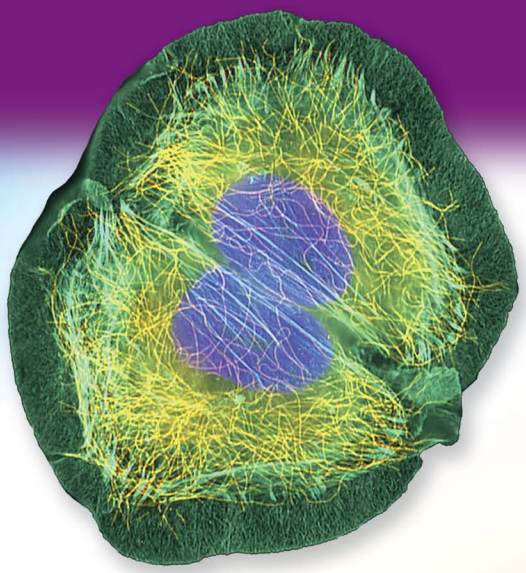
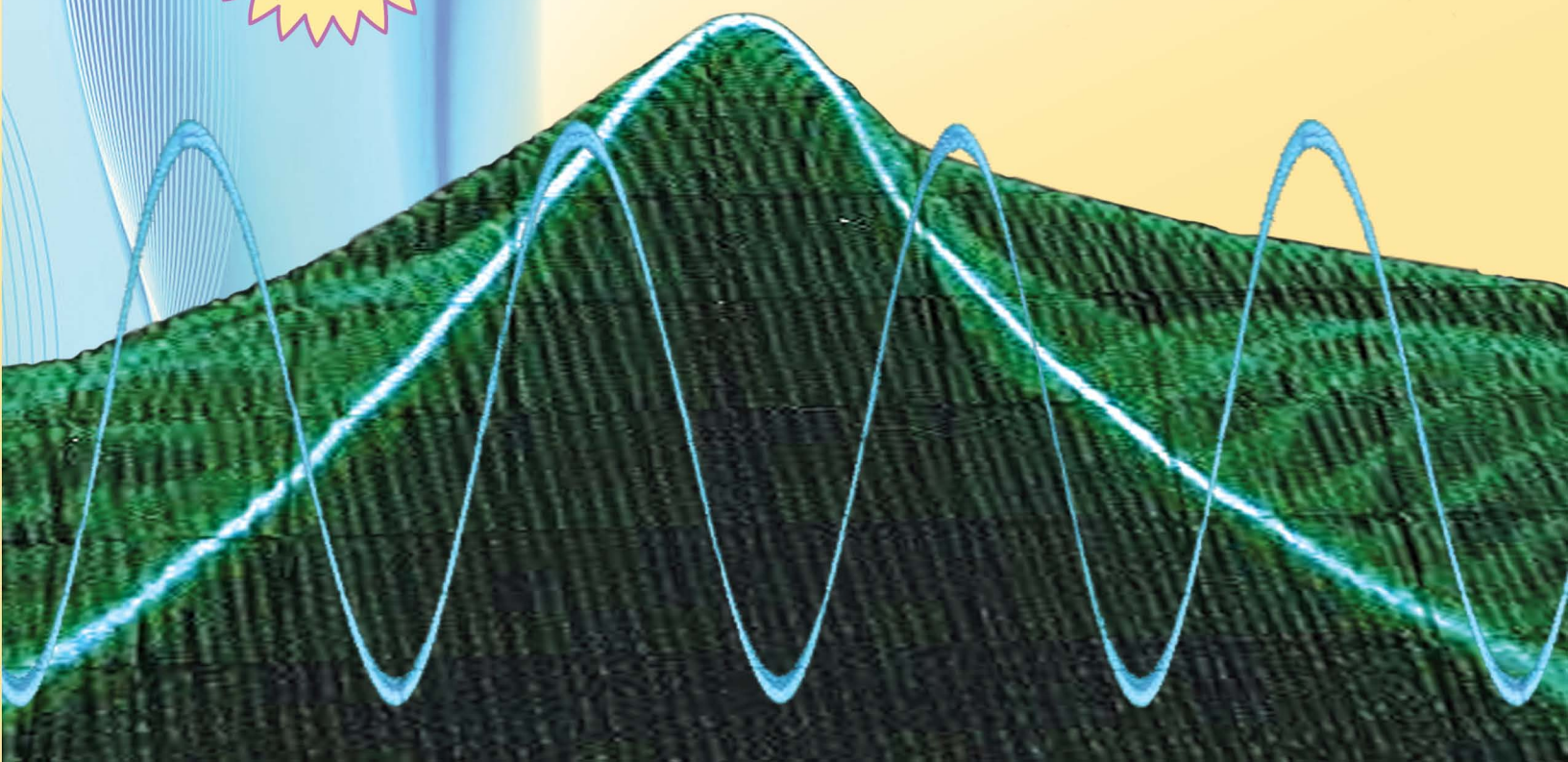
Nenah Sylver, PhD



# The Rife Handbook

## of Frequency Therapy and Holistic Health

REVISED 2011 EDITION



## Holistic Health | Electromedicine

The first edition of this book sold in over 30 countries. Completely revised, updated and expanded, this version includes recent discoveries about how Royal Rife's original equipment worked, new disease and frequency listings, a detailed index, and additional, easy-to-administer, innovative natural therapies. This is the most complete and versatile resource available anywhere on electromedicine and holistic health.

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*The Rife Handbook* is a first-rate, comprehensive, extremely well organized and documented manual to help laypersons and physicians better understand the concepts of vibrational medicine and the power of complementary health protocols. . . . I am literally blown away by this incredible masterpiece and give it a definitive five-star rating.

— Gerald H. Smith, DDS, DNM
Past President, Holistic Dental Association



Sophisticated enough for the seasoned health professional, yet thorough and understandable enough for the novice. . . . Even if the reader does not (yet) own a frequency device, this book is one of the best primers I have ever seen on holistic health. Anyone interested in alternative healing protocols must have this book.

— Rose Marie Williams, MA
*Townsend Letter* columnist, and natural health and environmental advocate

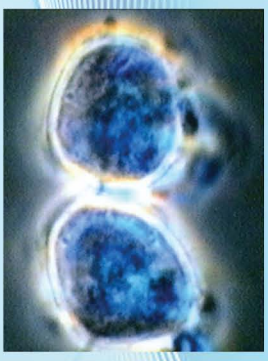
Dr. Sylver courageously demonstrates how each of us has the power to take charge of our own lives and create our own wellness protocols, without abdicating responsibility to anyone else. *The Rife Handbook* is destined to become the definitive reference on attaining self-directed, holistic health.

— S. Nathan Berger, DDS, PC
Rife researcher and biological dentist

Incredibly well written and comprehensive. . . . I am mesmerized by Nenah Sylver's quality of writing and knowledge. She explains the most difficult topics clearly so anyone can understand and benefit from what she has to offer. . . . I recommend *The Rife Handbook* without hesitation to all physicians and students in the health field.



— John A. Amaro, PhD, DC, LAc, Dipl Med Ac
President, International Academy of Medical Acupuncture
and developer, Electro Meridian Imaging (EMI)™ acupuncture diagnostic instrument



A thoroughly researched guide to holistic health . . . for any clinical practice utilizing complementary and energy medicine therapies.

— Robert S. Ivker, DO
Co-Founder and Past President, American Board of Integrative Holistic Medicine (ABIHM)
and author, *Sinus Survival*

Nenah Sylver's direct style is a prophetic voice for the medicine of the future.

— Joel P. Carmichael, DC, DACBSP
President, North American Academy of Energy Medicine

I recommend *The Rife Handbook* without reservation to every health seeker, patient, physician and scientist who values objectivity and innovation in medicine and wants guidance on complementary methods of healing.

— Bryan Rosner
author, *Lyme Disease and Rife Machines* and *The Top 10 Lyme Disease Treatments*

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# Praise for *The Rife Handbook*

Applying electricity to treat illness is an old science. The Egyptians utilized electric eels centuries ago. Acupuncture discussed in *The Yellow Emperor's Internal Medicine Classic* dates to 200 BCE. In modern times, Georges Lakhovsky used electricity for his Multi-Wave Oscillator (created with the assistance of Nikola Tesla and patented in 1934). The efforts of Royal Rife are much better known. However, the saga of Rife technology reads like a mystery novel with intrigue, misinformation and hiding of information, theft, lawsuits, character assassination and governmental abuse. Now comes Dr. Sylver with a clear explanation of Rife therapy in an easily readable and scholarly treatise. Finally the mystery is solved, and we can put Rife technology into a usable context for its intended purpose—the healing of the sick.

*—Jerry Tennant, MD, NMD, AAO, SOPS*
*inventor of multiple surgical instruments, intraocular lenses and the Tennant Biomodulator®,*
*and author of A Lens for All Seasons, A Primer of Cataract Surgery, and Healing is Voltage*

At a time when health conscious individuals are concerned about drug-resistant infectious diseases, the government's push for mass inoculations, the over-medication of children, bioterrorism, and negative effects of vaccines and drugs, along comes a well researched, easy-to-read treatise that revives non-invasive and effective frequency therapy. *The Rife Handbook* is sophisticated enough for the seasoned health professional, yet thorough and understandable enough for the novice. This book does more than discuss the genius of Royal Raymond Rife; it superbly explains holistic approaches to treating disease. Even if the reader does not (yet) own a frequency device, this book is one of the best primers I have ever seen on holistic health. Anyone interested in alternative healing protocols must have this book.

*—Rose Marie Williams, MA*
*Townsend Letter columnist, and natural health and environmental advocate*

It doesn't happen very often, but occasionally I read a massive book on natural health and healing that just plain blows me away. Dr. Nenah Sylver's huge and impressive *Rife Handbook* is more than merely the best and most complete compendium on frequency healing that I've ever seen. In addition to a massive cross-referenced frequency directory for most human ailments, this wonderful book also features detailed, helpful, and ground-breaking information on complementary therapies—and much, much more.

*—Chet Day*
*Health & Beyond Online, www.chetday.com*

We work in the area of complementary and holistic cancer healing education and recommend Rife therapy to all our clients. *The Rife Handbook* is a bible in our office, an invaluable tool toward the healing of dozens of cancer victors. Nenah Sylver's research is thorough and detailed. The book sits on a prominent place on my shelf next to every frequently used manual in my practice.

*—Ellyn Hilliard, CNC, PhD*
*co-owner of Twelve Ways Healing Center in Colorado, US*
*a holistic healing retreat for people facing life-threatening illness*
*(www.cancersurvivorzone.com)*

Royal Raymond Rife discovered one of the most groundbreaking medical tools of the last hundred years. Due to political and financial interests, his discoveries were driven underground. But today, people suffering from cancer and other diseases can base their treatment on authentic science instead of politics. A scientist in the true definition of the word, Dr. Sylver methodically guides readers through Rife's life and achievements, with a history of the technology and the scientific foundation for its use. She also provides practical tips that can be easily integrated into a comprehensive protocol for a wide variety of health conditions. Nenah Sylver is the "researcher's researcher"; I habitually turn to her work as a trusted reference. I recommend *The Rife Handbook* without reservation to every health seeker, patient, physician, and scientist who values objectivity and innovation in medicine and wants guidance on complementary healing modalities.

*—Bryan Rosner*
*author, Lyme Disease and Rife Machines and The Top 10 Lyme Disease Treatments*

It is an honor to endorse the intelligent, well-researched and politically courageous *Rife Handbook* in these corrupt times. This very valuable resource will help energy medicine hit its full, scientifically-validated stride in the years ahead.

*—Barry Lynes*
*author, The Cancer Cure That Worked and The Healing of Cancer*

*The Rife Handbook* is, without a doubt, the best written and most informative book I've ever seen on resonant frequency therapy. Dr. Sylver has compiled the best and most useful of all historical and technical knowledge involving Rife and many other types of frequency therapies. Her clear, step-by-step explanations of both theory and practical applications address virtually every point, and more, that I as a device manufacturer have been asked about the technology. This book contains the most extensively annotated and cross-referenced frequency index to be found anywhere. Furthermore, the far-reaching education on the principles of holistic health and many important complementary modalities will help readers make informed choices about their care. This invaluable volume is a "must have" reference for laypeople, for the practitioners who treat them, and for seasoned researchers. If you have but one book on the subject, this should be the one!

*—Jimmie Holman*
*Rife researcher and designer, Pulsed Technologies*

*The Rife Handbook* is impressive and encyclopedic, a priceless addition to my library. I reference it all the time and its review of electrotherapy is first-class.

*—Steve Haltiwanger, MD, CCN*
*internationally acclaimed authority on nutrition, electromedicine, and the electrical properties of the body*

Dr. Nenah Sylver's 2001 edition offered an impressive collection of long-suppressed information to help people break away from the self-serving deceits employed by conventional allopathic medical care and the pharmaceutical industry. With this new volume, Dr. Sylver demonstrates her mastery of this complicated field with massive amounts of hands-on information that you must learn if you are to finally be well. She courageously demonstrates how each of us has the power to take charge of our own lives and create our own wellness protocols, without abdicating responsibility to anyone else. *The Rife Handbook* is destined to become the definitive reference on attaining self-directed, holistic health.

*—S. Nathan Berger, DDS, PC*
*Rife researcher and biological dentist*

As an AAMA Board Certified Alternative Medicine Practitioner, I have many fine modalities from which to choose. I recently experienced a health issue that failed to be helped by either conventional allopathic medicine or even alternative medicine treatments. However, after a Rife frequency square wave treatment protocol was applied, this health issue was completely resolved.

Rife technology, until now, has been largely questioned by both alternative medicine and allopathic practitioners for efficacy and disease resolution. But *The Rife Handbook* will dispel your doubts. It is the recommended work for practitioners who need to understand how and why this therapy works, and who want to utilize frequency therapies in conjunction with current preferred interventions to help their patients heal. Nenah Sylver's definitive interpretation of frequency therapy identifies applications, indications, contraindications, safety, and specific treatments along with directions specifying "how, when, and what frequency" for therapy sessions. The detail with which the author examines treatment modalities is remarkable; she presents a variety of protocols to resolve most health issues. It is rare that I read another's views of various alternative medicine therapies that exude such succinct clarity and comprehension as hers. Dr. Sylver has a remarkable grasp of what works, how it works, and on whom it may be effective.

This 768-page, well-referenced treatise provides treatment options when progress falls short, or when there appears to be an impassable plateau in the way of optimal recovery. Having read every single page, I found no competing interests, monetary motive, or corporate interest from the author and enthusiastically endorse *The Rife Handbook*.

*—Bill Misner, MS, PhD*
*AAMA Board Certified Alternative Medicine Practitioner*
*author, What Should I Eat? A Food-Endowed Prescription For Well Being, 2nd Edition (2009)*
*and Nutrition For Endurance: Finding Another Gear (1998)*

This meticulously researched book examining the discoveries and inventions of Royal Raymond Rife provides new and ample documentation, including a fascinating compilation of cutting edge data on a variety of wellness issues, brilliantly interpreted. It is rewarding to see a new generation of health professionals postulating what I have been saying for four decades. If you are interested in exploring Rife frequencies as an alternative source, or in acquiring new information to help with decisions about your health, this book will be a valuable addition to your library.

*—Phyllis A. Balch, CNC*
*author, Prescription for Herbal Healing, Prescription for Dietary Wellness,*
*and Prescription for Nutritional Healing*

Nenah Sylver's direct style is a prophetic voice for the medicine of the future. Her timely book comes amidst the rise of consumer-driven health care in America: patients are demanding more than chemistry can offer. There is wide consensus that health is more than the absence of disease, and that illness is more than the miscarriage of biochemical processes. Nearly a half century after Nobel laureate Albert Saint-Gyorgyi first called our attention to its necessity, we may finally see a shift to incorporate the findings of quantum mechanics into biology and medicine. As Robert Becker discovered, these disciplines blend nicely together in the same laboratory, and hold great promise for the clinic. Dr. Sylver provides a well-organized history of Rife's work and a seminal guidebook for the modern application of his discoveries. This significant volume will encourage lively and informed discussion regarding the implications of bio-electromagnetic energies for human wellness.

*—Joel P. Carmichael, DC, DACBSP*
*President, North American Academy of Energy Medicine*

Dr. Nenah Sylver has gifted humanity with a magnificent, comprehensive, thoroughly researched guide to holistic health as well as the science and application of the work of a great medical pioneer, Royal Raymond Rife. This book will help physicians expand their base of practical and theoretical knowledge. I highly recommend it for any clinical practice utilizing complementary and energy medicine therapies.

*—Robert S. Ivker, DO*
*Co-Founder and Past President, American Board of Integrative Holistic Medicine (ABIHM)*
*and author, Sinus Survival*

*The Rife Handbook* is a first-rate, comprehensive, extremely well organized and documented manual to help laypersons and physicians better understand the concepts of vibrational medicine and the power of complementary health protocols. This holistic bible provides an extensive A to Z list of frequencies to treat disease, plus invaluable information on the politics of medicine, complementary therapies, types of electromedical devices, and other topics to help one survive the pitfalls of modern medicine. As an author, researcher and international lecturer with over 40 years of clinical experience, I am literally blown away by this incredible masterpiece and give it a definitive five-star rating. I strongly recommend that this book be used at any educational institution that seeks to disseminate science-based information to students of medicine, chiropractic, osteopathy, naturopathy and other health modalities.

*—Gerald H. Smith, DDS, DNM*
*Past President, Holistic Dental Association*

Resonant frequency therapies are mostly unknown to the general public, and well written material on Royal Rife is scarce. Yet hundreds of thousands of people, from the skilled professional to the layperson, are using frequency devices with phenomenal success in the treatment of disease. Rife's groundbreaking research involving many scientific disciplines—and his innovative discoveries—upset the present scientific paradigm. But they will eventually reshape our world. And *The Rife Handbook* will help open people's minds to what is now a worldwide technological shift. This book is long overdue.

*—James E. Bare, DC*
*chiropractor and inventor of the patented Bare-Rife frequency therapy device*

This book is incredibly well written and comprehensive, relevant to students and practitioners alike. Covering an array of topics in medicine and holistic health, it comes at a most crucial time in the bourgeoning field of alternative and complementary health care. Having read scores of books on electromedicine, l count this book as my number one reference on the topic. I only wish I had the knowledge presented in these pages many years ago. As a scientist with over 40 years of clinical and academic experience, I am mesmerized by Nenah Sylver's quality of writing and knowledge. She explains the most difficult topics clearly so anyone can understand and benefit from what she has to offer. Dr. Sylver is sure to inspire and educate those fortunate enough to hold a copy of her book in their hands. Without question, she will be included as one of the great minds of the 21st century. It is with great pride and honor that I recommend *The Rife Handbook* without hesitation to all physicians and students in the health field.

*—John A. Amaro, PhD, DC, LAc, Dipl Med Ac*
*President, International Academy of Medical Acupuncture*
*and developer, Electro Meridian Imaging (EMI)™ acupuncture diagnostic instrument*

# The Rife Handbook

## of Frequency Therapy and Holistic Health

Nenah Sylver, PhD

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Phoenix, Arizona

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published by:
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PO Box 74324
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phone: 480-688-4786

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*The Rife Handbook of Frequency Therapy and Holistic Health*

An earlier edition of this book, called *The Handbook of Rife Frequency Healing: Holistic Technology for Cancer and Other Diseases,* was published in 2001 by The Center for Frequency. A larger, revised hardcover edition, with substantially new material, an index and a different title, was published in 2009 by Desert Gate Productions LLC. This revised 2011 edition is also published by Desert Gate Productions LLC. All rights reserved. No part of this book shall be reproduced by any means without written permission of the publisher or author, except for reviewers who wish to quote passages.

Indexed by Ron Strauss and Ann Rogers of First Glance Indexing (annrogers@mchsi.com).
Cover design by Nenah Sylver.

Cover Images, Front.
*Top*: A human skin cell dividing in two. These particular skin cells (known as keratinocytes, or HaCaT) have been transformed to have unlimited growth potential without being tumor forming. The cells were stained with fluorescent dye. The nucleus is purple and the microtubule strands (involved in cell division) are yellow. The laboratory-grown cells, which retain all the structural and functional features of human skin, are used in wound healing and research. The photo was taken through a light microscope. Courtesy of Dr. Torsten Wittmann/Photo Researchers, Inc.
*Bottom*: Two superimposed wave forms from a Bare-Rife device, as viewed on an oscilloscope. Wave forms courtesy of James Bare; wave form graphic created by Nicholas Vittum.

Cover Images, Back.
*Top*: Bipolar nerve cell, as seen through the Ergonom microscope.
*Middle*: Cross section of a bone 3.5 mm thick, as seen through the Ergonom microscope.
*Bottom*: Cell division, as seen through the Ergonom microscope.

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This book is dedicated

to all peoples everywhere—
black
brown
red
white
and yellow

who seek
clean food
pure water
dependable shelter
right livelihood
and radiant health

and who want to be
respected for their humanity
and honored for their divinity.

May they find the
dignity
joy
peace
and love

that is their birthright,

and always have the freedom to choose
the course of their own lives.

# Disclaimer

The information given in this *Handbook* is for educational, informational, and investigational purposes only and is not to be construed as diagnosis of disease, treatment of disease, prevention of disease, or as a replacement for consulting a qualified health care practitioner.

Be careful when investigating this technology! Protocols for this technology may need to be modified, or this technology may be contraindicated entirely, if you have a heart condition, are wearing a pacemaker, are pregnant, are nursing, have blood clots, are taking strong medications such as chemo, are wearing metal implants or stents, have breast implants, are especially sensitive to radio frequency (RF) or other electromagnetic radiation, have problems with your immune response, or have especially sluggish eliminative functions (colon, kidneys, liver and lymph system). Before using any equipment, and to see if you should even be experimenting with this technology, please read about these circumstances, and the precautions to take, in Chapter 4. The author, publisher and distributor are not responsible or liable for the results of your experimenting with rife technology or using any of the other therapies described in this book. The reader accepts full responsibility for any and all consequences of experimenting with these modalities. *If you have a medical condition, see a qualified health professional of your choice.*

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Royal Raymond Rife with one of his microscopes, 1929.

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# Acknowledgments

This book would never have been written without the pioneering discoveries and great personal sacrifices of Royal Raymond Rife. Likewise, this book could not exist without the contributions of the archivists, electronics engineers, microscopists, mathematicians, and medical researchers who came after Rife and continue to refine the growing field of frequency healing. This *Rife Handbook* is not intended to replace anyone's research, discoveries or devices. Rather, it is meant as a guide to complement the Rife resource material that has been reemerging after being suppressed for over half a century.

Not all Rife researchers are in the public eye, or want to be. But all of them deserve to be acknowledged for their efforts to promote this drug-free, non-invasive way to banish disease and promote wellness. I especially thank the following for reviewing portions of my manuscript and providing some technical information: James Bare, DC; S. Nathan Berger, DDS, PC; K'Lynn Chastain; Gerry Graham, DC; Anthony G. Holland, PhD; Richard Loyd, PhD; Brian McInturff; Bruce K. Stenulson; and Jeff Sutherland, PhD.

Jason Ringas and Shawn Montgomery (co-founders of the Rife Research Group of Canada), along with Stanley Truman, allowed me to use some key documents and photos from their archives. Charlene Boehm, Dave Felt and Jimmie Holman spent many hours patiently answering my questions and explaining technical issues. Jeff Garff supplied many photos and also resized them for me. Bryan Rosner offered his friendship and enthusiastic support. Peter Walker, founder of Rife Research, Europe and www.rifeforum.com, provided photos and information, helped with website design, and assisted in other ways too numerous to count. And research from the late Donald L. Tunney has continued to enrich so many. I am grateful to them all.

Rife therapy should be administered holistically, as part of an overall wellness protocol. Therefore, this book addresses many complementary modalities. A project of this scope and depth could not have been completed without input from health professionals and educated laypersons versed in acupuncture, biology, chemistry, chiropractic, herbology, internal medicine, massage therapy, naturopathy, pathology, and physics. I thank Lynne August, MD; Mike Devour; Sally Fallon, MA; Noel Huntley, PhD; Diana Jordan, RN, CT; Bob Lesnow, DC; Gerald Olarsch, ND; Lorinda Panton; Bruce Poritzky, BS; Karen Purcell, ND; Paul Silverfox, LMT; A. Van Beveren, PhD, CNC; and Richard A. Wullaert, PhD, head of the Functional Water Society.

I also acknowledge the following, whose time and talents helped in myriad ways: Ann Rogers and Ron Strauss at First Glance Indexing; attorney George Thomas, who instructed me on laws governing medical devices; Edna (Eddie) Tunney, who gave me moral support when I really needed it; Robin Walsh, former head librarian at Ulster County Community College, who unearthed hard-to-find journal articles for me, even though I no longer live anywhere near the library; and Margie Wilson of Wordsworth, who helped with miscellaneous publishing details. Special appreciation goes to David Friedman of Barner Books, who

in the process of working as my sales agent also became my friend. Editorial assistance for this *Handbook,* in particular help organizing Chapter 5, was provided by Linda Thieman, MA. Additional copyediting was done by Kitty Farago, RN. If I have not acknowledged someone I should have, it was inadvertent, so please consider yourself included.

In the personal arena, I continue to be blessed with the companionship of my life partner and best friend, Paul Silverfox, LMT. Throughout the many years that I labored on all versions of this book, Paul taught and uplifted me with his unconditional love. He attended to everyday matters so I could spend uninterrupted hours writing. He readily gave advice on all aspects of the manuscript, no matter how many rewrites I asked him to critique. And he offered encouragement whenever I needed it. I will always appreciate his friendship and caring.

The others I want to acknowledge are people whom I may never meet face to face. Members of several Internet health forums, from all over the world, have regularly relayed accounts of medical politics, reported their favorite frequencies, and described groundbreaking therapies. Their stories of how they were helped by Rife's technology and other modalities have been informative and inspiring. Another group I may never meet in person is the thousands of laypeople and health professionals who, over the course of a decade, telephoned or emailed me with questions. Their questions made me think and strive to find the answers, thus helping me create a better book.

Finally, there is one more person I want to sincerely thank: you, the reader of this book. Your desire to learn and your willingness to take responsibility for your wellness form the bedrock of holistic health. It is in service to you that I have written *The Rife Handbook*.

# Foreword by Richard Loyd, PhD

There are times when a person may need immediate orthodox medical attention. If involved in a car accident producing severe injuries, I would hope to be transported to the best emergency room in town for medical care. But what about conditions where heroic and invasive interventions are not immediately required? There is danger in making use of medical care.

In April of 1998, the *Journal of the American Medical Association* (*JAMA*) published an article from researchers at the University of Toronto who studied the numbers of serious adverse drug reactions in the USA during 1994. "Serious" pertained to drug reactions from correctly prescribed medications that required hospitalization, caused permanent disability, or induced death. There were 2,216,000 serious adverse drug reactions in the USA in 1994, about 106,000 of which were fatal. This makes correctly practiced medical care approximately the fifth leading cause of death.

Then in 2000, *JAMA* published another article. Dr. Barbara Starfield of Johns Hopkins School of Public Health took the 106,000 number from the above study and added the deaths from unnecessary surgeries, deaths from medical errors, and deaths from infections in hospitals, yielding a total of 225,000 deaths per year from medical care.

In 2003, doctors Gary Null, Carolyn Dean, Martin Feldman, Debora Rasio and Dorothy Smith published a study (which appeared in *Townsend Letter* and was widely reprinted) called "Death by Medicine." Careful studies of peer-reviewed journal articles and government health statistics showed that medically caused deaths added up to more than 783,000 per year, well ahead of heart disease (at about 700,000) and cancer (at about 550,000, many of which should be categorized under drug-related deaths). The authors concluded that *medical care is the leading cause of death in America*.

It would seem prudent to consider non-toxic and non-invasive therapies whenever possible. One type of therapy to consider is that of microbiologist, scientist and optician Dr. Royal Raymond Rife. As early as 1929, articles began appearing in newspapers such as the *San Diego Union* and *The Los Angeles Times* about Dr. Rife. He had discovered that frequencies could be used to destroy germs without harming the patient.

Dr. Rife developed equipment to apply frequencies. Since that time, various types of effective frequency devices have been produced. Hundreds of cancer patients have recovered without the benefit of surgery, chemotherapy, or radiation. Lyme disease, Multiple Sclerosis, rheumatoid arthritis, and many other conditions have yielded to frequency therapies. Non-professionals have produced many of these results. I have had the privilege of watching many people self-treat and enjoy improvements in their health.

A woman with advanced rheumatoid arthritis found walking even a few steps to be very difficult. She decided to give frequency therapy a try. She used a piece of equipment that is able to scan the body and detect which frequencies should be used. It then applies the frequencies. She reported that a few days later she was able to enjoy walking with her children at a fair for hours.

A woman reported having problems with parasites after eating undercooked shrimp. She also used a unit that could scan the body and apply frequencies. When the correct frequency was used, she reported that she could feel a large worm thrashing around. Soon after that she passed the creature. It was one inch in diameter and thirty inches long!

A woman had cancer in her right breast, right lung and in her right shoulder and ribs. Her right arm hung limp. She was heavily medicated for pain, and could not eat or keep supplements down due to nausea. Her husband decided to administer frequencies for six hours a day (not recommended). In a week she was able to stop her medications, and she could take supplements and eat. After one month, cancer was no longer detectable, and she had use of her arm again.

An attorney with an autistic son reported that her child seldom slept more than three hours at a time; he would wake up in pain. The two of them were getting six hours or less of sleep a night. After the mother gave the boy one frequency session, he started sleeping consistently for ten hours, and his behavior improved.

A prostate cancer patient had difficulty urinating, and he had a PSA of 140. He scanned for frequencies and administered them. Five days later, the urine flow was normal and the PSA dropped to 90. Two months later, his PSA was down to less than 2.

A leukemia patient had a white blood cell count of 250,000. He decided to use frequencies that other leukemia patients had found useful. After six weeks, his white blood cell count was down to 16,000. His physician said that the palliative treatments that they were doing could not have done this.

A patient with pulmonary fibrosis made crinkling sounds in his lungs as he breathed. He was told that his prognosis was hopeless, that his oxygen saturation would continue to decrease until not even inhaling oxygen would keep him alive. He did a scan and applied the needed frequencies. He coughed up a lot of material, after which his lung sounds and oxygen saturation returned to normal.

A hepatitis C patient had a virus level of more than 9,000,000. He used frequencies from a scan and from lists. Five days later, his virus score was 1,000,000.

Several people with degenerative hip conditions have used frequency therapies. So far, all have recovered. It appears that when the infections in the joints are removed, the body is able to repair the damage.

And yet, most physicians have never heard of the work of Dr. Rife. *The Rife Handbook of Frequency Therapy* is a book that doctors and their patients can use to learn about this safe, effective and non-toxic therapy for cancer and so many other conditions

Dr. Sylver presents a fascinating account of the life of Dr. Rife and his accomplishments. She describes how his discoveries were, and continue to be, ignored or opposed. She explains why you may not get the best available care when you seek medical help. She covers in detail helpful steps to take in moving toward wellness, including how to get quality water and how to detoxify the body.

She covers what you need to know to conduct a frequency therapy session. And she lists a large number of conditions with appropriate frequencies, as well as complementary therapies. Dr. Sylver has spent years studying how people get sick and how they can get well. She presents a wealth of valuable material that will be beneficial to doctors, practitioners of all kinds, and those who are on the road to recovering their own health.

—Richard Loyd, PhD
coordinator of the
Annual Rife International Health Conference
*www.RifeConference.com*

# Preface by Jeff Sutherland, PhD

When Nenah Sylver published the first edition of *The Rife Handbook* in 2001, it received excellent reviews as the best book in the field. This new version is substantially updated and improved, reflecting many of the advances in frequency therapies that have occurred in the last decade. Frequency therapy, properly applied, may well replace every other modality. Frequencies can alter DNA, kill or enhance cells, affect all chemical interactions, break up toxic substances and cause them to be eliminated from the body, kill pathogens that disrupt bodily function, and enhance and stimulate all cells and organ systems to higher levels of performance.

Frequency devices can change the medical paradigm as we know it. But unfortunately, there is considerable resistance to electromedicine. When I co-founded the Center for Vitamins and Cancer Research under the sponsorship of Nobel Laureate Linus Pauling, it became clear that certain innovations in medicine were not being researched sufficiently because of the limitations of our peer review process and the business interests of the health care system. Health care is a government regulated monopoly that systematically suppresses new innovation. Professor Clayton Christensen at the Harvard Business School writes: "Powerful institutional forces fight simpler alternatives to expensive care because those alternatives threaten their livelihoods." No one with a vested interest wants things to change, particularly when large amounts of money are involved.

Numerous papers in leading research journals have demonstrated that frequencies can eliminate pathogens and kill cancer cells. Yet why wouldn't health care practitioners who put their patients first want to use this technology? The average physician spends seven minutes with a patient during a visit. This is not enough time to do a good diagnosis, much less figure out a frequency treatment. Physicians would have to change their business model. Individuals who are unwell may be the only ones with the time and energy to spend on their problems. Rife frequency technology is a user-friendly modality for people to use to make themselves better.

Dr. Sylver spends a lot of time in her book to help you use frequencies safely. Even if you just want to make life a little better for your family and friends, you will want to read *The Rife Handbook*. There are superbugs and bioengineered diseases out there that might make it to your neighborhood. Will your local medical clinic help you when thousands of people are dying from a strange disease? Don't count on it! If you want to live long and prosper, learn about frequency therapy.

—Jeff Sutherland, PhD
Principle Investigator of research grants,
National Cancer Institute
Assistant Professor, Department of Radiology,
University of Colorado School of Medicine
Co-founder, Center for Vitamins and Cancer Research
Frequency Foundation, Boston, 2008



Royal Raymond Rife and Mamie Ah Quin Rife.

*Courtesy of Jeff Garff*

# Introduction

Imagine what your life would be like if you could eliminate ill health in as little as one day for something mild (like the common cold), or in six months to a year for a more serious illness (like cancer). To do this, you would need a protocol to strengthen your system so that it is no longer a breeding ground for pathogens, a frequency device, and a list of frequencies.

Royal Raymond Rife, and his effective, non-invasive technology that has helped countless overcome life-threatening diseases, is finally emerging into public awareness after years of suppression. The knowledge that specific frequencies destroy microbes is not new. As incredible as it sounds, Nebraska-born scientist Royal Rife began his career as an inventor almost a century ago.

One of Rife's key inventions was a most unusual microscope. In those days, the magnifying power of existing microscopes was poor. Individual viruses, and even some bacteria, could not be seen unless they were clustered together in colonies. Determined to see individual microbes, Rife built his highly acclaimed Universal Microscope. Many times more powerful than other magnifying instruments, the microscope made specimens visible without killing them—a feat beyond the capacity of even today's electron microscopes. In order to make microbes visible, electron microscopes bombard them with electrons in a vacuum, which kills them. Rife had a good reason for wanting to see specimens in their natural live state. If you want to find out how to kill a microbe, you need to observe how it reacts in its environment. Once Rife could observe the activities and responses of living microorganisms, he could figure out a way to destroy them. Hence, the Rife Ray was born.

Rife's method of destroying microorganisms was based on the principle of resonance. Every living organism has a resonant frequency, or intrinsic radiation signature. The cliché of the soprano who shatters a glass with her single, pure, focused tone is an adequate working metaphor for how Rife's electronic device worked. The various frequencies it emitted corresponded to the resonance of different microbes, disabling them so severely that they were no longer viable. Once the pathogens were disabled, the body could then eliminate them.

Thousands of tests were successfully conducted on infected animals. Some highly prestigious doctors and clinicians, impressed with the initial results, supported Rife in other ways. They supported him financially, substantiated his findings, and used the Rife Ray in their clinics, both in the United States and overseas. Some doctors even sent Rife notarized affidavits stating the effectiveness of the treatments. This was all done without poisonous drugs, invasive surgery, unhealthy dependence on doctors, or unfairly high medical bills. Accounts of Rife's microscope and ray device were published in journals, newspapers, and medical bulletins across the United States.

Ironically, Rife's treatments may have been too successful. The medical-pharmaceutical industry, foreseeing a loss in profits from drugs and surgeries, spawned some very vocal opponents—none of whom tested the machine. As time passed, the physicians and financial backers who had been Rife's colleagues and friends became targets of

character assassination. Medical boards threatened to revoke the licenses of doctors who used the Rife Ray unless they relinquished their equipment. Some of Rife's closest collaborators later denied even knowing him, despite the existence of one widely circulated photograph in which they appeared with him. Articles on Rife and his inventions began disappearing from publication archives. Clearly, Rife's Ray device worked. It was the greed of a powerful few that deprived many of healing and even their lives.

The story of Rife, while unique in its details, nonetheless follows a familiar pattern: a holistic cure is discovered that is non-invasive, successful and inexpensive; and then the modality disappears. Like other promising holistic treatments, Rife's inventions were driven underground.

The long silence on Rife and his inventions was finally broken with Christopher Bird's article "What Has Become of the Rife Microscope?" which first appeared in the March 1976 issue of *New Age Journal* and was reprinted later in other publications. Then in 1987, Barry Lynes published *The Cancer Cure That Worked*, an impassioned account of Rife's life and inventions. But original data gradually surfaced as well: Rife's surviving lab notes, along with old newspaper clippings, magazine articles, letters, telegrams, photographs, certificates, awards, tape recordings, and other assorted memorabilia provided vital pieces of Rife history. Some researchers spent hours rummaging through "dead" file cabinets of newspaper offices. Others were lucky to spot an article or two in obscure yellowing engineering journals. Still others uncovered family documents in the attics and basements of descendents of Rife's colleagues and co-workers. A wealth of documents and photos, unearthed over the years, are posted on the Internet at www.rife.org.

Using this primary source material as reference guides, scientists, health practitioners, electronics engineers and curious laypeople began experimenting with different types of machines as well as new frequencies. With a rapidly growing, fresh generation of wellness seekers demanding access to life-saving technology, a new era of frequency healing was born.

Although frequency equipment has been substantially modified since Rife and his colleagues treated people in the 1930s, 40s and 50s, some of the principles of how the devices work—microbe destruction through resonant frequency—are the same. Despite the intimidation tactics of the medical establishment and some government regulating agencies, more and more researchers are now stepping forward to share what they know via the printed page, radio, electronic media, and at conferences. Medical clinics and formal and informal research centers exist all over the world, in Mexico, Canada, New Zealand, South Africa, Germany, Romania, and other European countries. Designs and sales of second and third generation versions of Rife's original ray device are even available on the internet. The host of one Rife website (there are now thousands of Internet pages featuring this and similar technologies) reports that in January 2000 alone, his site received visits from people living in North America, South America, Europe, Asia, Africa, and Australia.

It was around 1983 that I first heard about Rife and his technology. Cryptic flyers from companies specializing in unusual devices somehow found their way to me. From time to time, electronics buffs and naturopaths would tell me about a device that emitted frequencies to halt and even reverse disease, but they couldn't or wouldn't elaborate. And small independent magazines occasionally carried articles about Rife. However, I didn't know where to obtain such devices—or, if addresses were available, I wasn't sure if the information was legitimate and the sellers honorable. Since I still had more questions than answers about the information I was gathering, I didn't do much with the data.

Thus for many years, Rife and his inventions occupied the same class as all the other unsolved mysteries of the universe. But although the sparse data had the flavor of a "too good to be true" rumor, my intuition nonetheless told me that this information was vitally important and would one day bear fruit. So I put everything into a file folder labeled "Unusual Healing Technologies," and waited, remaining open for I knew not what.

Then in 1993 I met Howard Mitchell, a dulcimer maker and musician who had majored in electrical engineering at Cornell and was now retired. With his highly inquisitive mind, his engineering background, and his love of tinkering with machines, Howie was an ideal Rife researcher. (My friend had already demonstrated an affinity for unusual science projects: one winter holiday, he sent me several Petri dishes containing glow-in-the-dark fungus.) Howie had previously been interested in frequencies as a musician, so learning about Rife was a logical next step. When he informed me that unfortunately (for experimentation purposes) he was in excellent health and therefore had no way to test his (not one, but two) frequency devices, I could not believe my good fortune and instantly volunteered to do it for him. Just as eagerly, he accepted my offer. This is how my academic query turned into a hands-on experiment.

Little did I know that my experimentation would continue indefinitely and lead me to unexpected and startling places. I exposed myself to many different types and makes of machines and tried nearly all of the frequencies that were on the lists that came with the devices. My efforts were rewarded when I avoided getting the flu, eliminated various types of infections, and helped friends with health problems of their own.

As my friends and acquaintances discovered that I was experimenting with rife technology, they began asking me about Rife and his life, how frequencies work, and about healing in general. Not knowing all of the answers—especially when they involved electronics, certain aspects of physics and details about microbes—I pumped information from every knowledgeable professional who was willing to talk to me. Dragging out my dusty medical and science textbooks, I added to my knowledge about biology, laboriously ploughed through chemistry, and brushed up on physics. I also devoured every book on Rife that I could find. The problem was that except for Barry Lynes's seminal biography, and one highly technical manual about how to build a specific type of frequency device, very little was available.

Compounding the problem of using the equipment was the fact that information on frequencies was found in many disparate places. So I began to compile a simple guide of popular frequencies that I had personally found to be effective, while continuing to try new numbers.

My friends were growing impatient. They wanted me to finish the guide so they could start using the frequencies. But it was becoming clear to me that I couldn't merely create a list of numbers to go with the equipment. I wanted people to understand what it means to be healthy—and why, once they start using the frequencies, they must work to eliminate the conditions that caused the illness in the first place.

At that time, another area of my life also began affecting my world view: my work as a Reichian (body-mind) psychotherapist. Increasingly, my clients began struggling with serious illnesses. Having been raised to believe that Western medicine was the only legitimate modality, they weren't totally convinced that holistic methods could help them. It felt odd to me that some of my clients had trouble understanding that physical disease can heavily influence one's emotional state, considering that they had specifically sought my services based on the understanding that unresolved emotions lodge in the body as tension, eventually causing illness. It never occurred to my clients that many emotional problems are exacerbated—if not directly caused—by the same physiological and biochemical imbalances that contributed to their diseases! This fired my resolve even more strongly to become active as an educator.

As I became more involved with this technology, sharing with friends and acquaintances became a full-time job. Although my enthusiasm never decreased, my energy level did. I had so much to share and explain that I was working even when I was socializing. Recognizing that this was a lot of information to handle, and that people tend to retain written information more easily than verbal, I looked for documents that presented the material systematically and clearly. I envisioned an all-purpose manual to meet a wide variety of needs—a combination holistic health guide, exposition on Rife and his work, and frequency directory, emphasizing cutting-edge research in medicine and science. But nothing suited my exacting requirements. After complaining for months about how hard it was to obtain reliable information about Rife, in conjunction with additional topics that I felt were essential, presented in just the way I wanted, I realized that the person who was supposed to put this all together was me. This is how my little list of popular frequencies metamorphosed into a project whose scope I could not have foreseen. This second edition that you are now holding in your hands is the result of my curiosity, learning, labor, and love over the course of more than fifteen years.

So now that you have this *Handbook*, where do you begin? Some readers, especially those who own frequency devices, may be tempted to go directly to the Frequency Directory chapter. This *Handbook,* however, is about much more than microbe-destroying frequencies. It is about freeing yourself from propaganda, trusting in your own experience, and the self-confidence—and health!—that blossom when you think and act for yourself. Please don't ignore Chapters 1 through 3, which suggest new ways to think about your body and healing. They will enhance whatever protocol you decide to use.

Chapter 1, "The Politics of Medicine and the Nature of Health," is a primer on allopathic and holistic medicine. It explains why most drugs don't work and usually make you worse—and also how the majority of laboratory testing is not only worthless, but can be rigged to "prove" whatever outcome the experimenter wants. The reader is also shown how drugs are approved, and by whom—which in most cases involves politics and profit rather than humanitarian concerns or even good science. [The level of deception and number of outright lies, from both the pharmaceutical industry and the FDA, have vastly escalated since even a few years ago when this book was first published. It is eye-opening indeed to contemplate the impact of the medical-pharmaceutical industry on all of our lives.]

Chapter 2, "The History of Pleomorphism and the Inventions of Royal Raymond Rife," features Rife's unusual life and the controversial debate over pleomorphism, a phenomenon little-known in the United States, but widely understood in Europe. Pleomorphism is the ability of microbes to radically change their form, structure and even function, depending on the ever-changing terrain of the body. Rife's microscope proved that in many cases, microbes become dangerous only when the system becomes biochemically unbalanced. This scientific

breakthrough played a pivotal role in Rife's lack of acceptance by his mainstream colleagues. So, if you are attached to the germ theory of disease, this chapter will give you a new perspective.

The adage "the terrain is everything" leads us to Chapter 3, which offers some of the most effective, user-friendly, and inexpensive "Complementary Therapies" to help you detoxify and heal your system. This chapter is for frequency device users who want to handle the effects of sudden microbial die-off. It is also designed for non-users who want to read about some of the best holistic modalities all in one place. Those readers already familiar with such protocols can learn new ways to approach what they are already doing. Here, you will read about various modalities such as oxygen, sauna and light therapies, and Inclined Bed Therapy. There is also up-to-date information on diet and nutritional supplements. Finally, drawing on my background in Reichian psychotherapy, I address the relationship between mind and body and discuss the psychological aspects of what we call disease.

Chapter 4 shifts our focus to the "how to" of Rife's technology. Readers unfamiliar with frequency devices are given a wealth of information in "Frequently Asked Questions About Rife Equipment and Sessions." In order to apply this technology correctly, you must learn who might benefit from the equipment and who should not use it, and under what conditions; what type of frequency device will best suit your needs; how to give yourself a session; how to select the correct frequencies; how to deal with detoxification responses from microbial die-off; how to administer sessions to children and pets; and more. If you already have a frequency device, this chapter will help you use it. If you do not have one, this chapter will help you choose the unit that's best for you.

Chapter 5 offers an extensive "Frequency Directory." After the reader is taught how to navigate through the directory, an alphabetized listing follows that provides frequencies for common and exotic diseases. In addition to conditions like allergies, cancer, HIV, Lyme disease and multiple sclerosis, the Frequency Directory includes the viruses, bacteria, parasites and fungi that are implicated in these symptom pictures. This chapter also doubles as a basic medical primer for the layperson, so even those without frequency devices will benefit from its contents. Summaries of the functions of organs, glands and bodily systems accompany the listings. When medical terms are used, they are always translated into plain, everyday language. Suggestions for holistic therapies that complement the frequency healing are also included.

The book closes with Chapter 6, "Creating a Better World, Inside and Out." Many people, taught to avoid death, are unprepared when it happens and they fear it, both for themselves and their loved ones. Yet paradoxically, the dominant values in our culture are filled with death. The economics, values, and lifestyle promoted by our culture support misery, poverty, hate and fear, instead of encouraging joy, love, creativity and truth. We cannot die in peace unless we live in love. In this chapter I discuss the changes that must be made on all levels—personal, political and transpersonal—in order for a life-based culture to emerge. In keeping with this theme, I could not resist including some exciting, groundbreaking scientific research that points to the existence of what we call spirit, and proves without a doubt that love heals.

Appendix A, "Resources," lists some sources of information, products and services that can help us on the road to health.

For those interested in making their own rife technology units available to other people, Appendix B, "Legal Implications of Rife Sessions," discusses some challenges of using non-medically approved devices for healing purposes. However, I am not an attorney; and different countries and municipalities have different laws concerning the use of electromedical devices. To ensure that you are in compliance with the laws of your own locale, use this section as a guide only and then consult with an appropriate professional.

Appendix C, "Healing with Electromedicine and Sound Therapies," is written for the layperson with no background in physics or electronics. This overview, which includes definitions and concepts related to the electromagnetic spectrum and sound waves, will help you better understand the more technical aspects of electromedicine. Those who want to explore frequency therapies in greater depth will find a listing of selected published clinical trials, spanning over four decades, in Appendix D. And Appendix E reports a promising study by a US research team of a Bare-Rife unit killing leukemia cells *in vitro*.

The References section includes both books that are referenced in the text and others not specifically cited. Since many of the books are from non-mainstream sources, I include detailed contact information for the publishers.

Several editorial notes are in order. When referring to people suffering from various health problems, I use terms like "people with cancer" or "people with multiple sclerosis" instead of "cancer patients" or "multiple sclerosis patients." Although this phraseology can be a bit cumbersome, I avoid using "patient" because the word both reflects and reinforces a hierarchical medical model that exalts the doctor as the all-knowing savior and relegates the seeker of health services to a subordinate role. Since one theme of this book is self-empowerment, I try to select my words carefully.

A similar dilemma exists with the word "layperson." Obviously, "layperson" is a substitute for the gender-biased "layman." However, I discovered that initially "layman" meant anyone (read: male) who was not a member of the laity (clergy). Later, "layman" was expanded to mean anyone who is not in a specialized profession. In other words, a layman is a commoner, someone who holds no title. In this dualistic world, titles of worth and prestige are accorded to "experts" who are assumed to "know it all," while little respect is given to so-called "non-experts" who do not hold prestigious titles or degrees. Therefore, even though many laypeople are highly educated and informed—sometimes even more than persons with degrees—their lack of medical credentials apparently still makes them commoners (and thus not worthy of esteem). Alas, I could find no suitable, respectful word in English that designates someone who is not a medical professional. In using the words "laypersons" or "laypeople," I mean no disrespect. Sometimes the limitations of language can be quite frustrating.

Despite my own language preferences, when quoting others I try to respect the writer's voice. Thus, if certain words are used, such as "patient," I leave them in.

Royal Rife's name is used often, as one would expect. Appropriate to this usage, "Rife" is capitalized. However, "rife" is now being used as a verb (referring to the act of giving oneself a frequency session). For these, and for the nouns "rifing" and "rifer" (which refers to one who gives oneself frequency sessions), the "r" is not capitalized. Similarly, when used to describe frequency devices, "rife" is not capitalized, since none of the devices in use today were made by Royal Rife the man. A similar logic explains why "rife practitioner" also uses a lower-case "r." However, when referring to the research, "Rife" is capitalized, since engineers and scientists involved in this area are usually investigating the man as well as the technology. (By the way, the acronym RIFE, for *Resonance Induced Frequency Effect*, has recently come into existence, to honor the many types of frequency devices modeled after Rife's original equipment or similar principles of resonance that he used.)

My final editorial note concerns the completeness of the information that appears in this volume. It seems that every month brings a fresh scandal involving the medical-pharmaceutical industry. Likewise, more exciting and innovative discoveries about health are constantly being shared with the public. The information in these pages was as complete as possible when this book went to press. You are encouraged to continue researching on your own.

The persecution that Royal Rife endured from our government and medical establishment simply for inventing a safe, inexpensive healing device is only part of the story of frequency technology. Reading the available literature about Rife and knowing which frequencies to use is a good start. But to really understand rife frequency healing, you must be willing to explore a radically different way of perceiving reality. This requires the mammoth (and not always easy) paradigm shift away from the one-size-fits-all, pop-a-pill-for-instant-results mentality. It means being observant and patient, trusting in the new paths to which your innate intelligence leads—insights that you were not taught how to cultivate during your conventional education.

Despite the remarkable success that I have personally experienced and seen with friends who have experimented with rife technology, there is no magic cure-all that has been found to work for everyone always. Most people respond favorably to sessions, but others may respond minimally. The machines cannot effect miracle cures. Your body is in charge of that. If you faithfully give yourself rife sessions, but continue doing what contributed to your getting sick in the first place, the best equipment in the world will not be able to induce lasting positive changes. This is why *when* you use a healing modality is as important as the therapy itself. Depending on the degree and type of imbalance, at different times a particular cleansing technique, healing modality, or frequency, may work better than others.

Sometimes I hear people complain when their healing regimen is not progressing according to schedule. But whose schedule? We are not inanimate machines. Mechanized medicine adheres to a prototype or standard of what it defines as normal, yet people vary wildly outside the range of presumed "normalcy." How many times have you heard of someone who felt unwell and received the following response from a doctor? "There's nothing wrong with you. You're in perfect health." These experiences teach us that we need to listen to our own bodies.

Admittedly, the line between listening to your body and listening to your addictions can be fuzzy. People are sometimes confused between these two, unsure which voice to follow. Cravings can seem like legitimate needs, and heeding the body's signals for nutrients can feel indulgent if one doesn't know what information to look for. In this case, the guidance of a professional can be very helpful. But you must use your powers of discrimination. Who is the best person to help you? The one with the greatest number of professional degrees may not be your best choice. If your concerns are brushed aside, or if your advisor places more importance on his or her knowledge than on your own experience, you might do better with someone else. The answers to wellness are not always simple, because life isn't simple. Since each person is different, there is rarely a single "right answer."

Ultimately, your best teacher is you! You are the one responsible for learning, deciding what to use and what to

discard, trusting in your own (informed) experience, and being accountable for your actions and decisions. These qualities constitute true power. Don't ever give away your power. This book is one of many stepping stones to acquiring the knowledge that you need to become an expert on you.

In closing, I want to thank you for helping to create a global paradigm shift, of which holistic healing is one part. Even if you are fortunate to be in good or excellent health now, it is comforting to know that this technology is available, should you or a loved one need it in the future. The application of rife and other kinds of frequency technology is bound to change the way medicine is practiced. As my friend Howie once wrote me: "I am thoroughly delighted, knowing that the experience of dealing with a disease might be interesting and even pleasant, rather than physically debilitating and allopathically terrifying." As more people strive to live in a loving, respectful manner—despite what those in power try to impose—everyone will have a greater opportunity to prosper. I dearly want to see this paradigm shift happen in my lifetime.

Welcome to the journey.

# Addendum to Introduction

The first edition of *The Rife Handbook* was released in March 2002, where it debuted at the Rife Conference held in Las Vegas, Nevada, in the United States. Despite my having steadily researched this technology for eight years, I could not have anticipated how many people were hungry for information about this unique healing modality. Nor could I have grasped the diverse knowledge and sophistication of the many researchers in this field.

Attending the Rife Conference, as a speaker, author and student, changed my life. Health professionals, device manufacturers and engineers were at the conference. But others attended, too—people who were ill or knew someone with a serious disease. Tired of the same old drugs-and-surgery routine dispensed by doctors who knew nothing else to suggest, they wanted to try something else. Several were already using the technology and recounted successful interventions against cancer and Lyme disease. The courage with which these folks were taking charge of their own lives was immeasurable and moving.

I was also impressed by the dedication and talents of the researchers. While it was true that they could sometimes be quarrelsome and cantankerous—driven by their own preferences and pet theories about how things worked and how to best accomplish their goals—it was because they cared. They not only cared about whether others lived or died, they cared about how people lived and about improving the quality of other's lives. Most significantly, as I later discovered, many of the researchers (like me) had at some point struggled with ill health. And some of them became Rife researchers after the death of a close friend or family member.

It was hard not to feel overwhelmed by what the seasoned rifers knew, as I began to see how much there was yet to learn. The field of rife therapy is so vast, it requires the knowledge and expertise of people in many and diverse disciplines: the healing arts (chiropractor, medical doctor, homeopath, naturopath, veterinarian); medical and scientific research (laboratory technician, microbiologist, microscopist); historical research (archivist, filmmaker, writer); physics; and of course electronics engineers, with their nuts-and-bolts skills of building equipment. Every rifer has something to contribute. This technology could not have come this far without input from everyone.

In the years that the first edition of this *Handbook* was in print, I had the almost daily privilege of connecting with customers from all over the world: Australia, Austria, Belgium, Brazil, Canada, Croatia, Denmark, France, Germany, Greece, Hong Kong, India, Israel, Italy, Japan, Manila, Mexico, the Netherlands, New Zealand, Norway, Pakistan, the Philippines, Singapore, Slovenia, South Africa, Spain, Switzerland, Thailand, United Arab Emirates, the UK, and Zimbabwe, as well as my native United States. Words cannot adequately describe my appreciation of these rich multicultural exchanges. The health professionals wanted to know more, do more. And the laypeople, many of them quite ill, made a point of telling me how rigorously they had been seeking alternatives to the unhelpful medical treatments they had already tried. We may not yet be regularly hearing about Rife and his inventions in the mainstream media, but that has not stopped the word about rife therapy from spreading. Many

people know, or intuitively sense, that frequency healing is a viable option, despite often discouraging comments from mainstream sources. These seekers won't stop searching until they find something that works.

The last several years have yielded valuable new information on Rife and his inventions. For a long time, old 1936 movie footage showing Rife working in his lab provided some of the best (and almost only) visual clues about the equipment, besides equally old photographs. Then reel-to-reel tapes, featuring Rife discussing the technology with many important colleagues, were discovered in an old trunk, cleaned of major hisses and pops, and transferred onto CDs. A Rife Ray, built in the 1940s, was found in a museum and restored by a team of resourceful engineers. Shortly after that, a US researcher and machine designer was given a box of priceless documents by an elderly nurse who had once worked with John Marsh, a colleague of Royal Rife's. This rifer was then given access to an old schematic of one of Royal Rife's original units, built in the 1930s. With help from other researchers—including an engineer familiar with the tube technology of Rife's era—he deciphered the almost illegible drawing and reconstructed the model. After he found an actual prototype of yet another model, we were closer to understanding how Rife's technology worked, and to producing more efficient and optimally effective machines.

Synchronously, just after the year 2000, a German microscope manufacturer launched an instrument that not only can view minuscule viruses in their living state, but exceeds Rife's best microscope in magnification power and breathtaking depth of field. This new instrument has already begun to assist countless pathologists and other scientists in their work to detect frequencies for diseases caused by new virulent pathogens.

Recently, medical researchers have connected microbes to conditions that one normally might not associate with pathogens at all. One doctor found a corkscrew-shaped, bacterial spirochete in the spinal fluid of over 90% of his clients with Multiple Sclerosis. Two scientists—who for years had formerly been dismissed by their colleagues for stating that stomach ulcers are caused by a bacterium—unearthed *Helicobacter pylori* in the stomach lining of people with ulcers, and won a Nobel Prize. *Actinomycetes* is now being linked to Parkinson's disease. And there is irrefutable evidence that a strain of *Adenovirus* is implicated in obesity.

Despite improved methods of identifying microbes with their associated diseases, this doesn't mean that we should focus on the so-called germ theory as the foundation for getting well. It's true that Rife did focus on killing and disabling microbes. But it would be a mistake to utilize rife therapy solely (or even primarily) from an allopathic perspective. Holistic medicine is founded on the need to correct the bodily terrain; even Rife knew this. Also, we are now realizing that Rife's frequencies didn't just kill microbes. The field created by his ray machine apparently also helped normalize tissue function. We are at the beginning of a new era filled with discovery, enlightenment, growth and healing. I feel incredibly blessed to be part of this worldwide movement.

You are riding the wave, too. Anyone who seriously investigates rife technology is making a statement. More and more people are saying that they don't want to be bought and sold like commodities at the market. They don't want to be toyed with, experimented on, or lied to. They don't want their treatment options limited by what their doctors were allowed to learn in medical school. And they don't want their doctors prevented from helping them by a licensing board that prohibits health practitioners from suggesting alternatives to the prevailing standard of care. People want a voice in matters that affect them, including the health care they use. Most important, they want their health practitioners to honor their need for compassion and hope as much as they honor their need for physical care.

In essence, people want to have their humanity acknowledged and to be respected—free to make their own choices. No wonder polls show consistently that three-quarters of the United States population have sought complementary therapies in addition to Western medicine!

More than ever, the powers that be are invested in maintaining the status quo at the expense of health, happiness, and lives. You deserve congratulations for your strength of character and vision to see through (and beyond) the dominant paradigm. It takes courage to challenge entrenched hierarchy.

As the number of infectious and degenerative maladies multiply, we need rife technology more than ever. Yet despite an obvious worldwide interest in frequency modalities of all kinds, information about rife therapy is available only to a minority who know where to look for it. Most people remain ignorant of this elegant technology that can substantially reduce suffering and save countless lives. It is my sincere hope that this *Rife Handbook* will make significant inroads into changing people's lives for the better.

Vilified and discredited by the ignorant, his technology misunderstood and underutilized, Royal Raymond Rife died in 1971. Today, roughly four decades later, rife frequency therapy—while not yet a household word—is nonetheless becoming more solidified in people's consciousness. In some circles, the technology is being used so regularly that the word "rifing" has become a verb. I think that Royal Rife would have been pleased and gratified that his modality is finally being given the respect it deserves.

I trust that by the time you finish this book, you, too, will be using the word "rifing" as a verb.

*Nearly all people die of their medicines, and not of their illnesses.*
—Molière, French writer (1622–1673)

# *Chapter 1 Outline*
# *The Politics of Medicine and the Nature of Health*


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# Chapter 1

# The Politics of Medicine and the Nature of Health

## INTRODUCTION

Chances are, if you're reading this book, either you have a health issue, or you know someone else with a health issue who's looking for healing. Perhaps the treatment you've been using hasn't worked. Maybe the treatment has produced too many unwanted symptoms. Or perhaps the therapy is simply taking too long. Are there viable alternatives for you, your family and friends? What are these other modalities, and how can they be administered? Perhaps you've heard about Rife the man, and about the technology he invented. What is it, how do you use it, and how can you get it fast?

If you suffer from a chronic or serious health problem, it's understandable that you may feel impatient and may want to know immediately how to use frequencies. But this chapter doesn't talk about Rife. Why not?

Electromedicine, which includes rife technology, is not routinely used for medical treatment. It's not routinely used because it's not well known. But this doesn't mean that rife therapy doesn't work. In order to optimally utilize rife technology, it's important to understand the limitations of our current medical paradigm, how this paradigm has been misused, and why it has eclipsed other, more effective modalities. Therefore, I ask for your patience while I present the material in a manner that will provide you with maximum benefit.

Some of the data that you'll read may surprise and even shock you. You will undoubtedly find much of the information disturbing. But only by knowing the truth will we know what we're really dealing with in our quest for healing. Only by knowing the truth can we make truly informed choices.

We all want to be healthy. Yet in this modern world, good health seems more elusive than ever. The incidence of chronic and degenerative diseases such as arthritis, diabetes and colitis has skyrocketed. Cancer, which according to the American Cancer Society afflicted only one in 8,000 people living in the United States in 1901, will strike one out of two Americans by the year 2010. In addition, many more people are plagued with ailments like asthma and food allergies, which, although usually not considered life-threatening, can be burdensome enough to substantially interfere with one's quality of life.

Citizens of industrialized countries outside the US have fared better, at least so far. But with the rapid increase of "fast" and "convenience" food, the prevalence and severity of illness outside the US are quickly approaching that inside the US. As for people living in non-westernized countries, there is more illness than ever due to microbial epidemics, many of which spring from unsanitary living conditions. Viable long-range plans to improve the world's health have not yet appeared; global illness is an escalating and severe problem.

Perhaps it's time to change our approach. So far, we have been given basically one approach to health. Do we really have other options?

Yes! But in order to explore these other options, we need to take a critical look at the existing medical

paradigm. Once we can analyze what went wrong, we can figure out how to make it right. Then, global illness will become global wellness.

## DEFINING HEALTH

The word *healthy* comes from an old Anglo-Saxon word meaning "to heal, make whole." This indicates that health is the ability to function in a unified way, in which all parts and living processes interact with each other in a complex, balanced exchange.

We cannot be robustly healthy in general while some little part of us is very ill, just as individual parts of us cannot be in perfect health, while the rest of the body is sick. How many times have you heard, "She was *perfectly healthy* until she came down with cancer"? That "perfect health" didn't exist. It took *time* for that woman to reach a state of imbalance. Her doctors and family just *thought* she had been well because they were unable to recognize the warning signs that indicated the eventual onset of cancer. The limitations of conventional medical training impeded not only the ability to diagnose, but also to cure.

There are two basic approaches to disease: allopathic (modern Western) medicine, and holistic (complementary) care. Although this chapter discusses allopathic medicine to some extent, the book as a whole will focus on holistic approaches and how to incorporate them into your life. Most of us have been raised under an allopathic paradigm. But with a little practice, you can expand out of the allopathic world into the wider arena of holism.

Allopathic medicine regards the body as a machine that is the sum of its parts. If something breaks, it must be fixed. One way to fix it is to cut out the body part or parts that aren't working (surgery). Another way to fix it is to give the person a drug that substitutes for the function of the body part or parts that aren't working. Still another way to fix the body is to numb the person against feeling the uncomfortable symptoms—again, by administering drugs. Drugs are created by extracting individual components from whole herbs, and/or synthesizing chemicals in a laboratory.

Holistic care treats the person as a living entity of interconnected relationships rather than as a carrier of isolated symptoms we call *disease*. The body is a unified organism that is greater than the sum of its parts. If something does not function properly, we need to find out why. One way to improve function is to eliminate the poisons that clog the system. Another way to improve function is to give the person the appropriate building blocks to restore health. The building blocks are natural substances, ranging from foods, nutritional supplements and herbs to electromagnetic frequencies that stimulate the proper function of cells.

I want to make it clear that allopathic medicine does have its place. If a motorist is seriously injured in an automobile collision, doctors can perform life-saving surgery. If someone does not produce enough insulin (a pancreatic hormone that helps the body utilize blood sugar) and is about to fall into a dangerous diabetic coma, the administration of an allopathic drug can save a life. Emergencies by definition require immediate intervention; we don't have time to wait for the body's natural recuperative abilities to start working and create the needed changes. It is wise to acknowledge that sometimes, the body simply cannot heal without a well-timed, externally-generated push.

Degenerative diseases, however, take time to develop. Had the person possessed more biochemical and energetic balance in the first place, s/he would not have reached the point of requiring such drastic intervention. Restorative steps could have been taken initially so there would not be a sudden need for insulin later. With allopathic medicine, invasive behavior is the norm and not the exception. With preventive medicine, there is less need for aggressive intervention because the body's innate ability to heal is being respected instead of suppressed.

In America, allopathic medicine is called "traditional," while holistic medicine is commonly labeled "alternative." But it is allopathic medicine that should be called "alternative." Holistic medicine has existed since ancient times, while allopathic medicine has gained gradual prominence only in the last 100 years.

As part of this attempt at cognitive reversal, allopathic medicine is also called *mainstream* care. Being in the *main*stream (as compared to an incidental little trickle) implies *main treatment*, which then translates to *treatment of choice*. But one must ask, "*Whose* choice?" Not surprisingly, *main*stream medicine is heavily promoted by *main*stream media, which casts holistic care as the "other" or "alternative" modality—and, by implication, as "secondary" or "inferior." With few exceptions, the media also tries to denigrate holistic care through such misleading terminology as "controversial," even though the mainstream press itself has reported that about 75% of the United States population has tried some form of "alternative" holistic modality in the past several years. In *Immunization: The Reality Behind the Myth,* Walene James asks:

> What is *controversy*? The word itself comes from the Latin meaning "turned opposite." That which is controversial is turned opposite a dominating structure, in this case, establishment medicine. In a free and open society, there would be no such

> label as "controversial," only disagreement within an open forum of ideas and options. There would be no one mainstream but many streams, each meeting different needs.
>
> Likewise with the word *alternative* as in "alternative" medicine. What if we called [the] Spanish [language] "alternative English"? The ethnocentrism—or is it chauvinism?—would be obvious.[1]

People conditioned by the Western medical model view it as *the* method of healing; they follow its dictates without question. What if there were more options, models that helped us take responsibility for our health rather than give away our power to question and choose? What if there were models that helped us unearth potential we never knew we had?

The first step, then, to managing disease is understanding what it means to be healthy. What is health? Health reflects an organism's ability to grow and function at optimal physical, emotional and energetic levels according to its nature. A healthy organism radiates vitality or life force. It assimilates, transforms and redirects life force—either back to itself when necessary, or outside of itself. In biochemical terms, this organism absorbs nutrients, utilizes them for repair, transforms them into fuel for energy, and removes toxic wastes that are a byproduct of metabolism. Emotionally, the individual reaches out to the environment (including other people), absorbs what is optimal for growth, and then gives back to the environment in an appropriate manner, while maintaining appropriate and flexible boundaries.

An unhealthy organism does not radiate vitality. It cannot adequately or efficiently utilize life force for its growth. Lacking energy to give to its environment, it tries to draw energy to itself. When extreme depletion occurs, this state is known as disease, reflecting an organism's inability to optimally function and grow. Such an individual may also be emotionally restrained.

Randolph Stone, founder of Polarity Therapy, pointed out that one's level of health depends on a free flow of energy in the body/mind system:

> When these energy currents flow freely without interruption there is a state of balance, . . . [a] freedom of motion and function, called health. . . . Interference in this natural flow of energy manifests as a multitude of pains and symptoms of energy blocks, where the current is short-circuited and broken down. This is called "disease," named after the structure plus "itis" (inflammation) or "algia" (pain), such as appendicitis, neuralgia or a complete breakdown "lysis," like in paralysis.[2]

When we are unbalanced, we must work harder to maintain ourselves. There is less efficiency and enjoyment in everyday activity. Eventually, the decrease of overall vitality takes its toll: if the imbalance is severe enough, or occurs over too long a period, degeneration begins.

There are different levels of being ill or out of balance. Some common categories are *physical*, *emotional*, *mental*, *energetic* and *spiritual*.

Physical imbalance is the easiest to spot. Nausea, fever, or a sprained ankle may be characterized as physical. Examples of emotional imbalance include unrelieved upset, manic excitement, or uncontrollable rage. A mental imbalance often corresponds with emotional affliction, but disordered thinking such as obsession can be assigned to the mental arena for now. For those focused on practical, concrete reality, energetic imbalances may be more difficult to detect or even accept as factual; but they can be regarded as blockages that prevent limbs, organs, glands, or entire systems in the body from functioning correctly.

The last imbalance on my list, spiritual, is even more difficult to identify. Spirituality is a very personal matter, and it means different things to different people. However, I define it for myself as "the consciousness of All That Is, that gives people the feeling of love and support through any experience." An example of a spiritual imbalance is someone who feels depressed, lost or unloved because s/he doesn't feel connected to a larger community outside of self.

The ways in which these five areas of imbalances overlap are many and complex. In fact, sometimes the structural, biochemical and energetic aspects can be difficult to separate. Acupuncturists who take the client's energetic pulse, and chiropractors who use kinesiology (muscle testing), are familiar with the relationships between structural weaknesses in the body involving muscles and bones, and imbalances in apparently unrelated organs and glands. For example, an injured ankle may not simply reflect an isolated mechanical injury, but the end result of a weakened digestive system, since the pathways of the liver and gall bladder meridians run on both sides of the foot.

Another example of overlap is a queasy stomach and vomiting—classic physical symptoms of indigestion. But there may be an emotional component as well. Let's say a person is feeling upset due to a difficult situation. Neurologically, the message of upset is conveyed via electrical impulses that travel from the brain down the spine to the digestive tract. This causes the stomach to contract, interfering with the flow of digestive juices—which in turn hinders digestion, perhaps even to the point where vomiting may occur. Now add worry to the mix. If the person is obsessing (a mental function) about something upsetting that *might* happen, this "critical mass" of both mental and emotional distress may not only fuel

indigestion, but cause the colon to become inflamed (a situation we refer to as a disease called "colitis").

The biochemical and the neurological are acutely intertwined. In her ground-breaking book *Molecules of Emotion*, neuroscientist Candace Pert reports that receptors to "brain" chemicals called neurotransmitters are not only found in the brain, but also in the intestinal wall. In fact, over 90% of the body's so-called brain chemical serotonin is produced in the gut! This means that a "gut" feeling—defined as an instinctive emotion, unexplainable by the rational mind—is experienced in a literal, visceral way in the gut, and not only in the brain.

Again using the example of indigestion, other energetic pathways may be involved. The major acupuncture meridian that runs vertically down the midline of the body, and through the belly, could be overactive or depleted of energy, and thus also play a causal role in indigestion. The converse may also be true: injury or a constricted digestive tract, perhaps due to mechanical blockage, can create an imbalance in a meridian where none had existed before.

Finally, spiritual difficulties may play a part in this condition. If the person does not feel loved or connected to life, s/he may be depressed. The depression may not be conscious, but it does take its toll on the body. When someone is emotionally depressed, his or her vitality is low. The body cannot function optimally because there isn't enough energy to feed all the systems. Thus collapse occurs, leading to all kinds of physical symptoms. A so-called spiritual imbalance—despite its being more conceptually amorphous than any of the other categories—is nevertheless the most encompassing. What began as a presumably simple symptom, indigestion, proves to be a complex, interweaving affair.

The body-mind-spirit system contains worlds of information. When symptoms are classified as belonging to "body," "emotions," "mind," "energy" or "spirit," the essence of the person can be lost. Nevertheless, approaching symptoms as distinct entities can be helpful, at least initially, giving us a starting point from which to address the imbalance. This *Handbook* focuses on the physical body as the primary reference, or starting point, in the vast field that some refer to as mind-body-spirit. When the body portion of this field becomes obviously disrupted, we call the resulting imbalance "disease" from the perspective of Western mainstream, allopathic medicine.

### Accidental Overdoses Become No. 2 Killer

Unintentional fatal drug overdoses in the United States nearly doubled from 1999 to 2004, overtaking falls to become the nation's second-leading cause of accidental death, behind automobile crashes, the government reported. . . . Researchers said they believed that sedatives and prescription painkillers like Vicodin® and OxyContin® were the main cause of the increase.

—*The New York Times*, February 10, 2007

## DRUGS AND THEIR EFFECTS

### *Drug Damage*

Before I begin, I want to emphasize that not every medicine is useless and dangerous. However, drugs must be used with great care. If you are currently taking medications of any kind and wish to explore other options—including reducing your dosages or eliminating the drugs entirely—it's important to seek supervision from an experienced health professional. Suddenly and completely withdrawing a drug can seriously impact your health, and even cause death. Taking nutritional supplements or herbs increases the complexity of your situation because as your health improves, your need for medications will very likely lessen. This doesn't mean that you shouldn't take nutritional supplements; it simply underscores the need for medical assistance because as you become well, your current medication dosages may become dangerous.

Unfortunately, in most cases drugs are highly invasive. They substitute for either a bodily function or a bodily product (although the two do overlap). For instance, antibiotics are prescribed when the white blood cells are too overwhelmed to adequately handle a large increase in bacteria. Lithium carbonate is given to manage the manic phase of manic-depression. Thyroxin is given when the thyroid gland does not produce enough thyroid hormone, and so on.

To the allopathically inclined, drugs are the solution to the bodily malfunction; so therefore they are not usually accompanied by therapies designed to correct the imbalance for which the drugs were prescribed in the first place. If, however, the *reason* for the deficiency or malfunction is not addressed, the drug may end up harming the person in ways that are worse than the disease. The longer the drug is taken, the greater the possibility of harm. For example:

- Every drug has so-called "side" effects of varying intensity.
- The person may become so resistant to the action of the drug that the very condition the drug was designed to correct may become more intense or severe.
- The person may become so unbalanced from the effects of the first drug that another condition arises,

creating an ostensible need for another drug, which in turn creates additional symptoms ("side" effects)—for which the person may be advised to take yet a third drug.

- The body function that the drug is replacing may decline or altogether fail from lack of activity.

The medical phrase "side effects" is deliberately misleading. *All* results and influences of medicines are "effects." The pharmaceutical industry has fabricated the phrase "side effects" to deter us from focusing on negative reactions to a drug.

Some "side" effects that the industry calls "toxic reactions" are actually *life-threatening*. Toxic reactions are said to occur when too high a level of the drug is in the person's blood. But the definition of *toxic* is poisonous. A toxin *is* a poison. If a drug is poisonous, isn't *any* level of the substance in the blood "too high"? Chemist Udo Erasmus comments, "Side effects (which are toxic reactions by our body to toxic substances) are not only acceptable, but are the rule in drug-oriented medical practice, because all drugs are foreign to the body and therefore all drugs are toxic."[3] The toxicity of drugs is based in part on their being synthesized from more complex substances that might take a longer amount of time to work, and whose other ingredients help buffer or eliminate the negative effects. I will say more about this later.

The foreignness of drugs to the body is also due to their broad-spectrum approach—an approach that conflicts with how the body processes its own internally-produced biochemicals. Cellular biologist Bruce Lipton explains:

> One of the most ingenious characteristics of the body's sophisticated signaling system is its specificity. If you have a poison ivy rash on your arm, the relentless itchiness results from the release of histamine, the signal molecule that activates an inflammatory response to the ivy's allergen. Since there is no need to start itching all over your body, the histamine is *only* released at the site of the rash. Similarly, when a person is confronted with a stressful life experience, the release of histamine within the brain increases blood flow to the nervous tissues, enhancing the neurological processing required for survival. The release of histamine in the brain to deal with stress behaviors is restricted and does not lead to the initiation of inflammation responses in other parts of the body. . . . [It] is deployed only where it is needed and for as long as it is needed.
>
> But most of the medical industry's drugs have no such specificity. When you take an antihistamine to deal with the itchiness of an allergic rash, the ingested drug is distributed systemically. It affects histamine receptors wherever they are located throughout the entire body. Yes, the antihistamine will curb the blood vessels' inflammatory response, dramatically reducing allergic symptoms. However, when the antihistamine enters the brain, it inadvertently alters neural circulation that then impacts nerve function. That's why people who take over-the-counter antihistamines may experience allergy relief and also the side effect of feeling drowsy.[4]

### Medical Devices Can Be Unsafe

The many people who depend on life-sustaining medical devices, such as pacemakers and other types of heart implants, need to monitor their condition carefully. In the last several years, a number of device manufacturers have been cited and sued for issuing defective devices or implants made with sub-standard parts that resulted in serious injuries and even death.

Viewed in this light, the ingestion of drugs can be analogized to pouring one hundred gallons of paint over the side of a house to make sure that it covers the window ledge, which was the only part of the house you wanted to repaint. Since drugs can never be specific the way the body is, you have to throw all the paint you can at the house and hope that some of it sticks where you want it to go.

This is why there are so many "side" effects and toxic reactions from allopathic drugs. Natural foods chef and health writer Annemarie Colbin reports that figures from as far back as 1986 show that "over 1 million people a year (3% to 5% of admissions) land in hospitals as a result of negative reactions to drugs."[5] Furthermore, according to a data analysis study reported in the 1998 issue of *The Journal of the American Medical Association*, over a thirty-year time period, from 1966 to 1996, 2.2 million people had serious or fatal in-hospital, adverse drug reactions to prescribed medications.[6] I'll discuss this more a little later, but right now let's take a look at the *Physician's Desk Reference*.

The *Physician's Desk Reference* (or *PDR*®, as it's popularly called) is a massive volume of almost 3,000 pages. Written for and sold to doctors, the *PDR*® is supposed to list all effects of all drugs. Despite its fame and solid reputation, the *PDR*® does have many flaws. Medical doctor Jay Cohen writes:

> Because the *PDR*® is mainly a collection of drug-company written package inserts, it omits a great deal of important information. The *PDR*® omits or

underreports many serious side effects. It frequently omits information about proven-effective medication dosages that are lower and safer than the doses recommended by drug companies or usually prescribed by doctors. Many new, important uses of medications are not even mentioned in the *PDR*®.

Nor does the *PDR*® provide any guidance whatsoever in selecting between the many drugs that might be used for medical conditions. And, although a new *PDR*® is published each year, many drug descriptions are not updated. Some of these descriptions contain information that is decades old.[7]

Even with the significant omissions, a glimpse into some *PDR*® entries is very revealing.

- Valium®. The "side" effects for the highly addictive drug (used to treat emotional problems) include fatigue, mental confusion, constipation, depression, headaches, incontinence, nausea, skin rashes, slurred speech, muscle tremor, anxiety, hallucinations, insomnia, rage, sleep disturbances, and blurry vision.
- Eskalith®, known generically as lithium carbonate or simply lithium, produces reactions nearly identical to the above. Additional possible effects are kidney atrophy, fever, ringing in the ears, gastrointestinal disorders, excessive thirst, drying and thinning of the hair, blackouts, seizures, irregular beating of the heart, sexual dysfunction, swelling of joints, dental cavities, thyroid dysfunction, diabetes, blindness and coma. The *PDR*® warns that symptoms of lithium toxicity "can occur at doses close to therapeutic levels" *as well as* "levels *within* the therapeutic range." [emphasis added][8] But how "therapeutic" is it when the dose can poison someone? (See Sidebar, "Mental Illness or Lithium Deficiency?")
- Prozac®. This highly-publicized drug, despite its reputation as a mood enhancer, produced no change in

## Mental Illness or Lithium Deficiency?

The term "mental illness" is used freely—and, I believe, wrongly—by mental health professionals who use an allopathic medical model to label people's mental, emotional and spiritual distress. History shows that the definition of "mental illness" usually depends on the prejudices and cultural conditioning of the person making the diagnosis.

Labels aside, emotional distress is very real. But the divergent ways in which this distress is treated have vastly different consequences. Mental hospitals commonly prescribe the pharmaceutical lithium carbonate (or sometimes lithium citrate) to treat bipolar disorder and manic depression. A typical dose of lithium carbonate provides over 1,500 mg. of elemental lithium, which accounts for its many serious "side" effects.

Compare the synthesized drugs lithium carbonate or citrate with the natural trace element lithium *orotate*. As discovered by the recently deceased German doctor Hans Nieper, when certain organic mineral salts (including orotic acid) are combined with other minerals, transport across the cell membrane is assured. This allows much lower doses of the mineral to be used with optimal effectiveness.

The natural mineral lithium orotate, when taken in the amounts recommended by some holistic practitioners—140 mg three times a day—provides a total of 15 mg of elemental lithium. Lithium the natural trace mineral helps the body utilize nutrients. Natural lithium helps restore the brain signaling pathways that have been damaged by monosodium glutamate and other chemicals. Natural lithium enhances nerve cell DNA replication. And this natural trace mineral binds to aluminum—a heavy metal that damages tissue—so the aluminum can more easily leave the system. Since the aging brain shrinks—as shown by autopsies, X-rays and brain scans—the ability of lithium to promote brain cell regeneration and increase brain cell mass, suggests its usefulness as an anti-aging nutrient as well as a viable treatment for people with Alzheimer's, senile dementia and even Parkinson's.

Some naturopaths successfully treat emotional distress with homeopathic lithium. Medical doctor Jonathan V. Wright advocates taking between 10 and 20 milligrams of lithium aspartate or orotate daily, to help protect the brain from shrinkage, from damage due to chemical pollutants (including drugs), and from cell death due to loss of blood flow (which can be caused by a stroke). Based on research from the Mayo Clinic and other respected institutions, Dr. Wright also suggests natural lithium (along with other nutrients) for treating alcoholism, cluster headaches, fibromyalgia, gout, and hyperthyroidism. Lithium may also prevent viruses from replicating, including the adenovirus, cytomegalovirus, Epstein-Barr, *Herpes* simplex, and measles virus.

Overwhelming the body is an invasive practice taught by allopaths. Giving the body what it needs is the standard of care for holistically-oriented professionals. From the available research, it seems clear that a major contributor to mental and emotional imbalances is a deficiency of an essential trace mineral. Healthy water contains between 3 ppb (parts per billion) and 5 ppb of lithium, and unprocessed sea salt crystals contain minute amounts.

41% of its users when taken at a low (20 mg) dosage. Seventy-one percent, or almost *three-quarters,* of the people who eventually took three times that amount, reported other symptoms besides the desired mood elevation: skin rashes, fever, water retention, carpal tunnel syndrome, fatigue, gastrointestinal disorders, dry mouth, abnormal vision, sexual dysfunction, respiratory ailments, interference with blood sugar levels, and impaired thinking. In some cases, people died from kidney and liver damage. Other patients experienced an increase in anxiety and insomnia, which are among the symptoms that Prozac® is supposed to alleviate. This will be discussed later in detail.

- Tetracycline. This widely used antibiotic causes lightheadedness, dizziness, headache, blurry vision, nausea, vomiting, diarrhea, inflammation of the colon, inflammation of the pancreas, rashes and lesions of the skin, abnormal sensitivity to light, muscle and joint pain, water retention, asthma, fever, violent cough, chest constriction, variations in pulse, anemia, abnormal decrease in the number of blood platelets, inflammation of the membrane surrounding the heart, and serious shock. Tooth discoloration and abnormal development of tooth enamel occur in children. Some people also experience lesions and itching in the anal and genital regions. Antibiotics do not distinguish between the harmful bacteria we want to eliminate and the beneficial intestinal bacteria that help us digest our food. When the intestinal tract is healthy, flora are plentiful and keep in check the fungal forms that normally live in the body. However, after the antibiotics destroy the beneficial bacteria, there is nothing to prevent *Candida*, *Monilia*, and other fungi from proliferating and causing many unpleasant symptoms, for which doctors often prescribe more drugs. The *PDR*® warns about the "side" effect of inflammatory lesions due to *Monilial* overgrowth, but doesn't say why this occurs. It is no accident that the word "antibiotics" is from the Greek, meaning "against life."
- Paclitaxel. This highly poisonous drug, marketed under the brand name Taxol®, is used for women with ovarian and breast cancer. Taxol® causes disorders of the nervous system, low blood pressure, high blood pressure, hives, suppression of bone marrow, chest pain, rapid irregular heartbeat, *grand mal* seizures, skin rash, muscular pain, diarrhea, intestinal obstruction and perforation, and hair loss (the latter in 87% of the patients). In one study, nausea and vomiting occurred in over half of the test subjects; in another, 78% experienced anemia, 37% required red blood transfusions, and several required pacemaker surgery. The *PDR*® bluntly states: "There is no known antidote for Taxol® overdosage."[9] Perhaps the manufacturer feels that the life-threatening nature of the drug is justifiable, since in allopathic circles cancer has such a low rate of cure. Ironically, drug-induced symptoms occur in those least able to deal with additional stress in their lives: the very ill.

Warnings about drugs are not confined to the *PDR*®. Consider the labels on medications. The label for Azidothymidine—otherwise known as AZT and popularly prescribed to people infected with the HIV virus—reads in part: "Toxic by inhalation, in contact with skin and if swallowed. Target organ(s): blood bone marrow. If you feel unwell, seek medical advice. Wear suitable protective clothing." Elsewhere the label reads: "For laboratory use only. Not for drug, household or other uses." A skull-and-crossbones, the legal symbol indicating that this substance is a poison, also appears on the label. Many people never see these warnings because the medications are removed from their original boxes and repackaged by the pharmacist before reaching the consumer. If people did see the warnings for AZT, I wonder how many would take it.

Now let's look at a popular medical textbook, *Harrison's Principles of Internal Medicine*, for explicit warnings about the effects of drugs. Gastrointestinal distress, particularly vomiting and diarrhea, accounts for about one-third of the "side" effects of drugs. Another analysis reveals adverse drug reactions in a full 20% of ambulatory patients.[10] However, these statistics were obtained from *reported* cases only, so it is reasonable to assume that this figure is conservative. Also, the figures were released two decades ago. Today, we have even more noxious drugs, and sicker people, due to environmental and other factors. Levels and types of drug-related damage have accordingly increased. A more recent study from the *New England Journal of Medicine* shows that "an alarming one in four patients suffered observable side effects from the more than 3.34 billion prescription drugs filled in 2002."[11]

Jerry Phillips, associate director at one of the FDA offices, states bluntly: "The 250,000 reports [on adverse drug reactions] received annually probably represent only 5% of the actual reactions that occur."[12] This means that there are nearly *five million* negative reactions each year to medicines.

### *Drug Effectiveness*

All medications clearly have effects. The real question is: "Are drugs effective in treating the condition for which they were prescribed?" (Of course, "treating" is a

loaded term, because in the allopathic world "treatment" can mean eliminating or lessening symptoms without addressing the cause of the problem.) Colbin reports that in one study, "over 600 commonly prescribed drugs in use for more than 20 years have . . . never proven effective by properly controlled studies."[13]

Perhaps the most telling indictment about the success rate of drugs is an admission from Allen Roses, senior executive at Europe's largest drug manufacturer, GlaxoSmithKline. "The vast majority of drugs—more than 90%—only work in 30% or 50% of the people," he was quoted as stating. The story, which first appeared in British newspapers, was rapidly picked up by the BBC—much to the delight of holistically-minded folks in the States, who generally do not have such information available to them in the mainstream press.

> Allen Roses . . . has admitted that most prescription medicines do not work on most people. . . . [He] said fewer than half of the patients prescribed some of the most expensive drugs actually derived any benefit from them. . . .
>
> It is an open secret within the drugs industry that most of its products are ineffective in most patients but this is the first time that such a senior drugs boss has gone public. Drugs for Alzheimer's disease work in fewer than one in three patients, whereas those for cancer are only effective in a quarter of patients.[14]

> People think the FDA is protecting them. It isn't. What the FDA is doing and what the public thinks it is doing are as different as night and day.
>
> —Dr. Herbert Ley, former commissioner of the FDA, in testimony before a US Senate Hearing in 1965

Roses had an interesting agenda when citing the low success rates of drugs. As vice-president in genetics at Glaxo, he wanted to identify who would and would not respond to a given drug by administering a simple, inexpensive genetic test, thus eliminating the guesswork involved in prescribing pharmaceuticals. "His comments," it was reported, "can be seen as an attempt to make the industry realize that its future rests on being able to target drugs to a smaller number of patients with specific genes."[15] Ironically, in his desire to promote yet one more medical procedure, Roses publicly and openly told the truth about drugs.

### *Drug Preparation*

If an animal is providing the ingredients for a medication, I think it's important to consider how it is being treated. Even though this discussion is about the effects of drugs and not about animal welfare *per se*, I believe that how the animal is treated reflects on the intentions and ethics of the manufacturer.

Premarin® is a rather popular drug used to help alleviate hot flashes and other uncomfortable symptoms in women going through menopause. The major ingredient in Premarin® is estrogen, and the name of the drug is derived from the way the ingredients are harvested: from the urine of pregnant mares. The methods used to harvest the raw ingredients is one illustration of how the needs of animals are aggressively ignored during the creation of a drug. *Townsend Letter* reports:

> To produce Premarin®, pregnant mares are hooked up to rubber urine-collection bags and tethered in stalls so small they cannot turn around or lay down comfortably. They are forced to stay in this position for six months, while their bodies are producing the most estrogen. They are also deprived of sufficient water, in order to maintain the concentrated estrogen in the urine. Within days of giving birth in the spring, the mares are re-impregnated. Fertile mares may go through this process many times, over years in their lifetime. . . . The mares . . . are slaughtered once they can no longer become pregnant, or if they become too lame to stand in the small stalls.[16]

Animal cruelty is also intricately related to how vaccines are made. This will be discussed in more detail in the section, **The Folly of Vaccines**. Finally, I would think twice about using drugs from a company that disregards animal rights. If the feelings of animals are disregarded, why is there reason to believe that the company will care about the feelings of its human customers?

## HOSPITAL PROCEDURES AND THEIR EFFECTS

"Hospital procedures" includes all diagnostic tests and surgeries. According to a 1978 quote from the US Office of Technology Assessment (OTA), "Only 10% to 20% of all procedures currently used in medical practice have been shown to be efficacious by controlled trial."[17] This is a serious charge. In truth, many procedures are not tested at all. It is simply assumed that they will work.

The prevalence of surgery, especially in the US, may suggest that the procedure is less dangerous than it actually is. The authors of *Our Bodies, Ourselves* point out the need

to exercise "great caution" when deciding whether or not to have an operation.

> Many public health researchers are convinced that excess surgery results from excess surgeons, since the US has both the most surgeons and the highest rates of surgery in the world. . . . Because virtually all surgical procedures are reimbursed by insurance and graded according to their complexity, surgeons have strong financial incentives to perform a lot of surgery, especially . . . difficult operations. Hospitals similarly benefit from concentrations of elective (non-emergency) complex surgeries. And, precisely because surgery has become so common, many people have internalized the surgical mentality ("When in doubt, cut it out") and are easily convinced that an operation is necessary.[18]

Women not only take more medications than men, but they also undergo more surgeries. A recent groundbreaking report called "Death By Medicine," based on a medical literature review by Gary Null and some colleagues (including physicians), reveals that an astonishing one-third of US women have had a hysterectomy (the removal of the uterus) before menopause!

The routine removal of the uterus began with 19th century French doctor, Martin Charcot, regarded for his "expert" diagnosis that an average of 10 women per day suffer from hysteria. His solution for the women's suffering was to remove the offending organ that he believed caused their emotional imbalance. Forget that the source of their depression might have been the cultural belief that women were inferior and should be kept in the house all day! The word "hysteria" is derived from the Latin word *hystera*, which means "uterus." Clearly, sexism still dominates the medical field in the 21st century.

Nonessential surgical procedures are called "elective surgery," or sometimes "controversial surgery." They are considered medically unwarranted because their perceived benefits are generally outweighed by the risks. Risks can include anesthesia, stress from the body's being cut, and the body's reduced ability to function (or function smoothly) once organs or other parts are removed.

According to the authors of "Death By Medicine," 30% of these elective surgeries are unnecessary. For example, cesareans (C-sections) are routinely performed if it is merely *assumed* that the woman will have a hard time giving birth. Most people don't know that if the baby is turned around in the uterus, skilled massage can bring it back into the correct position. Stapling the stomach is another extreme surgery. While obesity is a genuine problem, a proper diet with enough enzymes, minerals and especially good fats and amino acids can profoundly correct the brain signals and nutrient starvation that tell the person to overeat.

### When Patients Get Well Without the Doctor's Help

Many amazing reports have been recorded and continue to be recorded, in the lore of progressive cancer treatment. The medical establishment handles these in one of the following ways:

1. They are ignored;
2. They are explained as "anecdotal," implying that they are lies [or they don't count, since the doctor had no control over the outcome];
3. They are said to have undergone "spontaneous remission," i.e., unexplained recovery (this means the doctor has no idea what happened);
4. They are said to have recovered from the delayed effects of conventional (allopathic) therapy, which was administered weeks or months before the progressive therapy.

—Ron Kennedy, MD
July 2000

Tonsillectomies are so ubiquitous, we don't normally think of them as medically unnecessary. But too many children routinely get their tonsils removed because the organs become swollen. Few people consider that tonsils are *designed* to get swollen! As part of the lymphatic network, tonsils swell with immune cells during infection to protect the body against microbes. Removing the tonsils is a little like ripping out the "check engine" light in the car when it goes on. You can rip out the light, but the problem with the engine has not magically disappeared. Yet another invasive procedure, which puts something into the body that was not originally there, presents its own type of dangers. Leaky silicon from breast implants can cause just about any symptom from extreme joint pain to chronic fatigue.

Many diagnostic routines are likewise highly invasive and painful. Moreover, they can have long-term health consequences—a high price to pay, considering their limited value. Although they are called "tests," they are hardly innocuous. Consider a biopsy, in which living tissue is extracted from the human host, usually to detect cancer. This procedure can create a more serious problem than if the tumor had been left alone. Normally, the body encases cancerous cells with material that we

call a "tumor" to prevent the cancer from spreading. However, if the tumor is pricked, or removed by surgery, cancerous cells leak out into the bloodstream and migrate, free to proliferate elsewhere. If the immune system is not strong enough to neutralize these stray cells, *metastasis* occurs. Biochemist Vincent Gammill, research director of the non-profit Center for the Study of Natural Oncology in California and the inventor of many cancer vaccines and nutriceuticals, remarks: "I rarely see distant metastasis until after a biopsy—and then it rapidly goes everywhere, including the bones."[19] Note that it is illegal for a doctor to advise against a biopsy, under threat of losing his or her license.

Another test, the euphemistically-termed spinal "tap," is done at considerable risk: fluid is extracted from the spine by means of a long needle. And today, X-rays are so prevalent in developed countries that most people don't regard them as abnormal or requiring caution. An analysis by Null and colleagues of this very common test is revealing.

> When X-rays were discovered, no one knew the long-term effects of ionizing radiation. In the 1950s monthly fluoroscopic exams at the doctor's office were routine. You could even walk into most shoe stores and see your foot bones; looking at bones was an amusing novelty. . . . It was common practice to use X-rays in pregnant women to measure the size of the pelvis, and make a diagnosis of twins. Finally, a study of 700,000 children born between 1947 and 1964 was conducted in 37 major hospitals. The children of mothers who had received pelvic X-rays during pregnancy were compared with the children of mothers who had not been X-rayed. Cancer mortality was 40% higher among the children with X-rayed mothers.[20]

"Even though by now it is popular knowledge that X-rays may cause cancer," Colbin writes, "over 300 million of them are ordered yearly *without medical need*. Radiation from diagnostic X-rays is implicated in cancer, blood disorders, tumors of the central nervous system, diabetes, stroke, and cataracts." Many of the lab tests, she adds, "are notoriously unreliable, perhaps because of the unreliability of human perceptions: Fifty percent of laboratories licensed to perform tests for Medicare work failed in a test of the accuracy of their analyses."[21]

Regarding some other medical technologies, such as CT scans, mammography, and fluoroscopy, Null et al. cite a researcher's figure on the effects of these together with X-rays: all the testing procedures "are a contributing factor to 75% of new cancers."[22]

One very common test, the Pap smear, consists of scraping cells from a woman's cervix (the lower end of the uterus, closest to the vaginal opening) and checking those cells for abnormalities. These irregular cells are supposed to indicate cancer, either now or in the future. Although the procedure is not dangerous and doesn't hurt too much, it can often lead to false negatives or false positives. Also, a journalist reports a study showing that:

> As many as 10 million women who have had hysterectomies and who no longer have a cervix are still getting Pap tests. . . . When a woman does not have a cervix, a doctor scrapes cells from her vagina instead, sending them off to be examined. . . . "It's a relatively cheap and easy procedure," [one doctor] explained. "It's sort of become a habit." . . . [Another doctor] was taken aback by her study's findings. "We were actually quite surprised," she said. "These women are being screened for cancer in an organ that they don't have."[23]

## IATROGENIC (DOCTOR-CAUSED) DISEASE AND PREVENTABLE DEATHS

Deaths resulting from overmedication, errors in prescriptions, invasive testing procedures, surgeries, and hospitalizations (for instance, someone catches an infection while being hospitalized, and dies) are so commonplace that there is a name for this constellation of occurrences: *iatrogenic illness* or *iatrogenic disease*. These deaths are even more tragic when you consider that, according to statistics compiled by Null et al., 8.9 million people were hospitalized unnecessarily in the year 2001 alone.

### *Drug Iatrogenesis*

*Harrison's Principles of Internal Medicine* mentions that a more severe "side" effect from drug-induced diseases—death—"in hospitalized patients varies from 2% to 12%."[24] Note that each hospitalized person is given an average of 10 different drugs.

A 1998 study published in *The Journal of the American Medical Association* indicates that over 100,000 Americans a year die from harmful reactions to medications. The deaths

> are not due to mistakes by doctors in prescribing drugs or by patients in using them. Rather, drug reactions occur because virtually all medications can have bad side effects in some people, *even when taken in proper doses*. [emphasis added]

> "We want to increase awareness that drugs have a toxic component," said Dr. Bruce Pomeranz, an author of the study and a professor of neuroscience at the University of Toronto. "It's not rare."[25]

Mistakes in dosage may also contribute to drug iatrogenesis. Null and colleagues cite a 2002 study showing that "20% of hospital medications for patients had dosage mistakes. Nearly 40% of these errors were considered potentially harmful to the patient. In a typical 300-patient hospital the number of errors per day were 40."[26]

Simply put, the fourth leading cause of death in America, after cancer, heart disease and stroke, is reactions to "safe" over-the-counter drugs and "properly" prescribed prescription medicine. Is the prescribing of most medicine, then, really proper?

### *Hospital Infections*

In 1986, Colbin reported "the most rapidly spreading epidemic of the twentieth century," citing "over 2 million infections a year" in American hospitals, that resulted in "60 to 80 thousand deaths."[27] Data analyzed on July 23, 2002 by *The Chicago Tribune* from patient databases, court cases, 5810 hospitals, and 75 federal and state agencies, found "103,000 cases of death due to hospital infections, *75% of which were preventable*. [original emphasis][28]

> Removal of Healthy Breasts Is Found to Cut Cancer Risk
>
> —Front page headline
> *The New York Times*
> January 14, 1999

### *Deaths from Surgeries and Tests*

Colbin writes that an "estimated 2.5 million operations a year are performed without real medical need, resulting in some 12 thousand needless deaths."[29] Statistics compiled by Null and colleagues give comparative numbers 25 years apart for unnecessary surgeries.

- 1974: 2.4 million unnecessary surgeries performed annually resulting in 11,900 deaths.
- 2001: 7.5 million unnecessary surgical procedures resulting in 37,136 deaths.

### *Combined Statistics*

Null et al. write: "The total number of [yearly] iatrogenic deaths . . . is 783,936." The conditions involved, all occurring in hospitals, include adverse drug reactions, medical error (unspecified), bedsores, infection, malnutrition, useless procedures, and surgery-related. "We could have an *even higher death rate* by using [another statistician's differently calculated] 1997 medical and drug error rate of 3 million." The authors conclude, "It is evident that *the American medical system is the leading cause of death and injury in the United States*." [original emphasis][30]

## THE FOLLY OF VACCINES

Normally, people assume that drugs are meant to be administered when one is ill. Vaccines, however, make up an entire class of drugs intended to be given only when people are well! At least until recently, the medical community's official position was that vaccinations should be given only to people presumed healthy. This is because the sick are too immunologically weak to handle the effects that the vaccines are designed to produce. Nonetheless, most doctors ignore this wisdom and routinely vaccinate everyone, whether they are healthy or ill. During flu season, newspapers routinely urge people, *especially* the elderly and the ill, to make sure they receive their vaccinations.

According to most holistic experts, no one should be vaccinated. (And rabies shots for animals are controversial.) Although mainstream medicine claims that vaccinations are necessary to eradicate disease, there are several outstanding rebuttals to this argument that vaccination proponents never discuss.

### *Improved Sanitation Fosters Health*

History shows us that serious diseases decreased with the advent of indoor plumbing and improved sanitation, better protection from the elements (including more adequate clothing), and cleaner food handling and storage.

Unfortunately, developing countries do not have the luxury of the same sanitation infrastructure that high-tech countries enjoy. In many parts of the world, diseases such as trachoma and snail fever—which cause great suffering, and hundreds of thousands of deaths—could more easily be eradicated if people had proper sewage disposal and clean water for drinking and bathing. With improved sanitation conditions all over the world, and not just in the privileged countries, the "need" for vaccinations and toxic medications will undoubtedly decrease.

### *Changing the Name of the Disease Skews Statistics*

Statistics are not the objective, static data we are led to believe. They can be used to substantiate lies. The

Centers for Disease Control (formerly the US Public Health Service) has been shown to manipulate statistics by changing the name of a disease and thus disguising the number of inoculation-related outbreaks. Nutritional biochemist A. Van Beveren writes that because "in nearly every state where the Salk vaccine was administered the polio rate leaped by 400% to 600%," what was then the Public Health Service responded by issuing "new guidelines for the diagnosis of the disease."

> From statistics we note that polio ceased to be a big problem almost immediately [after inoculation] but that suddenly aseptic or viral meningitis (sometimes spinal meningitis or Multiple Sclerosis) were seen in epidemic proportions in approximately the same number that polio was diagnosed in prior years. . . . In *Archives of Pediatrics* (1950), Dr. Ralph Scoby lists not less than 170 diseases with "polio-like symptoms and effects, but with different names. . . . Little mention is made of the fact that polio disappeared in Europe without mass immunization, and of the 25 or so cases of polio that have turned up in the past few years, virtually all were vaccine-induced."[31]

### Recipe Includes Dangerous Chemicals

Vaccination is more than merely ineffective. It actively reduces immune function because it introduces dangerous foreign material that we were never designed to ingest or metabolize into our systems. Some of these ingredients are used as preservatives. Others are meant to ensure that the accompanying viruses remain inactive, although this goal is not always accomplished. The chemicals include formaldehyde (an embalming fluid for corpses) and the toxic metals aluminum and mercury.

The form of mercury used in vaccines is called thimerosal (aka thiomersal), which the FDA explains is "49.6% mercury by weight and is metabolized or degraded into ethylmercury and thiosalicylate." The FDA claims that "thimerosal has a long record of safe and effective use preventing bacterial and fungal contamination of vaccines, with no ill effects established other than minor local reactions at the site of injection."

The agency does acknowledge that "some infants could have been exposed to cumulative levels of mercury during the first six months of life that exceeded EPA recommended guidelines for safe intake of methylmercury." However, it then states that this has nothing to do with vaccines, since the "existing guidelines [are] for exposure to *methyl*mercury"—and the metabolite of thimerosal is *ethyl*mercury, for which "there are no existing guidelines. . . . The maximum cumulative exposure to mercury from vaccines . . . was within acceptable limits for the methylmercury exposure guidelines."[32]

Due to recent public outcry, the FDA recommended that the amount of thimerosal be reduced, although it still claimed that "undetected" levels, or amounts existing as part of the manufacturing process, are safe. This is a blatant lie. *There are no safe levels of any type of mercury.* When pressure from the public, aware politicians, and some medical professionals increased, thimerosal was finally banned from some vaccines, only to have toxic aluminum hydroxide take its place.

> If you inject thimerosal into an animal, its brain will sicken. If you apply it to living tissue, the cells die. If you put it in a Petri dish, the culture dies. Knowing these things, it would be shocking if one could inject it into an infant without causing damage.
>
> —Robert F. Kennedy Jr. "Deadly Immunity: Exposing the Vaccine-Autism Link," 2005

### Bodily Waste Touted as Beneficial

The next argument against vaccines concerns their "main" ingredients, which are foreign to the body: dried pus, scabs, blood and other decomposed proteins from animals. These ingredients, which people accept into their bodies every winter as they line up for flu shots, are obtained in a most cruel manner. Sentient, healthy dogs and monkeys are made sick, and then the products of their suffering and disease are collected. The animal suffering aside, it makes no sense to put what are obviously waste products into the body. Modern hospitals try to reduce infection by sterilizing equipment and keeping operating rooms free of contaminants, such as blood and pus, the very substances that are injected into the body as vaccination material. If this material is harmful enough for us to avoid touching, why is it safe to inject?

### Injections Disable the System

Vaccines also cause disease because of *how* these materials are introduced into the body: through injection. Normally, foreign material gets into the body through the mucous membranes, which act as a natural barrier to protect the body from foreign substances—everything that is not-body. The body responds to foreign irritants by expelling them in the same manner in which they

arrived—via vomiting, or coughing and sneezing through the mucous membranes. Although the body is designed to eliminate viruses and other microbes efficiently, vaccinations, as Van Beveren points out, bypass the body's "carefully designed evolutionary system by introducing toxic matter directly into the bloodstream. This gives the body no warning, . . . no chance to recognize . . . or defend itself against future challenges from typical antigens [foreign irritants]."[33] The medical establishment, by classifying these items as medical ingredients under the term "immunization," lends an air of integrity and validity to the practice of injecting poisons into the bloodstream.

One of the most controversial vaccines is the rabies inoculation given to dogs and cats. Vaccinated pets suffer extensive damage: joint pain, muscle aches, diarrhea, vomiting, skin eruptions, convulsions, even death. According to articles appearing over 20 years ago in respected periodicals such as the J*ournal of the Neurological Sciences,* the significant increase of encephalomyelitis (brain inflammation), the eroding of myelin from the nerve sheaths, and related autoimmune inflammatory diseases—to name just a few conditions—are caused by the rabies vaccine. Moreover, the animals often undergo personality changes. Joyful, affectionate dogs become irritable, fearful and even hyper-aggressive. This is not surprising, as chronic infection and inflammation now devastate the nervous system and brain. Might the animals also be cranky because they're in pain? Essentially, they are suffering from a subclinical case of rabies!

Dogs are injured even more by being inoculated before eight weeks of age, when their immune response is weak and immature. And most are injected many times. One widely-used veterinary textbook bluntly states that annual revaccinations "lack scientific validity or verification. . . . There is no immunological requirement for annual vaccinations. Immunity to viruses persists for years or for the life of the animal."[34] Ironically, records show that many people bitten by "rabid" animals do not always die, and live normally despite having refused the vaccine after being bitten. Significantly, the very diagnostic tool for rabies is flawed. Structures called *Negri corpuscles*—whose

## Vaccine Facts

- Seven vaccines (polio, hepatitis A, varicella, pertussis, diptheria, tetanus and haemophilus influenzae B) have not been "evaluated or tested for their carcinogenic potential, mutagenic potential or for impairment of fertility" or "reproductive capacity" according to the vaccine manufacturers' own product inserts.
- Six vaccines (polio, hepatitis B, hepatitis A, pertussis, diptheria and tetanus) contain formaldehyde, a highly noxious and carcinogenic preservative.
- Five vaccines (hepatitis B, pertussis, diphtheria, tetanus and hemophilus influenza B) contain thimerosal, a mercury derivative preservative.
- Five vaccines (hepatitis B, hepatitis A, pertussis, diphtheria, and tetanus) contain aluminum as an adjuvant. Aluminum accumulates in the brain, muscle and bone tissue and can be linked to causing fibrosarcomas (cancerous tumors) at the injection site.
- Five vaccines (measles, mumps, polio, varicella and diphtheria) are developed from animal ingredients including cell cultures of chick embryos, monkey kidney cells, fetal bovine serum and embryonic guinea pig cell cultures. There has been a moratorium in the United States on animal organ transplants in humans due to the history of humans becoming infected by unscreened animal viruses; yet vaccines may include the SV40 virus and "Mad Cow Disease" (bovine spongiform encephalopathy).
- Five vaccines (measles, mumps, rubella, polio and varicella) are live virus vaccines. Live viruses can infect the recipient and even those in close contact with the recipient. These vaccines are given to young children, though immunity sometimes fades in adults. A pregnant mother or adult with a compromised immune system can be at risk by being around a child recently injected with live virus vaccines.
- There have been no long-term studies on the cumulative effect on the child's developing immune system of combining many vaccines together.
- It is not understood why some children negatively react to a vaccine. No genetic or lab screening tests are available to determine which children will react negatively to which vaccines.

—excerpted from PROVE (Parents Requesting Open Vaccine Education), www.vaccineinfo.net

### Politics of Vaccines

A closed meeting transcript from June of 2000 recorded 53 scientists from the CDC [Center for Disease Control], FDA, and the vaccine industry at the Simpsonwood Retreat Center in Georgia to review the findings of a statistically significant correlation between mercury-containing vaccines and neurological conditions. The discovery was made by CDC employee Thomas Verstraeten, MD, using the CDC's own data. The meeting was not open to the public or announced in the Federal Register, and the CDC has still not made their findings public. Verstraeten has since left the CDC to work for a vaccine manufacturer in Belgium. He has also not responded to a US Congressional subpoena. . . .

The CDC specifically cited a 1998 *British Lancet* study recommending more research into a potential link between the measles, mumps, rubella (MMR) vaccine and autism. . . .

The CDC's inability to objectively and fairly evaluate vaccine risks was denounced by a three-year-long congressional investigation.

"To date, studies conducted or funded by the CDC that purportedly dispute any correlation between autism and vaccine injury have been of poor design, underpowered, and fatally flawed. The CDC's rush to support and promote such research is reflective of a philosophical conflict in looking fairly at emerging theories and clinical data related to adverse reactions from vaccinations. . . . The CDC in general and the National Immunization Program in particular are conflicted in their duties to monitor the safety of vaccines, while also charged with the responsibility of purchasing vaccines for resale as well as promoting increased immunization rates," states the congressional report *Mercury in Medicine*. . . .

On January 24, 2005—the same day the Global Alliance for Vaccines and Immunization announced the receipt of $750 million for its historic world vaccination campaign—seven US Senators introduced Senate Bill 3. The bill is an unprecedented act giving comprehensive liability protections to vaccine manufacturers, restricting Freedom of Information Acts on drug/vaccine safety, and pre-empting states' rights to ban mercury from children's vaccines, all under the bill's official title: "Protecting America in the War on Terror Act of 2005."

—Lisa Reagan
"A Dragon by the Tail," 2005

existence in the spinal nerves and nerve cell plasma has been used to prove the presence of the rabies virus—are indistinguishable from the *Lentz-Sinigallia* corpuscle, which appears in dogs with distemper. In the 1960s, American veterinarian John A. McLaughlin performed autopsies on dogs thought to have died of rabies, and found no evidence at all of Negri corpuscles.

Vets with a conscience are now opposing repeated (if any) vaccinations. But the widespread phobia of rabies in the US makes it against the law not to repeatedly jab a dog. One vaccine dose costs one dollar or less, and vets charge fifteen to fifty times that amount to administer it. Is there a financial incentive for yearly inoculations? Apparently, lawmakers and pet owners prefer to continually dose pets—and cause the animals suffering—than rely on sound science.

### *Altered Viruses Cause Disease*

Another compelling reason not to vaccinate is that whole viruses or parts of viruses, in different states of presumed activity, are chief ingredients of the formulas. In their unaltered state when infecting the body in a "normal" way, viruses can wreak havoc. They penetrate the cell membrane of the host, appropriating the host's own DNA and RNA in order to thrive and reproduce. Viruses are known for their ability to remain dormant for long periods of time, often hiding in the tissues of the body, until stress, illness, or vaccinations re-activate them.

Now consider what might happen when *altered* viruses are administered in the form of vaccines. The two basic methods of preparing viruses for vaccine formulas are explained by homeopathic veterinarian Dolores Sánchez-Peñalver.

> "Modified live" [also called "weakened virus"] vaccines are made up of particles of live viruses that have been altered in a laboratory by passing the virus through animal tissue repeatedly to partially break it up and reduce its potency. . . . Though some vaccines are referred to as "killed" they are not truly killed. They are instead "inactivated" . . . generally with heat, radiation, or chemicals. . . . [This] simply means that in theory the virus cannot reproduce, multiply, and create pathology.[35]

But the inability of the virus to reproduce in its customary manner doesn't mean that it's safe. When viruses are put into vaccination formulas, "it doesn't matter if they are called 'killed' or 'modified live'. . . . They're still

viruses."[36] Viruses, whether "modified live" or "killed," *are still active. The very presence of genetic material from pieces of even "killed" viruses have been shown to cause mutation in the recipient's own DNA.* Another article states: "Chick embryo, monkey kidney cells, and calf serum," all substances generally put into vaccines, "are foreign proteins, biological substances composed of animal cells, which, because they enter directly into the bloodstream, can become part of our [own] genetic material."[37]

The mechanism by which vaccine viruses damage our genetic code and deteriorate our immune response is multi-faceted. Unnaturally weakened or "killed" viruses are present at too low a level to stimulate the body's defenses. However, this foreign microbial genetic material does not easily leave our tissues. The body does respond to this material—in an abnormal way. Van Beveren writes:

> The body does not usually tolerate viruses unless they have been weakened (so as not to awaken a strong response) or tricked through a route (usually injection) that bypasses . . . organs and functions that would inevitably lead to normal, natural expulsion. But [by being] synthetically weakened and directly introduced into the bloodstream, these bits of aberrant nucleoproteins are capable of remaining latent toxicants for many years without continually provoking acute illness, yet keeping the defense system restless and "on guard" almost indefinitely.[38]

Being continually "on guard" causes intense stress. The psychological signal is anxiety; the physical symptom is disease. Since, as mentioned earlier, "killed" viruses migrate directly into the DNA, the body—responding differently than it would to "normal" viruses—is not signaled properly to stop these "killed" viruses. But eventually, the weakened viruses become too plentiful for the body to ignore. As Van Beveren explains, at this point so many weakened viruses have been incorporated "into an appropriate chromosome [of the body's cells] and start the production of non-self proteins, [that] the only proper response from the organism must be to make antibodies—against its own cells."[39] This explains the recent astronomical increase of chronic and degenerative, so-called auto-immune diseases. The body attacks itself, no longer able to recognize its own cells due to the gradual, stealthy, unnatural introduction of foreign material.

In 1976 (over 30 years ago!), at a seminar sponsored by the American Cancer Society, Rutgers University professor Robert Simpson warned of a similar autoimmune reaction in response to vaccination. "Immunization programs against flu, measles, mumps, polio, and so forth, may actually be seeding humans with RNA to form latent proviruses in cells throughout the body. . . . When activated under the proper conditions . . . [these proviruses] could cause a variety of disease." Some of the conditions he specified are rheumatoid arthritis, Multiple Sclerosis, systemic lupus erythematosus, Parkinson's, and "possibly cancer."[40] Van Beveren names additional conditions that contain elements of autoimmune dysfunction: hemolytic anemia, granulocytopenias, thrombocytopenias, immune thyroiditis, sympathetic ophthalmopathy, chronic active hepatitis, polyarthritis, rheumatic fever, endomyocarditis, periarteritis nodosa, Addison's disease, atrophic gastritis, pernicious anemia, immune pancreatitis, primary biliary cirrhosis and ulcerative colitis.

The documentation on conditions catalyzed, exacerbated or outright caused by vaccines is solid. In *Immunization: The Reality Behind the Myth,* Walene James shows a cause-and-effect relationship between the administration of vaccines and a subsequent rise in the vaccine-specific disease. James mentions that generalized glandular and organ damage, allergies, and developmental disorders as well as more specific diseases such as encephalitis, among other problems, cause erosion of the myelin sheath that covers the nerves.

Considering that vaccines are supposed to *prevent* disease, the number and scope of conditions is indefensible. However, the quantity of vaccine-related diseases is not surprising. As Sánchez-Peñalver points out:

> The reason for using only parts of the viruses in these vaccines is so that the "attenuated" viruses will be "non-disease causing." [However] . . . they are [merely] . . . incapable of producing the *same* disease as the original virus would have caused. . . . Viral agents are fully capable of reproduction within the cells of the animal into which they have been injected [and hence, are fully active and able to cause illness].[41]

Interestingly, Van Beveren writes, "The thymus gland in vaccinated children atrophies much more, much faster, than in countries whose children are allowed to initiate a generalized inflammatory response." He also cites statistics showing that medical doctors "are the least inoculated group in the United States."[42] (See Insert, "Will Doctors Take Their Own Medicine?")

As of this writing, the most recent illustration of the above principles in action occurred in Nigeria in 2007. A report in the *Canadian Press*, which was circulated by other news media around the world, stated in part:

> Nigeria has found 69 cases of children paralyzed by polio not caused by wild polio viruses, but rather weakened ["modified live"] viruses from

## Will Doctors Take Their Own Medicine?

Professor John Saunders, who chairs the ethical issues committee of the Royal College of Physicians, certainly believes that there are circumstances in which doctors should be volunteers in their own trials. Having been a subject in his own research in the past, he says: "I think it is perfectly legitimate for people to say: 'If you aren't prepared to undergo this experiment on yourself, how dare you expect others to do so.'"

—"Doctors Who Had a Taste of Their Own Medicine," June 10, 2006
www.timesonline.co.uk/article/0,,8123-2217159,00.html



On February 19, 1999, the Australian publication Medical Observer published an article by Simon Chapman who insisted that vaccines are safe and stated that anti-vaccination activists are making a big deal out of nothing. In response, Dr. Viera Scheibner issued a challenge.

> If vaccines are such a blessing, I challenge Simon Chapman to appear on television and allow himself to be injected with all baby vaccines, adjusted to his body weight by a doctor of my choice and in my presence. The vaccines to be administered to Simon are as follows: DtaP, 3 doses within four months; Hib (any conjugates), 3 doses within four months; OPV or IPV, 3 doses within four months; and Hep B, 3 doses within one month of each other.
>
> There isn't a better way to demonstrate to us that vaccines are safe and effective than by Simon taking his own medicine. After every lot of vaccines an independent medical doctor and myself would assess Simon's reactions and the general state of health. Long-term reactions will be followed up for three years. If you do not publish my letter and/or Simon does not agree to this easy and safe demonstration, then it will show us all that vaccinators are dishonest and are afraid of their own medicine.

—Viera Scheibner, PhD, "Simon Chapman to Take His Own Medicine," February 19, 1999
Vaccine Information Service, www.vaccination.inoz.com/vaccchallenge.html



Jock Doubleday, director of the California 501(c)3 nonprofit corporation Natural Woman, Natural Man, Inc., offers $75,000.00 to the first medical doctor or pharmaceutical company CEO who publicly drinks a mixture of standard vaccine additives ingredients in the same amount as a 6-year-old child is recommended to receive under the year-2005 guidelines of the US Centers for Disease Control and Prevention. . . .

The mixture will not contain viruses or bacteria dead or alive, but will contain standard vaccine additive ingredients in their usual forms and proportions. The mixture will include, but will not be limited to, the following ingredients: thimerosal (a mercury derivative), ethylene glycol (antifreeze), phenol (a disinfectant dye), benzethonium chloride (a disinfectant), formaldehyde (a preservative and disinfectant), and aluminum.

The mixture will be prepared by Jock Doubleday, three medical professionals that he names, and three medical professionals that the participant names. The mixture will be body weight calibrated.

Because the participant is either a professional caregiver who routinely administers childhood vaccinations, or a pharmaceutical company CEO whose business is, in part, the sale of childhood vaccines, it is understood by all parties that the participant considers all vaccine additive ingredients to be safe and that the participant considers any mixture containing these ingredients to be safe.

The participant agrees, and any and all agents and associates of the participant agree, to indemnify and hold harmless in perpetuity any and all persons, organizations, and/or entities associated with the event for any harm caused, or alleged to be caused, directly or indirectly, to the participant or indirectly to the participant's heirs, relations, employers, employees, colleagues, associates, or other persons, organizations, or entities claiming association with, or representation of, the participant, by the participant's participation in the event. . . .

Since January 29, 2001 . . . 14 doctors, or persons claiming to be doctors, have contacted me about publicly drinking the vaccine additives mixture. None have followed through.

—Jock Doubleday, Vaccine Liberation Press Release, August 1, 2006

> polio vaccine that have circulated and regained their power to cause disease. . . . The vaccinated children shed viruses in their stools for weeks. Those viruses mutate. If they circulate long enough, the built-up mutations can restore the virulence stripped out in the vaccine production process, giving these viruses back the power to paralyze months and even years after their progenitors came out of a vaccine vial.[43]

Remarkably, pro-vaccine officials insisted that the polio outbreak was due to an overall decrease in vaccinations, rather than the modified live viruses in the vaccines that had been given just before the outbreak.

Despite the fact that vaccinations are now routinely given to very young children, the weak, ill, and elderly, safety studies for vaccines are done on a small population of healthy volunteers. Ironically, even though a vaccine may evoke an antibody response, this does not guarantee its ability to prevent infection. It's sad that many people who understand that a viral infection (like the flu) indicates ill health willingly submit to—and even request—a vaccination that contains gene-altering viral material. Dr. Russell Blaylock, an expert on the effects of MSG, aspartame and other toxic chemicals on the brain, cites a recent study by world-renowned immunologist Dr. H. Hugh Fudenberg. Adults who receive the flu vaccine five years in a row are 1,000% more likely to develop Alzheimer's disease. (See Sidebar, "Association of American Physicians and Surgeons Resolution Concerning Mandatory Vaccines.")

### *Alternatives to Vaccines*

Despite the many excellent reasons not to vaccinate, there is still the danger of possible exposure to more, and more virulent, microbes. Also, people are traveling to foreign countries in unprecedented numbers. They have many opportunities to be exposed to foreign microbes to which the body has not developed a natural immunity. It is time to administer safe, preventive treatments against microbes to which people are not normally exposed. These treatments already exist. Holistic veterinarians are already successfully giving animals immunity protection in the form of homeopathic remedies in liquid or pellet form. In creating homeopathic remedies, the substance is put in water. The vessel is rhythmically shaken, diluted, shaken again, diluted again, and so on, for a specific number of times depending on the dosage. The procedure is repeated so many times that in the final product, no physical remnant of the substance remains. Its vibrational signature only is imprinted in the carrier substance, which is usually milk sugar pellets, water or alcohol. Considerable research shows not only the efficacy of homeopathy, but also the ability of water and other substances to hold the electromagnetic signature of whatever is imprinted into them. This method of boosting the immune function could apply as easily to people as it does to animals.

As we realize that in most cases, drugs are ineffective and even harmful, it is easy to feel overwhelmed. Why, if drugs are so obviously invasive and dangerous, isn't this on the front page of every newspaper in the country? Why aren't measures being taken to protect every man, woman and child?

More than a few isolated medical professionals are finally speaking out against vaccines. We still have a long way to go, however, before this brand of medicine is recognized for what it truly is: experimentation with dangerous ingredients, which can have devastating consequences.

**Association of American Physicians and Surgeons**

**Resolution Concerning Mandatory Vaccines**

There are increasing numbers of mandatory childhood vaccines, to which children are often subjected without meaningful informed consent, including information about potential adverse side effects. . . . The process of approving and "recommending" vaccines is tainted with conflicts of interest. . . . Safety testing of many vaccines is limited and the data are unavailable for independent scrutiny, so that mass vaccination is equivalent to human experimentation. . . . AAPS calls for a moratorium on vaccine mandates and for physicians to insist upon truly informed consent for the use of vaccines.

Patients have the freedom . . . to refuse medical treatment even if it is recommended by their physician and to be informed about their medical condition, the risks and benefits of treatment, and appropriate alternatives.

—Association of American Physicians and Surgeons
October 2000
www.aapsonline.org/testimony/vacresol.htm

## FACTS AND FALLACIES ABOUT CLINICAL TRIALS

Standard scientific protocol for the early stages of drug testing involves inducing illness in two matched groups of animals and deliberately not intervening in the first

### When Clinical Trials Damage Even Healthy Volunteers

The trial of a new drug in a London hospital that nearly killed six men three months ago . . . left them in intensive care for weeks. . . . All six trial subjects were moaning or screaming and begging for pain pills. . . . All required weeks of intensive care, suffering failure of their kidneys, lungs and circulatory systems.

The six men, who were all young and healthy just months ago, now suffer from serious medical problems, . . . [including] severely damaged immune systems that will probably leave them vulnerable to disease for life. . . . They have been unable to get any of the drug companies involved in the trial to cover their medical expenses, or provide compensation—other than a one-time payment of under $20,000 apiece.

The six research subjects were given infusions of the new and unknown drugs only 10 minutes apart. Virtually all reviews of the trial have concluded that such new drugs should be given to one patient at a time, with long intervals in between, so that monitors can screen for serious side effects. . . . TeGenero, the small German bio-technology firm that developed the drug . . . filed for bankruptcy-court protection on July 4.

—Elisabeth Rosenthal, "Inquiries in Britain Uncover Loopholes in Drug Trials"
*The New York Times,* August 3, 2006

group, called the *control* group, to make sure that the disease really would have disabled and/or killed them. The second group, called the *test* group, is administered the experimental drug or treatment, to see how many of those animals will live.

The ways in which drugs are tested have so many flaws, that test results are not only misleading, but often invalid. In this section, I will discuss just a few of the practices that can lead to some glaringly inaccurate conclusions about the effectiveness and safety of drugs.

### *A Human is Not a Lab Rat*

In the US, researchers heavily rely on animals for their clinical trials. Generally, animals are the first to receive a new chemical. Mice, which reproduce and mature into adults quickly, are commonly used because the researcher can rapidly see how their offspring and succeeding generations respond—and thus more easily compare the health of one generation to the next. Members of the rodent family are utilized so much that the phrase *lab rat* was born. Other animals, such as dogs, cats, monkeys and other primates, and sometimes pigs (whose heart and circulatory system are remarkably similar to that of humans), are also used in experiments.

Once the animal's tolerance for a drug is reached and its responses recorded, the researchers believe that they have learned something about the alleged safe upper limit for human beings. Assuming that the drug is now considered safe enough to be used on human beings, the animals might be killed. Then researchers can legally experiment on humans. These experiments are called *clinical trials*.

The ethical issue of experimenting on animals for the benefit of peoples' health is a difficult one. Many discoveries have been made because of an animal's sacrifice. Yet, at what point does the animal's suffering outweigh the possible or dubious advantage of a positive discovery? The moral issue of causing pain to a sentient creature overlaps with whether or not it is scientifically sound to experiment on animals in the first place. How much latitude can researchers take to extrapolate information pertaining to animals onto humans?

The size, organ and gland structure, and function, biochemistry, and even psychological responses in animals are very different from those of human beings. Therefore, as some researchers already know, the value of data gleaned from animals' responses to drugs is questionable when applied to human beings.

### *A Human is Not a Test Tube*

Sometimes the researchers report that a drug accomplishes the desired effects *in vitro*, which is in a test tube or Petri dish. They cultivate a microbe in a nutrient broth to feed it (like soil nurtures a plant), and then let it interact with the drug while they watch it under a microscope. The drug might perform very well.

*In vitro,* however, is very different from *in vivo*, or inside a human being. The body of a complex and changeable human provides different nutrients for a microbe than does a carefully cultivated, selected nutrient medium inside of a container. Even if the two produce different results—that is, if a drug works well when viewed under a microscope but not inside the human body—the drug may still be allowed on the market.

### *How is the Drug Administered?*

During clinical trials, a drug intended for oral consumption might be given orally. Similarly, a drug intended for injection might be given via a needle intravenously or intramuscularly. But sometimes (again, for testing purposes), an oral drug might be administered by injection. This is often done when researchers experiment on animals. The idea is to get as much of the drug into the body as possible, far more than one could be forcibly fed in a

lifetime. The rationale behind this practice can only be guessed. Perhaps it's to test the subject's upper limits, since higher concentrations of a medication can get into a system by injection than by mouth.

The problem is, a substance that bypasses the digestive process and goes directly into the bloodstream can have completely different effects. This was made abundantly clear during the discussion on vaccines. Nevertheless, some researchers believe that injecting a drug that's supposed to be taken orally provides useful and accurate data for a clinical trial.

### How Much of the Drug is Administered?

During drug testing, the amounts typically administered are greater than the amounts intended to be prescribed in a real life situation. This is because researchers are trying to discover the subjects' highest tolerance of a drug before adverse effects occur.

### How Many Subjects are Tested?

There are three, sometimes four phases of a clinical drug trial. In any of the phases, the drug can be administered in two different strengths, against another already accepted therapy, or against a placebo. (A placebo is a supposedly inert substance assumed not to have an effect. This will be discussed in more detail shortly.) The FDA website summarizes these phases:

- *Phase I trials*. Researchers test a new drug or treatment in a small group of people (20 to 80) for the first time to evaluate its safety, determine a safe dosage range, and identify side effects.
- *Phase II trials*. The study drug or treatment is given to a larger group of people (100 to 300) to see if it is effective and to further evaluate its safety.
- *Phase III trials*. The study drug or treatment is given to large groups of people (1,000 to 3,000) to confirm its effectiveness, monitor side effects, compare it to commonly used treatments, and collect information that will allow the drug or treatment to be used safely.
- *Phase IV trials*. Post marketing studies delineate additional information including the drug's risks, benefits, and optimal use.[44]

Given the information available about the harmful effects of drugs, twenty research subjects is a minuscule number. Three thousand subjects for Phase III, the maximum

> The Union of Concerned Scientists (UCS) . . . released survey results that demonstrate pervasive and dangerous political influence of science at the Food and Drug Administration (FDA). Of the 997 FDA scientists who responded to the survey, nearly one-fifth (18.4%) said that they "have been asked, for non-scientific reasons, to inappropriately exclude or alter technical information or their conclusions in a FDA scientific document." . . .
>
> The UCS survey, which was co-sponsored by Public Employees for Environmental Responsibility, was sent to 5,918 FDA scientists. Forty percent of respondents fear retaliation for voicing safety concerns in public. This fear, scientists say, combines with other pressures to compromise the agency's ability to protect public health and safety. More than a third of the respondents did not feel they could express safety concerns even inside the agency. . . . [Also:]
>
> - 61% of the respondents knew of cases where "Department of Health and Human Services or FDA political appointees have inappropriately injected themselves into FDA determinations or actions."
> - Only 47% think the "FDA routinely provides complete and accurate information to the public."
> - 81% agreed that the "public would be better served if the independence and authority of FDA post-market safety systems were strengthened."
> - 70% disagree with the statement that FDA has sufficient resources to perform effectively its mission of "protecting public health . . . and helping to get accurate science-based information they need to use medicines and foods to improve their health."
>
> To address the concerns raised by FDA scientists, UCS recommends:
>
> Accountability: FDA leadership must face consequences if they side with commercial or political interests and not with the American people.
>
> Transparency: Scientific research and reviews should be open so any undue manipulation is immediately apparent.
>
> Protection: Safeguards must be put in place for all government scientists who speak out.
>
> —Union of Concerned Scientists, "FDA Scientists Pressured to Exclude, Alter Findings; Scientists Fear Retaliation for Voicing Safety Concerns," July 20, 2006

number reported for any of the steps, is scarcely a higher percentage, considering the millions of people who might take the drug.

Sometimes the number tested does not even reach 3,000. For instance, the *PDR*® reports that one of the tests for the drug Taxol® (used for women with ovarian and breast cancer) consisted of only 83 subjects. According to the National Cancer Institute, 1 out of 8 women will get breast cancer during her lifetime. (Statistics for ovarian and other reproductive-area cancers are not given.) Let's say that with even a very modest estimate, 1 in 50 people will be taking Taxol®. You do the math. What percentage out of even 1 in 50 people in the entire US population is 83 subjects?

### *For How Long are Subjects Tested?*

The amount of time allotted for clinical trials is negligible compared to the amount of time during which much greater numbers of people will be using the drug over extended periods. As Null et al. point out, "Serious adverse drug reactions commonly emerge after Food and Drug Administration approval. The safety of new agents cannot be known with certainty until a drug has been on the market for many years."[45]

> If excessive smoking actually plays a role in the production of lung cancer, it seems to be a minor one.
>
> —Dr. W.C. Heuper, of the National Cancer Institute quoted in *The New York Times* April 14, 1954

Due to safety uncertainty, there is a fifth phase of drug testing called "Post-Approval." Functionally speaking, though, this is not really part of the actual approval process. Even that official-sounding phrase cannot disguise the fact that the Post-Approval phase is a little like closing the barn door after the horse has escaped. Null et al. report that "The General Accounting Office (an agency of the US Government) found that of the 198 drugs approved by the FDA between 1976 and 1985, . . . 102 (or 51.5%) had serious post-approval risks." These "risks" included "heart failure, myocardial infarction, anaphylaxis, respiratory depression and arrest, seizures, kidney and liver failure, severe blood disorders, birth defects and fetal toxicity, and blindness."[46]

### *The Population Tested Does Not Necessarily Represent Who Will Be Taking the Drug*

Common sense indicates that the people tested for a drug's effectiveness should have the illness that the drug is designed to treat. But too often, clinical drug trials are conducted on healthy people! This skews the results. Healthy individuals tend to be more resistant to negative effects of drugs; whereas sick individuals—the ones who will actually be taking the medication—have lowered resistance due to their compromised immune response.

### *What If There's More Than One Drug in the Mix?*

As already mentioned, drugs are often tested on healthy subjects. Such individuals will not be taking other medications. This is actually one of the requirements for a valid test, because researchers want to obtain a "pure" reading of effects without the interference of other drugs in the body.

The problem is that many people who are on medications either take more than one at the same time, or take more than one within just minutes or a few hours of each other. But there are no provisions during clinical trials to test the interaction of the officially tested drug with other drugs that are not being tested. So in real life, it may be difficult to know which chemical is producing the bulk of the undesirable symptoms.

Here is an illustration of the above problem. Take a drug often used for cancer, called paclitaxel. Physicians are advised to treat patients with corticosteroids and other toxic chemicals before administering the paclitaxel itself, considered to be the "main" drug. (Note: Since the body has to be "prepped" in order to accept the medication, this indicates that the presence of the drug in the system is highly unnatural. Nonetheless, the *PDR*® states: "Paclitaxel is a natural product with antitumor activity."[47]) The negative reactions that the person experiences later could be exponentially increased by the interactions of the paclitaxel and the drugs that were used to "prep" the patient. It is impossible to know which reactions were caused by the paclitaxel and which were due to the "prepping" agent.

### *Is a Placebo Really Inert?*

There are at least two groups of subjects in a clinical trial. One group is given the "real" drug, and the second group is given something else that appears to be a drug, but which is totally inert and therefore doesn't have any "real" (recognizable) effect. The researchers use placebos so they can have something against which the real drug can be compared, and thus (one presumes) more accurately evaluate the two groups when the trial is over. It's also considered a more objective test if the participants don't know who is receiving the real pharmaceutical.

Both the lay public and health professionals have always understood that by definition, a placebo is completely harmless and inert, or inactive, so that nothing will interfere with knowing what the drug's effects are on the treated group. But reliance on the long-overvalued placebo method actually contains several flaws.

Webster's defines placebo as "a medicine given merely to humor the patient; especially, a preparation containing no medicine but given for its psychological effect."[48] The National Center for Complementary and Alternative Medicine at the National Institutes of Health (NIH) agrees, defining the "placebo effect" as "desirable physiological or psychological effects attributable to the use of inert medications."[49] But if placebo subjects believe that they are being helped by a presumably beneficial drug, this belief itself will assist their healing. This is hardly the definition of "inert."

To add to these problems, placebos often are simply sugar pills. They are indeed comprised of sugar, but is sugar inert? Not if that person is diabetic, is hypoglycemic, or has weight problems. And there is one more, astonishing piece to the puzzle. Regardless of what the word actually means, *a placebo does not necessarily have to be inert. Drug companies are legally permitted to design them with whatever ingredients they choose. They are not required to disclose what those ingredients are.* Sometimes, writes reporter Jenny Thompson, the pharmaceutical companies

> purposely put ingredients into the placebos that match those in the drug and will affect the outcome of the trial . . . [since they] are often fully aware of many of the side effects of the products they're testing. So, for instance, if a drug is known to cause dizziness and hypertension, the drug company running the test wants the placebo to have the same side effects. And they have an explanation for this. They say the placebo should mimic the drug being tested so that the control group of the experiment will have side effects similar to the placebo group. Without that, they claim, the results of a blind study would be compromised.[50]

The above makes no sense from a scientific standpoint. It does, however, make a great deal of sense if a company is trying to make a drug appear better than it actually is. A drug's harmful "side" effects can be masked if the control group is given something to induce similar harmful symptoms.

Medical doctor and research professor Beatrice Golomb is a highly vocal proponent for changes in how drug companies conduct their tests. She wants them to disclose all placebo ingredients, as well as develop a standardized set of placebos whose ingredients and "side" effects are known. This is a good start. However, trying to identify and then rectify all the problems intrinsic to drug testing involves a huge amount of effort and time. It might be more useful to devote energy to eliminating the need for drugs in the first place.

> Patients who get well when they are not supposed to are not having spontaneous remissions. They're experiencing self-induced healing.
>
> —Bernie Seigel, MD
> "Mind Over Cancer," 1988

### *Don't Underestimate the Effects of Water*

One aspect of the clinical trial that will influence any result is the simple ingestion of water. Even if a subject is swallowing a genuinely inert pill or tablet placebo, the water being drunk with the counterfeit medication is likely to have a beneficial effect on the subject's system. This is because many people are chronically dehydrated, and an increase of even 1% or 2% of the water in the system may not only mitigate disease conditions, but it may eliminate them entirely. Similarly, the presumably neutral *saline solution* placebo with which people are sometimes injected may be just what they need. (See the section on **Water** in Chapter 3 for more information.)

### *The Paradox of Double-Blind Studies*

The relationship between belief and biological functioning is relevant to double-blind studies as well as placebos. Chinese medicine researcher Dean Black writes:

> The Regeneration principle [of Chinese medicine] asserts that we must take an active role in our own healing; the double-blind principle asserts that we must *not*. The principle keeps us blind precisely so we *can't* take a role. There's evidence that the double-blind design puts patients into a state of uncontrollability, or helplessness, which provokes those high levels of corticoid hormones [that arise in response to stress]. . . . In that sense, the double-blind research design is unhealthful.[51]

Thus researchers who believe that they are gathering objective data are unknowingly contaminating the test results, as the very act of participating in a study

actively weakens one's immune response. Since double-blind studies negate subjects as an essential ingredient in their own healing, and thus actively interfere with the healing process, they can be considered unethical as well as unscientific.

In truth, the scientific method is not linear (Cause 1 + Cause 2 = Effect). Rather, it is like a circle, where many elements interact with other elements. You can pick one point on the circle, and as you travel around the circumference you are led to all of the other points. Whole, living systems, such as human beings, are not linear. Very rarely, if ever, does a clear-cut case of "cause and effect" occur, since each body part and system is related to other body parts and systems. This interdependence of all aspects of a living system contradicts linearity.

Nevertheless, this truth does not dissuade many researchers from engaging in linear thinking to the exclusion of all else. Ironically, they do not realize that linear thinking prevents them from being scientific!

### *Are Clinical Trials for Drugs Registered with the Government?*

Although a recent federal law requires pharmaceutical companies to post all research pertaining to the safety and efficacy of drugs on a government database, real world accountability is dubious.

In July 2004, ABC News reported the FDA's discovery that "less than half of the total number of cancer drug therapy studies in 2002 were listed." The percentage of disclosure for *all* clinical trials is even lower. "Of more than 5,500 currently ongoing drug studies, only *13%* were listed on the governmental database." [emphasis added] The report goes on to say, "The database wasn't intended to be comprehensive." This is curious. Why *not?* What about the law? The report's conclusion: "It's unclear how to make firms comply because federal law prescribes no penalties for a company's failure to post results."[52]

### *No Clinical Trials, but a Drug is Marketed Anyway*

Today, the FDA is famous for approving drugs that have not had proper clinical testing over a long enough period of time or with enough test subjects. An illuminating article, "New Drugs Hit the Market, but Promised Trials Go Undone," appeared in the March 4, 2006 edition of *The New York Times*.

> When it approves new drugs for sale, the Food and Drug Administration often requires their manufacturers to study whether they are working as intended and whether they have unwanted side effects. But the agency reported . . . that two-thirds of the studies had not even been started. . . .
>
> Dr. John Jenkins, director of the Office of New Drugs at the agency . . . emphasized that only 5% of the promised drug trials were officially considered "delayed." In many cases, trials have been pending for more than a decade but are not considered delayed because the agency never insisted on a specific timeline for the tests. . . . The agency often compromises by approving a drug quickly and then insisting that its maker prove after approval that the drug actually works. This strategy, as the numbers released . . . show, has been only marginally successful.
>
> As of September 30, of the 1,231 promised drug trials, 797, or 65%, had not begun or were "pending," according to the FDA. Another 231 were considered "ongoing" and 28 were "delayed." In the 2005 fiscal year, drug makers completed and submitted the results of 172 trials, the agency reported.

If pharmaceutical companies tend to be a little "delayed" in submitting test results to the FDA after their products are already on the market, they "complete trials rapidly when the FDA demands the results as a condition for approval."[53]

*The New York Times* article then goes on to say that cancer drugs are being tested, even though they are thought to produce similar effects to drugs that are already available. Since test subjects are afraid to receive a placebo they don't believe will be as effective as the actual drug, too few enroll in clinical trials. Due to this shortage of test subjects, too few drugs are even tested. This offers a good excuse for a poor track record for eliminating the cancer. In addition, since the trials are expensive, drug manufacturers are loathe to invest more money and do not finish the tests, even though, presumably, we need the tests completed in order to know how the drug did or didn't work. Finally, even though common sense would suggest that the FDA withdraw the drug from the market since there is little or no proof of efficacy—not to mention the shortage of test subjects, which invalidates the entire trial—regulators allow this unproven drug to continue to be sold and used, because they don't want to "hurt the patients"!

On a different note, sometimes a doctor prescribes a drug for *off-label* use. This means that even though the medication was created and tested solely for one condition (or a few specific conditions), the person is choosing to use it for an entirely different reason. Pharmaceutical companies routinely encourage off-label use. Since a

doctor can legally prescribe any drug, off-label use happens more frequently than one might think.

Some critics of this practice comment on the "frequently inappropriate and non-tested uses of these medications in spite of the fact that these drugs are only approved [and presumably tested] for specific conditions."[54] I think these objections are unfounded for several reasons. One, most clinical trials are deeply flawed anyway. Two, one can experience "side" effects regardless of the stated reasons for taking the drug. Three, sometimes a drug works better for an off-label use than for the condition for which it was created. Nonetheless, given the dangers of so many pharmaceuticals, there is a chance that someone with an "off-label condition" might be harmed by such use.

### *Summary*

Most drugs don't work. The majority of drugs are harmful. Clinical trials, due to many flaws in their methodology, do not accurately depict the dangers or effectiveness of a drug.

A federal law requires drug companies to reveal the results of all tests. However, there is no way for the FDA to determine or enforce compliance, and there is no punishment if the manufacturer does not comply. The manufacturer chooses which trial results, if any, are released. The manufacturer may even fabricate results to make the drug appear less dangerous and more effective than it actually is. Generally, a drug requires ten years of market exposure before it can be deemed safe. But by then, enormous damage may already have been inflicted.

Finally, as FDA personnel will point out, it is not the job of the Food and Drug Administration to conduct its own independent tests that might challenge the claims of the manufacturer.

For all these reasons, and more, the authors of "Death by Medicine" write: "Unfortunately, partaking in allopathic medicine itself is one of the highest causes of death as well as the most expensive way to die."[55]

Who would turn in their homework if they didn't have to?

—Dr. Alastair Wood, associate dean of Vanderbilt Medical School, commenting on the fact that the FDA often fails to demand that drug companies actually test the drugs they have approved for release. "New Drugs Hit the Market, but Promised Trials Go Undone" *The New York Times* March 4, 2006

## HOW DRUGS ARE APPROVED

Once clinical trials are conducted, how exactly does the approval process work? This is worth knowing because in the mind of the public, approval equals safety, even though this assumption is usually not supported by facts. (Note that although our discussion is about the approval process in the United States, most other countries imitate the US.) In *World Without Cancer*, G. Edward Griffin explains:

> There is a great deal of evidence supporting the nutritional-deficiency concept of cancer—more than enough to convince most people that the thesis is proven. But the word *proven*, when used by the FDA, has an entirely different meaning. . . . When the FDA says a therapy is proven, it means only that its promoters have complied with the testing protocols set by the agency to demonstrate safety and effectiveness. It is important to know, however, that the successful completion of those tests does not mean, as the terminology implies, that the therapy is safe and effective. It merely means that tests have been conducted, the results have been evaluated, and the FDA has given its approval for marketing, often *in spite of* the dismal results.[56]

As we have seen, the FDA's system of approval for pharmaceuticals is loaded with flaws and loopholes. One major loophole is that FDA approval of drugs—or additives, or any substance under its jurisdiction—is based on research that is *conducted and submitted by the manufacturer*. Many people believe that these clinical trials are serious scientific research, even though the studies selectively emphasize information or omit it altogether, making them misleading at best and outright falsified at worst. This means that, contrary to what many people believe, FDA approval seldom guarantees safety.

## THE PHARMACEUTICAL INDUSTRY MARRIAGE TO THE FDA

Since the first edition of this book was published, the amount of reported pharmaceutical industry corruption has skyrocketed. Across the nation and around the world, newspapers, magazines, television and the Internet have regularly carried exposés on doctors who took bribes and gifts, drug companies that were plagued with lawsuits, and pharmaceuticals that not only failed to work, but seriously harmed. These news items are now so commonplace, it can be difficult to

keep up with the latest exposé. However, in presenting even just a few examples of what has erupted in the news, this section captures the essence of the duplicity, evasions, and outright lies plaguing the pharmaceutical industry.

The first example is a brief but potent article called "FDA Advisers Tied To Industry." The author writes:

> More than half of the experts hired to advise the government on the safety and effectiveness of medicine have financial relationships with the pharmaceutical companies that will be helped or hurt by their decisions, a *USA Today* study found. These experts are hired to advise the Food and Drug Administration on which medicines should be approved for sale, what the warning labels should say and how studies of drugs should be designed.
>
> The experts are supposed to be independent, but . . . 54% of the time, they have a direct financial interest in the drug or topic they are asked to evaluate. These conflicts include helping a pharmaceutical company develop a medicine, . . . serving on an FDA advisory committee that

## The Politics of Price Gouging

- The claim that drugs are a $200 billion industry is an understatement. According to government sources, that is roughly how much Americans spent on prescription drugs in 2002. . . . But it does not include the large amounts spent for drugs administered in hospitals, nursing homes, or doctors' offices (as is the case for many cancer drugs). In most analyses, they are allocated to costs for those facilities. . . . So the $200 billion colossus is really a $400 billion megacolossus.
- The people hurting most are senior citizens. . . . In 2002, the average price of the 50 drugs most used by senior citizens was nearly $1,500 for a year's supply.
- More people . . . trade off drugs against home heating or food. Some people try to string out their drugs by taking them less often than prescribed, or sharing them with a spouse. Others, too embarrassed to admit that they can't afford to pay for drugs, leave their doctors' offices with prescriptions in hand but don't have them filled. Not only do these patients go without needed treatment but their doctors sometimes wrongly conclude that the drugs they prescribed haven't worked and prescribe yet others—thus compounding the problem. . . . In one of the more perverse of the pharmaceutical industry's practices, prices are much higher for precisely the people who most need the drugs and can least afford them.
- In 2001, the ten American drug companies in the Fortune 500 list (not quite the same as the top ten worldwide, but their profit margins are much the same) ranked far above all other American industries in average net return, whether as a percentage of sales (18.5%), of assets (16.3%), or of shareholders' equity (33.2%). These are astonishing margins. For comparison, the median net return for all other industries in the Fortune 500 was only 3.3% of sales. Commercial banking, itself no slouch as an aggressive industry with many friends in high places, was a distant second, at 13.5% of sales. . . . The most startling fact about 2002 is that the combined profits for the ten drug companies in the Fortune 500 ($35.9 billion) were more than the profits for all the other 490 businesses put together ($33.7 billion). . . . When I say this is a profitable industry, I mean really profitable. It is difficult to conceive of how awash in money Big Pharma is.
- Research & Development (R&D) is a relatively small part of the budgets of the big drug companies—dwarfed by their vast expenditures on marketing and administration, and smaller even than profits. . . . The prices [that] drug companies charge have little relationship to the costs of making the drugs and could be cut dramatically without coming anywhere close to threatening R&D. . . . The biggest single item in the budget is neither R&D nor even profits but something usually called "marketing and administration." . . . In 1990, a staggering 36% of sales revenues went into this category, and that proportion remained about the same for over a decade. Note that this is two and a half times the expenditures for R&D.
- One could hope drug companies would decide to make some changes—trim their prices, or at least make them more equitable, and put more of their money into trying to discover genuinely innovative drugs, instead of just talking about it. But that is not what is happening. Instead, drug companies are . . . marketing their me-too [copycat] drugs even more relentlessly [as well as] pouring more money into lobbying and political campaigns.

—Marcia Angell, MD
excerpts from "The Truth About the Drug Companies," *New York Review of Books,* 2004
and
*The Truth About the Drug Companies: How They Deceive Us and What to Do About It,* 2004

> judges the drug, . . . stock ownership, consulting fees or research grants.[57]

Although it is against the law for the FDA to use experts with financial conflicts of interest, according to the *USA Today* analysis, the agency waived this restriction more than 800 times from January 1, 1998 through June 30, 2000. "At 92% of the meetings, at least one member had a financial conflict of interest. At 55% of meetings, half or more of the FDA advisers had conflicts of interest." The reporter adds that "with few exceptions," the FDA follows the advice of the approximately 300 pharmaceutical "experts" on the eighteen advisory committees.[58] It is staggering to think that the (then) FDA senior associate commissioner Linda Suydam repeatedly waived the conflict-of-interest restrictions because, she claimed, no better experts could be found than the ones who were also hired by industry! (See Sidebar, "The Politics of Price Gouging.")

People who work or once worked at the FDA have also been in the news. A 2004 article from the *British Medical Journal* reports:

> Daniel Troy, chief counsel to the US Food and Drug Administration, is under fire for inviting drug companies to inform him of lawsuits against them so the FDA could help in their defense. . . . Mr. Troy is one of over 100 industry advocates who have become regulators under . . . George W. Bush's administration. . . .
>
> Before coming to the FDA, Mr. Troy was with the law firm Wiley Rein & Fielding in Washington, DC, where he advanced the interests of drug and tobacco companies against the FDA. . . . Since coming to the FDA, Mr. Troy has filed briefs defending four companies, including Pfizer, SmithKline Beecham Consumer Products, and GlaxoSmithKline, arguing the side of the defendant corporation against people who were suing for damages after using that corporation's product.
>
> Mr. Troy hid . . . his ties to Pfizer by failing to report to Congress that he had been paid $358,000 by Pfizer in 2001—the same year he was appointed to the FDA.[59]

More recently, in 2006, FDA former chief Lester M. Crawford was in the news. He and his wife owned stock in companies that the FDA is supposed to regulate—despite the fact that, according to a *New York Times* article, "Senior employees of the [FDA] are prohibited from owning shares in companies the agency regulates."[60] The Crawfords owned shares in Johnson & Johnson, Merck, Pfizer, Medtronic, and Boston Scientific. They also held shares in more diversified companies that sell health care products: Kimberly-Clark, Pepsico, Sysco, and Wal-Mart. Dr. Crawford was charged with, and pleaded guilty to, breaking conflict-of-interest laws, failing to report his stock ownership, and lying to the Justice Department.

The article further reveals, "During a period when the Crawfords held shares in Pepsico, a soft drink and snack food company, he was chairman of an FDA Obesity Working Group that among other tasks was reviewing calorie content labeling for soft drinks."[61]

Dr. Crawford will not be required to serve any jail time. He will simply pay a fine—which no doubt he can easily afford, since dividends from pharmaceutical stocks are lucrative. (See Sidebar, "The True Cost Of Your Prescription Drugs.")

In 1998, the Public Citizen's Health Research Group of Washington surveyed FDA-employed medical doctors who supervise the evaluation of individual drugs. The research group found that:

- Nineteen medical officers [of the 53 who responded] identified 27 new drugs that were approved even though the officers thought they should not be.
- Seventeen said the food and drug agency's safety and efficacy standards were lower than in the past.
- Nineteen said they felt more pressure to approve drugs from within the agency and from Congress and the pharmaceutical industry.

Not surprisingly, the survey was anonymous. That it was completed by only 33% of the people to whom it was mailed may indicate complacency about FDA procedure rather than a lack of problems, as the FDA claimed. In any case, 19 dissatisfied employees out of 53 surveyed is over one third—a high percentage of doctors critical of the FDA approval process.

—Denise Grady, "In a Survey, the FDA Is Accused of Hasty Approval of Drugs"
*The New York Times,* December 3, 1998

## THE PHARMACEUTICAL INDUSTRY MARRIAGE TO OTHER GOVERNMENT AGENCIES AND OFFICIALS

The Food and Drug Administration is not the only government agency with fingers in the pharmaceutical money pot. The drug industry has contributed astronomically high sums to political candidates and to officials already in office.

## The True Cost of Your Prescription Drugs

Did you ever wonder how much it costs a drug company for the active ingredient in prescription medications? . . . We did a search of offshore chemical synthesizers that supply the active ingredients found in drugs approved by the FDA . . . [since a] significant percentage of drugs sold in the United States contain active ingredients made in other countries [and which in fact may be heavily contaminated with heavy metals and other impurities]. In our independent investigation of how much profit drug companies really make, we obtained the actual price of active ingredients used in some of the most popular drugs sold in America.

So often, we blame the drug companies for the high cost of drugs, and usually rightfully so. But in this case, the fault clearly lies with the pharmacies themselves. For example, if you had to buy a prescription drug, and bought the name brand, you might pay $100 for 100 pills. The pharmacist might tell you that if you get the generic equivalent, they would only cost $80, making you think you are "saving" $20. What the pharmacist is not telling you is that those 100 generic pills may have only cost him $10! . . . This helps to solve the mystery as to why they can afford to put a Walgreen's on every corner. The chart below speaks for itself.

| Drug and mg dose | Retail (100 tablets) | Cost, active ingredients | Markup (%) |
|---|---|---|---|
| Celebrex®, 100 mg | $ 130.27 | $ 0.60 | 21,712 % |
| Claritin®, 10 mg | $ 215.17 | $ 0.71 | 30,306 % |
| Keflex®, 250 mg | $ 157.39 | $ 1.88 | 8,372 % |
| Lipitor®, 20 mg | $ 272.37 | $ 5.80 | 4,696 % |
| Norvasec®, 10 mg | $ 188.29 | $ 0.14 | 134,493 % |
| Paxil®, 20 mg | $ 220.27 | $ 7.60 | 2,898 % |
| Prevacid®, 30 mg | $ 44.77 | $ 1.01 | 34,136 % |
| Prilosec®, 20 mg | $ 360.97 | $ 0.52 | 69,417 % |
| Prozac®, 20 mg | $ 247.47 | $ 0.11 | 224,973 % |
| Tenormin®, 50 mg | $ 104.47 | $ 0.13 | 80,362 % |
| Vasotec®, 10 mg | $ 102.37 | $ 0.20 | 51,185 % |
| Xanax®, 1 mg | $ 136.79 | $ 0.024 | 569,958 % |
| Zestril®, 20 mg | $ 89.89 | $ 3.20 | 2,809 % |
| Zithromax®, 600 mg | $ 1,482.19 | $ 18.78 | 7,892 % |
| Zocor®, 40 mg | $ 350.27 | $ 8.63 | 4,059 % |
| Zoloft®, 50 mg | $ 206.87 | $ 1.75 | 11,821 % |

—Sharon L. Davis
Budget Analyst, US Department of Commerce

—Mary Palmer
Budget Analyst, Bureau of Economic Analysis, Office of Budget & Finance

www.rense.com/general54/preco.htm (August 14, 2004)

The Center for Public Integrity, a nonprofit, nonpartisan, independent journalism organization located in Washington, DC, is dedicated to producing and disseminating investigative reports and databases, and to educating citizens "with tools and skills they need to hold governments and other institutions accountable."[62] The CPI has collected and analyzed huge amounts of data on the "deep-pocketed" pharmaceutical and health products industries, and made this data available on its website. Just a sample of that data is cited in this chapter.

In the area of lobbying alone, the CPI reports that the pharmaceutical industry:

- Employed [between October 1998 and April 2005] . . . almost 3,000 professional lobbyists, more than "any other organized interest," including insurance companies.[63]

- Engaged 1,291 lobbyists in 2004, "some 52% [of whom] were former federal officials."[64] "This included more than 50 former members from the House [of Representatives] and a dozen from the Senate."[65]
- Lobbied "on more than 1,400 congressional bills since 1998 and spent a whopping $612 million during that period."[66]
- Spent nearly $116 million lobbying the government in 2003, and $123 million in 2004.
- Utilized, since 1998, "four and a half pharmaceutical industry lobbyists . . . for every member of Congress in office."[67]

Recently, the slang phrase *Big Pharma* has captivated the attention of drug industry critics and even been used in the mainstream press. This phrase is probably derived from the name of the trade association Pharmaceutical Research and Manufacturers of America, whose acronym is PhRMA. PhRMA, the tenth largest lobbying organization in the US, represents more than 40 of the world's best-known drug companies. The CPI reports that "besides its 38 in-house lobbyists, PhRMA employed 160 lobbyists . . . [from] 2003 to 2004. Since 1998, the organization used 64 different firms to lobby 35 federal agencies on 38 issues." In addition, PhRMA spent more than $65 million on lobbying from October 1998 through April 2005.[68]

Gifts to politicians also play a huge role in the pharmaceutical industries romance with government. A study of more than 25,000 public documents, conducted by CPI, revealed that members of Congress, their staff, and aides have received almost $50 million worth of 23,000 privately funded trips, and "repeatedly ignored travel disclosure requirements and House and Senate rules."[69]

Personnel within the FDA itself were also courted. Although policy forbids employees from taking trips paid for by health-related companies, significant amounts were spent on gifts to FDA employees, CPI discovered. The FDA used an "apparent loophole" in the law to accept over "$1.3 million in sponsored travel since 1999 from groups closely tied to pharmaceutical and medical device companies." This money was used to "fly and host agency employees. Eleven drug safety board members were among the travelers sponsored. . . . Nonprofit groups and universities with . . . ties [to Big Pharma] paid for roughly a third of the more than 3,600 trips taken by [FDA] officials."[70]

Big Pharma also contributes large sums to political groups and candidates sympathetic to its advancement. Data analyzed by CPI show that executives, employees and political action committees of drug companies

> donated more than a combined $18 million to state political groups and candidates from 2001 to 2004. . . . Pharmaceutical companies also spent significant amounts themselves on campaign donations to state candidates [with] favored positions on issues important to the industry. Pfizer contributed more than $3 million to candidates for state office over the period; Eli Lilly and GlaxoSmithKline each gave more than $2.2 million.[71]

## Politics of the Flu

In 2005, George W. Bush predicted that at least 200,000 people in the US alone—and possibly up to 2 million—would die from the avian flu. These figures were dutifully reported in the press, despite the fact that only 60 deaths had been reported up to that point.

The panicked public was then assured that a vaccine called Tamiflu® would take care of the problem. The problem is, Tamiflu® could only decrease the number of days one was sick. In fact, the vaccine might contribute to the virus's ability to mutate. But apparently this did not matter. The United States government ordered 20 million doses of the drug, with US taxpayers paying the bill. At $100 per dose, the drug cache cost $2 billion. Roche, the drug company that manufactured Tamiflu®, collected the funds.

But there was another fact that the general public wasn't immediately told. Although Roche collected the money, the vaccine had been developed by another company called Gilead Sciences, Inc. at least a decade before. What foresight! Around 1995, Gilead sold Roche the exclusive rights to market and sell Tamiflu®. As part of the agreement, Gilead would receive a royalty from Roche equal to about 10% of sales.

By another remarkable coincidence, former Secretary of Defense Donald Rumsfeld was a member of Gilead's board of directors between 1987 and 2001. Rumsfeld was also its chairman from 1997 until 2001, the year he joined George W. Bush's cabinet as Defense Secretary. Although Rumsfeld was no longer serving in an official capacity on Gilead's governing board, he still held stock in Gilead valued at between $5 million and $25 million.

—adapted from
www.globalresearch.ca

Not all of the money spent by the drug industry is reported to the Internal Revenue Service (IRS). In 2002, PhRMA gave $41 million in political contributions to pro-drug industry candidates. According to a report issued by another monitoring group, Public Citizen, PhRMA failed to mention most of these contributions to the IRS. These contributions were funneled through organizations claiming to be advocacy groups for senior citizens, which made PhRMA exempt from having to disclose funding sources. Instead of being used to make the lives of elders easier, however, the money was paid for ads supporting political candidates who were friendly to the interests of Big Pharma/PhRMA.

Big Pharma, reports CPI, also funds pending legislation, having contributed $83 million "to lobby on the California health care and drug discount referendum issue in 2005."[72] The referendum would have given discounts for prescriptions to low and middle-income people. On the surface, this discount may seem innocuous or even helpful. However, this bill allocated the funds from taxes foisted on taxpayers, with Big Pharma as the primary beneficiary. Californians defeated the bill.

Lamentably, politicians with conflicts of interest (financial ties to Big Pharma) usually back bills favorable to the drug industry. One example out of many is Pennsylvania Congressmember James Greenwood. In July 2004, Greenwood accepted the post as head of The Biotechnology Industry Organization, which includes drug manufacturers as its members. "Just before he accepted the position," CPI reports, "he was scheduled to hear testimony on possible links between antidepressant use and suicide among children. Because of the conflict of interest, he cancelled the hearing."[73]

> Our government does not regulate the pharmaceutical industry—rather the pharmaceutical industry regulates the government, which is why Americans pay by far the highest prices in the world for medicines.
>
> —Representative Bernie Sanders (Independent-Vermont), quoted in "Prescription for Power: Drug makers' lobbying army ensures their legislative dominance," The Center for Public Integrity, April 2005

## THE PHARMACEUTICAL INDUSTRY MERGER WITH UNIVERSITIES AND OTHER RESEARCH INSTITUTIONS

Dr. Marcia Angell is former Editor-in-Chief of *The New England Journal of Medicine* and Senior Lecturer in Social Medicine at Harvard Medical School. The author of the 2004 book *The Truth About the Drug Companies*, Dr. Angell recounts the liaisons between drug manufacturers, universities, and presumably objective medical publications.

> Only a handful of truly important drugs have been brought to market in recent years, and they were mostly based on *taxpayer-funded* research at academic institutions, small biotechnology companies, or the National Institutes of Health (NIH). . . . [The Senate-approved Bayh-Dole Act] enabled universities and small businesses to patent discoveries emanating from research sponsored by the National Institutes of Health, the major distributor of tax dollars for medical research, and then to grant exclusive licenses to drug companies. . . .
>
> Bayh-Dole also transformed the ethos of medical schools and teaching hospitals. These nonprofit institutions started to see themselves as "partners" of industry, and they became just as enthusiastic as any entrepreneur about the opportunities to parlay their discoveries into financial gain. Faculty researchers were encouraged to obtain patents on their work . . . (assigned to their universities), and they shared in the royalties. . . .
>
> As the entrepreneurial spirit grew, . . . medical school faculty entered into other lucrative financial arrangements with drug companies, as did their parent institutions. . . . These laws mean that *drug companies no longer have to rely on their own research for new drugs*. . . . Increasingly, they rely on academia, small biotech startup companies, and the NIH. . . . One of the results has been *a growing pro-industry bias in medical research—exactly where such bias doesn't belong*. [emphasis added][74]

### *Bribes and Gifts to Doctors*

The merged interest of government officials with the very industry they are supposed to watch is not the only problem. Doctors have been wined, dined and courted in myriad ways by pharmaceutical industry representatives. In 2000, *The Journal of the American Medical Association* published a study revealing that "interactions

### He Who Calls the Tune

The American Medical Association climbed into bed with the Rockefeller and Carnegie interests in 1908 for the praiseworthy purpose of upgrading American medicine . . . [and] has been sharing the sheets ever since.

The impact of this organization on the average physician is probably greater than even he recognizes. First of all, the medical student cannot obtain an MD degree except at a school that has been accredited by the AMA. . . . If he decides to become a specialist, his residency must conform to AMA requirements. . . . To prove his standing as an ethical practitioner, he must apply to and be accepted by his county and state societies in conformity with AMA [allopathic] procedures. AMA publications provide him with continuing education in the form of scientific articles, research findings, reviews and abstracts from medical books, . . . evaluations of new drugs, foods, and appliances.

The AMA spends millions of dollars per year for television programs to affect public opinion, maintains one of the richest and most active lobbies in Washington, spends many millions in support of favored political candidates, and is instrumental in the selection of the Commissioner of the Food and Drug Administration.

Who controls the AMA? Most people would assume that the dues-paying members control their own association, but nothing could be further from the truth. . . . [The permanent] leadership maintains firm control over . . . [resolutions put forth by reference committees] appointed by the Speaker of the House, not by the delegates [doctor members]. The committees are stacked to carry out the will of the leadership.

Altogether the AMA now derives over $10 million per year in advertising, which is almost half of the Association's total income. Who advertises in the AMA Journal and related publications? The lion's share is derived from the Pharmaceutical Manufacturer's Association whose members make up 95% of the American drug industry.

—G. Edward Griffin, *World Without Cancer*, 1997

between physicians and the pharmaceutical industry are not as innocuous as they seem. Pharmaceutical companies spend more than $11 billion each year to promote and market drugs, an estimated $8,000 to $13,000 per physician per year."[75] In 2006, one health columnist reported that drug companies "spend more than $20 billion annually in the United States on marketing activities directed at doctors and other health professionals, which is more than five times what they spend on television ads."[76]

These billions are spent on meals, entertainment (during which reps give sales presentations), books, medical supplies, "consultation fees," awards of airline miles, gasoline, and even Christmas trees.

One particularly insidious gift comes in the form of conferences that offer continuing medical education (CME) credits. Every year or two, medical professionals are required to attend health-related seminars to obtain the necessary credits toward license renewal. The goal, which is laudable, is to keep medical professionals up-to-date in their areas of expertise. But there is an almost guaranteed conflict-of-interest when pharmaceutical companies began offering seminars authorized to confer CME credit. One can only imagine what "education" was being fed to attendees as innovations in their field.

In February 2006, the *Chicago Tribune* reported similar perks offered to British physicians by sales representatives for Abbott Laboratories. The sales reps offered not only "lap dances" at an adult sex club, but treated more than 60 health professionals to Centre Court Wimbledon seats and greyhound race track tickets. In response, Britain's leading drug industry trade group, the Association of the British Pharmaceutical Industry, suspended Abbott's membership for at least six months. Although this suspension did draw public attention to the ethics violations, and the presumably small number of employees involved were fired (or resigned), Abbott was still permitted to sell drugs without restriction in the United Kingdom. The *Tribune* article described the behavior of the Abbott employees and the doctors involved as "troubling . . . because it occurred after the industry said it would begin policing itself."[77] Despite the copious negative press, and doctors publicly stating the need and their commitment to disentangling themselves from drug industry influence, the problem appears to be as pervasive as ever. A national survey in the April 2007 issue of the *New England Journal of Medicine* found that 94% of doctors reported having some relationship with drug companies. Seventy-eight percent accepted drug samples; 18% received payments for "consulting"; 16% received payments for speaking; 15% were reimbursed for travel, food and lodging (identified as "meeting expenses"); and 7% accepted tickets to sporting or cultural events. A whopping 83% were treated to food or drink.

The billions spent each year by drug companies create loyalty to particular brands. One *Journal of the American Medical Association* researcher, who reviewed 29 studies of

interactions between physicians and the drug industry, found that physicians' practices are affected in four major ways:

> Physicians prescribed a drug manufactured by the sponsor of a medical education program more frequently, hospitals increased their prescribing of a conference travel sponsor's drug, residents increased "nonrational" prescribing of a drug following a meeting with a company representative, and attitudes about drug company representatives became more positive. The researcher noted that interactions between MDs and pharmaceutical representatives begin in medical school and continue at a rate of about four meetings per month.[78]

Busy doctors find it difficult to keep current on the latest developments in drugs. Their interaction with drug company reps expedites their "education." Perhaps most troubling about this lack of ethics is the very real risk to people's health—not to mention lives. Gifts lead to higher health care costs through the prescribing of expensive brand-name rather than generic drugs. Even more troubling, doctors tend to select whatever new product has just been peddled to them.

There is yet another unethical practice resulting from the physician-drug company marriage. A surprisingly large number of doctors hired by Big Pharma to test drugs recruit their own patients into the studies for a per-patient fee. In addition, even after the physicians have been disciplined by state medical boards, drug makers continue to hire them.

In one such case, practicing psychiatrist Faruk Abuzzahab had his license suspended for seven months and restricted for another two years by the Minnesota Board of Medical Practice after five of 46 people in his care died. One of the five who died was a man whom the physician was pressuring to take part in a clinical trial. When the man refused to be part of the study, Abuzzahab immediately discharged him from the hospital—even though the man was deteriorating, and in fact was found to be suicidal! Two weeks later, he killed himself. Despite Abuzzahab's record and the public disciplinary action, he continues to be employed by drug makers to run so-called clinical trials. In fact, in Minnesota alone, from 1997 to 2005, over 100 doctors who had been disciplined by the state medical board accepted, collectively, $1.7 million from pharmaceutical companies.

### Respect for Drug Industry Falls

Pharmaceutical companies were ranked in the bottom half of industries considered to be doing "a good job of serving their consumers," a recent US Harris poll shows. They came 11th out of 15; only health insurance companies, oil companies, managed care companies, and tobacco companies had a worse ranking. The annual poll, of 978 adults, shows that the proportion of respondents saying they have a positive attitude towards the pharmaceutical industry fell from 79% in 1997 to 44% in 2004—a bigger drop than for any other industry.

—Jeanne Lenzer, "Respect for Drug Industry Falls"
*British Medical Journal,* July 17, 2004

### *Some Tales of Approval*

Now let us take a look at the FDA approval process of one drug and one food additive. The following accounts are good examples of the revolving door policy between FDA officials and drug company personnel—and in some instances, their attorneys as well.

#### rBGH

Often, drugs are hastily approved because high-ranking FDA personnel are comprised of former or future drug company employees. The story of rBGH (recombinant bovine growth hormone) is particularly insidious, because after the drug was approved, a major media network as well as the manufacturer and the FDA attempted to suppress the truth about its dangerous effects. Even more troubling, rBGH is not a typical veterinary drug. Intended to induce cows to produce more milk, it must be injected into the animals daily. But rBGH ends up in the food supply, so the average consumer is drugged each time s/he ingests milk, butter, cheese, cream, ice cream and yogurt.

rBGH was developed by Dr. Margaret Miller, one-time researcher for the chemical corporation Monsanto, which is famous for its drugs and pesticides. Rose Marie Williams, columnist for the respected holistic journal *Townsend Letter*, describes how the drug was developed:

> Bovine Growth Hormone (BGH) is naturally produced by the pituitary gland in cows and stimulates milk production. The recombinant form (rBGH) is a genetically engineered combination of the cow gene for BGH and DNA from *Escherichia coli* (*E. coli*) bacteria. Therefore, it cannot be identical to the natural hormone produced by the cow as is claimed by Monsanto.[79]

The recombinant form of Bovine Growth Hormone was easy to approve at the FDA. After she finished her work at Monsanto, Miller was hired as part of the FDA

staff, where she was put in charge of evaluating her own research. "FDA's standard cancer test for a new human drug requires two years testing on several hundred rats," Williams writes, but the artificial hormone "was tested for only 90 days on 30 rats before being approved."[80]

As one might expect, with such shoddy testing there was bound to be trouble. Although some dairy farmers reported positive experiences with the drug, more than half did not. Among at least 20 adverse "side" effects are a 79% increase in mastitis (inflammation of the udder, which raises the amount of pus in the milk), increased digestive upset including diarrhea, higher incidence of lameness, more metabolic disorders, and increased multiple births. However, the damage is not borne solely by the cows. Humans who consume dairy products from these cows also develop health problems, including higher than usual incidences of colon, lung, prostate and breast cancers; and a dramatic increase of multiple births.

Attempts to disclose, on a mass scale, what rBGH really does, were heavily resisted. In late 1996, Fox Television wife-and-husband journalist team Jane Akre and Steve Wilson were assigned to do a story reassuring consumers that rBGH was safe. Much to their surprise, after interviewing dairy farmers and reviewing studies linking the effects of rBGH to cancer in humans, the Florida-based team discovered just how dangerous the drug really was. Hours before broadcast, the Fox News station cancelled the show after Monsanto threatened "dire consequences"[81] if the stories aired.

Under pressure from Fox lawyers, Akre and Wilson rewrote the story more than eighty times. After threats of dismissal and offers of six-figure sums to drop their ethical objections and keep quiet, they were fired in December 1997.

In 1998, Akre filed a suit against Fox for violating Florida's Whistleblower Law, which makes it illegal to retaliate against a worker who threatens to reveal employer misconduct. She is the first reporter to ever use the Whistleblower Law against her own employer. After a five-week trial and six hours of deliberation that ended in August 2000, a jury unanimously determined that Fox

> "acted intentionally and deliberately to falsify or distort the plaintiffs' news reporting on BGH." In that decision, the jury also found that Jane's threat to blow the whistle on Fox's misconduct to the FCC was the sole reason for the termination. . . and the jury awarded $425,000 in damages.[82]

In February 2004, Fox appealed and won, unexpectedly overturning the original award to Akre. For a long time after the trial, both Akre and Wilson were blacklisted by the media and could not find jobs—even though both had won many awards, including four Emmy® Awards (Wilson), and the Associated Press award for investigative reporting (Akre). Eventually, Steve Wilson became chief investigative reporter for WXYZ-TV in Detroit, the most prestigious of ABC affiliate stations. As heads of their own production company, they continue to do ground-breaking reporting. As of this writing, both Wilson and Akre are considering an appeal to the Florida State Supreme Court.

As Jane Akre and Steve Wilson discovered, it takes money and persistence to bring information to the public that is unfavorable to Monsanto. Aware of growing consumer resistance to ingesting unnatural hormones along with their food, Monsanto undertook another approach: lawsuits against dairy companies to prevent them from labeling their products "does not contain rBGH." After a long fight, the dairy companies (and consumers) won the right to have products that are labeled. However, the victory was only partial. In the United States today, thanks to Monsanto's close ties with government, products free of rBGH must state that there is no difference between items containing rBGH and items that do not contain rBGH.

In yet another clever move, Monsanto decided to rename its product. "Aware that some consumers may be put off by the word *hormone*,' Williams writes, "Monsanto now refers to the drug as supplemental bovine somatotropin or 'supplemental bST.'"[83]

Now, a new fight is on the horizon. Monsanto is lobbying for a law to be passed that *forbids* dairy manufacturers from stating that their milk and milk products are free of growth hormone. The company's lobbying group claims that informative labels only make consumers unnecessarily afraid.

### Aspartame

The "food" regulating aspect of the Food and Drug Administration is as dismal as its drug regulating aspect. The story of this sweet white powder is worth discussing in depth because it is so ubiquitous in our food supply. Many people use it outright, or eat any number of the 5,000 products in which it appears—believing that since aspartame is meant to be a replacement for sucrose (table sugar), it is harmless and even helpful. But in fact, aspartame is a highly dangerous neurotoxin.

Originally synthesized under the brand name NutraSweet®, aspartame was produced by other companies after Searle's patent expired in 1992. Aspartame has also been marketed under the names Equal®, Spoonful®, Equal-Measure®, Canderel®, Benevia®, and Misura®. (Industry now wants to market it with the word "amino" in its name to suggest a naturally occurring amino acid, thus bypassing consumer fears.)

In July 1974, the FDA delayed approval of aspartame for dry goods due to many independent tests affirming the chemical's dangers. One study by Dr. John Olney, research psychiatrist from the Washington School of Medicine, revealed holes in the brains of mice after they consumed aspartic acid, a major ingredient in aspartame. In another study, Dr. Harry Waisman, Professor of Pediatrics at the University of Wisconsin, fed aspartame in milk to seven infant monkeys. After 300 days, five of them had *grand mal* seizures and one of them died. Milk tends to mitigate some damage from the chemical, so imagine what would have occurred had the monkeys not been fed milk.

In 1975, an FDA-appointed task force discovered that when Searle had initially submitted research to the FDA, all negative data—including the fact that a high proportion of animals fed aspartame developed tumors—was omitted from the report. Searle personnel had simply removed the tumors surgically from the animals and reported them as healthy without checking the animals for cancer.

As a result of these findings, in 1977 a second task force was assigned to investigate the conclusions of the first task force. After this group also charged that Searle had falsified data, the FDA ordered a grand jury investigation of Searle's aspartame studies. Yet during the time the grand jury was active, it did not initiate any legal action against Searle. After the grand jury disbanded, Assistant US Attorney William Conlon, a member of the grand jury, accepted employment with the law firm that represented Searle.

Concurrently in 1977, Searle hired as its CEO former White House Chief of Staff Donald Rumsfeld—and aspartame's status as safe was virtually guaranteed. In January 1981, very soon after Rumsfeld promised a speedy approval, aspartame was indeed approved for use in dry foods by Dr. Arthur Hayes, who had just become FDA Commissioner despite objections by the FDA's own Public Board of Inquiry. In 1983, Hayes approved aspartame for use in diet soft drinks. One month later, Hayes left the FDA—and a few months after that, he began working for the advertising agency that handled NutraSweet®. Hayes joined the firm with a 10-year contract at $1,000 a day.

Meanwhile, complaints to the FDA about aspartame multiplied. People's symptoms included, but were not limited to: arthritis; autoimmune disorders such as Lupus; burning of the eyes, blurry vision and blindness; digestive disorders, including nausea and vomiting; hearing loss and tinnitus (ringing in the ears); heart problems, including chest pain, palpitations and hypertension; muscle cramping and joint pain; neurological problems, including depression, memory loss, Multiple Sclerosis, hyperactivity, tremors, seizures, Alzheimer's, slurred speech, headaches and migraines, dizziness, and Parkinson-like symptoms; respiratory problems, including asthma and chronic cough; sexual problems, including infertility, impotence and menstrual problems; tumors of the testicles, breasts and brain; urinary disorders, including burning urination; and even coma and death. Not surprisingly, a chemical of this magnitude also creates birth defects in fetuses of pregnant women. This huge range of conditions is due to the ability of aspartame to so thoroughly affect the brain and nervous system. Thus, it can mimic any symptoms and worsen other conditions that are already present.

The new FDA commissioner, ignoring the agency's own register of 10,000 complaints, refused to demand an analysis of the chemical—despite the fact that respected researchers confirmed that aspartame breaks down and releases formaldehyde and diketopiperazine (known to cause brain tumors) after being stored in the refrigerator for only 10 weeks. Diet Coke®, a favorite beverage of teenagers, is often stored for that period of time before being drunk.

Then the FDA complaints disappeared entirely. Although the agency had once listed 92 adverse reactions from aspartame—and, in fact, sent a list to all who queried or complained—in 1996, the FDA stopped taking complaints and now denies the report's existence.

By now, enough people had been injured to create a shift. In September 2004, the National Justice League filed charges in a California court against, among other defendants, NutraSweet® Co., the American Diabetes Association, and Monsanto. (Monsanto had purchased G.D. Searle in 1985, and made Searle Pharmaceuticals and NutraSweet® separate subsidiaries.) Among other charges, the drug manufacturer, and the food conglomerates that used the chemical in their products, were accused of racketeering, false advertising and consumer fraud. The court papers disputed the claim that aspartame is safe (including for children and pregnant women). Donald Rumsfeld was also mentioned in the lawsuit.

The arguments used to justify aspartame's presumed safety are insidious. Proponents claim that because two of aspartame's three ingredients, aspartic acid and phenylalanine, are comprised of amino acids (the building blocks of protein), they are "natural" and thus easily handled by the body. The rationalization is that "the body cannot distinguish between the amino acids in aspartame and milk." However, this is not true. All protein foods contain more than just two amino acids, which ensures that the potentially unbalanced effects of one or two amino acids that would flood the system are counteracted by other naturally-occurring amino acids. As evidenced by the growing number of complaints, this balance does not exist with the synthetic sweetener. Moreover, it was

recently discovered that aspartame is created with a genetically engineered bacterium.

There's also a problem with methanol, the third ingredient in aspartame. Webster's Dictionary defines methanol as "a colorless, volatile, inflammable, poisonous liquid, $CH_3OH$, obtained by the destructive distillation of wood and used in organic synthesis, as a fuel, and in the manufacture of formaldehyde, smokeless powders, paints, etc."[84] The only concession that the FDA finally made to consumers is the requirement that foods containing aspartame be labeled for phenylalanine. Phenylalanine is acknowledged to be dangerous to people with a genetic disorder called phenylketonuria (PKU). Since such individuals lack the enzyme necessary to metabolize phenylalanine, the chemical accumulates in the body. At a high enough level the chemical causes severe brain damage.

Although the uproar over aspartame received some media publicity—including Dr. Frank Walton's report on the television show "60 Minutes," which revealed that of 90 independent studies *not funded by the manufacturer*, 83 showed problems with aspartame—this chemical is still on the market, and falsely touted by the FDA as safe.

Splenda®, the more recent marketplace rival of NutraSweet®, is as unsafe as its competitor. Chemically related to DDT, Splenda® causes swelling of the liver and kidneys. Studies showed that the thymus gland—a key component of one's immunity—shrank 40% in rats fed food laced with Splenda®.

Now that the patent on aspartame is expiring, Monsanto has introduced a new, more potent poison called neotame. A slightly modified version of aspartame, neotame is 7,000 to 13,000 times sweeter than sugar. The addition of a few extra chemicals does not make neotame safer than its counterpart.

## HOW DRUGS ARE MARKETED AND PUBLICIZED

Common sense, standard language usage suggests that the approval of drugs and the marketing of drugs are two clearly separate issues. But the cozy relationship between the drug industry and the FDA has blurred the two so that they are almost indistinguishable from each other. Since billions of dollars in advertising yearly plays such a key role in persuading people to take medications, it is worth examining how drugs are marketed.

### *Corporate-Owned Media*

Some readers are old enough to remember the days of "mom and pop" businesses—individual stores owned by the couple on the corner, which did not have to compete with chain stores owned by huge corporations. The local five-and-ten has not been the only business forced to shut down by mega-corporations. There once existed independent book publishing companies, newspapers, magazines,

> [The pharmaceutical industry] has moved very far from its original high purpose of discovering and producing useful new drugs. Now primarily a marketing machine to sell drugs of dubious benefit, this industry uses its wealth and power to co-opt every institution that might stand in its way, including the US Congress, the Food and Drug Administration, academic medical centers, and the medical profession itself. . . .
>
> The great majority of "new" drugs are not new at all but merely variations of older drugs already on the market. These are called "me-too" drugs. The idea is to grab a share of an established, lucrative market by producing something very similar to a top-selling drug. . . . Of the 78 drugs approved by the FDA in 2002, only 17 contained new active ingredients, and only 7 of these were classified by the FDA as improvements over older drugs. The other 71 drugs approved that year were variations of old drugs or deemed no better than drugs already on the market. The me-too business is made possible by the fact that the FDA usually approves a drug only if it is better than a placebo. It needn't be better than an older drug already on the market to treat the same condition; in fact, it may be worse. There is no way of knowing, since companies generally do not test their new drugs against older ones for the same conditions at equivalent doses. (For obvious reasons, they would rather not find the answer.)
>
> As their profits skyrocketed during the 1980s and 1990s, so did the political power of drug companies. By 1990, the industry had assumed its present contours as a business with unprecedented control over its own fortunes. For example, if it didn't like something about the FDA, the federal agency that is supposed to regulate the industry, it could change it through direct pressure or through its friends in Congress.
>
> —Marcia Angell, MD
> excerpts from "The Truth About the Drug Companies," *New York Review of Books*, 2004
> and
> *The Truth About the Drug Companies: How They Deceive Us and What to Do About It,* 2004

and television and radio stations. Now, the word "independent" cannot describe the major media, by any stretch of the imagination.

*A handful of corporations own the media in the United States.* These corporations decide what the public will read, see, watch and hear. Clearly, their interest is to mold what we perceive—and what we believe to be true.

Ben Bagdikian is an author intimately familiar with the media. In his 1983 book, *The Media Monopoly*, he warned that the 50 corporations that (at the time) owned the majority of all news media in the US were becoming much too powerful. Critics laughed at him. In the 4th edition of his book, published a mere nine years later, Bagdikian pointed out that less than two dozen corporations owned 90% of the mass media. This included not only newspapers, magazines, TV and radio stations, but also books, records, movies, videos, and wire services. Bagdikian predicted then that eventually this number would drop to about half a dozen companies. By 2000, when the 6th edition of *The Media Monopoly* was published, Bagdikian's prediction had proved uncannily prescient. The number of media controlling monopolies had dropped to six. Since 2000, more media mergers have occurred. The expanding media giants now include the Internet market.

In 2004, Bagdikian's once more revised and expanded book, *The New Media Monopoly*, documented even more mergers. "These five [corporations] are not just large," Bagdikian writes,

> though they are all among the 325 largest corporations in the world—they are unique among all huge corporations: they are a major factor in changing the politics of the United States and they condition the social values of children and adults alike. These five huge corporations—Time Warner, Disney, Murdoch's News Corporation, Bertelsmann of Germany, and Viacom (formerly CBS)—own most of the newspapers, magazines, books, radio and TV stations, and movie studios of the United States. . . . General Electric's NBC [is] a close sixth.

Bagdikian addresses the effects of these conglomerates on our culture:

> They manufacture politics and social values. The media conglomerates . . . have almost singlehandedly as a group, in their radio and television dominance, produced a coarse and vulgar culture that celebrates the most demeaning characteristics in the human psyche—greed, deceit, and cheating as a legitimate way to win (as in the various "reality" shows). . . . [They have also] been a major factor in . . . television's increasing crudity and violence because such programs are the cheapest to produce.
>
> These five conglomerates have newspapers and broadcast stations in cities and towns all over the United States, but local people have no voice in what they see and hear, even though, under law, the American public owns the air waves.
>
> The five giants fight each other for high ratings in radio and TV, but unseen by the average American, they are quietly corporate partners in joint ventures that make them more like a cartel of interlocked companies.[85]

The reach of these corporations extends around the world, to literally every continent. This influence helps explain why, a couple of decades ago, NBC killed a news story on the dangers of nuclear power plants. General Electric, which owns NBC as well as many such plants, didn't want its stock to fall.

Corporate media power also explains why the agenda of drugs and surgery is pushed so hard, and holistic modalities are trivialized, ignored and outright slandered. And it explains why most people in the US have still not heard of rife technology.

### *The Fallacy of Peer-Reviewed Articles*

The presumably objective peer review process typical of most scientific journals is not any less biased than the drug company write-ups. In fact, peer review is seriously, *scientifically flawed*.

In a piece titled "Something Rotten at the Core of Science?" the author writes:

> A recent US Supreme Court decision and an analysis of the peer review system substantiate complaints about this fundamental aspect of scientific research. Far from filtering out junk science, peer review may be blocking the flow of innovation and corrupting public support of science. . . . Given the fact that most reviewers are likely to be mainstream and broadly supportive of the existing organization of the scientific enterprise, it would not be surprising if the likelihood of support for truly innovative research was considerably less than that provided by chance. . . . The public might be right in groping its way to a conclusion that there is something rotten in the state of science.[86]

As those few corporations keep buying up smaller ones (making their media empires even larger), easy

media access to the truth becomes even more elusive. This is why I go out of my way to look for my information in non-mainstream publications. There are some excellent sources of "alternative" data in References and Appendix A. Appendix D lists articles on research with frequencies that don't mention Royal Rife.

### *Industry Ties to Medical Journals*

An interesting piece, "Scientists Often Mum About Ties to Industry," appeared in *The New York Times* in 2001.

> Scientists who report research findings are expected to divulge any financial ties that might influence their work. But often they do not, according to the first comprehensive analysis of disclosure policies in science and medical journals.
>
> In reviewing 61,134 scholarly articles published in 181 academic journals in 1997, researchers at Tufts University and the University of California at Los Angeles found that just one-half of one percent detailed personal financial interests, including consulting arrangements, honorariums, expert witness fees, company equity and stock, and patents. All of those few disclosures appeared in just a third of the 181 journals.
>
> It is possible, of course, that scientists have few conflicts to report. But experts say previous studies have shown that as many as half of all academic researchers consult with industry. . . . Journal editors [says one expert] "are not forceful enough" in requiring disclosure, "or there is widespread disobedience" of their rules.[87]

This conflict-of-interest problem became so serious that in 2000, *The New England Journal of Medicine* apologized to its readers for violating its own rules. It had published "reviews of the medical literature on drug therapies despite the reviewers' financial relationships with the companies marketing the drugs."[88]

### *Industry-Sponsored and Ghostwritten Articles in Medical Journals*

Ghostwritten papers from medical school doctors are common, a fact now becoming known to a wider public.

In 2001, CBS News reported former Wyeth-Ayerst executive Jo Alene Dolan as saying that all drug companies ghostwrite, and that doctors always know about drug industry involvement. CBS News also revealed that Wyeth hired a company called Excerpta Medica to create a market for its diet drug Redux®. To create this market, Excerpta paid doctors to review and sign the articles that were submitted to nine medical journals, without telling the doctors that it (and they) were being funded by Wyeth. Excerpta claimed that the doctors knew about Wyeth's funding of the ostensibly unbiased article. However, Dr. Richard Atkinson, professor of Medicine and Nutritional Sciences and the director of the Beers-Murphy Clinical Nutrition Center at the University of Wisconsin Madison Medical School—who reviewed and signed one of the Redux® papers—refuted this claim. "If I knew that a drug company had some role," he said, "in sponsoring a talk, an article, a symposium, whatever, I think I would be more on my guard to make sure that there was not any bias introduced." Significantly, Excerpta Medica did not use the term "ghostwrite." Instead, it said that the authors "facilitate."[89]

Eventually, Redux® was linked to heart and lung problems. It was pulled from the market and the article on it was never published. Nevertheless, the politics of drug promotion illustrated by this event is typical. The fact that respected medical journals and otherwise honest doctors become ensnared in these politics indicates the scope and severity of the problem.

### *No Funding for Non-Drug Studies*

More and more, I am hearing stories about serious researchers, many of them rifers, who submit articles containing scientifically sound studies to journals that reject the articles because they do not conform to mainstream thinking (as if mainstream thinking had brought us so many solutions!).

Unfortunately, many intelligent and original articles about various topics (including life-saving healing modalities) are never accepted for publication. The very periodicals that are supposed to impartially report new developments in science actually discourage them, because chief advertisers in medical journals consist of pharmaceutical and medical supply companies—the very businesses that are threatened by innovative, non-drug treatment modalities.

Some scientific journals don't carry huge glossy ads. But this doesn't mean that they have an objective publication policy. Advertisers always instruct editors of publications to make sure that the content of editorials and stories match the advertising content. If a piece is considered too controversial, the advertisers simply take their business elsewhere.

A similar problem exists with funding for scientists and scientific organizations, which rely on corporations, on universities that are in turn funded by corporations, or on foundations that are also either directly funded by

### Double Standard

I use absolutely no drugs, not even the psychoactive drug used by 53% of Americans (caffeine). . . . I'm no supporter of marijuana or any recreational drug, but if using marijuana to feel better is a crime, then why isn't the same standard applied to prescription drugs? If you think marijuana destroys your memory, you should try statin drugs sometime. They can destroy a person's normal brain function in mere months, leaving them in a drug-induced stupor that makes potheads look downright clever. . . . In my view, we should be arresting and locking up the Big Pharma executives and corrupt FDA officials who continue to push dangerous drugs that kill 100,000 Americans each year. If you really want to protect the public from dangerous drugs, start arresting and prosecuting the truly dangerous drug dealers—the ones operating under the FDA protection racket.

—Mike Adams, 2006
www.naturalnews.com/019340.html

corporations, or have key personnel whose money and other interests are tied to corporations.

### *Publicity Does Not Mean Quality*

Most of us are taught that a product that has survived in the marketplace must be useful, worthwhile, well-made, etc. But this is not necessarily true. Advertisers count on this assumption in order to sell products. The more an idea is hammered into the public's consciousness, the more we become receptive to it simply through sheer repetition. In fact, Big Pharma spends $60 billion annually on marketing—almost two times what it spends on research and development—to ensure that we are not only willing, but eager to ingest these synthetic substances.[90]

## DOPING OUR CHILDREN

### *Effects of Psychotropic Drugs*

Solid evidence of drug-related disasters continues to grow. One of the best articles, "School Violence: The Psychiatric Drugs Connection," has received substantial publicity since its publication in the late 1990s. The author, Pulitzer Prize-nominated investigative reporter Jon Rappoport, writes that the problems caused by Prozac® and other prescription mind-altering drugs is much more widespread than the *PDR*® and mainstream media have disclosed. As it turns out, a disproportionately large percentage of teenagers were on some form of anti-depressant when their shocking, senseless murder rampages made national news.

There are many examples of both suicides and murders resulting from the effects of psychotropic drugs. In March, 1998, 13-year-old Mitchell Johnson and 11-year-old Andrew Golden killed five and wounded eleven people in a school in Arkansas. Two months later, 15-year-old Kip Kinkel first killed his parents, and then two students, in a school cafeteria in Oregon. The now-infamous Columbine High School in Littleton, Colorado was the site of the April 1999 tragedy during which teenagers Eric Harris and Dylan Klebold fatally shot 12 students and a teacher, and wounded 24 other students before committing suicide. And in 2005, in Red Lake, Minnesota, a teen named Jeff Weise first killed his grandfather and his grandfather's girlfriend, and then went on a shooting rampage at the local high school that left nine people dead and more than a dozen wounded. He then took his own life.

These massacres sparked heated public discussion about the need for more caring parental involvement in the children's lives, for school personnel to be willing to report aberrant student behavior, for more responsible sale of guns, and for the entertainment industry to refrain from pushing murder and violence as acceptable forms of fun. All of these factors are relevant and changes are obviously needed. However, the one critical factor that was conspicuously absent in reports from all but the most obscure (independent) media was drug treatment history. In these and fourteen other similar acts of violence between 1992 and 2000, *virtually all of the teenagers were on legally prescribed drugs*—Prozac®, Zoloft®, Paxil® and/or Luvox®—used to treat depression and obsessive-compulsive disorder. It took several years for Eric Harris's autopsy report to be made public. Apparently, the low "therapeutic" levels of the antidepressant Luvox® in his system at the time of death were not therapeutic after all. In the case of Jeff Weise, his anti-depressant prescription had just been increased to 60 mg a day.

Rappoport quotes psychiatrist Joseph Tarantolo, president of the Washington chapter of the American Society of Psychoanalytic Physicians:

> [The drugs] relieve the patient of feeling. He becomes less empathic, as in "I don't care as much," which means, "It's easier for me to harm you." If a doctor treats someone who needs a great deal of strength just to think straight and gives him one of these drugs, that could push him over the edge into violent behavior.[91]

Psychiatrist Peter Breggin, author of *Toxic Psychiatry*, *Talking Back to Prozac®* and *Talking Back to Ritalin®*, told Rappoport:

> With Luvox®, there is some evidence of a 4% rate for mania in adolescents. Mania, for certain individuals, could be a component in grandiose plans to destroy large numbers of other people. Mania can go over the hill to psychosis. . . . I have no doubt that Prozac® can cause or contribute to violence and suicide. I've seen many cases. In a recent clinical trial, 6% of the children became psychotic on Prozac®. And manic psychosis can lead to violence.[92]

Since Breggin has a reputation of being antagonistic to the pharmaceutical industry, it is easy for his critics to discount him. But it is harder to discount negative input from someone who works for the manufacturer of the drug. In 1994 David Healy, consultant for Eli Lilly (the pharmaceutical conglomerate that produces Prozac®), conducted a study proving that antidepressants can induce suicidal tendencies. A 1995 issue of the *British Medical Journal* contains data linking Prozac® to increased suicide risk. By 1996, the FDA had received 35,000 complaints about Prozac® alone. A review-study called "Antidepressants for Children" in a 1996 *Journal of Nervous and Mental Diseases* concludes that "despite unanimous literature of double-blind studies indicating that antidepressants are no more effective than placebos in treating depression in children and adolescents, such medications continue to be in wide use."[93]

Rappoport cites numerous studies that have appeared in respected professional publications not routinely read by the general public. The February 1990 *American Journal of Psychiatry* chronicled six depressed people, not known to be suicidal, who developed "intense, violent, suicidal preoccupations after 2 to 7 weeks of fluoxetine [Prozac®] treatment." The obsessions with suicide lasted from 3 days to 3 months after the medication was withdrawn. According to the study, 3.5% of Prozac® users were at risk. In "Emergence of self-destructive phenomena in children and adolescents during fluoxetine treatment," the authors report "self-destructive phenomena in 14% percent (6 out of 42) of children and adolescents (10 to 17 years old) who had treatment with fluoxetine (Prozac®) for obsessive-compulsive disorder." In yet another article, which appeared in the July 1991 *Journal of Child and Adolescent Psychiatry,* a 13-year-old boy was described as "full of energy," "hyperactive," and "clown-like"; but after taking Prozac®, he exhibited sudden and violent acts that were "totally unlike him." And a 1991 issue of the *Journal of the American Academy of Child and Adolescent Psychiatry* reported that a depressed 10-year-old boy, after being treated with Prozac®, became "hyperactive, agitated, [and] . . . irritable," making a "somewhat grandiose assessment of his own abilities."[94] He also phoned a stranger and threatened to kill him. After the Prozac® was stopped, the symptoms disappeared.

Ritalin® is customarily used to treat attention deficit disorder (ADD), also known as attention deficit hyperactivity disorder (ADHD). This well-known drug is also implicated in murderous rampages. Rappoport mentions that as early as 1986, the *International Journal of the Addictions* published an extensive literature review by Richard Scarnati titled "An Outline of Hazardous Side Effects of Ritalin® (Methylphenidate)," complete with indexed journal articles pertaining to the over 100 symptoms listed. Symptoms include aggressiveness, akathisia (the inability to remain seated, with the tendency to be in constant, often repetitive motion), brain damage, convulsions, paranoid delusions, insomnia, toxic psychosis, terror, screaming, visual and auditory hallucinations, pathological thought processes, extreme withdrawal, and decreased REM sleep.

REM is an acronym for Rapid Eye Movement. These eye movements, through closed lids, indicate dreaming, and they occur an average of two hours a night as a normal part of the sleep cycle. A decrease in the amount of REM sleep can be highly detrimental to psychological and physiological health. When REM sleep is continually interrupted over long periods of time, signs of sleep disturbance occur, including the inability to mentally focus, lack of motor coordination, and emotional volatility. This sounds very much like the psychotic and hallucinatory reactions described as "side" effects of Ritalin®.

### *Waking Up*

Parents of children who become suicidal and delusional after taking psychotropic medications know the heartbreak of seeing a once-"good" child (albeit with problems) become a behavioral, amoral monster. One of the first states to take a firm stand against the drugging of children was Colorado. On November 11, 1999, the Colorado State Board of Education adopted a resolution to "encourage school personnel to use proven academic and/or classroom management solutions to resolve behavior, attention, and learning difficulties" since there exist sufficient "documented incidents of highly negative consequences in which psychiatric prescription drugs have been utilized for what are essentially problems of discipline which may be related to lack of academic success."[95] (And, I might add, nutrient starvation. As one writer put it, "ADD, Attention Deficit

Disorder, has been coined to characterize children deficient in magnesium and iodine."[96])

Fred A. Baughman, Jr., a medical doctor who was instrumental in getting the resolution passed, pointed out that the US has the highest number of drugged children on the planet. An article received by the committee claimed that ADHD is "a real disease," and that "unless treated with drugs of addiction (Ritalin®, Adderall®, Dexedrine®, etc.), it (ADHD) leads to more later-in-life, adolescent, and adult addiction and substance abuse than if there were no treatment at all."

The Colorado committee was wise enough to see that there is no evidence to support the claim that ADHD is a genuine illness. Methylphenidate is "classified as a Schedule II, controlled substance. . . . [It is a] central nervous system (CNS) stimulant and shares many of the pharmacological effects of amphetamine, methamphetamine and cocaine." In truth, as Baughman pointed out, the drugs that were used for treatment were themselves addictive, with another respected study concluding that

> children treated with these stimulants take up smoking earlier, smoke more heavily and are more likely to abuse cocaine and other stimulants as adults. . . . Make no mistake about it—it is the representation of ADHD as a disease, the children as diseased, abnormal, that is the linchpin of all of this. Lacking a disease; lacking diseased children, there is no justification of giving such drugs. Nor is it legal to give such drugs to admittedly normal children.[97]

Colorado State Board of Education member Patti Johnson agreed. When she testified before the US House of Representatives on September 29, 2000, she also pointed out that educators are not allowed by law to practice medicine. "Yet . . . financial incentives exist for schools to label children with learning disorders." She presented several examples of how parents are coerced into giving their children medication:

> [One parent] said she was told her son had ADHD. . . . The school's special education director eventually admitted that she had coaxed the teacher to answer the questions of the checklist used to determine if the child had ADHD in a certain manner so her son "would get the help he needed."
>
> [Another parent] said he at first complied with the school's direction to have his son take a stimulant drug. The drug caused his son to become violent; he began taking steak knives out of the kitchen and stabbing his stuffed animals. When the parent took him off the drug, the principal of the school began pressuring him to resume the stimulant—so much pressure that the matter is now in court and the father could forfeit parental rights if he disagrees with the decision of the court on whether or not to place his child on Ritalin®. . . .
>
> The label of ADHD [in the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders,* or *DSM*] is assigned if the child exhibits such symptoms as not listening when spoken to, is forgetful, fails to finish homework, fidgets, talks excessively, etc.—*the typical behavior of a normal child*. [emphasis added] Parents of children said to have these disorders are generally told that it is a neurological disorder or a chemical imbalance in the brain. Yet . . . the National Institutes of Health on ADHD in November 1998 . . . reported that "we do not have an independent, valid test for ADHD, and there are no data to indicate that ADHD is due to a brain malfunction. . . ."[98]

### *Information Cover-up*

In general, laypeople who do not read "alternative" literature or research on the Internet are more hindered than doctors in their access to information. They usually are not permitted to see the handouts given to medical professionals. Most have never even seen a copy of the *PDR*®—an expensive, huge volume available only to doctors, and often not found in libraries (unless an older volume is contributed when the donor obtains a new one). And despite a recent increase of articles about people who have been harmed by drug companies, the multi-faceted truth about drugs is still conspicuously absent in the mainstream press. Such omissions, combined with limited access to data, can make it hard for the public to believe the extent of industry cover-up.

Physicians are not immune to the effects of selective information either. Even though the *PDR*® is a source of valuable information, it is not as thorough in its description of "side" effects of drugs as the in-depth articles published in professional journals. Literature issued by the drug companies is likewise limited. For instance, as reported by Null and Feldman, "Eli Lilly states in Prozac's® information sheet that the drug can cause akathisia [restlessness, pacing, and anxiety]. However, the company has said that less than 1% of Prozac® users experience this side effect, while a report in the *Journal of Clinical Psychiatry* has estimated that the actual share of Prozac® users who suffer from akathisia is 10% to 25%."[99] These percentages vary greatly. Unless doctors specifically take time to

extensively search the medical literature for more comprehensive information, they are limited to drug company literature and *PDR*® summaries of edited data.

The problem of lies and omissions is compounded by the existence of organizations that appear to serve the public but have ties to the drug industry. Consider, for example, the case of Ritalin®. The presumably "independent" national ADD support group called CHADD (Children and Adults with ADD) has received almost one million dollars from the Ritalin® manufacturer. Not coincidentally, CHADD recommends Ritalin® for all children with so-called attention deficit disorder.

Despite industry attempts to conceal the effects of psychotropic drugs, the emotional imbalances and violent behavior induced by Prozac® prompted February 7, 1991 headlines in two major newspapers: "Murder Trials Introduce Prozac® Defense" in the *Wall Street Journal* and "Suicidal Behavior Tied Again To Drug: Does Antidepressant Prompt Violence?" in *The New York Times*. Other media briefly mentioned the teenagers who were taking antidepressants before the Colorado shootings.

For a long time after the initial exposés appeared, there was almost no mention of this link in American newspapers, magazines and television. As Rappoport points out, the mainstream media is

> afraid to go after psychiatric drugs as a cause of violent crime. This fear stems in part from the sure knowledge that expert attack-dogs are waiting in the wings, funded by big-time pharmaceutical companies. There are doctors and researchers who have seen a dark truth about these drugs in the journals, but are afraid to stand up and speak out. After all, the medical culture punishes no one as severely as its own defectors.[100]

These words are even more meaningful if you consider that Marc Czarka, the director of pharmaceutical affairs for Eli Lilly Benelux, admits that the company contributes money to the American Psychiatric Association.

### *Parental Action*

It took enlightened consumers (and parents of children who were harmed) to initiate lawsuits against "designer" poisons and the companies that make them. The first landmark lawsuit against Eli Lilly and Prozac® was initiated in the early 1990s. The plaintiff in this case, Fentress, made the accusation that Prozac® had induced murder. Being "the first action involving Prozac®," Rappoport observes, "it would establish a major precedent for a large number of other pending suits against the manufacturer." Using data culled from (among other sources) an article by Michael Grinfeld called "Protecting Prozac®" that appeared in the December 1998 issue of *California Lawyer*, Rappoport describes how the trial appears to have been fixed. In an astoundingly weak argument against Lilly, Paul Smith, the attorney for the plaintiff, did not even refer to criminal violations committed by Lilly on other occasions—information that would have greatly helped strengthen his client's case. After deliberating only five hours, the jury returned with a verdict favorable toward Lilly. Apparently, Smith had omitted the damaging evidence against Lilly to induce a favorable verdict for the drug company. In return, the case would be settled out-of-court, *in secret*, between Lilly and the plaintiff. Judge John Potter, who presided over the case, asked lawyers for both sides if "'money had changed hands.' The lawyers said no—without, however, acknowledging that an agreement was [already] in place."[101] Technically, the attorneys had not lied. No money had changed hands (yet).

Since that trial, there has been an ongoing investigation against the attorney Smith. Rappoport cites Grinfeld:

> In court papers, [Judge] Potter wrote that he was surprised that the plaintiff's attorneys [Smith] hadn't introduced evidence that Lilly had been charged criminally for failing to report deaths from another of its drugs to the Food and Drug Administration. Smith had fought hard [during the Fentress trial] to convince Potter to admit that evidence, and then unaccountably withheld it.
>
> In 1996, the Kentucky Supreme Court issued an opinion on all this: ". . . there was a serious lack of candor with the [Fentress] trial court and there may have been deception, bad faith conduct, abuse of the judicial process or perhaps even fraud."[102]

Sometimes, complainants are paid to shut up. Subsequent cases against Lilly, Rappoport writes, at least until around the year 2000, were settled without a trial, "with such strict confidentiality, that it is almost as if they never happened. This smoothness, this invisibility, keeps the press away." Out-of-court settlements also discourage greater numbers of people from coming "out of the woodwork with lawyers and Prozac® horror-stories of their own because they are not reading about $2 million or $10 million or $50 million settlements paid out by Lilly."[103]

Nevertheless, small victories are occurring. Although Eli Lilly persisted in denying the validity of the study published in the February 1990 *American Journal of Psychiatry* that links suicides to the ingestion of Prozac®, one of its

divisions, Dista Products, issued a brochure for doctors dated August 31, 1990, stating that in the future "suicidal ideation" would be included in the adverse events section of its Prozac® product information.

There is another victory, although because of the government's largely successful attempts to control individual behavior, it may be a partial one. In 2000, New York-based Michael Carroll was visited by the Department of Social Service, which threatened to take away his 4-year-old son Kyle if he *stopped* giving his son Ritalin®. According to an article in the *Christian Science Monitor*, Michael had halted Kyle's medication because the drug not only failed to help the boy with his reading problem, but it made him withdrawn and unable to sleep or eat. "From the beginning . . . I kept asking for special-education classes," Michael is quoted as saying. "They just wanted him to sit still and to push him through the system." Fortunately, a judge ruled that the concerned father could stop drugging his child if he found another doctor who said that Ritalin® was unnecessary. "Since August, Kyle has not used Ritalin®," the author writes. "He's regained his appetite, and his father says Kyle is his old outgoing self and is doing well in special-education classes at a different school."[104]

There have been more lawsuits against pharmaceutical companies. At least two have recently received class-action status, in California and New Jersey, as the number of lawsuits continues to grow. And California and New York lawsuits contend that the drug companies Novartis and Ciba-Geigy, along with the American Psychiatric Association and CHADD, have conspired to create an enormously broad-based definition of attention deficit hyperactivity disorders to ensure hefty sales and profits.

It is heartening that the overmedication of children is now being recognized by doctors and parents as a nationwide epidemic, even though for some, this recognition has come too late. From a 2004 newspaper article:

> At least 110 American kids have killed themselves while taking antidepressants during the past, new FDA data says. . . . Those reports . . . led a scientist for the Food and Drug Administration to conclude that most antidepressants raise the risk of suicide in children. . . . The FDA is now considering whether to issue stronger warnings or advise against their use, as Great Britain has done.[105]

Or consider this April 2004 story from *The New York Times*, which quotes one doctor as stating bluntly, "There is no good reason to prescribe these pills."[106] Eventually, the Individuals with Disabilities in Education Act (IDEA) was amended to address the forced medication of children. Schools would no longer have the right to coerce parents into medicating their children as a condition of their child's attendance at school.

Even as this important amendment was becoming law in 2004, pharmaceutical manufacturers appeared to be replacing lost income from discredited older drugs by creating new drugs, and then denying responsibility for subsequent damage. This denial has had fatal consequences. In February 2004, 19-year-old Traci Johnson hanged herself at Lilly's Indianapolis clinic. Johnson, whom Lilly acknowledged had been healthy, was taking part in a clinical trial to see how high doses of the antidepressant Cymbalta® affected healthy volunteers. The young woman had been taking up to *six times* the recommended 60 mg daily dose for depressed subjects. She was being weaned from the drug when she committed suicide. The FDA ruled six months later that the antidepressant had played no role in her suicide—even though, incredibly, the agency had told ten drug manufacturers in March to strengthen suicide-related warnings on labels for antidepressant drugs.

Something is seriously wrong with this picture. The FDA's warnings against similar drugs in the past—and its requirement of more complete labeling now—indicate an awareness of the connection between suicide and psychotropic drugs. Yet once again, a pharmaceutical manufacturer is absolved of liability. As awareness grows of the negative effects of psychotropic drugs, and as more young people become suicide headlines, class-action lawsuits by parents and doctors will be almost useless, due to new laws absolving drugs companies of liability and responsibility.

Now, more than ever, it is the responsibility of each individual to become more fully informed. Parents must educate themselves and choose wisely, if they want to protect their children.

### *The Consequences of Addiction*

I have devoted considerable space to the drugging of underage children for several reasons. My first point relates to the "dumbing down" of the population. Gary Null and colleagues point out that

> a whole generation of antidepressant users has resulted from young people growing up on Ritalin®. Medicating youth and modifying their emotions must have some impact on how they learn to deal with their feelings. They learn to equate coping with drugs and not their inner resources. . . . [Even the *Journal of the American Medical Association* admits] "Ritalin® acts much like cocaine."[107]

Unless the root causes of emotional upset (and perceived misbehavior) are addressed, relying solely on a foreign substance to balance one's brain chemistry makes little sense. Whoever heard of someone with a Prozac® deficiency? It is much more likely that nutrient deficiencies are involved. Yet nutritional imbalances and thyroid imbalances—which profoundly influence mood and affect a surprisingly high percentage of the population—are rarely, if ever, addressed by Western medicine. How can they be, since the allopathic model by definition does not look at the entire system? (The consequences of thyroid dysfunction are addressed in Chapter 5.)

Second, the problem of drugs in the schools is an excellent example of government interference in the private sector. Using the excuse that they are "concerned about students' health," school systems and government agencies continue to coerce children into being drugged, acting as doctors, even though it's not legal to practice medicine without a license.

My third point relates to culpability. Drug companies, as well as the agencies that are supposed to regulate them, are responsible for promoting the legal distribution of toxic chemicals. Yet each of us is responsible for becoming informed about what is really occurring in government and industry. Being informed allows us to make intelligent, compassionate decisions independent of pharmaceutical cartel propaganda. Adults must take the time to educate themselves, since most children are not equipped to do this, and their subordinate legal status makes them vulnerable to being poisoned in the name of "illness prevention." As long as parents remain blindly obedient to the allopathic paradigm of "it's broken, so let the medical-pharmaceutical cartel fix it," they will feed the political machine that seeks to exert tighter and tighter control over the general population—and sacrifice their children in the process.

What about people who insist that these drugs help? Some parents do report improvement in a child's behavior when the child is on medication. And when I had a psychotherapy practice, I counseled one adult who described more stable moods, and relief from depression, while on mood-altering medication. I have no reason to doubt these accounts. However, I ask at what price a relative handful of people are obtaining relief—and what they are missing by not trying other modalities. It is true that severe lack of focus, depression, and other negative psychological conditions correlate to chemical imbalances. However, correlation does not mean "cause." Just as brain chemistry imbalances can produce emotional, mental and behavioral dysfunction, emotional and environmental stresses (which may involve chemical contaminants and nutritional deficiencies) can produce chemical imbalances. And learning disorders can be inflamed or outright induced by many factors—from school and home life, to diet and heavy metals, to television and video games.

### *Electronic Media as a Drug*

In the last decade, parents and educators have become much more aware of the factors that negatively influence children's health. Obviously, a loving and stable family life is crucial for a child's well-being. However, school sometimes can overshadow the positive effects of the home. Children, who experience the most intense growth spurt in their entire lives, need to discharge their boundless energy in physical ways. Yet our culture forces them to sit still in often boring and irrelevant classes. Those children who are unable to tolerate what no adult would willingly undergo, are labeled "diseased."

Toxins that are ingested pose a particular threat. Diets of sugar, artificial chemicals, and dyes have long been shown to cause hyperactive behavior. Fluoride, which causes its own set of problems, is added to almost every toothpaste and to most of our municipal drinking water, even though toothpaste labels correctly state that it's a poison, and warn against children swallowing it because it's so toxic. These ingredients are discussed in more detail in Chapter 3.

One of the most ubiquitous and unrecognized dangers is electronic media. Computers, TVs and video games can stunt growth as palpably as can a poor diet. One scientist describes the effects of color television (and computer and video monitor) radiation on living organisms:

> [Color televisions] have three electron guns in the cathode ray tube (CRT), and operate at relatively high exciting voltages. The TV emits a wide spectrum of noxious energies, to include ELF [Extremely Low Frequencies], soft X-rays, radio frequencies and pulsed magnetic fields.[108]

Television additionally lulls viewers into a hypnotic trance from the abnormally loud, fever pitch speech patterns of the advertisements. And the lack of normal eye movements engendered by TV watching create abnormal, altered brain wave patterns. This is because the number and type of eye movements required to take in an entire, compressed scene on a TV screen are vastly fewer, and different, from those movements the eye would make if it were scanning the natural environment. Since the visual cortex occupies an enormous amount of space in the brain relative to other functions, vision is integrally connected to brain function. Watching television without natural eye movements diminishes the operation of the brain, and this literally impairs our thinking.

Abnormal activity in the visual-processing areas of the brain occurs at high levels in autistic children as well. Recently, researchers at Cornell University found a statistically significant correlation between autism rates and increased television watching in children under age three. The rise in childhood autism, one writer notes, began around 1980, when cable TV and VCRs became common. "Since the brain is organizing during the first years of life and since human beings evolved responding to three-dimensional stimuli, I wondered if exposing toddlers to lots of colorful two-dimensional stimulation could be harmful to brain development."[109]

This hypothesis does appear sound. In the Cornell study, the researchers factored in other variables such as indoor air quality (children watching TV spend much more time indoors), and the occurrence of higher-than-normal amounts of rainy and inclement weather (which encourages TV watching). The study concluded that there seems to be a direct link between autism and TV watching, and that practical conclusions can be drawn from that link.

> Autistic children exhibit abnormal activity in the visual-processing areas of their brains, and these areas are actively developing in the first three years of life. . . . [If] television has specific harmful medical effects—in addition to these new findings about autism, some studies have linked television viewing by children younger than three to the onset of attention-deficit hyperactivity disorder—parents may urgently need to know to keep toddlers away from the TV. . . . The American Academy of Pediatrics currently recommends against any TV for children under the age of two.[110]

The writer comments that among the Amish, who don't watch television, there is almost no autism. (The Amish also do not vaccinate their children.)

Becoming both brain-dead and, alternately, brain-hyper, seem to be casualties of the "screen" revolution. "Hi-tech maps of the mind," writes one British reporter, "show that computer games are damaging brain development and could lead to children being unable to control violent behaviour." This is not necessarily only due to the violence inherent in such "games," but, as brain scans have shown, the only portions of the brain stimulated are "associated with vision and movement. . . . The students who played computer games were halting the process of brain development [the frontal lobe] and affecting their ability to control potentially anti-social elements of their behaviour." In contrast, arithmetic pursuits

> stimulated brain activity in both the left and right hemispheres of the frontal lobe—the area of the brain most associated with learning, memory and emotion. . . . Whenever you use self-control to refrain from lashing out or doing something you should not, the frontal lobe is hard at work. Children often do things they shouldn't because their frontal lobes are underdeveloped. The more work done to thicken the fibres connecting the neurons in this part of the brain, the better the child's ability will be to control their behaviour. The more this area is stimulated, the more these fibres will thicken.[111]

Thus computers—like television, video games, DVDs, and cell phone screens—function as unrecognized, highly desirable and socially-sanctioned drugs. People are drugging themselves into oblivion without questioning the conditions that led them to medicate themselves in the first place. It matters little if the so-called drug takes the form of a chemical or electromagnetic radiation. The process is the same. It is still addiction. If an adult wishes to take drugs of whatever kind for whatever reason, that is his or her option. I am leery, however, of the ethics of giving drugs to a still-growing, dependent, neurologically immature child. Surely there are better options.

## DOPING THE REST OF US, OR DRUGS WHERE WE DON'T WANT THEM

### *Antibiotics in Our Food*

The misuse of antibiotics is rampant. Null and colleagues report that in the United States every year, between 3 and 5 million pounds of antibiotics are used on humans. "With a population of 284 million, . . . this amount is enough to give every man, woman and child 10 teaspoons of pure antibiotics per year."[112] Almost half of the people with upper respiratory tract infections receive antibiotics from their doctor, even though, as Null et al. point out, the Center for Disease Control cautions that 90% of these infections (including children's ear infections) are viral. Antibiotics cannot destroy viruses.

Humans are not the only ones given antibiotics. About 25 million pounds a year, Null et al. report, are used on animals. Of this amount, 23 million pounds are given not to treat disease, but to try to prevent it, as well as to try to stimulate growth. The need for disease prevention is due to the unnatural and stressful conditions under which factory farmed animals are forced to live.

These animals are confined in crowded quarters, with a deficit of sunshine and fresh air, and forced to eat food they were never meant to eat. This is discussed more in Chapter 3.

Overuse of antibiotics, Null and colleagues report, results

> in foodborne infections resistant to antibiotics. Salmonella is found in 20% of ground meat but constant exposure of cattle to antibiotics has made 84% of salmonella resistant to at least one anti-salmonella antibiotic. Diseased animal food accounts for 80% of salmonellosis in humans, or 1.4 million cases a year. . . . Approximately 20% of chickens are contaminated with *Campylobacter jejuni* causing 2.4 million human cases of illness annually. Fifty-four percent of these organisms are resistant to at least one anti-*Campylobacter* antimicrobial.[113]

It has been known for at least 10 years that the antibiotics people are forced to eat and drink have conferred antibiotic resistance to germs. In Scandinavia and other parts of the world, it has been found that decreasing the amount of antibiotics given to animals has little effect on food production costs. However, the US has not shown the same incentive in minimizing or eliminating this practice.

Excess antibiotic use has even affected plants. Both organic and conventional crops that are grown with manure from antibiotic-fed animals are taking in the drugs through their roots. Then, whoever eats the plants takes in unwanted drugs as well.

### *Drugs in Our Drinking Water*

People who are careful to limit their intake of pharmaceuticals, or who avoid taking them entirely, may still unwillingly ingest all kinds of drugs every time they take a sip of water. Detectable levels of drugs exist in virtually every body of water today, worldwide. According to the Environmental Protection Agency, whether the river, lake, creek, aquifer or groundwater is urban or rural, obviously dirty or seemingly pristine, it contains drugs. Our water also contains drug metabolites, which are byproducts, produced by the body, of the primary ingested chemicals.

How do drugs get into our water supply? The metabolites are excreted in urine. Hospital personnel flush expired and unused medications down the toilet. Consumers are advised to do the same. Drug companies pump waste from the manufacture of pharmaceuticals into nearby, convenient water bodies. These chemicals are not removed by most municipal filtering systems, which use even more chemicals to treat the water rather than the much safer, and very effective methods using carbon filtering, ultraviolet light, and ozone.

> We are a nation obsessed with pharmaceuticals. We spend vast sums to manage our health, and we pop pills to address every conceivable symptom. Some elderly Americans take as many as 30 drugs a day, some of them merely to counteract the effects of others. Prescription drug sales rose by an annual average of 11% between 2000 and 2005. Americans now fill more than three billion prescriptions a year; nationwide, more than 10 million women take birth-control pills, and about the same number are on hormone-replacement therapy. The rate at which prescriptions are dispensed is only going up as the population ages. Already, those over 65 fill twice as many prescriptions per year as do younger Americans.
>
> —Elizabeth Royte
> "How Prescription Drugs Are Poisoning Our Waters"
> *OnEarth Magazine*, 2006

"An aging population and our growing addiction to pharmaceuticals may have disastrous consequences for our water supply," writes Elizabeth Royte in "How Prescription Drugs Are Poisoning Our Waters." She describes how massive amounts of drugs move through the systems of the elderly into the water system:

> Heritage Village [is] a sprawling retirement community in western Connecticut. . . . [Its approximately 4,000 residents] take an average of six drugs a day. And that's a healthy population.
>
> In a convalescent home a few miles away, Patricia Reilly, age 88, wheels herself each morning toward a low shelf. With a glass of water and small cups of applesauce at the ready, she prepares to take her morning medicines: nine different types that treat heart disease, acid reflux, renal stones, a chronic urinary-tract infection, chronic constipation, migraine headaches, depression, allergic rhinitis, degenerative arthritis, and intermittent vertigo. The 120 residents of River Glen Health Care Center, where the average age is 90, take an average of eight drugs a day; the most common among them target high cholesterol, high blood pressure, depression, and diabetes. Once swallowed, Reilly's medications will bring her some relief, but their biological activity won't stop once they leave her body.

> When residents of Heritage Village and two other nearby retirement communities flush their toilets, wastewater laced with traces of prescription drugs rushes through a series of pipes into the Heritage Village treatment plant. This flushing is the main pathway by which pharmaceuticals enter the environment. . . .
>
> Through a process of settling and aeration, the Heritage Village plant separates liquids from solids, treats the liquid portion with disinfectant, and then discharges this effluent into a mini-creek that meanders between the third green and the seventh tee of the Heritage Village golf course. Making its way through a riparian band of oaks and maples, the creek fans out into the Pomperaug River, which loops without further interruption through the town of Southbury. . . . The effect of those drugs on the environment, and possibly on those who drink water pumped from those streams, is only beginning to be understood.[114]

The effects of medications have already been extensively documented. Here is a small sample, summarized from the above article:

- A Baylor University researcher found tiny amounts of Prozac® in liver and brain tissue of channel catfish and black crappie captured in a creek near Dallas that receives almost all of its flow from a wastewater treatment plant.
- A University of Georgia scientist found that tadpoles exposed to Prozac® morphed into undersize frogs, vulnerable to predation and environmental stress.
- The EPA reports that antidepressants can have a profound effect on spawning behaviors in shellfish and that calcium-channel blockers (used to relieve chest pain and hypertension) can dramatically inhibit sperm activity in some aquatic organisms.
- Even at extremely low levels, ibuprofen, steroids, and antifibrotics—a class of drugs that helps reduce the development of scar tissue—block fin regeneration in fish.
- According to a report by the Scientific Committee on Problems of the Environment, a worldwide network of scientists and scientific institutions, and the International Union of Pure and Applied Chemistry, more than 200 species—aquatic and terrestrial—are known or suspected to have experienced adverse reactions to such endocrine disruptors as estrogen and its synthetic mimics.

Fish, frogs and lab rats aren't the only life forms negatively affected by drugs. People are being affected on virtually all levels—behavioral, cognitive, immune, neurological, and reproductive. Moreover, hormones in the environment are now linked with lowered sperm counts and the development of breasts in males. Synthetic hormones (most notably estrogen) are found in medications and in some plastic containers that hold food.

Mercury, a byproduct of coal-burning power plants, chlorine production, cement manufacturing, hazardous-waste burning and metal refining, is also a problem. This highly poisonous heavy metal is now in our water supply as well as in vaccines.

Typically, a health risk assessment is based on the analysis of one chemical at a time. But this approach does not accurately reflect our exposure to many chemical compounds at once. According to a 2002 US Geological Survey, traces of 82 different contaminants—including drugs, fertilizers and flame retardants—were found in surface waters across the United States. The pharmaceuticals included antibiotics, antidepressants, anti-hypertensives, hormones, and painkillers.

The toxicological expertise now exists to assess the effects of many chemicals combined, which is how they are found in our environment. Whereas a single chemical might not have produced an effect, it takes lesser amounts, and lower levels of exposure, to produce symptoms when one is exposed to chemical stews.

"I'm worried for fish populations, and I'm worried for human populations," remarks environmental endocrinologist David Norris. "The levels found in Boulder Creek [one water body he studied] are low in absolute terms, but they aren't low on the biological level. You could have six chemicals below the no-effect level, but all together they are above the no-effect level."[115] This is why our symptoms from chemical cocktails are considered iatrogenic disease by Null and his colleagues.

## FIGHTING BIG PHARMA

Our current market economy seems skewed in favor of those who cheat. Dr. David Egilman, professor of medicine at Brown University in Rhode Island, believes that ethical companies cannot compete with unethical ones because "the penalties for getting caught never approach the cost advantages of increased profit, and there rarely are criminal penalties." The professor proposes a "reform package [that] must . . . press criminal charges against industry leaders who suppress data that results in death."[116]

Finally, some federal prosecutors are taking this advice. See below.

### *Conflict-of-Interest Lawsuits*

Subpoenas have been issued to several drug companies, among them, Bristol-Myers Squibb, Johnson and Johnson, and Wyeth. *The British Medical Journal* online reports that the subpoenas were "part of an investigation . . . into a pattern of financial incentives that the major drug makers have used to persuade doctors to favour their drugs." One manufacturer, Schering-Plough, was found to have

> paid doctors between $1,000 and $1,500 for each patient for prescribing its drug Intron® A [for treating hepatitis C]. . . . Six specialists in liver disease said Schering-Plough paid "consulting fees" to doctors to keep them loyal to the company's products.[117]

### *The Case Against Paxil®*

In 2004, Eliot Spitzer (then New York State Attorney General)—famous for his tough stance against companies that accrue profits at the expense of public health—sued the world's second-largest drug manufacturer, GlaxoSmithKline. Among numerous infractions concerning its leading antidepressant drug Paxil®, the company was accused of fraud, negligence, liability, breach of warranty, charging consumers too much—and, most important, of suppressing studies showing that the drug caused birth defects, and made children and adolescents violent and suicidal.

In October 2006, without admitting any wrongdoing for having withheld negative information about the medication's safety and effectiveness, Glaxo agreed to pay $63.8 million to all those involved in the class action suit. Although nearly $64 million seems like a lot of money, the US residents who had bought Paxil® products received very little. They were entitled to a full refund—and only if they could produce records of their purchases. Those without documentation would receive $15. In reality, however, if there were more plaintiffs than anticipated, the money would be divided up into even smaller portions and the actual payment amounts would be less.

For some of the plaintiffs, not even a large sum could undo the damage that had been caused. Several children named in the class-action lawsuit had experienced such marked personality changes after taking the drug that they committed suicide. Their parents and families were not legally entitled to any additional compensation.

As if the suicide "side" effect weren't problematical enough, in March 2005, the FDA and Department of Justice cited Glaxo for failing to meet FDA standards for product strength, quality, purity and safety. It was discovered that the "active" ingredients in their Paxil CR® (time-release) tablets were absent, so the tablets were taken off the market.

People taking Paxil® must wean themselves off it gradually. Abrupt withdrawal—due to either stopping the pills or taking defective pills that lack a vital ingredient—can cause shooting pains and flu-like symptoms, and even cause suicidal tendencies. Glaxo had never warned consumers that they might be putting themselves in danger by using these pills. (How ironic that Paxil® could cause suicide either by its presence or abrupt absence.) Although Glaxo agreed to an independent quality control review, and to recall all of the Paxil CR® manufactured before November 2004, the company was cited later for the same infractions. One reporter comments:

> It would be difficult to find a better career than employment as a GlaxoSmithKline attorney, especially if job security is a top priority. Not a year goes by when the company is not doling out millions of dollars to defend against charges involving corporate misconduct of one kind or another.
>
> A limited review of the company's involvement in the legal system over just the last five years reveals a clear pattern of habitual corruption. However, although Glaxo has paid billions of dollars in accumulated fines, penalties and awards to plaintiffs in civil cases, not one company official has been arrested and charged with a crime.[118]

### *The Case Against Vioxx®*

The beginning of the 21st century brought huge amounts of negative publicity to Merck & Co. Inc. The manufacturer's drug Vioxx®, originally approved in 1999 and prescribed for arthritis, menstrual pain and muscular pain, was causing considerable illness and even death. Although Merck fought hard to hide the truth—after all, the drug had earned huge profits with over 50 million prescriptions during a 5-year period—the high-profile drug company could not prevent the publicity that it received.

One of the major whistle-blowers against Vioxx® was David Graham, a medical doctor who has been with the FDA for over 20 years, and is the Associate Director for Science and Medicine in FDA's Office of Drug Safety. Dr. Graham was well qualified for his position, trained

at prestigious universities in internal medicine and neurology, and with a master's degree in Public Health. His research and desire to keep the public safe had caused the removal of almost a dozen drugs from the market. Just a few were the antibiotics Omniflox® and Trovan®, the diabetes drug Rezulin®, weight loss drugs Fen-Phen and Redux®, and the over-the-counter decongestant PPA (phenylpropanolamine).

Dr. Graham willingly gave revealing testimony before the Senate Finance Committee on November 18, 2004.

> Let me begin by describing what we found in our study, what others have found, and what this means for the American people. Prior to approval of Vioxx®, a study was performed by Merck. This study found nearly a 7-fold increase in heart attack risk with low dose Vioxx®. [However] the labeling at approval said nothing about heart attack risks. In November 2000, another Merck clinical trial named VIGOR found a 5-fold increase in heart attack risk with high-dose Vioxx®. . . . About 18 months after the VIGOR results were published, FDA made a labeling change about heart attack risk with high-dose Vioxx®, but did not place this in the "Warnings" section. Also, it did not ban the high-dose formulation and its use. . . .
>
> In March of 2004, another epidemiologic study . . . found that Vioxx® increased the risk of heart attack and sudden death by 3.7 fold for high-dose and 1.5 fold for low-dose, compared to Celebrex®. A study report describing this work was put on the FDA website. . . . Among many things, this report estimated that nearly 28,000 excess cases of heart attack or sudden cardiac death were caused by Vioxx®. I emphasize to the Committee that this is an extremely conservative estimate. FDA always claims that randomized clinical trials provide the best data. If you apply the risk-levels seen in the two Merck trials, VIGOR and APPROVe, you obtain a more realistic and likely range of estimates for the number of excess cases in the US This estimate ranges from 88,000 to 139,000 Americans. Of these, 30% to 40% probably died. For the survivors, their lives were changed forever. It's important to note that this range does not depend at all on the data from our Kaiser-FDA study. Indeed, Dr. Eric Topol at the Cleveland Clinic recently estimated up to 160,000 cases of heart attacks and strokes due to Vioxx®, in an article published in the *New England Journal of Medicine*."[119]

Thanks also, in part, to the *New England Journal of Medicine*'s disclosure that Merck had knowingly lied to make Vioxx® appear safer than it was, Merck was plagued by over 6,400 lawsuits. Some of the lawsuits were from people damaged by heart attacks, blood clots and strokes. Some of the suits were from families of people who had died from the increased risk of a drug that, manufacturer reports to the contrary, was anything but safe.

In August 2006, a federal jury found the pharmaceutical company "negligent," having "knowingly made misrepresentations" about the drug.[120] The jury awarded the 62-year-old male plaintiff in the case $50 million, although Merck appealed the decision. As of this writing, the company has lost about half of its Vioxx® cases.

In an interview, Dr. Graham bluntly announced that the FDA is incapable of protecting America from unsafe drugs.

> The FDA is responsible in so far as it could have prevented much of the damage, heart attacks and deaths simply by banning the high dose Vioxx® back in mid 2000 when they knew the results of the VIGOR Study. But the FDA did nothing for almost two years.
>
> The FDA . . . views industry as the client. They're serving industry rather than the public. . . . Another aspect to the culture at the FDA is that it overvalues the benefits of drugs and undervalues the risks of drugs.[121]

Not surprisingly, Graham also spoke of the tactics used by FDA personnel and other government officials to intimidate and discredit him. Fortunately for honest lawmakers and doctors, and for consumers concerned about drug industry corruption, he continues to speak about biased or completely altered studies that deter us from making informed choices.

### *The Case Against Lipitor® and Other Statin Drugs*

Recently, another medical disaster occurred with an entire class of medications known as *statin* drugs. Among the most widely prescribed medicines in the United States, statin drugs are designed to reduce the amounts of serum cholesterol (fats in the blood) by inhibiting a key enzyme involved in the body's ability to synthesize cholesterol.

The scenario is by now a familiar one. What the pharmaceutical companies claim in terms of safety, and what consumers report in terms of unwanted "side" effects, are two very different stories. Medical doctor and associate professor Beatrice Golomb, along with several colleagues, has collected large quantities of data on effects of statin

drugs. Studying 1,000 subjects in a project funded by the National Institutes of Health, the researchers found that muscle pain, weakness and tenderness are not only "common" from statins, but that the "actual damage to muscle tissue can be very serious."[122] The muscle damage is especially insidious, another research team reported, because even though there is "clear evidence of skeletal muscle damage in statin-treated patients," people may be "asymptomatic."[123] If no symptoms are felt, the person will assume that the drug is safe—until there is long-term, possibly irreparable damage.

Golomb and colleagues found many other negative symptoms from statin drugs. In addition to extreme fatigue, people often experienced "headaches, joint pains, and abdominal pain. . . . Studies have confirmed that peripheral neuropathy (tingling and numbness or burning pain) may [also] occur with statins." Other "side" effects included:

> Sleep problems, sexual function problems, fatigue, dizziness, . . . a sense of detachment, . . . swelling, shortness of breath, vision changes, changes in temperature regulation, weight change, hunger, breast enlargement, blood sugar changes, dry skin, rashes, blood pressure changes, nausea, upset stomach, bleeding, and ringing in ears or other noises.[124]

The effects of statins extend beyond physical symptoms into the realm of emotional and psychological changes. Alterations in cognition, mood and behavior manifest as depression, memory loss, and difficulties in concentration and thinking. "In some cases," report Golumb et al., "violence, psychosis, and suicide have been reported."[125] There is some debate as to whether 100% of statin users suffer memory loss, and whether that memory loss is permanent. However, Golumb and other researchers find it significant that for many people, memory loss and other problems begin when people start taking the drugs, resolve when the drugs are stopped, and return when the drugs are resumed. Unfortunately, in some subjects the problems linger even after the eventual withdrawal of the drugs.

Clearly, unwanted "side" effects from statins are severe. In a developing fetus whose pregnant mother is taking the drugs, the damage is even greater. The long list of severely malformed soft tissue, organs, glands, nerve tissue and bones from a statin-fed baby sounds so unbelievable, and the effects are so gruesome, that the documented dangers might seem like a science fiction novel had researchers not corroborated the findings. The defects seem unlimited: fused ribs; short or misshapen arms and legs (in some cases, one leg is almost one-fifth shorter than the other); holes in the heart and trachea; ruptured kidneys; and stenosis (abnormal narrowing of blood vessels) with hydrocephalus (abnormal accumulation of cerebrospinal fluid).

In the medical field, statins are so notorious for their effects on the development of the brain, spinal cord, and protective membrane that covers the brain and spinal cord, that the deformities dealing with the spine and face have been given their own category. Spina bifida ("cleft spine"), the most common neural tube defect in the United States, is frequently found in statin infants. Some infants suffer from a failure of the brains hemisphere to divide. Or they lack brain lobes entirely. Still others have malformed skull bones and facial tissue. One facial deformity is a single eye located where the root of the nose would be, with either a missing nose or a tube-shaped nose above the eye. Another facial deformity consists of a small flattened nose with a single nostril located below closely-set, incomplete or underdeveloped eyes.

As one might expect, if the baby even lives (which is unlikely), quite a few disabilities result from these ghastly deformities, including paralysis, urinary incontinence, bowel dysfunction and severe retardation. Women who become pregnant while taking statin drugs subject their babies to "worse defects," comments medical doctor Malcolm Kendrick, "than were ever caused by thalidomide [another drug that caused severe birth defects, and is now banned except in certain cases]."[126]

Ironically, many of these birth defects occur precisely because the drugs are doing what they are designed to do: lower cholesterol. Despite what the medical establishment and popular press has led the public to believe, cholesterol is not a villain. As food activist Sally Fallon and fats expert Dr. Mary Enig point out:

> Cholesterol is essential for the development of neural tissue, so we should expect to find that if the mother is taking a drug that inhibits cholesterol synthesis at a time when the fetus is developing, horrible developmental abnormalities will occur. Such as failure of the brain to develop in the right way, or duplication of the spinal cord.[127]

Statins also lower the levels of Coenzyme Q10, a vital nutrient. The website of the Mayo Clinic bluntly states:

> Coenzyme Q10 (CoQ10) is produced by the human body and is necessary for the basic functioning of cells. CoQ10 levels are reported to decrease with age and to be low in patients with some chronic diseases such as heart conditions, muscular dystrophies, Parkinson's disease, cancer, diabetes, and HIV/AIDS. Some prescription drugs may also lower CoQ10 levels.[128]

### The Truth About The Centers for Disease Control and Prevention

The first word in the name is not "Center" but . . . "Centers." There is no Center in Atlanta that does medical research or cures diseases. What is in Atlanta is merely a government administrative building which administers the many "Centers" throughout the United States. The Atlanta office is funded and operated by the [United States] Federal Government. The many different Centers are mostly funded with private grant money from pharmaceutical companies who deal in drugs relating to the specialty of each of the many Centers.

If a Center in Montana, specializing in rare tropical reptilian viruses accidentally discovers a new Framawitz Disease and finds that a drug called Gillibrulin will cure it, then the disease and the drug are owned by the pharmaceutical company which privately funded the medical research. . . . The purpose of the main office in Atlanta is to be a promotional agent and salesman for the pharmaceutical companies who "discover fictitious disorders" at the various "Centers" and then convince you that to prevent Framawitz Disease you need to be on a lifetime dose of Gillibrulin. . . .

In the last 20 years, . . . I have identified 12 fictitious medical problems which have resulted in massive billion dollar profits to a few pharmaceutical houses. All of the medical problems were either man-made or don't exist, and were hyped and promoted by the CDC. All of them [include] the words Disorder or Syndrome in their names. That's because they are not legitimate diseases. . . . I call it bio-terrorism.

—Marshall Smith, "Fever and The Mystery Disease SARS: A Bio-terror Weapon Spreads Around the World" *BroJon Gazette*, March 31, 2003

Golomb and colleagues also discuss Coenzyme Q10.

> There is published scientific evidence that statins lower CoQ10 levels in a dose-dependent fashion; that low levels of CoQ10 relate to muscle and brain pathology; and that restoration of CoQ10 may lead to diminution of symptoms in those with muscle or cognitive problems. We have received a number of anecdotal reports from statin users who developed muscle problems who report benefit from adequate doses (which vary from person to person) of Coenzyme Q10 supplements, which are available over the counter. There is also one small controlled study that reported benefit of CoQ10 to statin muscle symptoms. There are also controlled studies showing benefit of Coenzyme Q10 supplementation in persons who have low levels of this biochemical not necessarily related to statin use. Coenzyme Q10 should be in gelcaps, in an oil or Vitamin E base to be absorbed.[129]

Simply put, statin medications interfere with the body's normal levels of some nutrients and its ability to process them. Given the horrendous deformities and other damage that statins cause, why are people taking these drugs? Evidently, the public has been convinced of a false "need." Fallon and Enig analyze the pharmaceutical industry's sales strategy.

> Growth of this magnitude can only be achieved by rapidly expanding the customer base. First proposed for men deemed "at risk" for heart disease by virtue of "high" cholesterol levels, doctors now recommend statins for both men and women of all ages, diabetics and sufferers of rheumatoid arthritis. The literature even promotes statin use as a cancer prevention measure. . . .
>
> Studies going back almost 30 years [show] . . . that statin drugs do not provide any benefit to women who do not have already existing heart disease. [However] more healthy Americans joined the ranks of patients in July with new recommendations to lower LDL-cholesterol (the so-called "bad" cholesterol) to less than 100, *30 points lower than previously recommended*. [emphasis added] The authors of the recommendations, which were . . . endorsed by [among others] . . . the American Heart Association and the American College of Cardiology, have made a living promoting pharmaceuticals, with most receiving honoraria from all the major drug producers, including Merck, Pfizer, Parke-Davis, AstraZeneca, Abbott, Dupont, Sankyo, Bayer and Bristol-Myers Squibb.
>
> The challenge for the statin makers is to convince everyone "qualified" to actually take the drugs. . . . At a UK medical meeting . . . Dr. John Reckless (this is his real name!) calls for adding statins to tap water—like fluoride. (Actually some of the bestselling statins—Lipitor®, Baycol®, Crestor® and Lescol®—contain a fluoride compound.)[130]

Convinced of the need to take a harmful drug, the public enriched Pfizer with 75 million prescriptions for Lipitor® in 2004. Lipitor® and another type of statin called Zocor® were the top two best-selling drugs in 2004.

Figures for sales of cholesterol-lowering drugs between 2003 and 2006 are approximately between $11 and $14 billion per year, depending on the year being cited and the source estimating the figures. Even at the low $11 billion figure, it's easy to see why a drug company would be tempted to do everything possible to keep this pharmaceutical on the market.

One effort apparently designed to relieve the public's anxiety appeared in the form of a March 26, 2007 full-page ad in *The New York Times*. The drug company now clearly stated that not everyone—including people with liver problems and pregnant women—could take Lipitor®. People who experienced muscle weakness and pain they had not felt before taking the drug were advised to tell their doctor. (The "side" effects of digestive upsets were not serious and would probably disappear, consumers were advised.)

But to me, the most interesting part of the ad was a statistic. Threat of copyright infringement precludes me from directly quoting, but I can paraphrase what the ad said. For those already at risk for heart disease, Lipitor® was supposed to lower the probability of heart attack by 36%. This is an impressive figure. However, an asterisk led to an explanation of how those figures were determined. (To the company's credit, the explanation was directly below the percentage figure, and the typeface was large and easy to read.) The 36% was obtained from an unnamed number of participants, studied for an undisclosed period of time. Also, the way in which the figure was calculated was confusing. The reader was told that 3% of all subjects studied who took a placebo had heart attacks, compared to 2% of subjects who took the statin drug. There is no way to obtain the figure of a 36% reduction in heart attacks from this figure, unless you base your calculations on the following convoluted rationale: *2 out of 3 subjects taking Lipitor® had heart attacks, compared to 3 out of 3 not taking Lipitor®. Therefore, Lipitor® is one-third more effective.* This is the only way I could rationalize how the figure of 36% was obtained. But, examined as they truly are, the difference in percentage points is quite insignificant. I wonder if other readers of the *Times* were similarly confused.

An equally serious problem with the ad became evident in January 2008, when the news media reported that the United States Congress was investigating Pfizer. The ad had prominently featured a photo of Robert Jarvik, inventor of the artificial heart, above a caption stating that he took Lipitor® and benefitted from it. Dr. Jarvik appeared to be giving medical advice. But he did not have a license to practice or prescribe medicine. According to Congress, this was misleading, and manipulated readers.

Despite such diligent efforts on the part of statin drug manufacturers to market their medicines, their windfall profits may not last as the dangers of statins become more public. In fact, when that *New York Times* ad appeared, there already had been several highly publicized class-action lawsuits against Pfizer, Inc. All the complaints focus on the manufacturer's attempts to deliberately deceive the public by failing to disclose potential "side" effects of Lipitor® that include (possibly lasting) muscle damage. Even though the symptoms abated for some plaintiffs after the drug was stopped, other plaintiffs stated that they continued to suffer from fatigue and tingling in the hands and feet. Significantly, a lawyer representing 19 plaintiffs in one of the lawsuits stated that Lipitor's® effectiveness in lowering cholesterol levels was not in dispute. He wrote:

> Rather, these lawsuits charge that Pfizer failed to adequately warn both doctors and consumers of the drug's more serious and sometimes permanent health risks—risks that Pfizer was well aware of in its own clinical studies of statin usage. Pfizer has apparently engaged in a campaign of misinformation, designed to downplay and cover up Lipitor's® more serious and irreversible side effects, and is willing to promote the drug at any cost.[131]

Significantly, some of the court papers mentioned that although Lipitor® lowers blood cholesterol, there is no proof that the drug reduces the risk of heart disease in women or the elderly. In fact, the very people who are likely to take cholesterol-lowering drugs are those who are most at risk of damage from the drugs. In 2002, one physician with 17 years of medical practice wrote:

> All patients taking statins become depleted in Coenzyme Q10 (CoQ10) eventually. Those patients who start with a relatively low CoQ10 level (the elderly and patients with heart failure) begin to manifest signs/symptoms of CoQ10 deficiency relatively rapidly, in 6 to 12 months. Younger, healthier people whose only "illness" is the non-illness "hypercholesterolemia" can tolerate statins for several years before getting into trouble with fatigue, muscle weakness and soreness . . . and most ominously, heart failure.[132]

Lipitor® is only one of many statin drugs whose manufacturer has been sued. An Internet search using the keywords "statin," "Bayer," "Lipobay®" and "Baycol®," for starters, will yield a wealth of reading material—and reports of settlements for over 3,000 lawsuits.

Dr. Malcolm Kendrick points out that in the UK, statin drugs will soon be made available without a prescription.

### *The FDA's Defense*

The Food and Drug Administration has protected drug companies so obviously and systematically, that ethical officials in the United States government have finally noticed. So has the press. *New York Times* reporter Gardiner Harris, who often writes about medical politics, wrote in a September 2004 article:

> The chairman of a House committee angrily accused the Food and Drug Administration on Thursday of withholding documents on the effects of antidepressants on children.
>
> Holding a copy of an e-mail message from an agency official instructing others in the agency not to unearth documents, . . . Joe L. Barton . . . said it demonstrated that the agency was deliberately defying the panel. He threatened to ask police officers to go to the agency's offices to retrieve the records.
>
> "The FDA's lack of cooperation with the committee in obtaining relevant and responsive information in a timely fashion on a matter that involves the safety of our children leaves me wondering whether this is sheer ineptitude or something far worse," Mr. Barton said. . . .
>
> Seven top executives from drug giants like Pfizer, Wyeth and Glaxo-SmithKline were sharply questioned about why the companies had collectively failed to publish or publicize results of studies showing that their drugs had not proved effective in treating depressed teenagers and children.[133]

As one might expect, with the rapid escalation of such negative publicity, the FDA began to defend itself. In July 2006, one *New York Times* headline read, "FDA Rules Will Regulate Experts' Ties to Drug Makers." The agency is reported as having stated that new rules would make it

> impossible for experts who get money from drug makers' marketing departments to serve on advisory committees. That would exclude, for instance, anyone who was paid by the marketing departments to promote drugs.
>
> But the rules would loosen other restrictions, they said. . . . Indeed, agency officials said they had no intention of excluding all advisers with ties to drug makers.[134]

With double-talk like the above, it may not be realistic to expect that the FDA will start behaving itself any time soon. However, thanks in part to the willingness of the media to cover Big Pharma misdeeds—and also perhaps because these disasters are becoming increasingly visible—the general public has become much more cautious about taking pharmaceuticals. Before reaching for the medicine cabinet to pop a pill, more and more consumers are pausing to think about how many drugs they really want to be taking, and how often.

## BIG PHARMA'S CAMPAIGN AGAINST NUTRITIONAL SUPPLEMENTS

While dangerous drugs are rarely pulled off the market—even when the FDA or a manufacturer voluntarily reports their hazards—government regulations can be quite different for natural substances such as herbs.

Despite the fact that most herbs are much safer than patented pharmaceuticals, botanicals as well as vitamin and mineral supplements are subject to substantially more scrutiny and restrictions. Notably, data supporting the safety and effectiveness of nutrients is usually from sources independent of the supplement manufacturer—as opposed to the drug company-sponsored studies upon which the FDA relies to guarantee drug safety.

One example of inconsistent control can be seen with the herb ephedra. Ephedra, which has been used for centuries, is one of the best bronchodilators around: it opens the air channels in the lungs of people with asthma and allergies. However, several years ago the FDA decided to impose strict regulations on an herbal supplement containing ephedrine (used for weight loss), after considerable negative publicity about its dangers.

The main problem with this restriction is that ephe*dra* is quite different from ephe*drine*. Ephedra is the whole herb. Ephedrine is one synthesized chemical out of many that the herb contains. Another issue is amount. A whole herb formula containing, say, 50 mg of ephedra would have only about half a milligram of ephedrine. But a synthesized formula containing ephedrine might have up to 20 mg of ephedrine. Incredibly, the FDA missed this significant difference in its investigation. One would expect scientists—who by training are taught to be precise—to catch this important difference. But evidently, other forces were operating here. Although the natural herb was being heavily regulated, pharmaceutical companies had been

## Drug Interactions with Herbs and Nutritional Supplements

Periodically, the media warns about unwanted interactions between drugs and herbs, or drugs and nutritional supplements. The problem of unwanted interactions is quite real, since some herbs (or nutritional supplements) might cause some effects opposite to those of the drugs that are also being taken. Or, some herbs might augment some effects of the drugs, thus producing excessively unbalanced reactions in the body. Generally, neither doctors nor those under their care are versed in these interactions. The possibility of unwanted effects is further compounded because many people don't tell their doctors that they are taking herbs and/or other supplements along with the drugs.

The way these reports are written often demonizes the nutrients and herbs without giving a more complete, functional description of what is really occurring. The information below gives the facts from two different viewpoints. The allopathic angle, summarized from several sources (while remaining faithful to their tone), warns about herbs and other nutritional supplements as though they are interferences. The holistic viewpoint, which is mine, explains what the interactions mean, leaving the consumer free to make an informed choice.

| Herb/Nutrient | Allopathic Angle | Holistic Perspective |
|---|---|---|
| **Bromelain** | Can increase effects of blood-thinning drugs and tetracycline antibiotics. | Blood-thinning drugs and tetracycline antibiotics may become more potent when the subject consumes bromelain, a naturally-occurring enzyme that catalyzes other chemical reactions. Bromelain also has natural anti-inflammatory effects. |
| **Echinacea** | Might counteract immune-suppressant drugs such as glucocorticoids taken for lupus and rheumatoid arthritis. Might increase side effects of methotrexate. | Glucocorticoids, immune-suppressant drugs taken for lupus and rheumatoid arthritis, are less effective if the subject takes echinacea, because echinacea stimulates the production of white blood cells and increases their motility and effectiveness. Examine the wisdom of suppressing the immune system. If the immune response is overactive, deal with the root cause, instead of simply trying to eliminate symptoms. The noxious effects of methotrexate—which the allopathic community calls "side" effects to detract us from seeing that all its effects are "primary"—are noticed more by the person who takes echinacea because echinacea stimulates the body's defense cells to do their job. One such task is to remove all poisons from the system. |
| **Evening Primrose Oil** | Can counteract the effects of anti-convulsant drugs. | Anti-convulsant drugs do not work as well when the subject consumes evening primrose oil, which contains naturally-occurring fatty acids. Investigate the relationship of diet and contaminants to convulsions. |
| **Vitamin E** | Can increase effects of blood-thinning drugs, aspirin, and some herbs. | Blood-thinning drugs and herbs work even better when Vitamin E is consumed. Vitamin E intake should be reduced to no more than 200 IU per day at least two weeks prior to any surgery; anything above that increases the rise of bleeding. |
| **Fish Oil** | Can increase effects of blood-thinning drugs, aspirin, and some herbs. | Blood-thinning drugs and herbs work even better when fish oils are consumed. Consider not taking the drug or herb and eat fish oil, a food, instead. (Molecularly distilled fish oil supplements are free of mercury and other dangerous heavy metals.) Decrease fish oil intake at least two weeks prior to surgery to discourage possibility of excess bleeding. |
| **Gamma Linolenic Acid (GLA)** | Can increase effects of blood-thinning drugs and herbs. | See "Vitamin E" and "Fish Oil." |

| Herb/Nutrient | Allopathic Angle | Holistic Perspective |
|---|---|---|
| **Garlic** | Can increase effects of blood-thinning drugs and herbs. | See "Vitamin E" and "Fish Oil." |
| **Ginger** | Can increase NSAID side effects and effects of blood-thinning drugs and herbs. | See "Vitamin E" and "Fish Oil." |
| **Ginkgo** | Can increase effects of blood-thinning drugs and herbs. | See "Vitamin E" and "Fish Oil." |
| **Folic Acid** | Interferes with methotrexate; ask your doctor how to take it. | The intended effects of methotrexate are lessened or altered if the subject consumes folic acid, apparently at the same time. Since most people are deficient in folic acid, ask for what purposes methotrexate is being taken, and see if there are safer alternatives to the drug. |
| **Ginseng** | Can increase effects of blood-thinning drugs, estrogens and gluco-corticoids; shouldn't be used by those with diabetes; may interact with MAO inhibitors. | See "fish oil." Also, there are many causes of high blood sugar. These vastly different physiological and biological scenarios relating to diabetes need to be investigated and separated before one blanket statement can be made about the effects of an herb. Regarding MAO inhibitors: the above does not say what kind of reaction takes place. Again, more information is needed. |
| **Kava Kava** | Can increase effects of alcohol, sedatives and tranquilizers. | The effects of alcohol, sedatives and tranquilizers may be increased with the use of Kava Kava. This suggests that safe, less potent substitutes for sedatives and tranquilizers should be used; and if necessary, their effects can be augmented by controlled amounts of Kava Kava. |
| **Magnesium** | May interact with blood pressure medications. | Blood pressure medications may interact with magnesium. Magnesium deficiency has been proven to be a factor in so many cases of heart attacks and circulatory disorders, that most hospitals immediately put people with heart attack on intravenous magnesium. If you have a heart problem, check for magnesium deficiency before resorting to taking drugs with unwanted "side" effects. |
| **St. John's Wort** | May enhance effects of narcotics, alcohol, and antidepressants; increase risk of sunburn; interfere with iron absorption. | Narcotics, alcohol, and antidepressants are dangerous drugs that substitute for the body's natural functions, and may interfere with the pharmacological action of St. John's Wort. Scientific studies in Europe show St. John's Wort to be very safe and also effective in alleviating depression. |
| **Valerian** | Can increase the effects of sedatives and tranquilizers. | Sedatives and tranquilizers can increase the effects of valerian root, a safe natural herb that has been used for centuries. |
| **Zinc** | Glucocorticoids and other immuno-suppressing drugs, see entry for "Echinacea." | Glucocorticoids and other immunosuppressing drugs, see entry for "Echinacea." |

producing ephedra alkaloids synthetically for years. Mary Marino writes:

> Almost every cold, cough, or allergy product on the market made by the drug companies such as Sudafed®, Actifed®, Advil® cold and cough formula and others contain synthetically produced versions of the ephedra alkaloid pseudoephedrine. These products are readily found on the shelves of almost every grocery store, drug store, convenience store and pharmacy outlet in the country. . . . To say that natural ephedra kills and a synthetic version of one of its alkaloids found in drugs doesn't, is pure hypocrisy.
>
> How can [the FDA] honestly justify banning ephedra which they claim is killing people yet leave all of the pharmaceutical products on the market containing the same alkaloid that occurs naturally in ephedra? . . . If ephedra is as dangerous as the FDA says, why not ban every product in this country that has any trace of ephedra alkaloids in them instead of taking cheap shots at the supplement industry while protecting the pharmaceutical industry? The fact is, natural ephedra products were taking business away from the pharmaceutical industry.[135]

To make matters worse, the FDA ignored a law governing ephedra sales that was already in place. The regulation of natural ephedra, reports Marino, was already so strict *prior* to the newer ban, that all labels bore strict warnings "listing a number of possible contraindications, including warnings that persons under the age of 18 couldn't buy ephedra and shouldn't take ephedra. Some stores even went as far as locking up their ephedra products in special cases behind the counter."[136]

The (newer) ruling on ephedra was eventually overturned, and it is once again allowed to be sold. However, far higher doses of the (concentrated) synthetic analog of ephedra herb are still allowed to be sold, and in far higher doses per pill, than the herbal form.

Given the public's use of herbs, the number of alarming stories on holistic modalities in the mainstream media is wildly disproportionate to the number of similar reports on allopathic treatments. Consider the following excerpt from "How to Recognize a Quack."

> The practitioner insists that most doctors, the Food and Drug Administration and professional organizations such as the American Medical Association don't know what they're talking about with regard to your health. He may even claim to be persecuted by the medical establishment.
>
> The practitioner has no training in nutrition or food science but may display a string of spurious credentials. . . . Dr. Stephen Barrett, a leader in exposing health frauds and editor of the newsletter Nutrition Forum . . . recommends avoiding nutrition advisers who belong to . . . organizations that do not require their members to have degrees from accredited institutions.
>
> His nutrition education is not based on scientifically established facts. He may have a degree such as Doctor of Naturopathy (ND), Certified Herbologist (CH), Doctor of Chiropractic (DC), Registered Healthologist (RH) or Certified Acupuncturist (CA).
>
> The counselor claims that modern methods of processing, storing and shipping foods strip them of key nutrients and that people can't possibly get a balanced diet without vitamin and mineral supplements.

> [Allopathic] medicine in our country has been on a crusade over the last 100 years to wipe out every other form of [natural] medicine. One of the things they did that was unique was they lobbied to make words legal only for them to use. Today in the US, only a medical doctor can diagnose a disease, prescribe something, and cure you. Nobody else can say "diagnose," "prescribe," and "cure." That means that nobody can cure you but a medical doctor. . . . I can't say "chaparral is the cure for a tumor." I can't say garlic is the cure for cholesterol or high blood pressure. They have made the laws. So that makes me look stupid, impotent, and it makes the herbs look weak and wimpy. I can't, as an herbalist, say that an herb will cure, even though a lot of prescription drugs are made from herbs. This was a tactic by organized medicine to wipe out the opposition, by making them look silly and impotent. . . . They have the words [and] they control the high ground. They can walk out and say, "Yes, if you take this drug, you will cure yourself." But they hired lawyers and got the government behind them. If I say that I go to jail. It isn't because the herbs don't work and the drugs are better, it's just because they have more money, they lobbied more and got the law passed in their favor. That is why people get this idea that herbs don't cure you.
>
> —Dr. Richard Schultz, School of Natural Healing
> Santa Monica, California
> www.whale.to/c/shulze.html

> He uses unproved diagnostic methods and treatments, such as hair analysis.
>
> He espouses "superfoods" and "supernutrients" and may even sell the remedies he prescribes.[137]

The above article, which appeared in 1988, is by Jane Brody, a longstanding science writer for *The New York Times*. In the past decade, Stephen Barrett (on whom Brody relied for some of her data) has received a great deal of negative publicity for his habit of filing defamatory lawsuits against holistic practitioners on the grounds that the natural remedies they use are ineffective or harmful. Barrett, whose organization Quackwatch has sued almost 40 people over the years, never won a lawsuit. On more than one occasion, the presiding judge has harshly reprimanded him for attempting to stifle free speech and freedom of health care choice. Coverage of one trial by a Canadian health organization provides more detail.

> At trial, under a heated cross-examination . . . Barrett conceded that he was not a Medical Board Certified psychiatrist because he had failed the certification exam. This was a major revelation since Barrett had provided supposed expert testimony as a psychiatrist and had testified in numerous court cases.
>
> Barrett also had said that he was a legal expert even though he had no formal legal training. During the course of his examination, Barrett also had to concede his ties to the AMA, Federal Trade Commission (FTC) and Food & Drug Administration (FDA).[138]

Today, there is significant public acceptance of chiropractic, acupuncture and herbs (to name just a few therapies commonly attacked by those with ties to the pharmaceutical industry). However, natural therapies continue to be maligned in the mainstream media, as evidenced by Brody's more recent article, "Americans Gamble On Herbs As Medicine."[139] Note the emotionally-laden word "gamble"—as if the efficacy of drugs over herbs was a universal, self-evident truth. Brody's claim that "scores of products [exact number unspecified] sold in the United States are listed by European and American authorities as ineffective, unsafe or both," is simply not supported by reputable research. The "serious side effects" that she says are linked to herbal remedies—"high blood pressure, life-threatening allergic reactions, heart rhythm abnormalities, mania, kidney failure and liver damage"—are less severe, proportionately fewer in number, and statistically less significant than the effects of allopathic drugs. Any substance powerful enough to change the biochemical terrain of the body needs to be understood, treated with respect and used correctly. *Uncontaminated (organic) herbs, when properly used, are generally not toxic.*

To Brody's charge that sassafras and comfrey "contain known carcinogens,"[140] one might ask, "Known to whom, what are those carcinogens exactly, and what data supports this claim?" The author apparently has taken information about these herbs grossly out of context. As I will explain in depth in Chapter 3, when a so-called "active ingredient" is removed from its herbal matrix of *combination ingredients*, it invariably causes reactions that do not occur if intact portions of the plant are consumed. Drug-oriented researchers customarily isolate from an herb what they

### Snake Oil Vindicated

Snake oil originally came from China, where it was used to alleviate inflammation and pain in rheumatoid arthritis, bursitis, and similar conditions. Chinese laborers, on section gangs doing the grunt work involved in building the railroad tracks to link North America coast to coast, gave it to Europeans with joint pain (bursitis, arthritis). When rubbed on the skin above the pain, snake oil brought relief, the story goes. Patent medicine men ridiculed the claim. [Hence, today people refer to a remedy that doesn't work as "snake oil."]

In 1989, a nutrition-oriented medical doctor from California decided to find out what snake oil contains. He obtained a sample of the oil from San Francisco's Chinatown, had it analyzed, and found that [out of the one-quarter that is not carrier oil] . . . 25% of the product is oil from Chinese water snakes, which contains 20% of the important Omega 3 derivative eicosapentaenoic acid (EPA) as well as 48% myristic acid, 10% stearic acid (18:0), 14% oleic acid, and 7% linoleic plus arachidonic acids. At 20% EPA, Chinese water snake is the richest known natural source of the parent of series 3 prostaglandins, which inhibit the production of pro-inflammatory series 2 prostaglandins. Like Essential Fatty Acids and their other derivatives, EPA can be absorbed through our skin. Salmon oil, the next-best source of EPA, contains a maximum of only 18% EPA. Other fish oils contain less.

The bottom line is that traditional snake oil is natural and therapeutic. The snake oil salesman is vindicated.

—Udo Erasmus
*Fats that Heal, Fats that Kill*, 1993

perceive as the "active" ingredient, feed it in ridiculously high amounts—amounts that a human being would never consume—to laboratory animals, and then denounce the herb as an invalid remedy because the animals sicken or die. Moreover, lab animals are often injected with the substance being tested, whereas humans would take the substance orally, and never by injection.

Earlier I discussed the folly of testing for oral drugs by injecting them rather than administering them orally, the way they are intended to be taken. Injection for tolerance levels is also done with substances such as vitamins (when they are tested at all). Except for Vitamins B12 and C, which are sometimes administered intravenously by holistic health providers, nutritional supplements are rarely taken directly through the bloodstream. Nevertheless, if adverse reactions are reported for substances that are meant to be eaten rather than injected, this can be used by a company to "prove" that the substance is harmful.

When doing tests, it's important to know how the substance is going to be used. Many foods and ordinarily benign materials can be harmful if consumed in unusual ways or abnormally concentrated amounts. We would have to continually ingest excessively high doses of some herbs, over a long period of time, to be harmed. It is also true that some parts of a plant can be poisonous while other parts are beneficial. (One good example is rhubarb. Due to the high oxalic acid content, its leaves are poisonous and when ingested in large enough amounts, can cause cramping, nausea and even death. Cooks discard the leaves and cook the stalks and make them into pies.)

Brody does raise some valid points elsewhere in her article. She discusses potentially huge markups in price, dishonest manufacturers whose products do not contain what the label claims, and possible lack of effectiveness because of inferior herbs or the ways in which the herbs are processed. However, the author does not question why so many people continue to buy herbs if the herbs don't work. Apparently she believes more in the authority of doctors who don't use the herbs than in the empirical experience of the people who do. Admitting her preference for those who choose "established medical remedies" (allopathic) over those who "choose self-medication with plant extracts"[141] (holistic), she fails to question exactly who has "established" these allopathic "medical remedies" as the one true path.

Despite continual media propaganda, the public still searches for options other than those endorsed by mainstream channels. Otherwise, there would not be so much effort to sway people from natural therapies. In contrast to the bias of Ms. Brody is the directness of Mike Adams. It would be refreshing to see the following in *The New York Times*:

> We were using niacin [Vitamin B3] and niacinamide before the new psychiatric drugs entered the North American market. Our results were better and safer but we had no one to support us. While drug results were more often more dramatic, they were also much more dangerous. Eventually, it turned out that drugs, while helping in the short run and used in small doses, in the long run stopped the process of recovery long before the patients became well, and froze them into a chronic semi-invalid state from which they can not recover as long as they remain on the medication.
>
> Today, 47 years later, orthomolecular vitamin treatment is still relatively unknown. The use of drugs is world wide and sanctioned by powerful drug interests, the professional associations and governments. It seems not to matter that huge numbers of patients are being denied their chance for full recovery. . . . Niacin has . . . been trampled on for the past 40 years by the galloping hordes of professional establishments, the American Psychiatric Association, governments, the FDA, the National Institutes of Mental Health, and by nearly every health-professional organization. It is a wonder that there are any orthomolecular doctors at all.
>
> —Abram Hoffer, MD, PhD
> www.whale.to/a/saul18.html

> The US Food and Drug Administration, the agency that claims to be responsible for protecting consumers from dangerous food and drug products, has just surrendered its primary responsibility. Recently, an FDA advisory panel voted to recommend that a dangerous prescription drug, Tysabri®, which was withdrawn from the market a year ago due to its promoting of a deadly brain disease, should now be put back on the market. . . .
>
> The justification . . . to reinstate a drug with known deadly side effects is based on the idea that patients should now weigh the risks of dangerous drugs and decide for themselves whether the risks outweigh the benefits, if any. . . .
>
> There are enormous problems with this new stance by the FDA. The first is that patients do not have the medical knowledge to understand and interpret the significance of these side effects that will no doubt only be mentioned in small print . . . [and] that most patients will probably ignore. . . . The second problem . . . is that it exposes a wicked double standard: With prescription drugs,

patients should be able to weight benefits vs. risks, even for drugs that may kill you. But with herbs and nutritional supplements, no such decision is extended to patients. The FDA merely bans whatever natural substances it wishes, usually based on reports of very small numbers of people being harmed by extremely rare overdoses. . . . The FDA now sees its job as protecting the public from "dangerous" herbs while shirking safety responsibilities on truly dangerous prescription drugs. . . .

The FDA's position now comes down to simply this: Everyone needs to be protected from herbs and nutritional supplements, but no one needs to be protected from prescription drugs. . . . If the agency is now merely going to pass through drug safety decisions to doctors and patients, then why do we need the FDA at all?[142]

> Patients have the freedom . . . to refuse medical treatment even if it is recommended by their physician and to be informed about their medical condition, the risks and benefits of treatment, and appropriate alternatives.
>
> —Association of American Physicians and Surgeons, October 2000 www.aapsonline.org/testimony/vacresol.htm

## A HOLISTIC, FUNCTIONAL APPROACH TO HEALTH

### *Substitution vs. Support*

So far, the discussion of pharmaceuticals has focused on their lack of effectiveness, their so-called "side" effects, and the politics that keeps these drugs on the market. Now I want to address another undesirable effect of drugs that are taken for long periods: their ability to prevent the body from working on its own. This concept is intrinsic to understanding how holistic modalities work.

Drugs are taken to *suppress symptoms*. But they are also taken as *substitutes*—for either a bodily *function* or bodily *substance*. To discuss the substitution of a bodily *function*, let us use the example of constipation, for which a muscle relaxant is prescribed. The constipation may be caused by impacted waste in the colon, often due to improper diet. The condition can also be caused by parasites or *Candida*, which clog the system. Or perhaps the person does not drink enough water, which is needed to soften stool. With all of these conditions, sending the muscles a pharmaceutical message "Relax!" won't address the problem of constipation. In fact, the drug may make the problem worse. The colon actually needs stimulation, so that the rhythmical contractions of its muscles can expel the waste. The more flaccid the colon muscles are, the greater the chances are that waste will accumulate. Thus the drug disables the body, creating a vicious cycle.

To discuss the substitution of a bodily *product*, let us use the example of an underactive thyroid. Thyroxin, a thyroid hormone, is prescribed to replace what the gland is not secreting. But too often in such cases, the thyroid gland becomes only more lethargic, and eventually shuts down altogether. Biochemically, the receptor sites for that particular hormone are sated. They do not "know" or "care" that the hormone they are receiving is from a source outside rather than inside the body. The system's internal sensors know only that there is enough thyroxin circulating in the bloodstream for the moment. So, through a series of steps, messages are sent that result in the thyroid gland's stopping its secretion of thyroxin. Now there is even less thyroxin being made endogenously (from within the body). In turn, this may create the need for an even larger dose. As the person becomes more and more dependent on externally-provided thyroxin, in time the thyroid gland completely loses its capacity to manufacture the hormone and literally atrophies from lack of use. Then, the person is forced to take the substitute drug for the rest of his/her life. Thus another vicious cycle is created.

In both scenarios, where a drug replaces a bodily function or substance (or both), over a long enough period of time, the person becomes permanently dependent on pharmaceuticals. Now, sometimes drugs can be extremely helpful. And sometimes intervention is urgently needed. This is often true with thyroid problems, since the gland plays such an important role in so many bodily functions. But while radical intervention is necessary for people in crisis, or for those who need immediate surgery, this doesn't prevent illness because the root of the problem is never addressed. Why not try to stimulate repair of the body as well? Allopathic medicine does not seek the *causes* of the degeneration of the organ, gland or system. Nor does it seem interested in helping the body restore itself by giving it the necessary support.

### *All Parts Are Connected*

Western medicine disempowers us further by demanding double-blind studies, on the premise that this type of research is the only valid way to determine whether a

drug, herb or vitamin is effective. Proponents of this method claim that scientists can determine precisely what the agent of healing does or doesn't do only if the subject is passive. However, the question, "What result is brought about by the patient and what is caused by the drug?" is not the right one to ask. The principle of active/passive is based on an either/or dichotomy that does not exist in real life. Quantum physicists remind us that one cannot observe something without changing what is being observed. This principle pertains as much to the macrocosmic world as it does to the microcosmic universe. It is *never* the case that people are completely passive agents in their own healing. Simply making a decision to get well—or to participate in a double-blind study, for that matter—can reflect the person's desire to grow or change. When someone takes charge of their own healing, biochemical and physiological changes occur. Even the conventional medical community acknowledges that people who feel in control over their lives produce beneficial hormones that help them heal; whereas those who do not feel in control produce noxious biological chemicals that make them feel even sicker.

Neuroscientist Candace Pert illuminated the importance of both interconnection and taking charge of one's own life in her fascinating popular book, *Molecules of Emotion*. Describing a discovery she made with fellow scientists, she wrote:

> The immune system was potentially capable of both sending information to the brain via immunopeptides and of receiving information from the brain via neuropeptides (which hooked up with receptors on the immune cell surfaces). Our work . . . [pointed] irrefutably to the existence of a chemical mechanism through which the immune system could communicate not only with the endocrine system but with the nervous system and brain, as well. Previous work my colleagues and I had done demonstrated quite convincingly that the brain communicated with many other bodily systems. But the immune system had always been considered separate from the other systems. Now we had definite proof that this was not the case.[143]

The same theme of biological interconnectedness, expressed from a structural viewpoint, is discussed in *Energy Medicine: The Scientific Basis* by James Oschman. "A few decades ago," Oschman writes, "the living cell was visualized as a membrane-bound bag containing a solution of molecules"—which left the interior of the cell to be considered basically "empty." However, contrary to what many of us learned in high school, a cell in the body "is *not* a bag of solution," nor a circular outline surrounding empty space.

> The more closely biologists and microscopists looked at cells, the more structures they found. With better preparation techniques, electron microscopists began to see within cells the material that the biochemists had been discarding. . . .
>
> We now know that the cell is so filled with filaments and tubes and fibers and trabeculae—collectively called the cytoplasmic matrix or cytoskeleton—that there is little space left for a solution of randomly diffusing . . . molecules. *Virtually all the cell water is bound in particular ways to the cellular framework.* [emphasis added][144]

In other words, scientists discovered that the cellular matrix (within the cell) and extracellular matrix (outside the cell) are both comprised of a certain type of delicate connective tissue that links the inside of each cell to the inside of every other cell *throughout the entire body*. (This discovery was unknown for a long time because the very process of preparing cells for viewing under a microscope, and the ways in which enzymes were extracted for examination, destroyed the living matrixes that are a vital part of the cellular structures. Chapter 2 discusses in depth what is possible to miss under a microscope.)

The discovery of our connective matrix has enormous ramifications, because it is this matrix that *allows information to travel instantaneously in the body*—whether that information is in the form of hormones, electromagnetic, or other types of energy. "The boundaries between the cell environment, the cell interior, and the genetic material are not as sharp or as impermeable as we once thought," Oschman reports. He describes how this biological condition can help us understand various healing modalities.

> As a hands-on [massage, "Touch For Health," energy work, or related therapist], what you touch is not merely the skin [which also contains this matrix of tissue]—you contact a . . . living matrix [that] is a continuous and dynamic "supramolecular" webwork, extending into every nook and cranny of the body. . . . In essence, when you touch a human body, you are touching a continuously interconnected system, composed of virtually all of the molecules in the body linked together in an intricate webwork. *The living matrix has no fundamental unit or central aspect, no part that is primary or most basic. The properties of the whole net depend upon*

> *the integrated activities of all of the components. Effects on one part of the system can, and do, spread to others.* [emphasis added] [145]

Recognizing the body as a single, unified organism makes it much easier to comprehend why the *intentions* on the part of the healer or health care provider are so important. Intentions, Oschman explains, "give rise to specific patterns of electrical and magnetic activity in the nervous system of the therapist that can spread through their body and into the body of a patient." [146]

This phenomenon on the biological level is mirrored in quantum physics, where subatomic particles in their own separate research laboratories have been shown to *communicate*—even across the Atlantic Ocean. In the ether, just like inside and outside biological cells, there exists a matrix consisting of particles that oscillate in response to each other. I discuss this in more detail in Chapter 6.

As it turns out, the oscillations of cells, plus their receptivity to electromagnetic fields, play a key role in why rife therapy can be healing in addition to killing microbes (see Appendix C for more information). Oschman's book is an excellent resource. He documents the different types of energy (frequencies) on the electromagnetic spectrum, what devices were used to register the various frequencies in the body, and how they can be applied to various methods of healing.

## A HOLISTIC APPROACH TO LIFE

Holistic health cannot be separated from holistic living. In natural medicine, one doesn't choose a particular treatment as much as choose an orientation and a direction. When you sincerely adopt a holistic framework, your entire approach to life cannot help but shift.

Learning basic principles about the structure, function and biochemistry of the body is empowering. Although we might (rightly) seek guidance and information from those more knowledgeable, ultimately we all (re)turn to ourselves to discover what is best for us. No one else lives in your body or has your exact experiences, senses and perceptions.

Mainstream medicine—especially if it is considered the sole or only viable healing modality—by definition keeps us tied to invasive practices. Even more importantly,

### A Cancer Survivor Speaks Out

This is not the story of a woman with cancer. Perhaps you've read them in women's magazines. I certainly have. Usually the woman finds out by accident she is sick. Then on we read through the grueling treatment, through one, perhaps two apparent remissions inevitably followed by the return of the disease. We read with a mixture of *schadenfreude* [malicious satisfaction] and horror as the woman distances herself from her professional life, as her significant relationships deepen or disappear. Then the woman dies, though this detail is announced by the editor in polite italics after the writer has urged the reader eloquently and beautifully to make the most of the rest of his or her life.

My story is not like that. Now when I read those stories, I see something else: how intelligent, educated women listen to what conventional American medicine tells them about cancer, how they accept their treatments, no matter how damaging or horrific, and die. I wonder at how little they question what caused their cancer and why their treatments are so debilitating and ineffective. Perhaps because of their ordeals, death is a longed-for release when they write about it, but somehow I believe that between the period of the final, eloquent sentence and the beginning of the editor's italicized note there was a whole world of suffering. . . .

Truth #1: I didn't need all that chemotherapy and radiation. I discovered less invasive therapies to kill the cancer and rebuild my immune system. Truth #2: I did discover reasons why I developed cancer and have worked out strategies for keeping it away. These reasons may or may not be true, but they satisfy my need for reasons. The strategies appear to be working because I have never felt better. Truth #3: I do stand up against the medical establishment by telling everyone I can that I have had cancer and that I cured my disease my own way. I believe that if I had taken the "cure" conventional medicine offered me, I would never be as physically healthy as I am today, or as mentally and emotionally strong as I have become. . . .

Cancer treatment is a question of choice. You either choose to treat your cancer with alternative treatments and learn to live with the ambiguity of always being outside the medical establishment, or you allow doctors to treat your body as if it were a third world country with a particularly nasty dictator that they nuke and poison until they say you are cancer-free, and then you wait.

—Susan Hussey, "One Health, One Disease"
*Organica News*, Winter-Spring 2005

it fortifies the illusion that in order to heal, we must relinquish our discernment and our ability to learn to the so-called experts. Those who put responsibility for their health into the laps of others give up their agency and their sovereignty, and sometimes their lives.

There are some interesting statistics from a Harris Poll survey as reported in a 2004 issue of the *British Medical Journal*: a very modest "13% of Americans believe that pharmaceutical companies are 'generally honest and trustworthy,' putting the industry on a par with tobacco, oil, and managed care companies."[147] Nevertheless, people still visit mainstream doctors and flock to hospitals. Even though a particular holistic therapy might be proven effective, according to the most stringent mainstream standards, people may still refute its safety or efficacy because they have been trained to denigrate everything that is not considered "standard" treatment.

Even many people who express interest in holistic modalities choose allopathic medicine when they become seriously ill—because in most cases, Western medicine is what they were taught as children. Since it's familiar, it's what people turn to for comfort during a crisis. Humans tend to be creatures of habit. Thus we choose the path of least resistance, even if we suspect that it may not be beneficial long term.

Sometimes, even those committed to holistic methods find it challenging to remain with these therapies, especially if their family and friends think they're foolish. How many times have you been given the veiled criticism, "No one *else* does it that way"?

Another factor that keeps some of us attached to Western medicine is its unlimited publicity. Allopathic modalities occupy a much larger portion of public awareness than holistic ones. Also, there are many more allopathic doctors than holistic practitioners. All of these factors—combined with the refusal of insurance companies to reimburse for holistic remedies—can discourage all but the most determined souls from pursuing a holistic path.

In the scientific area, a holistic modality might be evaluated as worthless or harmful not because it's defective, but because the Western standard used to evaluate is based on limited, linear methods that do not, and cannot, work with living, whole systems. "Simply because a treatment or therapy fails to fit the medical world's concept of accountability," writes Rife researcher and chiropractor James Bare,

> does not mean that it has no merit and should be considered fraudulent. In the final analysis only the results of the treatment, the patient's health, and the patient's physical completeness after treatment are of any importance.[148]

Dr. Bare points out that despite the wealth at its disposal, the allopathic medical profession "has not been able to produce satisfactory results. Certainly no practitioner of natural health care would ever make press releases to brag about a 4% to 9% response (responded but still died from the disease) rate from their patients."[149] Moreover,

> patients willingly accept the huge physical risks associated with [allopathic] medical care. Yet that same patient and their family has no tolerance for any risk associated with Natural Therapeutics. A 1% or 2% death rate just from the use of anesthesia is completely acceptable, the death of 40,000 people a year from prescribed medications reactions, . . . [the death of] 40,000 people a year from surgery is acceptable, the death of several thousand people a year from improperly administered or incorrect medications is acceptable, the hospitalizing of over 8 million people in 1994 for drug-related mortality and morbidity is tolerated, but not one death or injury from Natural Therapeutics is tolerated.[150]

Similarly, one Chinese medicine specialist points out the folly of regarding health in such narrow terms as distinct diseases or specific cures, since illness can indicate weakness or imbalance in the entire organism. Once we "seek to overcome those weaknesses," he writes, we "will very likely end up doing what we would do to be healthy, even if we weren't sick. The motivation here is not to overcome disease, but to help support life."[151]

Yet how many of us live in environments that support life—that foster self-awareness, that encourage the freedom to choose, that allow us to be different from others without being censured? If you're someone who has always trusted and believed that the government (and medical profession) is truly interested in your well-being, some of the material in this chapter might feel difficult and overwhelming. "Why would people in positions of such power," you might ask, "want to cause harm to innocent people?"

This is an emotionally charged question, and the answers may not be easy to accept. I do know that at least part of the answer is about greed and power. Corporate profits have escalated at the expense of people's well-being and quality of life. But there are deeper psychological and even spiritual issues operating here, too. Some individuals enjoy having complete control over other people's lives. It gives them a feeling of being powerful and important. This need for power indicates an inner emptiness—a disconnection from the very source that helps sustain good health and a fulfilling life. But

those on the receiving end of these attempts at coercion and intimidation also suffer.

So, for those desiring a holistic life, what do we do? Is there any hope for increased funding of holistic health research? There is always hope. Hope is a positive emotion that assists in healing. However, as long as the money is controlled by the medical-pharmaceutical cartel, funding for holistic modalities is likely to be limited. Some attendees of a 2004 conference on Corporate and Political Influence on Science-based Policymaking called for many changes, from the disclosure of "financial interests of investigators and funding sources, to a registry of all clinical trials, to comparative rather than placebo controlled trials, to publication of negative data."[152]

In the meantime, there's plenty we can do for ourselves. That is what this book is all about. If you are curious about how holistic modalities can help you, don't wait until you are too weak or ill to do your research. Start now!

People who dismiss the corruption in the government and pharmaceutical industry as imaginary, exaggerated, or as the delusions of a few paranoid souls, are fooling themselves. They also may be leaving themselves vulnerable to a health crisis. After becoming sick, they will find that the medical options available do little to prolong their

### Newsflash!

As we go to press, some new acts in the legal arena have developed that are sure to impact the future of medicine in significant ways.

First, the United States Supreme Court ruled that consumers are not allowed to sue pharmaceutical companies—even in cases of grave harm or death, from medical devices as well as drugs—if these items have had prior FDA approval. The pharmaceutical companies are legally protected even if:

- The approval of the drug/device has been based on incomplete testing.
- The labeling of the drug/device is insufficient or deceptive.
- The companies had misled the FDA into approving the drug/device through false reports.
- The FDA has received reports of damage or death associated with the items.
- The FDA failed to warn the public of the dangers of the drug or device after receiving complaints.

How does this function in practical terms? Families of people who had committed suicide in 2003 after taking the antidepressants Paxil® and Zoloft® were not allowed to sue the companies for failing to warn of a risk of suicide—because the FDA had refused to order such explicit warnings to be on the labels! This, despite the fact that Pfizer had known about the suicide risk since the late 1980s, as it became publicly disclosed in the lawsuit.

This new law essentially allows government policy (ruled by the desires of drug makers) to pre-empt state consumer protection laws. In the US, the legal right to instigate lawsuits against drug manufacturers for personal injury, failure to warn, and wrongful death, has been rescinded. This means the loss of justice. It means that even the limited monitoring of drug companies we had will no longer exist. And it certainly means no more accountability by pharmaceutical companies for their products. Who, or what, will hold pharmaceutical companies responsible for problems that may arise? More than ever, it's critical that we educate ourselves about alternatives to drugs—even as laws worldwide are being made to ban access to all kinds of natural vitamins, minerals and herbs.

Slightly more hope was generated by the outcome of the second story, although the details are distressing. At the age of 19 months, Hannah Poling from Georgia (now 9 years old) received five vaccinations for nine infectious diseases. Many of the vaccines that Hannah received contained thimerosal, a form of mercury. Two days after receiving the final vaccine, the child, who had been developing normally, developed a fever, cried incessantly and refused to walk. During the next seven months she became developmentally disabled, and in 2001 received a diagnosis of autism.

Since Hannah's father was a neurology resident at Johns Hopkins Hospital at the time, she was able to receive intensive tests. The tests indicated a disorder in her mitochondria (the fuel burning units in the cells). Children with such a disorder develop normally until a severe infection—such as those contracted from vaccines—disturbs the ability of the mitochondria to produce energy. Then the brain, deprived of energy, does not grow properly, and the children regress. This regression is essentially autism.

The Poling family sued. As part of the confidential ruling, the Department of Health and Human Services agreed to pay the family compensation. To the public, it appeared that the court had admitted that vaccines can cause autism. However, the US government stated that Hannah had a pre-existing condition that the vaccines merely *exacerbated*.

It seems ridiculous to argue cause or exacerbation when it's clear that vaccines are dangerous. In these uncertain and troubled times, the need to educate ourselves is more urgent than ever.

life or augment the quality of their remaining time. On the other hand, those who are open to learning and to expanding beyond the conventional "stay inside the box" mindset, have a much better chance of healing. They are the ones who will ask questions, refuse to take "no" for an answer, get excited about possibilities—and even explore giving themselves rife sessions.

It is a bittersweet process indeed to acknowledge the cavalier disregard of human life that pervades industry and government. But in refusing to be asleep, we do not have to succumb to despair. Instead, we can use our increased awareness to circumvent, dislodge, or change the mainstream, or *dominator* (dominant), paradigm. There are many ways to participate in the growing global movement for positive transformation. The arena of change this book focuses on is health, with an emphasis on holistic modalities and technology invented by Royal Raymond Rife.

Significantly, all of Rife's experiments were conducted within the parameters of allopathic medicine. And the medical doctors who supported him were allopathically trained. Yet in many ways, Rife's approach to his own technology was holistic. As with any healing modality, allopathic or holistic, it can be tempting to use frequency therapy in a mechanized (allopathic) manner. But once you understand the life cycles and characteristics of microorganisms, it will be more difficult to do this; you will open doors to a radically different approach to health. In the next chapter, I show you why.



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*Its name is Public Opinion. It is held in reverence. It settles everything. Some think it is the voice of God. Loyalty to petrified opinion never yet broke a chain or freed a human soul.*

—Mark Twain, American writer, critic and humorist (1835–1910)

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# Chapter 2

# The History of Pleomorphism and the Inventions of Royal Raymond Rife

## INTRODUCTION

Holistic health can be a "hard sell" in today's marketplace. As addressed in detail in Chapter 1, the wealthy medical-pharmaceutical industry has launched a sustained campaign to discredit any person, modality, substance or idea that threatens its power and profits. Drug companies publish skewed "research" denigrating simple, time-honored remedies—while distorting laboratory results for new medicines, making them appear safer and more effective than they actually are.

Many people today are not aware of a major clash, nearly 200 years ago, between two French scientists, one representing Big Pharma and the other representing holism. Once you learn the central issues behind this debate, who won it and why, you will understand the scope of Royal Rife's technology, and why this technology was so difficult for some people to accept.

## LIFE CYCLES OF A MICROBE: BÉCHAMP VERSUS PASTEUR

For almost two centuries, citizens worldwide have grown up fearing dangerous microorganisms that lurk in our air, water and food, causing infection and plague in hapless victims. That is because the clash of two centuries ago was won by the famous French chemist Louis Pasteur. Pasteur, in hypothesizing how people get sick, promoted what became known as his "germ theory" of disease. Basically, the theory states that bacteria, viruses and fungi are potent and unchanging; they invade the person from an outside source; a particular microbe causes a particular disease; and once we wipe out the germ with medicine, we banish the disease and create health. Most people do not know that Pasteur's germ theory is based on flawed, if not outright falsified, research.

Most people recognize the name of Pasteur, for it was he who championed the widespread process of heating milk to temperatures high enough to destroy microbes. Indeed, the process is named "pasteurization" in his honor. What is less well known is that the process is not as beneficial as we have been led to believe, and in fact, damages a food to the point where it is actually dangerous. (See Chapter 3 for more details on milk.) Furthermore, very few people are aware that of the legitimate ideas and discoveries that Pasteur did present to the world, many were stolen from a far more brilliant rival, a doctor and pharmacologist named Pierre Jacques Antoine Béchamp (born 1816).

The two men were quite different, in intellect, training, competence and temperament. Pasteur had no training in the biological or medical sciences, and never obtained credentials beyond his chemistry background (he barely passed his exams). Béchamp held many degrees and titles. Among these were Doctor of Medicine, Doctor of Science, Master of Pharmacy, Professor of Medical Chemistry and Pharmacy (at the Faculty of Medicine, Montpellier University), Professor of Biological Chemistry, Fellow and

Professor of Physics and Toxicology, and Dean of the Free Faculty of Medicine (at the University of Lille, France). Among Béchamp's many achievements was the development of an inexpensive way to produce the chemical aniline for France's dye manufacturers. He also saved the silk industry in France from ruin by finding the causes and cures for two diseases that were devastating the silkworm population. Although Pasteur wrote in a correspondence to a colleague, "I have never even touched a silk-worm,"[1] he later claimed credit for having single-handedly rescued the silk industry—a claim so well publicized, that Pasteur was believed due to sheer repetition.

Some of Béchamp's work that Pasteur plagiarized was even submitted to the French Academy of Science in Pasteur's name. Science biographer Edith Douglas Hume chronicles in great detail how Pasteur's own experiments sometimes contradicted his conclusions. She also explains that various chemical procedures suggested by Pasteur to French winemakers and other industry heads were abandoned after they learned that his suggestions would not work.

Despite Béchamp's encyclopedic scientific contributions, his name and accomplishments have been nearly obliterated from history, while the name and achievements of Louis Pasteur are revered. An ironic twist to this tale is that although Pasteur stole scientifically accurate data from Béchamp, it was sometimes so contaminated by Pasteur's own inaccurate theories that many improvements contributed by Béchamp were offset or erased. Perhaps Pasteur's greatest offense was to replace Béchamp's solid evidence about the origin and nature of microbes with what we call the germ theory. This popular fiction quickly became regarded as irrefutable fact by mainstream scientists and medical doctors. I will discuss the flawed germ theory in a moment—but first, it is worth exploring a bit how this theory became construed as absolute fact.

The answer then, as now, has a lot to do with publicity and politics. Hume writes of Louis Pasteur that "intense strength of will, acute worldly wisdom and unflagging ambition were the prominent traits of his character."[2] By contrast,

> Antoine Béchamp was utterly indifferent to personal ambition. Never of a pushing temperament, he made no effort to seek out influential acquaintances and advertise his successes to them. Self-oblivious, he was entirely concentrated upon nature and its mysteries, never resting till something of these should be revealed. Self-glorification never occurred to him and while the doings of Pasteur were being made public property, Béchamp shut in his quiet laboratory, was immersed in discoveries, which were simply published later in scientific records without being heralded by self-advertisement.[3]

The medical doctor who wrote the forward of Béchamp's own volume, *The Blood and Its Third Anatomical Element,* points out that one of Pasteur's promoters was the Research Advancement Society in England, "an organization which exists for the purpose of popularizing experiments on animals. Pasteur discovered . . . that if one gets into the limelight and . . . [has enough] push [money and political power to] . . . back . . . him, his name can be immortalized."[4]

If Béchamp was such an obviously superior and credentialed scientist, why were so many ready to believe Pasteur? The answer—unfortunately, then as now—is *image*. Pasteur was a much better public speaker than Béchamp. Pasteur's more imposing and impressive presence is a good illustration of the extent to which social status determines what becomes regarded as "science." Also, powerful economic interests, including the chemical companies, were making money from Pasteur's fables. So they continued to help suppress Béchamp's discoveries and work. By the time of Pasteur's death, the germ theory was firmly entrenched in people's consciousness, propelled by a momentum of its own.

Although Béchamp's discoveries and research seem extraordinary on one level, they were based on common sense, as they explained so many apparent anomalies in medicine. In every living entity, the scientist discovered, exists a basic unit smaller than a cell—an autonomous, living, molecular structure he named *microzyma* from the Greek words meaning "small" and "ferment." Rather than being harmful, Béchamp wrote, microzymas "function as anatomical elements in the living and healthy organism; there they are the physiological and chemical agents of the transformations which take place during the process of nutrition."[5] In other words, microzymas are responsible for building cell tissue. In fact, they provide many useful services *until the terrain of the body changes and the tissues begin to degenerate. At that point, the microzymas change form and function according to their new environment.*

Altered microzymas comprise approximately a dozen different families consisting either of bacteria, viruses or fungi. However, there is a hierarchy of appearance and structure among these pathogens. A bacterium is considered to be the first pathogenic change in a diseased body, and a fungal form is the last. This order of emergence and hierarchy of sophistication may be one reason that bacterial infections are easier to eliminate than fungal infections: the body is not as far along in its process of deterioration. (Note that the bacteria referred to here are

pathogenic, and not the essential microorganisms such as *Acidophilus* and *Bifidus* that live in the intestinal tract and help us digest our food. Beneficial intestinal flora thrive and proliferate only under those conditions that favor our own health.)

Pathogenic microzymas further ferment unhealthy tissue, disintegrating it into its more elemental components. The microzymas actively catalyze the total destruction of an organism without being destroyed themselves. When there is no more tissue, they revert back to their harmless state. Béchamp demonstrated this process by conducting an experiment with a dead cat encased in natural limestone, and thus protected from exposure to the air. After several years, the cat was completely decomposed by bacteria, which returned to their microzyma state after they completed their scavenger job. This experiment was repeatable. One author succinctly describes this process:

> The bacteria found in man and animals do not cause disease—*they have the same function as those found in the soil, or in sewage, or elsewhere in Nature; they are there to rebuild dead or diseased tissues, or rework body wastes* and it is well known that they will not or *cannot* attack *healthy tissues* [original emphasis].[6]

Body tissues are healthy when they receive the proper nutrients. If there are no assimilable nutrients available for an adequate period of time, cells starve. In a state of starvation, the cells lose their vitality and ability to function and they decompose into diseased tissue, unable to support growth. Once this occurs, the microzymas transmute and are first on the scene to perform their cleanup.

## CONTRIBUTORS TO DISEASE

There are several important contributors to physical disease. I say "contributors" rather than "causes," because illness is comprised of many interrelated factors, rather than one or two linear causes that lead to effects.

### *Nutritional Deficiencies*

Nutrient starvation is due to poor quality food. Most people eat an unbalanced diet, consisting largely of processed food loaded with artificial additives. But it's doubtful whether some items sold to eat should be called "food" at all. These include refined sugars (such as table sugar); refined carbohydrates (white breads and pastries, made from denatured grains); artificial chemical preservatives, flavorings and dyes; unfermented or improperly fermented soy products; coffee and soda; so-called junk food (such as manufactured dried snacks and chips); pasteurized and homogenized dairy; and most vegetable oils. A better term for such items is "*fake* food."

Fake foods do not give the body what it needs to maintain its vitality. They also strip the system of valuable nutrients and add compounds that are harmful, so you end up depleting your system even more. Improper diet hinders the body's ability to resist internal and external insults and injuries. For a detailed discussion, see Chapter 3.

### *Sleep Deficit*

Getting about 8 hours of sleep a night is crucial. The body uses the time to repair itself. Waste removal continues even more efficiently, since tasks that are normally done during waking hours have been set aside. Vital functions such as heartbeat and respiration slow to a minimum. Even the brain is working to restore itself and promote memory retention.

Illness, nutrient starvation, and irregular lifestyle habits can all contribute to a lack of sleep. Conversely, when we don't get enough sleep—and especially if sleep deficit continues over a period of days, months and years—we lay the foundation for vastly reduced functioning and even illness.

For a detailed discussion on the benefits of sleep, the effects of sleep deprivation, and suggestions on how to get a good night's sleep, see Chapter 3.

### *Oxygen Insufficiency*

Oxygen scarcity is a serious problem. Not only would we die without it, but our tissues require oxygen for repair. Also, most pathogenic microbes thrive in an anaerobic (oxygen-deprived) environment.

Although so-called oxygen therapy is used in the United States to help ease conditions such as asthma and emphysema, the modality is much more sophisticated in other forms. In many countries outside the US, oxygen therapies consist of pure medical grade ozone, food grade hydrogen peroxide, and hyperbaric oxygen chambers. Each provides significant benefits when used properly. Chapter 3 discusses in detail the history of oxygen therapies, how and why they work, and in many cases how to administer them yourself.

### *Chemical Toxicity*

*Toxin* literally means "poison." Any substance that stresses the system's biochemistry to the extent that cell structure and organ function are negatively affected, may be considered a poison. Chapter 1 addressed in detail the effects of foreign chemicals we call "drugs." But there are literally

tons of other chemicals that are so commonly used, many people do not regard them as dangerous foreign agents. These agents enter the body through the skin, respiratory tract and gastrointestinal tract. The following excerpt from my book, *The Holistic Handbook of Sauna Therapy*, very briefly describes the number of dangerous chemicals in our environment.

> [These chemicals] include pesticides, fertilizers, and volatile organic compounds (VOCs)—among which are formaldehyde, toluene, benzene, and styrene. These are found in antifreeze, carpet, disinfectant, laundry detergent, polishes and varnish, shampoo, even packaged foods. Heavy metals (also known as toxic metals) also find their way into the body—cadmium, lead, mercury and zinc in cleaners, cosmetics, paint, solvents, vaccinations, and thousands of other items.
>
> Detergents, heavy metals and solvents abound in cleaners, soaps and personal care products. Hydrocarbons and sulfur dioxide are in automobile, bus and airplane exhaust. Carpet contains acetone, benzene and ethylbenzene, formaldehyde, phthalate, styrene, toluene and xylene, in addition to heavy metals that give them their bright color. Clothing is treated with fire retardant and fabric softener. Computers, telephones, electronic devices, and thousands of other things outgas molecules of plastic. Deodorizers and mothballs are made from dangerous petrochemicals. Fertilizers also contain petrochemicals. Furniture, glue and adhesives contain solvents. Pesticides, insecticides, fumigants, and fungicides, purposely made to be deadly, are registered poisons with the United States government. They are sprayed onto our crops and now are embedded in cooking utensils and children's toys. Shoe polish is comprised of dyes synthesized from coal tar, which in turn is derived from petroleum. Second hand cigarette smoke alone contains (among other chemicals) acetone, acetylene, ammonia, benzene, carbon monoxide, DDT, formaldehyde, heavy metals, hydrogen cyanide, methane, methyl alcohol, nickel compounds, nicotine, and propane.[7]

It is almost impossible to avoid chemicals. "Our bodies act like sponges, absorbing the chemicals to which we are exposed," write the authors of *Natural Detoxification*.

> Water-soluble chemicals are absorbed and then excreted. However, fat-soluble chemicals accumulate in our fat cells and cell membranes. . . . When the body is under stress [as during illness, emotional anguish, or nutritional deprivation], it releases these chemicals from the fat to circulate in the bloodstream. Later, these chemicals will return to the fat cells and cell membranes, to be released another time. The release and return cycle of these chemicals continues indefinitely unless we help our bodies rid themselves of toxins.[8]

"Over four million distinct chemical compounds have been reported in the literature since 1965, with 6,000 new compounds added to the list each week," write the authors of a study on chemicals found in the human body. "More than 3,000 chemicals are deliberately added to food and over 700 have been identified in drinking water. . . . Over 400 chemicals have been identified in human tissues, with some 48 found in adipose [fat], 40 in [breast] milk, 73 in the liver, and over 250 in blood plasma."[9] Less than half of these toxins have been approved by our government agencies.

The negative effects of toxic chemicals are amply discussed in other books. It is my hope that this brief overview encourages you to explore the topic more fully. Sauna therapy, which helps eliminate this toxic load, is discussed in Chapter 3.

### *Electromagnetic Toxicity*

When knowledgeable people hear the word "toxin," they commonly think of environmental pollutants, and drugs and other dangerous chemicals. Sometimes they think of radioactivity as well. It's true that all of these substances overburden the body with wastes and often prevent it from functioning properly. But electromagnetic fields are another, very real, and usually hidden source of environmental pollution.

Electromagnetic fields can have either beneficial or detrimental effects, due to their ability to change the polarity and voltage of the cells. The benefits and dangers of different types of EM radiation—including the radiation emitted by rife frequency devices—are discussed in detail in Chapter 4 and Appendix C.

### *Injury*

The relationship between injury and infection is complex but easy to recognize, once you understand how injury can lead to illness.

*Inflammation* is the body's way of dealing with irritation—regardless of whether the irritation is caused by microbes (infection), chemicals, friction, heat, or toxins. During inflammation, various scavenger cells gather at the problem site to ingest dead and damaged tissue. The scavenger cells also act as a cushion or barrier between the

local damaged tissue and the surrounding healthy areas. In addition, an increased supply of blood is generated by the immune response to bring extra nutrients, oxygen, and hormones to the repair site.

*Infection*, on the other hand, is a pathological, diseased state of the tissues involving microbes. The microbes force their way into various cells in the body and, as a byproduct of their own metabolic and survival functions, introduce waste materials into the tissues that don't belong there. (The speed at which microbes proliferate depends on the body's pH, the amount of oxygen in the system, and glucose levels, among other factors.) The body reacts to this biological assault by feeling pain (the nerves are being chemically irritated); malfunction (microbial toxins unfavorably alter the body's pH, poison the system, and hamper waste removal); and/or swelling.

*This is the point at which infection and inflammation overlap.* The body responds to localized microbial infection through swelling to contain the infection and protect the surrounding tissues from being inundated by pathogens. But inflammation itself can cause infection. For example, during a non-microbial swelling such as an injury, if the scavenger cells cannot break down and digest the damaged tissue quickly enough, the injured cells in the area will putrefy. Then, an infection due to microbial contamination and/or endogenous toxins will result. Unfortunately, on those occasions when the body's inflammatory response lingers past the point of usefulness, the swelling continues for too long, slowing down the circulation in the area and thus preventing healing. (At this point, to eliminate the swelling one might try the opposite effects of heat and cold through the alternating application of ice packs and sauna, or cold and hot water.)

Any debris—no matter what its cause—that remains in the system without being cleared, can cause inflammation and eventually infection. Injury can have long-lasting, sometimes permanent negative effects on the body. What begins as a mechanical stress can quickly become biochemical in nature, due to the secretion of stress hormones and the accumulation of white blood cells in the area. This is why sudden physical shock to the system, which causes tissue damage, can aggravate already existing problems and bring microbes to the area where previously there were few or none.

### *pH Imbalance*

Another important contributor to becoming ill is a disturbance in the body's *pH*, or acid-alkaline balance. Although a disturbed pH results from nutrient deficiencies, the converse is also true. When the acid-alkaline balance is awry, it can either augment a problem that already exists, or create new problems. Sometimes a seriously ill person can become well just by correcting his or her acid-alkaline balance. However, this procedure is not as simple as it might seem, because different areas of the body, at optimal function, have different levels of acidity and alkalinity. I'll get to this in a moment.

pH expresses the degree of acidity or alkalinity of a fluid, measured on a scale of 0 to 14. The designation is derived from "p," a mathematical symbol used to make the calculation, and "H," the chemical symbol for hydrogen. The element hydrogen—in particular, hydrogen ions—are key to measuring pH. (An ion is a charged particle that has gained or lost one or more electrons.) When ions are present in a liquid, electrical energy can be conducted through the solution. In a solution, different elements form ions in varying amounts, depending on the ability of the atoms to gain or lose electrons. These atoms dissociate (ionize) in solution to form hydrogen ions (H+) or hydroxyl ions (OH–). Even though pH selectively measures only hydrogen ion activity, it refers to both acidity and alkalinity, since the lessening or absence of H+ implies an increase or the sole presence of OH–.

This bit of chemistry may seem rather dry, but it's relevant to health. pH relates to ion concentrations. It is minerals dissolved in solution that determine the presence of hydrogen ions and hydroxyl ions! Also, *minerals in solution conduct an electrical charge*. When the systemic fluids act like batteries—that is, conduct electrical charge—nutrients can enter the cell and wastes can leave. But if the electrical charge of the cells and bodily fluids is too weak, our bodies don't work properly and we become ill.

Depending on the presence or absence of H+ and OH– ions, the solution will be acidic, neutral or alkaline. If the H+ concentration is greater than OH–, the material is acidic. The pH values of acids range from 0.0 to 6.9 (less than 7.0). If the OH– concentration is greater than H+, the material is alkaline or basic. The pH values of bases range from 7.1 to 14.0 (greater than 7.0). If equal amounts of H+ and OH– ions are present, the material is neutral, at exactly 7.0.

Note that the numbers on the acidity/alkalinity scale do not represent equal divisions. Each number higher than the one before it represents an exponential increase: 1 is ten times greater than 0; 2 is ten times greater than 1 or one hundred times greater than 0; 3 is ten times greater than 2 or one thousand times greater than 0, and so on. This means that even a small change in the measurement of systemic acidity matters a great deal.

Sometimes, people talk about being "too acidic." This is too general a reference to provide much meaningful information about health, because different parts of the

body are designed to have intrinsically differing ranges of acidity or alkalinity. The optimal pH levels for the blood, urine, saliva, and various bodily tissues are different from one another. For instance, the skin is normally acidic; its natural surface acids help protect it. The saliva must be alkaline, since alkalinity helps to digest starches (carbohydrate digestion begins in the mouth). On the other hand, the stomach fluids must remain at about 2.0, which is very strongly acidic. Only an adequate supply of hydrochloric acid can help the inactive form of pepsin in the stomach convert to its active form, and thus digest protein (animal or vegetable).

Often, there is an inverse relationship between acidity in the stomach and acidity in the body. The more (desirably) acidic the stomach is, the more (desirably) alkaline the body tissues are; and the more (undesirably) alkaline the stomach is, the more (undesirably) acidic certain parts of the body are. Sufficient hydrochloric acid in the stomach for digestion means that fewer undigested food particles travel through the intestinal wall and lodge in cells as irritating, usually acidic wastes.

The one body area whose pH *must* stay within a very narrow range of alkalinity is the arterial blood plasma. Depending on which authority is being cited, the ideal pH for the blood plasma ranges from about 7.35 to 7.4. If the blood deviates too much from its ideal pH for too long a period of time, the person becomes sick and dies. (The watery blood plasma is a liquid—entirely different from the round red blood cells that float in it, and whose iron content gives the blood its red color.)

The job of regulating the acid-alkaline levels belongs to the respiratory tract, the chemical and physiological buffering system (which includes the liver), and the urinary tract. The respiratory tract alters the rate of carbon dioxide ventilation from the bodily fluids. This in turn changes the ion concentration through a series of biochemical processes. The chemical and physiological buffering system of the body undergoes a number of different steps to produce special biochemicals that also counteract the acidic pH imbalance in the blood plasma.

It is the urinary tract network, however, that is the body's most efficient method for getting rid of acids. The kidneys play a prominent role in excreting acid through the urine. But even this method has its limitations. The blood transports excess acid to the kidneys only a little bit at a time, and slowly. No matter how hard the kidneys are forced to work (assuming they don't become overloaded), there is only so much acidity they can excrete. After the kidneys have excreted all they can, if excess corrosive acids and acid-forming substances still threaten to damage the bloodstream, the acids are simply relocated elsewhere in the body to protect the blood.

Waste accumulates in the system more often than many people realize, which is why cleansing and detoxification are so central to natural medicine. If the body does not eliminate waste quickly enough, the toxins get stored in the extra-cellular fluids (fluids surrounding the cells), the connective tissue, the joints, and even the organs. This is how a chain reaction of deterioration in bodily functions starts to occur. It is this autointoxication—a condition of being poisoned by one's own toxic wastes—that lays the foundation for degenerative conditions including arthritis and bone loss, allergies, cardiovascular problems, diabetes, fibromyalgia, kidney stones, and even cancer.

Despite recent publicity on the importance of having an alkaline system, some areas of the body need to be acidic even if other areas need to be alkaline. This is why testing either urine or saliva provides an incomplete biochemical portrait. Also, some regions can be too alkaline—and excessively alkaline tissue in one area invariably has a counterpart of excessively acidic tissue in another area. For example, blood, with a pH of 7.45 instead of 7.4, is too alkaline. This means that the corresponding extracellular fluids are too acidic. Functionally, the red blood cells won't release enough oxygen to the tissues, which will become oxygen deprived. (This delicate balance can be corrected by eating more leafy greens.) Balancing pH is complex, so consult a holistic practitioner knowledgeable in body chemistry, metabolic processes and the nutritional needs of specific metabolic types.

Storing overly acid *or* alkaline wastes in the tissues to get them out of the bloodstream—while a necessary and viable intervention by the body—is, at best, an emergency, short-term solution to a pH imbalance. Bone loss is a good example of a highly unbalanced, overly acid system. It also graphically illustrates a malabsorption or shortage of calcium and other minerals, which are key factors in maintaining the proper pH. Most of the calcium we ingest is not used for bone construction, but instead freely circulates in the body to be utilized in various metabolic processes, including the neutralization of systemic acid. The blood's pH balance is so crucial that when no more calcium is available, the body leaches it from the bones.

This is why getting enough calcium is so important, particularly if you are ill. However, the rush to supplement the diet with calcium has brought its own set of problems: some people take too much calcium without also taking enough magnesium, boron and other nutrients that help the body utilize the calcium. Under these conditions, bone loss and other symptoms that we commonly associate with calcium deficiency occur because the excess unbalanced calcium is disintegrating the bones. Also, there are acid-forming and alkaline-forming varieties of calcium. Different people require different forms.

### *Proliferating Pathogens*

Pathogenic microorganisms are probably the most obvious component of illness. Since bacteria, viruses, parasites and fungi thrive in an unbalanced pH environment, the same factors that cause tissue deterioration also allow microorganisms to proliferate.

As you may recall, Béchamp pointed out that the function of pathogenic microbes is to break down bodily tissue that is already diseased. But the scavenger function of bacteria has complex ramifications. If these modified microzymas were only getting rid of debris, we humans could eat whatever we wanted and subject ourselves to all kinds of abuse without worrying about the consequences. We could binge on junk, see the body react by becoming toxified, and then blissfully sit back while the transmuted microzymas cleaned up the mess. The problem is, once the microzymas have transmuted into bacteria, viruses or fungi, feeding on unhealthy and fermented body tissue causes them to *excrete* unhealthy (mostly acidic) waste materials. *It is these microbial waste materials, or mycotoxins, that further contribute to a rising spiral of sickness*. Thus the phrase, "You are what you eat," takes on new meaning.

The *myco* in the word *mycotoxin* is from the Greek "mykes," which means "fungus." As mentioned in Chapter 1, a toxin is a poison. One common mycotoxin is acetaldehyde, which in turn breaks down into the poisons oxalic acid, uric acid, and alcohol. The more noxious the waste that is discharged into the body, the sicker we feel.

The term "mycotoxins" also applies to the waste material of pathogenic corpses that shatter in the body, a waste commonly known as die-off. Ideally, a white blood immune cell will attack, immobilize and devour a pathogen whole—thereby transmuting it—before the microbe has a chance to shatter and spew its toxic waste into the bloodstream. However, this best-case scenario is not always possible. Many people who are ill (particularly with chronic conditions) do not have enough optimally functioning white blood cells to gulp down the invaders whole. Several factors can cause a pathogen to rupture rather than simply become immobilized: an assortment of drugs in the system, the natural dying process of some microorganisms (they leak out toxins from their walls to defend against counterattack by the host), and in some cases, rife technology. As sick people know, the resulting foul die-off feels terrible. However, it's still preferable to shatter a microbe than have it live and repopulate the body with baby microbes. Chapters 3 and 4 address how to deal with microbial waste.

Most people have not heard of the mycotoxin called *acetaldehyde*. However, many of us are familiar with acetaldehyde's breakdown products oxalic acid, uric acid and alcohol, since they are found in foods.

Oxalic acid is a common toxin in many foods, including tomatoes (which contain high amounts). If eaten continually by a susceptible person in large enough quantities (as in the concentrated form of tomato sauce), oxalic acid can produce inflammation in the joints.

Another toxin, uric acid, cannot be destroyed by the body. If it is not excreted by the kidneys, it crystallizes as kidney stones. A high-protein diet is said to help form uric acid. However, complementing the protein with plenty of vegetables and enzyme-rich foods will help the system dissolve the uric acid crystals.

As for alcohol, reframing this legal drug as a toxin gives us a different perspective. Alcoholic beverages are produced when a fruit or grain is allowed to ferment. During the fermentation process, the yeast feeds on the food sugars and excretes alcohol, which is considered a desirable occurrence. However, alcohol is actually a waste product—yeast poop! It destroys brain cells, which people experience as intoxication. And its rapid metabolization by the body can cause liver damage.

### *Toxic Bodily Responses*

Illness can also occur as a result of noxious biochemicals, non-beneficial hormones, or other *endogenous* substances—*produced by the body itself—in response to these mycotoxins*.

A cyst, for example, is a sac containing liquid that forms around foreign material in the body to contain it and prevent the rest of the system from being poisoned. Western doctors often perceive the cyst as the medical condition itself rather than an expression of a deeper disruption. Put another way, they call the cyst the cause of the problem rather than the effect. The body's attempts to protect itself, while not always convenient or efficient, do demonstrate an attempt to achieve equilibrium. The holistic approach recognizes that the body's tendency to form cysts is intricately related to an impaired waste removal function.

### *Emotional States and Belief Systems*

The last, and very important, component to becoming ill is one's emotional state and belief systems. I'll discuss emotions first.

Emotional states consist of joy, anger, love, rage, sadness, excitement, etc. "E-motion" is really *energy in*

### Emotional Flexibility Helps Us Resist Illness

We can use the skills of coping and adapting to bring about changes that will make us happier and healthier . . . When we cope, we change our immediate environment to help us feel whole and healthy. We can cope by broadening our social networks, forming a diverse set of friends, family, and colleagues so as to build a healthier balance of dependence and interdependence. This gives us a greater sense of belonging as well as a sense of safety and security. We can also create changes by *adapting*—that is, by changing ourselves to fit the world better. We can look inside ourselves and work to change qualities in ourselves so that we're better able to withstand stresses and assaults form the outside world. . . .

Researchers looked at two groups of business executives: both were highly stressed, but one group exhibited a high instance of illness whereas the other group had no illnesses. The scientists found that the individuals with high stress and no illness had a strong commitment to themselves, had a vigorous attitude toward the world around them, looked for meaning in the events that took place, and believed that they had some control over every situation. The executives who succumbed to illness, lon the other hand, felt powerless, were nihilistic, and believed they had little or no control over what happened to them. . . .

Healthy people accept change and view it as a challenge and an opportunity to grow. When faced with stress, they may feel hopeless and helpless for a moment, but they will pick themselves up and go into action. . . . The key is balance.

—Mona Lisa Schulz, *Awakening Intuition,* 1998

*motion*; and this energy corresponds to both electrical and chemical messengers in the body. Electrical messengers are the charge that energizes the nervous system. Chemical messengers are the minute amounts of hormones that circulate throughout the body—for example, fear and depression occur simultaneously with the outpouring of the fight-or-flight corticosteroid adrenal hormones.

A feeling can be divided into two parts: the emotional content, and the urge to express the emotion through action or behavior. For example, love (the emotion) is a tangible energy. It expands the heart and chest cavity in a pleasurable way and builds up a charge. When the charge substantially accumulates, most people feel a need to discharge that energy. This is often done through a hug or other affectionate touch (the act), which allows the built-up energy to flow out from the chest through the shoulders, arms and hands. Sadness (the emotion) is accompanied by crying and sobbing (the act) to discharge the energy, and so on.

Holding back from expressing an emotion generally begins as a conscious behavior, and people are aware of their choice. But over time, if the emotional issue is not resolved, this holding back becomes unconscious or automatic, beneath one's level of awareness. At one time or another, most of us have probably held our breath when faced with dread, fear, or other uncomfortable emotions. More chronic, habituated responses to avoid feeling deeply include shallow breathing (which inhibits the natural biological response or *act* of vocalizing those emotions) and biting the lower lip and tensing the abdominal muscles and diaphragm (to prevent sobbing). Once the reason for holding back is not addressed, the muscular contraction that initially was deliberate becomes automatic, so the person is no longer aware of the emotion being held in the tensed muscles.

Awareness of emotions means the ability to choose to act on them, or not act on them while having the option to release or transmute them. But being unaware of emotions extracts a price: the chronic tightening of muscles (including the diaphragm), organs, glands and even skeletal tissue. This constriction prevents nutrients as well as oxygen from reaching the tissues, which contributes to the accumulation of waste products and an unbalanced pH.

The suppression and mismanagement of emotions also contribute to illness because tension, upset and worry—which corresponds to the adrenal secretion of fight-or-flight biochemical messengers—create excess acidity in the system. In this unnaturally over-acid condition, pathogenic microbes proliferate.

Emotions and beliefs are not the same, although they are related to each other. Belief systems are our thoughts about how the world operates (which we call "reality"). Belief systems are based on our emotional states, experiences, and what we have been cognitively taught. For example, someone with loving parents who helped her feel secure and wanted would be likely as an adult to view the world as a safe place, where one's needs are easily and joyfully met. But someone whose parents wanted her to conform to their own standards rather than accepting her for who she really was, might later view the world as a place of conflict and struggle. To the two people in the above example, the world is a radically different place.

Just as we can approach health by changing our physical environment (which can positively affect our emotional state), we can change our belief systems and emotional states—and thus the condition of the body. People whose illnesses are caused or strongly influenced by emotional states might consider seeking some form of psychological

healing. Sometimes love is precisely the one ingredient that is missing in our lives. The restoration of love—and hence the sense of connection to oneself and others—may be the needed component of one's healing.

Emotional factors are sometimes derided by doctors and laypersons, who use the pejorative term *psychosomatic illness*. This implies that since the diseased state is "all in one's mind," it is somehow not real, not worth serious attention. But *psychosomatic* simply refers to the connection between mind and body. The emotional and mental components of illness are as important as the physical. Paying attention to these aspects could save your life.

At the very least, maintaining a genuinely positive outlook will enhance the quality of your life. Chapter 6 describes in detail some revolutionary experiments on the relationship of mind, body and emotions. After you read about these studies, you will understand why I did not include genetic inheritance as one of the contributors to becoming ill.

The practice of consuming mushrooms as food becomes questionable once we realize that fungus is the most unhealthy manifestation of a microzyma. Mushrooms—a form of fungus—live on dead and decaying material, as compared to green plants that synthesize sunlight into chlorophyll. Many people afflicted with systemic *Candida*, vaginal yeast infections, and overgrowth of other fungal forms, find their symptoms aggravated after eating mushrooms, brewer's yeast, and foods such as bread, cheese and soy sauce that are produced through fermentation.

Even fungi that are used medicinally—such as shitake, maitake and reishi mushrooms, and the fungal drink kombucha "tea"—may not be tolerated by people with severe yeast problems (although these fungi can be helpful to those who do not exhibit a cross-sensitivity to fungus). Considering how many people are plagued by fungal infections, medicinal mushrooms should be used with great care.

## HEALING THE TERRAIN

Illness usually arises from many complex factors, rather than being the simple consequence of pathogenic microbes invading the system. However, it can be difficult to correct the bodily terrain on which the microbes feed. Those who are the most toxified and ill have the most urgent need to eliminate waste. But increased energy is required for waste removal, and a sick person usually doesn't have an erg to spare. Moreover, these transmuted microzymas are *reproducing* at a brisk rate, usually faster than the immune cells can eliminate them.

Compounding the problem, a very ill person generally harbors yeast, fungi and molds. These organisms, which appear at the final stage of a microzyma's transmutation cycle, are often the most damaging. They are not only the most sophisticated in structure and function, but they exist in the most fermented, acid state possible for living tissues. The over-acidity in the system causes more fermentation, which then creates even more transmuted microzymas. The microzymas, in turn, excrete more acidic waste materials, which then ferment even more tissue, which then creates more acidity—and the whole vicious cycle begins all over again. All this not only contributes to, but it can directly cause, degenerative disease.

Unfortunately, people with an unbalanced pH usually have little or no interest in eating nutrient-rich vegetables or protein-laden meats. Instead, they prefer sweets, refined starches and even alcohol, all of which further unbalance the pH. Ironically, the craving for unhealthful substances is largely due to the hunger pangs of the sugar-loving pathogens, which need this unbalanced diet in order to survive. Not surprisingly, the biochemical message sent by the parasitic microbes—"Feed me junk!"—is often confused with the person's own hunger signals. No wonder people sometimes feel enslaved by their cravings and wonder if it's possible to get well!

To be fair, some holistic practitioners debate whether "the terrain is everything" is true in *every single* case of illness. In less than half a century, genetically engineered and unnaturally mutated germs have emerged that are so virulent, they seem capable of altering the bodily environment in even reasonably healthy individuals. One example is the huge, corkscrew-shaped Lyme spirochete, which can bore into bone. Due to its size and shape, it can cause intense physical pain and severe disabilities including blindness. As thousands of Lyme sufferers know, usually the healthiest diet alone cannot halt the deterioration caused by Lyme. Recovery requires many different modalities, including rife therapy to directly destroy the pathogen.

Healing, therefore, has many approaches. The terrain may not be everything in every case of illness, but reestablishing its integrity is critical.

Now I want to address arguments that appear to refute Béchamp's claim that diseases are caused by unbalanced internal conditions. History proves that a substantial decrease in hospital fatalities and an improvement in public health took place once physicians began washing their hands before performing surgery and dressing wounds. However, as Walene James explains, "when unclean or putrefying matter—conveyed by hands,

dressings, or other means—contacts fresh wounds, it introduces morbid microzymas that alter the normal function of the inherent microzymas of the body."[10] This is not merely superfluous window dressing of Pasteur's germ theory. The differences, though subtle, are important. According to Pasteur, all disease originates from outside attackers (germs) that penetrate an otherwise pristine and healthy system, with no internal systemic response other than the mobilization of immune cells to ward off the invaders. However, as Béchamp recognized, the body is never a passive observer of its circumstances; there is always a synergistic relationship between internal and external conditions.

Take the example of decreased illness after doctors began washing their hands in hospitals. When a doctor performs surgery on a patient with unwashed bloody hands that have previously touched someone else's open wound, that surgery patient becomes sick because it is *foreign material*, rather than a *pathogenic microbe* per se, that has been introduced into the patient's body. The phrase "foreign material" is key here. Human beings are not constructed to harbor life forms alien to their innate processes. James summarizes Béchamp's findings:

> There are functional differences in the microzymas of (1) the same organs and tissues of the same animal at different ages, (2) the blood and tissues of different species, and (3) the blood and tissues of different individuals of the same species. Because microzymas of different species are functionally different, each species has diseases peculiar to it. Certain diseases are not transmissible from one species to another and often not from one individual to another, even of the same species. Microzymas, then, are species and organ specific and even person and age specific.[11]

The specificity of microzymas to a given location explains how the introduction of foreign blood proteins (to use the above example) can make someone sick. "It is not the inoculated organisms which multiply," Béchamp wrote, "but their presence and the liquid which saturates them *causes a change in the surrounding medium* [the person's body] *which enables the normal microzymas to evolve in a diseased manner*." [emphasis added][12]

Put another way, the introduction of agents foreign to the body upsets the chemical balance of the inner terrain. These foreign agents can be chemical toxins, junk foods, or waste products from unnatural microzymas. Once the environment of the body is thrown out of balance, the microzymas that regularly inhabit the system change in response to the altered chemistry. The foreign proteins do catalyze the change. However, *the malady itself is caused by the body's own altered microzymas that have formed in response to the changed environment triggered by these outside agents*. At this point, the pathogenic microbes that are multiplying are not foreign substances, but the body's own transmuted microzymas which—because they are reproducing and spewing their toxic waste into the system—perpetuate the cycle of ill health as long as the inner terrain is unbalanced. (See Sidebar, "Vaccines as Foreign Substances.")

## Vaccines as Foreign Substances

The consequence of introducing foreign substances into the body—things that never belonged there and should not be allowed there now—helps explain the harmful effects of vaccinations. Substances used in vaccines include phenol (also known as carbolic acid, a poisonous acid derived from coal tar nonetheless marketed by the pharmaceutical/medical industry as an antiseptic); mercury- or aluminum-based preservatives (highly poisonous in any form); and acetone (a highly unstable solvent commonly used in nail polish remover). The "main ingredients" of vaccines are foreign proteins such as chick embryo, monkey kidney cells, calf blood serum, and other materials that, because they are injected directly into the bloodstream, actually become part of our genetic makeup.

The introduction of foreign proteins into the body via vaccines is an eerie precursor to genetically engineered crops, in which foreign proteins are forced into the genetic structure of plants through the mechanical splicing of DNA. Laypeople who object when pesticides or fish genes are spliced into their tomatoes know instinctively that it is wrong, even though they may lack the scientific background to explain why. Simply put, foreign proteins are not meant for the bodies of human beings—otherwise, we would already possess them, and they wouldn't be foreign. When alien materials are introduced into a living organism, the body becomes foreign unto itself. This explains the high rate of autoimmune diseases in response to vaccines. It also explains why such a high percentage of organ transplants are rejected. The recipient body is only doing its job: instructing its immune cells to attack the transplanted organ, a foreign invader, at which point doctors pump the patient full of drugs to suppress this natural systemic response.

An infection catalyzed by external unsanitary conditions must be dealt with in the same manner as any other imbalance that involves the body's own transmuted microzymas: attention must be paid to proper diet, purifying the blood, rest, and so on. We are not dealing with separate diseases here, only different manifestations of unbalanced conditions. Significantly, Béchamp recognized the function of fever as "the effort of the organism to rid itself of the products of an abnormal fermentation and disassimilation, while inducing a return of the diseased microzymas to the [original positive] physiological condition."[13] Pathogens cannot live beyond certain high temperatures, so the body finds a way to "cook" them by producing a fever.

Béchamp's colleagues and the general public ridiculed his discoveries. James analyzes the barriers that prevented them from accepting what the scientist had proven in his laboratory.

> First, it [the germ theory] fit neatly into the mechanistic theories of the universe that were popular in the nineteenth century. Second, it fit "human nature." Man, apparently, ever ready to avoid responsibility and place causation outside himself, found an easy scapegoat in the bad little organisms that flew about and attacked him. After all, it wasn't too long ago that evil spirits had been responsible for man's ills. Third, it fit "commercial nature." When we place causation outside ourselves, we create vast armies of attackers and defenders, assailants and protectors. In the case of disease causation, our protectors are such things as vaccines, drugs, X-rays, and the like, and their administrators, medical practitioners. The possibilities for commercial exploitation are endless. Is it any wonder that the "powers that be"—conservative, well-established scientific authorities—were behind Pasteur?[14]

Unfortunately, mechanistic thinking, the abdication of personal responsibility, and "commercial nature" are still largely the dominant paradigm today.

## BÉCHAMP'S SCIENTIFIC PROGENY

Had Béchamp been the only physician who observed these basic units of life that transform as the body changes, he might have passed into obscurity. But professionals from many different sectors of the scientific and medical communities subsequently agreed with his findings. What follows is only a small sample.

### *Rudolf Virchow*

By the age of 25, 19th century Prussian Rudolf Virchow had become a doctor and the founder of pathology who discovered and named many structures and tissues in the human body. Perceiving that the presence of microbes was the effect—rather than the cause—of disease, he used the famous analogy that mosquitoes gravitate to stagnant water to feed, rather than being the cause of the stagnation itself.

### *Florence Nightingale*

Florence Nightingale was a 19th century British mathematician and nurse who turned the devalued art of nursing into a respected profession and championed public sanitation because she understood that protecting the terrain was the biggest deterrent against germs. In 1860 she remarked:

> Diseases are not individuals arranged in classes, like cats and dogs, but conditions growing out of one another. . . . I was brought up . . . to believe that smallpox . . . [began as] a first specimen in the world, which went on propagating itself, in a perpetual chain of descent. . . . Since then I have seen . . . smallpox growing up in first specimens . . . where it could not by any possibility have been "caught". . . . Wise and humane management of the patient is the best safeguard against infection—the greater part of nursing consists in preserving cleanliness. The specific disease doctrine is the grand refuge of weak, uncultured, unstable minds, such as now rule in the medical profession. *There are no specific diseases; there are specific disease conditions.*[15]

### *Guenther Enderlein*

A little later, in Germany, scientist Guenther Enderlein (1872–1968) wrote about the different phases of the life cycles of microorganisms. He described how they can climb up the evolutionary ladder very quickly from their basic size 0.01 micron form (which he called *endobionts*) and assume more complicated forms, with increased ability to perform complex functions. In *Bakterien Cyclogenie (The Life Cycle of Bacteria)*, Enderlein pointed out that the highly varied forms the microbes assume is a different phenomenon from the adaptive changes that occur when a bacterium becomes resistant to an antibiotic over several generations. He called microbes *pleomorphic*, from the Greek meaning "many forms." Echoing

Béchamp, Enderlein emphasized that the numerous developmental stages of a microbe are not freaks of nature, but naturally occur under certain conditions as part of the microbial life cycle. Pleomorphism, Enderlein wrote in 1950, "is easily affected . . . by increasing the local pH value."[16] (See Sidebar, "Antibiotics and Microbe Behavior.")

Enderlein had access to better microscopes than did Béchamp. Besides presenting specific data about how numerous classes of microorganisms function, he was able to describe in some detail the different microbial shapes. He developed a comprehensive program of biological medications directed at the microbes' different life cycle stages to help the body eliminate the pathogenic forms and rebalance itself. Enderlein understood, however, that as long as the bodily terrain remains favorable to ill health, the microbes will continue to evolve into their more toxic forms. That is why he also emphasized a healthy diet and the elimination of acidic wastes from the person's system as the chief components of good health.

### *Bruno Haefeli*

Swiss biologist Bruno Haefeli worked with Enderlein. He reported that when acid accumulates in the body's cells due to poor diet and other stress, the cells begin to ferment. This provides a tasty snack for the malevolently transmuted microzymas and a wonderful opportunity for them to further ferment bodily tissue. Haefeli's name for the basic unit of microorganism was *protit*, but the concept was the same. All over the world, scientists were amassing the same data: microbes evolve into what look like completely different microbes if conditions in the body support the change.

### *Wilhelm Reich*

Around the time that Enderlein was working in Germany, and later Europe and the United States, his contemporary, natural scientist and psychiatrist Wilhelm Reich, followed a similar course (and geographic itinerary) with his own examination of microorganisms. In the 1930s, through special high-magnification microscopes that used dark field condenser technology and had a viewing capacity of up to 4,500 times, Reich was able to examine the life processes of minuscule organisms. After extensive experiments, he discovered living, mutable microscopic entities that he called *bions*. "My observations [of these bions] and the resulting hypotheses," Reich freely acknowledged, "clashed severely with the 'germ theory.'"[17] These bions appeared to be none other than Béchamp's microzymas and Haefeli's protits. Based on the fact that the blood of the cancer patients he studied produced pathogens much more readily than did the blood of healthy people, Reich concluded that one's propensity to develop cancer is based on the ability of blood and bodily tissue (the terrain) to resist putrefaction.

Significantly, Dr. Reich cautioned his critics against trying to duplicate his experiments without using identical measuring tools—a common mistake made by many scientists who try to replicate the work of other scientists. *"It is not really possible"* he wrote, *"to verify the findings unless the same optics are used* [original emphasis]."[18] This is why Reich described in detail the manufacturers, models and technology of the microscopes that he used in his lab to examine the living specimens.

Echoing Béchamp and foreshadowing some modern microscopists, Reich believed that what we call the cancer virus is actually a mutation of some of the body's own minute biological structures.

### Antibiotics and Microbe Behavior

Many times after the administration of antibiotics, people either feel a need to take another cycle of the same drug—"because the medicine didn't kill all the germs"—or they become sick with an apparently unrelated illness, to which they respond by taking a different drug. There are two reasons for the growing immunity of microbes to antibiotics. First, if enough antibiotics are ingested over a period of time (either directly, or through the consumption of non-organic commercial meat, whose animals are routinely fed antibiotics), the microbes will mutate into a more resistant form that is not necessarily part of their normal pleomorphic cycle. This scenario is now widely acknowledged as fact by the allopathic community, but they respond by creating even more deadly poisons to kill the strengthened microorganisms, instead of carefully limiting the use of antibiotics or stopping it entirely.

The second reason that antibiotics don't work is not readily understood by allopathic doctors and researchers. Even if a drug succeeds in eliminating a specific microbe, the microbe is one, narrow range of pathogen in an entire pleomorphic family. The drug has not eliminated other pleomorphic forms of the same microbe, either higher up or lower down on the evolutionary chain. Unless the unhealthy terrain of the body is changed, the same symptoms will recur in the future; or other forms in the same microbial family will later cause new, different symptoms regarded as an unrelated, apparently different disease.

### *Edward Rosenow*

Knowledge of the pleomorphic life cycle of microorganisms was not limited to Europeans. In 1914 in the US, Dr. Edward C. Rosenow—who among his other accomplishments was an associate at the Mayo Clinic for over 60 years and published over 450 medical papers—wrote an article in *The Journal of Infectious Diseases*. He described taking a variety of bacterial strains from different diseased tissues and placing them in separate Petri dishes that all contained the same nutrient medium. When after a short period of time he examined the different dishes, he found no difference between the microbes. They all had transmuted into the same form! (He and his colleagues were able to see this phenomenon almost 20 years later through Royal Rife's microscope. This will be discussed shortly.) When Rosenow later returned the altered microorganisms to their original diseased tissues, *their offspring assumed the original form and function of the parent microorganisms*. Rosenow's simple experiment has been successfully repeated by other scientists.

A. Van Beveren writes:

> Thus there is no *"streptococcus"* for the throat and *"pneumococcus"* for the lungs. They are the very same bacteria feeding on—and being modified by—the substance they are breaking down. This is pleomorphism and, while once ridiculed, [it] is now being reconsidered in light of improved microscopic techniques.[19]

## ROYAL RAYMOND RIFE

### *A Renaissance Man*

As we explore the history of the discovery of pleomorphism, a major repeating theme is the quality of the microscopes used by the researchers. Although the microscopes of Béchamp's time limited his ability to report in minute detail the appearance of the microzymas, he could certainly identify them by function and location. The scientists who followed him achieved much more detailed descriptions due to improved microscope technology. This brings us to Royal Raymond Rife.

Royal Rife was born in Nebraska in 1888. He was raised by an aunt and uncle, as his mother died shortly after his birth and his father was apparently unable to take care of him. By 1912, Rife had moved to San Diego and married a Chinese-American woman named Mamie Ah Quin.

Mamie, the third of twelve children, had been born into a wealthy and highly respected family within the San Diego Chinese community—in fact, her father was regarded as the unofficial mayor of Chinatown. Among his many accomplishments, the elder Ah Quin was a labor broker, recruiting newly arrived Chinese immigrants to build the railroad. He also had considerable bilingual talent and extensive legal knowledge, which made him a favorite translator in the courts. More is known about the Ah Quin men than the women. For instance, one of Mamie's brothers later became part owner of a tourmaline mine that supplied jewels to the Dowager Empress in China. But we do know that all of the Ah Quin children were reported to have received musical instruction. And, from what we know about the father's efforts to assimilate into American culture (he cut off his back braid, an offense punishable by death in China)—and the entrepreneurship of the men in the family—it's reasonable to assume that Mamie's upbringing similarly focused on breeding, education and adaptation to a new culture. All this, and Mamie's striking physical beauty, evidently attracted Rife to her. Because it was illegal for Caucasians to marry non-Caucasians at that time, Rife and Mamie probably got married across the border in Tijuana. (The youngest daughter Mabel also married a Caucasian, and records show that she did so in Tijuana in the 1920s.)

The newlywed Rifes moved onto the estate of San Diego millionaire industrialist H.H. Timken, who hired Rife as his chauffeur and car mechanic. Timken quickly recognized that Rife was not a typical employee. A gifted musician and artist, Rife had already educated himself in the fields of optics, electronics, biology and chemistry. Additional education for Rife included studies at Johns Hopkins University, two years of training to perform eye surgery, and six years of study with optical scientist Hans Luckel, who worked for German-based company Zeiss Optics and was in the New York plant when he taught Rife. (Rife is also said to have received an honorary Doctor of Parasitology degree from Heidelberg University, but this cannot be verified. One rifer who claims to have a copy of the degree has not allowed it to be publicly examined. Others who queried the university have been told that no such degree has been located.)

In his lifetime, Rife is known to have designed and built many medical research instruments including spectroscopes, optical tools, micromanipulators, and stop-motion photomicrographs. With one of his own photomicrograph inventions, he is thought to have made all of the pictures that appeared in the *Atlas of Parasites*, published by the University of Heidelberg in Germany. According to several reports, the governments of the United States and several foreign countries later awarded Rife over a dozen medals for scientific work involving variable pitch propellers, machine gun synchronization gears, inclinometers, and high altitude barometric pressure scales.

Royal Rife reportedly had a period with the United States Navy during World War I when he traveled to Europe to examine foreign laboratories for the US government. Among other tributes, he was awarded a Research Fellowship in Bio-Chemistry by the Andean Anthropological Expedition Institute for Scientific Research on August 10, 1940. According to Rife researcher and engineer Dave Felt, Rife was also offered an honorary Doctor of Science degree by the University of Southern California in 1936, but never accepted it.

One of Rife's inventions had been some sophisticated X-ray equipment that Timkin was using to examine the entire assembly line in his tapered roller bearing factory. Around 1920, the X-ray array detected faulty hairline fractures in the steel that was used to manufacture the bearings. This saved Rife's grateful employer hundreds of thousands of dollars. Thereafter, Rife spent even more time in his laboratory, which was located above the garage on the Amelia C. Bridges estate and had been financed by Bridges and other wealthy sponsors, including Timken. It was in this lab that Rife created some remarkable optical equipment.

### *The Universal Microscope*

Rife was used to working alone. However, he was catapulted into the public eye when he built the first of five microscopes that were far superior in resolution or performance to anything thus far available. Although Rife was a contemporary of both Enderlein and Reich, he appeared to be unaware of the microscope technology and research of his European counterparts. We do know that he was so dissatisfied with the existing level of microscopy, he was determined to create something better.

The most powerful and celebrated instrument, completed in 1933, was the 200-pound, 5,682-part Universal Microscope. Standing between two and three feet high, it had a magnification power of about 60,000 times, with a resolution of 31,000. Rife's microscope had some unique design features. "The New Microscopes" by Raymond E. Seidel and M. Elizabeth Winter, which described how the Universal Microscope worked, appeared in a 1944 *Journal of the Franklin Institute* and was reprinted in the *Annual Report of the Board of Directors of the Smithsonian Institution* for the period ending June 30, 1944. (Rife later remarked that despite a few errors, the article was basically correct.) Some highly technical details from the article are included to illustrate the level of expertise and legitimacy conferred on Rife by the medical community.

> Dr. Royal Raymond Rife of San Diego, California . . . has built and worked with light microscopes which far surpass the theoretical limitations of the ordinary variety of instrument. . . . The entire optical system of lenses and prisms as well as the illuminating units are made of block-crystal quartz . . . . The illuminating unit used for examining the filterable forms of disease organisms contains fourteen lenses and prisms. . . .
>
> When light comes into contact with a polarizing prism, it is divided or split into two beams, one of which is refracted to such an extent that it is reflected to the side of the prism without, of course, passing through the prism while the second ray, bent considerably less, is thus enabled to pass through the prism to illuminate the specimen. When the quartz prisms on the universal microscope, which may be rotated with vernier control through 360°, are rotated in opposite directions, they serve to bend the transmitted beams of light at variable angles of incidence while, at the same time, a spectrum is projected up into the axis of the microscope, or rather a small portion of a spectrum since only a part of a band of color is visible at any one time. However, it is possible to proceed in this way from one end of the spectrum to the other, going all the way from the infrared to the ultraviolet. *Now, when that portion of the spectrum is reached in which both the organism and the color band vibrate in exact accord, one with the other, a definite characteristic spectrum is emitted by the organism. . . .*
>
> *A monochromatic beam of light, corresponding exactly to the frequency of the organism* (for Dr. Rife has found that each disease organism responds to and has a definite and distinct wave length, a fact confirmed by British medical research workers) *is then sent up through the specimen and the direct transmitted light, thus enabling the observer to view the organism stained in its true chemical color and revealing its own individual structure in a field which is brilliant with light.* [emphasis added][20]

Rife's method of illuminating microbes was extraordinary. Microbes seem invisible to us because the human eye can see only a very narrow band of light (color) on the electromagnetic spectrum—and not in the ultraviolet range that many microorganisms reflect. However, applying certain laws of optics, Rife *translated* the natural emanations of the microorganisms to the portion of the electromagnetic spectrum that humans can see. By rotating the microscope's quartz prisms in various

configurations, Rife literally *tuned into the frequencies* of microbes, expressed as color on the visible (to us) light portion of the electromagnetic spectrum.

Put another way, as Rife approached the precise frequency of the microbe, the microbe began to resonate or vibrate in response to the narrow band of light that was being aimed at it. The microorganism became illuminated when the light that was shone on it matched its own inherent, energetic light wave signature. Typhoid presented itself as brilliant turquoise; the cancer virus as purplish-red; and so on. (See Sidebar, "Viewing the Carcinoma Virus.")

Even when magnifying specimens only 31,000 times (its lowest range), the Universal Microscope far surpassed the best light microscopes that used conventional lighting (such as the popular Zeiss dark field, oil immersion scope), and the electron microscope. Even though an electron microscope can enlarge an image up to one million times, it works by bombarding the slide with electrons in a vacuum, conditions under which no living organism can remain viable. Also, the microorganism will shrivel unless the slide on which it's placed is carefully sealed. By killing a microorganism before observing it, vital information—such as how the microbe functions in its natural state, and what might destroy it—is lost. Steve Ross of the World Research Foundation once pointed out during a radio interview that the practice of killing specimens before viewing them is "like picking up a dead dog in the street and trying to figure out what the personality is. . . . You're not looking at the same organism."[21] Under Rife's microscope, these live organisms, meticulously prepared on various types of slides, were different indeed.

Rife's colleague Dr. Rosenow further verified: "Examination under the Rife microscope of specimens containing objects visible with the ordinary microscope, leaves no doubt of the accurate visualization of objects or particulate matter by direct observation at the extremely high magnification obtained with this instrument."[22]

With such high resolution, not only did the Universal Microscope allow previously invisible microorganisms to be viewed, it also proved that they were pleomorphic. "The New Microscopes" authors discussed the phenomenon of pleomorphism:

> The human body itself is chemical in nature, being comprised of many chemical elements which provide the media upon which the wealth of bacteria normally present in the human system feed. These bacteria are able to reproduce. They, too, are composed of chemicals. *Therefore, if the media upon which they feed, in this instance the chemicals or some portion of the chemicals of the human body, become changed from the normal, it stands to reason that these same bacteria, or at least certain numbers of them, will also undergo a change chemically since they are now feeding upon media which are not normal to them,* perhaps being supplied with too much or too little of what they need to maintain a normal existence. They change, passing usually through several stages of growth, emerging finally as some entirely new entity—as different morphologically as are the caterpillar and the butterfly. . . . The majority of the viruses have been definitely revealed as living organisms, foreign organisms it is true, but which once were normal inhabitants of the human body. [emphasis added][23]

### Viewing the Carcinoma Virus

Although Rife was usually successful in viewing microorganisms, initially he had trouble detecting the carcinoma virus. One day, he serendipitously placed a tube of cancer culture inside an electrified glass ring filled with argon gas and left it there for about 24 hours. When he later examined the culture through his microscope, he noticed that it had acquired a purplish-red color that now made it visible. Remarkably, the specimen was still living. Thus Rife discovered a method of "staining" the cancer virus, with certain frequencies on the electromagnetic spectrum, without killing it.

The authors named many organisms that became visible through Rife's microscope. Note that by the time the article was published—eleven years after the debut of the Universal Microscope—the Rife Ray had already been invented. (This will be discussed shortly.) The "certain lethal frequencies" mentioned below are those emitted by the Rife Ray.

> Under the universal microscope, disease organisms such as those of tuberculosis, cancer, sarcoma, streptococcus, typhoid, staphylococcus, leprosy, hoof and mouth disease, and others may be observed to succumb when exposed to certain lethal frequencies, coordinated with the particular frequencies peculiar to each individual organism, and directed upon them by rays covering a wide range of waves. By means of a camera attachment and a motion-picture camera not built into the instrument, *many "still" micrographs as well as hundreds of feet of motion-picture film bear witness*

> *to the complete life cycles of numerous organisms.* [emphasis added][24]

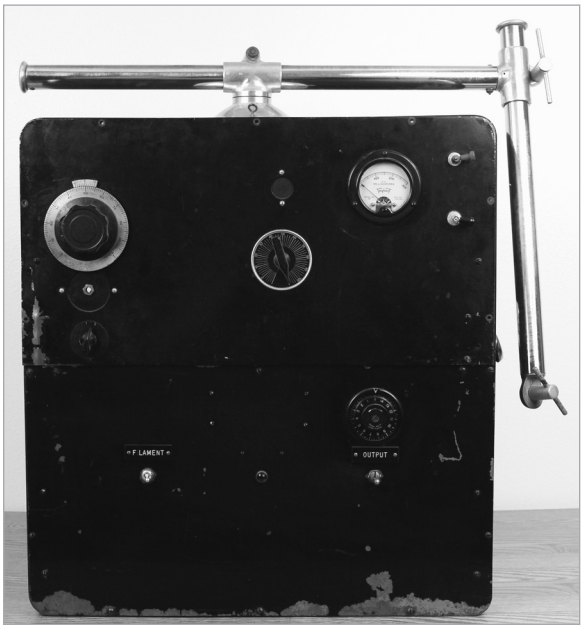
Rife himself understood the importance of pleomorphism. "It is not the bacteria themselves that produce the disease," he emphasized, adding that he and his colleagues "believe it is the chemical constituents of these micro-organisms enacting upon the unbalanced cell metabolism of the human body that in actuality produce the disease. We also believe," he acknowledged, "if the metabolism of the human body is perfectly balanced or poised, it is susceptible to no disease."[25]

Fortunately for Rife, there were a number of highly respected doctors and researchers in the medical and scientific communities who supported his work. Before Rife's third Universal microscope was completed, he met bacteriologist Arthur I. Kendall. Kendall held many important positions during his lifetime, among them Dean of Northwestern Medical School; instructor at Harvard University Medical School; Director of the Hygienic Laboratory (the forerunner of the present National Institute of Health); and chair of the Department of Bacteriology at Northwestern University in Illinois. Like Dr. Rosenow before him, Dr. Kendall had independently investigated the pleomorphic character of microbes. In a nutrient medium he developed (called the K-medium after its inventor), he placed bacterial cultures that transmuted into another form. Once the delighted Kendall was able to view the transmuted bacteria through Rife's microscope and further confirm his findings, the two men began working together closely. Thereafter, Rife conducted many experiments with both Kendall and Rosenow, who both made public their position on pleomorphism. In the December 1931 issue of *California and Western Medicine* (the journal of the California Medical Association), Rife and Kendall published a report of some of their experiments on filterable forms of *Bacillus typhus*. Rife wrote in part:

> We have classified the entire category of pathogenic bacteria into 10 individual groups. Any organism within its group can be readily changed to any other organism within the 10 groups depending upon the media with which it is fed and grown. For example, with a pure culture of *bacillus coli*, by altering the media as little as two parts per million by volume, we can change that micro-organism in 36 hours to a *bacillus typhosis*. . . . Further controlled alterations of the media will end up with the virus of poliomyelitis or tuberculosis or cancer as desired, and then, if you please, alter the media again and change the microorganism back to a *bacillus coli*.[26]

Rife also described the pleomorphic nature of the cancer virus.

> By continued microscopic study and stop motion photographs, it was found that the "BX" virus had many changes and cycles as so with other micro-organisms.
>
> The virus can be readily changed to other forms or cycles of themselves by the media upon which they are grown. By [making] the "K" media slightly acid, we no longer have a "BX" as we have classified this cancer virus, but we have




Beam Ray Corporation Clinical Model ray machine.

*Courtesy of Jeff Garff*

> what we term a "BY." In this stage or form, it is still a virus, but considerably enlarged from the initial "BX." Still retaining a purple red refractive index, but will no longer pass the porosity of the W porcelain or diatomaceous earth filter. In this stage, the "BY" requires a much coarser N filter.
>
> The next stage finds this micro-organism, now known as the monococcoid form, in the monocytes of the blood of over 90% of carcinomotous [sic] individuals.[27]

It was important that the medical community learn about the growing documentation of pleomorphism, as well as the technology available to observe it. So on November 20, 1931, a distinguished doctor named Milbank Johnson gave a banquet in his Pasadena, California home to honor the accomplishments and achievements of two men: Dr. Kendall, for his K-medium for growing pathogens, and Royal Rife, for the microscope that enabled pathogens to be viewed. Among over 30 guests were some of the most prominent medical doctors, bacteriologists and pathologists in the country. According to Steve Ross, in addition to such live meetings, over one hundred newspaper articles were written about the Universal Microscope alone in the 1930s and 1940s.

Additional documents from that period show that many eminent researchers enthusiastically endorsed and used the instrument. In a more recent article on Rife, Gerry Vassilatos reports that Rife's microscopes

> were immediately obtained by Northwestern University Medical School, the Mayo Foundation, the British Laboratory of Tropical Medicine, and other equally prestigious research groups. . . . [Many] specimens were obtained and studied. . . . Active poliomyelitis cultures were studied, the virus successfully isolated, identified, and photographed in 1932 by Rife and Kendall. In these cultures the team recognized streptococcus and motile blue forms resembling typhosus. These last reports were immediately transmitted to the Mayo Foundation and duplicated by Dr. E. Rosenow. Dr. Karl Meyer (Director of the Hooper Foundation for Medical Research, University of California) came to the Rife Research laboratories with Dr. Milbank Johnson, examining and corroborating the stated results. The impossible and anomalous became fact. Bacilli could act as virus carriers. Furthermore, poliomyelitis victims evidenced a startling degree of typhosus-like associated virus.[28]

The discovery that viruses can exist inside bacteria (in the form of *bacteriophages*) is critical, and impacts on the treatment of disease and the success or failure of rifing. This will be discussed further in Chapter 4.

Rife was not content simply to view and identify pathogenic organisms. He wanted to cure disease. If he could identify microbes by using frequency, he reasoned, he could use frequency to destroy them.

*Frequency* is the number of cycles per second at which an object vibrates, commonly expressed in hertz (Hz). Everything has an inherent *resonant frequency* or *oscillatory rate*. A competent architect is aware of this principle when designing bridges. If a bridge is built without its oscillatory rate factored into the construction, a hurricane or heavy wind could cause the bridge to steadily vibrate in harmonic resonance for a long enough period that parts of it (if not the entire structure) will shatter or collapse. (See Sidebar, "The Galloping Gerty Disaster.") Compromising the structural integrity of a bridge by exposing it to its oscillatory rate is similar to partly or completely shattering a microbe by exposing it to *its* oscillatory rate. Rife's various microscopes, which allowed him to see live microorganisms reacting in their environment, were indispensable to his future accomplishments. The high magnification abilities of these microscopes would allow him to find frequencies to destroy ever tinier microorganisms.

### *The Rife Ray*

Royal Rife experimented with a number of ray machine designs before finding a unit that satisfied him. In 1921—twelve years before the construction of the Universal Microscope—Rife had built his earliest Rife Ray, the #1. With that ray, Rife could kill *B. coli*, a common bacterium residing in the colon. The Rife Ray #2 was built in 1923.

#### The Galloping Gerty Disaster

An excellent example of a structurally defective bridge is quite famous, because its collapse happened to be captured on motion picture film (clips of which can be seen on various Internet sites). In 1940, the mile-long (1.6 kilometer) Tacoma Narrows suspension bridge in the northwestern United States—now better known as "Galloping Gerty"—collapsed when a steady wind provided so much energy that the bridge began oscillating in simple harmonic motion. When the oscillations became intense enough, the entire bridge collapsed. It took ten years before its replacement was completed.

By 1934, the Rife Ray #3 was developed. It was comprised of several bulky pieces that filled a large table in Rife's laboratory, making it not only difficult to move, but also labor intensive to calibrate and operate.

To produce the frequencies, the Rife Ray #3 used *receivers*. At some point, Kennedy brand receivers may have been used. The Kennedy receivers were *regenerative,* which simply means that they had built-in components designed to amplify the electronic signal so it would be stronger. However, as the Kennedy receivers were not *shielded* (more about this in a moment), other types were probably preferred in the final designs.

Frequencies were emitted from the glass ray tube, which was mounted on a base on the outside of the cabinet and connected to the receiver. The ray tube used for the Rife Ray was similar to X-ray machine tubes of the era; but it did not produce X-rays because X-rays are created in a vacuum, and this ray tube contained an inert gas. Rife initially experimented with mixtures of different noble gases, including argon and krypton. But he eventually chose helium because it withstood "many more hours of bombardment"[29] than the other gases he tried. The gas-filled tube became brightly lit when a frequency of sufficient power was passed through it.

Presumed to have been more powerful than its predecessors, the Rife Ray #3 outputted about 50 watts to the tube. Fifty watts was enough power so that the frequencies emitted by the tube could penetrate through 15 inches of concrete. Even when the unit was one floor away from where the microscope stood, Rife demonstrated that after about 10 minutes, every specimen under his microscope died after the machine was turned on briefly. The microbes were devitalized not by the visible light emitted by the tube, but rather by the *electromagnetic field,* which includes electric and magnetic waves. Other bandwidth energies contributing to this effect may have included infrared and *scalar waves* (discussed in more detail shortly). Modern researchers sometimes refer to these combined fields as the "Rife effect."

Some components of the radio equipment included *vacuum tubes*. Housed inside the cabinet, the vacuum tubes were entirely different from the ray tube that was mounted on the outside of the cabinet. Vacuum tubes were somewhat fragile and bulky, they used a lot of energy, and they overheated easily. This is why engineers developed the transistor in the late 1940s. Unlike a hollow tube, the transistor was solid (hence the phrase, "solid state technology"). Transistors possessed all the beneficial electrical properties of vacuum tubes without any of their shortcomings: they were sturdy, inexpensive, tiny, they used very little power, and could immediately turn on without requiring any warm up time. Today, virtually all electronic apparatuses (including electromedical devices) use solid state technology instead of vacuum tubes.

As with all electronic equipment, Rife's frequency devices were potentially vulnerable to being affected by unwanted stray electromagnetic interference. The interference could come from motors, generators, cables carrying high levels of alternating or direct current, transformers, and even the Earth's own magnetic field. (Electricity running through wires creates a magnetic field; see Appendix C for more information.) For a unit such as the Rife Ray—which required precision calibration and relied on exact frequencies to disable pathogens—even a little bit of interference could make a huge difference in whether or not the device was effective. Therefore, it was curious that with at least one of the Rife Ray models, the components were not adequately protected from stray magnetic fields. We know this to be a fact because when a working Rife Ray prototype was found around the year 2001, the late Rife researcher Aubrey Scoon—an engineer who spent considerable time with the device—wrote: "Because the plasma tube is an active circuit element, capacitive coupling from any body in the vicinity of the plasma tube actually causes changes in the oscillator frequency."[30] In other words, the very presence of someone near the tube (combined with tuning problems inherent in the device) caused the frequencies from the tube to waver.

This unwelcome variation in frequency would not have occurred had the equipment been *shielded*—a problem that was widely recognized, even during Rife's time, as common to just about any electronic device. *Shielding* is the use of various materials to surround and protect components so they can operate properly without interference. Any material used to shield sensitive components is a good conductor. The material diverts the interference field so the field travels *around* the device instead of *through* it. The shielding can be used to either *keep out* the field, or *confine* the field so it does not disturb other equipment that's in the same room, next door, or even miles away. Shielding materials include wire mesh, metal enclosures, conductive paint, foil tape, adhesive compounds, and Mu metal. Mu, an alloy of nickel, iron, copper and molybdenum, is highly effective at protecting against static fields and low frequency magnetic fields. Mu metal was available in Rife's time, but it was (and still is) quite expensive. Today, to avoid interference, it's customary to shield sensitive equipment—everything from high definition cathode ray tubes to amplifier circuits to wiring. Sometimes, to provide extra separation, the components are housed in discrete sections of the unit.

I discuss shielding in some detail because it's relevant today. Most of the shielding problems in modern machines involve interference with external electronics. Any good frequency device costing thousands of dollars should be shielded. An unshielded unit running in the same room as a working computer or television will create a wavy picture, static, or both. Sometimes, sharing the same wall sockets or circuits will cause interference but using different circuits (on different fuses or circuit breakers) will correct the problem. Interference can also manifest as an annoying hum, which occurs when the unit's power signal leaks into an amplifier circuit and the signal becomes augmented. Many people report hearing a hum in either their television set or their phone line when they are rifing. Moving the frequency instrument away from the other electronics usually eliminates the hum.

The frequency capability of Rife's equipment spanned from what engineers call the *audio range* on the electromagnetic spectrum (measured in hertz, abbreviated Hz) to the *ultrasonic* and *broadcast* ranges (measured in megahertz, abbreviated MHz). The term "audio range" can be confusing to non-engineers. It simply refers to a frequency that *could* be heard if the electromagnetic waves were converted into sound waves. Megahertz frequencies (much higher than the audio range signals), if convertible to sound waves, would be beyond the range of human hearing. So they are not considered to be in the so-called audio range.

In many of his units, Rife used a radio frequency (RF) *carrier wave,* which was always in the MHz range. The RF signal served a dual purpose. The high-frequency signal was necessary to light the tube. But it also served as a foundation upon which other frequencies could "piggyback" onto it, like a ship on the ocean (the RF signal) carrying passengers (other frequencies). Also, the use of carrier waves produced *heterodyning*—the combining and merging of two original frequencies, which in turn created more new frequencies. (The new frequencies resulted from the sum of the original two, and from the difference between the original two.) With Rife's units, it was sometimes impossible to determine which frequency was doing what, as all the signals sent to the ray tube were important. It was probably the unique combination of frequencies, wave shape, and energy fields that did the healing.

The shape of the RF signal that was sent through the ray tube was a *sine wave*—which, by definition, is symmetrical, having a smooth rounded shape. (*Square waves,* commonly used in modern devices, could not be produced by the older equipment.) The ray tube distorted the waveform, which produced many *harmonics*—higher frequencies created by a main frequency under certain conditions. Some of these additional, higher-frequency harmonics were even higher than what the receiver alone was capable of outputting. This helped make Rife's technology even more successful.

The ray tube was a partially directional *transmitter*. Since its power or energy was concentrated into a small area, the practitioner placed the tube either within a few inches of the subject's body, or in some cases directly on the person. Dr. Robert P. Stafford, one of Rife's colleagues, reported that when he treated people who had cancer, he focused on 6 square inches at a time, moving the tube up and down, and back and forth, on the body until the entire affected area was treated.

The Rife Ray's ability to eliminate disease was based on Rife's finding each organism's MOR, or Mortal Oscillatory Rate, and dialing those rates into the machine. The May 6, 1938 edition of the *San Diego Evening Tribune* carried a now-famous article by Newell Jones explaining how the microbes died, through a process called *entrainment*.

> Each organism requires a different wavelength. . . . [What is occurring is] something similar to . . . when one musical tuning fork is set in vibration by sound waves emanating from another fork struck nearby. Another example is the vibration which almost everyone has noticed a pipe-organ note causes in windows or furniture of the room where the instrument is being played. Again, a similar thing happens when a radio cabinet rattles from sounds passing from its speakers.
>
> It is commonly known that the sound from the first object causes the second to vibrate in harmony. . . . The thing where the original sound-producing vibration occurs has the same pitch, wave length, [and] frequency . . . as the one giving the sympathetic response. . . . [One object may] have a frequency which only is a part of a complex frequency possessed by the other; that is, one may be a simpler tone which is one element in a complex tone characterizing the other.[31]

The destruction of a microbe has often been compared to the cliché of a soprano singing a pure, focused tone that shatters a glass whose resonant frequency matches that particular note. While this explanation is easy for a lay audience to grasp, the analogy of sound to describe how Rife's equipment worked is not technically correct. In most circles, vibration—i.e., sound waves—is regarded as mechanical motion. However, since Rife's units could affect microorganisms through many inches of concrete, and concrete can absorb mechanical motion and prevent its transferral elsewhere, it's clear that another force was responsible for the Rife Ray's capabilities. We already

### Scalar Wave Properties

Electromagnetic (EM) waves and scalar waves are related, but different. An EM field can be separated into distinct electrical and magnetic fields that are *transverse,* or transmit at right angles from their point of origin. Scalar waves are also known as *longitudinal waves,* parallel to their point of origin. EM waves have a beginning, middle and end, with correspondingly uneven amounts of strength. Scalar waves are *standing*. One common catalyst for the release of scalar waves is their *coupling* (engaging) with an EM field. (The EM field can be generated not only by electronic devices, but also by humans. Dr. Valerie Hunt's research focuses on both scalar and EM waves emitted by human healers.)

"The concept of scalar waves," writes British physicist Noel Huntley, "is beyond the scope of conventional science, but not quantum physics. The data on scalar waves from Maxwell's brilliant, original electromagnetic equations was removed prior to publication."[32] Scalar waves are difficult to detect using standard equipment; they certainly do not register on an oscilloscope. Remarkably, though, conventionally trained engineers cite their incomplete education, inadequate measuring devices and limited experience as proof that scalar waves do not exist. This is similar to some professionals who looked through Royal Rife's microscope and did not see various pleomorphic strains of the same microbe because of *their* preconceptions.

Certain plasma tube devices are uniquely suited to emitting scalar waves. The noble gas inside the tube is excited, the electrons of atoms are hurled into a higher orbit, and the gas turns into higher-energy plasma. Once the catalyst that causes this higher-energy state is withdrawn, the plasma collapses back into gas. In order for this collapse to occur, the plasma must release energy, one form of which consists of photons of light. The rapid move back and forth between states may initiate the production of scalar waves. Such waves are then received directly by certain cell structures that process and power metabolic functions. We can perceive scalar waves due to their effects: the restoration of biological tissue, and the proper function of living organisms.

know that the electromagnetic field emitted by Rife's machine could change the voltage of microbial cell walls. Even a minor alteration of voltage can unfavorably affect an organism's structural integrity and destabilize it. Today, we understand one more possible influence on Rife's technology: the presence of *scalar waves*.

Scalar waves are emissions that are not part of the electromagnetic (EM) spectrum. A few innovative researchers have evidence that some plasma devices emit scalar waves (as apparently did Royal Rife's instrument)—and that these scalar waves help regenerate the body as well as possibly devitalize pathogens. See Sidebar, "Scalar Wave Properties."

When Rife finally did find the MOR, explains chiropractor James Bare (inventor of the Bare-Rife frequency device), the microorganism "would lose its color and become clear as it absorbed the resonant energy [of the frequency] and changed or died."[33] Sometimes the microbes shattered. Other times, they simply weakened and lost their motility (the ability to move spontaneously and actively). Jones explained that some microbes "writhe as if in agony and finally gather together in deathly moving clusters."[34] "Some types," Rife himself stated, "will explode or disintegrate and some will gather together like log jams or agglutinate."[35]

All of Rife's frequencies were microbe-specific. The power of the unit was not as important as having the correct frequency. The inventor himself stated, "One tenth of one meter [or a smaller denomination] off and you have nothing. . . . [The frequency must] be absolutely correct for that individual organism."[36] (When Rife mentioned meters, he was referring to the *length of the wave* that corresponded to the actual number in Hz.)

How did Royal Rife determine the MOR of a microbe? First he examined thousands of microbe samples and tissue cultures from laboratory animals and humans under the Universal Microscope. As usual, the microorganism was illuminated in its own colored light while the surrounding field remained white. Then Rife tested the samples to ensure that a specific disease correlated to a specific microbe (he used Koch's cause-of-disease hypothesis, an allopathic medical model). Finally, Rife would turn the dials of the Rife Ray ever so slightly, switch on the power, and then examine the slide under the microscope to see if this time he had found the correct frequency.

The entire process was tedious and repetitious, involving painstaking observation. It was also a solitary task. Royal Rife was used to working this way, however; he had labored similarly to make the microbes visible under his microscope. His colleagues describe him as a man of immense patience. In *The Cancer Cure that Worked*,

Barry Lynes quotes a close friend and co-worker, Benjamin Cullen, who watched the scientist regularly:

> I've seen Roy sit in that doggone seat without moving, watching the changes in the frequency, watching when the time would come when the virus in the slide would be destroyed. Twenty-four hours was nothing for him. Forty-eight hours. He had done it many times. Sit there without moving. He wouldn't touch anything except a little water. His nerves were just like cold steel. He never moved. His hands never quivered.
>
> Of course he would train beforehand and go through a very careful workout afterward to build himself up again. But that is what I would call one of the most magnificent sights of human control and endurance I'd ever seen.[37]

Rife's technology did not harm the human or animal host. The oscillatory rates of humans and small mammals are much more complex than (and much different from) the MORs of microscopic viruses, bacteria or fungi. Rife was confident about the safety of his equipment, and stated this on numerous occasions.

> With the [50 to 60 watts of] power that is in these [ray tubes], there is absolutely no harm. . . . I had my [ray] tube right here . . . about 11 or 12 inches away from the slide in the microscope. And here I was with . . . that tube going . . . year after year . . . and it never harmed me any.[38]

And:

> I stood in front of that thing [his RF ray tube] for 30 years finding these different frequencies that devitalize these different bacteria. And that thing was shooting on me right here [his chest], but it is absolutely harmless to normal tissue.[39]

The non-invasive nature of this new method began generating great excitement in the medical community.

### *Case Studies*

By the end of 1932, Rife was destroying the typhus bacteria and the cancer and other viruses that were both grown in cultures and inoculated into lab animals. Then, as well as now, standard scientific protocol for testing drugs and other treatments involved using two groups of infected animals: the group that received treatment, and the control group that did not. If significantly more animals in the treated group lived than did those in the control group, this presumably indicated that the treatment was effective. To prove the effectiveness of the Rife Ray, Rife was obliged to follow this standard procedure. He injected his rats with the disease organisms. Then he withheld treatment from the control group (all of whom died), and gave treatments to the other rats (all of whom lived). Within the confines of scientific protocol, Rife was kind to the animals. To spare them pain (which also made them easier to handle), he administered anesthesia before giving them injections or doing surgery.

Rife describes the scientific protocol in detail:

> On one series of cancer tests, I inoculated the virus which I had isolated and filtered from an unulcerated breast mass into an albino rat. The tumor was allowed to grow and then I surgically removed the tumor and again isolated and filtered the virus from a portion of the ground up tumor and inoculated the next rat and repeated this procedure 411 times to prove that this virus was the causative agent of cancer.[40]

Eventually, Rife had to prove that microbes could be destroyed in humans without harming the host. To secure human subjects for his case studies, he was assisted by Dr. Milbank Johnson.

Johnson, the medical doctor who had hosted the historic dinner honoring Kendall and Rife, was enormously wealthy, reportedly having assets worth around $15 million. After receiving a Doctorate from Northwestern Medical School in 1893, Johnson was awarded a Doctor of Law degree in 1916 from the University of Southern California, and another degree in 1920 from Northwestern University. The medically-related posts he held during his illustrious career included Professor of Physiology and Clinical Medicine at the University of Southern California; Chairman of the Claims Committee of the Pacific Mutual Life Insurance Company in 1920, and Claims Director most of the years from 1906 until 1936 (his retirement); member of the board of directors at California's Pasadena General Hospital; Chief Surgeon of the Southern California Edison company; and member of the Los Angeles Board of Health.

Johnson's humanitarian nature and his interest in eliminating illness are amply demonstrated in his surviving letters. The fact that his first wife died in 1920 of cancer, plus a *Streptococcus* infection following radiation treatments, undoubtedly made him even more interested in Rife's clinics. It was Dr. Johnson who convinced Timken to help finance Rife's new laboratory, which was built around 1935. Generally, Johnson remained loyal

and supportive to Rife for as long as the two men were in contact. Pivotal to all phases of Rife's career, Johnson advised and guided Rife. He generated publicity. And he helped Rife with projects.

Johnson himself initiated most (if not all) of Rife's research studies because Rife disliked the spotlight and preferred to focus on his laboratory work. Johnson assembled some of the most prominent professionals with outstanding credentials (most of them had MD, PhD or DDS degrees) from Canada, England and the United States to work with Rife. These professionals did independent studies, performed laboratory research, and worked directly with patients using the Rife Ray. To test Rife's equipment on people with cancer and other illnesses, three clinics were set up, all of them funded by Johnson.

The first clinic was set up in 1934 under the auspices of a University of Southern California "Special Medical Research Committee" in the La Jolla home of Ellen Scripps. Rife referred to this committee later on a legal document, and this particular clinic is often cited as a quintessential success by proponents of the technology. However, Dave Felt, based on a surviving letter by Dr. Johnson, believes that this committee was unofficial and the university's name was used "in order to have some liability coverage for Scripps because they were using her property. Johnson probably asked Dr. Rufus B. von KleinSmid, president of USC, if he could form the clinic under the umbrella of the university, and Von KleinSmid said yes."[41]

> Those who say it cannot be done should not get in the way of the person doing it.
>
> —*Chinese proverb*

Most of Milbank Johnson's letters have been recovered. However, those dated between June 1934 and early 1935 are missing, so we can only guess at what actually occurred. From Dr. Johnson's surviving letters, we learn that Johnson had no help and no assistants, and that Rife's involvement in the 1934 clinic was minimal. In fact, Johnson had to plead with Rife—in many ways the quintessential scientist who secludes himself in his lab—to get involved with the clinic at all. We know that almost a dozen people were treated (perhaps as many as 16), most for cancer and a few for tuberculosis.

Of the people in the 1934 study who were treated for cancer, some apparently did go into remission, because tissue and fluid samples sent to pathologist Alvin Foord at the Pasadena General Hospital were stated to be free of any traces of cancer. However, Johnson did report later that in early 1935, one man returned to him. The cancer in his cheek had not improved, so Johnson sent him to a hospital to have the corresponding eye, and the malignant tissue behind the eye, surgically removed. In a December 1935 letter from Johnson to Dr. Mildred Schram of the International Cancer Research Foundation in Philadelphia (Johnson was apparently trying to solicit her assistance), he wrote: "I am also going to give you a brief of the cases which I treated in La Jolla [the] summer before last with their present status in so far as I can find the patients. There was nothing done at that time of a conclusive nature."[42]

If results of the first clinical trial were not "conclusive," subsequent trials appeared promising. The second clinic established by Johnson was at the Santa Fe Hospital in Los Angeles. It opened the first week of November 1935. As with the first clinic, it was Dr. Johnson who ran the Rife Ray machine.

The third clinic opened September 1936 at the Pasadena Home for the Aged, another Scripps facility. This study, which focused on cataract reduction and elimination, showed impressive results: Dr. Johnson reported complete restoration of vision in 30 of 31 people he treated. The Pasadena clinic remained open until May 1937. Unfortunately for us, the frequencies used to eliminate the cataracts are not mentioned in Johnson's report.

The equipment used in the 1936 clinic was the Rife Ray #4, which engineer Philip Hoyland had built for Rife and Johnson in 1935. Johnson—eager to get the ray machine into clinics—enticed Hoyland to leave his job as a radio repairman in Pasadena and come to work for Rife. Hoyland was employed to build a compact, portable unit that could perform as well as Rife's best prototype. It was highly successful. As contemporary Rife researcher Shawn Montgomery describes it, "The thing was a *bona fide* cure-all, provided you tuned it to the correct prescribed pathogenic frequency using a precise methodology. This was 1935 to 1936."[43]

Around this time, Rife also set up a new laboratory in Point Loma, with the help of Milbank Johnson. Some of the people who worked with Rife in the lab, administered therapy in clinical trials, or treated their own clientele using Rife's ray, were among the most respected professionals in the country. I mention the following people by name, along with some of their affiliations, to give a sense of the proficiency, talent, enthusiasm and interest that surrounded Rife and his work: Agnes Bering (who worked with Rife in his laboratory from 1915 to 1946); T.O. Burger, MD; E.F.F. Copp, MD; James B. Couche, MD (pharmacist, physician and surgeon); Ben

Cullen; George Dock, MD (Professor of Medicine, Tulane University and later President of the Las Encinas Sanitarium of Pasadena, California); C. Fischer, MD (of the Children's Hospital in New York); Alvin G. Foord, MD (pathologist at Pasadena General Hospital and one-time president of the American Society of Pathologists); Oscar C. Gruner, MD (pathologist, Archibald Cancer Research Committee, McGill University in Canada); Richard T. Hamer, MD; Joseph Heitger, MD (an eye doctor and good friend of Johnson); Arthur I. Kendall, PhD (inventor of the K-medium and observer of pleomorphism in microbes); his daughter Alice Kendall (who assisted Rife in the lab); Royal Lee, PhD (an inventor of spectrographic and other equipment, and the developer of whole food supplements that are still produced today by the company he founded); Ray Lounsberry, MD; Karl Meyer, MD (pathologist and Director of the Hooper Foundation for Medical Research of the University of California in San Francisco); Waylen Morrison, MD (Chief Surgeon for the Santa Fe Railway); Edward C. Rosenow, MD, ScD, and LLD (who had observed pleomorphism in microbes and was on the Mayo Clinic staff); Henry Seiner (trained in microscopy by Rife and sent to England to demonstrate a virus microscope); Verne Thompson, electronics expert; Ernest Lynwood Walker, BAS, ScD; and Arthur W. Yale, MD (Director of the Yale Foundation in San Diego). In addition, W.D. Coolidge and Charles P. Steinmetz from General Electric furnished Rife with hundreds of tubes, which were manufactured to Rife's specifications.

Meanwhile, across America and in Europe, other doctors were administering Rife's therapy privately to their own patients. Numerous pathogenic microorganisms were being deactivated or killed, among them *Bacillus anthracis, Escherichia coli* (or *E. coli,* called *Bacillus coli* or *B. coli* in those days), *Staphylococcus, Streptococcus,* and *Treponema pallidum.* People recovered from sarcoma, carcinoma, leprosy, tuberculosis, typhoid, tetanus, gonorrhea, pneumonia, and other ailments. Rife wrote:

> I saw cancer and tuberculosis cases that had completely recovered. I saw Dr. Couche's brother who had come over from England. He had a 30 year sinus condition with terrible drainage. Dr. Couche used the frequency instrument on him and he was well in three weeks. Dr. Couche had treated Dr. Hamer, MD for a sinus condition which cleared up. Dr. Couche had treated Dr. Butterfield, MD's brother-in-law who had a stiff wrist—a tuberculosis of the bone which cleared up. Also I saw a Mexican boy who had osteomeylitis of the bone which Dr. Couche cleared up with the frequency instrument. I saw George Lemm being treated by Dr. Couche for tuberculosis and he had come out from Chicago to die. He was sent from the Vulclain home. As soon as they found out that Couche was getting results, they tried to get all of their patients back but Lemm said no, that he was going to finish up with Couche and he completely recovered.[44]

Rife noted that two frequencies instead of one were needed to eliminate all the symptoms of tuberculosis because, he discovered, more than one pleomorphic form of the microbe was involved in the disease. For cancer, Rife and his associates learned that treatment should be given for 3 minutes once every three days to give the lymphatic system enough time to remove the toxins. (Modern frequency devices are different from Rife's original units, so treatment times are longer. For cancer protocols using contemporary equipment, see Chapters 4 and 5.)

According to Gary Wade, it was possible for the Rife Ray to have destroyed an entire cancer tumor in a single treatment consisting of one to one-and-a-half hours; but the resulting amount of dead tissue would have become "a feast for a massive bacterial infection" that "could lead to liver and kidney damage and general toxemia." In the 3-minute treatments that were administered over a longer period of time, the Rife Ray killed "a thin outer layer of cancer tumor tissue at one time," thus allowing "the body's immune system to remove this layer before the next treatment."[45] The administering doctors emphasized the need to drink two quarts or more of water a day—otherwise, the liver, kidneys and other organs would become overloaded from trying to eliminate, too fast, too many dead microbes and their waste products. But they were not concerned about the waste; they understood it to be a normal outcome of detoxification. Since the Rife Ray didn't do anything except what it was designed for—the destruction of pathogens—it could not be said to cause "side" effects as the phrase is commonly meant. The cleansing reaction was a natural, reasonable, and in fact hoped-for process that occurs in a body that is ridding itself of microbial corpses and their waste products.

The years 1936 through 1939 were tumultuous. The Beam Rays Corporation was formed to manufacture more units, with both Rife and engineer Philip Hoyland listed as co-owners of the company. (Incredibly, Hoyland was given 55% ownership, leaving Rife with only 45%—a grievous error that Rife would later regret.) In May of 1938, a Hoyland-built compact unit (which, like the other machines, used an RF carrier wave) was featured in lengthy

articles appearing in the San Diego *Evening Tribune*. It is believed that Dr. Hamer was the first doctor to use this Beam Rays device in his clinic in the spring of 1938, followed by Dr. Couche (who had also used the #4 machine in the years preceding the Beam Ray model). Enthusiastic professionals sent the inventor letters, occasionally notarized, praising the Rife Ray. Those lucky enough to have their health completely restored sent Rife sworn documents (some of which are posted at www.rife.org).

Rife, his investors, co-workers and colleagues hoped that this unit would help Rife and his technology achieve the recognition they deserved. Unfortunately, the promising period that Rife was enjoying was about to end. Beam Rays manufactured only 14 units, and then Rife was attacked from numerous quarters.

## THE PERSECUTION OF RIFE

It was in 1939 that a series of catastrophes befell Rife (and which adversely affected the many people who depended on his unit to heal them). In Chicago, Morris Fishbein was expanding his personal and professional power as head of the American Medical Association and its chief public relations officer—despite the fact that, according to biographer Morris A. Bealle, he had spent only five months as an intern at Durand Hospital. "Note," Bealle advised, "that all other medical graduates *are required* to serve two-year internships in some 'accredited' hospital. . . . [But Fishbein's] accession to editorship of the *AMA Journal* was a travesty on modern medicine, since he had never practiced medicine a day in his life." [emphasis in the original][46]

Fishbein was notorious for writing unfavorable reviews of products whose manufacturers did not advertise in the *AMA Journal*. However, if advertisers paid his rates, even ineffective and unsafe products could appear in the journal and receive its bogus seal of approval. "Some of the products [that Fishbein slandered] are harmful," Bealle acknowledged, "but the Fuhrer makes no distinction between worthy articles and [quack remedies]."[47] Among the items Fishbein condemned were ironized yeast (a nutrient, similar to brewer's yeast), Alka-Seltzer (an innocuous and effective over-the-counter antacid containing mostly bicarbonate of soda), and Sal Hepatica (a safe and effective homeopathic remedy). Anything and everything was subject to Fishbein's public smears: he called chiropractic a "malignant tumor" and osteopathy and homeopathy, "cults."[48]

One of Fishbein's most fraudulent deceptions was the vilification of an electromedical diagnosis unit called the Ellis Microdynameter. He deliberately published a faked picture of it in the *AMA Journal*, and then submitted a falsified description of the machine to the April 2, 1935 Congressional Record. Fishbein also set up dummy corporations through which advertising revenues were eventually funneled back to him. As a result, he became quite wealthy. So did the AMA.

Many of Fishbein's investments were a matter of public record. The *Illinois Medical Journal*—which, as the publication of the Illinois Medical Society, had always been critical of unethical acts by the AMA—had proclaimed in an editorial back in December of 1922: "The AMA today is a one-man organization. The entire medical profession of the United States, insofar as its organization is concerned, is at the mercy of one man and a Board of Trustees that is subservient to him."[49]

Unfortunately, the few voices raised to protest Fishbein's tactics and nearly unlimited power were unable to stop him. Fishbein was finally removed from his post at an AMA convention in 1949, but not before he inflicted a lot more damage. There is evidence that the AMA—or the AMA as represented by Fishbein—played a key role in Rife's decline by organizing agents to steal the inventor's work, undermine the Beam Rays Corporation and halt production of the units. In his article, "Deconstructing Beam Rays, Incorporated," Shawn Montgomery describes this methodical scheme in intricate detail. Not surprisingly, he begins with a biography of Morris Fishbein, "the founder of America's corrupt medical status quo. . . [who] was infamous for using his sway as the powerful AMA chief to 'buy into' or 'buy out' any legitimate medical device, drug or process that crossed his path. 'Buy into' for profit, or, if it competes with already profitable enterprises, 'buy out' to suppress. This was Fishbein's *modus operandi*. It is difficult to find any information on Morris Fishbein that does not condemn him."[50]

Montgomery acknowledges that he was unable to find references that Fishbein ever met Rife, let alone acknowledged, quoted or even condemned him. However, Montgomery does report that Ben Cullen, a close friend of Rife's who worked in the lab, discussed at length the Fishbein "conspiracy"—a discussion that was recorded on tape. Furthermore, Cullen's account was corroborated by Rife's associate Henry Siner, by Rife himself, and later by Rife's attorney, Bertrand Comparet. Apparently, Fishbein had heard about Rife from a man with a malignant tumor who was cured by the Rife Ray. "Through this man, Fishbein not only discovered Rife, but saw verification as to the reality and efficacy of this procedure. According to Cullen, Fishbein then dispatched two [representatives] from Los Angeles . . . to approach Beam Rays Corporation

and attempt to buy into the company." Beam Rays declined their offer, so Fishbein's representatives then "bribed one of Rife's partners, Philip Hoyland, with $10,000 to compel him to proceed as their agent—or, as Cullen calls it, their 'stooge.'" With the assistance of a high-priced lawyer, Hoyland "attempted a hostile takeover of Beam Rays through a contrived lawsuit aimed at replacing the Board of Directors (and positioning Hoyland and his gang as the replacements)." This included "conspiring with C.R. Hutchinson"—a corporate entrepreneur who saw an opportunity to get rich by promoting the technology that cured cancer—"to slowly freeze Rife out of their shared ownership deal."[51] In addition, there were more deals and "side" deals, which split up the ownership of Beam Rays Corporation even more. The structure of the corporation was not only incredibly convoluted, but also undoubtedly illegal.

Another unscrupulous act Hoyland committed was the complete redesign of the Beam Ray. Montgomery points out (just as Comparet had) that the device could not be patented—for it was "a variable frequency generator hooked up to a helium tube. It couldn't do anything different enough or distinct from already existing equipment to be eligible for patent consideration. It was obvious to all that the only things of value in the process they were endorsing (or selling) were the MOR frequencies. And they only had value if they were secret."[52] Of course Rife, Hoyland and a very few trusted associates knew the frequencies—but not the company's board of directors, executive officers or shareholders. If the frequencies were common knowledge, there was nothing to prevent others from building their own equipment. This would mean no compensation to Rife for his hard work, time, energy and vision. Hence, Hoyland built the units so that the frequencies—as well as the methods used to generate them—were disguised. See Insert, "Permutations of the Rife Ray," for more details.

One might generously concede that Hoyland's redesign of the Beam Ray was justified—except, as Montgomery summarizes:

> It wasn't long before it became apparent that Hoyland's revamped design for the Beam Ray Machine was unstable. Hoyland was constantly called upon to go to the doctor's office and "fix the machine": recalibrate dial settings, service a leaky tube, solve overheating issues, solve "frequency drift" problems. As the summer of 1938 waned, Beam Rays Corporation started to become unglued. [From] reading the letters, transcripts [and] depositions, there is a sense that a stark realization was slowly dawning upon them—both collectively and as individuals—that this hastily arranged business venture might be as inherently unstable as Hoyland's machines were turning out to be.[53]

Making a bad situation even worse, Hoyland also defrauded a group of wealthy British doctors who had paid for several ray units, but to whom he sent incompletely assembled and improperly calibrated equipment—which, as a result, did not operate correctly. Attorney Bertrand Comparet later called it "deliberate sabotage. . . . They [Rife and his associates] wanted a saleable instrument and Hoyland was making junk."[54]

One of the most sad and frustrating aspects of this whole situation was that Royal Rife passively allowed it to happen. Like many geniuses devoted to science, Rife refused to get involved with the business end of his beloved research. Montgomery bluntly states:

> He could do just about anything he wanted to when it came to tinkering, building, conceptualizing, formulating or configuring. But when it came to "the art of people," Rife was a bit of a dummy. Rife was the first one to admit that he was not a businessperson. Imagine his trepidation at having among his inventory of inventions a little box that demonstrably cures cancer and any infectious disease—a thing that not only needs to be marketed, but demands it. So what did Rife do? He started giving away ownership and control of his invention in order to pass this "business responsibility" onto others. He signed over 55% ownership of the Beam Ray device to Philip Hoyland. Rife gave him a controlling interest because he felt that would provide just enough incentive to make it work. Rife's attorney [at the time] . . . the man responsible for notarizing the agreement, thought this was insanity and counseled Rife to substantially reduce Hoyland's percentage. But Rife was adamant. Hoyland had designed and built the version of the machine in question while working for Rife over the last few years for very little pay, [so Rife thought] it was fair. . . . A pliable, vulnerable and somewhat inept Dr. Rife allowed himself to be manipulated by people he trusted . . . [including Philip Hoyland, who used him] as a document-signing puppet.[55]

After the trial, Ben Cullen stated that Philip Hoyland had admitted to him that although he had accepted the $10,000 bribe "to scuttle the whole Beam Rays operation," he later "was very sorry and wished to God he'd never accepted

### More Rife History: the John Hubbard Interviews

In 1947, pathology student John Hubbard discovered the *Journal of the Smithsonian Institute* article on Rife's Universal Microscope. Excited, he sent letters to all the optical companies, asking if they had any information on the microscope. Not one did.

Almost thirty years later, the now-tenured Professor of Pathology at State University of New York at Buffalo read Christopher Bird's article on that same Universal Microscope while browsing a magazine rack. The Professor contacted Christopher Bird, who fortuitously had learned the whereabouts of John Crane, an engineer who was still living and had associated with Rife during the inventor's later years. Bird was looking for an expert in microscopy and pathology to help him assess the instruments that Crane said were in his possession. So their quests merged: Hubbard and Bird began working together to unearth, examine, and if possible, obtain a Rife microscope (to satisfy Hubbard) and a Beam Rays machine (to satisfy Bird). From John Crane, they obtained a list of about a dozen people who were still alive and had known or worked with Rife. They traveled to San Diego, Los Angeles, Chicago and even England. Over the course of many years, Professor Hubbard conducted most of the interviews and recorded them.

Hubbard also visited the San Diego court records room in 1976, and obtained microfilm of most of the 1939 Beam Rays trial documents: affidavits, depositions, subpoenas, demurs, court motions. Thanks to his record-keeping and interviews on tape (along with other surviving letters and documents), the history of Royal Rife is more complete.

—adapted from Shawn Montgomery, "Requiem for Royal Rife: The Hubbard Interviews, Introduction," 2006

it."[56] But by then, the damage to Rife was irreparable. Even though Hoyland lost the court case (and of course left the company), Beam Rays Corporation had spent so much money on the case that it was now bankrupt.

With all these crises, it's not surprising that Rife began having a problem with alcohol. Attorney Bertrand Comparet would later confirm that Rife's affinity for alcohol was catalyzed by his fear of being put on the witness stand during the trial. But after the trial ended, Rife couldn't quit. Drinking would continue to be a problem for the rest of his life.

Around this time, a law was passed by the Federal Communications Commission (the FCC is responsible for granting licenses to broadcasters who meet its requirements). The new law prohibited the transmission of certain RF frequencies without a license. Although the law was intended to protect radio broadcast stations and their listeners from stray RF signal interference, it also prevented Rife's therapy from being administered, since the Rife Rays relied on radio frequencies as an integral part of the treatments. To comply with the new legal requirements, Rife had to completely reconfigure his units.

For this new task, Rife hired Verne Thompson. Thompson was an electronics engineer with experience as a police radio repairman for the San Diego Police Department, and had been doing all the repairs on the frequency devices after Beam Rays Corporation closed. Together, in the early 1940s, the two men designed a new ray tube instrument that—although patterned after the best Beam Rays device—was quite different. The high RF carrier waves that Rife had previously used would have interfered with radio frequencies allocated to broadcasts and other functions; so this new device utilized low frequencies in the hertz (audio) range. It's unclear how the lower frequencies were determined.

Even though Rife's new machine was less effective than the best of his earlier models, the systematic attempts to undermine Rife continued. "The [American] Medical Association ruled," writes Vassilatos,

> that no [state medical] society member who maintained use of the Rife Ray tube system would be permitted to continue medical practice in the United States. Morris Fishbein . . . extended his legal arm to inform each member of the Rife team of the impending legal process. All Ray tube units would be recalled, impounded, and destroyed by Federal Court order, under penalty of fines and imprisonment.[57]

The AMA did as it had threatened. It applied its clout with the state medical societies to forcibly close any clinic that was using a ray device. Each doctor was threatened with the loss of his license and a malpractice lawsuit unless his unit was relinquished—a difficult constraint, as these doctors owned high-performance Beam Rays or earlier equipment. Dr. Richard Hamer, who had bought a Rife Ray machine in the late 1930s, was one of the physicians who reluctantly visited an office, probably of the AMA in San Diego. Dave Felt relays a conversation about that era with Dr. Hamer's son Don: "Dr. Hamer was told—we don't know by whom—to get rid of the machine or lose his MD license. Don said that his dad was really excited and happy with the machine, and that it worked extremely well. But he had to comply."[58]

## Permutations of the Rife Ray

Royal Rife's best machine, when calibrated properly, had an almost 100% success rate in eliminating conditions ranging from *Staph* infections to cancer. But not all of his units were successful. This has led contemporary Rife researchers to ask: What made some machines effective, while others were not? And why has it been so difficult for researchers to consistently duplicate Royal Rife's most promising case studies? These questions are not merely academic, because a significant failure rate for even one serious condition may cost people their lives. Despite an impressive track record for nearly every health challenge, too often many modern units are unsuccessful when used to treat cancer. Although they work far better than chemo and radiation—if only by reducing pain and improving quality of life—Rife researchers (and of course those who are ill) want and expect more. Frequency device manufacturers, hoping to duplicate Rife's formula *Equipment* + *Frequencies* = *Healing,* are constantly experimenting with different designs.

The major obstacle to learning the secret of Rife's success has been the lack of reliable data due to incomplete historical records. For a long time, there were tantalizing but only partial clues from Rife's surviving lab notes, decades-old correspondence, early film footage and photographs. Then in 2001, someone discovered many reel-to-reel audiotapes in an old trunk, featuring discussions between Rife and several colleagues. The recordings were converted to CD and made available to the public. Listening to Rife and his friends discuss the equipment and case studies provided more information as to how his equipment worked, but critical information was still missing. Around the same time, what was believed to be an original Beam Rays machine was found in a museum and carefully dismantled by a British team that included engineers Aubrey Scoon and Stuart Andrews. Analysis showed that Royal Rife had borrowed a number of components from the work of other groundbreaking inventors, including Nikola Tesla, Georges Lakhovsky, perhaps Reinhold Voll, and especially Albert Abrams. But they knew that Rife's equipment had been redesigned more than three different times, at one point to accommodate a new FCC law regulating the use of radio frequency wavelengths. How a unit operated depended on when it had been built and who had built it. Unfortunately, existing photos did not provide enough details about the equipment to provide definitive clues; and as it turned out, this was not one of Rife's best units. The team incorrectly identified the unit and mistakenly believed that it worked when it did not. This led them to formulate plausible—but wrong—theories about how the machine generated frequencies.

In 2004, an elderly nurse who used to work with John Marsh (a colleague of Rife's in his later years) gave boxes of valuable documents and audiotapes to US researcher and frequency generator builder Jeff Garff. Three years after, Garff and a small group—which included Jason Ringas of the Rife Research Group of Canada and Jim Peters, an engineer familiar with old tube technology—deciphered a schematic of a Beam Rays Corporation instrument built by Philip Hoyland. A working model was made, using antique parts that were still available. The problem was, the schematic of the device was incomplete. This meant that the group could only guess how the device worked—and their guess, although reasonable, turned out to be incorrect. Thus more time was spent without unearthing answers.

One year later, in 2008, Garff located and purchased a Beam Rays instrument—one of the original 16 built in the 1930s by Beam Rays Corporation—from Dr. Larry Low of Toledo, Ohio. Around the same time, Steve Ross of the World Research Foundation, who had known John Crane (another colleague of Rife's in his later years), allowed Garff to scan the original 1939 Beam Rays trial manuscript. As it turns out, according to Garff, the Beam Rays Corporation had produced two different designs: the laboratory model and the clinical model. From reading the trial testimony, Garff and Peters realized that the schematic they owned belonged to the laboratory model, while the actual instrument that Garff had obtained was a clinical model. Now they had to untangle which machine was doing what. By 2010, the original Beam Rays clinical model was repaired, and certain aspects were evaluated with a spectrum analyzer. The analysis disclosed that Philip Hoyland—who became Rife's engineer in 1935 with the construction of the Rife Ray #4, and who in 1936 began building the Beam Rays clinical model (sold by Beam Rays Corporation in 1938)—had deliberately obscured how the frequencies were transmitted, and consequently, what those frequencies actually were.

Shawn Montgomery gives an excellent description of the various ways in which some of Royal Rife's machines were altered, configured and disguised.

> As time went on and different versions of the Beam Ray Machine came out of Hoyland's workshop, it started to become something that was so technically far removed from Rife's original approach that it was (from Hoyland's perspective) debatable whether or not Rife had a stake in it anymore. Rife's old device was a big, clunky, modular "contraption." Hoyland's new machines were smaller, sleeker, and portable. Hoyland combined recent advances in electronics with sophisticated circuit design, more advanced than the "old school" circuitry Rife had employed. Further, on Rife's old device the dial settings indicated the frequency of the output signal

and the device itself was simply a large, modular frequency generator that provided particularly high power ratings in certain high frequency bandwidths where the MORs resided. Hoyland's new machines took the MOR frequencies and hid them within the circuitry of the machines so that the dial settings would not give the true output frequency, but an encoded numeric equivalent. The output signal on Hoyland's machines was generated by an indirect means within the machine, unlike Rife's original device (whose output signal was generated directly). In other words, Rife's old machines were designed to mainly present the frequency in question, and Hoyland's new machines were designed to mainly hide the frequency in question.

This brings us to the final point of difference in the two machine camps. Rife's original machines were high-frequency devices. He found that the MORs for most bugs were in the radio frequency (RF) range, very high. So Rife's frequency instruments were designed to provide maximum power at these higher ranges. Hoyland changed all of that—and in doing so, he messed with the frequencies. Hoyland's idea was to convert Rife's discovered MOR frequencies by . . . translating them down to a lower [frequency]. . . . The result was a whole new set of numbers, a whole new set of frequencies, a whole new set of MORs, a whole new electronic encryption method to scramble these new numbers, a whole new waveform, a whole new power signature (fundamentally different than the old one), a whole new bandwidth, a whole new approach—a whole new machine.[59]

Had Hoyland built the Beam Rays Corporation devices in a straightforward way, their mode of operation would have been more easily deciphered by modern researchers. Although Hoyland did not accomplish his goal of taking over the Beam Rays Corporation, he did accomplish his goal of deceiving others who would eventually try to duplicate both the original technology and the treatment successes.

Along with Hoyland's deceptions, several sets of lab notes from various periods (written by a few different people) caused a great deal of confusion regarding the frequencies. The numbers for the same microorganism appeared to be recorded differently for different machines. Which one was correct? Then, there were two RF (radio frequency) signals coming from a ray tube. Were there two MOR frequencies for one microbe? We do know that with tuberculosis, two MORs were needed so that both forms of the microbe were destroyed—otherwise, the infection would return if only one form was targeted. However, generally with the two frequencies, it was difficult to tell which one was the actual MOR. And what purpose did the other signal serve?

What about the effects of combining two frequencies, which produced other complex frequencies called *sidebands?* Was it one of the frequencies that existed *within* the sidebands that turned out to be the actual MOR of the pathogen? That may have depended on what machine was being used. Then there was the issue of the waveform. Some researchers insisted that the shape of the wave was the deciding factor in achieving cures. Others claimed better results with only certain noble gases in the plasma tube. Still others wondered whether a plasma light was needed at all. Couldn't metal electrodes contacting the body be used instead of a light tube, since both appeared to function equally well as transmitters? And, although some experimenters believed that an RF carrier wave was needed to drive the frequency into the body—because otherwise, the signal might not penetrate all types of bodily tissue—other experimenters obtained good results without an RF carrier wave. Considering the possible biases and preferences of the researchers (some of whom built and sold their own frequency devices), it's easy to see how someone could misinterpret the data.

And what about many of the audio range (lower) frequencies that contemporary experimenters have been using for various conditions? Many of these numbers seem to work: users report feeling better. But what is contributing to improved well-being? It's possible that—in addition to (or instead of) microbe devitalization—the body's immune response is being stimulated. Medical doctor Robert P. Stafford, a colleague of Rife's who used the technology extensively until his death, believed that some of the frequencies, rather than killing or disabling microbes, were effective because they stimulated the adrenal glands and supported immune function, which helped the client's own body fight the infection. But the wave shape had to be considered, too. Sine waves are gentler than square waves. What effects on the body's tissue did each have, and did the different wave shapes affect microbes differently?

Other factors may also explain varied responses in subjects then and now. Evidence shows that some newly emerging microbes have been genetically engineered, and are hence much tougher to eliminate than their predecessors. Also, an unprecedented increase in harmful synthetic chemicals over the past 80 years has made us more susceptible to the proliferation and mutation of microbes. Dr. James Bare, inventor of the Bare-Rife device, speculates that more may have been occurring than microbe destruction.

> Once a cancer starts, does removal of the initiating microorganism cause the cancer to disappear? . . . Rife's early philosophy was that

> cancer was caused by a virus. . . . Today, we know that there are quite a few different viruses that cause cancer. [For instance, the Human *Papilloma* Virus (HPV) can cause cancer of the uterus, penis, ovaries, nose, esophagus and lung. Hepatitis B and C viruses are implicated in liver cancer. The Epstein-Barr virus, various *Herpes* viruses, and Simian Virus 40 (SV40) are also associated with cancers. Even bacteria are not exempt: the bacterium *Helicobacter pylori* can cause stomach cancer.]
>
> Rife reasoned that if the . . . viruses were killed, the cells would normalize and the cancer would disappear. But by the 1950s . . . Rife [may have] believed that cancer originated from the toxic *byproducts* of the . . . virus metabolism. One byproduct was identified as Di-benzanthracene. Nowadays, its derivative, Dimethyl-Benzanthracene (DMBA) [a highly carcinogenic, orange-brown crystalline hydrocarbon found in coal tar], is often used to induce cancer in lab animals.
>
> So what was Rife actually treating? Was he normalizing the cancerous cells . . . ? Was he killing the microbes responsible for the infection (if present)? Or was he eliminating some chemical carcinogen?[60]

There is reason to assume that Rife's therapy was helping in all of the ways that Bare discusses. Cancer cells have a much lower plasma membrane potential (lower voltage) than normal, non-cancerous cells—differences which are reflected in the electromagnetic (EM) signatures that they emit. The EM field emitted by the Rife Ray contained many different types of wavelengths known to have a variety of effects on living tissue. This includes the normalization of cellular voltage (which corresponds to an increase of energy in the tissues). Once cellular voltage was restored, chemical carcinogens could be better eliminated, because healthy cells can remove noxious waste much more easily than unhealthy cells. Not discussed by Bare, but considered by other researchers, is the likelihood that the EM field was either tapping into restorative scalar waves directly, or helping the body tap into them. See elsewhere in this chapter, and Chapter 4, for more information on scalar waves.

There is one more area of debate within the Rife research community worth mentioning, and that is the effectiveness of electrode (pad) units versus ray tube (radiant plasma) units. Devotees of radiant plasma units point out that Rife was not happy with the later change of design from a ray tube to electrodes—and that he could have used electrodes or a metal antenna in his initial units, but instead chose gas-filled tubes because there are many different energies (including electric and magnetic fields) that created a beneficial effect. Proponents of electrode devices believe that as long as the correct frequencies are transmitted, the benefits are the same, since people do benefit when using pad machines. From clinical trials in the US and abroad, it's clear that both methods of delivery work—although in most instances, with both delivery systems, it's important to use the correct frequency.

We still have more to learn about how Rife's technology worked, and how the therapy can be adapted for today's world. Thankfully, after many years of conjecture, trial, error and experimentation, we are closer to knowing what made Royal Rife's best machines so successful.

Dr. James B. Couche, who had been using Rife technology in his practice for two decades, had his AMA membership rescinded because he—along with his colleague Dr. Yale—refused to relinquish his machine. "These two surgeons later stated," Vassilatos reports,

> that for 22 years after this action, they continued to successfully treat and cure thousands of patients with the Rife Ray tube devices which they secretly maintained. Dr. Yale published a large and concise chronological account of patients treated and cured in his practice throughout that 22-year period. Notwithstanding the fact that 60% of severe (cancer) cases brought him were medically [inoperable], incurable, and hopeless, Dr. Yale confirmed that all of these persons were yet alive and living happy, full lives.[61]

Threats and intimidation are key ploys used to coerce people into submission. However, altering the historical record is necessary too, to prevent people from realizing that times were once different or better. With their memories altered or wiped clean, people tend to remain submissive and complacent. This explains the orchestrated attempts to erode history. Vassilatos writes:

> Fishbein, the editor and chief censor of the AMA, saw that Rife's name would be stricken from all . . . publications, that no professional journal would dare publish anything by Rife, and that no mention would ever be made of Rife's achievements in formal proceedings. Inescapably linked with the pharmaceutical trusts, Fishbein's actions were all too conspicuous.[62]

### Corruption Has Many Faces

Alfred Sloan and Charles Kettering, the founders of the Memorial Sloan-Kettering Cancer Center in New York City, had long and prosperous careers at General Motors, the car manufacturer. Although Kettering discovered that adding grain alcohol to gasoline would boost mileage, eliminate knocking in the engine and limit poisonous fuel emissions, he later abandoned this high-performance gasoline formula in favor of inferior-performing lead additives that every industry mogul knew were highly toxic.

—summarized from "The Secret History of Lead" *The Nation*, March 20, 2000.

Barry Lynes recounts similar reports. Twenty years after the historic 1931 dinner honoring Kendall and Rife, some of the attendees denied that the Universal Microscope worked, that they had been present at the dinner, or that they even knew Rife. Considering that some of these professionals were publicly quoted in newspapers and magazines as having worked side by side with Rife—and that a photograph taken of the banquet attendees had been publicly distributed—their denials seem astonishing. However, this illustrates the degree of intimidation involved.

One can only imagine how Rife must have felt after being betrayed by some of his formerly supportive colleagues. Consider Arthur Kendall, who isolated and noted the pleomorphic characteristics of typhoid bacillus with Rife, and then published a paper on their findings. After retiring to Mexico in 1942, he wrote to the California Department of Public Health that his contact with Rife had been very limited. And Alvin Foord of the Pasadena General Hospital, who did the pathology tests for Dr. Johnson during the 1934 clinical trials, later denied his involvement.

With support from the Fishbein backers, the allopathically-oriented American Medical Association, the American Cancer Society, and Memorial Sloan-Kettering Cancer Institute in New York City began a heavily organized, public mud-slinging attack on Rife and his colleagues. Sloan-Kettering specialized then, as now, in treating cancer with radiation and chemo. It had, and continues to have, administrative ties to the American Cancer Society. (See Sidebar, "Corruption Has Many Faces.") Executives from the Rockefeller Foundation, who were friends with the chief administrators of the AMA, also denounced Rife and his technology. Virtually all of the establishments that attacked Rife were partially funded by, or connected to, the pharmaceutical industry.

Organized meetings were held in which doctors who had never even looked at microbes through the Universal Microscope condemned Rife's research, the frequency therapy, and the doctors who used the technology. Rife's supporters were blasted by the press, professionally and personally intimidated, and threatened with the loss of their practitioner licenses. Royal Rife's laboratory was raided. Photographs, medical records, reports, pieces of the Universal Microscope including some very expensive hand-cut quartz prisms, and other valuable equipment were stolen. The abundant funding and resources that had been Rife's in the 1930s were no longer available, making the mass production of a high-powered Rife Ray no longer feasible.

It was during—and despite—this time of intense AMA intimidation and harassment that Dr. Raymond E. Seidel and M. Elizabeth Winter managed to publish their article on "The New Microscopes" in the February 1944 issue of *The Journal of the Franklin Institute*. However, this article's publication was an exception. Despite the prestige of Rife's defenders—and the hundreds of articles that had appeared in newspapers and journals like *Scientific American*, the July 13, 1932 "Proceedings of the Staff Meetings of the Mayo Clinic," and publications of the Franklin Institute and the Smithsonian Institution—after the mid-1940s, most positive publicity for Rife had dissipated. Furthermore, publications containing articles on the Universal Microscope were disappearing from archives and libraries. As late as 1986, Steve Ross of the World Research Foundation stated that no references could be found in the US to either Rife or his microscope in any of the 350 electronic databases that the organization was using at that time.[63]

Those who insist that they surely would have heard of Rife and his inventions had they "been any good" need only observe the methods used to suppress his work. If supporters of Rife could be pressured enough to withdraw their support and financial backing—and even deny knowing him—imagine what the general public, which had no firsthand experience of the man or his inventions, could be induced to think.

Then in October 1944, a different kind of tragedy struck. According to a coroner's report secured by Dave Felt, Milbank Johnson died of a rupture in his heart, right before his 73rd birthday. Even though the friendship between Johnson and Rife had become so strained that they had not spoken to each other in seven years, Johnson had still been a friend, sponsor and champion. To Rife, losing Milbank Johnson may also have felt like losing a vital connection to a better past. Rife continued to drink to relieve his stress.

There was simply too much money invested in allopathic drugs and its affiliated businesses—doctoring, hospital care, anesthesiology, surgical supplies—to

### Pleomorphism as a Global Phenomenon

Ironically, an Internet search reveals at least eight heavily documented textbooks on pleomorphism published in German, complete with references and photos. In the United States, the existence of pleomorphism is still debated. However, some US medical sources, especially the older ones, do mention pleomorphism. *Taber's Cyclopedic Medical Dictionary* (first copyright 1940), defines pleomorphism as "1. Property of crystallizing into two or more different forms. 2. Occurrence of more than one form in a life cycle."[64] And *Harrison's Principles of Internal Medicine* (one of two major textbooks used by medical students) states that "*Acinetobacter calcoaceticus* . . .was described by DeBord as *Mima polymorpha* in 1939. It is one of two well-characterized varieties of *Acinetobacter*. . . . Organisms described as *Bacterium anitratum* and B5W are synonymous with *Acinetobacter.* These organisms are pleomorphic, gram-negative, encapsulated, and non-motile. They grow well on ordinary media, forming white, convex, smooth colonies. Diplococcal forms predominate in colonies grown on solid media; rods and filamentous forms are more common in liquid media."[65]

It's indeed puzzling why more people in the medical community haven't paid attention to routine research that was conducted by their own respected microbiology specialists.

allow a non-invasive modality to be widely utilized. If the Universal Microscope did in fact clearly show the response of microorganisms to their environment, it would be easy enough to test whether or not the Rife Ray worked. But if the frequency therapy worked, then expensive drugs and other allopathic treatments might become less necessary, even obsolete. The logical way to rebalance the system would be through holistic dietary and lifestyle changes, rather than from the ingestion of poisonous medications. And then, allopathic medicine could be rejected as the main—or only—healing modality.

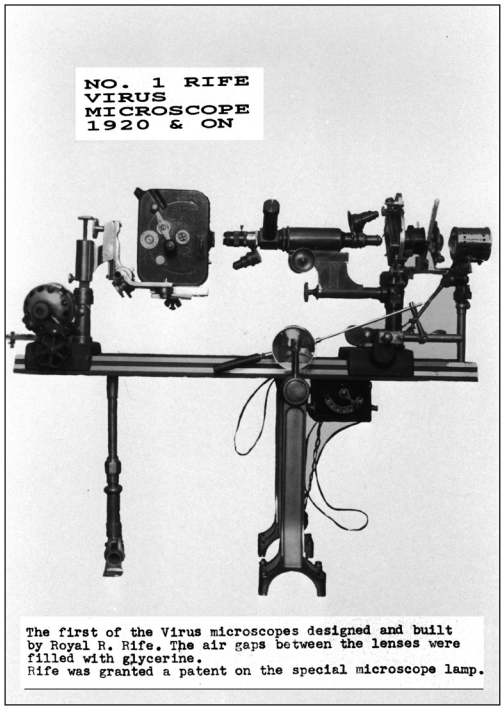
To be fair, not everyone in the medical community who opposed Rife's technology was motivated by greed. A sizeable number of doctors had trouble accepting the fact that microbes could be seen live through the Universal Microscope. It had never been done before. Also, "live" meant that these minuscule creatures could do some pretty amazing things—like change their form, size, function, and even virulence. If microbes could transform, and their transformation was based on the terrain in which they lived, this did more than put the responsibility of healing back into the hands of the sick. It meant that cherished beliefs were invalid, despite hard data that contradicted those beliefs. To those whose identities were based on certain beliefs, pleomorphism not only seemed like science fiction, but it threatened their sense of self.

A few doctors knew, or had heard of, colleagues who'd looked through the Universal Microscope, and had seen what Rife saw. But they were still skeptical. Now, it's understandable if one cannot accept favorable second-hand reports from even highly respected colleagues—after all, empirical evidence is much more convincing, and more scientific. However, it's harder to fathom the fear of researchers and doctors who refused to even *look* through the microscope. One would think that they'd want every tool available to help the people they said they were serving.

There was yet another category of professionals: those who looked through the microscope and did not see the microbes at all. How could this be? Lynes analogizes their lack of ability to the reactions of the Fuegan natives who were met by the explorer Magellan:

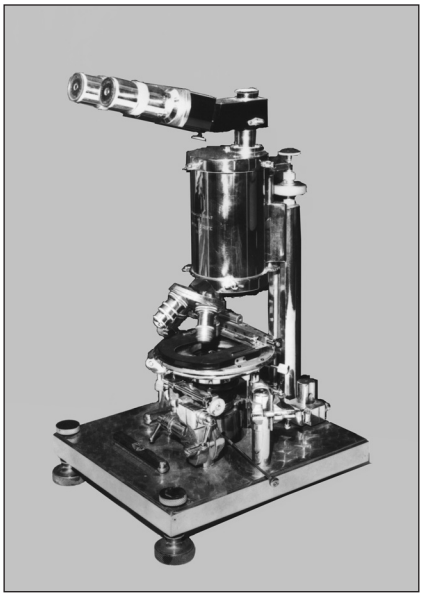
> When Magellan's expeditions first landed at Tierra del Fuego, the Fuegans, who for centuries had been isolated with their canoe culture, were unable to *see* the ships anchored in the bay. The big ships were so far beyond their experience that, despite their bulk, the horizon continued unbroken: the ships were invisible. This was learned on later expeditions to the area when the Fuegans described how, according to one account, the shaman had first brought to the villagers' attention that the strangers had arrived *in* something which although preposterous beyond belief, could actually be *seen* if one looked carefully. We ask how could they not see the ships, . . . they were so obvious, so *real*. . . . Yet others would ask how *we* cannot see things just as obvious.[66]

Vassilatos's explanation is not psychological, but monetary. He points out the clear opposition from RCA, the manufacturer of the competing (electron) microscope. Regardless of why others failed to see what Royal Rife and his enlightened contemporaries saw, the outcome was the same. For Rife, to fall from a position of being respected and praised to being ridiculed and ignored—not to mention being betrayed by friends, and seeing decades of work pilfered and destroyed—was more than he could bear. By 1950, he was drinking daily. He still conducted some experiments, wrote, and was contacted by professionals and a few friends. But



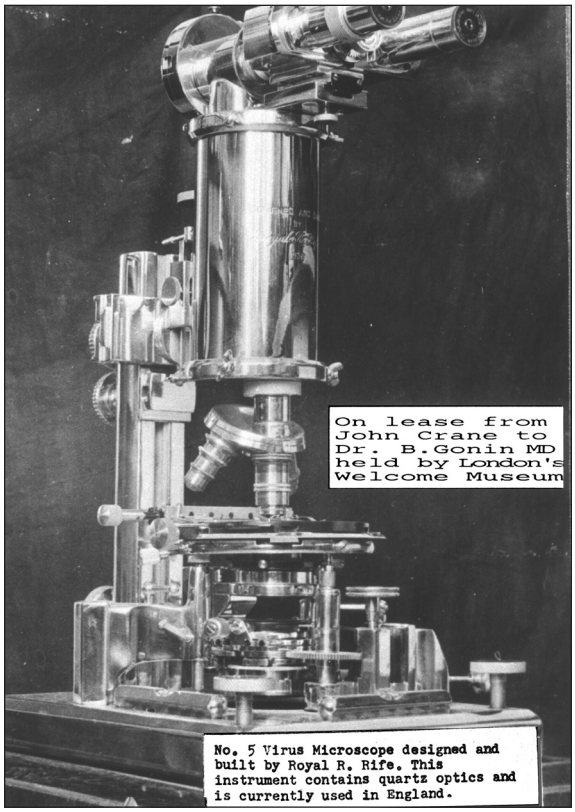

Rife's first high-powered microscope, built in 1920.

*Courtesy of Rife Research Group of Canada*

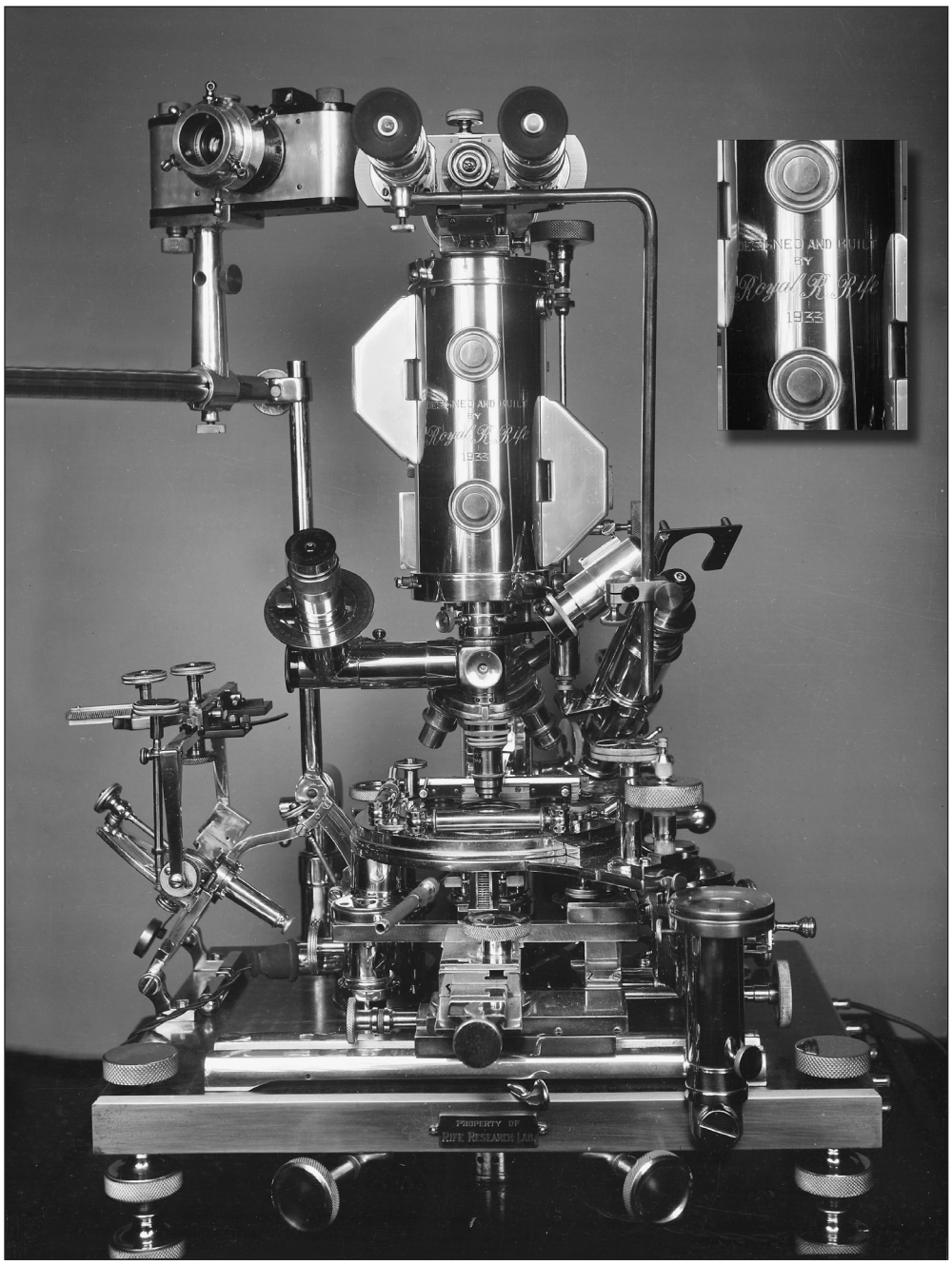


Rife's Microscope No. 4, intended for commercial production.

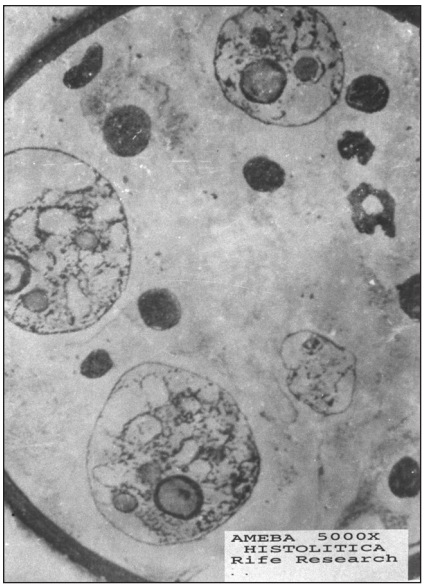
*Courtesy of Rife Research Group of Canada*



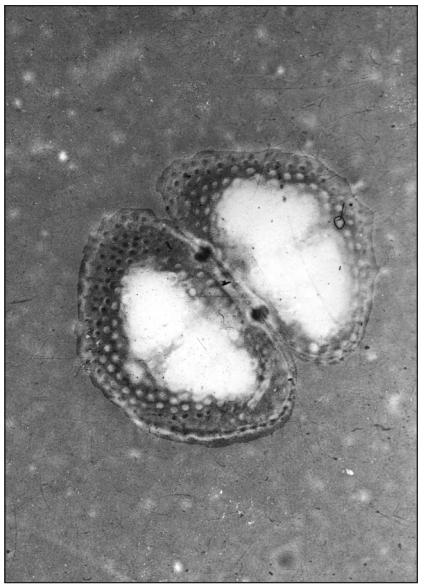

Rife's Microscope No. 5. This was his last model.



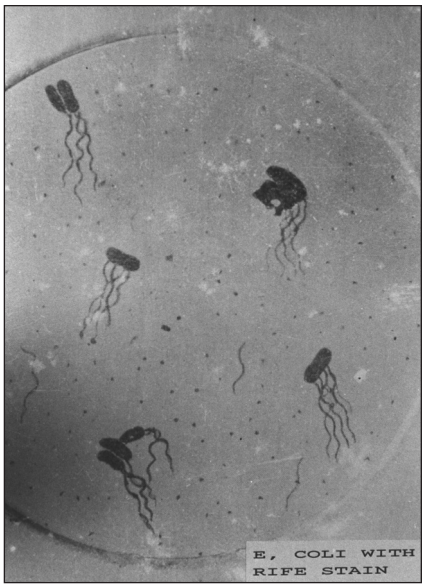

Rife Universal Microscope No. 3.
Inscription on top reads, "Designed and built by Royal R. Rife, 1933."
Plaque at base reads, "Property of Rife Research Lab."



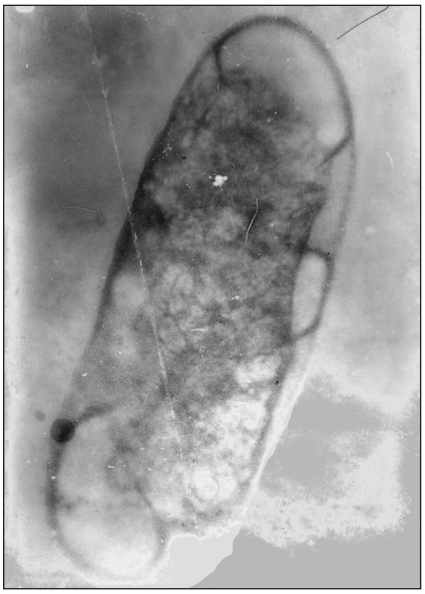

*Entamoeba histolytica* (amoeba),
as seen through Rife's microscope.



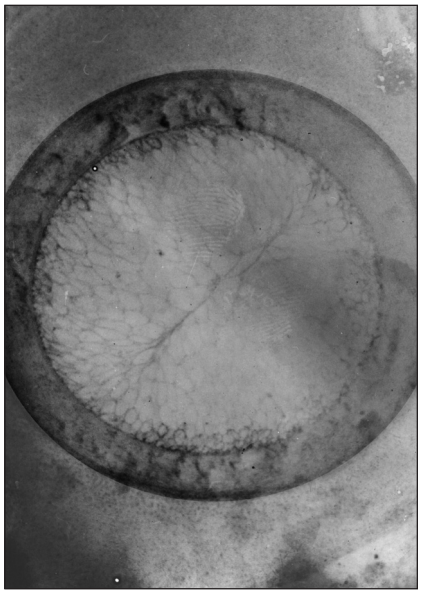
Algae cells,
as seen through Rife's microscope.




*Escherichia coli,*
as seen through Rife's microscope.
This specimen is stained with a dye
created by Rife, which
did kill the microorganisms.



*Salmonella typhimurium,*
in transition into the filterable state,
showing three filterable granules
instead of the usual one,
as seen through Rife's microscope.



*Clostridium tetani* (tetanus) spore,
as seen through Rife's microscope.




*Mycobacterium tuberculosis*
(tuberculosis), rod form,
as seen through Rife's microscope.

*All photos courtesy of Rife Research Group of Canada*



CITY—COUNTY SECTION FINANCIAL NEWS

The San Diego Union

AND DAILY BEE — THE PIONEER NEWSPAPER OF SOUTHERN CALIFORNIA

CITY—COUNTY SECTION IMPERIAL VALLEY

MARINE INFORMATION—RADIO PROGRAMS

SAN DIEGO, CALIFORNIA, SUNDAY MORNING, NOV. 3, 1929

WEATHER SUNDAY—FAIR; CONTINUED MILD; LOW HUMIDITY

LOCAL MAN BARES WONDERS OF GERM LIFE

NEW APPARATUSES UNVEIL HIDDEN MICROBE UNIVERSE TO HUMAN EYE

Super-Magnified Lockjaw Bacillus Evidences Vegetable Composition; Disease Study Advanced.

Record Tourist Season in Prospect for San Diego, Railroad Man Says

Making Moving Pictures of Microbe Drama

R. R. Rife, Point Loma scientist, is photographing the hidden secrets of the microbe kingdom. At the top is a motion picture film showing the adult Strongyloides Intestinalis (hookworm) in action. At the left is a spore of Bacillus Tetani (lockjaw), enlarged 217,000 diameters, said to be a world's record. Under it is a group of the bacilli from which the spore was taken, enlarged 18,000 times. In right center is Rife, behind the cine-micrographic camera which he built to take his "microbe movies." Below is a group of typhoid bacilli, magnified 16,000 diameters to show the flagellae for the first time.

Finds East 'Sold' on This City

Resorts Over Border Prove Big Attraction, F. B. Dorsey, S. D. & A. Traffic Manager, Says on Return.

CITY HAS BIG DRINK OF WATER ON HAND: 44,666,159,457 GALS

ARREST TWO MEN ON HIGHWAY WITH ALLEGED ALCOHOL

285 Gallons and Two Cars Confiscated; Believed Part Of L. A. Ring Operations.

L. A. PLEDGES AID IN MOVE TO MAKE SAN DIEGO A MAIL TERMINUS

Local Chamber Assured Full Co-operation by Northern Neighbor; Swing Arranges Hearing on Plans Nov. 25

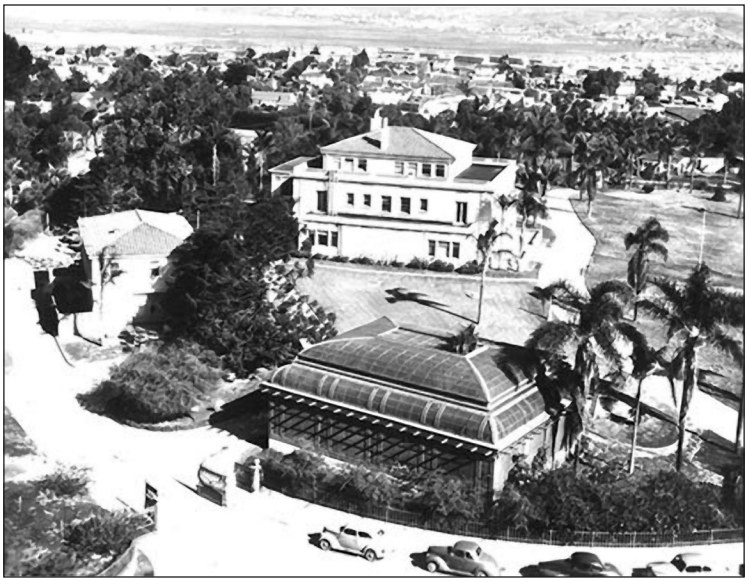
QUICK DISPOSAL

Front page article on Rife, *The San Diego Union,* November 3, 1929.

Rife is an expert in more lines than the average man has time to dabble in. He is an able bacteriologist, embryologist, electrical and scientific engineer, metallurgist, chemist, photo-micrographer, and he plays with scientific crime detection. As recreation he takes to target shooting in terms of half-inch bullseyes.

His chief enthusiasm, however, is the inquiry into the causes, agencies and forms of diseases, and it is this enthusiasm that has caused him to develop his various pieces of apparatus, and to refine them to an efficiency beyond all precedent.

—*The San Diego Union,* November 3, 1929



Amelia Bridges estate in San Diego, California.
Rife's first laboratory was on the top floor of the garage,
which is the small white building on the left.



JUNE, 1931 27

# *Movie* New Eye of *Microscope* in War on *Germs*

*By* H. H. DUNN

R. R. Rife, once a chauffeur, has devised a means of preserving with a movie camera the life history of man's most deadly microscopic enemies.

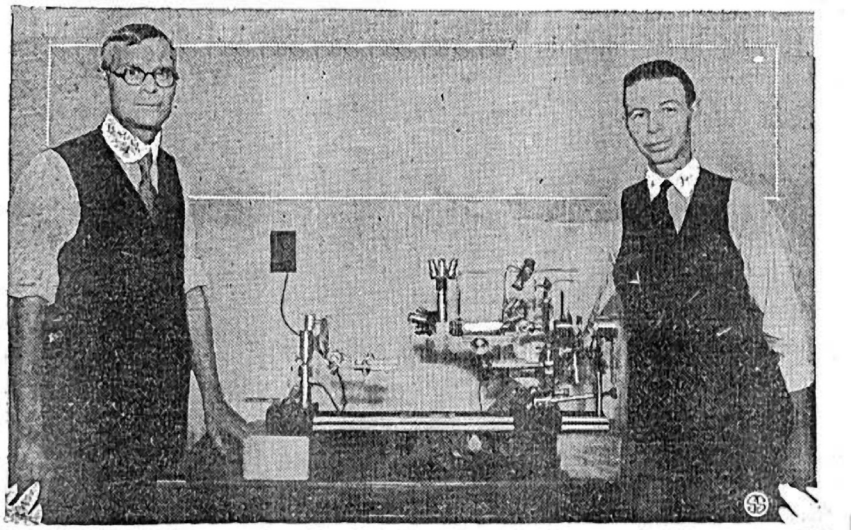
Larva of the hookworm, magnified 12,000 times, is seen just after it has emerged from the egg. At right, bacteria of typhus showing the filaments.

the time required to diagnose certain diseases may be cut from days to hours by the use of the films.

WHENCE come the actors in these strange movies? Rife propagates and rears all the microbes he studies, I learned, in an incubating plant of his own design. Deadly germs, housed in jars, are nursed as carefully as the frailest child. Delicate thermostats control the warmth of ovens in which the germs are

*Both photos courtesy of Jeff Garff*

# World's Biggest Microscope In San Diego



The world's largest microscope, shown here, is in San Diego. It is the property of Dr. Royal R Rife, 2500 Chatsworth blvd. At the left is Dr. Arthur Isaac Kendall of Northwestern University who collaborates with Dr. Rife, right, in his microscopic studies of filter passing micro-organisms. The instrument was built by Dr. Rife.

EMBER 4, 1931

If you can favor by

## San Diegan's Super-Microscope Gives First View Of Filtered Bacteria

### Instrument Praised As New Aid To Science

PASADENA, Dec. 4. — Using the new "super-microscope" invented by Dr. Royal Raymond Rife of San Diego, Dr. Arthur Isaac Kendall of Northwestern University Medical School has seen for the first time the exceedingly minute moving bodies that apparently carry the life of bacteria when these are induced to "dissolve" into a form that will pass through the pores of the finest porcelain filter and still remain alive.

The work was done at the Pasadena hospital, and will be reported in the official publication of the California Medical Association, California and Western Medicine.

**Bacillus Used**

The material used by Dr. Kendall was a culture of the typhoid bacillus, ordinarily a fairly large germ, easily visible under the higher-powered lenses of a compound microscope. By feeding it on his recently-evolved "K medium," which apparently has the power of causing all visible bacteria to pass over into an invisible, filterable phase, Dr. Kendall induced the bacilli to go through this change. Under the highest power of the ordinary microscope, he could see nothing moving in the fluid, except a swarm of rather active little granules that could be seen only as tiny motile points.

Examination with the Rife microscope, however, these points became plainly visible as small, oval, actively moving bodies, turquoise blue in color. These appeared in all the cultures, and could be transferred from one culture to another through the fine-pored filters; so Dr. Kendall considers them to be the actual filterable forms of the typhoid bacillus.

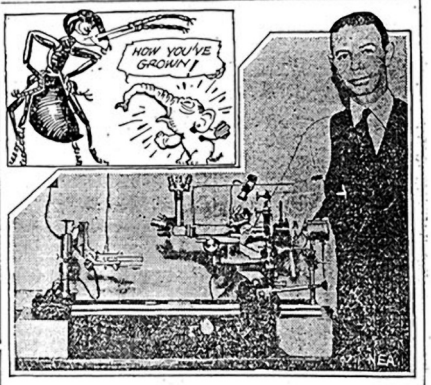
**Microscope Praised**

This visual demonstration of the hitherto invisible, living and moving particles of the filterable phase of a bacillus, is hailed editorially by California and western medicine. Of Dr. Rife's microscope, the editorial says:

"Whereas, our present microscopes magnify from one to two thousand diameters, in this new microscope we have an instrument for which a magnification as high as 17,000 diameters is claimed.

"This is certainly a long stride from the initial efforts of Van Leuvenhock, whose simple instrument may be said to have laid the foundation for the science of bacteriology which later came into being; and by means of which science much of the world's progress in man's conquest of the infective and other diseases has been made possible."

(Copyright, 1931, by Science Service)




A new superpower microscope which magnifies objects to 5000 times their normal size has been perfected here by Dr. Royal Raymond Rife, shown above with his invention. Six quartz lenses are used in the powerful new instrument, which magnifies on a scale which would make an ant appear larger than an elephant. Another unusual thing about the microscope is that objects seen through it are shown in true perspective, rather than in reverse focus, as is the case with previous microscopes.

Articles on Rife and his microscope, unknown newspapers, 1931.

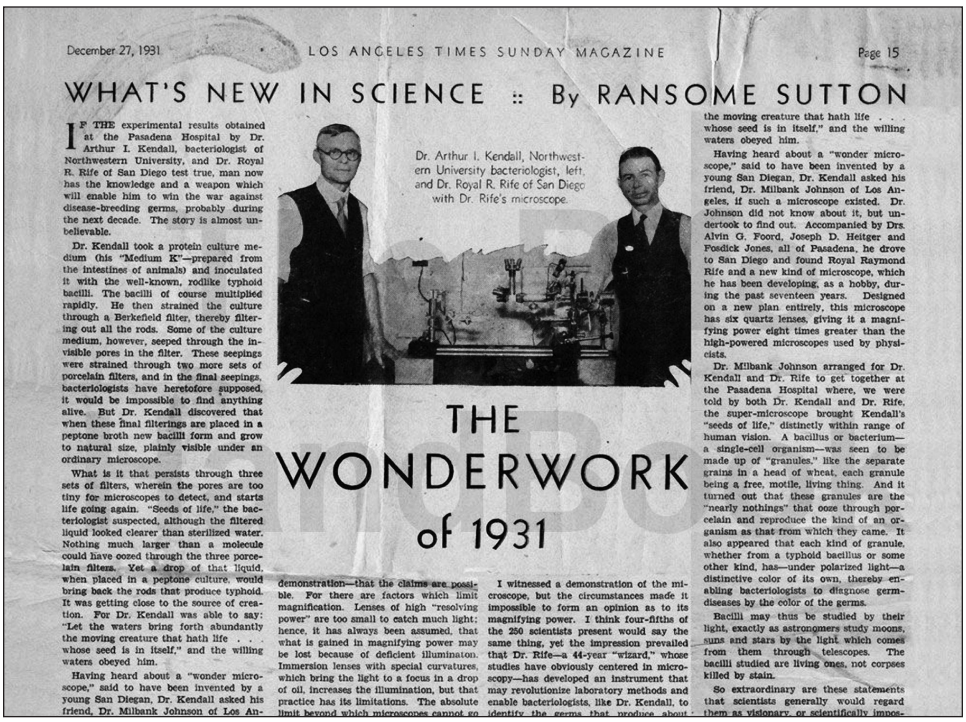


Arthur Isaac Kendall, PhD; Milbank Johnson, MD; and Royal Raymond Rife.



Banquet held by Dr. Johnson, 1931, in honor of Kendall and Rife. Dr. Kendall created the K-medium on which microbes fed, and were then seen as transformed through Rife's microscope. Kendall and Rife are among the five men standing in front of the rear window.

*Both photos courtesy of Jeff Garff*



December 27, 1931 LOS ANGELES TIMES SUNDAY MAGAZINE Page 15

WHAT'S NEW IN SCIENCE :: By RANSOME SUTTON

# THE WONDERWORK of 1931

IF THE experimental results obtained at the Pasadena Hospital by Dr. Arthur I. Kendall, bacteriologist of Northwestern University, and Dr. Royal R. Rife of San Diego test true, man now has the knowledge and a weapon which will enable him to win the war against disease-breeding germs, probably during the next decade. The story is almost unbelievable.

Dr. Kendall took a protein culture medium (his "Medium K"—prepared from the intestines of animals) and inoculated it with the well-known, rodlike typhoid bacilli. The bacilli of course multiplied rapidly. He then strained the culture through a Berkefield filter, thereby filtering out all the rods. Some of the culture medium, however, seeped through the invisible pores in the filter. These seepings were strained through two more sets of porcelain filters, and in the final seepings, bacteriologists have heretofore supposed, it would be impossible to find anything alive. But Dr. Kendall discovered that when these final filterings are placed in a peptone broth new bacilli form and grow to natural size, plainly visible under an ordinary microscope.

What is it that persists through three sets of filters, wherein the pores are too tiny for microscopes to detect, and starts life going again. "Seeds of life," the bacteriologist suspected, although the filtered liquid looked clearer than sterilized water. Nothing much larger than a molecule could have oozed through the three porcelain filters. Yet a drop of that liquid, when placed in a peptone culture, would bring back the rods that produce typhoid. It was getting close to the source of creation. For Dr. Kendall was able to say: "Let the waters bring forth abundantly the moving creature that hath life . . . whose seed is in itself," and the willing waters obeyed him.

Having heard about a "wonder microscope," said to have been invented by a young San Diegan, Dr. Kendall asked his friend, Dr. Milbank Johnson of Los Angeles, if such a microscope existed. Dr. Johnson did not know about it, but undertook to find out. Accompanied by Drs. Alvin G. Foord, Joseph D. Heitger and Fosdick Jones, all of Pasadena, he drove to San Diego and found Royal Raymond Rife and a new kind of microscope, which he has been developing, as a hobby, during the past seventeen years. Designed on a new plan entirely, this microscope has six quartz lenses, giving it a magnifying power eight times greater than the high-powered microscopes used by physicists.

Dr. Milbank Johnson arranged for Dr. Kendall and Dr. Rife to get together at the Pasadena Hospital where, we were told by both Dr. Kendall and Dr. Rife, the super-microscope brought Kendall's "seeds of life," distinctly within range of human vision. A bacillus or bacterium—a single-cell organism—was seen to be made up of "granules," like the separate grains in a head of wheat, each granule being a free, motile, living thing. And it turned out that these granules are the "nearly nothings" that ooze through porcelain and reproduce the kind of an organism as that from which they came. It also appeared that each kind of granule, whether from a typhoid bacillus or some other kind, has—under polarized light—a distinctive color of its own, thereby enabling bacteriologists to diagnose germ-diseases by the color of the germs.

Bacilli may this be studied by their light, exactly as astronomers study moons, suns and stars by the light which comes from them through telescopes. The bacilli studied are living ones, not corpses killed by stain.

So extraordinary are these statements that scientists generally would regard them as visionary, or scientifically impos-

Dr. Arthur I. Kendall, Northwestern University bacteriologist, left, and Dr. Royal R. Rife of San Diego with Dr. Rife's microscope.

demonstration—that the claims are possible. For there are factors which limit magnification. Lenses of high "resolving power" are too small to catch much light; hence, it has always been assumed, that what is gained in magnifying power may be lost because of deficient illumination. Immersion lenses with special curvatures, which bring the light to a focus in a drop of oil, increases the illumination, but that practice has its limitations. The absolute limit beyond which microscopes cannot go

I witnessed a demonstration of the microscope, but the circumstances made it impossible to form an opinion as to its magnifying power. I think four-fifths of the 250 scientists present would say the same thing, yet the impression prevailed that Dr. Rife—a 44-year "wizard," whose studies have obviously centered in microscopy—has developed an instrument that may revolutionize laboratory methods and enable bacteriologists, like Dr. Kendall, to identify the germs that produce about

Another news article, *Los Angeles Times Sunday Magazine,* December 27, 1931, with the famous photo of Rife and Kendall. Rife was often called "Dr." as a sign of respect.

Article on Rife's microscope, unknown newspaper.



# Rife Microscope Opens New Field In Germ Studies

## Inventor Will Aid Scientist In Attempt To Isolate Infantile Paralysis Germ As First Experiment

As the first of a series of expeditions into eight new worlds, never before explored by science, Royal Raymond Rife, San Diego scientist, and his co-worker, Dr. Arthur Isaac Kendall, Northwestern university scientist, will attempt to isolate the dreaded infantile paralysis germ.

ROYAL R. RIFE

This attempt will be made with the new Rife microscope, eight and a half times more powerful than any yet devised, the modest, mild-mannered inventor told members of the University club Friday.

It is the belief of Dr. Kendall, one of the nation's leading bacteriologists, that the infantile paralysis germs and those of about 50 communicable diseases assume a smaller form in the filtered state and those escape detection under the present day microscope.

**Light Beam Cold**

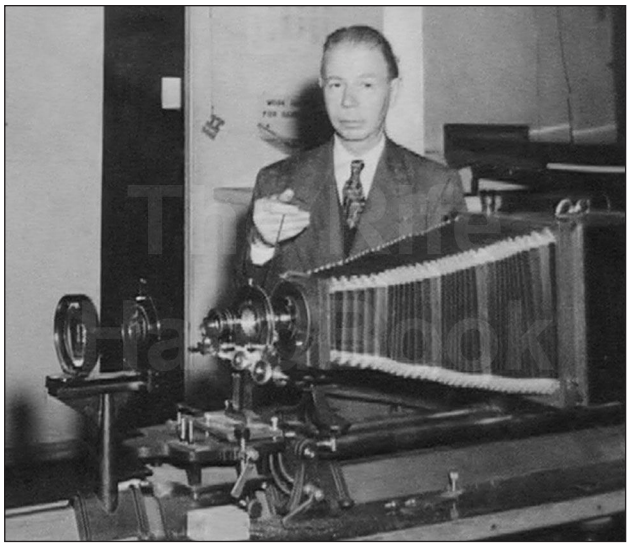
Unlike the instruments in use today, the beam of this light is cold and living objects have been studied under its full glare for six hours without evaporation from heat. By the use of quartz lenses, it is possible to develop about 50 per cent more light than filters through the glass of the present magnifiers, Rife added.

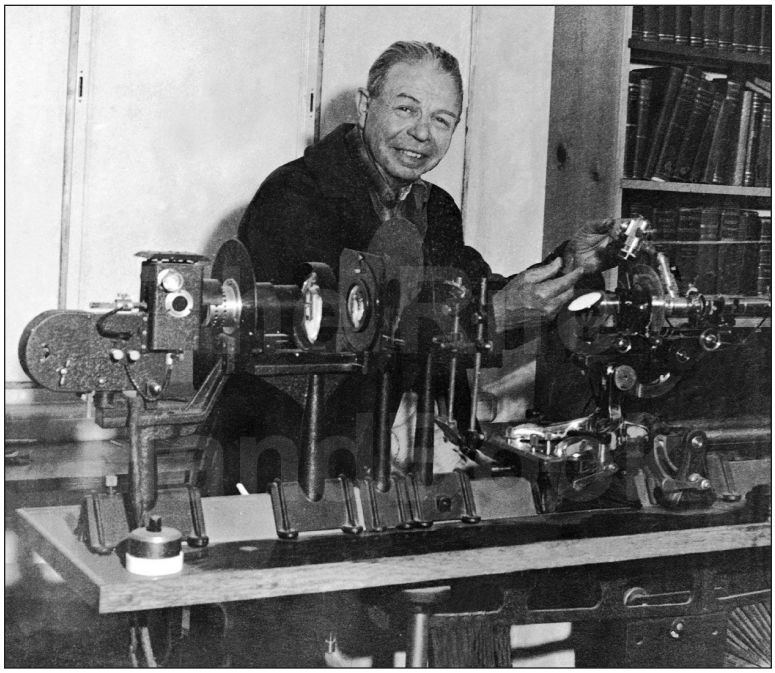
A revolutionary feature of the R..e microscope is the elimination of staining, a drawback of current magnification. Rife expressed the belief that each micro-organism has its own color stains which identifies it under the microscope.

One of the secrets of the new microscope, which has created a sensation in the scientific world, is its use of six quartz lenses, which

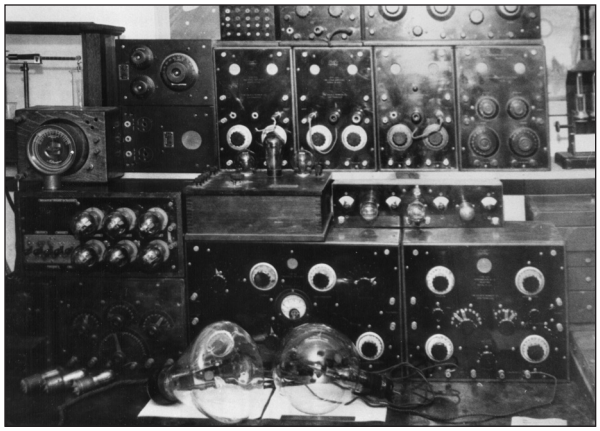
*Both photos courtesy of Jeff Garff*

Cameras were essential tools for Rife's work.
He used both still and motion picture cameras to capture the images
of specimens seen through his microscopes.



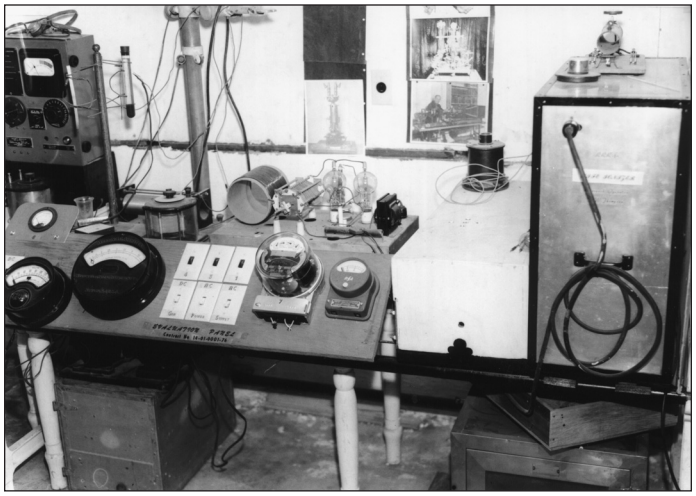


*Both photos courtesy of Jeff Garff*



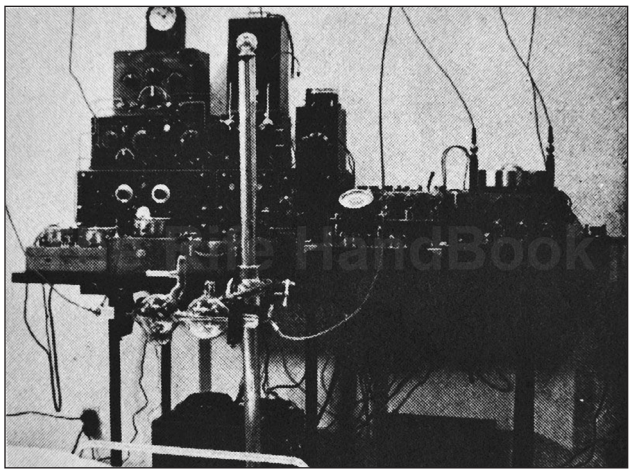
A collection of Kennedy and other brand radio receivers that Rife experimented with at different times. Note the gas-filled transparent tube in front, used to convey the frequencies.

*Courtesy of Rife Research Group of Canada*



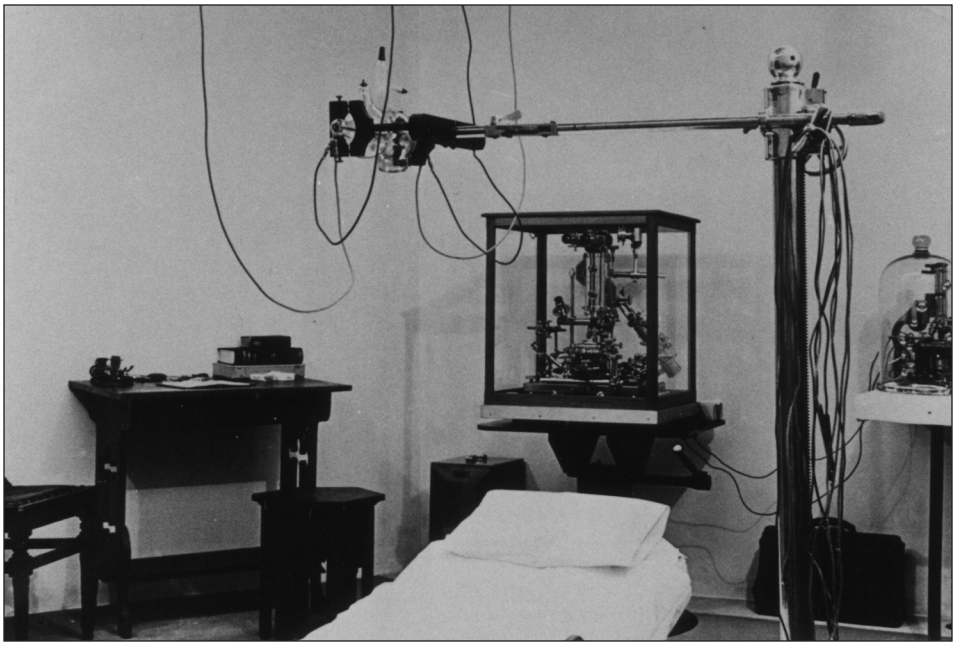
Rife Ray No. 1.

*Courtesy of Rife Research Group of Canada*



Rife Ray No. 3, 1934, used in a clinical trial the same year.

*Courtesy of Jeff Garff*



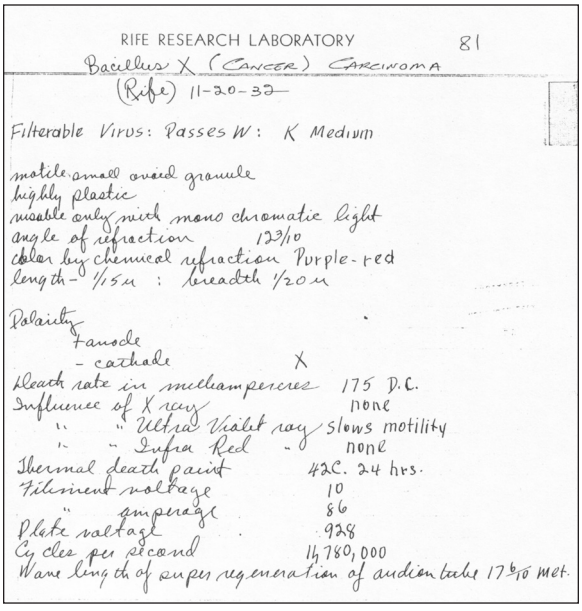
Cancer treatment room.

*Courtesy of Rife Research Group of Canada*



Rife Ray No. 4, 1935.

*Courtesy of Jeff Garff*



RIFE RESEARCH LABORATORY 81

Bacillus X (Cancer) Carcinoma

(Rife) 11-20-32

Filterable Virus: Passes W: K Medium

motile small ovoid granule
highly plastic
visable only with mono chromatic light
angle of refraction 123/10
color by chemical refraction Purple-red
length - 1/15 u : breadth 1/20 u

Polarity
+ anode
- cathode X
Bleach rate in milliamperes 175 D.C.
Influence of X ray none
" " Ultra Violet ray slows motility
" " Infra Red - none
Thermal death point 42C. 24 hrs.
Filament voltage 10
" amperage 86
Plate voltage 928
Cycles per second 14,780,000
Wave length of super regeneration of audion tube 17 5/10 Met.

A page from Rife's lab notes for the *Bacillus X*, or Carcinoma (cancer) virus.



THE ASSOCIATED PRESS ☆ THE INTERNATIONAL NEWS

EVENING TRIBUNE

FINAL HOME

ESTABLISHED 1895

No. 13873 28 PAGES 2 SECTIONS SAN DIEGO, CALIFORNIA, FRIDAY, MAY 6, 1938 SECTION A FIVE CENTS 75c PER MONTH

WEATHER FORECAST

Yesterday's Low and High

'Klan' Threat To Filipino Guardsmen

MIAMI, Fla., May 6 (A.P.)—Comdr. O. H. Abel, of the United States coast guard, demanded police protection today for two Filipino guardsmen threatened—purportedly by the Ku Klux Klan — because of their marriage to white women.

Good Records Cited

Saying the Filipinos, Francesco Rubia and Pedro Acoba, had good service records and were law-abiding citizens, the commander of the coast guard base here wired Gestapo to the local authorities to give them protection against the Klan or any other organization which attempts such illegal terroristic activities."

"If the local police cannot or will not afford them this protection," he added, "I will take steps to see that they get it."

Police Chief H. Leslie Quigg said the coast guardsmen would receive protection, but that no guard would be stationed at their house.

The Filipinos said a delegation of eight men called at the home where both couples live last night and handed Mrs. Rubia a note crudely printed on a piece of coarse paper, blank which read, "we are tired of white women living with Filipinos. This is a warning for you to move within 24 hours. Signed—Ku Klux Klan."

Rubia said today he would obey the warning and move "as quickly as I can" but that he would not be able to do so by the deadline last night.

Boost in Cost Of S. D. Relief

San Diego's needy during the 1938-39 fiscal year, starting July 1, will require $4,136,711 in relief, of which all but $1,500,464 will be furnished by state and federal governments, a budget drafted last night by the county welfare board estimated. The estimated welfare expenditures are believed the largest in the history of San Diego county.

Disbursements here during the current 1937-38 fiscal year, to end June 30, were slated to provide $3,272,784,

DRY SEASON ON; FIRE OFFICIALS URGE PRECAUTION

With the warm weather season officially opened and expected to be unusually dry, San Diego county fire department officials warned today that the danger months lie just ahead and urged citizens to take extra precautionary measures to prevent destructive blazes.

Due to the drying-out action of the sun's rays, grass, brush and weeds always are productive of fire hazards not present in winter, it was pointed out. Citizens are urged to use care in disposing of matches, lighted cigaret stubs and other dangerous articles.

Two fires, one brush and grass, were reported last night, but no property damage resulted, it was reported.

Deal Is Raked By Hoover as 'Dictatorship'

OKLAHOMA CITY, May 6 (I.N.S.)—Former President Herbert Hoover today left the state Republican convention here with 11 demands on the national government to save this country from the "dangerous road to dictatorship."

Mr. Hoover told the Roosevelt administration for causing the present business recession and drew a parallel between new deal policies and

(Text of Hoover speech on Page 6-A.)

the course taken in authoritarian countries of Europe. Already, he said, "it would startle the people to have a detailed list of the powers over their daily life they have surrendered to the president and his administration."

Some of the European nations, he said, started out to surrender itself to a dictator.

"In variable doses," he continued, "they undertook credit and currency control and ended by destroying both."

(Continued on Page 4, Col. 6)

'WON'T RUN IN '40,' ROOSEVELT QUOTED IN PARIS PAPER

PARIS, May 6 (U.S.)—"I shall

House Forces Vote on Wage-Hour Bill

# DREAD DISEASE GERMS DESTROYED BY RAYS, CLAIM OF S. D. SCIENTIST

Petition O. K.'d In Scramble By Solons

WASHINGTON, May 6 (A.P.)—House members completed a petition today to force house consideration of the revised wage-hour bill.

Rules Group Relieved

The 218th signature was affixed just three hours after the petition was filed.

Rep. Maslon (D-La.) was the 218th signer.

Signatures of a majority of the 435 members of the house are necessary to petition discharging house committees from consideration of bills.

Completion of the wage-hour petition relieves the rules committee from further action on the measure and has the effect of bringing the revised wage-hour bill to the house floor for consideration within this week.

On several occasions, the members attempting to affix their signatures threatened to tear the paper apart.

Speaker Bankhead, rapping vainly for order, was forced to suspend

Apparatus of San Diegan Seen as Boon to Medical World



Cancer Blow Seen After 18-Year Toil by Rife

By NEWELL JONES

Copyright, 1938, by The Evening Tribune

Discovery that disease organisms, including one occuring in dread cancer, can be killed by bombarding them with radio waves tuned to a particular length for each kind of organism, was claimed today by a San Diego scientist, Royal Raymond Rife, Ft. Loma. He added that he had isolated this cancer organism but is not positive yet that it is the direct cause of the disease.

The discovery promised fulfillment of man's age-old hope for a specific destroyer of all his infectious diseases, although Rife avowed any claim that he had established this yet. He announced his work in the conservative manner of scientists, but his reports indicated the great promise in their telling of successful bombardment of thousands of cultures of organisms, including almost all kinds known to afflict mankind.

Organisms from tuberculosis, cancer, sarcoma, the tumor resembling cancer but not so mortal as it; deadly streptococcus infection, typhoid fever, staphylococcus infection and two forms of leprosy were among many which the scientist reported are killed by the waves. He said that his laboratory experiments indicated that the method could be used successfully as a

Royal Raymond Rife, left, [illegible] hand, with the Rife ray apparatus



THE ASSOCIATED PRESS ☆ THE INTERNATIONAL NEWS

EVENING TRIBUNE

ESTABLISHED 1895

2 SECTIONS SAN DIEGO, CALIFORNIA, WEDNESDAY, MAY 11, 1938 SECTION A

# Rife Bares Startling New Conceptions Of Disease Germs and Their Activity

By NEWELL JONES

Three new and revolutionary conceptions of disease germs and their activities were disclosed today by Royal Raymond Rife, San Diego scientist, as a climax to years of exploration by him in the mysterious microscopic worlds of these little slayers of men. He:

1—Expanded his previous brief reports of isolation of hitherto unseen, filter-passing viruses to tell of discovery of many kinds of them and to picture them as living entities, rather than mere chemicals, and as players of more extensive and important roles in disease than realized before.

2—Reported discovery that organisms of disease have more forms of their respective kinds than known previously.

3—Announced the startling finding that the organisms radically alter their fundamental biologic characteristics when "fed" upon different substances, actually changing from one thing to another in the case of one type.

**Rife's announcements followed his revelation last week of discovery that tuned radio waves will kill organisms of disease, and of improvement of his high-power microscopes, both reported exclu-**

**(Continued on Next Page, Col. 3)**

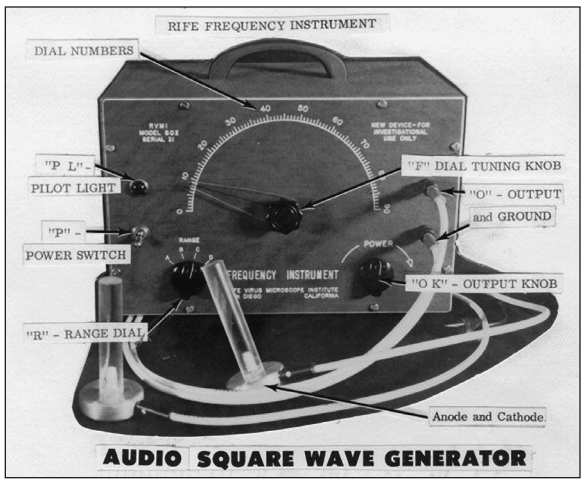
San Diego *Evening Tribune* article by Newell Jones on the Rife and Hoyland Beam Rays Corp. instrument, May 11, 1938.

*Both photos courtesy of Jeff Garff*



Royal Rife and co-inventor/engineer Philip Hoyland,
with Beam Rays Corp. instrument, 1938.

© *San Diego Historical Society; used with permission*




Rife Labs pad instrument, 1957.

*Courtesy of Jeff Garff*



Royal Raymond Rife relaxing with a guitar and cigarette.
He was a very good musician and played several instruments.
One of his microscopes is in the background.

*Courtesy of Jeff Garff*

Having spent every dime I earned in my research for the benefit of mankind,
I have ended up as a pauper. But I achieved the impossible, and would do it again.

—Royal Raymond Rife, 1967

the vital foundation of his work was no longer there. Later, in October of 1957, his wife Mamie died, another very traumatic event.

## JOHN CRANE, JOHN MARSH, AND THE NEXT GENERATION OF FREQUENCY DEVICES

Several years prior to Mamie's death, when Rife was selling, piece by piece, his remaining equipment to pay for food, he met John Crane. Crane did not compensate Rife nearly enough for the equipment that he bought, but he did take Rife and Mamie into his home.

Then, in 1953, another key player in the Rife saga appeared: John Marsh. Marsh had recently moved to San Diego to obtain treatments for his wife, who had cancer. However, her doctors said that there was nothing they could do for what they believed was a terminal condition. When Marsh was assigned as supervisor to John Crane at their workplace, Convair Aeronautics, Crane told Marsh about Rife. After considerable persuasion, Rife gave them an old Beam Rays instrument, which they repaired. Marsh's wife was cured after six treatments.

The Beam Rays unit, while it benefited the Marshes, could not be used for the general public in 1953 unless it was updated and assigned a new FCC license. If Rife's technology was to survive, the 1930s instrument had to be equipped with newer electronic components that would make it not only accessible to the average person—more portable, affordable and easy to use—but also legal.

Thus, "a friendship [began] between these three men that would last for years," writes Jeff Garff. "Rife, John Crane and John Marsh worked together as a team in the 1950's and early 60s. They formed a company called Life Labs and started building Dr. Rife's frequency Instruments."[67] Verne Thompson was hired by Life Labs to make their equipment. Thompson updated the audio frequency instrument he had built around 1942, and in 1953, the AZ-58 was launched.

The AZ-58, also a ray tube instrument, transmitted frequencies in the hertz range and did not interfere with radio broadcasts. The wave shape was a *square wave*—literally squared-off and flat on top (as compared to a rounded sine wave), and containing (odd numbered) harmonics. To a limited extent, these harmonics can produce effects similar to those of a higher-frequency sine wave. However, after about the ninth harmonic, the power is so weak that the signal is no longer effective in devitalizing pathogens.

Life Labs, writes Garff, "lowered the audio frequencies by a factor of 10 and changed them from sine wave to a square wave waveform. . . . John Crane said this is when the instruments started to work better. It is ironic that they had to use a square wave that produces harmonics in order to get the instrument to even begin to give them any results."[68] Garff believes that Marsh and Crane not only regarded the lower frequencies as Rife's intellectual property, but also considered the AZ-58 to be Rife's instrument—citing, as evidence, a plaque on the front of the device with Rife's name on it. This may be an optimistic misinterpretation, however. During an interview in the 1970s, Comparet stated quite clearly that Rife had expressed displeasure with the AZ-58, and "indignantly denied" that Crane was "still using the Rife principal,"[69] as the unit had undergone too many radical changes.

We know that the AZ-58 did no harm. But the all-important question is, did it heal? Physician Robert P. Stafford, who spent many hours with the AZ-58 from 1957 to 1962, faithfully recorded its performance. He was pleased that the AZ-58 worked very well for most health conditions. However, it did not substantially help people with cancer. Dr. Stafford wrote, "As yet, we have failed to 'cure' any case of advanced, terminal malignancy. It appears in several instances that we may have impressed the disease favorably, [but only] temporarily."[70]

Meanwhile, more legal trouble was brewing. In 1958, the State of California Public Health Department compelled Crane to attend a hearing to discuss the shortcomings of the AZ-58. Although the unit had been independently tested by Palo Alto Detection Lab, Kalbfeld Lab, UCLA Medical Lab and San Diego Testing Lab—all of which verified that the equipment did not emit harmful radiation—this did not prevent the state from bringing Crane and Marsh to trial in spring 1961 on charges of medical misconduct. Comparet would later comment on the tactics used to entrap the two men:

> When anybody is apparently giving the medical monopoly a hard time, they go after him. . . . They [hired] some harmless looking housewives who were . . . fitted with wireless microphones, and down at the end of the block here were the [California] State men in a van with their recording equipment taking it down. . . . I remember one tape: here was Marsh in his own voice, clear as could be, saying, "This instrument will not only cure every known disease, it'll cure some we haven't yet discovered." To be fair to Marsh, John Crane was making the same type of claims, but he just didn't get caught.[71]

Comparet also, however, described how Crane risked breaking the law to help others. The customers of Crane

and Marsh, he said, "were ignorant people. You couldn't simply hand them the instrument and tell them, 'Go home and use it.' They didn't have brains enough. So Crane went there with his instrument and operated the thing himself to make sure it would be done correctly."[72] One customer was a woman whose condition markedly improved "until finally they [presumably her doctors] told her she should go to the county hospital and get a blood transfusion. And she came back from that in very much worse shape, and died a week or so later. He [Crane] had to admit on the stand [that] he and Marsh had gone there and operated the instrument to give the treatment, and neither of them had an MD license. . . . That's why John Crane served his time."[73]

As for Royal Rife, he was now almost 73 years old—and in no state to endure the stress and indignity of another trial. He secluded himself in Mexico and refused to come to the US as a witness. No notarized medical reports in favor of the frequency instrument were allowed at the trial, either from physicians or from those they treated. Rife's own written testimony—in the form of answers to questions posed by Crane's lawyer—was not introduced into the record because, Comparet later explained, Rife understandably refused to come and testify in court.

It's worth noting that Crane had previously invited numerous governmental agencies and private organizations to test the AZ-58. Among those he contacted were the United States Department of Health, Education and Welfare; the National Research Council Committee on Growth; The American Cancer Society; The Damon Runyon Fund; Memorial Sloan-Kettering Cancer Institute in New York City; and the International Cancer Clinic. But no one expressed interest.

Rife had strong feelings about this. "The American Cancer Society," he wrote in the document submitted to but not accepted by the court, "was interested until they found out that John Crane and I are not medical doctors and then they called John Crane from New York and stated that they had decided to cancel the proposed project which would have shown them how to isolate the virus, make it virulent, grow the cancer tumors and how to electronically eliminate the cancer." One can only imagine his frustration as he continued:

> They spend millions on drugs but nothing on electronics, unless it will supplement drugs like X-ray and radioactive treatments, which put terrible scar tissue and burns inside the body. And then the person has to have a great amount of dope and pain killers to keep the pain down. The drug racketeer makes $10 billion annually on cancer alone [*this was in the 1950s*], and with this money they have been able to have an unconstitutional law put on the books which stated that people will only be treated for cancer by medical doctors with X-ray, radioactive treatments, and surgery—creating a drug monopoly to kill cancer, slowly.[74]

Except for the few labs that had tested the device solely to make sure it did no harm, no organization, hospital, clinic or medical society ever tested the units on human beings. The only medical opinion represented at the trial was from a doctor who had been given a frequency instrument to test two months previously and decided that it didn't work—even though he admitted *in court* that he had never tested or evaluated it! The jury was comprised of people with no medical background, except for the foreman who was an allopathic doctor opposed to the entire concept of frequency therapy.

The AMA board under the Director of Public Health declared the frequency instrument unsafe, and banned it from the market. Both Marsh and Crane served three years of jail time, and were released in 1964, with orders not to associate with one another.

But the AZ-58 refused to die. Just before Crane's incarceration, he and Marsh reconstructed the device so it transmitted frequencies via electrodes rather than the more expensive gas-filled glass tube. A common, off-the-shelf audio frequency generator costing around $200 was used to produce the frequencies, since it's easier and cheaper to buy a mass-produced item than to build something from individual parts. This new device had no RF carrier. It utilized square waves and frequencies in the hertz range.

John Marsh continued to build both pad and ray tube instruments until his death in 1987. However, his activities were not as widely publicized as Crane's. After his release from prison, Crane did a brisk business selling electrode units. Noted for his tendencies toward hyperbole, he claimed benefits from this new device that seemed to rival (if not surpass) results achieved by Rife's original unit. This new machine was touted as successful in treating chronic bladder irritation, cataracts, fungal growths on the hands, growths over the eyes, anal fissures, pyorrhea, arthritis, ulcerated colon, varicose veins, prostate troubles, colitis, pains in the back, and heart attacks. Crane also wrote a lengthy, creative manual on how to use rife therapy with pad devices, and included the additional elements of polarity, color and magnetism.

Thanks to this new pad device, a new generation of rifers emerged. But Crane's units were expensive. An engineer friend of mine who bought a unit from Crane

shortly before Crane's death, concluded that it was an ordinary audio frequency generator, standard equipment in many labs. Crane had modified it with a new front panel, a simple power booster, and a few dollars worth of hand-held metal cylinders to use as electrodes. This new equipment, called in some circles the "Rife-Crane device" or simply the "Crane device," sold for five times its original cost.

Politely put, this was not Rife's technology at its finest, either in design or intent. However, the "Crane devices" provided a valuable function. They helped keep the technology alive. If there was a chance that this technology was valid, then successful versions of it might be reconstructed.

Royal Rife died in 1971. John Marsh died in 1987, and John Crane died in 1995. Fortunately, Rife's technology did not die with them. A new phase of this research was about to begin.

## THE MODERN PLEOMORPHISM ERA

A fascinating obituary of medical doctor Ludwik Gross appeared in an August 1999 issue of *The New York Times*. The article discussed the viral nature of cancer because Gross had won an Albert and Mary Lasker Foundation prize in 1974 for his discovery that leukemia can be transmitted by a virus. Gross had written, in a 1978 article in the *Cancer Research* journal, that for many years "there was considerable reluctance and often even frank hostility on the part of leading investigators to accept, as facts, these new and fundamental observations."[75] As Gross later explained, "Research projects and experimental approaches radically different from such accepted concepts or theories were not only frowned upon, but often resulted in the refusal of the necessary financial and logistical support needed by the investigator to carry out his proposed studies."[76] The author of the obituary reports that "for the half-century before Dr. Gross's discovery, scientists had largely ignored the role of viruses in cancer even though, beginning in 1908, researchers had suggested a viral cause by transmitting leukemia and sarcomas in chickens."[77] Thus, scientists have known for a century that pleomorphism plays a role in cancer and other illnesses. Following are some highlights on subsequent researchers who found essentially the same phenomenon.

### *Virginia Livingston-Wheeler*

In the 1940s, physician Virginia Livingston-Wheeler discovered a bacterium she named *Progenitor cryptocides*, Greek for "the hidden killer." "A specific class of microorganism apparently belonging to the mycobacterium has been observed and is grown from the cancerous blood and tissues of [human beings] and animals," she wrote. "They [the microbes] *are filterable and pleomorphic*." The various diseases associated with this family of microbes included "scleroderma, interstitial myocarditis, . . . fibrosis, pleurisy, pericarditis, rheumatic fever, nephritis, hepatitis and arthritis, *depending on the degree of host resistance, the invasiveness of the specific microorganisms, the strain specificity, and the site of tissue susceptibility*." [emphasis added][78] These findings, notes dermatologist and cancer researcher Alan Cantwell, "angered cancer experts, microbiologists and American Cancer Society spokespersons, all of whom continued to insist the cancer microbe did not exist."[79]

Livingston-Wheeler maintained that this pathogen is normally present in humans and animals, but causes cancer when the immune function is not working properly. She also recognized that immunity is compromised by exposure to chemical toxins, emotional stress, and poor diet.

In 1953, Dr. Livingston-Wheeler presented her discoveries to the 6th International Congress of Microbiology in Rome. After the seminar, the New York Academy of Medicine immediately issued a statement discounting her findings. Dr. Cornelius P. Rhoads, the head of Memorial Sloan-Kettering Cancer Center, stopped all funding for the Rutgers-Presbyterian Hospital Laboratory where Dr. Livingston-Wheeler had worked. Significantly, when Livingston-Wheeler spoke in July 1958 at the 1st International Congress of Microbiology and Leukemia in Antwerp, Belgium, she discovered that the pleomorphism of cancer was widely accepted in Europe even while being ignored in the US.

Then in 1959, the California-based Dr. Livingston-Wheeler met her neighbor, Royal Raymond Rife. Livingston-Wheeler arranged for the Institute of Cancer Research in Philadelphia to provide Rife with mice, and for about a year the two worked together. Although they held similar views on pleomorphism, Dr. Livingston-Wheeler focused on developing a serum instead of working with Rife's technology. In her San Diego, California clinic, people were treated with diet, supplements, and a vaccine prepared from their own diseased tissue.

Dr. Livingston-Wheeler died in 1990. But before her death, she expanded her research with three other remarkable women. See below.

### *Eleanor Alexander-Jackson*

In her lab at Cornell University, microbiologist Eleanor Alexander-Jackson had discovered pleomorphism in the tuberculosis bacillus, watching it change shape and size. In 1948, Dr. Alexander-Jackson met with

Dr. Livingston-Wheeler. Together, they found a special acid-fast stain that highlighted the microbe so it could be recognized in a Petri dish culture, and inside of a cancer tumor.

At the time, the way to differentiate a virus from a bacillus (bacterium) was to try to pass it through a special filter. Tiny viruses could pass through the filter, whereas the larger bacteria could not. The two researchers found that the acid-fast organisms found in scleroderma, leprosy, tuberculosis, and cancer could change from small forms that could be filtered, to large forms that could not be filtered! This could only mean that the viruses morphed into bacteria, and the bacteria morphed into viruses. What science had carefully catalogued as separate and discrete pathogens were, in actuality, *the same microbe changing form*. It is these changes in shape and form—and thus function—that cause the different symptoms we call disease.

In 1966, Drs. Livingston-Wheeler and Alexander-Jackson presented a paper at a seminar in Arizona sponsored by the American Cancer Society. When Alexander-Jackson returned to her laboratory at Columbia University after the seminar, she found that she had been fired from her research position.

### *Irene Corey Diller*

Around the same time, cellular biologist Irene Corey Diller—a stellar employee at The Institute for Cancer Research in Philadelphia—became famous for discovering and isolating fungus-like microbes in cancer cells. She published "Studies of Fungoid Form Found in Malignancy" in 1953.

Now the team numbered three. Once joined by Livingston-Wheeler and Alexander-Jackson, Diller worked with mice specially bred for a tendency to develop cancer. After injecting healthy mice with cancerous microbes cultured from tumors taken from human breasts and other areas, she more than doubled the rate of cancer in the mice. From these cancer tumors in the mice, she then successfully cultured the same microbe—thus proving that these bacteria were involved in the development of cancer. Utilizing Livingston's methods, Diller also grew the microbe from the blood of human beings with cancer.

### *Florence Seibert*

Born in October 1897, chemist Florence Seibert was considered one of the foremost authorities on the chemistry and immunology of the acid-fast bacteria that cause tuberculosis. In the 1920s, Dr. Seibert had devised a method to make intravenous transfusions safe by eliminating contaminating bacteria. She was heavily decorated. The Trudeau Medal—the highest prize given for tuberculosis research—was given to her by the National Tuberculosis Association in 1938 for perfecting the skin test for tuberculosis (used worldwide). In 1942, she received the Garvan Medal from the American Chemical Society. And in 1990, she was inducted into the National Women's Hall of Fame.

In 1959, Seibert retired. However, she was so impressed with Diller's research that she began working again in the early 1960s to help prove that bacteria cause cancer. Dr. Cantwell, who befriended all four women and considers them mentors for his own research, reports:

> Experiments conducted by Seibert and her research team were able to isolate bacteria from every piece of tumor and every acute leukemic blood they studied, proving these acid-fast and TB-like cancer microbes were not laboratory contaminants.
>
> In her autobiography, *Pebbles on the Hill of a Scientist*, published privately in 1968, she wrote: "One of the most interesting properties of these bacteria is their great pleomorphism. For example, they readily change their shape from round cocci, to elongated rods, and even to thread-like filaments, depending upon what medium they grow on and how long they grow. This may be one of the reasons why they have been overlooked or considered to be heterogeneous contaminants. . . . And even more interesting than this is the fact that these bacteria have a filterable form in their life cycle; that is, that they can become so small that they pass through bacterial filters which hold back bacteria."[80]

Seibert's research, like the experiments of others before her, clearly pointed to the ambiguous boundaries between presumed discrete pathogens. "Seibert's provocative papers, some emanating from the prestigious Annals of the New York Academy of Sciences, should have caused a stir," Cantwell comments.

> But with these four women slowly closing in on the infectious cause of cancer, funds from previous supporters (such as the American Cancer Society) suddenly dried up. . . . After [Siebert's] death, . . . the obituaries mentioned her contributions to the safety of intravenous fluids and her great achievement with the TB skin test, but not a word was written about her cancer microbe research, to which she devoted the last 30 years of her life.[81]

Dr. Siebert died in 1991, bewildered by the medical industry's lack of interest in finding the cure for cancer. She wrote, "It is very difficult to understand the lack of interest, instead of great enthusiasm, that should follow such results."[82] Difficult, indeed! One author reports that in 1985, the Sloan-Kettering Cancer Institute found "the Rife-Livingston-etc. organism (virus) in all blood cultures of cancer patients. They conclude[d] that the organism [came] from outside contamination and bur[ied] the report."[83]

### *Lida Mattman*

In 1997, American biology professor and microbiologist Lida Mattman was nominated for a Nobel Prize for her work on stealth pathogens. With 35 years of experience working in the fields of immunology, microbiology, bacteriology, virology, and pathology at various schools and institutions, Mattman was well qualified. Her specialty was *Borrelia burgdorferi*, one of the pathogens involved in Lyme Disease—and a microbe that she clearly stated is pleomorphic. In her definitive textbook, *Cell Wall Deficient Forms: Stealth Pathogens*, Mattman described how *Borrelia burgdorferi* can survive and spread without having a cell wall. In this state, as a "cell-wall-deficient" bacterium, it is quite dangerous because the body (and antibiotics) cannot detect it. Nevertheless, Dr. Mattman was able to culture the Lyme bacterium from its cell wall deficient form and grow it into spirochetes in a laboratory.

### *Gaston Naessens*

Contemporary French microbiologist who now resides in Quebec, Canada, Gaston Naessens has designed an unusual and powerful microscope called a Somatoscope. This device uses polarized light from an ultraviolet source and magnifies live specimens up to 30,000 diameters their size instead of the usual 2,500 diameters. As did his predecessors, Naessens has seen tiny entities in the blood, which he calls *somatids*. By now, you can guess the rest of the story. Naessens has reported seeing 16 somatid cycles. The first 3 cycles are normal. If the system becomes unbalanced, the somatids evolve into any of 13 other stages of bacterial, viral, or fungal forms. Naessens links these pathogenic somatid forms with a host of degenerative diseases such as rheumatoid arthritis, cancer, AIDS, lupus, and Multiple Sclerosis. He can successfully predict which disease condition will develop according to which microorganisms are the most prevalent in the blood.

To combat cancer, Naessens invented a holistic product called "714X." Still used today, it contains camphor (derived from the shrub *Cinnamomum camphora*), ammonium chloride. ammonium nitrate, sodium chloride, ethanol, and water. Every day, the 714X is injected into a lymph node in the groin. One round of treatment consists of 21 daily injections, with three series the minimum amount required (most people need to receive longer-term treatment).

The 714X injections appear to mobilize immune response and unclog the lymph system. (Thus, it is the body that kills the cancerous tissue.) Naessens's injections are available in Canada, Mexico, and Western Europe. They are used worldwide because they are successful. Because of his work, Naessens has been callously persecuted by the medical-pharmaceutical establishment.

### *Kurt Olbrich and Bernhard Muschlien*

In 1972, German engineer Kurt Olbrich left a career as one of the top research analysts in the plastics industry and formed the Institute for Interdisciplinary Basic Research. At the institute, Mr. Olbrich provided analysis services for various industries and research organizations—using, among other tools, a microscope. But the scientist's research was hindered. It was the same old story: existing light microscopes could not provide the resolution and image quality he needed for his work. So Olbrich began to investigate why the resolution and depth of field of existing light microscopes were so limited.

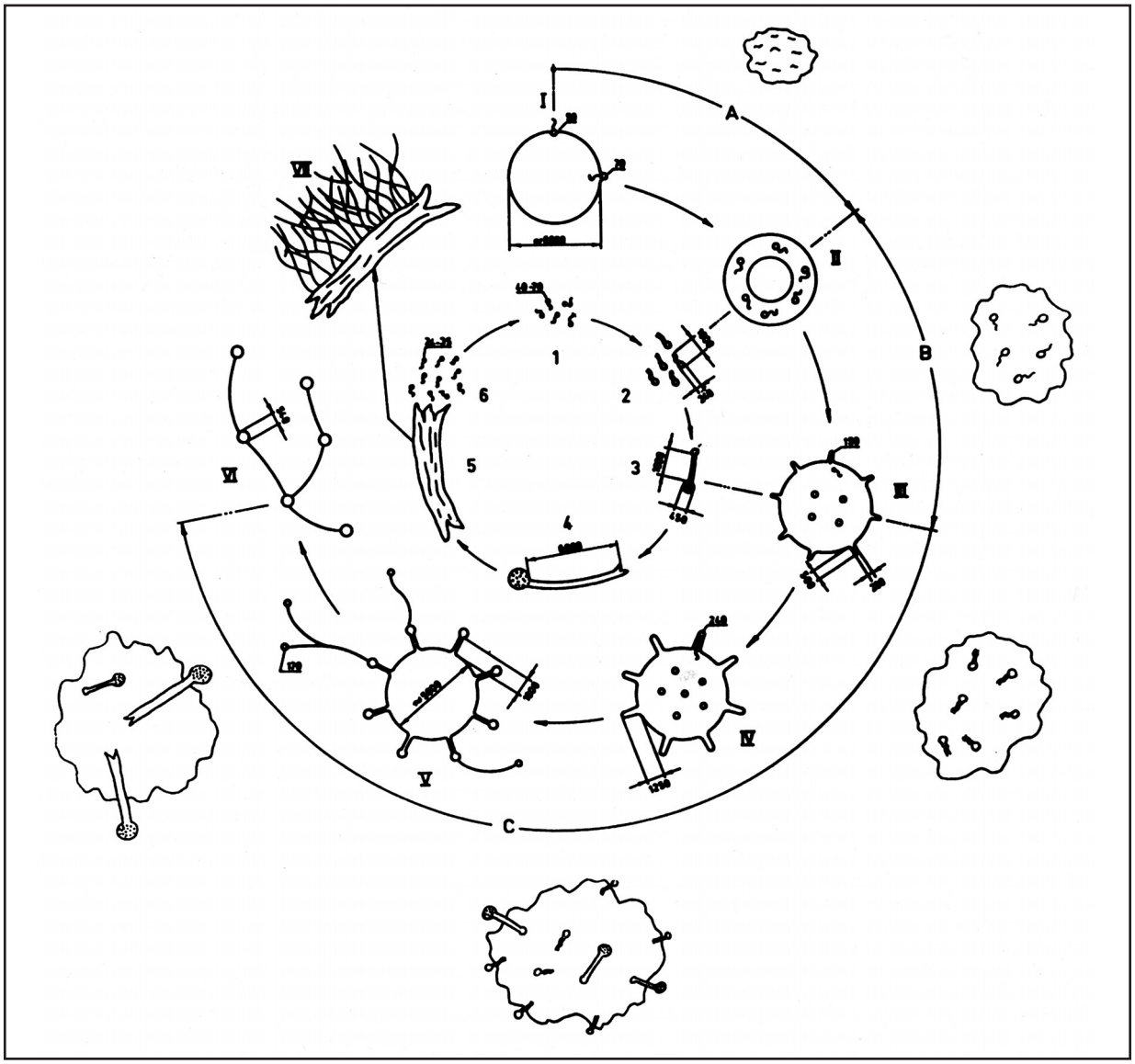
In 1976, after extensive research, Olbrich discovered a new way of building microscopes. By using a unique mathematical approach to optics, he avoided the constraints of existing optical theory and built a microscope with a resolution better than 100 nanometers, and with unparalleled depth of field, full contour sharpness, and true vivid colors.

Like Rife's Universal Microscope, Olbrich's invention allowed long-term viewing of microbes in their living natural state. There was never a need to kill the specimen, stain it, or use oil immersion. Olbrich's equipment worked on different principles than Rife's microscope. As a result, it had even greater resolution, and was very easy to operate. Olbrich named the initial microscope and its successors the *Ergonom*.

In 2002, the first instrument that Olbrich designed for sale was actively marketed by Grayfield Optical Inc., a company with bases in the United States and Europe. Later, Olbrich created a more affordable series of microscopes with the same ease of use, variable depth of field, variable color contrast, and an excellent optical resolution.

Today, at the Institute for Interdisciplinary Basic Research, Kurt Olbrich continues to do research and analysis—this time, with the benefits of his own tool. The

**The Olbrich Sanguinogramm**
the life cycle of *Mucor racemosus*

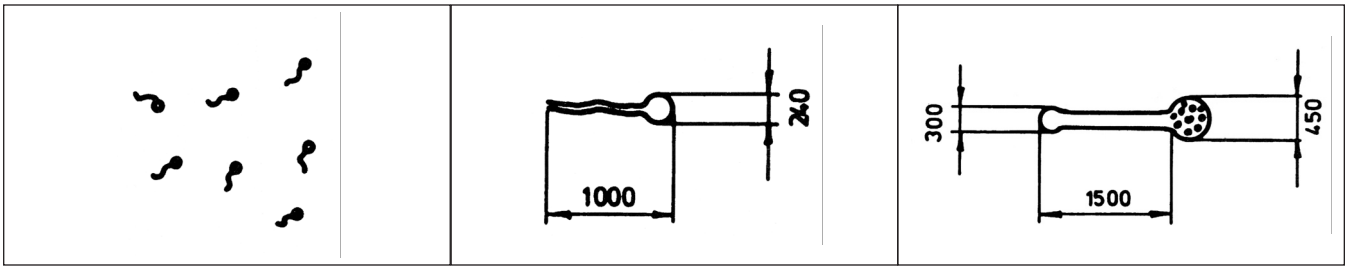



Kurt Olbrich has extensive experience investigating and cataloguing pleomorphic forms found in the blood of people who are precancerous and who have full-blown cancer. The above *Sanguinogramm* measures morphological phenomena in nanometer (nm) units. Olbrich calls the microbe a "cancer virus," though most forms are fungal.

**Inner circle:** Isolated cancer viruses.
**Outer circle:** Reaction of phagocytes. **A.** Normal conditions. **B.** Enlargement of phagocytes. **C.** First, attempts by the phagocytes to remove the cancer virus. After increasing in size, the viruses are released into the plasma and can then attack further cells (blood/tissue).

Construction of the Sanguinogramm is possible only by recording images of living phenomena in blood in real time. This is done through the Olbrich's Grayfield contrast microscope, the Ergonom 400. The Ergonom 400 uses normal white light, magnifying at least 25000:1 with corresponding true resolution capacity. Other equipment used includes a high-resolution video camera of broadcast quality (resolution of at least 600 lines), and a monitor with a horizontal screen size of at least 40 cm (pixel resolution better than 0.3mm). Use of such equipment allows for measurable freeze-frame images from moving objects to be created in true color without any significant electronic falsification.

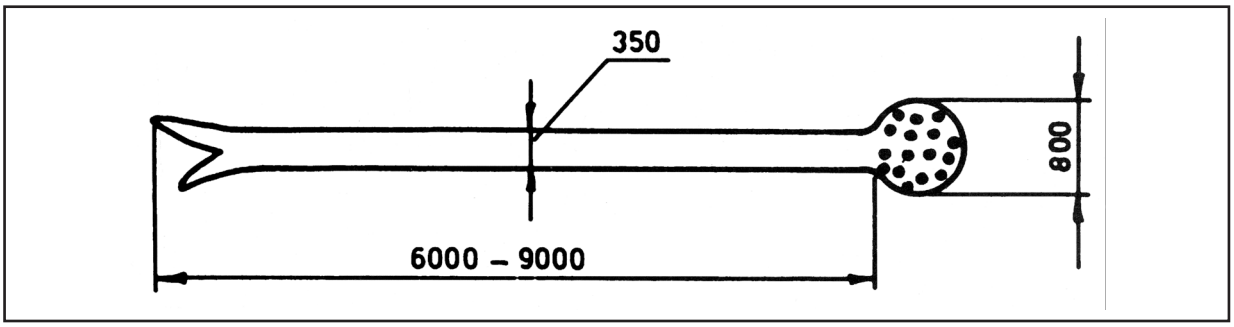
**Cancer Pathogens that can be seen and measured: Olbrich's original illustrations.**



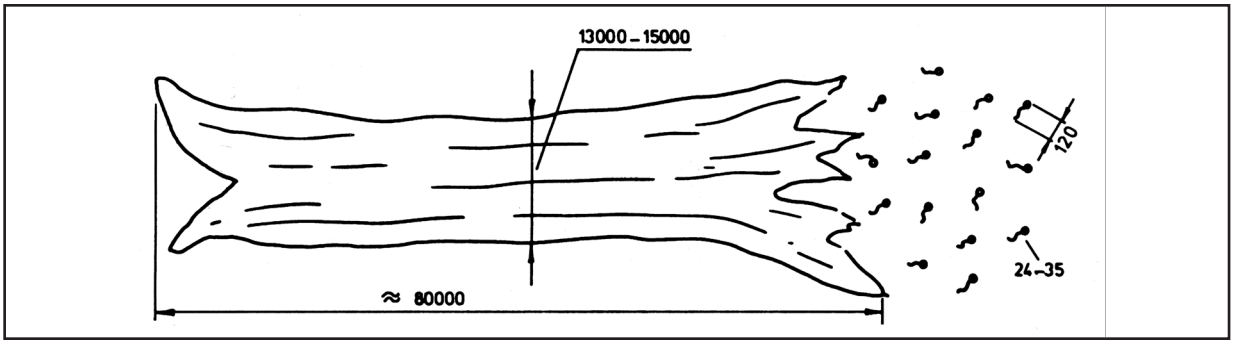
Potential cancer viruses as found in all blood. Their heads measure from 40–70 nm, and they have a simple flagellum.

The average head measurement is now about 240 nm. The complete length, including the doubled flagella, is about 1000 nm. This form corresponds to a weakened immune function, as when one is battling a severe case of influenza. After the person recovers, the original pleomorphic state automatically reestablishes itself, and viruses with twin flagella die.

This phase (called the "B" phase by Kurt Olbrich) begins when one's immunity is weakened over a longer period of time. The head now has an approximate diameter of 450 nm. The total length, without the head, is about 1500 nm. A club shaped formation is created. In the head, new infectious particles can already be detected.

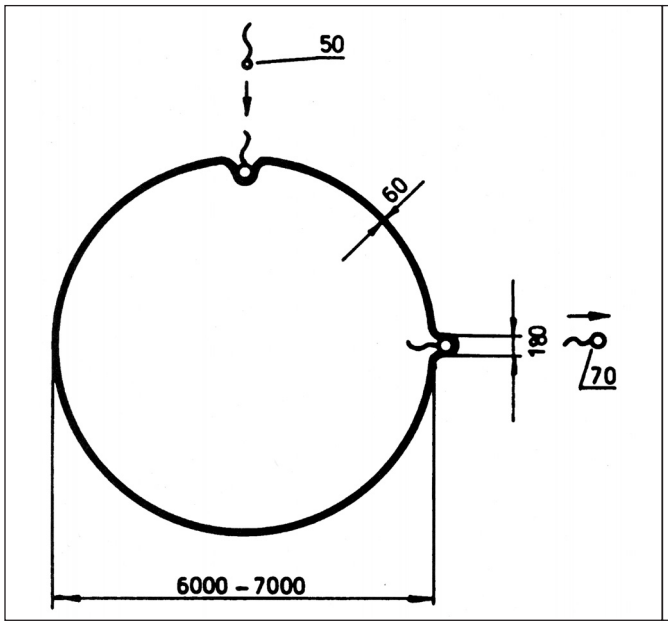



Here, a total length of about 6000 nm has been attained, the head measuring about 1000 to 1500 nm. The development of new viruses can be clearly seen. The end is jagged, probably to more easily attach to nerve surfaces and thus absorb more nutrition than what is available in the blood serum.

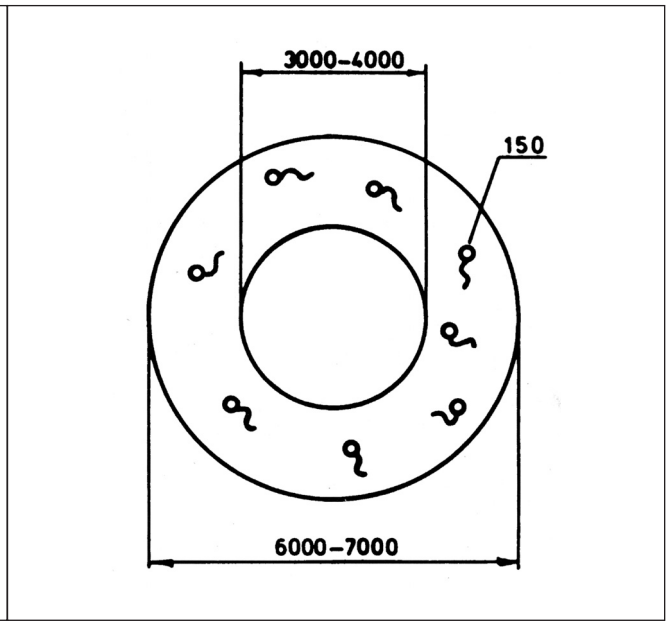



The formations are developing further. Once a total length of about 10 µm has been reached, the circular head formation explodes and young viruses emerge. The head diameter is about 24 to 35 nm and the structure possesses a simple flagellum. Now the cycle is complete.

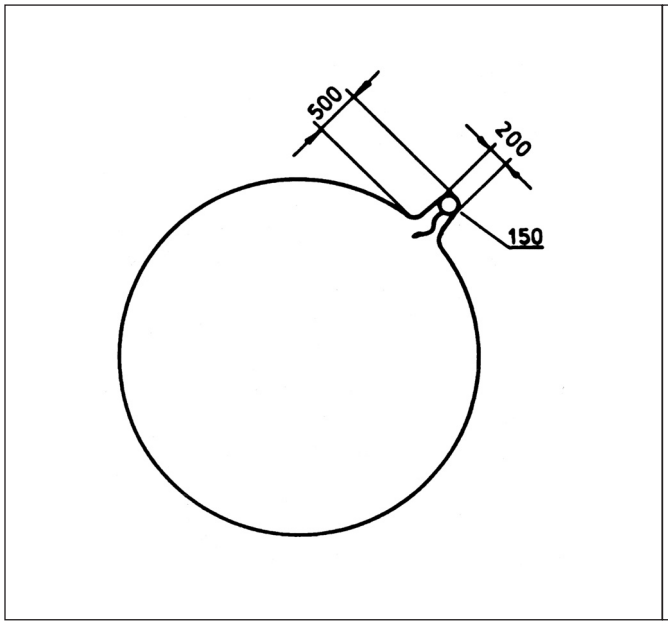
**Erythrocytes are attacked and become nutrient food for the pathogens.**



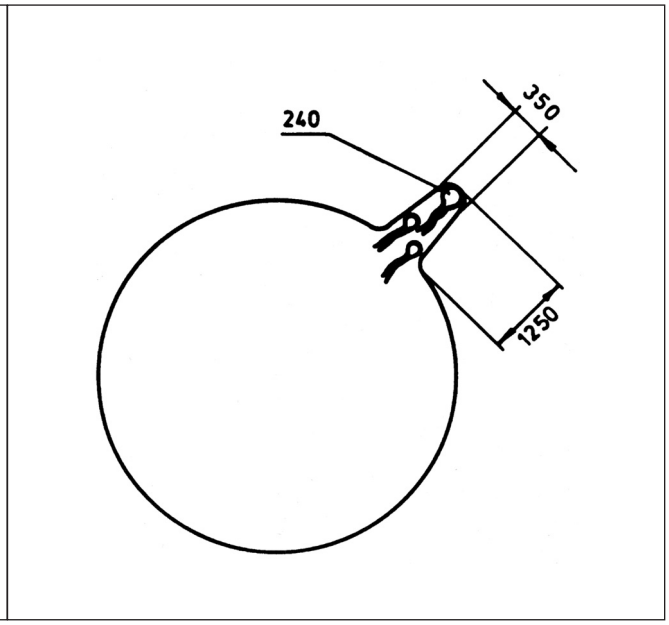

Here the erythrocytes (red blood cells) are depicted as spheres, with an exterior measurement of about 6000 nm. The cancer viruses, with a head measurement of up to 50 nm, penetrate the surface of the erythrocyte membrane and emerge again with a head measurement of up to 70 nm.




The larger spheres are blood cells containing cancer viruses, whose head measurements are over 90 nm. A flagellum is present, although it cannot be determined if the tail is single or double at this stage.

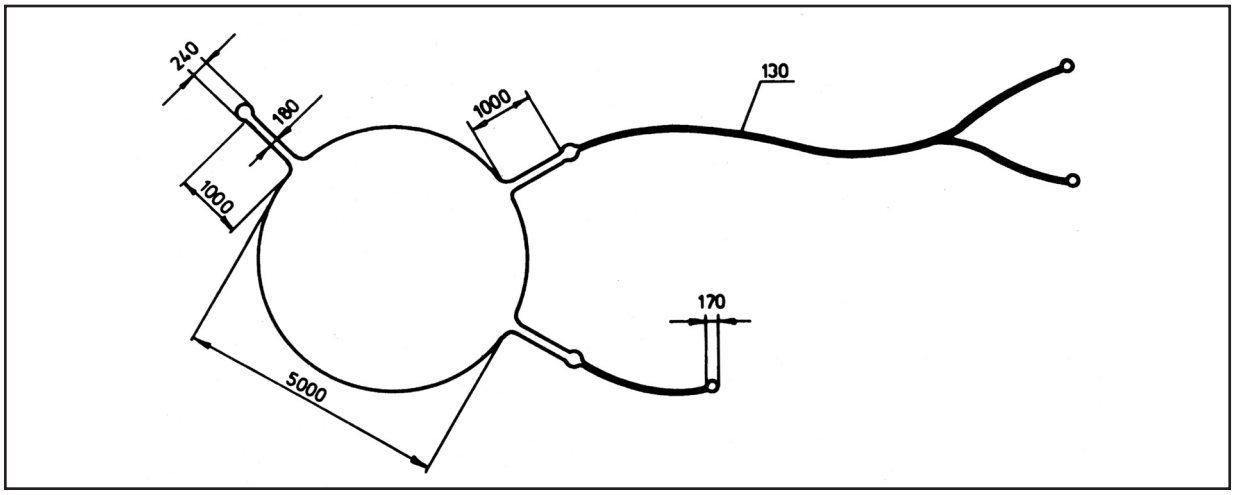



Here, the viruses try to pass from the inside to the surface of the membrane. At this stage, the head size is about 150 nm, the tube-like exit has a diameter of about 200 nm and a length of about 500 nm.

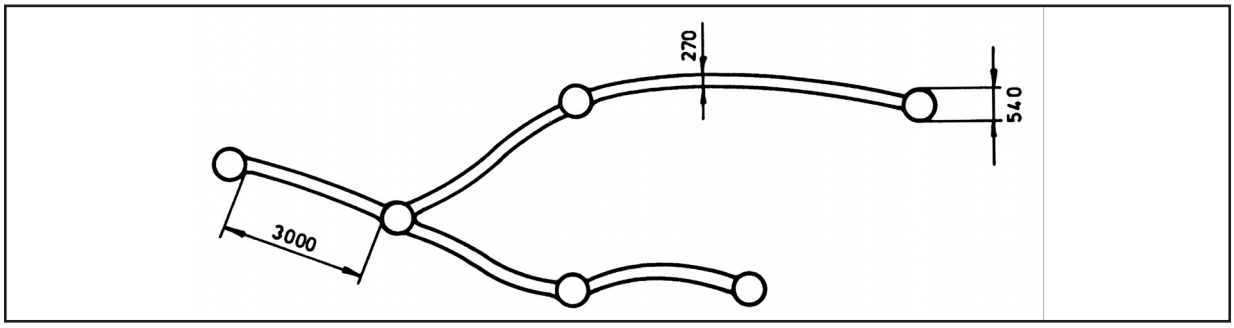



The development continues. It is unclear whether or not the viruses have developed into spores. The diameter of each virus head is about 240 nm, and the length of the tube-like exit is about 1250 nm.

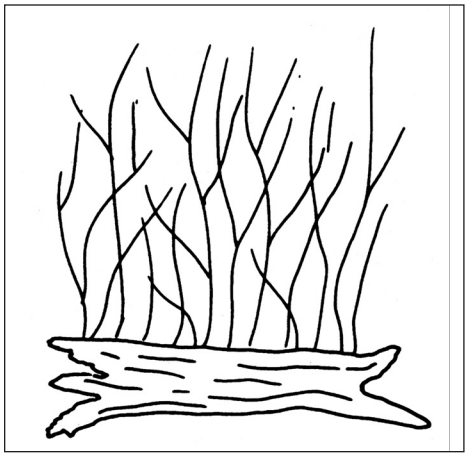
**Cancer Parasites grow into fungal mycelia.**




Here, the diameter of the erythrocyte is only about 5000 nm, whereas the tube-like tendrils emerging from the sphere are still about 1000 to 1250 nm. Pronounced ball-shaped formations are now developing at the ends.




The fungi threads separate from the erythrocytes. The ball-shaped formations have a diameter of about 540 nm.



From the shell of structure number 5 (see first, circular diagram of this series), fungal threads are now formed. This is most likely the stage where the metastases enter the blood.

Ergonom has been used to conduct a detailed analysis of Legionnaires' disease, leading to several published articles. The well-known German natural health practitioner Bernhard Muschlien, in conjunction with Olbrich, has also utilized the Ergonom microscope to provide foundational material for his published articles on pleomorphism and also for his film, "Symbiosis or Parasitism." (For company contact information, including access to the articles and film, see the Resource Appendix.)

As might be expected, the Ergonom is being productively used in cancer research. Olbrich has extensive experience observing the blood of people with various stages of cancer, and those whose blood indicates a precancerous condition. Some of the images and material in the widely read German medical textbook, *Pleomorphismus* (published by Haug Verlag), are based on Olbrich's observations through the Ergonom. In his series of drawings (see Insert pages, "The Olbrich Sanguinogramm"), Olbrich has standardized the measurements (in nanometers) of morphing biological life forms that live in the blood. The scientist describes the oncogenous blood parasite as a *cancer virus*—a term he chose because it appears to be a virus-like organism, even though most forms are fungal. While his observations might appear radical to an uninformed American lay and professional audience, the majority of German practitioners and laypersons have known about pleomorphism for a long time and welcome his research.

Peter Walker, a European-based Rife researcher and personal friend of Olbrich, points out some little-known facts about the way viruses appear under an electron microscope. His account provides an excellent reason to use a microscope that does not kill its specimens, when assessing the blood.

> Under an electron microscope, viruses not only die, they also shrivel up like a fist—so what you see is not what viruses normally look like. For example, textbooks teach that the HIV virus is about 30 to 40 nanometers, because that is the size as seen under the electron microscope. But in reality, such viruses can grow to nearly 300 nanometers when seen in their living state—a fact established during a trial in Berlin using the Ergonom microscopes.[84]

Thanks to Mr. Olbrich's perseverance and inventiveness, researchers in many fields can now investigate life in ways that previously had not seemed possible. The arenas in which the Ergonom can be utilized appear unlimited: medicine, biology, biochemistry, geology, electronics, archeology, and electromedicine.

## IMPLICATIONS FOR HEALING

Sincere professionals in the scientific and medical arenas can no longer dispute the findings of Royal Rife and others. Finally, Rife's experiments can be taken to a new level. Dr. Alan Cantwell—who studied with Dr. Mattman as well as Drs. Livingston-Wheeler, Alexander-Jackson and Diller, and who did not even have access to the Ergonom when he did his experiments—flatly states:

> From my work at the VA [hospital] with Eugenia [Craggs, a microbiologist specializing in tuberculosis], I learned one important thing: microbes change form. Sometimes they appear one way, sometimes another. And they could fool the experts. The appearance of the microbe depended on what it was fed in the laboratory. In the textbooks of microbiology the classification of organisms was simple and straightforward. But in reality, it was not that way at all.[85]

When dealing with a live person or animal, the appearance of a microbe likewise depends on the terrain inside the body. And that terrain depends on what the host has eaten. Changing the terrain not only changes the characteristics of a microbe, but in most cases determines whether the microbe will even exist.

I began this chapter by describing the two radically different concepts of illness and disease. You have seen how unscientific ideas become embedded in public consciousness to such a degree that they eventually are cited as "proof," despite their lack of scientific validity.

So it is with the medical community's devotion to monomorphism. As long as organized medicine continues to insist that this is the only correct view of how illness is caused, advancement of holistic concepts will be suspended. However, once a medical paradigm includes the existence of pleomorphism, a true revolution in health care can take place. Instead of taking the latest (and more) poisonous drugs, people will embrace their need to change what they eat and drink—and how they live. They will take responsibility to heal themselves directly, instead of giving away discernment and autonomy to an outside authority.

Since the first edition of this book was published, I have received thousands of phone calls, letters, and emails from people from all over the world. In most cases, they were not only willing, but eager to take responsibility for their own healing. Quite a number of correspondents were doctors and scientists, ready to act as healing facilitators and investigators rather than as unquestioned and inflexible authority figures.

The new paradigm of medicine cannot be stopped or suppressed any longer. People are waking up and are hungry to learn the truth. Not only is the lay public becoming more discriminating in their choices of healing modalities, but they are also actively seeking out many types of electromedicine modalities, including the technology that Rife created.

Worldwide, there are many hundreds of different frequency devices being used for therapy. Not only are more companies producing electromedical equipment, but private experimenters are building their own. Although Royal Raymond Rife was the only person who ever constructed a real "rife machine," this does not mean that modern units don't work. They do. With the rapid increase of modern infectious and degenerative diseases, researchers are working harder than ever to construct units with more successful track records, based on the principles that Rife discovered.

In Europe and other parts of the world, frequency therapy is being used openly by many clinics and doctors, due to a relatively enlightened understanding of medicine and correspondingly liberal laws. In North America, however, the manufacturers and sellers of frequency devices are not allowed to make medical claims for them. And media silence about this technology—at least in most American mainstream newspapers, magazines and television—makes it difficult to obtain information on frequency healing, unless the seeker is very determined and/or has Internet access.

Nevertheless, this situation is changing. The general public is more aware of Royal Rife now than they were even five years ago. Also, larger numbers of people are becoming interested in alternative healing methods—alternative, that is, to the allopathic medicines that have been pushed onto us like any other consumer item. The more we take responsibility to educate ourselves, the less satisfied we are likely to be with the status quo. This is as it should be. Every person has the right to choose how they want to heal.

We have seen that it is more accurate to view diseases as symptom pictures than as discrete entities. Chapter 5 explains how these symptom pictures are organized in a user-friendly manner so you can make the best use of the frequencies. But before we get there, it's important that you know what to do when all those pathogens start to die in your system. In the next chapter, which discusses complementary therapies that are compatible with Rife technology, you will learn how to treat your body as a valued friend.



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*Until a man duplicates a blade of grass, nature can laugh at his so-called scientific knowledge. Remedies from chemicals will never stand in favorable comparison with the products of nature, the living cell of a plant, the final result of the rays of the sun, the mother of all life.*

—Thomas Alva Edison, American inventor (1847–1931)



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# Chapter 3

# Complementary Therapies

## INTRODUCTION

You're sick. And you're sick and tired of being sick. Your condition may be life-threatening. Maybe you've been chronically ill, with debilitating symptoms. Or perhaps your symptoms are merely inconvenient, causing minor discomfort. But regardless of your situation, you want to get better now!

Desperate, you borrow or buy a frequency device and diligently begin sessions, determined to kill or at least disable the critters. But after the first rife session (or maybe halfway through it), instead of feeling better, you feel worse. You're achy and nauseated, dizzy and disoriented. Or you develop a headache and sore throat, as though you're coming down with the flu. Perhaps you have muscle and joint pain, bloating and cramps, skin eruptions—or feel fatigued, unable to concentrate. You notice that your urine has turned a bright yellow (unconnected to the golden color it sometimes turns when you take more vitamin supplements than you need). But regardless of your response to the rifing, you wonder: *Why do I feel so rotten?*

These responses are normal. The technology is simply doing the job for which it was created: the destruction of microbes.

Microbes lead busy lives. They steal your nutrients, appropriate your cells, and excrete waste into your bloodstream. They also reproduce, ensuring that more of their nasty little selves will soon emerge to commit the same abuse. After the pathogens are rendered less active (or in some cases made to shatter), garbage is everywhere. Microbial corpses, and the toxins gushing out of them, are clogging your bloodstream. The debris impedes lymph drainage, floods your tissues and joints, and seeps through the blood-brain barrier where it fogs your ability to think, feel and move. Your immune cells engulf the waste as fast as they can (though it doesn't feel fast enough to you). Once the immune cells have consumed their fill of rubbish and are no longer functional, they will have to be eliminated.

You'll need all the help you can get to excrete the toxic mess resulting from the rifing. And make no mistake about it: once you find matching frequencies for what ails you, there will be plenty to clean up.

Often, the only help you'll need to relieve (or eliminate altogether) the symptoms from microbial die-off is to drink more water. More water in the body decreases the ratio of microbial toxins to bodily fluids. If you don't drink, you'll become poisoned from the waste. If you're unwilling to drink more water, I strongly suggest that you don't rife at all, because otherwise you can make your condition worse. The kind of water to drink, and how much, will be discussed in the next section.

But what if you don't feel any of the above-mentioned symptoms? Does that mean the sessions aren't working? Not necessarily. If there are enough minerals in your system, you won't experience many or any symptoms. (For more information, read about the "Herxheimer" response in Chapter 4.)

Even if you don't experience die-off symptoms from rifing, you can still maximize the benefits by using one or

more complementary modalities discussed in this chapter. Some of these protocols, such as diet and herbs, focus on strengthening the body and building tissue. Other protocols, such as sauna therapy, focus on detoxification, on eliminating the debris that results from illness and stress.

Detoxification is often called "cleansing." A doctor once objected to my using the word "cleanse" because, she told me, to her it implied that the body is dirty. But the word merely describes the elimination of debris that—if not eliminated properly—can poison the bodily terrain and encourage microbes to proliferate.

Don't underestimate the importance of detoxification; it plays such an important role in remaining healthy. It's like clearing old dead leaves from a stream each spring to allow the water to flow freely again. You may be surprised to discover that cleansing is easier to achieve than you thought. But all of the therapies in this chapter are important. After learning about them, you may feel more motivated to try them. If you have a stubborn or serious medical problem, make sure to consult a health practitioner. However, most conventionally-trained medical doctors lack the mindset, training, inclination and time to investigate the therapies in this chapter. If they scoff at these protocols without knowing anything about them, they could undermine your confidence and health. Make sure, if you do seek supervision, that you see someone skilled in holistic methods.

This chapter will discuss **Water**, **Popular Beverages and "Health" Drinks**, **Food**, **Herbs**, **Selected Nutritional Supplements**, **Oxygen Therapies**, **Colloidal Silver**, **Colon Cleansing**, **Exercise**, **Bodywork**, **Light and Color**, **Sauna Therapy**, and **Sleep, Rest and Meditation**. I have carefully selected information that is underrepresented, or sometimes entirely absent, in both mainstream and holistic circles. These overviews are designed to inspire you to continue researching on your own. The Internet, libraries, and health food stores are valuable sources of information.

Even if you're not sure if rifing is for you—or if you don't have access to a frequency device—incorporating one or more of the modalities in this chapter into your wellness program could be just what you need.

## WATER

### *Water's Unique Properties*

Water is much more than something we gulp down to wet our throats. It's essential to life, along with the oxygen we breathe. The body contains an amazingly high amount of water. According to the Nutrition Almanac, in a normally hydrated adult the blood contains 83%, the kidneys 82%, muscles 75%, the brain 74%, the liver 69%, and bones a surprisingly high 22%. All of our vital functions require water. Professor Susan Kleiner, author of "Water: An Essential But Overlooked Nutrient," explains:

> Fluids fill virtually every space in cells and between them. Water molecules not only fill space, but they also help form the structures of macromolecules such as proteins and glycogen. As the primary fluid in the body, water serves as a solvent for minerals, vitamins, amino acids, glucose, and many other nutrients. Water also plays a key role in the digestion, absorption, transportation, and use of nutrients. Water is the medium for the safe elimination of toxins and waste products and whole-body thermoregulation is critically dependent on it. From energy production to joint lubrication to reproduction, there is no system in the body that does not depend on water.[1]

No wonder people can survive for about a month without food, but would die in several days in even a mild climate without water!

Water has another unique property. It's an ideal *universal solvent*, due to its ability to dissolve solutes (whatever is dissolved in it) without undergoing a chemical change itself. In its entirety, a water molecule has a neutral charge. However, the tetrahedron-shaped molecule is positively charged on one end and negatively charged on the other. This enables water to pull apart other molecules and reduce (dissolve) them into their basic elemental forms. For instance, with table salt (sodium chloride), the water that surrounds it acts like billions of tiny magnets to pull apart the compound mineral and reduce it to its original sodium (Na+) and chloride (Cl–) forms.

A water molecule consists of the elements hydrogen (H) and oxygen (O). Separately, they exist as gases. Together, they create a liquid when two atoms of hydrogen are combined with one atom of oxygen ($H_2O$).

### *Water Sources*

The source of the water that we drink does not always indicate its purity or quality. Our drinking water supply is usually from among the following:

- *Tap Water / Municipal Water Supply*. Municipal water usually comes from a reservoir (artificial lake specifically created to supply water to towns and cities). Reservoirs are fed by rain, and occasionally by ground or spring water. The town or city supplying the water

filters the water (which is beneficial), but then adds dangerous chemicals to it. The amounts and kinds of chemicals are determined by the local government.

- *Spring / Well*. This comes directly from the ground near your house, through pipes, and into your faucet. If the well supplies a certain number of dwellings, by law the water must be periodically tested, and in some cases treated for contamination.
- *Filtered*. The filtration, usually done on- site where the water will be used (private home or office), can be done with activated charcoal, reverse osmosis, ultraviolet, ozone, a combination of those, or another system supplied by the consumer. The source of the water can be a municipal water supply, spring, or well.
- *Distilled*. The water (which can be from any source) is boiled, evaporated into steam in a chamber, and then condensed and collected in another chamber. Distilled water can either be made with a home distiller, or commercially bought in plastic containers. The source of the water can be a municipal water supply, spring, or well.
- *Carbonated*. The water can come from any source. It may or may not already contain naturally-occurring carbonation. The water is filtered or distilled, infused with carbon dioxide—even if it's already naturally carbonated—and then bottled.

### *The Importance of Decontamination*

An alarmingly high amount of our drinking water is contaminated with industrial waste, sewage, pesticides, detergents, and even drugs, as discussed in more detail in Chapter 1. Lawsuits against industries are becoming common, as some manufacturing plants are increasingly polluting lakes and rivers with numerous toxic chemicals. Runoff from pesticides, herbicides, and manure used on factory farms seeps into the groundwater. Some areas still don't have adequate treatment facilities, and the sewage gets into our groundwater as well.

For these reasons, virtually every holistic practitioner and even some allopathic doctors discourage drinking water directly from the tap. Even if the original source is pure, after the water reaches the municipal water supply, it's treated with dangerous chemical disinfectants such as chlorine (used to eliminate pathogens) and fluoride. These practices are ill-advised, because for relatively little cost, safe ozone could be used instead. Many countries around the world use ozone to purify not only drinking water, but also swimming pools and hot tubs. (See **Oxygen Therapies** later in this chapter.)

Tap water is also problematic because it can pick up rust and other dangerous metals (oxidized or not) from the pipes that carry it. In some areas of the United States, I have actually seen foam spewing from the faucet. Was this due to detergent-like chemicals added to "improve" the water, or to contaminants? Sometimes it's hard to tell. Most municipal tap water in this country is noxious, and the awful taste proves it. Many people who aren't picky about what they eat still filter their water because it tastes so bad.

What type of decontamination process is best? Generally, any water (from whatever source) that's filtered to eliminate toxic metals, chemicals, particulate matter and microbes is safe to drink. This eliminates most municipal tap water as a good choice. What about carbonated beverages (soda water and seltzer)? Those tiny little bubbles are created when carbon dioxide ($CO_2$) is forced into water at a high pressure. And in nature, sparkling water is sometimes created when decaying vegetation releases its $CO_2$ into groundwater. But sparkling drinks, although made with filtered water, are not a wise choice either. Whether the carbonation is manufactured, is from a naturally bubbling spring, or (as in some bottled water products) is a combination of the two, when $CO_2$ combines with water it makes it acidic. Carbon dioxide is needed in the lungs to regulate the amount of oxygen absorbed by the body (too much oxygen can be dangerous)—but when it's in the stomach, the gas impedes digestion. Thus, carbonated water is not a suitable choice for drinking, either.

Thus we are left with pure spring, filtered, and distilled water. It makes sense that any water—unless regularly tested for contaminants and deemed safe—should be adequately filtered, whether it comes from a municipal water supply, well or spring. Who would argue against eliminating contaminants? But are there any advantages to imbibing clean spring water? And what about distilled?

### *The Relationship of Minerals to Water*

To answer these questions, I must redirect the discussion to the chemistry of minerals. All water (except for artificially created distilled water) contains minerals. So, the function and properties of water are intertwined with its mineral content. Please bear with me if I appear to digress too far from the topic; you will see how everything fits together by the end of this section.

Minerals rarely exist as single elements. They are usually *compounds*, combined with another element or elements—sometimes other solids, sometimes oxygen, sometimes water, and sometimes a combination of these. Even if a mineral is referred to by its common (elemental)

### Milky Oats for Nerve Repair

Mercury, a highly toxic heavy metal, causes severe nerve damage. It clips the delicate hair-like projections sitting at the top of nerve cells, and strips away the protective fatty myelin sheathing from the nerve stems. You may be mercury toxic if you ever received vaccines, had silver-mercury fillings in your mouth, ate fatty fish, or lived near coal-fired plants that polluted the air.

Oats are known historically for regenerating the nervous system. The strongest concentrations of desirable compounds are located in the oat *tops*—the highest, oval portion of the plant—and not in the stems (known as oat straw).

If you are planning a mercury detox program, drinking two or three cups of oat top tea to regenerate your nervous system *before* doing chelation may ensure better success. Even if you use an effective chelating agent like chlorella, if the nervous system is too damaged to recognize that mercury is present, your body may be unable to eliminate the metal.

Since oats are hardy, bring the water to a boil. Turn off the heat, and steep a heaping teaspoon of loosely packed oats for every cup of water. Let the oats sit in the water until the compounds become stronger. When the tea is finished, the water will turn light green. Its taste is surprisingly reminiscent of cow's milk, which is why oat top tea is often called "milky oats."

name that suggests the presence of only one element, there is always something to which it is bound. Calcium might be calcium chloride; magnesium, magnesium oxide; potassium, potassium iodide; and so on. Sodium is commonly bound to chloride. Chlorine is a gas, but becomes the solid chloride when it's combined with sodium, forming common table salt.

Many people who think of a "mineral" assume that no matter where it comes from, if it's a mineral it will nourish them. But this isn't true. Minerals are not always in a form that humans can assimilate. And if we cannot utilize minerals, those minerals might become contaminants.

#### Heavy Metals

There are two kinds of minerals that humans cannot utilize. The first are commonly called *heavy metals* or *toxic metals*. Heavy metals are not nutrients, and will never be nutrients. Poisonous to the body, they should never be ingested, regardless of their form. For the purposes of this discussion, aluminum, cadmium, lead and mercury are commonly regarded as heavy metals.

Much of our drinking water contains heavy metals. These heavy metals accumulate in the system, clogging whatever tissues they settle in: joints, blood vessels, organs, glands, bone. Once the heavy metals are trapped in the tissues, they interfere with the body's ability to function, causing serious damage. Some of the damage occurs in the form of degenerative conditions like heart disease, arthritis, respiratory conditions, and dementia.

Two of the most common heavy metals are aluminum and mercury. Although aluminum is the world's most abundant metal, it is not necessary for the proper functioning of the human body. Aluminum easily combines with other substances to form compounds, many of which are widely used in industry, including food manufacturing. Aluminum hydroxide is found in most antacids, sodium aluminum phosphate is put into processed cheese, aluminum chlorhydrate is used in antiperspirants, aluminum sulfate is used by water treatment plants, and so on. Although some scientists claim that aluminum must be consumed in large amounts to be poisonous, most holistic practitioners recognize the dangers of much smaller amounts. Numerous studies show that aluminum compounds produce memory loss, decreased muscle coordination, slowed growth, and other dysfunction. Not surprisingly, the brains of people with Alzheimer's disease contain larger than usual amounts of aluminum. As for mercury, there is no metal more dangerous. Many manufacturing plants spew mercury into our air and water, causing dangerous levels to accumulate in much of the world's fish. Since mercury lodges in fat cells, some fish that ordinarily would be excellent sources of Essential Fatty Acids are no longer edible. Even recently, mercury was used in thermometers. And it's still present in many vaccines (not that vaccines are themselves safe), and in thousands of other items, from carpeting to compact fluorescent light bulbs.

Regardless of which heavy metal is ingested, they all interfere with our vital life processes. To compound the problem, many pathogens, such as *Candida albicans*, are attracted to heavy metals because the metals make such good meals. This is why microbial infection often exists alongside heavy metal contamination.

#### Unabsorbed Minerals

There is a second category of minerals that humans cannot utilize: unabsorbed minerals that are not heavy metals. Although these minerals are not poisonous per se, they are contaminants because they cannot be assimilated by the body. Thus, their effects are similar to (though not always as severe as) the effects of toxic metals.

In their most elementary state, these minerals are found in rock. Water, wind, sun, and soil bacteria break apart

rock into soil. From this soil, plants extract the minerals and transmute them into a form that they can use. Then humans and animals eat the plants, liberating, through the process of digestion, the minerals into a form that *they* can use. In this context, *organic* sources of minerals are assimilable, and come from plants or animals; whereas *inorganic* sources of minerals are not assimilable, and come from rock or soil.

(The terms "organic" and "inorganic" can be confusing. People in the health food field know foods as "organic" if they are grown without pesticides, herbicides or synthetic fertilizers. On the other hand, conventionally trained chemists refer to compounds as "organic" or "organically-derived" if the compounds contain at least one carbon or one hydrogen atom, while compounds that lack carbon are termed "inorganic." In this current discussion, "organic" and "inorganic" are used to mean the *source* of minerals, which determines whether or not they can be absorbed by the body.)

Humans are designed primarily to assimilate organic sources of minerals, which is why we eat plants and not rocks or dirt. Occasionally, children do eat dirt and even small pebbles. But this is not common. The children may instinctively be trying to obtain needed minerals in the diet. "Although the chemical analysis [of organic and inorganic minerals] is the same whether found in air, earth, plant or animal," write father-daughter health food manufacturers Paul and Patricia Bragg in *Water, The Shocking Truth*, "it is only through the *life processes* of the plant whereby the constituents of air and soil become *vitalized* and useful to the human body." [emphasis added] [2]

Most chemists study the physical nature of elements and how they interact when they are combined, without considering the vital life force of the element. *Electrical charge is a component of life force*. For years, unscrupulous nutritional supplement companies have taken advantage of people's ignorance by cramming their products with cheap, useless, inorganic minerals. (See the section on **Selected Nutritional Supplements** in this chapter to learn more about the life force in foods and nutritional supplements.)

To utilize precious minerals, we must ingest them in the proper form—usually, plants, which transform the minerals for us. There is, however, one exception: when minerals are dissolved in water.

#### Electrolytes: Minerals with a Charge

Water dissolves inorganic minerals when it flows through forests and churns around rocks, ending as a spring, creek, river or waterfall. This moving water is such a powerful solvent that the minerals dissociate from one another and become *charged particles* called *ions*. An ion can be a single atom, or a group of atoms.

### The Electromagnetic Dance of Atoms

Elements are partly attracted to each other because of the direction in which their electrons are spinning. The electrons in the outer shell of one element will jump to the outer shell of another element only if the electrons of the two different elements have opposite spins: clockwise and counterclockwise. Why? Because the movement of electrons (electricity) creates a magnetic field (just as a moving magnetic field can create electricity). If electrons from two different elements have *same-direction* (or parallel) spins, they magnetically *repel* each other. If electrons from two different elements have *opposite-direction* spins, they magnetically *attract* each other. This magnetic attraction due to the opposite spins is so strong, it counteracts the repulsion that one might normally expect to occur between two electrons, both of which by definition possess negative charge.

This fascinating tidbit about chemistry partly helps explain what takes place, and why, when people are healed with electronic devices that influence the body's electromagnetic, magnetic, electrical, and other subtle energy fields. Just as minerals can affect the electrical and magnetic fields in the body, electromedical devices (with electrical and magnetic properties) affect the body's minerals. For more information, read *Energy Medicine: The Scientific Basis* by James L. Oschman.

Once minerals become ions, their behavior radically changes. Their electrical charge allows them to permeate a cell membrane. Normally, in an atom, the number of protons in the nucleus equals the number of electrons orbiting around it. The first orbital shell closest to the nucleus holds a maximum number of two electrons, the next orbital shell holds a larger maximum number, and so on. In many atoms, the orbiting electrons do not fill their outer shells to capacity. This allows the electrons to get bumped or rearranged fairly easily. An almost completely filled outer shell will more easily *receive* electrons, and will thus carry a *negative* charge, because there are now more electrons than there are protons. A sparsely filled outer shell will more easily *lose* its electrons, and will thus carry a *positive* charge, because there are now fewer electrons than there are protons.

It is this dance of oppositely charged particles that give us compounds in so many different and wondrous configurations, which activate almost unlimited life processes. One common example is the positively charged sodium ion (Na+) that combines with the negatively charged chlorine ion (Cl–) to create the compound mineral, or mineral salt, called sodium chloride. (See Sidebar, "The Electromagnetic Dance of Atoms.")

(Incidentally, in chemistry an atom is often compared to a miniature model of the solar system, with the nucleus of the atom at the center like the sun and the electrons orbiting around the nucleus like planets. Although quantum physicists have recently pointed out that this model of the atom is technically inaccurate, it is still the most familiar, and thus workable, conceptual design we have available to describe chemical processes. Hence, I am using it.)

It's not necessary that you learn every detail about how ions are formed. What is important to remember is this: *the movement of energy* (called electron transfer) *on the electromagnetic level corresponds to a chemical reaction on the grosser material plane*. Life processes occur when the transfer of electrons take place; and minerals play a vital role in this process. "These ions-in-solution," soil scientist David Yarrow writes, "are valuable for their effects on water's [intrinsic] electrical properties. Most often, they increase water's ability to pass an electric current, or store electrical charge."[3] This is why ions are called *electrolytes*.

In the body, different electrolytes are located inside and outside of the cell membrane. These electrolytes have different electrical potential or driving force, just like a battery. Through many complex steps involving the flow of electrons across the cell membrane, electrolytes help maintain biochemical and physiological changes crucial for life. Electrolytes are responsible for energy production; ease of respiration; maintaining the distribution of water in the body; the proper function of nerves, muscles and organs; the delivery of nutrients to the cell; the removal of wastes; and osmotic integrity, or uniform pressure on the inside and the outside of the cell. (Osmosis is the diffusion of water across a semi-permeable membrane. The flow occurs from a higher to a lower concentration.) If our cells do not receive adequate electrolytes, among other effects the cell membrane collapses and leaks fluid. The water then becomes trapped between the cells, resulting in what we know as water retention, while meanwhile the cell itself is starved for water and all the nutrients the water carries. An unnaturally permeable cell membrane also leaves the cell more vulnerable to invasion by microbes and the body's waste materials, which in turn acidifies the system further.

Finally, electrolytes play a key role in the pH balance of the cells. Most minerals are alkalizing; a few are acidifying. We need *all* minerals to function properly, although most of the minerals required for health (calcium, magnesium, potassium and sodium) are alkalizing. Alkaline minerals appear in our drinking water more often than acidic minerals, but not always.

Nothing in the body can function properly without electrolytes. All living organisms possess the means to transfer an electrical charge. The stronger the electrical potential, the more vital the organism is. Impeded electrical potential causes illness. Insufficient electrical potential causes death. (See Sidebar, "The Amazing Story of Alexis Carrel and His Chicken Heart.")

### The Amazing Story of Alexis Carrel and His Chicken Heart

In 1912, French-born surgeon Alexis Carrel won the Nobel Prize in Medicine for devising unique ways to suture blood vessels, repair damaged arteries, and transplant organs. By 1935, together with famous aviator Charles Lindbergh (who was also an environmentalist and an inventor in his own right), Carrel created an artificial heart.

But the accomplishments of Carrel's that are the most commercially publicized may not be the most important. From 1912 to 1940, the scientist kept a piece of embryonic chicken heart alive in a solution whose minerals were present in the same proportion as the minerals in chicken blood—and which had the same alkalinity (a pH of 7.35 to 7.45). Carrel was careful to change the solution and oxygen every single day. The experiment ended only because he deliberately stopped bathing the heart tissue 28 years later.

Normally, the life span of a chicken is no more than eleven years (assuming she didn't die at around age four from the stresses of egg laying). Carrel was able to keep the heart tissue healthy and alive because *the mineral solution nourished the cells, and the replacement of the fluids every day ensured that all the cellular waste materials were removed*. The secret, then, to health and longevity is not only proper nutrition, but *waste removal*. Carrel's mineral bath eliminated all the waste products of cell metabolism!

Theoretically, there is no limit to the number of divisions that a healthy cell can undergo, provided it is kept clean of metabolic wastes. This has enormous implications for theories about aging. What if so-called "aging" is nothing more than the breakdown of the tissues due to toxification?

Interestingly, Carrel spent many years working at the Rockefeller Institute for Medical Research in New York City until the administration forced him to retire. The Rockefeller family has major ties to the medical-pharmaceutical industry. The Institute bestowed much public praise on Carrel for his undeniably spectacular surgical innovations, but was remarkably quiet about the doctor's discovery that simply keeping the body in its pristine state—with nothing more than oxygen and a mineral bath—may hold the secret to healing, health and longevity.

A unique relationship exists between water and minerals. The minerals dissolved in water influence its properties. Water containing electrolytes has a lower surface tension, which allows it to be better absorbed. A good analogy is a bead of water on a wooden surface. If the surface is highly waxed, the water remains where it is, and intact. This is comparable to the action of non-mineralized water. If, however, the surface is not waxed, the water seeps more easily into the wood. This is similar to the action of water containing electrolytes.

It's no accident that historically, so-called miracle or healing waters have all been alkaline due to heavy alkaline mineral content. In Europe, mineral water is defined as having more than 250 ppm (parts per million, which is the number of micrograms per milliliter) of minerals. Not coincidentally, water that contains electrolytes tastes subtly sweet. Good water is actually quite delicious, and very satisfying as a beverage.

Just a little over 100 years ago, before the Earth became polluted with so many chemicals and wastes, there was ample living water that contained electrolytes (dissolved minerals, which made the water conductive, or able to carry an electrical charge). Also, Earth's waters generally had an alkaline pH and plenty of oxygen. Today, this is the exception rather than the norm.

Purifying our water is a necessity. However, what we take out of water is as important as what we leave in. If we remove enough of the beneficial dissolved minerals, we may make ourselves ill. This will become even clearer as I discuss various purification methods.

### *Filtering*

Many people filter their water even if the source is an underground spring or well—because even underground water can be contaminated with pathogens, or have an unpleasant taste from mineral deposits or chemical additives. A good filter removes microbes, chlorine, and large particles. It always consists of a fibrous core through which the water travels before being released through the tap. Different materials for the filter cores include activated charcoal and shredded coconut shell. These substances cannot remove fluoride, although ozone will. (The dangers of fluoride will be discussed later.) In addition to fibrous cylinders, the more sophisticated water purification systems use ozone—or ultraviolet light, which produces ozone. In any unit, the filter must be replaced regularly, or else the core becomes overloaded with contaminants. When it turns brown, it's time to change the filter.

Home filtering units can sit on the countertop, be installed beneath the sink, or be fitted at the water's entryway into the house. Filters are not only important for drinking water, but also for bathwater. If your water has been pre-treated with chlorine, it's wise to install a filter at the entryway of your home instead of on individual faucets, as chlorine is very toxic. See Sidebar, "Chlorine: a Poor Choice for Water Purification."

One popular and inexpensive water filter consists of a small activated charcoal cylinder fitted to a pitcher. Water poured into the pitcher passes through the charcoal (this is considered the purification process). But most people don't bother to pour water over the core to "freshen" it first and let the freshening water go down the drain. Instead, they use all the water that flows through the cylinder. This means that bacteria collecting in the charcoal passes directly into the pitcher, along with the so-called filtered water. Unless you regularly keep the charcoal core free of pathogens, I would not recommend this type of passive filter. Get a water purification unit that puts the filter core through a cleansing cycle with fresh water. The best units also circulate ozone to kill the bacteria that multiply in any filter.

Some people like reverse osmosis (RO) units. This technology was developed in the late 1950's under US government funding as a method of removing salt from sea water. First used by water bottling plants and other industries, RO eventually became available to consumers. During this process, water molecules are forced at high pressure through a series of coiled, semi-permeable membranes, which separates the water from unwanted substances. Unlike simpler filtering units, reverse osmosis does eliminate fluoride. It also diverts the waste materials into a drain, thus slowing contaminant buildup in the units themselves. (RO filters still need changing, though; otherwise, bacteria accumulate in the membranes.) But most RO units waste 4 gallons of water for each useable gallon. And all units remove vital minerals along with harmful contaminants—which explains why RO water tastes awful. Devoid of minerals, the water pulls metal molecules from the plumbing pipes and tastes metallic.

Water *filtration* systems may not be able to remove inorganic minerals. But *electrolysis* can. See below.

### *Water Electrolysis (Ionization)*

Most people have not heard the term *electrolysis* used in relation to water. (In popular usage it pertains to the removal of hair.) Water electrolysis, also called *ionization*, was developed in Japan several decades ago. This wonderful way of treating water is worth exploring in some depth. Although water electrolysis involves learning just a little more chemistry, the technology is so beneficial, it's worth trying to understand it.

### Chlorine: A Poor Choice for Water Purification

Chlorine, commonly added to municipal water supplies to kill pathogens, is very dangerous. Highly reactive, it readily combines with other substances to form a variety of toxic compounds, including carcinogenic trihalomethanes, nitrogen trichloride (a cause of asthma in chlorinated pools), and other byproducts. These chemicals cause, among other problems, birth defects, cancers of the bladder, bowel, breasts and kidneys, fertility problems, heart disease, including high blood pressure and hardening of the arteries, and immune breakdown.

Chlorine was originally used as a deadly weapon during World War I. However, it is so ubiquitous now, its use is considered normal. Aside from poisoning the body, chlorine (like fluoride and bromine) creates additional problems because it displaces the beneficial mineral iodine. Without iodine, the thyroid gland cannot manufacture thyroxin, the hormone used to regulate metabolism—and whose absence causes problems ranging from abnormal body temperature to depression. Without iodine, the body is also unable to protect itself adequately against infections, including cancer. Most of the iodine the body uses is located in the thyroid, breasts, lungs and sinuses.

There are many ways in which chlorine can get into the bloodstream. When put into bath or shower water, swimming pools or hot tubs, it's absorbed directly through the skin. Hot or even warm bathwater causes the pores of the skin to become larger, so any chlorine in that water will be absorbed readily. Showering in chlorinated water is the equivalent of drinking eight glasses of it at once. Breathing in steam from the hot water allows the chlorine to directly enter the lungs, where it causes asthma, bronchitis and other respiratory conditions due to its ability to damage the lining of the lungs. Chlorine is also a serious eyes irritant, making them itch and burn. Even if no serious disease develops, the chemical dries out the skin's natural moisture barrier.

Chronic exposure to chlorine—which is not difficult, considering it's put into drinking water and swimming pools—creates chronic inflammation. Over time, cells and tissues become damaged faster than the body can repair them. Simply put, cell damage equals disease and aging. Symptoms from chlorine exposure occur long before the chemical can be smelled, at levels over 3.5 parts per million (ppm).

There is absolutely no reason to use chlorine as a water purifier, especially with other options, such as ozone and colloidal silver, available.

As already discussed, when ions are present in a liquid, electrical energy can be conducted through the solution. In a fluid, different elements form ions in varying amounts, depending on the ability of the atoms to gain or lose electrons. These atoms *dissociate*, or *ionize*, in solution to form either *hydrogen* ions (H+) or *hydroxyl* ions (OH–). Depending on the presence or absence of H+ and OH– ions, a given solution will be acidic or alkaline. If the hydrogen ion (H+) concentration is *higher* than the hydroxyl ion (OH–) concentration, the material is *acidic* (as in "acid"). If the hydrogen ion (H+) concentration is *lower* than the hydroxyl ion (OH–) concentration, the material is *alkaline* (or *basic*, as in "base"). Put another way, if there are more hydroxyl ions (OH–) than hydrogen ions (H+), the liquid will be alkaline.

In water, any *acidic* minerals present are *negatively* charged, and any *alkaline* minerals present are *positively* charged. Some common acidic minerals are iodine, sulfur and phosphorus. Some common alkaline minerals are potassium, sodium, calcium, magnesium, iron and manganese. The presence of acidic minerals (which have a negative electrical charge) corresponds to positively charged H+ ions. The presence of alkaline minerals (which have a positive electrical charge) corresponds to negatively charged OH– ions.

During water electrolysis, the two opposite-polarity ions, OH– and H+, are created when an electrical charge is passed through the water. Then an elaborate dance begins. Sang Whang, an enthusiastic proponent of water ionization, explains:

> Alkaline minerals in the positive electrode chamber migrate into the chamber with [the] negative electrode; the positive electrode repels positive charges and the negative electrode attracts positive charges. As these positively charged alkaline minerals enter the negative electrode chamber, they combine with hydroxyl ions (OH–) in $H_2O$, kicking out hydrogen ions (H+). These hydrogen ions then travel to the negative electrode and give up their positive charge and become electrically neutral hydrogen molecules ($H_2$).
>
> The opposite process takes place with acid minerals. Acid minerals migrate into [the] positive electrode chamber and combine with hydrogen ions (H+) in $H_2O$, kicking out hydroxyl ions (OH–). These hydroxyl ions then travel to the positive electrode, lose negative charge and become water ($H_2O$) and oxygen ($O_2$). In the ionizer, oxygen gas is released from the acid water

> chamber and hydrogen gas is released from the alkaline water chamber. Both chambers remain electrically neutral.[4]

Simply put, a water electrolysis unit (ionizer) converts regular tap water into alkaline water and acid water by separating the acid-forming and alkaline-forming minerals via an electrical current. Negatively charged minerals are attracted to the positive electrode, and positively-charged minerals are attracted to the negative electrode. During this process, the acidic ions and alkaline ions are also separated and eventually neutralized. What remains is water called "acidic," which contains acidic minerals, and water called "alkaline," which contains alkaline minerals. The acidic and alkaline waters are collected in two separate chambers attached to separate output tubes.

Depending on the mineral content of the source water and the programming of the ionizer, the pH value of the alkaline water can range anywhere from the low 7s to 10.5 or even higher. Whang writes:

> The main alkaline minerals of tap water are calcium and a small amount of magnesium. . . . In the pecking order of ion exchange of the four alkaline minerals in water, potassium is the strongest, next is sodium, then calcium, and the last is magnesium. Stronger minerals can replace weaker minerals, but not the other way around.[5]

This unique water technology also changes the molecular structure of the water, usually from a 12-molecule cluster to a hexagon, half as large as tap water molecule chains. Such water dissolves those minerals that are present more efficiently and completely. The smaller molecule is what makes water "wetter," able to permeate cellular membranes more easily and rapidly. This superior hydration promotes more efficient nutrient transport across the cell membrane, and a more complete removal of wastes. Sometimes wetter water is called *micro-clustered* or *clustered* water.

Both acidic and alkaline waters have been successfully used in Japanese hospitals for many years. The naturally acidic skin—whose slightly acidic coating acts as a protective barrier against germs—is bathed in the acidic water for treatment of skin conditions such as eczema and boils. When the alkaline water is drunk by people whose systems are too acidic, the internal pH becomes more balanced, and the body's terrain becomes less hospitable to microbes. Alkaline water has a higher concentration of oxygen in addition to assimilable organic minerals.

The degree of benefit from water electrolysis (ionization) depends on the source water feeding the unit. If your goal is to obtain large quantities of alkaline water, your source water must be sufficiently alkaline. If the water is acidic—say, below 6.8 or 6.7 (7.0 is neutral)—you'll have to pump quite a bit of water through the device to obtain enough alkaline fluid for drinking (although you'll get lots of acid water for a refreshing bath). Also, even if the finished water product is purified and contains only ionic (assimilable) minerals, these minerals might not exist in the proportions that your body needs. An electrolysis device can only work with the minerals present in the source water. For this reason, some units are equipped with calcium and magnesium mineral packets that add alkalinity (and those particular minerals) to the water.

Do you need a water electrolysis unit if your source water is substantially alkaline, and contains a nice variety of minerals in the amounts that you need? That depends. Even though water is an excellent solvent, not all of the minerals in it may be completely dissolved (ionic). Over time, mineral salts that cannot be dissolved (and are thus unable to be assimilated) can cause damage similar to that of heavy metals. They can lodge painfully in the joints (causing arthritis) or remain in the kidneys (causing painful stones that block the ducts). This is the one way in which beneficial minerals can act like heavy metals: if they are not absorbed by the body. For this reason alone, a water electrolysis unit can be a wise investment.

### *Distillation*

The distillation of water removes more from water than does filtration. Distilling removes all particulate matter, heavy metals, most contaminants (except fluoride and Volatile Organic Compounds—unless another, specially designed filter is used), and most microbes. But distillation removes all minerals from water, too. The absence of minerals virtually eliminates the water's ability to conduct an electrical charge. This non-conductivity makes distilled water an excellent foundation for cosmetics, cleaners, and thousands of other chemical preparations. The uniform effects of distilled water also ensures that the properties of the substances are consistent with every batch. Hence, distilled water is a standard item in industry. (Distilled water is also used to make colloidal silver, discussed later in this chapter.)

But industry needs are quite different from drinking needs. Of all the ways of treating water to make it drinkable, distillation is the most controversial.

Let's consider what type of fluid distilled water really is. By definition, water without minerals does not exist. Water's innate ability as a solvent means that it will always contain even small amounts of some minerals. But when water is distilled, it becomes an even more ferocious

solvent. Deprived of minerals, and therefore any serviceable conductivity, the now denatured (de-natured) distilled water seizes minerals from whatever it touches to restore its electrical charge and thereby replenish itself. It doesn't matter what it takes. It will seize minerals, chemicals, acids, anything that it can dissolve.

The thorough removal of its minerals through distillation gives water a totally neutral pH of 7.0—at least, in theory. But in reality, the actual pH measurement is different. Since distilled water is so reactive, the instant it's exposed to the air it reacts with carbon dioxide, a naturally acidic gas. This creates carbonic acid, which becomes part of the overall solution. The presence of carbonic acid instantly lowers the pH of the water, making it acidic. I have never seen even freshly made distilled water test above 6.8. All of my testing with various brands of distilled water has yielded a much more acidic pH, sometimes as low as 5.8. You can test the pH of your water with a colored fluid available at pet stores, which is used to check the pH of fish tanks. This works better for water than pH strips, which are more accurate for bodily fluids.

The pH of water directly affects our health. For those who have excess acidity in their system, the last thing they should do is drink acidic water.

In addition to the pH, there is one critical matter that actively concerns many health seekers. What are the effects of drinking water that does not contain minerals?

The allegations for and against distilled water are many and confusing. It's harmful; it's the best water to drink. It leaches minerals from the body; it doesn't leach minerals from the body. It leaches minerals from the body, but only the harmful heavy metals. Some people swear that distilled water helped heal them, and won't drink anything else. Others claim that distilled water causes severe mineral depletion—with several practitioners reporting that clients who drank distilled water exclusively upset their body's mineral balance in as little as three weeks. Counter arguments assert that although this depletion might occur, it can take years.

It took me three years of research on water to make me feel comfortable addressing these confusing differences of opinion. It cannot be denied that distillation increases water's power as a solvent. Even partially distilled, low-mineral water is corrosive. In "Water—The Choice for Long-Term Health," Michael Donaldson explains:

> In the desalination industry it is an industry-wide rule that [partially or completely distilled] water must be partially remineralized before sent down the distribution pipeline because the purified water is too aggressive and will cause severe corrosion of the pipeline. This fact makes it very clear that low mineral water is indeed aggressive in nature. This fact cannot be disputed. One report from a desalination plant in Cyprus producing over 10 million gallons of purified water per day found that iron was being leached into the water supply. By alkalizing the water . . . the iron corrosion was stabilized.[6]

Distilled water may eat through metal pipe; but how does it react in a living body? Does it draw toxic metals or beneficial minerals to it? One might initially be tempted to say "no," since once inside the body, the water becomes part of the systemic fluids. Nevertheless, thanks to the Internet, which has made recent studies available, we now have ample evidence that drinking low-mineral water—and, in at least one study, distilled water—can damage one's health in major ways. Some of this data has not been easy to find because many of the studies are published in languages other than English, and have not been translated. However, what I was able to unearth is compelling.

The first example is a comprehensive 939-page report called "Drinking Water and Health," published in 1977 by the Safe Drinking Water Committee of the National Research Council. The study showed that the absence of magnesium alone (and to a lesser extent calcium) contributes to heart disease, the formation of kidney stones, and the development of cancer. Warnings about the health dangers of few or no assimilable minerals in our drinking water were repeated in seven subsequent National Academy of Sciences printings, the last one in 1988. Here are some excerpts from the US government-sponsored report:

> Several hypotheses are reported on how water factor(s) may affect health; these mostly involve either a protective action attributed to some elements found in hard [mineral-rich] water or harmful effects attributed to certain metals often found in soft [mineral-deficient] water . . . investigators have attributed the disease-protective effect of hard water to the presence of calcium and magnesium . . . [as well as] vanadium, lithium, chromium, and manganese. *The suspect harmful agents include the metals cadmium, lead, [inorganic] copper, and [inorganic] zinc, all of which tend to be found in higher concentrations in soft water as a result of the relative corrosiveness of soft water.* [emphasis added]
>
> [Research indicates] that the amount of these elements provided through drinking water relative to other sources is less important than their

## Alkaline Water in the Body

How does alkaline water behave once it's in the body? When the alkaline water reaches the very acidic stomach, wouldn't the stomach's hydrochloric acid neutralize it so that the water is no longer alkaline? If so, what's the advantage of drinking alkaline water?

The pH of alkaline water indeed becomes more acidic in the stomach—while at the same time the normal 4.0 (acidic) pH of the stomach fluid becomes more alkaline. Yet the alkaline water is not wasted. Its minerals are used by the body to maintain the correct pH of the tissues, which is a vital job.

When alkaline minerals reach the stomach, they react with the hydrochloric acid to form chlorides and carbonates, which are alkaline compounds. Alkaline bicarbonate compounds are also formed: sodium bicarbonate, magnesium bicarbonate, calcium bicarbonate, and potassium bicarbonate. These bicarbonates travel to the small intestine to neutralize the acidic chyme (food slurry) exiting the stomach. (The neutralization is necessary because the intestine does not possess a thick mucous layer to protect its walls from the corrosive food mixture. The pancreatic juice made by the pancreas, which mixes with chyme as well, also contains sodium bicarbonate, for the same reason.)

Some of the sodium bicarbonate made by the body also goes into the bloodstream. The blood's pH should be between 7.35 and 7.45 at all times. If too much acidity threatens the bloodstream, the sodium bicarbonate acts as a buffer to make the pH more alkaline. (Likewise, if the bloodstream is becoming too alkaline, acidic buffers appear to make the pH more acidic.) The bicarbonates neutralize excess bloodstream acids by dissolving solid acidic wastes into liquid. This releases carbon dioxide, which is expelled through the lungs.

Gauging by the pH value of the stomach alone, one might wonder if alkaline water ever reaches the body. But it does. All minerals are transported to the extracellular fluids, which surround each cell of the body. As Frank Cuns-Rial, a naturopathically-oriented chemist, explains:

> I regard the extracellular fluid as the largest and most disregarded organ of the body. The blood deposits the nutrients into this fluid and from there it is transferred into the cell. The health of this fluid is paramount since it interacts both with the blood and with the cell membranes. Here, it's crucial to have a wholesome concentration of alkaline minerals to feed the cells and to influence the blood pH.
>
> Minerals are attached to different chemical combinations or compounds, resulting in chlorides, carbonates, etc. These combinations perform different tasks as required by the body. For example, the same atom of magnesium might exist in the form of a chloride in the stomach, as aspartate [a compound of aspartic acid] in the gut, and as citrate once it reaches the cell membrane. When magnesium finally enters the cell, it's ionic, or unattached, with a minute electrical charge. Sometimes the mineral is strongly linked (as in the chloride form). Sometimes it's loosely linked (as in the aspartate form). And sometimes it's very loosely linked to enzymes, proteins, hormones, or other substances. But the atom itself does not undergo any chemical change when it's attached to different carriers. Ultimately, it's the ionic form of the mineral that confers alkalinity to the extracellular fluid.[7]

Thus, although minerals often change from one chemical form into another, their *intrinsic identities* remain intact. So, an inherently alkaline mineral will impart its alkalinity to the extracellular fluid. Therefore, alkaline water maintains its alkalinity at the cellular level.

It may be optimal to drink alkaline water on an empty stomach. The stomach is designed to produce more hydrochloric acid as soon as its pH rises to above 4.5. Therefore, when alkaline water with an 8.5 pH or higher is drunk, the stomach produces more hydrochloric acid, which in turn causes also means increased production of bicarbonates, which then causes more bicarbonates to enter the bloodstream.

Alkaline water proponent Sang Whang believes that one major cause of aging is due to insufficient levels of bicarbonates in the blood. Less bicarbonate means a reduced ability to neutralize and eliminate acidic wastes produced by the body. The phrase "alkalize the system," Whang points out, does not refer to raising the pH of the urine or saliva (the blood pH is regulated to remain constant), but to increasing the amount of bicarbonates in the blood. Incidentally, when the pH in the entire body is balanced, the tissues are oxygenated at their saturation point, which reduces the possibility of cancer and other diseases.

Although many people benefit from drinking primarily alkaline water, others feel better drinking mostly acidic water. One conservative estimate of an optimal pH range for water is from 6.0 to 8.5. But metabolisms vary widely. If you have any concerns about drinking alkaline or acidic water on a regular basis, consult with an experienced metabolic specialist who understands body chemistry.

chemical form. It is theorized that trace elements often occur in a chelated form in foods and may be less available metabolically than the ionized form that generally occurs in water. . . .

Another possible variable is the different effect of hard and soft waters on the mineral composition of foods during cooking . . . soft water [such as distilled] may remove a significantly higher proportion of various "protective" nutrients and elements from foods during cooking than do hard waters.

More than 50 studies in nine countries have been carried out on possible relationship of water hardness and health . . . [revealing] a consistent trend of significant statistical associations between the hardness characteristics of drinking water and the incidence of cardiovascular problems (heart disease, hypertension, and stroke) and, to a lesser extent, other diseases. . . . A voluminous body of literature suggests that in the United States and other developed nations, the incidence of many chronic diseases . . . [reflects] an *inverse* correlation between the incidence of cardiovascular disease and the amount of hardness. A few reports also indicate a similar inverse correlation between the hardness of water and the causes of risk from several non-cardiovascular causes of death. . . . Studies in the United States and Canada have shown that age-adjusted cardiovascular mortality rates among populations using very soft water may be as much as 15% to 20% higher than among populations using hard water. The differential reported for the United Kingdom may be as high as 40%. . . .[8]

The results of yet more studies, conducted outside the United States, are summarized by Donaldson.

[A] study from Russia . . . compared the populations in two cities that were supplied with different water—one with low TDS [total dissolved solids], low calcium, and low magnesium, and the second one with higher TDS, calcium, and magnesium in the water. Other mineral levels in the water were also determined. The population in the area supplied with the lower mineral water showed higher incidence rates of goiter, hypertension, ischemic heart disease, gastric and duodenal ulcers, chronic gastritis, cholecystitis (inflammation of the gall bladder) and nephritis (inflammation of the kidneys). Children in this area with the low mineral water had slower physical development and more growth abnormalities, newborn mortality rates were higher, and pregnant women had more edema and anemia. Clearly, the minerals in the water were benefiting this population.

In another Russian study women living in four Siberian cities, which had increasing amounts of calcium and magnesium in their water, were followed for health outcomes. In the two cities with the lowest levels of water minerals there were more cardiovascular problems, higher blood pressure, headaches, dizziness, and osteoporosis compared to the two cities with the highest levels of water minerals. . . .

A study with over 4,000 women in France found that consumption of calcium in their drinking water was associated with an increase in bone density.[9]

A more recent report, called "Nutrients in Drinking Water," was published in 2005 by the World Health Organization (WHO). It was written by a panel of water specialists who had met in 2003 to examine the impact of making sea water drinkable through a process called desalinization. In many parts of the world, water is not potable (drinkable), so using seawater seems to be a viable option. However, since the high salt content in seawater eventually causes dehydration and death, after being cleaned the water must be treated to remove the excess salts. What were the health hazards or benefits, the panel wondered, of purifying seawater through sand; through harmful chemicals (such as chlorine); through beneficial chemicals (such as chlorine dioxide); and with ozone? The panel also addressed correcting the water's pH.

The panel remarked that historically, research has focused more on the toxic contaminants and total dissolved solids in drinking water than the beneficial or protective effects of its minerals. However, the benefits of minerals became highlighted due to the main concern, which was the effects of desalinization. While desalinization is a good method for removing large amounts of undesirable salt from seawater, it might also remove too many nutrient minerals. Therefore, among other questions the panel asked: should minerals be added after the desalinization process? If so, which ones? What amounts were appropriate for infants, young children and adults? And did differences in diet impact differently on health?

The panel's conclusions were virtually identical to those of their Safe Drinking Water Committee predecessors of 30 years ago. "Drinking water should contain minimum levels of certain essential minerals," including calcium, copper, iron, magnesium, manganese, selenium and zinc.

"Demineralised water that has not been remineralized, or low-mineral content water . . . is not considered ideal drinking water."[10] The health effects were numerous, and quite similar to those found by the previous committee three decades previously.

Significantly, the panel was very careful to explore the possibility of bias. Since much of their data was based on older studies, the members considered the possibility that some of the studies "may not meet current methodological criteria." However, they continued,

> *These findings and conclusions should not be dismissed*. Some of these studies were unique, and the intervention studies, although undirected, would hardly be scientifically, financially, or ethically feasible to the same extent today. The methods, however, are not so questionable as to necessarily invalidate their results. *The older animal and clinical studies on health risks from drinking demineralised or low-mineral water yielded consistent results both with each other, and recent research has tended to be supportive*. [emphasis added][11]

Significantly, some of the research that formed the panel's conclusion was *on distilled water*. I'll get to that in a moment. First, the panel's recommendations:

> International and national authorities responsible for drinking water quality should consider guidelines for desalination water treatment, specifying the minimum content of the relevant elements such as calcium and magnesium. . . . Authorities should ensure that the guidelines also apply to uses of certain home treatment devices and bottled waters.[12]

Now here is the study specifically on distilled water and its effects on health, commissioned by the WHO in the late 1970s. A Professor Sidorenko and a Dr. Rakhmanin led a team of researchers from the A.N. Sysin Institute of General and Public Hygiene, and the USSR Academy of Medical Sciences. Their conclusion? "Not only does completely demineralised water (distillate) have unsatisfactory organoleptic properties [an unpleasant taste and smell], *but it also has a definite adverse influence on the animal and human organism*." [emphasis added][13]

Donaldson gives an excellent summary of the above study, which was written in Russian and has not yet been translated into English.

> [Dr.] Rakhmanin carried out a one-year experiment with rats using low mineral water. Negative effects were found. These rats had an increase of extracellular body water, increased sodium concentration in the blood, increased urine output, and increased losses of sodium and chloride ions in the urine. There were also hormonal changes including reduced secretions of tri-iodothyronine [a form of thyroid hormone used by the tissues] and aldosterone [secreted by the adrenal cortex, it regulates kidney function and balances the electrolytes in the body], and increased secretion of cortisol [a stress hormone secreted by the adrenals], and morphological [structure and function] changes in the kidneys. There was evidence of reduce[d] skeletal ossification of rat fetuses of the dams given *distilled water* during the one-year study as well. Many of these same findings were repeated in human volunteer studies—increased urine production (almost 20%), increased body water volume, increased sodium concentration in the blood, decreased potassium concentration in the blood, and increased elimination of sodium, potassium, chloride, magnesium, and calcium ions from the body. [emphasis added][14]

In other words, an inadequate dietary intake of minerals caused a further imbalance of the minerals that were already in the body. Once the imbalance began, the body tended to retain more sodium than necessary, while excreting other vital minerals including potassium, magnesium and calcium. Loss of these vital minerals led to increased stress (due to augmented levels of stress hormones), to abnormally soft bones in developing rat fetuses, and to excessive bloating (due to the tendency of water to seep between the cells where it doesn't belong, instead of inside the cells where it does belong).

Of course, in order to accurately evaluate scientific research, one must ask questions about the subjects whom one is studying. In the "Drinking Water and Health" report, the variable of diet was not included. Were the subjects receiving enough minerals from the foods they were eating? If their diets were adequate, would they have the same health problems from drinking low- or no-mineral water?

Some people in the health field believe that the majority of our minerals should come from food. The aforementioned Braggs, persuasive advocates of distillation, correctly pointed out that distillation produces the purest water in this polluted age. They wrote about enjoying glorious health due to drinking distilled water every day, along with quarts of fresh juice (abundant in minerals) and a vegan diet of mostly raw fruits and vegetables. In fact, Paul Bragg was in glorious health until the day he died, well into his 90s—not from illness, but from a surfing accident.

To ascribe the health of the Braggs to distilled water, however, is misleading. Their dietary regimen was rich in minerals. Fresh fruit and vegetable juices, taken each day, offset any disadvantages from drinking distilled water. Most people do not live in a sunny temperate climate like the California-dwelling Braggs, where fresh produce can be obtained regularly. If someone feels better drinking distilled water, could it be that the previous water source was heavily contaminated, and that distilled is better only by comparison?

Research shows that the comparatively smaller amounts of ionic minerals present in water may be more helpful than one might think. To repeat one significant concept from "Drinking Water and Health": minute amounts of minerals from water are so much more bio-available than larger amounts of minerals from food, that the *quality* (source) of the minerals is more important than the *quantity*.

The WHO panel also factored in the effects of diet.

> The choice of complementary food introduced after six months may vary widely and it influences the evaluation of the nutrient mineral content in drinking water considerably. . . . Use of foods that are naturally rich in trace elements like zinc and iron (e.g. meat) or minerals like calcium (e.g. dairy products) is recommended, but may not be practised because these foods are not available, affordable or acceptable for the family. This may lead to reliance on predominantly plant-based or vegetarian diets of poor nutritional quality. In these situations, and depending on its composition, drinking water may contribute a considerable part of the dietary mineral intake.[15]

Donaldson writes that animals who had zinc or magnesium added to their drinking water

> had much higher levels of zinc and magnesium in their blood than a comparison group that was fed much higher levels of these minerals in their food but provided with low-mineral water to drink.[16] . . . [Furthermore] the bioavailability of minerals from water has been studied in people as well [as animals]. . . . Water is a good carrier of minerals. . . . Minerals in water are as available to be utilized by the body as minerals in food, *sometimes even more available*. [emphasis added][17]

In other words, many nutritional deficiencies can be addressed by drinking water containing dissolved minerals—electrolytes! Electrolytes, you will recall, carry vital electrical charge that allows cells to function. And these minerals are so potent, only small amounts are needed.

The WHO panel concurred. Moreover, its report stated that not only did low-mineral water produce "direct [undesirable] effects on the intestinal mucous membrane, metabolism and mineral homeostasis or other body functions," but that it also caused "little or no intake of calcium and magnesium, . . . low intake of other essential elements and microelements, . . . [and] loss of calcium, magnesium *and other essential elements in prepared food*." [emphasis added][18] In other words, the lack of minerals not only negatively impacts cellular function, but a diet already low in minerals makes it difficult for the person to absorb what minerals are already present!

Interestingly, the WHO report also affirmed the danger of "possible increased dietary intake of toxic metals."[19] The additional heavy metal intake has been definitively corroborated by many other sources. In the absence of beneficial minerals that it truly needs, the body will grab an element *relative* with chemical *similarities* that do not support the system—even if it's a heavy metal, and even if it's toxic.

The underlying theme of the WHO report is the understanding that minerals dissolved in water are highly available.

> Even the relatively low intake of the element with drinking water may play a relevant protective role. This is because the elements are usually present in water as free ions and therefore, are more readily absorbed from water compared to food where they are mostly bound to other substances.[20]

Even small amounts of ionic minerals allow the body to thoroughly absorb and utilize whatever else you are eating and drinking. People who are sick suffer from an electrolyte imbalance, which impairs digestion. Impaired digestion prevents the body from optimally extracting minerals from food—which in turn impairs the digestion even more. So the cycle continues. "Iodine, selenium and magnesium," reports *Acres USA*, a holistic farming magazine, "are the three minerals most likely to be deficient."[21]

Again, citing Donaldson:

> Studies showed that low mineral water caused an extra loss of sodium, chloride, potassium, magnesium, and calcium ions from the body. *Low mineral water isn't neutral, but it pulls out minerals from the body.* So, instead of adding an extra 40 mg of magnesium and an extra 100 mg of calcium from the water, *a person drinking distilled or RO [reverse-osmosis] water will have to make up that much and more, due to the extra loss of minerals. Over time this could have an impact. Not everyone*

*will be affected, but people drinking larger amounts of water or getting fewer minerals from their foods will be impacted first.*

*My conclusion here is that distilled water can be used if you make up for it with a high mineral intake, but it is important to know that it is working against you, not for you. . . . Distilled water, and other low mineral water, is not a neutral water; it actually takes away from you, whereas water with optimal concentrations of minerals in it actually supply your body with good building material.* [emphasis added][22]

The message could not be clearer. If you drink low-mineral water, or no-mineral distilled water—without compensating for the loss of those minerals by drinking fresh vegetable juices or taking ionic mineral supplementation—you can damage your health! Clinicians commonly report severe mineral depletion in clients who drink distilled water on a regular basis. Sometimes, deficiencies start appearing in as little as three weeks.

There is one more aspect of distilled water to consider: the equipment used to make and store it. Virtually all distilled water sold in supermarkets is bottled in soft plastic. Distilled water is so volatile, that the resins of the plastic leach (outgas) right into the water. (See Sidebar, "When Water Comes in Bottles.") You will ultimately save money, and your health will be better, if you buy your own distiller. Home distilling units come with containers of relatively stable, hard plastic. However, occasionally a distiller can be found that's made of glass,

### Should We Buy Bottled Water?

Most of the plastics we use, which are so convenient for water storage, are dangerous. The bottles degrade over time, leaching estrogen-like substances into the water that can cause severe DNA damage and birth defects.
Three types of plastic have a reputation (so far) of being safe, making them good for storage of foods and beverages: polypropylene (designated with the recycling code "#5 PP"), high-density polyethylene (designated "#1 or #2 HDPE"), and low-density polyethylene (designated "#4 LDPE"). Recycling code #7 may mean that the product contains BPA, which is toxic. The designations of all plastics are found inside triangular symbols on the bottom of the containers.

Bottled water presents other problems besides the issue of safety. Many environmental and health groups point out the waste involved in producing bottled water. It takes precious resources, energy and petroleum to manufacture the bottles. Even assuming that the bottles are recycled, it seems excessive to have countless brands of water—some shipped from halfway across the world—taking up supermarket space.

There is also the issue of marketing fraud. Large mega-corporations that are losing money from reduced sales in soda are trying to regain income through the sales of "designer" water. Some of the advertising hype claims that the water comes from "pristine springs," "clear mountain streams," "untouched melting glaciers," or a similar lovely-sounding place. A few of the bottled waters on the market do taste wonderful and feel vibrant. This is corroborated by the (truthful) labeling that indicates a high mineral content with a correspondingly alkaline pH. But too often, the claims of water bottlers are bogus. Their designer water is simply tap water that has been filtered—and not very well, either. Tests on numerous brands have shown high levels of contaminants, including bacteria, arsenic, chloroform and phthalate. Bottled water should be thoroughly tested. But the contamination and taste would not be issues if the water were ozonated. Ozone is the safest and most effective agent for water purification available.

The matter of unsafe plastics aside, it's disturbing that some environmental groups call consumers' desire for bottled water a "fad." It's true, from an environmental standpoint, that manufacturing plastic for bottled water is wasteful. But if tap water tasted that great—or was as healthy and innocuous as some people claim—there would be less consumer demand for bottled water.

The tap water has been undrinkable in virtually every home I've ever lived in or visited. One rental house had sulfur in the water, which came directly from an underground well. In another dwelling, the water came from an underground spring, but it was heavily chlorinated by the time it reached the surface. In one large city, the municipal tap water was subjected to so many harmful chemicals that the water literally foamed out of the kitchen faucet. And in one country home at the foot of a mountain, the pH was much too acidic for me, about 5.5.

Tap water must be made drinkable again. Clean water isn't a privilege, it's a right. In the meantime, we can refuse to purchase bottled water, most of which is contaminated, stored in unsafe plastic, and fraudulently marketed by mega-corporations. You can buy your own wide-mouth, safe plastic reusable container, and fill it up each time with mineralized, filtered water before you leave your home.

or that can deposit the freshly made water into a glass container.

Distillers that boil and condense the water once—which is most units on the market—cannot eliminate hydrocarbons or volatile organic compounds (VOCs) such as benzene. However, a very few, better units are equipped with a second filter. This additional filter further sanitizes the already distilled steam, and will remove almost all of the hydrocarbons. This is a great advantage for those whose water is filled with such contaminants. Fairly good quality water distillers can be bought for just over a hundred dollars. Units that clean the steam (and thus remove most of the hydrocarbons) cost more.

Distilled water does have its place, as long as you compensate for its disadvantages and use it wisely. You can clean your water and re-mineralize it, too. Below, I offer some suggestions on how to do this.

### *Restoring the Water*

Now that you've purified your water, without using chlorine or other toxic chemicals, you have a fluid that's low in minerals. What should you use to restore them?

A number of excellent products on the market contain a variety of ionic minerals (sometimes called *colloidal* minerals), which are then mixed into larger amounts of water. The best quality liquid minerals contain not only minerals found in large quantities (such as magnesium), but also trace minerals. Trace minerals, although required in minute amounts by the body, are essential for cellular function and overall health.

Some alkaline liquid mineral preparations also contain *fulvic acid*. Fulvic, created by microbes that live at the roots of plants, dissolves and converts the soil minerals into a useable form that plants, animals and people can use. Fulvic makes all nutrients more absorbable and bioavailable by helping them dissolve into their simplest ionic form, and thus more easily cross cell membranes. The cell membranes themselves become more permeable, so more wastes can leave as well. Fulvic also increases the absorption of oxygen, decreases systemic acidity, assists in the metabolism of carbohydrates and of proteins, improves enzyme function, and stimulates the immune response. Significantly, fulvic also binds and removes toxic heavy metals and other contaminants from the body.

Another good product that contains high levels of trace elements is *Willard Water* (also known as Catalyst Altered Water, or CAW, available at www.willardswater.com). Willard Water has a different molecular structure than ordinary water, which gives it a lower surface tension, making it "wetter" than normal water. It's also alkaline, with a pH of about 8.7. Willard Water is not corrosive or carcinogenic, and is completely safe for humans, animals and plants. It contains water, sodium metasilicate, calcium chloride, magnesium sulfate, sulfated castor oil, and soluble lignite.

It can take a long time to heal from the effects of electrolyte starvation. *If you do decide to distill your water, make sure to liberally supplement your diet with minerals.* Mineral supplements are more bio-available as liquid electrolyte formulas than as capsules. Since the most "alive" water moves swiftly over rocks and receives at least some sun, you can energize distilled water by pouring in liquid minerals, placing the container in the sun for at least an hour, and then shaking the container. The shaking helps restore the electrical charge, as it can make the mineral particles smaller. Once the water is saturated with organic minerals, light and movement, it is no longer distilled, but revitalized with the qualities of living water. It's also wise to use this technique, by the way, with other types of water. Sunlight, movement and electrical charge can't hurt!

Incidentally, water from different locations is different not only in function, but also in crystalline structure. See Sidebar, "The Structure of Water."

### *How Much and How Often?*

Many people don't drink enough water. Kleiner, who is considered an expert on water by others in her field, writes:

> A portion of the population may be chronically mildly dehydrated. . . . Dehydration of as little as 2% loss of body weight results in impaired physiological and performance responses. . . .
>
> Early signs of dehydration include headache, fatigue, loss of appetite, flushed skin, heat intolerance, light-headedness, dry mouth and eyes, burning sensation in the stomach, and dark urine with a strong odor. Signs of more advanced, severe dehydration include difficulty swallowing, clumsiness, shriveled skin, sunken eyes and dim vision, painful urination, numb skin, muscle spasms, and delirium. . . . New research indicates that fluid consumption in general and water consumption in particular can have an effect on the risk of urinary stone disease; cancers of the breast, colon, and urinary tract; childhood and adolescent obesity; mitral valve prolapse; salivary gland function; and overall health in the elderly.[23]

That one can develop so many apparently unrelated symptoms is not surprising when you consider the role that water plays in the body. The health conditions that

can result from dehydration are so encompassing that the late medical doctor Fereydoon Batmanghelidj (bat′-man-ge′-lij) devoted a brilliant and well-documented book entirely to the topic, *Your Body's Many Cries for Water*. The idea for the book began years ago, during a politically-motivated incarceration in the Middle East, when Dr. Batmanghelidj was the only one present to provide medical services to his fellow prisoners. With no medical supplies whatsoever, he was forced to rely on the only available substance—plain water—to treat a man suffering from ulcers. Not knowing what else to do, Batmanghelidj administered the fluid in systematically timed, very small amounts. To his great surprise, the man's pain completely vanished. This inspired Batmanghelidj to investigate the healing properties of ordinary tap water.

Dr. Batmanghelidj's advocacy of tap water has caused great confusion with many American readers, who know that virtually all municipal (tap) water is loaded with chlorine and other dangerous chemicals. When I telephoned the doctor's office around 2001 to inquire about this (before he passed away in 2004), his wife explained to me that Dr. "Batman," as most people affectionately called him, defined "tap" water as clean and drinkable, free of contaminants and apparently full of ionic minerals—the kind of water he grew up with in his native country. Mrs. "Batman" also volunteered that the doctor felt that the US government failed in its purported mission to cherish and protect our water, which is every person's right to enjoy.

Knowing, then, that to Dr. "Batman," municipal tap water is clean and pure, we can understand his repeatedly stating that plain tap water is quite sufficient to induce the many remarkable recoveries from illness that he observed over the years. Nearly all of the symptoms we call disease—symptoms that are diverse, numerous, and localized differently according to who is experiencing them—are the body's normal responses, Dr. Batmanghelidj asserted, to *dehydration*. When the body lacks sufficient water for its many vital functions, a kind of "drought management" takes place and the neurotransmitter, histamine, allocates water to those systems that need it the most. Since digestion is a primary life-sustaining function and can only occur with adequate saliva, the mouth is one of the last places in the body to be deprived of water. (The digestion of starch and sugar begins in the mouth, and we additionally need saliva to swallow the food.) Thus, the dry mouth ordinarily associated with the need to drink is actually the *last* indication that someone is dehydrated.

Histamine is the substance that directly or indirectly produces the bodily responses and sensations we call illness: sinusitis, asthma, allergies, and even chronic pain. These sensations indicate that certain areas of the body have been deprived of needed water because the small amount of water that *is* present, is needed for other, more vital functions. Batmanghelidj gave convincing proof that dehydration is also heavily implicated in colitis, diabetes, hiatal hernia, high blood pressure, and other illnesses. The list seems endless.

### The Structure of Water

Does structure relate to function, as many natural scientists assert? Japanese photographer Masaru Emoto decided to find out if this were true of water. "The Earth is called the 'Water Planet' and about 70% of its surface is covered in water," just as human beings consist of about 70% water, Emoto wrote. "If water is contaminated, all creatures would be denied . . . existence. Considering these environmental situations, I continued to seek a way to clearly evaluate water. . . . What is the difference in the information that each kind of water holds?" [24]

Knowing that snow crystals always form lovely symmetrical, and quite elaborate, shapes of embellished hexagons, he took water from different locations, froze individual drops, and then—at a specific melting point similar to the temperature under which snowflakes form—photographed the crystals through a microscope. The result is a fascinating book, *The Message from Water*, which shows the reader photographic proof that the molecular structure of water is determined by its source and treatment.

Mr. Emoto obtained water samples from all over the world. These included Japanese mountain streams, a New Zealand glacier, the London municipal water supply, tap water from the northwestern United States, and a French fountain in Lourdes known for its healing properties. Water from scenic, unspoiled locations had perfectly symmetrical, beautiful crystalline designs. Their colors were generally white or gold, and they were always bright. Moreover, their six-sided shapes were embellished with lovely symmetrical branches. Polluted industrial water, water from pipes and storage dams, and stagnant water exhibited chaotically formed, ugly misshapen structures. Their colors were dark brown and gray, and they were always dull.

Living water is geometrically balanced, with balancing effects on the body. Contaminated water is geometrically *un*balanced, with *un*balancing effects on the body. Interestingly, of all the uncontaminated waters tested, distilled water has the most simplistic pattern, consisting of an unembellished, straight line hexagon without any lovely symmetrical designs. It's as though the hydrogen and oxygen are missing something (which they are): minerals!

Initially, Dr. Batmanghelidj was either ostracized or ignored by most of his colleagues. However, he received notes from people all over the world thanking him for helping them restore their health through this simple but vital practice. Dr. Batmanghelidj only sold books. He never advocated or sold drugs, supplements or bottled water. Mrs. "Batman" continues his work today.

Not all health specialists agree that drinking water is essential. Some believe that we should "eat" our water in the form of 70% high-water-content foods—in other words, a diet consisting largely of fruits and vegetables. However, not everyone can consume enough high water-content produce to meet their daily water consumption requirements. Even if processed, concentrated and dried foods are avoided, in those who are ill or partly dehydrated, the burden on the body to extract the badly needed water from food may prove too stressful.

This brings us to how much water one should drink. The answer isn't as simple as some would like to believe. A European woman once asked me why Americans drink "so much" water. This is probably due to the overemphasis, in the typical United States diet, on concentrated foods such as bakery products and chips, and the scarcity of fresh vegetables and fruit. The omission of high water content foods creates the need to drink more (although someone who's sick shouldn't be eating chips and similar foods anyway). Most health practitioners agree that drinking water each day is important, separate from the increased needs that the use of rife technology creates. But how much is enough?

Opinions vary. One recommendation is six to eight glasses of water per day, and even more if there's strenuous activity, high temperatures, or a diet heavy in salt. Another common guideline is one fluid ounce for every two pounds of body weight. This would make two quarts sufficient for a person weighing 128 pounds, 2½ quarts for someone weighing 160 pounds, and so on. However, the use of this formula is questionable for people weighing more than 200 pounds, since even the healthiest person can die of a mineral salt (electrolyte) imbalance from consuming too much water too quickly. So use common sense and moderation. To compensate for the danger of overly diluting the body's electrolytes, follow Batmanghelidj's advice to replenish daily the mineral salts lost through urination. (The type of salt you use is critical, though; see Sidebar, "Real Salt—More Than Just Sodium Chloride.")

The problem with the above guidelines is that they don't always pertain to everyone. Just as there is no one-size-fits-all diet (discussed later in the **Food** section), people have different needs for water. For instance, someone with a lethargic lymphatic system does not handle fluid elimination as easily as someone with a more efficient system. Sandra Cabot, an Australian medical doctor and naturopath, classifies individuals who tend to retain water as *lymphatics*:

> Fluid retention occurs because the return of blood through the veins in the arms and legs back to the heart is sluggish due to weak valves within the veins and poor muscle tone in the limbs. Fluid also tends to accumulate in the subcutaneous tissues between the skin and the muscle layer because of an inefficient lymphatic system.[25]

With a poorly working lymphatic system, not only is water trapped between the tissue cells, but the electrolytes (and also water-soluble vitamins, including B-vitamins) become diluted and are present in the wrong ratios to each other. This, in turn, causes even more edema (water retention). (See the section on **Exercise** later in this chapter for more information on the lymphatic system.) Since the lymph system plays such an important role in immune response, its inefficiency makes one more prone to swollen glands, excessive mucus production, allergies, sinusitis, hay fever, bronchitis and asthma. Thus, it's really important to pay careful attention to water intake, especially during rife sessions. While sufficient water is required to flush out microbial toxins, too much fluid will cause bloating. Each person is different, and will have to determine his or her own comfort and health level. Bloating from water intake may indicate electrolyte imbalance, insufficient nutrition, kidney dysfunction—or, simply an intake of too much water. Adding a liquid electrolyte supplement, plain lemon juice, or good quality salt to your water can help reverse the bloating.

Whether you require a large or small amount of water daily, or an amount in between, consider following Dr. Batmanghelidj's guidelines on *how* you drink. The bloodstream can only handle being diluted by about four ounces of water every half hour, as the kidneys immediately filter the excess to maintain the fluid balance of the blood. Therefore, sip water in small amounts—eight ounces per hour as the upper limit, and four ounces per half hour as the ideal.

### *Summary*

Get your water tested every one to two years, both before and after filtration (or purification or electrolysis). This will tell you the source water's quality, how well your unit is working, and if the final water meets your needs. Testing your source water will also help you decide what type of water processing unit to get—or

if you are better off buying spring water. Does your water contain pathogens, chlorine or other chemicals, heavy metals, undissolved minerals or the wrong kind of minerals?

If you don't have access to a pristine mountain spring or well, acceptable substitutes are:

- Distilled water (ideally, which you distill yourself), to which you add an appropriate electrolyte formula. You can also shake it, and expose it to sunshine.
- Water that is first filtered for pathogens, chemicals and other contaminants, and is then appropriately mineralized.
- However you decide to re-mineralize your system, the water you drink may make the difference between poor health and vitality. *If you are rifing, it is very important to replenish your mineral supply.* The body uses up a lot of minerals when you are detoxifying and eliminating microbes. This is addressed further in Chapter 4.

## Real Salt—More Than Just Sodium Chloride

In March 1930, lawyer, peace activist, philosopher, and future Noble Prizewinner Mahatma Gandhi led a 239-mile (385-kilometer) march across India to protest the British tax on salt. The non-violent resistance leader and other marchers were brutally beaten and arrested by the police. Eventually, the protesters helped to eliminate the tax on salt as well as secure India's independence from the British.

Why did the protestors risk physical injury and worse? It wasn't just for national independence. They recognized the value of salt. Sea water is almost identical in composition to that of human blood. So, from the beginning of history, humans have instinctively gravitated toward a food that contains all of the minerals in the body.

Salt is critical for life. It assists in brain development. It aids digestion—the chloride in sodium chloride is used by the body to make hydrochloric acid, needed for protein utilization. Salt helps overcome adrenal exhaustion. And it allows nutrients to enter the cells and waste materials to leave. No civilization can develop without salt.

In many countries, most of what passes for salt is adulterated junk. Real salt grows in a crystal shape, sometimes as large as one millimeter. These crystalline particles harvested from the sea contain almost one hundred trace minerals. Among them are calcium, boron, magnesium, gallium, germanium, gold, lithium, manganese, molybdenum, potassium, selenium, silicon, silver, sulfur, vanadium, and zinc. When trace minerals exist in sufficient quantities, the relatively large amounts of chloride and sodium in a salt crystal are beneficial. In *Seasalt's Hidden Powers*, Jacques de Langre explains how commercially processed salt is stripped of its valuable trace minerals:

> Because table salt comes from the same batch as vacuum-refined industrial salt, it is treated with caustic soda or lime to remove all traces of magnesium salts. These vital magnesium salts are taken out because they keep the salt from flowing out of the dispenser spout. . . . [This practice brings] more profits [to] the chemical market. Yet these magnesium salts . . . fill important biological and therapeutic roles. Further, to prevent any moisture from being reabsorbed, salt refiners now add alumino-silicate of sodium or yellow prussiate of soda as dessicants, plus different bleaches to the final salt formula. But since table salt, chemically treated in this way, will no longer combine with human body fluids, it invariably causes severe problems of edema (water retention) and several other health disturbances.[26]

Webster's dictionary defines *prussiate* as "a salt of prussic acid; cyanide."[27] It's shocking that a recognized poison can be so cavalierly added to one of our most common foods.

Even if salt is not contaminated by toxic foreign chemicals, the processing alone (refining) renders it useless because it's stripped of valuable minerals. This includes industrial salt, presumably edible grocery store salt, and even most "sea salt" sold in health food stores. Any salt that's dried by intense heat and then re-crystallized, has no vitality or nutritive value. Ironically, people who work for commercial salt companies are very proud of the "purity" of their denatured salt. They don't understand that denatured salt is not a real food. It is like calling a cat that has been killed, preserved in formaldehyde, and stuffed by a taxidermist a "real" cat.

When a food is isolated from its matrix, the body instinctively knows that something is missing. This explains why someone can binge on an entire bag of salted potato chips, pretzels or corn chips at once. It's not only the carbohydrates that are addictive; so is the salt. The person is seeking the minerals that were removed during processing. But continuing to eat ordinary commercial salt produces an even greater mineral depletion, which in turn creates more cravings.

Our need for salt is a normal, instinctive biological need. What is abnormal is the commercial white crystals that the food industry promotes as real. Denatured salt has been linked to a number of diseases, including high blood pressure and heart attacks. Several salts are now on the market in their unaltered crystalline form. My personal favorite is Celtic sea salt from France, since it closely matches the body's mineral content.

## POPULAR BEVERAGES AND "HEALTH" DRINKS

People who are ill often ask if coffee, tea, soda, milk that's homogenized and pasteurized, hot cocoa, chocolate milk or fruit juice are comparable to properly mineralized water. They are not! In most cases, these drinks require more nutrients for their assimilation than they give to the body. They are also dehydrating, as they force the body to use its precious water stores to eliminate the wastes they contain and produce. Don't forget that accumulated wastes provide a great breeding ground for microbes, as well as encourage tissue degeneration. If you are used to drinking lots of coffee, soda or fruit juice, might this be what has sapped your vitality in the first place?

### *Not for the Sick, and Unwise for the Healthy*

#### Coffee

Coffee has become a serious addiction for billions of people worldwide. Statistics vary on how many in the US drink coffee, but any way you look at it, the number is substantial. According to the much-cited National Coffee Association, updated figures for July 2006 show that more than three out of four adult Americans say they drink coffee either daily or regularly. Figures for 2000 show that the average coffee consumption was 3.1 cups per day—and that 24% of regular coffee drinkers used cups sized 8 ounces or larger. Canadian coffee consumption in 2004 was 93.7 liters, or a little over 99 quarts, per person yearly.

Coffee is referred to as an "addiction" for good reason. True, this drink does have a unique aroma that many find pleasing (although even some committed coffee aficionados admit that it smells better than it tastes). However, its chief appeal lies in its caffeine content. Caffeine is a legal drug that causes great harm, and sometimes irreparable damage, to the hormonal and nervous systems.

I'll begin by describing the action of caffeine on the adrenals. Perhaps if people understood the effects, they'd be less tempted to drink coffee. As we age, the adrenals take over functions previously performed by the sex glands, including the production of various hormones such as DHEA, estrogen, pregnenolone, progesterone and testosterone. And, of course, the adrenals are connected to the fight-or-flight response. Normally, the adrenals secrete hormones in an emergency. (To give an oversimplified summary, adrenaline is released during acute stress and cortisol is released during chronic stress.) When the danger has passed—that is, when there is no longer a reason to fight or flee—the adrenals stop secreting the hormones. But caffeine interferes with adrenal function by causing the *continual* production of cortisol. This elevates the heart rate, raises blood pressure, and abnormally increases respiration. Excess cortisol also causes fat to gravitate to the belly and the neighboring internal organs (I'll discuss this last point in more detail later in the chapter).

Caffeine also influences blood sugar levels by having a "domino effect" not only on the adrenals, but also on other organs and glands involved in sugar regulation. The adrenals hormonally signal the liver to release its supply of stored sugar into the bloodstream. In response to this sudden rapid rise in glucose, the pancreas releases excessive amounts of insulin hormone to quickly drive the sugar out of the bloodstream and into the tissue cells. This causes blood glucose levels to drop from excessively high to excessively low. Over time, both the pancreas and adrenals become exhausted from these abnormally rapid switches. Tired glands are a huge contributing factor in permanent diabetes and hypoglycemia.

Although the unremitting stimulation from caffeine can exhaust the adrenals to the point where they become dysfunctional, one might not feel exhausted immediately. On the contrary, many people feel that drinking coffee gives them a much-needed lift. But this stimulation is artificial, due to the temporary rise in blood sugar. Once the blood sugar drops to dangerously low levels, the underlying fatigue is felt. Attempting to obtain more energy, the person drinks another cup—and then the cycle starts all over again. It's no accident that pastries, bread, rolls, cakes and pies are the favorite accompaniment of coffee. But the high amounts of sugar and starch in these foods stress the pancreas even more. This is why many coffee drinkers gain weight. The metabolism-stimulating effect of coffee increases appetite and cravings for sugars and carbohydrates. Any glucose not utilized by the cells at a given time is stored as fat.

Kidney function is also affected. Normally, when urine passes through the kidneys to be filtered, the kidneys recycle minerals that are still needed by the body. But coffee forces the kidneys to excrete vital calcium, iron, magnesium, potassium and trace minerals—eventually creating deficiencies in those minerals. Caffeine breaks down into uric acid in the body, which can eventually cause kidney stones and gout.

Caffeine prevents the pineal gland in the brain from producing melatonin, which is why many coffee drinkers have a hard time sleeping. Caffeine inhibits the enzymes used in the formation of memory, eventually causing loss of memory. And caffeine can cause abnormal DNA by inhibiting the mechanism that repairs it.

Some effects of caffeine are gender-specific. In women, it can aggravate or cause premenstrual syndrome (PMS), menopausal symptoms, and even breast cancer, as well as induce higher rates of miscarriage and infertility. During pregnancy, caffeine crosses the placental barrier. Since fetuses do not have the ability to detoxify caffeine, babies born of

women who drink as few as 2 cups a day tend to have lower birth weight and even more deformities such as cleft palate. If the mother nurses, she transmits caffeine and all the other compounds in coffee to the baby through her breast milk. In men, the irritating caffeine can aggravate prostate problems and urinary tract infections. Both men and women who drink coffee are more prone to osteoporosis.

Besides caffeine, coffee contains more than 208 acids. These make the body acidic as well, cause indigestion, and contribute to arthritis, rheumatism, and skin disorders.

The addictive quality of coffee is experienced by many users who try to quit. They experience headaches, elevated blood pressure, and often stomach problems. Nearly all of them become irritable.

Some people can drink coffee before bedtime, yet sleep like a baby. You may be among those for whom caffeine sensitivity is not an issue. Or, you may be in an advanced state of adrenal exhaustion. This means less resistance to stress and greater susceptibility to illness. If you are hoping that so-called decaffeinated coffee is the answer, be

## Coffee as a Pesticide

Federal scientists have discovered that the same chemical that provides the pick-me-up in a cup of java is a deadly turn-off to snails and slugs. Caffeine renders their food unpalatable. Applied to their soil, the stimulant causes snails and slugs to writhe uncontrollably. At the proper dose, these mollusks succumb to the neurotoxin fairly quickly. . . .

Earl Campbell, now with the US Fish and Wildlife Service, and his [Agricultural Research Service] colleagues stumbled on this anti-slug measure while looking for a pesticide to eradicate noisy frogs. . . . The Hawaiian Islands evolved in the absence of amphibians and reptiles. However, some 40 different species of these nonnatives have taken up permanent residency on at least a few of the state's lush islands. . . . The species *Eleutherodactylus coqui* has become especially vexing. Its mating calls, which can go on all night—and year-round in low-lying areas—reach 90 decibels, the volume of barking dogs and vacuum cleaners. . . .

After working their way through soaps, surfactants, and off-the-shelf pesticides—all without antifrog effects—Campbell's group started to evaluate products in the grocery store, including acetaminophen (Tylenol®) and cigarette nicotine. "We had very poor results with almost all of these," Campbell told Science News Online. Finally, his team tried a caffeine-rich anti-sleep preparation. "It was the only thing that worked at a legal [label's recommended] level," Campbell says. . . .

It was during early evaluation of caffeine's potential that the researchers applied a dilute concentration of the compound to the soil in greenhouses where many frogs were holed up. At once, Campbell noticed that slugs began surfacing and dying.

That interested [Robert G.] Hollingsworth, an entomologist studying pests of ornamental plants, such as potted orchids and anthuriums. Small snails have proven a bane to orchid growers [because they] . . . chew away at roots. . . . Hollingsworth launched tests of various concentrations of dilute caffeine against those orchid snails . . . and that local garden denizen, the two-striped slug. . . . The tests showed what plants around the globe had discovered long ago: Caffeine makes a good all-natural pesticide. . . .

According to the 2001 opus *The World of Caffeine* by Bennett A. Weinberg and Bonnie K. Bealer, . . . exploitation of this natural poison comes at a price because "the very drug that helps [plants] destroy their enemies ultimately kills them as well." With coffee, for instance, as branches, leaves, and berries fall to the ground, caffeine leaches out of this litter, eventually enriching soil caffeine concentrations to a point where they become toxic to the parent plant. This is one reason that the productivity of coffee plantations tends to wane with time. . . .

A 4-ounce solution of 2% caffeine applied to the soil of 4-inch greenhouse pots devastated garden slugs, Hollingsworth found. Within 3.5 hours, 75% of the slugs emerged from hiding in the soil. Within 2 days, 92% of the slugs were dead. When the researchers dropped the concentration of caffeine by half, it took another day to achieve the same body count. When they halved the caffeine level yet again, the kill rate dropped to 55% and the time to death extended to 5 days.

Even concentrations of only 0.1% caffeine may prove useful. Sprayed onto such slug-prized cuisine as cabbage leaves, those concentrations deterred feeding by 62% . . . when compared to uncaffeinated salad greens. This suggests that a regular spray of leftover coffee . . . might control nighttime crop losses in the garden.

Eighteen years ago, Harvard Medical School scientist James Nathanson reported finding that caterpillars would actively avoid eating garden leaves sprayed with caffeine. . . . "The mucus [on the outside of slugs and snails], which is the basis for their locomotion, is very high in water content," he [Hollingsworth] observes, and it permits water-soluble caffeine easy entry. Once inside the critters, the new Hawaiian studies show, the neurotoxic caffeine destabilizes the mollusks' heart rate.

—Janet Raloff, "Slugging It Out with Caffeine," Science News Online, week of June 29, 2002

aware that it still contains 3% caffeine—which is enough to stress your system and cause damage.

One holistic source recommends not to make coffee part of your diet if you have the following health conditions:

- Acid indigestion
- Anxiety, irritability and nervousness
- *Candida* or yeast problems
- Colitis, diverticulitis, diarrhea, and other irritable bowel symptoms
- Chronic fatigue syndrome
- Auto-immune disorders
- Diabetes or hypoglycemia
- Dizziness, Meniere's syndrome or tinnitus (ringing in the ears)
- Gout (elevated uric acid levels)
- Heart disease or heart palpitations
- High blood pressure
- High cholesterol
- Insomnia and interrupted or poor quality sleep
- Liver disease and gallbladder problems such as gallstones
- Kidney or bladder problems, including kidney stones
- Migraines or other vascular headaches
- Osteoporosis
- Skin irritations, rashes and dryness
- Ulcers, heartburn, and stomach problems such as hiatal hernias
- Urinary tract irritation [28]

Coffee also dehydrates the body. As discussed in the previous section on **Water**, many of the symptoms we call "illness" are the body's response to chronic dehydration. Since coffee drinkers tend to swig less water, there is an enormous probability of becoming dehydrated.

How do you know if you're consuming more coffee than your system can handle? The authors of *Mastering Leptin* write that, among other factors,

> if caffeine raises blood pressure more than four points [and] contributes to weight gain around the middle, . . . then it can be assumed that caffeine intake is excessive. This is because excess sympathetic nerve stimulation causes a numbing effect on fat cells in the abdominal area leading to excess weight gain around the middle. In such situations caffeine is making adrenaline resistance worse.[29]

Some good-tasting coffee substitutes, containing roasted chicory and other roots, are available at health food stores and even some supermarkets.

**Soda**

This sugary, carbonated beverage (also known as a soft drink or soda pop) comes in a huge variety of sizes, colors, flavors and fizz. Soda comprises more than a quarter of all drinks consumed in the United States. The rate of consumption averages around 216 quarts (or 204 liters) per year per person.[30] "Kids are heavy consumers of soft drinks, according to the US Department of Agriculture, and they are guzzling soda pop at unprecedented rates," writes reporter Sally Squires. "Fifty-six percent of 8-year-olds down soft drinks daily, and a third of teenage boys drink at least 3 cans of soda pop per day."[31]

There isn't one positive thing to say about this synthetic concoction. Since so many people drink it, I would like to describe its effects on the body.

Soda pop, points out Squires, "provides more added sugar in a typical 2-year-old toddler's diet than cookies, candies and ice cream combined."[32] That's a lot of sugar! Two years old is also a young age at which to start the soda pop habit. Squires adds:

> Not only are soft drinks widely available everywhere, from fast food restaurants to video stores, they're now sold in 60% of all public and private middle schools and high schools nationwide, according to the National Soft Drink Association. A few schools are even giving away soft drinks to students who buy school lunches.[33]

Soft drinks contain carbonated water, phosphoric acid, sugar (or a synthetic sugar sweetener substitute), flavorings, preservatives, and often caffeine. Here is a brief summary of the damage caused by these ingredients:

- *Sugar.* The sweetener may be either sucrose (table sugar), or high-fructose corn syrup. Many people have allergies or sensitivities to corn. In addition, high amounts of fructose stress the liver and cause weight gain. I'll discuss this in more detail in the **Food** section.

  Sugar provides a fertile breeding ground for bacteria, which cover the teeth with a film called plaque. Plaque disintegrates the tooth enamel, causing holes or cavities that can eat into the nerve-rich soft tissue (dentin). Plaque also lodges between the gum and the

teeth, creating pockets of infected material that cause the gum to pull away from the teeth.

There is abundant scientific data proving that sugar causes obesity. Children who drink soda are almost twice as likely to become obese than those who do not. *Obese* does not merely indicate overweight. An obese person is more than 20% over his or her maximum healthy body weight. Obesity is known to contribute to diabetes and heart attacks. Squires reports that Harvard University researchers "found that schoolchildren who drank soft drinks consumed almost 200 more calories per day than their counterparts who didn't down soft drinks. That finding helps support the notion that we don't compensate well for calories in liquid form."[34]

As I'll discuss in detail later in the **Food** section, sugar depletes the body of vitamins and minerals because the system requires abnormally high levels of nutrients to process the sugar.

Finally, sugar makes the system much more acidic. This forces the kidneys to work harder to eliminate the wastes that cause disease.

- *Phosphoric acid.* The phosphorous in phosphoric acid binds to calcium, thus preventing the body from absorbing it. This calcium deficit manifests in all bone tissue in the body, including in the mouth (the teeth). If you immerse a tooth in cola, you can see it dissolve. The phosphoric acid "begins to dissolve tooth enamel in only 20 minutes," notes the Ohio Dental Association.[35] When bones are depleted of calcium, they become more porous and brittle. Calcium loss from bone affects five times more girls than it does boys, leading to more fractures and breaks. As adults, these girls are also much more likely to develop osteoporosis.

  Phosphoric acid also causes the aluminum in the cans to leach into the liquid. So when you drink soda, along with everything that's supposed to be in the can, you're guzzling a toxic heavy metal.

  Finally, phosphoric acid unbalances the body's pH. As the name implies, it makes the body much more acidic. As with sugar, this forces the kidneys to work harder.

- *Caffeine.* Not all cola drinks contain caffeine, but many do. A 12-ounce can of typical cola can contain from 35 to 38 mg of caffeine. This is roughly 28% of the amount of caffeine contained in an 8-ounce cup of coffee. "Few know that *diet colas*—usually chosen by those who are trying to dodge calories and/or sugar—*often pack a lot more caffeine*," points out Squires. [original emphasis][36] Just one example she gives is 42 mg of caffeine for a 12-ounce can of Diet Coke®—which is seven times more than that found in the same amount of Coca-Cola Classic®.

  The effects of caffeine were covered in the last section devoted to coffee. The caffeine found in many sodas is probably derived from kola nuts, in which it's naturally present. Squires asks: "Why is this drug, which is known to create physical dependence, added? . . . Logic dictates that when you are dependent on a drug, you are really upsetting the normal balances of neurochemistry in the brain. The fact that kids have withdrawal signs and symptoms when the caffeine is stopped is a good indication that something has been profoundly disturbed in the brain."[37]

- *Artificial Sweeteners.* The most popular synthetic sweeteners are aspartame and saccharin. The damage to the liver, to the entire nervous system and brain, and to muscles is extensive and sometimes irreparable. Not all cola drinks contain artificial sweeteners, but many do. The politics, and some negative health effects, of aspartame were discussed in Chapter 1. More details of aspartame's health hazards will be discussed later in this chapter in the section on **Food**.

One more thing. All of the sugar (or synthetic sweetening chemicals), flavorings, and phosphoric acid require massive amounts of water to flush them out of the system. Soda users rarely drink enough water, and become dehydrated. If you're rifing, you need lots of water to dilute the microbial poisons. Is it wise to drink soda at all?

### *In Moderate Amounts*

#### Black and Green Tea

The popularity of tea as a beverage dates back thousands of years to the Orient. Technically, tea refers to one specific plant called *Camellia sinensis*. The green leaves are processed by being steamed to prevent them from degrading. Black tea is simply green tea whose leaves have been left to oxidize (break down) and ferment.

Only the very healthy should drink black tea. The fermentation process used on the leaves destroys the delicate bioflavonoids and other beneficial components. One naturopath comments that black tea can cause more damage to the kidneys than even coffee. Like coffee and soda, black tea dehydrates the system.

Green tea is touted, in both holistic circles and the mainstream press, for its high bioflavonoid and antioxidant content, both of which help prevent cancer and other diseases. But drinking green tea on a long-term basis may present problems. First, tea leaves contain caffeine, along with many volatile oils. Caffeine causes mineral depletion

because in most people it acts as a diuretic, forcing too much liquid at once through the kidneys. The second disadvantage may be the natural tendency of the *Camellia sinensis* plant to accumulate the toxic metal fluoride. Once inside the body, fluoride combines with any aluminum present to form aluminum fluoride. If the plant is growing in an area with heavy air and soil pollution, fluoride will be present in larger amounts than usual.

Fluoride is so well known for impairing the thyroid gland's ability to secrete thyroid hormone, that it was once routinely administered in cases of hyperthyroidism (abnormal hyperactivity of the thyroid) to impair the gland! A cup of green tea contains an average of 7.8 mg of fluoride—much higher than the amounts once given as medication to treat hyperthyroidism. (See Sidebar, "The Dangers of Fluoride.")

Nevertheless, green tea may still have a place in the diet. Undoubtedly, fluoride levels in the tea were lower before modern fluoride pollution. And green tea may not have been as dangerous long ago, because in the Orient it was sipped rather than gulped. Also, the traditional Oriental diet consists of fish and seaweed, whose large iodine content helps protect the thyroid. So, if you drink green tea, make sure it's organic, don't overdo the amount, and increase your iodine intake.

#### High-Sugar Vegetable and Fruit Juices

Fruits have many beneficial properties. Cranberries can reverse urinary tract infections. Black cherries are anti-inflammatory, and thus are used to help eliminate gout. Blueberries and other berries are high in antioxidants.

However, fruit's high fructose content (even though naturally occurring) stimulates the reproduction of sugar-hungry microbes—thus increasing toxic waste levels in the body. So for people with infections, the benefits of fruit may be eclipsed by the fructose.

If fruit is a questionable food for a sick person's diet, imagine the effect of *juice*. Drinking fruit instead of eating it means that you ingest far more sugar, since it takes a huge amount of fruit to make up one glass of juice. We normally couldn't eat so many pieces of fruit at once! It's too much concentrated sugar, without fiber in the stomach to act as a buffer and prevent the sugar from rapidly entering the bloodstream.

The high sugar content of fruit explains why people with serious illnesses (such as cancer or yeast infections) sometimes don't get well on juice, but become worse.

The bright orange carrot is an image of health to many people. But even though a carrot is a vegetable, it contains as much sugar as fruit. Pathogens thrive as much on carrot sugar as they do on the fructose in an apple or melon. Greens, on the other hand (see below), contain many more nutrients minus the sweetness. By using mostly greens for your juice (you can add a tiny bit of carrot), you'll still obtain valuable vitamins, minerals and enzymes without the damaging effect of concentrated sugars.

Canned and bottled juices are not nutritionally valuable. If the juice is fresh squeezed, make sure you drink it immediately. Vital enzymes in juice degrade fairly quickly—usually within an hour after the juice is extracted—so the benefits of juicing are lost if you wait. Pasteurization (heating) renders juice useless, as the high heating kills the enzymes and many important nutrients.

Many practitioners agree that since fruit and vegetable juices do not naturally exist outside of the whole plant, one should consume them only if there is a special need, such as during a serious illness. People who are ill generally suffer from sub-standard digestion. The advantage to liquid nourishment is its ready absorption by the body.

### *Restorative*

#### Vegetable Juices and Green Smoothies

Many holistic practitioners suggest fresh vegetable juice daily during a cleansing or restorative program. Fresh vegetable juice contains valuable enzymes that catalyze all chemical processes in the body, aid digestion and repair tissue. People who have a difficult time assimilating solid food can help repair their gut, and give themselves valuable nutrients, by drinking juice.

Although carrot is considered a staple for vegetable juices, its sugar content is too high for many people who are ill. Cucumber, celery, and parsley can provide a good base for a vegetable drink.

Juiced greens are very potent. If they cause the liver to detoxify too rapidly and dump its stored toxins into the bloodstream, you may feel nauseated and even vomit. (For this reason, beet—which is a potent liver and gall bladder cleanser—should also be used in very small amounts.) So don't drink too much concentrated juice at once; you can always dilute it in water. Also, not everyone responds well to fasting on juice alone. You can always use juice to supplement a diet of solid food.

If you don't own a juicer, or have access to a place that sells fresh squeezed vegetable juice, a wonderful substitute is liquid chlorophyll, sold in bottles at the health food store. Some of the chlorophyll products are flavored with mint to make them more palatable. Powdered young grasses mixed in water are also an acceptable substitute. Alone, they taste like, well, grass—admittedly not delicious; but they are good for you. Some of the more common dried powdered greens are wheatgrass, alfalfa, barley grass and kamut. Many people begin with ½ teaspoon of powdered grass in 8 ounces of water, gradually

### The Dangers of Fluoride

Fluoride is a poison, more toxic than lead and only slightly less toxic than arsenic. Fluoride is a byproduct of the aluminum and fertilizer industries. In 1939, a biochemist working for those industries devised a clever plan to unload the toxic waste onto the public at no cost to industry. A fabricated study was presented to the public, which claimed that fluoridated water would prevent dental cavities. Thus, instead of rightfully paying to get rid of the poisonous waste, the companies were paid for it by calling water fluoridation "healthful."

Fluoridation is the practice of adding silicofluorides (hexafluorosilicic acid, and sometimes sodium hexafluorosilicate) to public water supplies at 1 ppm (part per million). Even at 1 ppm, the effects of fluoride are devastating. Solid evidence of fluoride's harm comes from all over the world, including but not limited to the United States, China, Japan, Venezuela, the former Soviet Union, and South Africa. All of the studies—except for research whose results were deliberately withheld or misinterpreted—have shown that fluoride in drinking water causes gastrointestinal disturbances, convulsions, aching bones, bloody vomit, skin rashes, central nervous system injury, genetic and birth defects, lowered intelligence, and increases in deaths from many different cancers (including liver and bone cancer). Moreover, in most cases fluoride *mottles* and *destroys* teeth rather than preserves them.

The legal classifications of fluoride speak for themselves:

- In the United Kingdom, silicofluorides are a class 2 poison under the Poisons Act.
- According to the United States Environmental Protection Agency, fluoride is a class 4 poison.
- Fluoride in any form has never been approved by the United States Food and Drug Administration.
- In Nevada, US, according to law sodium fluoride is a pesticide.
- In California, US, the law regulates fluorides, classifying them as "hazardous waste."
- The European Union has banned fluoridation because of the health risks.

The following is only a brief list of who opposes fluoridation of the water supply.

- The Netherlands banned fluoridation in 1976.
- Finland banned fluoridation altogether when a study in the 1980s revealed that osteoporosis sufferers had extremely high levels of fluoride in their bones.
- Ninety-eight percent of Western Europe is now fluoride-free, without any rise in tooth decay.
- Fourteen Nobel Prize winners in chemistry and medicine oppose the fluoridation of our drinking water.
- In the United States, only 34% of the drinking water is non-fluoridated.

By law, all toothpaste containing fluoride must warn the consumer to "seek medical help or contact a poison control center immediately" if more toothpaste than is "normally" used for brushing is accidentally swallowed. The director of research and development for oral and personal care at Arm & Hammer products was once quoted in a *Washington Post* article as saying, "When I receive the fluoride here, it has a skull-and-[cross] bones on it [the graphic symbol indicating "poison"]." [38]

The general public is finally waking up to what insiders in the toothpaste industry have known for a long time: fluoride is a poison (at one time, a poison used to kill rats). Tooth decay is not due to a deficiency of rat poison, but to nutritional deficiencies. Meanwhile, this poison continues to be put into foods, beverages, medicines and dental products. For more information, read *Fluoride: The Deadly Deception* by Christopher Bryson, and *Fluoride: The Aging Factor* by John Yiamouyiannis.

increasing the quantity. If the taste of powdered grass doesn't thrill you, many preparations on the market contain a wide range of ingredients that mask the grassy taste.

The growing conditions of grass may affect their taste and even one's ability to tolerate them. Many people (including myself) find commercially grown wheatgrass sickeningly sweet. This may be because, grown indoors, it's constantly exposed to light, even at nighttime—which forces the grass to grow too rapidly. As a result, its sugars become too concentrated and it has too strong an effect on the body. Commercially grown kamut, which is much less sweet, is grown slowly outside under natural conditions, which allows it to experience dark and light. Its effect on the body corresponds to its germination time, slower and gentler. If you grow your own grasses for juicing, let them germinate under natural conditions.

There is one family of green plants that some health practitioners are advising to use with caution: algae and most seaweeds. These include spirulina, blue-green algae, chlorella and dulse. According to a literature search performed by nutritionist Charles K. Rosenberg, the Vitamin B12 found in these products is not real B12, but an *analogue*. A B12 analogue is similar enough to the real thing to latch onto the body's receptor sites for B12. However, since it's not the actual vitamin, it ultimately causes Vitamin B12 starvation because the body cannot access the real vitamin as long as the receptor sites are being usurped by the phony. Interestingly, an article in the *Journal of Nutrition* found that although roasted nori (used in sheets to make sushi rolls) contains B12 analogues, raw nori does not. Apparently, something about the drying process unfavorably transforms the B12.

It can be difficult to distinguish true B12 from its analogues. Even when true B12 is present in a food, it may be rendered ineffective if comparable amounts of its analogue are present. Although only 10 micrograms (not milligrams, which is 10 times that amount) of B12 is required each day—and it can take five years or more to develop deficiency symptoms—when a B12 deficiency does develop, it can cause severe problems. Some symptoms of Vitamin B12 deficiency are anemia; energy depletion; neurological damage including confusion, hallucinations, memory loss and personality changes; tingling and numbness in the limbs; sore tongue; and vision problems. B12 deficiency also interferes with the metabolism of cobalamin, a part of the Vitamin B12 complex.

Normally, Vitamin B12 is made by the friendly flora in the colon. But B12 must be supplemented by animal products in the diet. In order of concentration, B12 is present in liver, muscle flesh, eggs and dairy products. Seaweeds contain many beneficial nutrients. So, as long as you're eating enough animal products—and at a different time—the loss of B12 will not be an issue.

Chlorella, a microscopic plant, is another good green food. Although it may compete with real Vitamin B12 for the body's receptor sites, it's still valuable for its ability to attract heavy metals (such as arsenic, mercury, cadmium and lead), which the body then eliminates. If you rely on chlorella for heavy metal elimination, again, make sure to eat animal products. Chlorella is also extremely high in chlorophyll. And it contains all the amino acids (over 50% protein), enzymes, vitamins, minerals, fatty acids, mucopolysaccharides, nucleic acids (RNA and DNA), and other beneficial nutrients. Since its cell wall is tough (to protect the nutrients) and is therefore indigestible to humans, buy "broken cell wall" chlorella. It still retains its nutritional and chelating abilities, but the cellulose is mechanically fractured to make the nutrients assimilable in the human digestive tract.

Buying chlorella in bulk is economical. However, don't do what I did when I first received my pound of bulk chlorella powder in the mail. I was so excited to get all that lovely green stuff at such a great price, I went overboard. I figured that if a little works well, more would work better. *Wrong*. I became violently ill and vomited—not because the chlorella was "bad," but because it was doing its detoxification job so well. Begin with ¼ teaspoon in a glass of water and see how you respond, before taking more in one sitting.

In lieu of vegetable juice, you can puree raw vegetables with water in a powerful blender to produce an enzyme-rich, fiber-rich drink. In *Green for Life,* Victoria Boutenko points out that fiber binds excess estrogen, escorts debris from the gut, provides food for the friendly intestinal flora, and even possesses anti-cancer properties. Peeled cucumber, celery and lettuces make an excellent base for any green smoothie. The addition of parsley, avocado and tomato creates a rich thick soup or sauce, while banana and apple provide a balanced shake that's neither too sweet nor too bitter. Green smoothies give the digestive tract a rest as they heal the entire body with optimum nutrition. For most people, green smoothies are a better choice than juice without fiber.

#### Herbal "Teas" and Similar Drinks

The recent popularity of leaves, roots, berries and bark that impart such wonderful flavors in boiling water has helped wean people off both coffee and tea. The number and variety of plants requires an entire book, so only a few highlights will be given here.

As mentioned earlier, only the *Camellia sinensis* plant can technically be called "tea." However, the phrase "herbal tea" has become part of everyday word usage. Even some chain restaurants now offer herbal "teas" along with the usual coffee and tea.

People often like these herbs for their effects as well as their flavor. Although some claim that "tea" herbs (such as peppermint, chamomile and hibiscus flowers) have no restorative effects and are merely appealing beverages, herbalists (and my personal experience) indicate otherwise. Even modest "tea portions" of various plants create effects. To cite just two examples, peppermint stimulates better digestion and encourages wakefulness, and chamomile calms the nerves and helps induce sleep. Later in this chapter, the section on **Herbs** discusses in detail what makes an herb medicinal.

Coaxing satisfying and subtle flavors from herbs is an art. For leaves and delicate plant parts, heat the water to

just under a boil and then let the leaves steep. But don't let the leaves sit in the water for too long; otherwise, they'll turn bitter. Dried berries, bark and thick rinds, which contain more and heavier layers of tough plant cellulose, require a more rigorous approach. Boiling for a period of time is required.

Ginger root has a well-deserved reputation for being the most widely used and available herb on the planet. A favorite with cooks, ginger is also well known for relieving colds, allergies, arthritis and asthma; and for helping to protect the digestive tract and liver from toxins and parasites. It also stimulates digestion and alleviates nausea, which is why it's popular during pregnancy. With a little cinnamon, and perhaps some raw honey and raw cream, ginger is such a satisfying drink that it can be used to break the addiction to coffee. See Sidebar, "Nenah's Warming Spice Drink for a Sweet Tooth," for a recipe I created that uses ginger.

The number of non-caffeinated beverages is limited only by what's available—and your imagination.

#### Vitamin C Powders

Properly mineralized water has a subtle sweet taste, and is actually very refreshing. But if the idea of drinking plain mineralized water sounds boring (electrolytes don't have a strong taste), and if you don't like the taste of green drinks, try powders containing Vitamin C and other minerals. Vitamin C assists the body in vital functions while adding taste to your water. It helps eliminate excess fluid and makes the water more absorbable. It also protects against infection by strengthening the cell membranes, making it difficult for viruses to penetrate the tissues.

A number of studies have shown that the minimum daily requirement of Vitamin C established by the US government is much too low (evidenced by how many people are ill). Almost all other mammals produce Vitamin C in their bodies, but humans cannot. Therefore, we are dependent on external sources for our supply.

Some people use plain ascorbic acid, but powdered Vitamin C *complex* (see the section on **Selected Nutritional Supplements** later in this chapter) will work better. One of the easiest, high Vitamin C-content drinks consists of freshly squeezed lemon juice in water. Lemon can help eliminate nausea, which you may experience if you're on a detox program.

One underappreciated source of Vitamin C—and also bioflavonoids, a vital part of the Vitamin C complex—is rose hips. Although rose hips are commonly sold as a tea, it is unwise to heat them because even moderately high temperatures destroy the delicate bioflavonoids. It's more nutritious (and economical) to purchase rosehip powder in bulk, and simply mix it in room-temperature (not boiling) water to make a delicious beverage. Sprinkled onto food, rosehip powder imparts a wonderful sweet and sour taste to stews and desserts. I prefer to use foods that contain the nutrients I need, as long as the nutrient levels are high enough. Rose hip powder is one of the best bargains around.

### Nenah's Warming Spice Drink for a Sweet Tooth

- 12 cinnamon *(Cassia)* sticks, about 2¾ inches long (not powder, or else the drink will be bitter)
- ½ heaping teaspoon whole allspice
- ½ heaping teaspoon whole cloves
- 1 heaping teaspoon peeled chopped ginger
- ½ teaspoon hulled cardamom
- ½ teaspoon whole fenugreek
- 1½ tablespoons loosely packed shredded Chinese tangerine peel (*Citrus reticulata*), optional
- ½ teaspoon powdered green stevia leaf, optional
- 7 to 8 quarts water

Boil water. Put all ingredients except stevia into the water and don't allow it to boil again. Simmer until the tightly curled cinnamon bark flattens somewhat (45 minutes to 1 hour). Strain immediately so the drink doesn't get bitter. Refrigerate a few days or keep overnight in a thermos. Drink is good cold or gently reheated. Add stevia just before serving.

The spices balance blood sugar, induce sweating, aid digestion, open the sinuses and respiratory tract, dispel excess moisture, and warm the body.

### *Summary*

Water is critical to our well-being. However, it must be properly mineralized. Plain water that is devoid of properly balanced electrolytes can actually create mineral imbalances and deteriorate your health. Some signs of this mineral depletion are bloating and fluid retention.

Instead of adding an electrolyte formula to your drinking water, you can use fresh lemon juice, liquid chlorophyll, or Vitamin C powder.

You can take some of your liquid as fresh squeezed vegetable juice and herbal teas.

### Fads, Trends, and Bald-Faced Lies

Fad is defined by Webster as "an exaggeratedly fussy attitude, especially about eating or not eating certain kinds of food." My definition of a "fad" is:

- You keep eating a certain way, even though you look and feel worse.
- You keep eating a certain way because it is advertised and talked about, even though you look and feel worse.
- You know all of the "scientific reasons" for eating this way, even though you look and feel worse.

—Mary Frost
*Going Back to the Basics of Human Health*, 1997

## FOOD

### *One Size Does Not Fit All*

Did you ever go shopping for a "one-size-fits-all" bathrobe? If you're 5 feet tall (my height), and if you have a friend who's over 6 feet tall (like my partner), and both of you try to fit into the bathrobe, you'll quickly learn that this claim does not coincide with reality. Yet the public is constantly told that this one-size-fits-all mentality applies to everything, from clothing to diet.

More than ever, professionals and laypeople alike are aware that good health depends on eating properly. The problem is, even so-called experts—in the holistic as well as mainstream medical arenas—disagree as to what constitutes the optimum diet. There are many types: macrobiotics, vegetarian, vegan, raw foods, Ayurvedic, high complex carbohydrate, low fat—the list is endless. You may have asked yourself why popular diets and dietary paradigms contradict each other so much. "How can they all be right?" you wonder. "Why does my friend lose weight when she eats certain foods, and I gain weight from eating the same things?" Or, "Why does a juice fast make my friend feel great, while I just feel tired?"

Many factors determine the best diet for an individual: genetics, race, ethnicity, culture, body type, season, age, health status, environment, lifestyle, belief system, and even spiritual convictions. I will discuss just a few factors here.

#### Ethnicity and Geographical Ancestry

In *Nourishing Wisdom: A Mind-Body Approach to Nutrition and Well-Being*, nutritional psychologist Marc David writes that the peoples of the Earth "live near mountains, oceans, rivers, deserts, tundra, tropics, forests, and flatlands." The diets of these peoples are as varied as the terrain that grows their food. David asks:

> Is it sensible for any one people to tell another about the "true" way to eat? Can a tribesman from West Africa whose staple food is cassava root tell an Eskimo he is wrong because his staple food is fish? Or can the Japanese tell the Mexicans of the absurdity of eating dairy, corn, hot peppers, and food fried in lard, staple products completely unknown to native Japan?[39]

Herein lies the problem. "Following a fad diet or a computer-generated diet will only have limited value," writes nutritionist Judith DeCava, in an article whimsically titled "Food Fights." "A 'one-size-fits-all' approach to diet and all other universal dietary recommendations overlook the tremendous amount of biochemical and physiological diversity among individuals."[40]

However, DeCava continues:

> While one's specific ancestral heritage may be of critical importance in ascertaining ideal foods to consume, identifying the diet that will best support one's health is much more complicated than ethnic and cultural background. There are simply too many factors that influence nutritional needs. . . . No wonder the diet "experts" are essentially unable to achieve consistent, predictable results with their followers.[41]

As it turns out, there are many factors to consider in planning an optimal diet. See below.

#### Biochemistry and Metabolism

In the last decade or so, some diet books have emerged that are based on some form of metabolic typing. One popular book suggests eating food according to one's blood type. Another bases food choices on endocrine type. Still other food plans are based on the inherent acidity or alkalinity of foods, which presumably impart their pH into the body once they're ingested.

But other aspects, points out DeCava, appear to be even more important: the individual's metabolic rate, acid-alkaline balance (it's more complicated than you might think), and sympathetic or parasympathetic nervous system dominance. When all the unique biochemical aspects of the body are considered, she concludes, people reveal at least five thousand variations in biochemistry.

For many decades, holistically-oriented laypersons and professionals have affirmed the need to eat alkalizing foods, based on the assumptions that most people's

systems are too acidic, and that alkalizing foods will correct the acidity. Charts of foods, arranged according to their presumed acidifying and alkalizing effects on the body, have appeared in books and on the Internet. The problem is, most of that information on how foods affect systemic pH are incorrect. Physician Harold Kristal and his co-author, James Haig, explain some variations in metabolism that cause people to be affected in opposite ways when eating the same foods. I have also included the concise "Major Tenets of Metabolic Typing" from their book as a sidebar, since it describes the effects of food on the body so well.

> Conventional nutritional wisdom holds that any particular food will have the *same* pH effect in anyone who eats it. Thus it is commonly said that protein foods (especially animal proteins) are generally acid forming, and that fruits and vegetables are generally alkaline forming. But, in the world of Metabolic Typing—where *blood* is being used as the primary pH marker—this would only be true of the two Autonomic types [signifying whether the sympathetic or parasympathetic nervous system is dominant in energy control]. For the two Oxidative types [signifying how rapidly food is converted into energy], the opposite would apply: most animal proteins would be alkaline forming, and most fruits and vegetables would be acid forming. Almost all other nutritionists who work with pHs use urine and/or saliva—not blood—as their primary marker. This is simply for ease of access. . . . [But] urine and saliva [are] much more changeable and, therefore, less reliable as metabolic markers than blood pH. . . .[42]

Holistic proponents can be as dogmatic about their dietary preferences as allopathic physicians can be about their treatment methods. For example, the late Robert Atkins promoted a high-protein, relatively high fat and low carbohydrate diet. Dean Ornish promotes a high-carbohydrate, low-fat and low-protein diet. During a television debate between the two doctors, the reason for their preferences was revealed. DeCava reports that after they presented clinical evidence and scientific studies,

> Dr. Atkins explained how *his* health improved when he began to follow the diet he now advises for everyone. Dr. Ornish then told how *his* health improved when he changed his diet to the one he now urges people to follow. The same is true for most all diet promoters—whether popular authors or clinicians in private practice—the diet that works for him/her is the one thought to be ideal for all.[43]

### Major Tenets of Metabolic Typing

- We are all biochemically unique, with different constitutional and genetically inherited nutrient requirements.
- People are predisposed to greater or lesser dominance in either the Oxidative system (the conversion of nutrients into energy) or the Autonomic system (the distribution of that energy via the autonomic [involuntary] nervous system).
- The Oxidative system consists of Fast and Slow Oxidizers (determined by the speed at which they convert nutrients into energy).
- The Autonomic system consists of Sympathetic and Parasympathetic types (determined by which of the two branches of the autonomic nervous system is more active).
- There are foods that are bad for everyone (sugar, white flour products, [completely or] partially hydrogenated oil, deep-fried foods, chemical additives, etc.).
- There are good foods that are bad for you, as well as good foods that are good for you, depending on your Metabolic Type.
- Any given nutrient or food can have virtually opposite biochemical effects in individuals of different Metabolic Types.
- Foods and nutrients that acidify the two Oxidative types (Fast and Slow Oxidizers) alkalize the two Autonomic types (Sympathetics and Parasympathetics); foods and nutrients that alkalize the Oxidative types, acidify the Autonomic types.
- An ideal venous blood pH of 7.46 reflects the biochemical balance and metabolic efficiency of a balanced metabolism.

—Harold J. Kristal and James M. Haig
*The Nutrition Solution: A Guide to Your Metabolic Type*, 2002

Diets that appear theoretically sound can be quite different once they're actually implemented. Take macrobiotics, a temperate approach to eating that encourages the ingestion of balanced amounts of locally grown food in season. Most people who hear the term—as well as some high-profile macrobiotics advocates—think of a one-size-fits-all diet (lots of rice, some veggies, some

seaweed and pickled condiments, and a bit of fish). But this diet has proven to be unbalanced and harmful for some people. In an ironic twist, those foods do not reflect true macrobiotics principles anyway. The "fresh, locally grown food" rule varies widely, depending on where one lives. The Inuit (Eskimos) who eat seal meat are practicing a true macrobiotic diet, as are residents of Puerto Rico who munch on bananas, coconuts and avocados ripe from the trees.

Macrobiotics consultant Steve Gagné rightly focuses on the energetic qualities of a given food, and on how these qualities affect humans and the other creatures who consume it.

> No doubt about it—a healthy diet can contribute to adjusting the human body into a healing mode. . . . But it is a specious oversimplification to assume that it is solely the food that is actually doing the healing. . . . At this extreme, the theory of healing an illness with certain foods is not unlike the "magic bullet" theory of modern medicine. If I had a quarter for every time a client has asked me what specific food "is good for" a particular symptom, I could buy Manhattan and move it to Maine for a vacation home.
>
> A dietary counselor might say: "Brown rice heals the intestines" and "You should eat brown rice every day to heal your constipation, diarrhea, or enteritis." Theoretically, according to Chinese medicine, rice resonates with or affects the large intestine. And besides, it's got bran [a good source of fiber]. Sounds good.
>
> But what if your intestines refuse to be nourished by brown rice because of your past eating habits? If your system is accustomed to large amounts of fat and animal food, and has gotten its carbohydrate mostly from [junk food], the resonating that brown rice does may . . . [create] lots of gas. . . . For that matter, what if you just cannot stomach rice? Well, so much for theories and concepts.[44]

No wonder the average reader has such a hard time with well-meaning diet books! Since most popular diets recommend eliminating junk food, chemicals and refined carbohydrates, it is inevitable that some people will be helped. But not everyone benefits from the latest dietary wisdom. It's not that the diet is intrinsically bad. Each person is an individual, with a unique biochemistry, and with different needs and preferences that cannot be addressed by a simplistic one-size-fits-all system.

I believe that these physiological differences form the basis of emotionally-laden opinions on what is good or not good to eat. For example, I've noticed that the majority of people who cannot digest red meat also cannot emotionally tolerate the idea of eating it, and thrive on grains and vegetables. Their counterparts, on the other hand, often seem unable to handle even moderate amounts of complex carbohydrates, and become mentally unfocused, tired and sick. They find red meat perfect for building their strength, and just as emotionally criticize the vegetarian and vegan counterparts for their narrow views. People whose dietary preferences and needs are different from your own are not wrong. They are just different.

> There is a vast difference between food-faddism and the subject of diets. Diets have become viewed as what a person is *limited to* in eating, whereas they should be viewed as what a person *must have* as nutritional elements.
>
> —L. Ron Hubbard, *Clear Body, Clear Mind,* 1990

**Current Needs and Health Condition**

What helps you during one period of your life may not work for you during another. "Unlike the horse that must have grain or the lion that must have meat, humans can and do switch metabolic needs, often in midstream as they are healing and reaching a new plateau of wellness," writes DeCava. "Healing bodies have very different requirements from healed bodies."[45] So, just as during your experiments with rifing, you use frequencies for *Candida* one day and *Staph* the next—and on some days you don't use any frequencies—you may find it necessary to experiment with your food.

What your ancestors ate can play a major role in what you are evolutionarily designed to eat. However, this guideline can, and should, be modified if your lifestyle is radically different from that of your forebears. For instance, 100 years ago the people who were farmers needed high-calorie diets high in meat, fat and starch to sustain them for heavy manual labor. Today, more people sit at desk jobs than work in the fields. Such a diet would not only be unsuitable, but would in fact be harmful. Our needs change according to circumstance and location.

**Buildup, Breakdown or Maintenance**

One interesting dietary paradigm describes the way in which a food affects the system. It either builds up the body, helps the system cleanse and detoxify, or maintains

the body. While these effects can vary because people differ in how they metabolize and assimilate, a food will still tend to exhibit one (and sometimes two) of these three functions.

Problems arise if a food's effect is not compatible with what your body needs at the moment. This frequently occurs when people eat certain foods to eliminate wastes from their system when they are ill, but continue the same diet when they are well. For instance, as David writes:

> Therapeutic diets often facilitate dramatic healing . . . [but] this does not mean they will continue to work on an everyday basis once the body is healed. Often a diet provides therapeutic benefits for a specific period of time and loses its effectiveness when the natural limits of its healing powers are reached. We have seen an example of this in cleansing diets that have positive benefits yet cause negative reactions once the body moves in a building phase.[46]

In her wonderfully written and researched book *Food and Healing*, Annemarie Colbin explores this topic in depth. She also discusses the biochemistry of foods, how and why different nutritional systems developed, and which diets work best according to the environment and unique stresses under which the person is living.

#### Balance of Nutrients

Another aspect of a food's suitability is its proportion of proteins, carbohydrates and fats—or its contribution (whether balancing or not) to the total protein, carbohydrate and fat content of the entire meal. This factor is sometimes overlooked by people who are otherwise careful to consume high quality and well-prepared foods. Also, the nutrient content of a food (vitamins, minerals, Essential Fatty Acids, etc.) contributes to one's overall feeling of wellness.

#### Time of Day

Some people function optimally eating a good hearty breakfast in the morning. It helps them wake up, focus, work and relate, and if they don't eat, they're grouchy. Others feel better eating lightly or not at all when they awaken; a morning meal makes them feel heavy, lethargic and unable to focus.

That said, the maxim "eat a good breakfast every morning" may still be true. The lack of hunger on awakening may indicate that the metabolic thermostat is not working properly. Many people make the mistake of shocking their body into waking up by drinking coffee. Coffee does diminish hunger, but it does this by disrupting the body's blood sugar regulation. It would be more productive to eat some animal protein in the morning to reset your metabolism.

Some people face problems if they end their evening meal later than 7:00 p.m. By then (partly because the sun has set, or will soon set), the body is preparing for sleep rather than digestion. Going to bed on a full stomach is almost certain to cause indigestion. This, in turn, leads to disturbed sleep and equally disturbing, chaotic dreams. Eating a late evening meal is also one of the chief causes of weight gain, especially if there is no exercise afterward to burn the calories eaten. And eating a large meal just before bedtime may curb your appetite for the next morning—which further interferes with the hunger cycle. This explains the importance of being regular with your meals.

On the other hand, going to bed hungry may keep you awake. See the **Sleep, Rest and Meditation** section at the end of this chapter for more information on natural substances you can take to induce sleep.

#### Atmosphere

The setting in which we eat is an often overlooked, but important, factor in how well we digest, assimilate, and enjoy our meals. In fact, setting is so important that an entire art of interior design, decoration and service is taught by the restaurant industry. Atmosphere is more than the taste, smell and texture of the food; elements of sight and sound in the environment are critical.

A spacious room with visually pleasing lines helps one focus on digestion; whereas a cluttered room is not restful to the eyes and may distract from digestion. Similarly, music that is soft, melodic and not too fast is soothing to the nervous system; whereas music that is loud, raucous and has a heavy bass beat is stressful to the nervous system.

High-end, fancy and gourmet restaurants emphasize low lighting, uncluttered décor that's easy on the eyes, muted or soft colors, gentle music played at a low volume, and table linens that suggest luxury. All these comforts make diners want to take their time when they eat. Lavish restaurants can afford such features, because the food is pricey. But in a fast food eatery, where food is cheap on many levels (as well as not very nutritious), the goal is to serve as many customers as possible. To induce people to eat quickly, the lighting is bright and harsh, the prominent décor colors orange and red, and the music has a strong beat and is played at a loud volume. Thus, the establishment compensates in quantity what it cannot deliver in quality. Which atmosphere is more conducive to your digestion?

#### Attitude

When I was a child, my mother always used to yell at me not to guzzle my food, but to chew it thoroughly. Now that I am an adult (and a researcher), I understand

why. Even though digestive enzymes are secreted by the stomach, pancreas and liver, as the old saying goes, digestion really does begin in the mouth. The salivary glands secrete an enzyme to digest starch.

The real work, though, is done by the teeth. The smaller the food is broken down initially, the less mechanical motion is required of the stomach later. If you eat when you are in a hurry, or are feeling anxious and angry, the secretion of digestive enzymes is impaired. As a result, nutrients are less well absorbed. In addition, chronic digestive ailments such as colitis, hiatal hernia, and Crohn's disease may arise. This is why folk wisdom from all over the world advises people to eat only when they are calm and relaxed. The calmness and intention with which you approach your food is so important, it sometimes can even offset the effects of bad food.

There is a saying in holistic circles, "Eat your drink and drink your food." In other words, make your solid food watery enough to drink so the nutrients are reduced to more basic components. And by "chewing" your drink, (as with thorough chewing) you keep the drink in your mouth long enough to help your body recognize which biochemical messages (enzymes) need to be activated.

> The fate of a nation has often depended on the good or bad digestion of a prime minister.
>
> —Voltaire, French novelist, critic, humorist (1694–1778)

In this discussion about attitude towards food, there is another quality as important as calmness: gratitude. I believe that plants and animals have consciousness. They might not be aware in ways that we can easily recognize. And their consciousness may not be as sophisticated or complex as ours. Therefore, it's easy to dismiss these other life forms as not being conscious at all. However, anyone who spends time observing animals in groups knows that other creatures are capable of learning, and that they develop social structures as well. Humans who live intimately with animals usually don't need much convincing to know that their dogs, cats, lambs, goats and birds have a potentially huge range of responses to us (as we do to them). The dog comes to lick us when we're depressed and the caged bird learns to trust us and climb on our finger. It's apparent that animals also feel fear, curiosity, joy and love.

The reactions of plants are more difficult to distinguish. But lie-detector expert Clive Backster's groundbreaking experiments that began in 1966 changed the way we view plants. The physiology of lie-detector tests (done with a polygraph) is described in the classic and amazing book, *The Secret Life of Plants*.

> The human body's electrical potential—or basic charge—can be measured as it fluctuates under the stimulus of thought and emotional. The standard police usage is to feed "carefully structured" questions to a suspect and watch for those which cause the needle to jump. Veteran examiners, such as Backster, claim they can identify deception from the patterns produced on the graph.[47]

Backster was teaching a class on lie detection when he watered a tropical *Dracaena* plant that was sitting in his office. In his now-famous landmark demonstration, he spontaneously hooked up the polygraph to the leaf to test the electrical conductivity of the plant. He had assumed that a moister plant would show more conductivity. But the readings did not change. However, when Backster then decided to burn the leaf to which the electrodes were attached, the needle on the machine went wild! Again, from *The Secret Life of Plants*:

> Backster's dragon tree, to his amazement, was giving him a reaction very similar to that of a human being experiencing an emotional stimulus of short duration. Could the plant be displaying emotion? . . .
>
> When Backster left the room and returned with some matches, he found another sudden surge had registered on the chart, evidently caused by his determination to carry out the threat. Reluctantly he set about burning the leaf. . . . Later, as he went through the motions of pretending he would burn the leaf, there was no reaction whatsoever. The plant appeared to be able to differentiate between real and pretended intent. . . .
>
> More than 25 different varieties of plants and fruits were tested, including lettuce, onions, oranges, and bananas. The observations [were] each similar to the others. . . . The phenomenon appeared to persist even if the plant leaf [or fruit] was detached from the plant. . . . Even if a leaf was shredded and redistributed between the electrode surfaces there was still a reaction on the chart. The plants reacted not only to threats from human beings, but to unformulated threats, such as the sudden appearance of a dog in the room or of a person who did not wish them well.[48]

The remarkable ways in which animals and plants communicate and express themselves is beyond the scope of this book (although I do discuss the physics of love, and healing beyond time and space, in Chapter 6). My point here is that genuine appreciation for our meals is not merely an empty gesture. Nor does that appreciation have to be displayed under the rubric of religion. True gratitude indicates a spiritual connection to what's around us. Gratitude not only gets our juices flowing (literally), but it transforms us—and thus our surroundings—in positive ways.

The knowledge that animals are sentient beings who feel and process is often the reason that people become vegetarians. But what about plants? Now that we know plants have feelings, too, what is there left to eat? Some people who are able to connect to the inherent consciousness of the animals and plants that give their lives to sustain us, feel deep sorrow. This may partly explain why people can become so argumentative about the "right" way to eat. Perhaps some of us harbor deep feelings of regret that we have to eat at all.

I feel my best when I eat both animals and plants. Giving heartfelt thanks to the plant and animal kingdoms for their sacrifice has helped me feel more at peace with my need to consume them.

#### In Brief

There are many approaches to diet. What we eat is a highly personal matter consisting of biochemical, physiological, psychological, environmental, and cultural factors. Also, people have different needs at different times. Within a wide range of menu choices, some foods are life-sustaining while others are devitalizing. An appropriate food is whatever supports your system and health situation.

A healthy diet includes:

- The intrinsic quality of the food.
- The way in which the food is prepared (discussed later in this **Food** section).
- How well the food matches the individual's lifestyle, health, ancestry, stress levels and immediate needs.
- The setting in which the food is eaten, which includes the attitude of the eater.

### *How We Raise Our Food*

Eating used to be simple. Our great-grandparents or grandparents would either grow food themselves in their garden, buy from or trade with a neighbor, or—if they lived in a city—buy from the truck that rumbled in a couple of times a week with newly-picked produce from nearby farmers. Even people living in the outskirts of a small city owned chickens, so they could eat fresh eggs almost any time they wanted them. Housewives grew herbs on their windowsills, and it was standard practice to bake their own bread and often, even grind their own flour.

Times are radically different now. More people live in the cities than in wide open spaces suitable for farming. With the focus on narrow, specialized skills required by technologically-advanced societies, hardly anyone grows their own food anymore. We are further away than ever from the living soil, the source of our sustenance. Foods are no longer vital and nourishing, but highly manipulated commodities that only faintly resembles their animal and plant origins. In fact, food growers are part of the food *industry*. Agriculture has become agri*business* and *mega*-culture, reflecting the change from the family farm to huge conglomerates.

Our great-grandparents, and even grandparents, would have been baffled by the definitions below, because until the last 50 or 75 years there would not even have been a reason to use the terms. The following definitions deal with the "how" of food growing. Directly after, I will discuss the "what"—what specific foods and food groups are commonly available, and how to make the healthiest choices for your unique needs.

#### Factory Farmed

Food simply used to be called "food." But with today's modern production methods, "factory farmed" is a specific way of describing how our food reaches us from farm or ranch to table. The growing and processing follow the mechanics of an assembly line. Factory farmed foods—staples in all conventional supermarkets—are grown and processed in the cheapest and most expedient manner possible. Standard supermarkets tend not to use the term "factory farmed," especially in reference to animals, because of how the animals are treated. I will discuss produce first.

The goal is to create fruits and vegetables that grow quickly, are uniform in appearance, pack neatly in boxes, and travel well for shipping—often across thousands of miles, and even overseas. To achieve this, only a few varieties of each plant are grown. They are generally hybrids—that is, they are unable to reproduce in the usual way through pollination, which produces seeds. One of many problems with this *monoculture* system is the lack of resistance to insects and disease.

The vegetables and fruits are grown on huge hundred-thousand acre farms, using the latest irrigation equipment, sowing and fertilizing techniques, and harvesting methods. In the United States, pesticide use "has remained relatively constant at about 1 billion pounds per year. . . .

## The 43 Most Heavily Sprayed Fruits and Vegetables

Rank = Lowest number indicates the *most* pesticide load.
Score = Highest number indicates the *least* pesticide load.

Score is based on, among other factors, the percentage of samples tested with detectable pesticides, the average number of pesticides found on a sample, average amount (in ppm) of all pesticides found; maximum number of pesticides found on a single sample, and the number of total pesticides found on the crop

| Rank | Fruit or Vegetable | Score |
|---|---|---|
| **1 (worst)** | Peaches | **100 (highest pesticide load)** |
| 2 | Apples | 89 |
| 3 | Sweet Bell Peppers | 86 |
| 4 | Celery | 85 |
| 5 | Nectarines | 84 |
| 6 | Strawberries | 82 |
| 7 | Cherries | 75 |
| 8 | Pears | 65 |
| 9 | Grapes, Imported | 65 |
| 10 | Spinach | 60 |
| 11 | Lettuce | 59 |
| 12 | Potatoes | 58 |
| 13 | Carrots | 57 |
| 14 | Green Beans | 53 |
| 15 | Hot Peppers | 53 |
| 16 | Cucumbers | 52 |
| 17 | Raspberries | 47 |
| 18 | Plums | 45 |
| 19 | Grapes, Domestic | 43 |
| 20 | Oranges | 42 |
| 21 | Grapefruit | 40 |
| 22 | Tangerine | 38 |
| 23 | Mushrooms | 37 |
| 24 | Cantaloupe | 34 |
| 25 | Honeydew Melon | 31 |
| 26 | Tomatoes | 30 |
| 27 | Sweet Potatoes | 30 |
| 28 | Watermelon | 28 |
| 29 | Winter Squash | 27 |
| 30 | Cauliflower | 27 |
| 31 | Blueberries | 24 |
| 32 | Papaya | 21 |
| 33 | Broccoli | 18 |
| 34 | Cabbage | 17 |
| 35 | Bananas | 16 |
| 36 | Kiwi | 14 |
| 37 | Sweet peas, frozen | 11 |
| 38 | Asparagus | 11 |
| 39 | Mango | 9 |
| 40 | Pineapples | 7 |
| 41 | Sweet Corn, frozen | 2 |
| 42 | Avocado | 1 |
| **43 (best)** | Onions | **1 (lowest pesticide load)** |

—adapted from Organic Consumers Association,
www.foodnews.org/walletguide.php

Agriculture now accounts for 70% to 80% of total pesticide use,"[49] according to the US Geological Survey. Use of chemical fertilizers is in the millions of tons, and climbing. These chemicals damage the soil, poison the water supply, injure the plants, and harm the health of the people who eat the plants. The soil becomes demineralized, the water collects contaminants, the roots of plants are burned from the phosphates in the fertilizers, and we consume weed killer along with our salad. Since we don't always see this destruction, it's easy for some people to ignore it. The tragedy is, there are wonderful ways to remineralize the soil so that these synthetic chemicals are not needed. Often, the simple addition of calcium-rich lime is sufficient. (A great source of information is the wonderful farming magazine, *Acres USA*; see References.) I'll say a bit more about soil management shortly.

Factory farmed animals are treated just as cavalierly as crops and our precious soil. But because their suffering seems more obvious—their living conditions clearly lead to serious illness and even death—the plight of factory farmed animals can be more difficult to ignore. All factory farmed animals are prone to infection, resulting from the lack of exercise and sunlight, forced confinement, abnormal crowding, and the concentrated amounts of urine and manure in their living quarters. This is the rationale animal growers use to routinely give factory farmed animals antibiotics. (However, this practice is backfiring. To cite only one example, the summer of 2007 brought alarming reports of infections of methicillin-resistant *Staphylococcus aureus*, or MRSA, in the meat of factory farmed pigs, chickens, and to a lesser extent, cattle. In the Netherlands alone, the MRSA strain was found in 20% of pork and 21% of chicken. No doubt this situation will worsen until it improves.)

An additional problem with antibiotic-fed animals arises when their manure is made into fertilizer. The drugs are excreted in the manure. The plants then absorb the drugs, which become concentrated in the leaves and especially the roots. This has huge health ramifications for people who eat potatoes, beets and carrots. Unfortunately, this problem can occur with organically grown as well as conventionally grown crops, since there are no laws regulating manure for organically grown plants. I will say more about organically grown crops shortly.

Other experiences common to all factory farmed animals are painful mutilation, and constant emotional and physical stress—not to mention being deprived of eating their normal diet. There are also environmental stresses:

### MSG is Sprayed on Our Crops

In January of 1998, the United States Environmental Protection Agency approved a spray called Auxigro®—which contains 29.2% pharmaceutical grade glutamic acid (MSG)—for use on all crops in the US. Free glutamic acid, touted as a "growth enhancer," is converted to gamma amino butyric acid (GABA) not only in the human body, but also in vegetables. In humans, GABA induces the pituitary gland to release growth hormone; in plants, it increases growth.

Crops initially registered included navy and pinto beans; celery; cucumbers; grapes; onions; bell, green and jalapeno peppers; iceberg, romaine and butter leaf lettuce; peanuts; potatoes; snap beans; strawberries; tomatoes; and watermelons. On July 7, 2004, Emerald BioAgriculture requested approval of use of AuxiGro® as a desiccant, disinfectant, fertilizer, fungicide and growth regulator, for increased yield and prevention of powdery mildew in various crops such as almonds, grapes, and melons. They also asked to add broccoli, Brussels sprouts, cabbage, cauliflower, kale, collards, turnips, rutabaga, mustard, watercress, kohlrabi, and other crops to the list of crops approved for AuxiGro® use. Today, the EPA has approved *all crops* for MSG spraying. Crops sprayed with AuxiGro® are allowed to be sold in the open market without any indication that they have been treated.

MSG is being sprayed directly on fruits, nuts, seeds, grains, and vegetables as they grow, even those crops used in baby food—despite the fact that in the 1970s, baby food processors were persuaded to omit the MSG from the many brands that were on supermarket shelves. MSG is being sprayed onto our crops, despite the fact that in 1995, the FDA proposed that free glutamic acid be labeled due to its potentially deadly effect on individuals with asthma. (The effects of MSG are explored in greater depth later in this chapter.)

The EPA website states: "Waivers have been requested for acute toxicity, genotoxicity, reproductive and developmental toxicity, subchronic toxicity, chronic toxicity, and acute toxicity to nontarget species. . . ."[50]

Aside from remaining on our food, the spray diffuses into the air and trickles into our groundwater.

Fortunately, ascorbic acid (Vitamin C) protects from glutamate damage. For every 30 pounds of body weight, take a minimum of 50 mg Vitamin C fifteen to thirty minutes before ingesting the MSG-laden food.

—adapted from www.msgtruth.org/cropspra.htm
and www.truthinlabeling.org/msgsprayed.html

the manure of these animals seeps into nearby lakes, underground springs and streams, which increases algae and bacteria levels.

Slaughtering techniques are similar for all factory farmed animals. According to United States slaughtering laws, pigs, cattle, chickens and other animals are supposed to be stunned (either via electroshock or a mechanical blow to the head) before being hung upside down by their back legs and bled to death. But often, the animals are not stunned sufficiently. They remain conscious and very aware, even as they are being knifed and cut to pieces. Their kicking and struggling then injures the workers who are trying to slaughter them. Slaughtering a pig can be especially difficult. If the pig cannot be killed with a knife within a certain time limit, the worker must still carry it to the next station on the assembly line—a scalding tank—where the fully conscious pig is boiled alive. All factory farmed animals have high levels of stress and fear, which skyrocket when they're slaughtered. The stress hormones are released into their muscles, and remain there.

Below, I will briefly describe the living conditions of just a few animals who supply concentrated protein for the dinner table. Please keep in mind that I am not using these examples to promote a vegetarian agenda. Rather, I am pointing out how factory farming causes undue suffering for the animals, and how this suffering eventually becomes part of our meals.

***Birds.*** Chickens and turkeys are kept in cages that are so cramped, the birds peck at each other in frustration. This is why their beaks are clipped (without anesthesia)—and why turkeys have their claws clipped as well. Often the cages are stacked one on top of the other, from floor to ceiling.

Urine and excrement are abundant. When there are no cages, the birds wade through this mess on the floor. The ammonia fumes from the waste are so strong, the chickens develop severe respiratory lesions and gastrointestinal tract irritation. According to one source, "The livestock sector produces an estimated 73% of all ammonia emissions nationwide." Ammonia is listed as a toxin by the EPA "alongside arsenic, cyanide, and benzene as hazardous substances. . . ."[51]

Arsenic is also present in chickens, because it's added to their feed to kill intestinal parasites. But the poison is not excreted; it goes right onto consumers' plates.

Sometimes the bones in the chickens' legs become abnormally soft and the muscles become very weak, making it impossible for the birds to walk. (However, this may be due to a weaknesses in the breed. A colleague who raises free range chickens for home use has noticed an abnormally rapid growth rate and accompanying excessive hunger in the chickens that cannot stand or walk properly.) However, diseased and dying birds are seldom discarded. When the birds are processed, the overtly bad portions are simply cut off and thrown away, while the apparently normal parts are sold. Damaged and diseased birds are largely the source of the "one type of chicken part" packages available in supermarkets.

It's worth noting that due to consumer demand for white meat, factory farmed chickens and turkeys have been bred, and sometimes genetically engineered, to have excessively plump breasts. (Genetic engineering is discussed shortly.) Carrying this extra weight is abnormal for the birds. Turkeys have been altered so much that they cannot even breed as they normally would, so the females must be artificially inseminated.

Birds that are not factory farmed, and that are not descended from factory farmed birds, are quite different structurally. They are not only sturdier, they function better too. See "Heirloom" later in this section.

***Foie gras from ducks or geese.*** Translated literally from French as *fatty liver*, foie gras is a pate (mash) traditionally made from the enlarged liver of geese, and more recently, ducks as well. It's considered a delicacy and fetches a high price. Ducks (which are easier to raise than geese) that are a few months old are confined to a dark shed, and force-fed excessive amounts of food several times a day via a feeding tube thrust down their throats directly into their gullets. Since the liver cannot handle that kind of overfeeding, it becomes pathologically enlarged, usually about 8 or 10

### Humane Slaughter

The animals we raise for food deserve to have not only peaceful and comfortable lives, but also peaceful and comfortable deaths. To accomplish this, Dr. Temple Grandin has been designing humane cattle butchering plants for decades. In her books and lectures, Grandin describes growing up autistic: perceiving the world in pictures (rather than in words), and being easily overwhelmed by stimuli that most people can ignore. In some aspects, Grandin's neurological wiring is similar to that of animals. Her way of processing information has given her profound insight into how cattle respond to what they see, hear and touch. Thanks to her genuine love of cattle, the animals can spend their final moments feeling calm instead of terrified. Grandin's facility designs and cattle handling techniques are used in slaughterhouses all over the world.

times its normal size. Such ducks become obese. They have difficulty standing, walking and breathing. And they suffer from lacerations of the throat, and from excess bacterial and fungal infections in their digestive tracts. Many of them die before they can be harvested.

***Eggs.*** Factory farmed eggs come from factory farmed chickens. The egg farmers trick the chickens into laying more eggs by keeping them under artificial lights for at least 17 hours a day. Whereas one free roaming chicken will lay about one egg every other day (and fewer during cold weather), one caged, factory farmed chicken will lay 300 a year.

***Pigs.*** Pigs raised for ham, pork and bacon lead wretched lives. Breeding sows are subject to continuous impregnation (via artificial insemination), and are confined in 2-foot-wide gestation crates that prevent them from turning around or lying down comfortably. The crates to which they are transferred to give birth have barely enough room to stand up and lie down. With no straw or other bedding, many develop sores on their legs. (As of this writing, there are laws in two states in the US forbidding the use of breeding crates, and more legislation is being discussed.)

When the piglets are young, notches are cut into their ears for identification. Their tails are also cut off—all done without anesthesia or pain relievers—to minimize tail biting, a neurotic behavior due to their agitation over being confined. Fifteen percent of all piglets die by the age of three weeks. The survivors are taken away from their mothers and crowded into pens with metal bars and concrete floors. Pigs are confined until they reach the weight of 250 pounds at six months of age.

Sixty percent of pigs have severe respiratory problems due to the dander and noxious fumes from the urine and feces that build up inside the sheds. Other diseases include swine arthritis (due to the pigs' unnaturally rapid growth rate and lack of exercise, as well as the excrement-covered floors); gastrointestinal ailments including salmonella; and parvovirus.

Pigs are inherently clean animals. When allowed to roam outdoors in humane conditions, they roll in the mud to keep cool. Given enough space, they are careful not to soil their eating and sleeping areas. But factory farms force them to live in their own excrement and vomit.

***Cattle.*** Of all factory farmed animals, adult cattle raised for beef have the easiest lives, due to their size. They *must* live outside on the range, more or less in their natural surroundings. During this time, the biggest infraction may be the branding they undergo, during which a piece of hot iron is seared into their flesh for identification purposes. Also for identification purposes, chunks are cut from the hide under their necks.

> The road to healing begins when we all feel deep concern for the suffering that surrounds and suffuses us all with the darkness of a dying planet. We have made the Earth so sick—and ourselves in the process—because we have lost touch with the sacred dimensions of reality, of nature, of wholeness, balance, harmony, health and spiritual well-being.
>
> We are so spiritually disconnected that we find reason to put our own genes into pigs so that we can use their hearts and other organs to replace our own diseased organs, which have in turn been harmed by our excessive consumption of animals raised in horrendous conditions and the ongoing pollution of the environment and our vital food chain.
>
> We are so cognitively disconnected from reality that we spray poisonous chemicals on the crops we feed to our children and rationalize such stupidity as the best and most efficient way to feed a hungry world and even to protect wildlife and biodiversity.
>
> We are so emotionally disconnected from other animals that for economic reasons we justify incarcerating livestock in the cruel, intensive confinement systems of factory farming, and accept the suffering of other animals in vivisection laboratories in the name of medical progress. To question this pathology of anthropocentrism is not to put animals or nature before people, but rather to demand a full ethical and economic accounting of those activities, values and policies that are harmful to the life community.
>
> —Michael W. Fox, DSc, PhD, BVetMed
> *Acres USA*, July 2007

The cattle are rounded up and transported in cramped trucks to slaughterhouses. Many are taken to feedlots first, to gain more weight. The cattle are usually fed genetically engineered grains, manure from chickens and other animals, slaughterhouse waste, and even garbage (including sawdust, cardboard and newspaper).

Dairy cattle are routinely fed rBGH (recombinant bovine growth hormone), which artificially creates a larger milk yield, but which also makes the cows ill, causing pain and discomfort due to increased swelling of the udder. This in turn leads to an increase in infection, which leads to an increase of pus and blood in the milk these cows provide. These contaminants, plus developmental abnormalities, are then passed on to those who eat their milk products. See Chapter 1 for more information on rBGH and its effects on both cows and humans, and for information on the media's attempt to conceal its dangers.

The social costs of factory farmed foods are high. Crops are usually picked by workers who live in substandard conditions and are not paid a living wage. Often the crops are irradiated (described later in this section). Meats are butchered in giant warehouses under inhumane conditions, both for the animals and for the workers who slaughter them. The workers often become injured due to the high rate of repetitive motion involved in processing animals at breakneck speed. In the United States, many workers hired as food processors are illegal immigrants who don't protest against filthy and dangerous conditions because they fear that they will simply be replaced (apparently, both animals and humans are considered expendable). Although the US government has been more diligent recently in investigating the hiring of "illegal" aliens, conditions have not improved very much.

***Milk Fed.*** This refers to calves raised for their veal. In a bastardization of the English language, the phrase means precisely the opposite of what common sense would suppose. Young calves are confined to pens where they cannot turn around or lie down. They are separated from their mothers at an early age and are not allowed to nurse. This nutrient-deficient diet is administered purposely to make them anemic, to give their flesh an abnormally tender texture after they are slaughtered. Organically raised or grass-fed calves are never given the label "milk fed."

#### Farm Raised

This is a legal term pertaining to fish. Many types of fish are farmed, including bass, carp, domestic catfish, tilapia, trout and shrimp. However, since one of the most popular is salmon, I will discuss this fish in detail.

Farmed salmon are grown in small floating cages at mouths of rivers and oceans. The pens are crowded, which increases the incidences of disease. To deal with infection, the salmon growers routinely feed antibiotics to the fish along with their food—more antibiotics for their weight than any other livestock. Normally, salmon in the wild turn orange-pink due to the high amounts of krill (a tiny shrimp) they eat. Denied their usual diet, their flesh turns gray. This is why the pellets of grain and other ingredients they are fed are laced with bright orange dye. The amount and hue of the dye is based on a survey conducted by the fish industry to determine which shade of orange seemed the most "natural" to consumers, and thus the most appealing.

Aside from the forced ingestion of antibiotics and dye (both by the fish and by the humans who eat them), farmed salmon causes other problems. Depending on which source you heed (the US Department of Agriculture or the World Health Organization), the farmed Atlantic salmon contains 70% to 200% more fat than wild Atlantic salmon because of the high fat content in their feed. These fats are the more common Omega 6, rather than the less common (and more healthful) Omega 3 fats. Types of fats will be discussed in more detail later.

The most serious environmental danger from farmed salmon is their effects on wild fish populations. Since farmed salmon are crowded together in such high numbers, abnormally high levels of excrement accumulate in one spot. Farmed salmon infect wild salmon, who live near the cages or even just swim past them, with parasites and other infectious diseases. Also, many farmed salmon are genetically engineered (see "Genetically Engineered," below). Despite the denials of the farmed fish industry, farmed fish can, and do, escape from their cages. Once in the open water, they mate with wild fish. The resulting offspring are often malformed or sterile.

Wild salmon is highly nutritious. The types of wild Pacific salmon that are not farmed are Sockeye, Chum, and Pink.

#### Genetically Engineered (GE)

Genetic engineering involves splicing genetic material from a plant, animal or even human tissue, into the plant being manipulated. The most common GE crops are canola, corn, soybeans and tomatoes.

As far as we know, the method was first performed by the Monsanto corporation on soybeans to make them more resistant to herbicides. This conveniently gave Monsanto an opportunity to sell more of its herbicide Roundup®. But people were ingesting more herbicide along with the soy. The active ingredient in this herbicide is linked to an increase in non-Hodgkins lymphoma, a form of cancer. A GE corn called StarLink™ also contains a built-in pesticide—and along with the corn, people ingest even more pesticide than they normally might, which is likewise linked with cancer and other diseases.

Other GE crops contain built-in drugs such as vaccines, forcing people to ingest unsafe drugs that they might not need or want. GE tomatoes contain genes from a cold-water fish (ostensibly to make the tomato more resistant to freezing and thus allowing for a longer growing season). But this forces consumers—including vegetarians and those with fish allergies—to ingest fish proteins along with their tomato. To add a cannibalistic note, human liver genes are now found in rice. (The gene presumably helps us digest the pesticides used on the rice.)

Safe-food.org reports, "There are about 40 varieties of genetically engineered crop approved for marketing in the US. As a result, 60% to 70% of the foods on your grocery shelves contain genetically engineered components." Other sources give a higher figure of 75%; but regardless, "genetic engineering is the largest food experiment in the

history of the world. We are all the guinea pigs."[52] See Sidebar, "The Mechanics of Genetic Engineering," for information on how GE is performed.

These bizarre experiments, rightly called "Frankenfoods" by critics, can inflict unthinkable damage on humans, animals, other plants, and insects. Livestock farmers from all across the US report that, given a choice, their cattle walk away from GE grain and instead head for the non-engineered batches. They only eat the GE feed if they are starving. Monarch butterflies and ladybugs who consume pollen from plants engineered to produce the toxin from the bacterium *Bacillus thuringiensis* become sick or die. We can only guess what happens to birds that eat the contaminated insects. In the past few years, beekeepers worldwide have reported losing between 60% and 70% of their bees. There is strong evidence that GE crops are responsible: a four-year study by German zoologist Hans-Hinrich Kaatz showed that an alien gene used to modify rapeseed had transferred to bacteria living inside the guts of honeybees.

It is now known that GE bacteria have contaminated the beneficial bacteria in the human digestive tract as well. Among other important functions, the intestinal flora aid digestion, help the body fight disease, and assist with blood clotting.

In the year 2000, GE StarLink™ corn— which had never been approved for human consumption—somehow got into the human food supply. All over the United States, people who ingested contaminated tortillas and corn chips reported headaches and digestive disturbances, undoubtedly due to the product's indigestibility and pesticide content. The US government bought all the GE corn-contaminated lots to save the businesses involved from financial ruin; but the funds came from the pockets of taxpayers.

Some effects of genetic engineering are particularly gruesome. A gene for human growth hormone produces very large mice, but causes pigs to become skinny, cross-eyed and arthritic. When spliced into salmon, the growth hormone gene makes them grow too big, too fast. It also turns them green. Increasingly, farmed salmon—even though kept in separate pens near the coastlines—are escaping into the larger bodies of open water and are contaminating the non-GE fish.

A similar danger exists with crops. It's only a matter of time before contamination from GE plants occurs in non-GE fields on a large scale. Seeds are spread by the wind and birds, and pollen is transferred by insects. It's nature's way of helping plants propagate. Many farmers who choose not to grow GE crops are finding that their corn, wheat or canola are becoming contaminated anyway, because nothing can stop the wind from scattering pollen from GE fields.

To make matters worse, the resistance to glyphosate—the "active" ingredient in Monsanto's herbicide Roundup® that is being spliced into GE soybeans—has now been transferred to weeds. Glyphosate-resistant weeds are proliferating all over the world: horseweed in several areas of the US (the states of Delaware, Maryland and New Jersey); rigid rye grass in Australia; goose grass in Malaysia; and various other plants in Canada.

### The Mechanics of Genetic Engineering

Ordinarily, when humans give nature a helping hand, they place the pollen of one plant onto a related plant to produce a new variety. Or, they place two similar animals in a pen and hope that they mate. But genetic engineering is completely different. It's "the process by which genes are altered and transferred artificially from one organism to another," writes Environmental Research Foundation consultant Rachel Massey. "Genes, which are made of DNA, contain the [biochemical] instructions according to which cells produce proteins; proteins in turn form the basis for most of a cell's functions. Genetic engineering makes it possible to mix genetic material between organisms that could never breed with each other."[53] In *Trust Us, We're Experts*, Sheldon Rampton and John Stauber point out that genetic manipulation is "frequently described as 'gene splicing,' a term that obscures much of the uncertainty and imprecision of the process." It evokes images of splicing a piece of film, which is easily seen and rearranged. However, one commonly used technique uses a patented "gene gun" that shoots tiny metal DNA coated slivers from one organism to another. "No one can predict where the new gene is going to land within the genome of the targeted organism. It may attach to the site of any chromosome, or may attach in the middle of another gene and interfere with the normal functioning of the cell."[54] Hungarian research biologist Arpad Pusztai analogizes this process to putting a blindfold on the archer William Tell before he shoots his arrow at a target.

Proponents of GE foods claim that there is no difference between splicing genes in a laboratory and cross-breeding plants, but this is not true. In the laboratory, scientists are crossing the species barrier by mixing together genetic material of animals, plants, and microorganisms. Human genes in tobacco, fish genes in tomatoes, viruses in squash and fruit, etc., would never be found in nature. The natural world limits the negative effects of cross-pollination and cross-breeding by ensuring that only related plants or animals can accept each other's sexual seed (pollen or sperm).

A press release, issued worldwide in the spring of 2006, described how 1,820 sheep in New Zealand had died after grazing on land where GE cotton had been grown. "The sheep and goats started dying after seven days of continuously grazing on tender leaves and pods of Bt cotton that remained in the fields after picking," the report stated. "Even wearing GE cotton could cause terrible skin reactions. . . . Workers picking GE cotton suffered severe skin reactions with itching and blistery eruptions leaving a black skin discolouration which was still apparent after five months."[55] Currently, many scientists believe that the mysterious new condition called Morgellon's disease—where living, parasitic strands of fibers emerge from the skin, causing severe skin eruptions and neurological damage—may be at least partly related to wearing clothing made from GE cotton.

There is no legal requirement that GE "foods" be labeled, even though the majority of Americans don't want to eat such horrific inventions. The companies that create these items have persuaded the FDA not to require such labeling—they know that their profits would dwindle if consumers knew what they were really buying. So, unless you buy organic produce, or know and trust the farmer who supplies your food, the groceries you buy in the supermarket or eat in a restaurant might be genetically engineered, and thus outright harmful to your health.

If you haven't started eating organic and/or naturally grown foods on a regular basis but are thinking of doing so, now is the time to start. Since pollen from GE crops is blowing into fields of non-GE crops and fertilizing them, a good way to avoid even accidentally GE contaminated foods is to eat less popular produce that industry has not tampered with (because there is no money to be made in less popular varieties). This means consuming buckwheat instead of wheat, blue corn instead of white corn, and less popular vegetables.

#### Irradiated

Irradiation consists of bombarding foods at high speeds with gamma rays from Cobalt 60, Cesium-137, or other radiolytic (radioactive) substances, some of which can remain radioactive for 600 years. Almost everything you buy in the supermarket—meat, poultry, eggs, fruits, vegetables, spices, nuts, seeds, grains, processed and baked goods—is irradiated.

The rationale for treating foods in this manner is to prevent spoilage from bacterial contamination and infestation by insects. But in truth, the practice was originally promoted by the nuclear power and nuclear bomb industries, which needed a way to get rid of their nuclear waste. These industries not only succeeded in creating a venue for their waste material, they also reaped a profit by creating a marketplace "need" for something that consumers would never think to ask for. The FDA has legalized irradiation, ignoring the growing body of research showing that this process alters the texture of foods; destroys nutrients such as enzymes and Vitamins A, B, C, E and K; creates poisonous by-products such as benzene, formaldehyde and nitrosamines; and makes the food carcinogenic due to the change in its molecular structure. (All these effects are similar to those caused by cooking food in a microwave oven. This will be discussed shortly.)

There is also the danger that bacteria exposed to the radiation may develop a resistance to the radioactivity, and in time, become more dangerous. This is similar to the resistance that bacteria develop from the over-consumption of antibiotics. Ironically, even though bacteria might be killed, their mycotoxins remain in the food.

Not all foodborne pathogens are killed by irradiation, however. The hepatitis and Norwalk viruses are unaffected. Studies have also shown impaired reproduction and more deaths in animals fed irradiated food. Proponents freely admit that irradiation accomplishes the intended objective of preventing seeds, nuts and grains from sprouting. But think about it: this means that there is no longer any enzyme activity or vitality left in the food! I discuss enzymes in more detail later in this chapter.

Don't be fooled if you see products marked *cold pasteurization* or *electronic pasteurization*. The food industry is using these terms instead of *irradiation* to persuade consumers that the practice is harmless. Likewise, the FDA terms this atrocity *radiant energy* to make it sound lovely, like sunshine or firelight. Newer irradiation techniques involve the use of electron accelerators, which (according to different reports) cause radiation levels that are either equivalent to those produced by 30 million chest X-rays (or 1.4 billion television sets), or up to 70 million chest X-rays. These X-rays are able to pass through plant cells and break apart the cell walls.

In February 2001, the World Health Organization (WHO) decided to increase the maximum allowable radiation levels for food to the equivalent of 330 million chest X-rays—2,000 times the fatal radiation dose for humans. WHO claimed that this level is safe. It's no wonder that opponents of irradiation call it "nuking"!

Irradiation opponents also point out that if more attention were given to producing food that is grown locally (thus decreasing its shipping time), proper storage, and clean processing in the first place, there would be no need to prevent spoilage by nuking it. Meats are highly contaminated with *E. coli* not because of inadequate cooking methods, but because in the slaughterhouses the intestines are punctured and feces spill onto the meat. Even though there is an official food radiation logo, it is not routinely

displayed in supermarkets or on packaging, so consumers have no idea what they are buying. The best way to avoid ingesting radioactive waste with your food is to buy from a source you know and trust.

### Cloned

"Simply put," reads the website of the Organic Consumer's Association, "cloning is a way to make genetically identical copies of an animal without using sexual reproduction. DNA is taken from one of the animal's cells and inserted into an unfertilized egg whose own DNA has been removed. The egg is then placed inside a surrogate mother."[56] After being shocked by chemicals or electricity, the egg divides as though it were fertilized by a sperm cell from a male of the species. The baby that is eventually born is an exact genetic duplicate of the animal that donated the cloning cell.

Animals that are created by cloning tend to be unusually large fetuses, which can lead to the death of the mother carrying the fetus. The animals also have damaged and abnormal cells that lead to premature aging; deformities of the head and limbs; and problems with the heart, lungs and other organs. "But even if two animals have identical genes," write the authors of a *New York Times* article, "they can turn out differently if those genes are turned on or off at different times. And studies have shown that patterns of gene activity are different in embryos created by cloning compared with embryos created by the fusing of sperm and egg."[57] This is why so many clones die during gestation, or soon after birth.

Despite consumer objections, in the United States cloned animals in our food supply are neither regulated nor labeled by the Food and Drug Administration. Due to the problems with cloning, it still remains a high-priced method of "food" production; and it's difficult to say how many packages of meat found in supermarkets (mostly beef at this point) are actually from cloned animals. However, some farmers who want to continually perpetuate their prize animals support this method.

### Organic

This is a legal term set up by the United States Department of Agriculture (USDA). Vegetables, fruits, grains, seeds, nuts and oils must be grown without synthetic pesticides or herbicides, chemical fertilizers, irradiation, or other contaminants. Animals raised for food (and their dairy and egg products) must eat only vegetable materials grown in accordance with organic standards. In addition, the animals themselves must not be given hormones, or routinely fed antibiotics—although they are permitted antibiotics if they become ill, as long as the medication is withdrawn a certain number of weeks before the animals are slaughtered.

> Common sense tells me organic is better food—better, anyway, than the kind grown with organophosphates, with antibiotics and growth hormones, with cadmium and lead and arsenic (the EPA permits the use of toxic waste in fertilizers). . . .
>
> Pesticide residues are omnipresent in the American food supply. . . . Many of them are known carcinogens, neurotoxins and endocrine disrupters. . . . The government has established acceptable levels for these residues in crops, though whether that means they're safe to consume is debatable: in setting these tolerances, the government has historically weighed the risk to our health against the benefit to agriculture. The tolerances also haven't taken into account that children's narrow diets make them especially susceptible or that the complex mixtures of chemicals to which we're exposed heighten the dangers.
>
> —Michael Pollan
> "Behind the Organic-Industrial Complex"
> *The New York Times*, 2001

The USDA and the Food and Drug Administration (FDA), alongside conventional food processors, have tried very hard in the past several years to dilute organic standards to the extent that the label would essentially be meaningless. At various times, attempts have been made to pass bills allowing for a certain percentage of sewage, irradiation, pesticides, chemical fertilizers, non-organic feed (in the case of animals), and even farm-factory animal intestines, to be used in the growing of food labeled organic. Organic farmers have justifiably objected to these attempts to undermine our food supply.

Be aware that many farmers raise crops and animals organically, but do not have organic certification because they can't afford to pay the exorbitant sums required by the government to be certified. The farmers cannot devote large numbers of hours, either, to complete the burdensome paperwork, and they usually can't afford to pay someone else to do the paperwork. Thus, many reluctantly choose to exclude themselves from this classification system. If you know the farmer and trust his or her growing methods, a government certification may not be important to you.

### Wildcrafted or Wild

While this term is used mostly for herbs, it can also pertain to fruits and some vegetables. It indicates that the plant has been growing in its natural location, rather than rooted in a garden or farm, that it has not been domesticated, and that it's very likely unsprayed. Since

### When Organic Isn't Necessary

Since it's very expensive in the United States to certify food as organic, not all naturally-grown food is certified. But even though uncertified food cannot legally be called organic, it can still be clean.

Some foods labeled organic provide little or no advantage. For instance, virtually all imported olive oil is clean, since in sunshine-filled Greece and Italy, farmers would never dream of spraying their crops (nor would they have any "need" to do so).

Today, on this heavily polluted planet, even organically raised produce will contain some pesticides. Poisonous pesticides are now found in the fat of sea mammals at the formerly pristine North Pole; so there is no completely clean animal, plant, soil, water, or human being anywhere in the world. The best way to protect yourself with your food is to know its source.

by definition, wildcrafted herbs are "found" plants, their numbers can dwindle. Therefore, the people who pick these plants are usually careful to limit the number they take and leave enough plants growing so they can be pollinated and propagate more plants.

#### Heirloom or Open Pollinated

This usually refers to vegetables, although it can also describe other plants and (in the case of *heirloom*) animals. An heirloom plant is hardly ever used in monoculture agribusiness, which relies on hybrid plants to achieve uniformity and consistency. Normally, a hybrid plant is created by grafting one plant onto another, or by manually mating dissimilar types of plants over many generations to obtain certain desired characteristics. This brings instability to subsequent generations of plants grown from those seeds, since the farmer can never be sure if succeeding generations will have the same (desired) characteristics of the parent plant. Sometimes, the descendents of hybrid plants are sterile; or they cannot produce seeds at all.

In contrast, an heirloom fruit or vegetable is open-pollinated. This indicates that the plant has access to open air, where bees and birds that feed on the nectar, fruit and seeds spread pollen from one plant to another. The plants produced in this manner are always seed-bearing. Also, the seeds they produce will always produce plants just like them—a guarantee that is impossible to obtain with hybrid plants. Moreover, heirloom plants are hardy and resistant to disease and pests. This is due to the ability of heirlooms to adapt over time to whatever climate and soil in which they grow. They might not appear as conventionally pretty or uniform as hybrids, but their gene pool gives them a more varied and interesting appearance, and a far better taste than conventional crops due to their greater environmental adaptability.

Special strains of cattle, sheep, and other animals that have not been over-bred, that are generally smaller than their commercial counterparts, and that have not been used very much for the commercial market, are *heirloom*. Some of the hardiest and most flavorful meats come from heirloom animals. One example of heirloom poultry is a chicken or turkey that has not been bred to have an excessively large breast to satisfy the consumer white meat market. Such birds are much healthier and resistant to disease because they are structurally stronger. They take more time to raise, because they do not put on weight prematurely, but this also makes them superior in taste to factory farmed animals.

#### Unsprayed

Since "unsprayed" is not a legal term, it cannot be legally guaranteed, as only "organic" crops can be certified legally as unsprayed. However, if you have met the grower and trust him or her, eating unsprayed produce can be just as safe as eating organic produce. The produce may even be fresher, because it's probably from a farmers' market that requires the produce to have been picked within the last 24 hours. See "Local," below.

#### Local

*Local*, while not a legal term, has retained its common meaning because it has not been legally co-opted and altered by government. (Legal bureaucracies often reverse the meanings of common terms and phrases so they mean the opposite of what everyone thinks they mean.) Fruits, vegetables and herbs that are local are generally produced by farmers living within a few hundred miles of your area. Farmers sell either to neighborhood stores, or at farmers markets where they set up their produce right at their trucks in neighborhood parks, parking lots, and other open areas. "Local" does not indicate how the crops are grown (such as whether or not they are organic). However, buying local is often an opportunity to ask the farmers themselves what (if any) sprays they use, etc. More people are beginning to request locally grown produce because it's fresher than veggies trucked from farther away; it can be picked ripe; buying local supports small farmers; and the less distance food is trucked, the more fuel is conserved.

#### Free Range

This usually pertains to birds and their products (chickens and eggs), although sometimes the label is used for mammals, too. The term can be misleading, however, because although the animals are allowed to roam outside, the

amount of time they are given can be limited to 15 minutes a day.

Yolks in true free range eggs have a deeper yellow or gold color than in factory eggs, and the yolks are firmer and sit higher after being poured from the shell. The shells are also harder, due to increased calcium levels.

**Cage Free**

This pertains to poultry. The term can be misleading; for while the birds technically are not cramped into tiny cages and are allowed to walk around, they may still be forced to spend all of their time in crowded indoor shelters. If treated humanely, they have access to sunlight, although it's usually minimal, generally around 30 minutes a day. Often, the birds are exposed solely to artificial fluorescent lighting.

**All Natural**

This is not a legal term, and may be one of the biggest consumer scams around. The food processor depends on the consumer to make up his or her own meaning. To most people, the rosy-sounding word *natural* conveys "being in nature," with the image of an animal happily frolicking in the sun with the rest of its herd or flock—the very antithesis of factory farming. However, the food processor is not legally bound to adhere to such "natural" practices, no matter how well-meaning the consumer's imagination might be. Note how many times you see *all natural* on a label.

> Of the 1.2 billion pounds of pesticides used on US farms, one-tenth of one percent of the pesticide reaches the target pest.
>
> —*EPA Journal,* 1992

**Naturally Raised**

This is not a legal term, so it can mean what the food processor wants it to mean. The food processor may depend on the consumer to make up his or her own meaning. Sometimes cattle ranchers use the term to mean *grass-fed*. However, "grass-fed" is much more specific and leaves less room for misinterpretation or misunderstanding. See below.

**Grass-Fed**

This pertains to cattle, calves, lambs, sheep, buffalo, goats, and any other ruminant (two-stomached) mammal that chews its cud. Note that grass cannot be legally labeled organic. Since it's difficult to prevent a grazing animal from seizing something from the earth that *isn't* legally termed organic, meats labeled "grass-fed" cannot also be called "organic." But in this case, organic is no advantage. Animals that provide organic meat are generally fed with grain, which produces huge problems (see "Vegetarian Fed or Grain Fed," below).

Grass-fed meats are generally just as clean (if not cleaner) than organic meats. The animals are healthier and stronger, because they're raised outside in their native environment and allowed to graze.

As might be expected, grass-fed cattle are also nutritionally superior than even their organic grain fed counterparts. They have one-third fewer calories than grain fed beef, and substantially greater amounts of many vitamins. Furthermore, the risk of bacterial contamination is very low in grass-fed cattle. Numerous recent outbreaks of *E. coli* infections in meat were from cattle fed grain, not grass. Grain causes an abnormal, and unfavorable, high acid pH in the first stomach. James B. Russell, a Department of Agriculture researcher at Cornell University, explains that because cattle do not digest starch well, some undigested grain reaches the colon, where it ferments. This allows various acids to accumulate in the colon, and promotes populations of acid-resistant *E. coli*. A grass diet does not disturb the normal pH of the first stomach.

Make sure that your grass-fed animal is not "finished" with grain. Just a few days of consuming grain in a feedlot ruins the benefits of the animal's grass diet. See below.

**Vegetarian Fed or Grain Fed**

These phrases refer to chickens and turkeys, cattle, and (less often) lambs. The phrases became especially popular after the heavily publicized scare of so-called mad cow disease, a condition augmented or caused by feeding animals the waste products and diseased flesh of other slaughtered animals. *Vegetarian fed* and *grain fed* probably became more widely used in an attempt to lessen consumer fears of contracting the disease.

But problems arise when animals are fed grains—both for the animals, and for the humans who eat them. Unless the grains are certified organic, they are at best usually loaded with pesticides, and at worst genetically engineered. Another problem is that cattle, bison, goats and sheep are designed to eat fibrous grasses, not starchy low-fiber grain. When ruminant animals are grain fed rather than pasture fed, the naturally (and desirable) acidic pH of their first stomach is disrupted and becomes too acidic. This makes them more prone to *E. coli* infections and other diseases. Grain fed mammals also have much lower levels of many vitamins than animals allowed to eat grass.

Finally, grain-fed mammals develop an abnormal amount of fat—and along with extra weight, an unbalanced ratio of the different types of Omega fats in their bodies (discussed in a moment). Cattle, sheep, buffalo, goats and other

animals are not evolutionarily designed to eat grain. Grain disrupts the animals' metabolism, as well as the metabolism of the humans who eat them. Insulin production abnormally escalates, which in turn raises the overall fat content in the animals. Every cattle rancher knows that *grain puts weight on the animals*. This is why cattle fed mostly on hay (for convenience) are fattened up on grain for a few days or weeks just before they're slaughtered. The ranchers get the most money for the heaviest weight.

The increase in fat is not only cosmetic. In animals fed grain for any length of time, the thick white fat marbled throughout the flesh contains an approximate 30:1 ratio of Omega 6 to Omega 3 fats. (There are different types of fats, which perform different functions. Among other features, Omega 3 fatty acids are anti-inflammatory.) The typical American diet contains from 10 to 30 times more Omega 6 fatty acids than Omega 3. But a healthy diet should consist of no more than 3:1 of Omega 6s to Omega 3s—or even equal amounts of each. Since Omega 3 fatty acids cannot be made by the body and must be obtained from food, this imbalance may contribute to the rising rate of inflammatory disorders in the United States. When we eat these animals, we eat what they ate. And we are affected just as if *we* had been fed grain. I will say much more about grain later in this chapter.

Chickens, turkeys, ducks and birds in general do require starchy grains and seeds in their diet. However, they are also designed to live outdoors so they can scratch and peck for grubs and insects that live on or in the ground. Inherently, chickens and other birds are not vegetarians. They need the additional protein that bugs provide. So, when the supermarket label proclaims that your chicken was fed an all-grain diet (as if this is desirable), be aware that because your bird has put on extra fat due to such a diet, you could, too. Genuinely free range chickens and other birds that are given access to open pasture, and are allowed to snack on unsprayed fruit and vegetable scraps, have a much more nutrient-rich diet. You will too, if you eat such birds.

#### Pastured Poultry

Not to be confused with "pasteurized," this term refers to birds that live in a movable enclosure that shelters them from the elements. The structure is moved once or twice daily to a new piece of pasture so the birds can forage for insects (which comprise 20% of their diet). Birds raised this way are much happier and tastier than free range. They are also much harder to find.

#### Animal-Compassionate or Humanely Raised

This relatively new term, which is not legally binding, is used to persuade consumers that the animals that provide their meals are being treated humanely. But what the consumer assumes, and how the animal raisers actually treat the animals, may be two different things. Personally, I think that the only compassionate way to raise animals is to give them ample space, sunlight, company of their herd or flock, and either the opportunity to forage, or a completely natural diet that replicates what they would eat if left to forage for themselves. Whether animals raisers will do this remains to be seen.

#### Sustainable

This term, which is not legally binding, is now being used to reassure the consumer that the animals are raised in such a way that minimizes large accumulations of waste and has the least amount of negative environmental impact. However, what the consumer assumes, and how the animal raisers actually treat the animals and the land, may be two different things. Optimal sustainability involves moving the animals around to graze and forage naturally; allowing the animals to fertilize the land with their manure, but at amounts that the land can process; avoiding chemical pesticides and fertilizers; and administering drugs to the animals only when absolutely necessary. If these guidelines are respected, respect for the animals will automatically follow. Many farmers with small farms are growing crops and raising animals sustainably, but are not certified organic because they cannot afford the thousands of dollars necessary to meet the legal labeling requirements.

Another aspect of the term "sustainable" is the freshness of the product when picked or packed. This relates to the distance it must travel to reach the consumer. Sometimes, even if an item is not certified organic, the fact that it's locally grown—and therefore has not been shipped cross-country for thousands of miles in a refrigerated truck—gives it more nutritional value.

#### High Brix

*Brix* (pronounced "bricks") may not yet be a part of mainstream agriculture—or even a part of the public consciousness—but in my opinion, this unique method of growing and evaluating crops is quite superior in every way to all other methods.

The practice was begun by Professor A.F.W. Brix, a 19th century German chemist who measured the percentage of solids in a few drops of freshly squeezed liquid (juice or sap) from a live fruit, root, stem or leaf. In addition to fructose, sucrose and other sugars, the solids that are measured include flavonoids, amino acids, minerals, oils, and other nutrients.

The device used for modern measurement is called a refractometer. "When the drops fall on the prism," explains contemporary farmer Rex Harrill,

> you close the cover plate to spread it out and then look through the viewing end of the instrument where you will see an etched scale generally calibrated in 0–30 degrees or 0–32 degrees Brix. Just as a pencil appears bent when placed in a beaker of water, the light passing through the plant juice droplet is bent so that a clear line is shown against the scaled background. The amount of bending is directly related to the richness of the plant juice (richer juice bends the light more).[58]

There is a direct and intimate connection between higher Brix numbers, high life force, concentrated nutritional value, and superior flavor. Not surprisingly, these qualities indicate a rich mineral content in the soil. A Brix measurement considered excellent begins at 12 to 14, although measurements as high as 28 Brix have been recorded. Harrill says:

> To me, Brix is a measure of energy. A high-Brix plant emits a far superior energetic electromagnetic spectrum than a low-Brix specimen. Insects "see" in this range and they "attack" plants with the weakest emanations. . . . All that talk about how healthy plants "resist" insects is really another way of saying that *the strongest plants don't attract insects in the first place*. . . . A refractometer is merely a way for us to see by proxy what insects see with their eyes. [emphasis added][59]

High Brix plants are vibrant in color, have wonderful flavor (and are naturally sweet), contain abundant nutrients, and are resistant to insects, weeds and disease. They are also resistant to rotting: Brix experts flatly state that high Brix plants may dehydrate in storage, but will not rot. In comparison, low Brix plants are more muted in color, have bland flavor (or are unpleasantly sour or bitter), have low levels of nutrients, and are susceptible to insects, weeds and disease. This includes rotting. (Note that a plant with slime or mold on its surface is also rotten on the inside, even if you can't see the rot; so it's best not to eat the fruit or vegetable at all.)

The enhanced mineral content of high Brix plants makes the fruits and vegetables structurally different as well. For instance, a healthy orange, lemon or grapefruit will have a thinner rind. Comparing two bushels of grain that have identical volume but different weight, the heavier one has more nutrients and therefore higher Brix readings. Nutrient-dense, high Brix vegetables have a natural waxy coating on them, not the synthetic paraffin that some growers add after the produce is picked. Low Brix fruits, such as peaches or plums, will have a split pit. Low Brix vegetables will be somewhat dry and hollow inside (which probably indicates a boron deficiency). Potatoes with sunken eyes are probably deficient in manganese.

To grow high Brix crops, the soil must be healthy. Brix readings improve when the pH of the soil is balanced. The ideal pH for almost all crops is 6.4, which requires a proper mineral ratio. There are many ways to improve the soil: most often, with high-calcium lime, and other beneficial natural soil foods including powdered fish, seaweed, and additional sources of phosphorus, nitrogen and potassium. Friendly soil bacteria are also needed; the plants rely on bacteria to break down the rock so the minerals can be utilized.

An estimated 90% to 95% of produce obtained from ordinary commercial channels is fairly low Brix. Although growing high Brix crops requires more effort and care, and perhaps a greater initial financial investment, the returns are immense. You eat less, because the food is so nutrient-dense. Better nutrition means that you will be healthier. And being healthier means saving money on visits to health professionals. You'll also need fewer nutritional supplements, because the foods you eat will provide the necessary nutrition.

High Brix doesn't affect just plants and the humans who eat them. It also affects animals. Studies have shown that cows eat half of what they normally would consume when they eat high Brix grass and hay. They also produce more milk, which is yellow in color (probably due to a higher beta-carotene content).

If you garden or farm organically, you're already familiar with the importance of not using pesticides. Making sure to nourish the soil for optimal nutrition seems like the logical next step. You can find more information on Brix, including a source for refractometers, at www.crossroads.ws/brixbook/BBook.htm.

The possibilities for healing with high Brix foods are exciting. Obtaining a high Brix measurement in plants can be compared to obtaining a clean live blood analysis in a human. A healthy live blood reading shows perfectly formed, round red blood cells that are separate and distinct; viable and functioning white blood cells; and no waste material in the plasma. People who get the nutrients they need have a better chance of remaining healthy. If you give a plant the nutrition *it* needs, it will remain vital. Sick humans attract microbes. Sick plants attract insects. Attracting microbes or insects both indicate a similar deficiency. They are the human and plant equivalents of being undernourished and ill.

High Brix plants are essentially organic, even if they lack a legal certification. A plant cannot be high Brix if it's loaded with pesticides, herbicides, and synthetic fertilizers. Ideally, crops should be picked at the peak of their ripeness, to ensure their freshness. And high Brix

## The Solution to Crime

Forget tougher punishments and hiring more police. The solution to crime and violence is on your dinner plate.

At first glance, there seems nothing special about the students at this high school in Appleton, Wisconsin. They appear calm, interact comfortably with one another, and are focused on their schoolwork. And yet a couple of years ago, there was a police officer patrolling the halls at this school for developmentally challenged students. Many of the students were troublemakers, there was a lot of fighting with teachers and some of the kids carried weapons. Today [a school counselor] describes the students as "calm and well-behaved." Fights and offensive behavior are extremely rare and the police officer is no longer needed. What happened?

A glance through the halls at Appleton Central Alternative provides the answer. The vending machines have been replaced by water coolers. The lunchroom took hamburgers and French fries off the menu, making room for fresh vegetables and fruits, whole-grain bread and a salad bar.

Is that all? Yes. . . . [The principal] is still surprised when she speaks of the "astonishing" changes at the school since she decided to drastically alter the offering of food and drinks eight years ago: "I don't have the vandalism. I don't have the litter. I don't have the need for high security."

It is tempting to dismiss what happened at Appleton Central Alternative as the wild fantasies of health-food and vitamin-supplement fanatics. And yet it is not such a radical idea that food can affect the way our brains work—and thus our behavior. The brain is an active machine: It only accounts for 2% of our body weight, but uses a whopping 20% of our energy. In order to generate that energy, we need a broad range of nutrients—vitamins, minerals and unsaturated fatty acids—that we get from nutritious meals. The question is: What are the consequences when we increasingly shovel junk food into our bodies? Do examples like the high school in Wisconsin point to a direct connection between nutrition and behavior? Is it simply coincidence that the increase in aggression, crime and social incivility in Western society has paralleled a spectacular change in our diet? Could there be a link between the two?

[A criminal-justice professor] has proven that reducing the sugar and fat intake in our daily diets leads to higher IQs and better grades in school. [After] a change in meals served at 803 schools in low-income neighborhoods in New York City, the number of students passing final exams rose from 11% below the national average to 5% above. [One study] showed that the number of violations of house rules fell by 37% when vending machines were removed and canned food in the cafeteria was replaced by fresh alternatives. [The professor] summarizes his findings this way: "Having a bad diet right now is a better predictor of future violence than past violent behavior."

In a prison for men between the ages of 18 and 21 in England's Buckinghamshire, 231 volunteers were divided into two groups: One was given nutrition supplements along with their meals that contained our approximate daily needs for vitamins, minerals and fatty acids; the other group got placebos. Neither the prisoners, nor the guards, nor the researchers at the prison knew who took fake supplements and who got the real thing. The prisoners given supplements for four consecutive months committed an average of 26% fewer violations compared to the preceding period. Those given placebos showed no marked change in behaviour. For serious breaches of conduct, particularly the use of violence, the number of violations decreased 37% for the men given nutrition supplements, while the placebo group showed no change. As a randomized, double-blind, placebo-controlled study, [the designer of the experiment, University of Oxford physiologist Bernard] Gesch emerges with convincing scientific proof that poor nutrition plays a role in triggering aggressive behavior.

After Gesch published his findings in 2002 in *The British Journal of Psychiatry,* the study was picked up by European and American media. The newspaper headlines were clear: "Healthy eating can cut crime"; "Eat right or become a criminal"; "Youth crime linked to consumption of junk food"; "Fighting crime one bite at a time." Then the media went deafeningly silent. Perhaps that's because . . . you can't get a patent on natural nutrients like vitamins and minerals. Far more effort goes into pharmaceutical, rather than dietary, solutions.

"Aggression is not only determined by nutrition," [Ap Zaalberg, working on nutrition with the Dutch Ministry of Justice] states. "Background and drug use, for example, also play a role. Yet I increasingly see the introduction of vitamins and minerals as a very rational approach. . . ."

The British charity institution chaired by Gesch . . . estimates it would cost 3.5 million pounds (5.3 million euros or 6.4 million US dollars) to provide supplements to all the prisoners in Great Britain. That is only a fraction of the current prison budget of 2 billion pounds (3 billion euros or 3.6 billion US dollars). . . .

"Most criminal-justice systems assume that criminal behaviour is entirely a matter of free will," Gesch says. "But how exactly can you exercise free will without involving your brain? How exactly can the brain function without an adequate nutrient supply? Nutrition may actually be one of the most straightforward factors to change antisocial behaviour. And we know that it's not only highly effective, it's also cheap and humane. . . . We need to know more about the composition of the right nutrients. It could be the recipe for peace."

—excerpted from Marco Visscher, "You Do What You Eat"
*Ode*, September 8, 2005

crops may tend to be locally grown. Brix holds great promise as the new way to determine crop health. As mentioned earlier, the US government and agribusinesses seem to be trying hard to undermine the standards by which a plant or animal is legally allowed to be certified organic. Establishing a separate, non-governmental network of Brix farmers may be the answer to various efforts to undermine the organic certification.

### *Staples*

At some point in their lives, our grandparents who lived on a limited income may have grappled with the problem, "What is there to eat?" Their children (our parents) who became more affluent had the luxury of musing, "What shall I eat?" But today, with the worldwide rise in obesity and (legitimate) escalating concerns about food safety, many of us are wondering, "What *can* I eat?"

Each category of food below contains information to help you decide what will best support you and your unique needs. Keep in mind that it is assumed that the foods are clean. They are either certified organic; are grown without pesticides, herbicides and synthetic fertilizers but not necessarily certified organic by the government; and/or are high Brix.

#### Red Meat

This category includes all red-hued meats: the more domesticated animals including cattle, lamb, pork and goat; game animals such as bear, boar, buffalo, deer and elk; leaner, more exotic meat such as ostrich; and beefalo, a cross between a cow and buffalo.

There is some debate about the wisdom of eating meat from pigs, since Rife and others have shown that the cancer virus grows readily in pig meat. This may be the origin of the prohibition against eating pig in some religions such as Judaism and Islam. Pork especially should be cooked at temperatures high enough to kill *Trichinella spiralis*, a roundworm that causes all sorts of symptoms due to its ability to burrow into the gastrointestinal and respiratory tracts, muscles (including the heart), and nerves. To avoid contracting Trichinosis, cook the meat thoroughly to temperatures of at least 160°F (Fahrenheit), which is 71.1°C (Celsius). Freezing at temperatures below 21°F (minus 6.1°C) for about a week kills the larvae. Canned meat retains much of its food value. However, there are problems with canned food. Cans can outgas toxic metal particles. And it's difficult to find products that are free of preservatives and texturized vegetable protein (TVP), which breaks down in the body into poisonous glutamic acid, the so-called "active" ingredient in monosodium glutamate, or MSG. MSG will be discussed in detail shortly.

#### How Can You Tell if There's Carbon Monoxide in Your Meat?

If you've ever watched movies of people trying to commit suicide in their cars, there's a pattern of self-destruction: close the doors of the garage, shut the car doors and windows, and turn on the engine. The colorless, odorless gas that backflows into the car and peacefully eases the actors into dreamland is carbon monoxide.

Now the FDA has given approval for the meat industry to fill meat packages with carbon monoxide. Normally, meat turns brown from exposure to oxygen. However, consumers don't want brown meat, and stores end up throwing away billions of dollars worth of meat that has become discolored but presumably is still reasonably fresh.

The meat industry has solved this problem by pumping the gas into packages to preserve the bright pink color, which lasts for several weeks. Although industry claims that the gas is harmless to health at the levels being used, consumers have their doubts. So far, meat treated with carbon monoxide is not labeled, so people don't know what they're buying. They also fear that meat that's truly spoiled won't *look* spoiled, even though meat industry lawyers state that odor, a bulging package, and the formation of slime will all occur in packages of spoiled meat.

How can you tell if your supermarket meat has been treated with carbon monoxide? By examining the plastic wrap used to package the meat. Untreated meat is wrapped in thin plastic wrap that clings to the meat. But when the gas is used, a thicker plastic is required to keep gas from escaping. Plus, the wrap won't cling because the gas has to circulate over the surface of the meat in order to do its job.

#### Poultry

Just a few birds that we eat are chicken, duck, turkey, goose, Cornish hen, quail, squab (young pigeon) and pheasant.

Don't forget that a grain diet can adversely affect an animal in similar ways that it affects humans—by raising the animal's insulin production and thus raising its overall fat content, and by negatively changing the ratio of beneficial to non-beneficial fats. Organically raised chickens might be confined indoors more than their outdoor, free roaming cousins not certified organic.

#### Eggs

With a high amino acid content (amino acids are the building blocks of protein), eggs are among the most perfectly balanced of foods. The negative publicity about eggs,

due to their cholesterol level, is undeserved. The lecithin in the egg yolk helps the body digest the cholesterol, also in the yolk. In any case, most cholesterol is produced by the body and is unrelated to a dietary intake of fat. Eggs do not cause cholesterol to form in the arteries. Studies showing an increase of blood cholesterol in people eating eggs were financed by the cereal companies, and were conducted using *powdered* eggs (fake food). Unfortunately, once those studies were conducted, the myth that eggs are harmful has remained somewhat fixed in publish consciousness. It's always worthwhile to find out who conducts and finances studies before believing the results.

The best eggs to get are direct from the farmer; if not farm-fresh, then organic. Store eggs labeled "high in Omega 3 fats" may not be as beneficial as the labels suggest: the hens are fed poor-quality, oxidized sources of Omega 3 fats, and thus the eggs may spoil quickly. Truly fresh eggs actually keep better outside the refrigerator. If an egg is fresh, when rolled across a table at room temperature it will be wobbly when it rolls. Eggs fresh from the hen are not washed, either. The shells have dirt and debris on the outside; but since the shells aren't washed, the shell's naturally protective coating isn't removed, either.

On his natural health website, Dr. Joseph Mercola advises not to eat an egg if the white is watery instead of gel-like, if the yolk is not firm, or if the shell is cracked or porous (immersing the egg in salted water will elicit bubbles if the shell is damaged). He also advises the best way to eat eggs:

> Eggs are often one of your most allergenic foods, but I believe this is because they are cooked. Heating the egg protein actually changes its chemical shape, and the distortion can easily lead to allergies. If you consume your eggs in their raw state, the incidence of egg allergy virtually disappears. . . . Egg protein is easily damaged on a molecular level, even by mixing/blending. If you choose not to eat your eggs raw, cooking them soft-boiled would be your next best option. . . .
>
> Scrambling your eggs is one of the worst ways to eat eggs as it actually oxidizes the cholesterol in the egg yolk. If you have high cholesterol this may actually be a problem for you as the oxidized cholesterol may cause some damage in your body.
>
> If you're in the habit of eating only the egg white, be aware that controlled diets of only raw egg whites can lead to severe biotin deficiency. . . . When you consume raw egg white alone, without the yolk, a component in them called avidin binds to the B-vitamin biotin, potentially creating a deficiency in your body.[60]

If you boil your eggs, don't overcook the yolks. The greenish ring around the yolk in hard boiled eggs indicates that the yolk proteins have degraded from being heated too long.

### Fish and Seafood

There is an amazing variety of fresh and salt water finned fish and shellfish. However, due to over-fishing, some species are becoming scarce. Fish are especially valued for their oils, a perfect food for the brain and nervous system, heart, and kidneys. Oils chemist Udo Erasmus states, "The warmer the water is that the fish swims in, the lower the oil content. So, Atlantic herring cooled by the Artic current have 11.3% oils, while Pacific herring warmed by the Japanese current have only 2.6% oils."[61]

If our planet were uncontaminated, all types of fish would be safe to eat. However, toxins are commonly stored in the fatty tissues of all creatures (including humans). Fatty deep-water fish, such as swordfish and most tuna, are caught in highly polluted waters and contain high levels of mercury, a dangerous heavy metal. So in this polluted age, we must carefully choose which fish to eat, and how much.

Be cautious if you're pregnant, because the toxic metals seep through the placental barrier right to the baby. One guideline of safety is to eat smaller fish. They have shorter lives. And, being lower on the food chain, they eat plants and smaller animals that contain fewer contaminants. The more specific guidelines below are from Environmental Defense, a 40-year-old organization devoted to solving urgent environmental problems. Fish are listed in four categories.

- *Safest*. The safest fish to eat—that is, sea animals that can safely be eaten more than once a week—are anchovies, Atlantic butterfish, Atlantic herring, oysters (farmed), mackerel, Alaskan sablefish (black cod), wild Atlantic salmon, canned pink or sockeye salmon, sardines, and squid. The following are noted by other sources as provisionally safe, meaning that young children should eat these fish no more than once a week: black sea bass, haddock, hake, Pacific cod, yellowtail flounder, Pacific whiting, shad and sole.
- *Reasonably Safe*. The following are farmed: abalone, striped bass, Arctic char, bay scallops, catfish, caviar, clams, blue mussels (farmed *and* wild), sturgeon, and shrimp from the US. Also crab (Dungeness, snow from Canada, and stone), crawfish, Pacific halibut, lobster, Atlantic mahi-mahi, shrimp from Canada, spot prawns, and tilapia.
- *Somewhat Safe*. Atlantic cod, Atlantic halibut, monkfish, skate, snapper, and tilefish.

- *Unsafe.* Grouper, marlin, orange roughy, Pacific rockfish (rock cod), farmed Atlantic salmon, Chilean sea bass (toothfish), shark, wild sturgeon, swordfish, and bluefin tuna.

Canned fish retains much of its food value. However, make sure you eat products that don't contain preservatives or texturized vegetable protein (TVP). TVP breaks down in the body into poisonous glutamic acid, the so-called "active" ingredient in monosodium glutamate, also known as MSG. (MSG will be discussed in detail shortly.)

**Dairy**

This includes milk from cows, sheep, goats, buffalo, camels, mares, and other mammals. It also includes the butter, cream, cheese, buttermilk, yogurt, quark and other products made from their milk.

Chapter 1 explained in detail the damage to both cows and humans from recombinant Bovine Growth Hormone (rBGH). As of this writing, it appears that every industrialized country in the world—except for the United States and Mexico—has banned rBGH and Bovine Somatotropin (BST), or substantially decreased their use. One of the best ways to avoid this artificial hormone is to buy domestic dairy products specifically labeled organic, or BGH-free. Foreign cheeses do not contain these hormones.

There is another important feature of dairy products: raw versus pasteurized and homogenized. You are receiving only a fraction of what dairy foods have to offer if you are not eating raw dairy—and dairy from grass-fed, as opposed to grain fed, animals. In fact, you may be harming yourself *unless* you eat raw dairy. Both the pasteurization and homogenization processes damage milk in different ways. I'll discuss pasteurization first.

Pasteurization involves heating the milk at a temperature of 145°F to 150°F (62.8°C to 65.6°C), and then cooling the milk to at least 55°F (12.8°C). According to different sources, the milk can remain at high temperatures anywhere from 15 seconds to 30 minutes. With "ultra-high temperature" pasteurization (UHT), temperatures are raised to 280°F (137.8°C) for at least two seconds. This is supposed to extend the shelf life of refrigerated milk for six months.

Regardless of how high the heat is, pasteurized milk is adulterated and dead; I would not use the word "food" to describe this fabrication. The stated purpose of pasteurization is to destroy germs that carry disease, and to prevent milk from souring. But the opposite is in fact true. Pasteurizing does not remove dirt. Nor does it eliminate or immobilize the *toxins* (called *mycotoxins*) that the bacteria produce. Thus, even organic pasteurized and homogenized milk can be highly allergenic (and cause respiratory and digestive problems, among other health problems), because they contain mycotoxins along with the remains of the dead bacteria killed by pasteurization.

Pasteurization does kill harmful bacteria. It also destroys the beneficial ones. If raw milk is allowed to sit, the beneficial lactic acid bacteria will naturally sour the fluid, making the milk highly assimilable and restorative to the digestive tract. *Heating actually allows the milk to spoil, and to spoil more quickly.* Bacterial growth exponentially escalates after the milk is adulterated. The milk gradually turns rancid in a few days, and then decomposes. When raw milk is left alone at moderate temperatures, it simply ferments into a healthful, cultured product.

Fears that raw milk easily spoils simply do not coincide with the historical use of raw milk to preserve meat. For centuries, Arabs preserved meat in raw camel milk. People from Iceland preserved sheep's heads in soured raw milk. In the United States, pioneers preserved meat in raw buttermilk and enjoyed meat year round.

The high heat of pasteurization also destroys almost all of the crucial vitamins, minerals, enzymes, and other nutrients that make raw milk so healthy. In fact, the gauge of pasteurization's success is based on the destruction of enzymes! (See the "Comparison Chart between Raw and Pasteurized Milk" to see what is destroyed, and the effects of this destruction.)

For decades, the dairy industry has regarded milk as the perfect food due to its substantial calcium content. This may be the most popular selling point of milk. But ironically, the heat of pasteurization makes most of the calcium unable to be dissolved. Hence, the body cannot utilize the calcium. Not only is a calcium deficiency created—which can lead to soft, improperly formed bones and teeth—but the insoluble form of calcium can cause constipation and the formation of calcium deposits (stones) in the body.

Misinformation about raw milk being full of germs has been widely disseminated. But before the advent of high-tech pasteurization methods that ruined good milk, raw dairy was used as a tonic for hard-to-treat illnesses. Dr. Ron Schmid's "Real Milk" website features excerpts from an article by a Dr. J. Crewe of the Mayo Foundation (forerunner of the famous Mayo Clinic in the US). The article—which was originally published in the January 1929 issue of *Certified Milk Magazine* and quoted from the eighth edition of the medical text *Principles and Practices of Medicine*— summarized the therapeutic use of raw, butterfat-rich milk from pasture-fed cows. Many diverse conditions were successfully treated with such milk, including hypertension and other cardiovascular conditions; nervous system ailments; kidney problems including nephritis; psoriasis; and tuberculosis. Apparently, Dr. Crewe presented his findings to the Minnesota State

## Comparison Chart Between Raw and Pasteurized Milk

Note: the benefits of raw milk noted below are from *grass-fed* cows.

| Nutrient | Role in Nutrition | Raw Milk | Pasteurized Milk |
|---|---|---|---|
| **Proteins (general)** | Amino acids comprise 75% of the body's dry weight, all but one neurotransmitter, 95% of hormones, and 100% of all protein. They govern and participate in every chemical reaction in the body. | All 22 amino acids are 100% available, including the eight essential amino acids. | The amino acids lysine and tyrosine are altered by heat with serious loss of metabolic availability. This results in making the whole protein complex less available for tissue repair and rebuilding. Disease indicates an abnormality of amino acid structure and function. |
| **Caseins and Whey Proteins** | Caseins comprise about 80% of the proteins in milk. They are reasonably heat stable and easy to digest. The remaining 20% of milk proteins are whey proteins. These are also easy to digest, but they are also very heat sensitive. Among the whey proteins are key enzymes, immunoglobulins (antibodies), metal-binding proteins, vitamin binding proteins, and growth factors. See below for a few specifics. | Available. | Caseins are mostly intact, but the co-factors needed to help digest them are not, making heat-treated milk difficult to digest. Most of the whey proteins are destroyed. |
| **Immuno-globulins** | This complex class of milk proteins called antibodies, which are inherently present in raw milk, render it less vulnerable to bacterial contamination. They also confer resistance to many viruses, bacteria, fungi and bacterial toxins. | All are available. | Nearly all are destroyed. |
| **Nisin** | A natural antimicrobial agent rich in amino acids, it is a natural antimicrobial agent used worldwide. Has been used since 1953 to control bacterial overgrowth in foods. It is produced by *Lactococcus lactis,* a beneficial bacterium naturally present in raw milk. | Available. | Destroyed, since pasteurization kills beneficial as well as harmful bacteria. |
| **Lactoferrin** | A protein, whose unique ability to bind to iron helps improve absorption and assimilation of iron. It also has anti-fungal, anti-bacterial, anti-viral and anti-cancer capabilities since it deprives tumors and pathogens of iron, which they utilize for growth and reproduction. Stimulates immune cells to engulf pathogens and foreign materials. Also is a powerful antioxidant and anti-inflammatory agent. | Available. | When milk is pasteurized at the lowest possible heat, the lactoferrin appears to be intact. However, very high pasteurization temperatures (305°F or 151.7 °C), combined with high pressure homogenization, some or all of the lactoferrin is completely inactivated. |

| Nutrient | Role in Nutrition | Raw Milk | Pasteurized Milk |
|---|---|---|---|
| **Enzymes (general)** | A class of biochemicals, made from small chains of amino acids, that catalyze all metabolic and life processes without being used up in the process. Enzymes assist with everything from cellular growth to protection against infection. | All are available. There are over 60 known enzymes in raw milk. | Essentially destroyed. Pasteurization is in fact defined as succeeding according to the absence of enzymes. Among other disadvantages, the loss of enzymes prevents the assimilation of minerals. |
| **Lacto-peroxidase** | The second most abundant enzyme in milk. A strong antimicrobial agent in milk, saliva and tears. Inhibits the growth of *Salmonella* and other bacteria, yeasts, fungi, and viruses. | Found almost exclusively in the whey after cheese making; carbohydrate content about 10%. | Fairly unavailable after being heated. |
| **Lysozyme** | Enzyme. Can break apart cell walls of certain undesirable bacteria. | Available. | Reports are mixed. Sources either report destruction of this enzyme, or say that it appears to remain fairly intact. |
| **Catalase** | Enzyme. Helps prevent unwanted bacterial contamination. | Available. | Largely destroyed. |
| **Lipase** | Enzyme that helps digest fats. | Completely available. | Completely destroyed. |
| **Lactase** | Enzyme that helps digest lactose (milk sugar), the principal carbohydrate in milk. | Completely available. | Completely destroyed (some milk companies add it to the milk after processing). For almost half of the world's population whose digestive systems are completely or partially deficient in lactase (and who are said to be "lactose intolerant"), drinking pasteurized milk may cause diarrhea, bloating and cramping. |
| **IgG, a.k.a. Enzyme Immuno-globulin G** | Enzyme that inhibits rotaviruses that cause diarrhea in infants. | Completely available. | Partially destroyed. Johns Hopkins University discovered that raw milk contains 250% more of this enzyme than pasteurized milk. |
| **Phosphatase** | Enzyme essential for calcium absorption. | Completely available, and plentiful. | Completely destroyed. |

| Nutrient | Role in Nutrition | Raw Milk | Pasteurized Milk |
|---|---|---|---|
| **Fats** | Help metabolize protein and calcium, construction materials of cell membranes and hormones, chief foods of the nervous system and heart, provide energy storage and protection for organs, act as vehicles for fat-soluble vitamins. All natural protein-bearing foods contain fats. Fats cause the stomach to secrete the hormone CCK, which—aside from helping the body secrete digestive enzymes—sends a message to the brain when the stomach is full. The absence of fats in non-fat dairy products (as well as other fat-free foods) helps contribute to over-eating. | All 18 fatty acids metabolically available, both saturated and unsaturated fats. | Destroyed, including the 10 essential unsaturated fats. |
| **Conjugated Linoleic Acid (CLA)** | Polyunsaturated Omega 6 fatty acid that raises metabolic rate, helps remove abdominal fat, boosts muscle growth, reduces resistance to insulin, strengthens immunity, and lowers food allergy reactions. | Available. | Mostly destroyed. |
| **Vitamins, water-soluble** | Help with tissue repair and maintenance on all levels. Number of functions is too long to list. | All are 100% available. | Water-soluble vitamins are affected by heat and losses can range from 38% to 80%. Vitamin C loss by itself usually exceeds 50%. At least one quarter of all B Vitamins are lost. |
| **Vitamins, fat-soluble** | Help with tissue repair and maintenance on all levels. Number of functions is too long to list. | All are 100% available. | Among the fat-soluble vitamins, some are classed as unstable and therefore a loss is caused by heating above blood temperature. The loss of Vitamins A, D, E and F can run as high as 66%. |
| **Vitamin B12** | One of many water-soluble vitamins. Mentioned separately because it is abundant in raw milk, and very difficult to find in vegetarian sources. | This vitamin is 100% available. | Largely destroyed. |
| **Lactose (carbo-hydrate)** | Lactose is the naturally-occurring sugar in milk. | Easily utilized during metabolism. | Pasteurization turns the lactose into beta-lactose, which is absorbed more quickly by the body and thus floods the system with too much glucose at once. May be the origin of higher than normal incidences of diabetes and hypoglycemia in those who drink pasteurized milk. |
| **Minerals (general)** | Major minerals include calcium, magnesium, phosphorus, potassium, sodium, sulfur and chlorine (the beneficial trace mineral, not the toxic chemical). There are at least 24 vital trace minerals. | All major minerals are 100% available. The trace minerals are also 100% available. | There are losses in other essential minerals, as one mineral usually acts synergistically with another element. Also, the loss of enzymes prevents the assimilation of minerals. |

| Nutrient | Role in Nutrition | Raw Milk | Pasteurized Milk |
|---|---|---|---|
| **Calcium** | Abundant in raw milk. Most noted for building bone and teeth, increasing bone density and lowering risk of osteoporosis and fractures in older adults. Aids in muscle contraction. Also assists with electrical conduction along nerves and blood clotting. Also fights cancers, especially colon cancer. | Available. In order to be absorbed, calcium must be balanced with the proper ratio of phosphorus and magnesium. These two other minerals are also available in raw milk. | Calcium is altered by heat and loss in metabolism may run 50% or more, depending on pasteurization temperature. |
| **Phosphorus** | Builds bones and teeth. Responsible for energy production, acid-base balance, proper metabolism, cell membrane function, and calcium absorption. | Available. | Completely destroyed. |
| **Magnesium** | Abundant in raw milk. Helps build bone and teeth. Aids in necessary muscle expansion. Also responsible for transfer of bodily fluids and alkaline balance. | Available. | Less available. |
| **Bacteria (beneficial)** | Some of the beneficial bacteria strains break down the milk fats. Others transform lactose (milk sugar) into lactic acid. Lactic acid improves absorption of calcium, iron and phosphorus, breaks up casein into smaller particles, and helps destroy pathogens. | Bacteria grow very slowly, because the friendly acid-forming bacteria—nature's antiseptic—retard the growth of invading pathogens. Raw milk usually keeps for several weeks when under refrigeration, and will sour instead of rot. | Beneficial bacterial are completely destroyed. Pasteurization does not prevent unwanted pathogenic bacterial from contaminating the milk after it cools. |

**Adapted from:**

William Campbell Douglass, Jr. and Aajonus Vonderplanitz, "Supplemental Report in Favor of Raw Milk," a legal document sent by attorneys Arlene Binder and Roger Noorthoek to each Los Angeles County Board of Supervisor, posted at www.karlloren.com/aajonus/p15.htm (April 7, 2007)

**Additional material gathered from:**

Ron Schmid, "The Health Benefits Of Raw Milk From Grass-Fed Animals" (part of a project of the Weston A. Price Foundation, A Campaign for Real Milk: Pasture-Fed, Unprocessed, Full Fat), posted at www.realmilk.com/healthbenefits.html (April 7, 2007)

"Lactoperoxidase, Review of Biological Properties through 1997," at www.fst.osu.edu/People/HARPER/Functional-foods/Milk%20Components/Lactoperoxidase.html (April 7, 2007)

Medical Society in 1923. At that point, he had been treating people with raw milk for 15 years.

Another interesting historical reference is in a paper by B.M. Bernstein, which he presented in 1942 to the American Association of Medical Milk Commissions in Atlantic City, New Jersey. The paper pointed out that raw milk was a vital component in the treatment of gastric ulcers in the 19th century. Other credible sources, including physician William Campbell Douglass and Aajonus Vonderplanitz, cite the use of raw milk in helping to eliminate many diseases, including asthma and diabetes.

Another piece of misinformation associates raw milk with unclean conditions. In fact, cows raised for raw milk are much more heavily inspected than cows raised on factory farm dairies. Raw dairy farmers must keep the cows, their living quarters, and the milking equipment scrupulously clean. Throughout the years, several people employed by commercial (non-raw) dairies have told me that they saw batches of processed milk with "unacceptable" levels of contamination made "acceptable" again because cleaner batches were added to the contaminated ones—thus bringing the total contamination levels within the range allowable by law.

The FDA has been working hard to prevent people from having access to raw milk. Some farmers in states that prohibit raw milk sell cow shares. The shareholders visit the farm daily or weekly to fill their own containers with fresh milk. In response, in several instances FDA agents have trespassed onto the farms and confiscated the milk, even though the shareholder program is legal. One must ask, "Whose interests does the FDA really represent?"

Homogenization also damages milk. The milk is pumped at high pressure through a small opening to disperse the heavy, creamy fat molecules throughout the fluid. This makes the fat molecules smaller, and of uniform size and consistency. (Otherwise, the cream would rise to the top.) This process is not benign. Fats expert Mary G. Enig, PhD, writes:

> There is a tremendous increase in surface area on the fat globules. The original fat globule membrane is lost and a new one is formed that incorporates a much greater portion of casein and whey proteins. This may account for the increased allergenicity of modern processed milk.[62]

Raw milk has been a staple in the diets of millions of people all over the world for centuries. If you cannot obtain raw dairy products in your location, at least avoid homogenized or ultra-pasteurized dairy products. Some organic dairy farms now carry non-homogenized milk, cream and yogurt.

Now for the caveat. *Not everyone can assimilate even clean, raw dairy*. There are several possible reasons for this. One common finding is that people of Asian, African and Eastern European ancestry lack the enzymes to digest dairy—probably because their forebears did not include dairy as part of their traditional diet, and so therefore never developed the requisite enzymes. Apparently, even the enzymes already present in raw milk are not sufficient to help these people overcome an allergy or intolerance to milk. People who negatively react to *lactose*, or milk sugar, can take supplements containing *lactase*, the enzyme that helps digest milk sugar.

Sometimes, people have difficulty assimilating *casein*, which is a milk protein. Research from Keith Woodford of New Zealand indicates that dairy intolerance may result from proteins found in some milks and not others. The problematic protein, A1 beta casein, forms fragments when it is digested. This casein is not only an irritant, but it's also an opiate and an oxidant. A1 proteins are commonly found in the milk of cows from Western countries. On the other hand, so-called A2 milk does not cause irritation. A2 was a component of all milk until a mutation occurred in the bloodline of European cattle thousands of years ago. Cows giving A2 milk tend to live in Asia, Africa, and select areas in Southern Europe, although some A2 animals are now being bred in the US, Australia and New Zealand.

Yet another hypothesis regarding (raw) milk intolerance relates to the body's depleted bile stores and resulting difficulty in digesting fats. People negatively affected by cow's milk may be able to handle milk from a goat or sheep. Milk from smaller animals is more easily assimilated by humans because the fat molecules are smaller (on a more human scale). Also, the proportions of nutrients more closely resemble those of human milk. For instance, the much higher ratio of phosphorus to calcium in cow's milk compared to human milk may actually prevent the absorption of calcium in humans who consume bovine dairy products. On a related note, the minerals magnesium and boron, as well as Vitamin D3, help with calcium assimilation. Raw milk contains all of the nutrients necessary to utilize calcium; adulterated milk does not. (For those who cannot tolerate even raw dairy, calcium from vegetables such as leafy greens is fairly well absorbed.)

Other possibilities for difficulty in digesting milk are reactions to what the cow ate, and even the bromine solution that many dairies use to wash the cow's udders (although it's unlikely that a raw dairy would use toxic bromine).

Sometimes, people intolerant to dairy can eat *fermented* milk products, such as yogurt, buttermilk, kefir, cream fraiche and sour cream. Through the process of fermentation, beneficial bacteria predigest the food, thus rendering it more easily absorbed. However, not everyone can handle even fermented raw dairy from a

small animal, so consult a qualified health practitioner if you suspect that you have a problem with dairy. Signs of intolerance could be gastric distress, respiratory distress, excessive mucous production, brain fog, fatigue, and muscle and joint pain. (Food intolerances and outright food allergies both demonstrate negative reactions to food. However, an allergic response features an immediate production of antibodies to the food, which is perceived by the body as a foreign invader.)

To summarize, the high heat of pasteurization destroys the majority of vital enzymes, vitamins and minerals that make milk nutritious and digestible. The high levels of healthful nutrients in raw milk have helped many people recover from all types of illnesses. Books and websites devoted to the benefits of raw milk contain stories of people with asthma, chronic fatigue, recurring infections, and other health problems who are now fully recovered as a result of drinking raw milk. Some of these accounts are written by parents about their children.

### Vegetables

This is a broad category that includes leafy greens, stems, the tops, the roots of the plant, and in some cases even the part containing the seeds. All these different plant parts have been grouped into the classification "vegetable," although they can have radically different properties.

Leaves include arugula, bok choy, Brussels sprouts, cabbage, chicory, dandelion, escarole, kale, lettuce, mustard greens, spinach and watercress.

Stems (stalks) include celery, leeks, chard, broccoli stalks, rhubarb and scallions

Roots (tubers) include carrots, beets, parsnips, radishes, potatoes, yams, sweet potatoes and taro.

Sometimes we eat the unopened flowers, although we might not think of it in those terms. This includes the tops of broccoli and cauliflower.

Other vegetables we call herbs: the tops of roots, such as parsley and cilantro. We also eat gourds (cucumber, okra and squash), seed covering crops (green beans and bell peppers), and crops technically classified as fruit but eaten as vegetables, such as tomatoes, avocados and lemons.

Vegetables in the *Solanaceae* family are problematic. This subset of nightshades encompasses thousands of trees, herbs, shrubs and vines worldwide. *Solanaceae* plants include the poisonous inedible deadly nightshade *(Atropa belladonna),* which, if even rubbed on the eyelids, can cause death. Related *Solanaceae* crops include tomatoes, white potatoes, eggplant, goji berries, ground cherries, tobacco, and sweet and hot peppers (bell, chili, cayenne and paprika).

The most well known nightshade alkaloid is *solanine,* but all *Solanaceae* plants also contain nicotine *(Nicotiana tabacum).* Another toxic compound is calcitriol—a different, and much more potent, form of Vitamin D than the D3 created by the body. Naturopath Garrett L. Smith reports that although some calcitriol (which maintains proper bone density) is produced by the body, too much calcitriol from *any* source causes hypercalcemia (high blood calcium). To normalize blood calcium levels, the body deposits the extra calcium in the soft tissues, which build up over time in the cartilage, heart, kidneys, ligaments, skin and tendons.

Besides delaying healing, nightshade ingestion can exacerbate or outright cause muscle pain and stiffness; joint pain and cracking; insomnia; indigestion, acid reflux, nausea and vomiting; cardiac arrhythmia; neurological disorders; general inflammation; and even scleroderma (hardening of connective tissue in the entire body). Many disease conditions are related to nightshade ingestion: gout, osteoarthritis, rheumatoid arthritis, coronary artery disease, bone spurs. What's actually occurring is the accumulation of poisons in the tissues and joints. In one study by N.F. Childers and M.S. Margoles (see References), the symptoms of over 70% of people with rheumatoid arthritis were substantially relieved when nightshade foods were removed from the diet.

People sensitive to nightshade-related conditions are typically unable to completely detoxify nightshade compounds, due to weakened liver and kidneys. And deficiencies of magnesium, Vitamin D3, and Vitamin K2 also play a role—for instance, with calcinosis (a toxic calcification of soft tissues). At best, the high heat of cooking reduces nightshade alkaloids by only about half. So if you eat nightshades, make sure you are nutritionally fortified. Take extra supplements. Eat the nightshades with fatty grass-fed meats, oily fish, butter and cheese. As for potatoes that contain green parts, discard them; don't simply cut off the green and assume that the rest is okay. Green potatoes and potato sprouts should not even be given to livestock. As for tomatoes, they can cause the most damage if they are eaten unripe, or in concentrated amounts (as in tomato sauce and condiments).

A word about sweet potatoes, part of the morning glory genus: these are also part of the immense *Solanaceae* family of plants. Although belonging to the same family does not mean that all plants will share all characteristics, caution is advised.

An entirely different class of vegetables called *goitrogens* is also problematic, but mostly when eaten raw, and in large amounts. *Goitrogenous* foods, which contain a high level of sulfur compounds, interfere with the production of thyroxin (a thyroid hormone), leading to sluggish thyroid function. Thyroid-inhibiting vegetables include members of the brassica family: arugula, bok choy, broccoli, Brussels sprouts, cabbage, cauliflower, collards, daikon and other radishes, horseradish, kale, mustard, canola or rapeseed, rutabaga, tatsoi, turnip and watercress.

The list of goitrogens is disappointing, as these vegetables are low starch; and it's such a large family, they are difficult to avoid. The good news is, cooking goitrogenous vegetables with high heat—or fermenting them (as in turning cabbage into sauerkraut)—appears to disable the thyroid-lowering function. These vegetables contain many nutrients, so it's worth making the effort to prepare them properly.

Frozen and dried fruits and vegetables are almost as nutritious as fresh. Canned produce has little nutritional value. The danger of cans is another matter, and will be discussed shortly. Home-canned produce packed in glass jars is acceptable.

**Fruits**

The many varieties include temperate-climate apples, pears, cherries, berries (blueberries, raspberries, blackberries, mulberries), figs, peaches, apricots, plums and nectarines; and warmer-climate and tropical fruits mangoes, dates, bananas, papayas, oranges, grapefruit and pineapples.

Despite its fiber content, the high sugar levels in fruit are harmful to people sensitive to sugars and carbohydrates, and to those who are ill. Microbes love sugar; so if you are suffering from a chronic or serious illness, it's best to curtail your intake of fruit until you are stronger. Also, be aware that a waxy coating is applied to most fruits to protect them during shipping, and that the wax, unless specified as being beeswax, is made from petroleum. Beeswax may be used more for organic fruits and vegetables; but since beeswax is inedible, you may still want to peel the item before eating it.

Many growers pick unripe fruit (such as bananas), and then use polyethylene gas to "ripen" it after shipping it to market. This is another reason to buy organic. I will discuss fructose (fruit sugar) in more detail shortly.

**Legumes**

The legume family includes peas and beans: green and yellow peas; kidney, pinto, fava, white, lima, navy, aduki and black beans; and lentils. Most legumes (as well as grains and seeds) contain phytic acid. The phytic acid binds to proteins, and particularly minerals, in the intestinal tract, thus lowering the absorption rates of calcium, magnesium, copper, iron and especially zinc. Most legumes become more digestible if they are first soaked for several hours (this deactivates the phytic acid).

After being soaked from 12 to 24 hours, beans should be gently cooked for 4 to 8 hours (with acidic lemon juice or apple cider vinegar in the water) to render the vegetable protein digestible. However, some beans also contain large, complex sugars called oligosaccharides that cause indigestion. Mammals do not produce the alpha-galactosidase enzyme, which is necessary to break down the sugars in the digestive tract. "When consumed," one health reporter writes, "these oligosaccharides reach the lower intestine largely intact, and in the presence of anaerobic bacteria ferment and produce carbon dioxide and methane gases, as well as a good deal of discomfort, not to mention embarrassment in polite society."[63]

Soy, also a legume, is a staple in the diets of many vegetarians and health-conscious consumers. But the million-dollar soy industry has presented only partial truths, as well as outright falsified "research," in order to develop a marketplace for its goods. The health problems caused by soy are almost too numerous to count. See Insert, "Soy: A Serious Non-Food." The websites mentioned there contain carefully documented reports of how people's health improved once soy was eliminated from their diet.

**Seeds and Nuts**

Seeds include pumpkin, flax, sunflower, and sesame seeds. Nuts include almonds, cashews, filberts, macadamia nuts, hazelnuts, pecans, walnuts, chestnuts, and coconuts. Most nuts and seeds contain over 50% fat, so make sure you can tolerate them. The inability to digest nuts may indicate a poorly functioning liver.

There are different opinions as to whether nuts should be eaten raw. Soaking nuts overnight, whether they have been roasted or not, does make them more digestible. Sprouting liberates many valuable enzymes, since a sprout is the beginning of a vital, chlorophyll-rich green plant. Some nutritionists dislike certain sprouts, citing the undesirable natural chemicals that are liberated along with the growing plant, but you'll have to see for yourself if a diet rich in sprouts (or rich in raw foods) is good for you.

Almonds belong to the same family as apricots and plums. The seeds inside the fruit pits look and taste like bitter almond. Apricot kernels are the source of the natural anti-cancer substance Laetrile, or what G. Edward Griffin points out is basically Vitamin B17, an essential nutrient for the body. The botanical relationship of almonds and apricots may explain why psychic Edgar Cayce advised in his famous nutritional readings that eating three almonds a day would prevent cancer. (Note, however, that bitter almonds, not the sweet ones, contain the B17.) Almonds are also considered special because unlike other nuts and seeds, for people of a certain metabolic type, they are alkalizing to the system. These health benefits—and the FDA's antipathy toward natural health—may explain why the FDA recently passed a law requiring all almonds to be irradiated (the agency calls it "pasteurization"), thus rendering them lifeless, incapable of sprouting. Even though irradiated almonds contain no life force, they are legally allowed to be called raw. In the United States as of this writing, this ruling is being fought.

**Fats and Oils**

Healthful fats, which have been eaten for thousands of years by native peoples adhering to traditional diets, are animal fats, coconut and olive oils, and raw butter. Animal fats and coconut oil can withstand fairly high

## Soy: A Serious Non-Food

Soybeans are perhaps most infamous for their *isoflavones*, or *plant estrogens* (phytoestrogens). Due to their ability to mimic the natural estrogen in the human body, isoflavones disrupt hormonal functions by either excessively stimulating the body's estrogen receptors, or shutting them down. A May 31, 2001 press release from the National Institute of Environmental Health Sciences reported cancer of the uterus in infant mice given genistein (one of the isoflavones in soy). This effect is similar to that caused by the synthetic estrogen DES, or diethylstilbestrol, which was once used to prevent miscarriage in humans (and to fatten animals). DES was taken off the market after it caused cancers in both mothers and offspring. However, soy is still used as food, despite ample scientific research showing its dangers.

Here are some more facts about soy, as reported by Kaayla T. Daniel in *The Whole Soy Story*, www.soy onlineservice.co.nz, and the Weston A. Price Foundation:

- Soy phytoestrogens may cause infertility, and even promote breast cancer in adult women.
- These same phytoestrogens cause premature sexual development in both girls and boys who eat it. Sometimes, boys become so feminized that they grow breasts. (Usually the breast growth reverses once soy is withdrawn from the diet.)
- Soy contains the scientifically documented carcinogenic and DNA-damaging and chromosome-damaging natural chemicals genistein and daidzein.
- Soy phytoestrogens are potent anti-thyroid agents that cause hypothyroidism and may even cause thyroid cancer. In infants, consumption of soy formula has been linked to autoimmune thyroid disease.
- Soy contains high levels of trypsin inhibitors, which interfere with protein digestion and may cause pancreatic disorders. In test animals, soy containing trypsin inhibitors caused stunted growth.
- Soy contains high levels of phytic acid, which reduces assimilation of calcium, magnesium, copper, iron and zinc. The phytic acid is not neutralized by ordinary preparation methods such as soaking, sprouting and long, slow cooking. High phytate diets have caused growth problems in children.
- Soy contains Vitamin B12 analogs, rather than Vitamin B12 itself. This means that the analog latches onto receptor sites of cells, but is not an exact duplicate of actual B12. Thus, nutrients in the Vitamin B12 analog are not absorbed; and they actually increase the body's requirement for B12.
- Soy foods increase the body's requirement for Vitamin D.

Soy proponents maintain that Asians have used soybeans for thousands of years. But the tiny legume originally used in Asia is quite different from its much larger, highly bred relative. Soybeans were planted mostly for animals to eat, and to put nitrogen back into the soil, as they are basically indigestible. Their high levels of enzyme inhibitors prevent the body from easily absorbing and utilizing calcium, magnesium and zinc. When soy is processed, the high heat necessary to destroy the enzyme inhibitors also destroys some essential amino acids, such as lysine. For these reasons and more, the original soy recipes from Asia *fermented the bean first*. Once fermented, the miso, soy sauce and tempeh—the only edible forms of soy—could be digested. In addition, these foods are used mostly as condiments, not as a main course or as meat substitutes.

In contrast to centuries-old, carefully fermented soy condiments, modern fake foods made from soy are unfermented and indigestible. As their labels indicate, the protein powders, imitation cheese, ice cream substitutes, meat-like cutlets, and even infant formula are made with de-natured soy protein *isolate*. But *isolate* means isolating and removing a food from its natural matrix—subjecting it to so much processing that it's no longer a whole food, but *fragmented*. On this basis alone, products made with soy protein isolate should be avoided. Soy protein isolate never received GRAS (Generally Recognized as Safe) status from the FDA as an edible food. It was approved, in 1959, solely as a binder for cardboard boxes.

The processing of most soy products creates:

- Denatured, fragile proteins, due to the high temperatures (this is in the production of soy protein isolate and textured vegetable protein).
- Toxic lysinoalanine and highly carcinogenic nitrosamines.
- Free glutamic acid or MSG, a potent neurotoxin.

Some women report feeling better when they eat soy. I have known two women who suffered from hormonal imbalances—imbalances that eating phytoestrogens helped to correct. But I've known many more people who have eaten soy and as a result, suffered from disrupted menstrual periods, diminished thyroid function, impaired memory, and premature aging. Vegetarians who insist on making unfermented soy a mainstay in their diet may be impairing their health and the health of their children.

There is frankly too much evidence that soy is a nonviable food. If you do eat soy as a main course, pay close attention to how you feel, and be willing to stop eating it if you don't feel well. Soy's ability to induce powerful hormonal changes gives it enormous potential as a valuable medicine, if properly used.

> Did you know that your heart uses *fat* exclusively as its source of energy? Now why would your heart only choose fat? It cannot miss a beat and needs a very reliable and optimum source of energy. Carbohydrates and glucose *are too unreliable* for your heart. Glucose is inferior for muscle power and only your brain is truly efficient at burning glucose as its source of fuel. Your brain is unique because it has the ability to utilize glucose without insulin being present. What this tells us is that the human body is a fat burning organism that is designed to operate on *small amounts* of insulin and carbohydrate.
>
> —Jay Robb, *The Fat Burning Diet*, 1996

heat; and butter and olive oil can withstand moderate heat. Flax oil, healthful under certain conditions, should only be eaten fresh and unheated.

Americans have been taught to fear dietary fat, evidenced by a glut of supermarket items peddled as "low fat," "zero fat," and "low cholesterol." But these no-fat foods are unnatural. The right kinds of fat—saturated and unsaturated, some from vegetables but most from animals—are an essential part of the human diet. Fats lubricate the tissues, assist with metabolism, provide essential nutrients, and help satisfy hunger. Fats provide the beneficial type of cholesterol that makes bile salts, hormones and Vitamin D. The heart and the kidneys cannot survive without fat. Our nerve cells are covered with fat, which acts like insulation, similar to the rubber that coats electrical wiring. A scarcity of dietary fat means that the messages conducted along the nerves become scrambled due to poor insulation. And fats comprise over 70% of the brain. If we do not eat enough of the proper fats, we cannot think, concentrate, remember, move, sense, or perceive correctly. The high amounts of fat in human milk help an infant develop properly.

If animal fats are so important in the diet, why are Americans so afraid to eat them? The answer can be found in a wonderful article by biochemical researcher Dr. Mary Enig and nutrition activist Sally Fallon called "The Oiling of America" (some of which is excerpted later in this chapter as a sidebar). They describe, in great detail, how negative publicity for both animal fats and coconut oil was generated by the "edible" oils industry about 50 years ago, to create a lucrative market for highly processed vegetable oils. The food industry deliberately falsified Enig's research showing the harm of processed hydrogenated fats, in order to convince the public to eat fabricated fats. In any case, Dr. Enig reminds us, the popular fiction claiming that animal fat is completely saturated is misleading and wrong. Beef fat is 54% unsaturated, lard is 60% unsaturated, and chicken fat is about 70% unsaturated.

*Eating dietary fat does not necessarily translate into becoming physically fat*. Contrary to what most people have been led to believe, it's an excess of carbohydrates (sugars and starches), rather than unaltered fats, that leads to overweight. Think of the Inuit (Eskimos), whose diet consists of at least 75% whale and seal blubber. (The effects of sugars, including the condition known as carbohydrate intolerance, are addressed elsewhere in this chapter.)

What about oils designated "cold pressed"? This simply means that the oils have not been heated after being extracted from their source. But even vegetable oils labeled *cold pressed* heat up considerably as a result of the intense pressure—20 tons per square inch—need to extract the oil in the first place. Think of how much pressure is required to squeeze oil from a hard seed or nut, compared to a fleshy olive or tiny soft sesame seeds! So even though a vegetable oil may be processed without chemical solvents, artificial preservatives or *extra* heating, as soon as the now-hot oil is squeezed out of nuts and seeds, it starts to turn rancid. One such oil is canola.

Canola, grown extensively in Canada, is none other than rapeseed. To make the oil more appealing to a mass market, Canadian scientists named the product as either a shortened form of "Canadian Oil," or "Canadian Oil Low Acid." The oil was developed using manual cross-breeding techniques on two related cruciferous plants, both known as rapeseed, to lower what was regarded as excessive levels of naturally-occurring erucic acid. Further attempts to alter canola were done by bombarding the seeds with radiation, which is one form of genetic engineering. Over 50% of today's canola crop is genetically engineered by the Monsanto corporation. This means that you are ingesting the herbicide Roundup® with your food.

Sally Fallon points out that no long-term studies on humans have been done regarding the safety of canola oil. Since this item is marketed as a healthy oil, and appears in most foods, it's helpful to know its history and why it can cause damage. See Sidebar, "The Dangers of Canola Oil."

As already stated, coconut oil can tolerate high heat. The naturally-occurring saturated fat in coconuts enables the oil to resist high temperatures without being transformed into dangerous *trans* (transformed) fats. Trans fats will be discussed in more detail later in this chapter.

The coconut's negative reputation is undeserved. Coconut is one of the few foods besides human breast milk that contains *lauric acid*. Lauric acid's potent antimicrobial properties suggests that coconuts may help those afflicted with infections—including cancer, *Candida albicans*, and HIV. Coconut *milk*—the watery, sweet, electrolyte-rich fluid inside the hard coconut shell—has a similar nutrient composition to human breast milk, which makes it suitable for nursing babies. In fact, coconut

milk was often used instead of blood plasma (blood liquid without the red blood cells) for transfusions, until plasma collection became popular.

Although coconuts contain up to 60% fat (of which over 90% is saturated), these fats are Essential Fatty Acids (EFAs)—and thus mandatory for life processes. Coconut's unique molecular structure of medium-chain fatty acids does not cause weight gain, as long as it's not eaten in excess. Rather, the fat is highly digestible, sates the appetite, and helps burn body fat. Old studies linking coconut oil with high cholesterol, heart attacks and other negative conditions were based on *adulterated coconut fat that was artificially manipulated to remove its EFAs*. Natives living in the tropics who consume enormous amounts of coconut products have among the lowest rate of heart disease in the world.

Flax may be eaten either freshly ground, or as a very fresh oil; but it should never be heated. Though high in naturally anti-inflammatory Omega 3 fats (which cannot be made by the body), the Omega 3s in flax must be

## The Dangers of Canola Oil

Canola oil is definitely not healthy for the cardiovascular system. Like rapeseed oil, its predecessor, canola oil is associated with fibrotic lesions of the heart. It also causes Vitamin E deficiency, undesirable changes in the blood platelets and shortened life-span in stroke-prone rats when it was the only oil in the animals' diet. Furthermore, it seems to retard growth, which is why the FDA does not allow the use of canola oil in infant formula.

The animal studies carried out over the past twenty years suggest that when rapeseed oil is used in impoverished human diets, without adequately saturated fats from ghee, coconut oil or lard, then the deleterious effects are magnified. In the context of healthy traditional diets that include saturated fats, rapeseed oil, and in particular erucic acid in rapeseed oil, does not pose a problem. In fact, erucic acid is helpful in the treatment of the wasting disease adrenoleukodystrophy and was the magic ingredient in Lorenzo's oil.

High levels of Omega 3 fatty acids, present in unprocessed rapeseed oil, don't pose a problem either when the diet is high in saturates. Rapeseed has been used as a source of oil since ancient times because it is easily extracted from the seed. Interestingly, the seeds were first cooked before the oil is extracted. In China and India, rapeseed oil was provided by thousands of peddlers operating small stone presses that press out the oil at low temperatures. What the merchant then sells to the housewife is absolutely fresh.

Modern oil processing is a different thing entirely. The oil is removed by a combination of high temperature mechanical pressing and solvent extraction. Traces of the solvent (usually hexane) remain in the oil, even after considerable refining. Like all modern vegetable oils, canola oil goes through the process of caustic refining, bleaching and degumming—all of which involve high temperatures or chemicals of questionable safety. And because canola oil is high in Omega 3 fatty acids, which easily become rancid and foul-smelling when subjected to oxygen and high temperatures, it must be deodorized. The standard deodorization process removes a large portion of the Omega 3 fatty acids by turning them into trans fatty acids. Although the Canadian government lists the trans content of canola at a minimal 0.2%, research at the University of Florida at Gainesville, found trans levels as high as 4.6% in commercial liquid oil. The consumer has no clue about the presence of trans fatty acids in canola oil because they are not listed on the label.

A large portion of canola oil used in processed food has been hardened through the hydrogenation process, which introduces levels of trans fatty acids into the final product as high as 40%. In fact, canola oil hydrogenates beautifully, better than corn oil or soybean oil, because modern hydrogenation methods hydrogenate Omega 3 fatty acids preferentially and canola oil is very high in Omega 3s. Higher levels of trans fats mean longer shelf life for processed foods, a crisper texture in cookies and crackers—and more dangers of chronic disease for the consumer.

But most of the Omega 3s in canola oil are transformed into trans fats during the deodorization process; and research continues to prove that the saturates are necessary and highly protective.

At least it can be said that canola oil is a good source of monounsaturated fat—like olive oil—and therefore not harmful. . . . Or is it? Obviously monounsaturated fatty acids are not harmful in moderate amounts in the context of a traditional diet, but what about in the context of the modern diet, where the health-conscious community is relying on monounsaturated fats almost exclusively? There are indications that monounsaturated fats in excess and as the major type of fat can be a problem. Overabundance of oleic acid (the type of monounsaturated fatty acid in olive and canola oil) creates imbalances on the cellular level that can inhibit prostaglandin production. In one study, higher monounsaturated fat consumption was associated with an increased risk of breast cancer.

—excerpted from Sally Fallon and Mary G. Enig, "The Great Con-ola"
*Wise Traditions in Food, Farming and the Healing Arts,* Summer 2002

converted by the body in order to be usable. Many people (and all dogs) lack the enzyme involved in this conversion. (The enzyme is also impaired by elevated insulin levels.) Therefore, Omega 3s are best obtained from animal sources. Since Omega 6 fats tend to be more common in the diet—most seeds and nuts contain generous amounts—Omega 6s should be balanced with at least half that amount of Omega 3s.

The best fats have an impressive track record: grass-fed animal fat; raw or fermented butter; olive and coconut oils. Fatty fish like salmon and tuna contain many beneficial oils. However, due to mercury contamination, it may be better to obtain your fish oil from capsule or liquid supplements that have been molecularly distilled to remove the heavy metals. Krill oil is easily absorbed, and contains high levels of antioxidants.

**Grains**

The most popular grains in North America are wheat, rice, rye, oats, barley, and corn or maize (often mistaken for a legume). Other grains are millet, quinoa, spelt, triticale and kamut. Grain-like foods include amaranth (a fruit), and the confusingly named buckwheat (the seeds of an herb related to rhubarb).

*Gluten,* a sticky protein, is in rye and barley, and in all members of the *Triticum* (wheat) family: spelt, emmer-wheat, kamut, triticale (a wheat-rye hybrid), semolina (the starchy inner kernel of durum wheat), and couscous, orzo and bulgur (all manufactured wheat products). Millet contain *gliadin,* a toxic protein component of gluten. Amaranth, buckwheat, quinoa and rice are gluten-free.

Corn is in its own class. Yellow and white corn contain high amounts of the amino acid arginine (which feeds pathogens such as the *Herpes* virus). Blue corn—in many ways a different plant than yellow corn—has an unusual amino acid profile that includes low arginine levels and high lysine levels. (Lysine inhibits the growth of *Herpes* and other pathogens.) Some people who cannot handle yellow corn can eat blue corn.

Gluten-free diets are gaining popularity as more people report ill effects from eating gluten. Why are glutinous grains so problematic? Agriculture and the domestication of grains occurred much later in human history than did the hunting of animals and gathering of wild foods. Biochemically, we are more equipped to digest and assimilate animal protein, roots, leaves and fruits than grains. Also, high-gluten grains are a relatively recent phenomenon. To increase their food supply in the New World, pioneers bred winter wheat—with an even higher gluten content than normal—which could survive the cold harsh winters.

Glutinous grains cause severe destruction to humans. The outer, indigestible bran hull contains phytic acid, a naturally-occurring preservative that prevents the kernels from rotting if they don't instantly encounter a favorable germinating environment. But phytic acid binds to minerals in the intestinal tract and prevents them from being absorbed and utilized. Enzyme inhibitors prevent germination under unfavorable conditions (such as too little moisture). But they also hinder digestion. And the hull contains lectins, which discourage bacteria, molds and animals from consuming the kernel so the seed can still germinate after years of dormancy. However, lectins impair metabolism. Usually the damage is not detected until it's severe and crippling. Conditions that are exacerbated (if not outright caused) by glutinous grains range from Crohn's disease and *Candida albicans* to osteoporosis, liver disease and Down's Syndrome. The insert "Dangerous Grains" explains the destruction in detail.

Despite gluten's effects, the health food movement promotes eating *unrefined* whole grains. *Refined* grains are stripped of the outer germ and bran—leaving only the starchy white center (endosperm)—so that almost all vitamins, minerals and perishable oils are removed. Now, it's true that the absence of vitamins, minerals and fiber in refined grain forces the body to draw on its own store of nutrients to process the empty calorie starch. It's also true that the absence of perishable ingredients in refined grain ensures a long (and even indefinite) shelf life: what makes nutrient-depleted grains desirable for storage makes them unable to support living beings. (Experiments show that rats and other animals fed a steady diet of refined carbohydrates, die quickly.) However, as medical doctor Kurt G. Harris points out, the wheat hull contains anti-nutrients that induce the eater to defecate before the seed can be digested. The plants' biochemical defenses—which allow the seed to survive and grow—are precisely what make them indigestible! Consuming the bran and germ means deliberately eating plant compounds that exist solely to irritate or poison predators. No amount of preparation, including soaking the grain for many hours before cooking it, can neutralize all the injurious compounds.

The processing of flour compounds its toxicity. Most commercial supermarket and bakery breads, cakes, pies and pastas are made from refined wheat flour that's bleached a dazzling, pretty white. But various bleaching agents—such as oxides of chlorine and nitrogen—combine with the few remaining proteins in the starchy endosperm to produce *alloxan.* Alloxan destroys the beta cells of the pancreas, making it impossible for the gland to produce sufficient insulin. Dani Veracity writes:

> Scientists have known of the alloxan-diabetes connection for years; in fact, researchers who are studying diabetes commonly use the chemical to induce the disorder in lab animals. . . . Even though the toxic effect of alloxan is common

## Dangerous Grains

### *Injurious, Not Essential*

There's an old saying: "Bread is the staff of life." People invite each other to "break bread" when they want to share a meal. The word "bread" suggests something so basic, it has even become a slang term for "money." Is bread as important as popular culture claims?

Bread is indeed important, but for different reasons than one might think. In the Western world, bread is synonymous with wheat. Not only is bread made from wheat; so are cake, pie, pastry and pasta. But for at least 30% of the world's population—and, some evidence suggests, 50% or even higher—wheat is a poison.

The many varieties of wheat, as well as rye and barley, contain a family of very sticky proteins called *gluten*. Gluten's stickiness makes it ideal for bread and other baked products. But this particular adhesive quality directly causes, or contributes to, seemingly unlimited health problems ranging from gastrointestinal ailments to degenerative diseases and autoimmune disorders. To appreciate gluten's health hazards, we need to understand how gluten affects the gut and the brain, and how the body's response to gluten parallels its response to microbes. The following discussion focuses on *gliadin*, one type of gluten protein. Gliadin, present in all gluten cereals (and oats, if they are contaminated by glutenous grains), is the most studied of all the gluten components.

### *Damage from Wheat and Some Other Grains*

*Gut damage.* The most widely known negative reaction to wheat is a condition called *celiac disease* (sometimes called *celiac sprue*), which affects the small intestine. Normally, the small intestine contains millions of *villi*, short projections that stick up everywhere like tiny slender poles. The villi increase the surface area of the intestine, thus improving the ability of nutrients from digested food to enter the bloodstream. But in gluten-sensitive people, exposure to gluten causes the villi to malfunction. First the villi become compressed, with somewhat less surface area available for nutrient absorption. As their deterioration continues, the villi become flat, completely destroyed by lesions. Usually, the intestinal damage occurs in the duodenum, the first third of the intestine located next to the stomach. In advanced cases, the jejunum (the next section) is also involved.

With damaged villi, the body cannot process food properly. Undigested food in the small intestine encourages an overgrowth of *Candida albicans*. Normally, *Candida* numbers are kept in check by beneficial bacteria in the intestine, which eats the *Candida*. But in a gut increasingly toxified by leaks—not to mention unhealthily fermenting food—the levels of beneficial bacteria dwindle and *Candida* proliferates. *Candida* infections cause almost unlimited problems, ranging from brain fog and depression to severe gastrointestinal disorders and weight gain. (Significantly, gliadin contains amino acid sequences that resemble those in *Candida*. And both gluten and *Candida* stick to the gut in a similar manner.)

Damage to the gut can still occur in the absence of outright villi damage (celiac disease). In everyone—regardless of whether they are gluten-sensitive or not—the body responds to the presence of gliadin by releasing a protein called *zonulin*. Newly published research shows that the "zonulin signaling" activated by gliadin intake leads "to increased intestinal permeability to macromolecules."[64] Zonulin not only opens the seams between cells, it *keeps* them open. This allows excessively large particles from grains and other foods to slip through the holes in the gut, circulate through the bloodstream, and enter tissue cells where they cause further damage. *Leaky gut syndrome* is the name commonly given to a punctured gut.

The digestive tract is designed to absorb nutrients *through the cells* in the intestinal wall, not *through gaps between* the cells. One might expect zonulin levels to increase during the acute phase of celiac disease. But so-called "normal" people who don't have celiac disease also produce more zonulin; the cell junctures simply close more quickly. So, even if the villi don't flatten, gluten damages the intestinal wall by creating holes. Irritation of the gut—which, again, can occur independently of villi destruction—causes bloating, gas, chronic diarrhea and constipation. Extremely high levels of irritation lead to inflammation and possibly infection, with diagnoses of Irritable Bowel Syndrome and full-blown Crohn's disease.

*Immune response malfunction.* In gluten-sensitive people, gliadin especially can stimulate an autoimmune response. Gliadin attaches to the villi in the gut, and is then attacked by the immune cells. In order to understand why this occurs, let's discuss for a moment how the body deals with microbes.

In a normal healthy body, the presence of *antigens* causes the production of *antibodies*. *Antigens* are molecules of proteins or complex carbohydrates, from either body parts or microbial waste, that stimulate antibody production. *Antibodies* are various proteins, located in blood and other fluids, that are produced by different types of white blood cells in response to foreign substances such as bacteria, fungi and viruses. The purpose of antibodies is to identify and neutralize these foreign materials. Antibodies, which are the body's frontline immune defense team, fit antigens like a key fits a lock. Once this fit occurs, the antibodies identify the antigens and tell the rest of the body what to do with them. When the body is working properly, different types of immune cells with different functions will be able to recognize antigens from the same microbe during future invasions so they can disable the microbe. This system works very well for infections. The body needs to recognize what is not itself, and then attack and remove the invader.

Problems arise when the body perceives an antigen from a food, and *treats the food as the invader*. "Our immune systems can't tell the difference between a gluten protein and another foreign protein that is a structural part of bacteria or a virus," write physician James Braly and Ron Hoggans, the authors of *Dangerous Grains*. "So we react the same way against all foreign proteins, by developing specific antibodies against these proteins." [65]

> Curiously and tragically, gliadin frequently causes the immune system to react as if it is not a component of nourishing food, but an invading bug or microbe or, worse, as though it is indistinguishable from normal organ tissues found in our bodies. . . . Whenever an individual's immune system is mounting an abnormal reaction to gluten, with or without symptoms, there is gluten sensitivity. . . . Non-celiac gluten sensitivity, or immune reactions to gluten, may affect as many as 90 million Americans. . . . The net result . . . is a large population that is chronically ill, unresponsive to conventional therapies, and often desperately jumping from one doctor to another without relief. To further confound the issue . . . [such people] suffer a greater risk of infectious disease.[66]

Why does the body respond to gluten proteins as though they are microbes? *The body recognizes the presence of microbes because of their ability to cling to cell membranes. Microbes have an adhesive quality similar to that of gluten*. Although wheat, the most commonly eaten grain, presents the most problems, rye, barley, spelt, kamut and triticale are also problematic. Plus, a faulty immune response can occur to more than one protein in a grain.

An *autoimmune disease* is characterized by the body attacking its own tissues. According to Braley and Hoggan, many of these autoimmune reactions, and related diseases, occur in 15% to 42% of those sensitive to gluten.

> One group of researchers . . . reported that more than 20% of celiac patients had evidence of autoimmunity, including antithyroid and antipancreatic antibodies. A large majority of the celiac patients with these anti-self antibodies were not following a gluten-free diet. One of the most startling lessons we learned from our study of gluten sensitivity was that simply eliminating gluten from one's diet can reduce the body's production of these antibodies.
>
> Further, given the elevated gliadin antibodies among patients with autoimmune diseases, in the absence of celiac disease [which specifically pertains to the intestines], the evidence suggests that gluten sensitivity may be the most important factor that predisposes to autoimmune diseases.[67]

The autoimmune response described above is due to molecular mimicry. But there are other types of autoimmune responses related to plant toxins called *lectins,* which are *agglutinins.* (The word comes from the Latin *agglutino,* meaning "to glue to"; and *agglutination* is the clumping of particles.) These plant toxins are in grain-like foods (mostly wheat, but also barley, buckwheat, corn, millet, oats, quinoa, rice and rye), in legumes, dairy (especially from grain-fed cows), eggs, and nightshades. Lectins can cause the gut, bloodstream, nervous system, organs and glands to malfunction. The intestines develop inflamed villi and harmful bacterial overgrowth; the bloodstream, clumped red blood cells; the brain, cognition and motor disorders. Lectins also diminish leptin sensitivity (which slows metabolism and produces abnormal fat deposits), and bind to insulin receptors (which prevents insulin from escorting glucose into the

tissues, thus maintaining abnormally high levels of glucose in the bloodstream). Unfortunately, not all lectins can be inactivated (or inactivated completely) by heating, soaking, sprouting or fermenting.

*Summary.* Here is just a small sample of conditions implicated in the ingestion of gluten:

- Arthritis, rheumatoid arthritis, fibromyalgia, and other kinds of chronic joint and muscle pain.
- Bone defects, including enamel erosion of teeth, impaired bone growth (and thus short stature), and osteoporosis.
- Cancers of all kinds, including of the bladder, brain, prostate and testicles, as well as Lupus erythematosus, lymphoma and squamous cell.
- Cardiovascular disorders, including cardiomyopathy (weakening of, and a change in structure of the heart muscle), and recurrent pericarditis (inflammation of the pericardium, or lining that surrounds the heart).
- Eyestrain and distortions, including "telescoping" of vision.
- Hormone disruption, including Addison's disease (insufficient adrenal hormones), diabetes, growth hormone deficiency, and thyroid disorders (hyper and hypo).
- Liver disease and allergies.
- Neurological disorders and mental/emotional conditions, including: anxiety and aggressiveness, Asperger's syndrome, autism, Attention Deficit Disorder, dementia, depression, Down syndrome, dyslexia, epilepsy, hyperactivity, learning disorders, migraines, multiple sclerosis, seizures, and schizophrenia.
- Obstetrical disorders, such as infertility, miscarriage, and stillbirths, as well as delayed puberty, menstrual disorders and abnormal sperm motility.
- Respiratory conditions, including asthma and emphysema.
- Skin conditions, including dermatitis, eczema, psoriasis and warts.
- Urinary tract problems, including kidney disease and frequent urination (sometimes at night, suggesting a possible history of bedwetting).
- Vitamin and mineral deficiencies, due to malabsorption or incomplete nutrient conversion.

### *Grain Addiction*

One of the most startling discoveries about grains is their effect on brain function. The *blood-brain barrier* is comprised of a group of cells that cluster together tightly, selectively allowing some substances to enter the brain while keeping other substances out. But the blood-brain barrier doesn't always do its job. Zonulin keeps the cells of this barrier separated in much the same way as it keeps the cells separated in the mucosal lining of the intestine. What happens if foreign particles penetrate this barrier?

After eating pizza, pastry or a sandwich, one can feel dopey, brain-fogged, or even drunk (as though from alcohol). Wheat and some other grains contain proteins called *exorphins* that attach themselves to the *opiate receptors* in the brain. Thus, these grains have a *narcotic-like* effect on the person who consumes them. A single protein structure of gluten contains at least five distinct opioids. "Although exorphins are less potent [than morphine], . . . there can be little doubt that such a plentiful supply [of foods containing grains] has helped shape the Western diet," write Braly and Hoggan. "Exorphins may be the determining feature of what we now call 'comfort' foods." [68] This is why it's common for people to develop cravings for bread, cakes, donuts, pastries, pies, or breakfast cereal. However, what at first might be a mere "craving" can soon escalate into an *addiction* to grains, especially wheat.

It's hard to be aware of the depth and scope of wheat addiction in American life, since products made of wheat (and some other grains as well) are so prevalent. Since the gluten-derived exorphins can attach themselves to any part of the body, they also interfere with the action of the body's natural "killer" immune cells, which are responsible for scavenging dead bodily cells and incapacitating the microbes that threaten our health. This is why some people with gluten sensitivity are much more susceptible to infectious diseases, including cancer.

### *Wheat Intolerance and Dairy Intolerance*

Significantly, research shows that 50% of gluten-sensitive people are unable to handle dairy products. True, the research does not distinguish between commercial and raw dairy; and raw milk is seldom the subject of contemporary studies anyway. But chances are, if a product contains wheat, it will also be eaten with, or contain, commercial (non-raw) milk,

cream and/or butter. *The same receptor sites in the body accommodate the proteins from both grain and dairy*. "Gluten grains and dairy products," report the authors of *Dangerous Grains*, "contain morphine-like substances that affect behavior, cause learning difficulties, change emotions and moods, and cause or worsen neurological diseases. These food-derived drugs even alter how our immune systems works." [69]

Adding to a wheat item not only dairy but sugar, can make the food especially lethal. Perhaps it's no accident that the most ubiquitous junk food in the United States is pizza—made with wheat, adulterated dairy, and nightshade vegetables. And favorite desserts tend to be made from wheat, dairy and sugar.

### *Detecting Wheat Intolerance or Allergy*

A few select (and expensive) blood tests can detect the presence of specific antibodies to gluten in the blood. Some people can tell immediately that they have a negative response to gluten, due to symptoms that may include brain fog, digestive disturbances (bloating and constipation), weight gain (possibly related to bloating) that is extreme and sudden, sleep disturbances, or alterations of mood. However, others may have a difficult time discerning that grains are problematic, as the symptoms are not obvious until the foods have been avoided for a month or even longer. It should be noted that a nursing, gluten-intolerant child, who is obtaining milk from a wheat-eating mother, will receive the offending proteins through the milk—and will react as though s/he has eaten the actual wheat. Childhood allergies and food intolerances, which can develop due to the detrimental materials in the mother's milk, often manifest as colic and other digestive disturbances, crankiness, and sleeplessness.

### *Other Forms of Wheat Intolerance*

Some people are sensitive to more than just gluten *ingestion*. One man reported *inhaling* the dust from wheat flour in a bakery, and suffering extreme gluten reactions. Some people react if they *touch* materials containing gluten. Several building material companies, in the admirable attempt to use alternatives to formaldehyde-ridden particle board, are manufacturing something called *wheatboard*, which is made of recycled wheat chaff. Although free of toxic chemicals, and stronger and more moisture resistant than comparable materials, the board can be highly toxic to gluten-sensitive individuals. Clearly, gluten is becoming more of a problem than anyone could have realized even 10 years ago.

### *Repairing the Damage from Gluten*

Some sourdough bread bakers claim that people can digest grain proteins if the bread sits long enough for the proteins to break down completely. They make their bread the old-fashioned way by fermenting the dough for over 24 hours. But while pre-digestion undoubtedly helps, the proteins still may not completely break down—as many gluten-sensitive individuals confirm. Why spend energy and time to manipulate something that's inherently unfit to be ingested in the first place?

Some people opt for expensive (and sometimes inconclusive) testing for the precise antibodies their systems produce in response to allergens or antigens. They may want confirmation of what they already sense, or (more often) they hope they're wrong so they can continue to eat what they want. But is a fleeting taste worth the long-term risk?

The best way to allow the body to heal is total avoidance. It takes a minimum of two years to repair the damage to your gut. And after your gut is repaired, the best way to *maintain* your newfound health is to continue to avoid gluten and eat nutrient-dense foods rather than dangerous grains.

What can you do besides abstinence? Digestive enzymes are key, since the damage began in the digestive tract. People who are ill, as well as individuals over 35 or 40 years old, are routinely advised by holistic health practitioners to supplement their diet with amylase, catalase, protease, lipase, hydrochloric acid, and beneficial intestinal flora. Eating aloe vera, and small amounts of edible clay (such as calcium bentonite) with meals, can also help heal the digestive tract.

If you have autoimmune damage, an even bigger repair job awaits you. You may suffer from heavy metal or fluoride poisoning, or need to repair your liver; so see a qualified holistic medical professional.

The good news is, often even serious medical conditions can completely heal if you avoid dangerous grains and other unsuitable foods. Once you feel better, you will see that dietary restrictions are a small price to pay for such a huge improvement in your health and well-being.

> scientific knowledge in the research community, the FDA still allows companies to use it when processing foods we ingest."[70]

In most traditional cultures, wheat is not a staple food. For starch, native peoples eat dried and pounded roots and tubers; soaked, dried and ground seeds; or gluten-free grains such as rice or maize. Historically, rice has been polished. In Asia, where huge amounts of polished rice are eaten, carbohydrate intolerance wasn't an issue until wheat and processed dairy were introduced into the diet. Basmati, a fragrant rice widely grown in India and Pakistan (and also eaten polished), is known for healing the gut and is used in Ayurvedic medicine for digestive disorders.

The evidence of long-term damage from glutinous grains—even in those presumed healthy—is compelling. I used to believe that people with longstanding or serious health issues should avoid such grains completely until their health improved and remained stable for a couple of years. But now, even this provision seems inadequate. There are no benefits whatsoever to eating glutinous grains.

### *Sweeteners, Synthetic Chemicals, and Synthesized "Foods"*

There is an entire category of fake food that transforms *the art and science of farming* into the *industry of food*: imitation "cheese" and texturized vegetable protein (TVP) made from soybean isolates subjected to extremely high heat; margarine made from vegetable fats whose molecules are artificially manipulated in ways that do not normally exist; and so on.

Foods that are outside of their original matrix and radically altered through heat or chemical processes are not only hard to digest, but they have little or no nutritional value. As stated earlier in the discussion on Brix, nutrient-dense food is loaded with flavor. Only fake, devitalized food is tasteless. It seems odd to deplete the soil with synthetic pesticides and herbicides; raise animals in crowded indoor environments and feed them products they normally would not eat; ship food thousands of miles away from where it is grown—and then process the food with loads of sugar, salt, and artificial flavorings to make it taste like its more natural counterpart. There is no "need" to enhance food with dangerous chemicals—or anything else, for that matter—if we grow real food on nutrient-rich soil without pesticides, herbicides or fungicides. At most, we might want to season it with healthy oils, genuine salt, herbs, and spices.

Below are a few ways in which we disguise and alter foods to make them taste better than they really are, and look better than they appeared after they were processed. Initially, you might be puzzled to see natural sugars in the same section as refined and artificial chemical sweeteners. But so-called natural sweeteners straddle the line between real food and manipulated food. Although directly produced by plants or animals, their sweetness is concentrated through drying, heating and/or evaporation. After you finish reading, you will understand why I included them.

#### Natural, Refined, and Artificial Sweeteners

Humans have always loved sweet foods. The expression "sweet tooth" dates from the late 1300s. Originally, the phrase referred to a fondness for any morsel that was considered a delicacy; but over time, it came to mean *sweet* delicacies. Today, the phrase more strongly denotes someone who has an uncontrollable craving for sweets. Of all the tastes—sweet, sour, salty, bitter and astringent—the sweet taste is the favorite of most people all over the world, particularly children.

Our sense of smell usually lets us know whether we will like a given food. Chances are, if the animal or plant smells putrid or unpleasant, it's rotten or poisonous; and if it's sweet, it's okay for us to eat. But what tastes good is not always healthful. Although sweet foods have an intoxicating taste, we pay dearly with our health when we eat them—especially those who are ill.

There are many types of sugar. Among the ones ending in "ose" are dextrose, fructose, galactose, glucose, lactose, maltose and sucrose. (Glucose is the primary fuel utilized by the brain and muscles.) Among the sugars ending in "tol" are those classified as sugar alcohols or polyols: erythritol, lactitol, maltitol, mannitol, sorbitol and xylitol. Different foods contain different amounts and combinations of sugars. For example, refined white sugar from cane is almost 100% sucrose (which is broken down by the body into glucose and fructose), the sugar in apples is almost 100% fructose, and honey usually contains a combination of fructose and glucose.

In this discussion on sweeteners, I will explore in depth the effects of all kinds of sugars on the body. Then I'll discuss specific sweeteners, from the least processed to the outright artificial. "The least processed" refers to substances that are gathered from plants and animals, and then dried or heated to concentrate their sweetness. "Outright artificial" refers to substances that are synthesized in a lab. They might be extracted from natural materials, but they undergo so many chemical processes that they're ultimately transformed into an entirely different substance.

So what does sugar do to the system? (Unless specified, my use of the word "sugar" is meant generically, and includes *all* sweeteners except for the obviously artificial sugar substitutes.) Sugar:

- Promotes tooth decay (except for xylitol).
- Upsets the body's vitamin and mineral balances, and steals nutrients.
- Feeds pathogenic microbes.
- Permanently alters protein structure and function, causing the body to age.
- Causes a loss of tissue elasticity and function.
- Changes collagen structure.
- Causes tendon brittleness.
- Impairs DNA structure and function.
- Causes hormonal imbalances.
- Hinders normal cell metabolism.
- Interferes with oxygen availability to the body.
- Destroys enzymes.
- Suppresses immune response.

Considering the above, it should not be surprising to learn about the physiological systems affected by sugar, and the resulting autoimmune and chronic degenerative diseases. In some cases, the illnesses are not only exacerbated by sugar, but are directly caused by it.

- Autoimmune system (including arthritis, asthma and Multiple Sclerosis).
- Cardiovascular system (including varicose veins and atherosclerosis).
- Eyes (including cataracts and nearsightedness).
- Gastrointestinal system (including indigestion, ulcerative colitis, food allergies and *Candida albicans*).
- Nervous system (including an increased risk of polio, and the triggering of epileptic seizures).
- Respiratory tract (including emphysema).
- Skeletal structure (including bone loss).

How can there possibly be so many ill effects from one class of foods? We know about tooth decay, but that's perhaps the most well-known and least controversial effect: bacteria in the mouth (primarily *Streptococcus mutans*) feed on sugars, and the acids secreted by the bacteria then erode the dental enamel. But what about the rest?

*Sweeteners, regardless of their source, deplete our nutrient reserves.* Some sweeteners contain absolutely no nutrients (such as white "table sugar" sucrose); others, such as molasses and honey, contain some. But even the most nutrient-rich sweetener does not contain enough vitamins and minerals to process the sugar. *The body requires huge amounts of vitamins and minerals to process simple sugars.* When we eat sugar, the body is forced to steal from its own stores of minerals and vitamins (including many of the B-complex vitamins) to metabolize it. Often, those stores do not exist, particularly in those who are already ill. This is why sugar is referred to as an *anti-nutrient*. Of course, nutritionally starved cells malfunction sooner, have poor resistance against microbes, and age and die more quickly due to oxidative damage. This could promote the increase in all kinds of disease, could it not?

Vitamin C normally helps prevent oxidative damage to the cells. However, *Vitamin C is particularly susceptible to being displaced when sugar is eaten because it shares, with sugar, the same pathway into the cell.* (Ironically, Vitamin C is made directly from glucose and has a similar chemical structure—which may explain why *only* Vitamin C, or *only* sugar, can enter the cell at a time.) Since sugar and Vitamin C compete for the one available transport system, even a slightly higher amount of sugar compared to Vitamin C prevents the vitamin from reaching the tissues.

Another important characteristic of Vitamin C is that it helps strengthen the cell membrane, so nutrients can enter and wastes can leave. When Vitamin C is scarce, metabolic wastes accrue much more easily, providing a breeding ground for bacteria, fungi and viruses. Also, microbes enter the cell more easily. With easy access into the cell, plus extra sugar to feast on, the microbes readily proliferate—and illness is almost assured.

Nutritionist Bill Misner describes the relationship of Vitamin C to sugar.

> Vitamin C is made in almost all living mammals except humans and a couple other species. . . . We've known for many years that sugar depresses the immune system. . . . It was only in the 70's that they found out that vitamin C was needed by white blood cells so that they could phagocytize [scavenge and eliminate] bacteria and viruses. . . . Linus Pauling knew that white blood cells needed a high dose of vitamin C and that is when he came up with his theory that you need high doses of vitamin C to combat the common cold. . . .
>
> There is something called a phagocytic index which tells you how rapidly a particular macrophage or lymphocyte can gobble up a virus, bacteria, or cancer cell. . . . *If there is more glucose around there is going to be less vitamin C allowed into the cell and it doesn't take much. A blood sugar value of 120 reduces the phagocytic index 75%.* [emphasis added] [71]

The systemic effects of sugar are far-reaching, since the interactions between various organs and glands are many and complex. Earlier in this chapter I mentioned how the body responds when caffeine is ingested. A similar response occurs with concentrated sweeteners, due to their lack of fiber. Let's use fruit as an example. When we eat an apple, the fiber or pulp is ingested along with the sugars. Fiber acts as a buffer in the intestinal tract, preventing the sugars from being absorbed too quickly into the bloodstream; otherwise, blood sugar levels would rapidly rise. (All sugars get transformed into glucose, the form of sugar best utilized by the body.) But with fruit juice, the fiber—which ordinarily slows the absorption of sugar—is missing. When the readily absorbed sugar hits the bloodstream, the pancreas *over-secretes* insulin in an attempt to drive the excessively high levels of glucose from the blood into the cells. This sudden outpouring of insulin then creates *too low* a level of blood glucose, which in turn further stimulates more sugar cravings, the ingestion of more sugar—and yet another outpouring of insulin. Thus the cycle of high/low blood sugar levels begins all over again.

The pancreas is not the only gland that malfunctions from sugar distress. So do the adrenal glands, which secrete hormones in response to the decidedly alarm state of the pancreas. Most people are familiar with the fight-or-flight function of the adrenals. When we are frightened, angry or anxious, the adrenals secrete adrenaline and cortisol. Adrenaline keeps us alert and focused, so we can deal with the danger. Cortisol increases the heart and breathing rates, and tenses the muscles—again, to help us literally fight or flee. When the source of the stress is removed, adrenaline levels drop. But since cortisol levels take a longer time to build in the body, they also take a longer time to return to normal. Therefore, after the danger has passed, the cortisol volume rises a little bit more, and then remains at that level for a while. During this time, the cortisol signals us to replenish our nutrient stores by *eating*.

Not only do many people eat in response to the adrenal's hormonal distress call, but cortisol signals the body's fat (adipose) cells to release fat (called *triglycerides*, when released from the fat cells) into the bloodstream, so the muscles can use the triglycerides for energy. (Meanwhile, the adrenaline had induced the pancreas to secrete yet another hormone that affects the liver in its sugar-storing capacity. However, this piece will be omitted to avoid making the discussion too complicated.) The problem is, if the muscles aren't moving—if, for example, you're lying on the couch eating chips and watching TV instead of going for a brisk walk—the triglycerides will not be used as fuel. Instead, they'll mostly migrate to the fat cells throughout the body. Some triglycerides do go to the liver, but the liver has a limited capacity to store fat; so any excess is sent to the adipose cells. And there can be quite a bit of excess.

Meanwhile the triglycerides, on their way to the body's fat storage centers, pass through the blood vessels. Here, they have ample opportunity to clog the arterial walls. This is why unused sugars in the system can lead to heart attacks. According to some sources, a high sugar intake causes as many as 150,000 premature deaths each year from heart disease in the United States alone. Sugar also lowers the levels of beneficial high density lipoproteins (known as HDL or "good" cholesterol), and raises the levels of harmful low density lipoproteins (known as LDL or "bad" cholesterol). The HDL cholesterol is used for various bodily functions. The LDL cholesterol forms plaque on the artery walls, causing heart attacks.

Fatty triglycerides are not the only ingredient gravitating to the adipose tissue. *Cortisol* also has an affinity for fat, especially the adipose tissue deep within the abdominal cavity. Even people who are thin can accumulate abdominal fat, which makes them more apple-shaped than pear-shaped. This so-called "beer belly" fat not only indicates high adrenal stress, but it has also been linked to cancer, cardiovascular disease (including high blood pressure and stroke), diabetes, and premature death.

Clearly, pancreatic and adrenal function are heavily intertwined. Both cortisone and LDL cholesterol levels rise by *400%* in response to excess blood sugar levels. Over time, the consistent overexertion of both the pancreas and the adrenals causes them to become depleted, and contribute to systemic breakdown. This can be at least partially alleviated with better food choices, and with exercise. As the **Exercise** section later discusses, even a little walking every day can help eliminate some body fat.

One problem that often arises with chronically high insulin levels is *insulin resistance*. In response to rising blood sugar levels, insulin is secreted by the pancreas to escort glucose out of the bloodstream and into the tissues to be used as fuel. However, sometimes the insulin cannot enter the tissue cells. In someone who is insulin resistant, either the receptor sites are completely full and unable to accommodate any more insulin, or they are not functioning properly and don't recognize the message that the insulin is bringing. Regardless of the reason for the insulin resistance, the glucose can no longer enter the cells, and instead accumulates in the blood. In response, the body tries to reduce the blood glucose levels by telling the pancreas to produce and release yet even *more* insulin. This is how a malfunctioning feedback loop, if not corrected, turns into full-blown diabetes.

Incidentally, one symptom of diabetes is thirst. The high ratio of sugar to blood plasma is one cause of thirst. Another symptom of diabetes, or even mild insulin resistance, is *hunger*. Dr. Batmanghelidj, author of *Your Body's Many Cries for Water*, pointed out that insulin draws water from the extracellular environment (the area surrounding the cells), which causes artificial hunger—and is another contributing factor to the desire to eat more. As you can see, excess insulin in the body is a complicated affair.

With excess insulin in the blood, virtually none of the carbohydrates and sugars that are eaten will be metabolized, because they can't get into the cells to be burned as fuel. Instead, the authors of *The Nutrition Solution* write,

> triglycerides continue to be released into the bloodstream to try to make up the energy deficit. Unfortunately, this has the effect of stimulating the liver to synthesize even *more* triglycerides, so that the bloodstream becomes overloaded with them—in addition to the excess glucose and insulin. This process accounts for the excess triglycerides—a prime risk factor for cardiovascular disease—found in people with Syndrome X.[72]

*Syndrome X* is another phrase for *carbohydrate intolerance*. This intolerance to carbohydrates (and sugars) exists in about 25% to 30% of the United States population, independent of diagnosed diabetes (although many people who are diabetic are also insulin resistant and carbohydrate intolerant). People who are carbohydrate intolerant tend to suffer from inflammatory conditions caused by the excess sugar.

There is one more feature of insulin resistance: the hormone *leptin*. Leptin was discovered at a private university in the United States in 1994 by scientists doing research on mutant mice. This unusual hormone is not secreted by any gland that's part of the conventional endocrine system, but rather, by *white fat cells* in the body. Leptin reduces, or suppresses altogether, cravings for carbohydrates and sweet foods once it circulates in the bloodstream and latches on to the leptin receptors in the tongue and the brain. "Leptin is the way that your fat stores speak to your brain to let your brain know how much energy is available and, very importantly, what to do with it,"[73] comments physician Ron Rosedale. Leptin controls appetite and fat storage, and tells the liver what to do with its stored glucose.

When the body's signal processing mechanism is working correctly, leptin conveys messages to reduce fat storage, increase the burning of fat, and reduce hunger (via feelings of satiation, and the sensation of being full). But if signals are not being sent or received properly, the biochemical messages from leptin will not register.

There are two ways that the leptin regulation system can malfunction and make people overeat. One, there is not enough leptin in the system. Two, high levels of leptin are present, but either the receptors are not working properly, or they have lost their sensitivity to leptin. If the body is exposed to too much leptin over a period of time, it becomes impervious to the signals and thus remains hungry, stops burning fat, and continues to store fat. Thus, people (and animals) can become leptin resistant the same way that they become insulin resistant: through the over-consumption of sugars and carbohydrates. This is why leptin is sometimes called *the obesity hormone*. Like insulin, leptin also escalates the storage of fat, particularly in the belly.

The authors of *Mastering Leptin* explain that besides fat control, leptin helps promote growth of bones, cartilage, skin and gastrointestinal tract tissue. They suggest how to time the ingestion of meals, coordinated with exercise, to maximize fat burning. They also give five guidelines for balancing insulin, leptin and blood sugar levels. Do not eat after dinner (allow 11 to 12 hours between dinner and breakfast the following day); eat three meals a day and do not snack, allowing 5 to 6 hours between meals; eat slowly without stuffing yourself; make sure breakfast contains protein; and reduce the intake of carbohydrates. *This includes reducing the intake of grains, which are concentrated carbohydrates and affect the body in ways very similar to sugar.*

We all need some carbohydrates, as *Mastering Leptin* also points out.

> Carbohydrates are especially important for muscle function; without enough carbohydrates, muscles lose their water content and become dehydrated, weak, and/or develop cramps. As part of their role in maintaining proper hydration of the body, they have a direct influence on electrolytes. Diets too low in carbohydrates can eventually lead to kidney and cardiovascular distress. A person with leptin resistance may already have strained kidney and cardiovascular function, thus a diet too low in carbohydrates may aggravate these issues.
>
> A physically active person who uses their muscles frequently has a higher need for carbohydrates and has an increased ability to metabolize carbohydrates. If a physically active person does not eat enough carbohydrates, they lack sustainable muscle energy. Performance suffers.[74]

Nevertheless, Rosedale points out, simple sugars are deleterious "to ideal health and optimal athletic performance when prolonged consumption in amounts above

15% of the carbohydrate calories are ingested."[75] As for the majority who are not world class athletes, they eat far too many carbs. This is why there's a chapter in *Mastering Leptin* called "Eat Like a Pyramid, Look Like a Pyramid." (See Insert, "The Food Pyramid and Carbohydrate Intolerance.")

Now that we have addressed how sugar affects glands and causes obesity, I want to mention another, less known problem from sugar ingestion: impeded oxygen transport. High glucose quantities cause the deposit of excessive fat not only around organs and in the subcutaneous fat cells, but also in the blood vessels. This reduces the amount of oxygen available to the red blood cells. When red blood cells are deprived of oxygen, they become sluggish, lose their electrical charge, and start sticking together. "Cellular hypoxia" (the lack of oxygen), Misner points out, "is the constant companion of numerous degenerative diseases."[76]

Sugar, notorious for being addictive, is similar to alcohol—in fact, drug treatment counselors are beginning to recognize the similarities between the two. Both sugar and alcohol latch onto the same beta endorphin brain receptors. Since one can stimulate a craving for the other, there is essentially no difference between alcohol addiction and sugar addiction. This accounts for the close relationship between addiction and behavioral problems. Every parent knows of sugar's allure, and the control required of the parent to say "no" to the child who asks for yet more candy. One writer remarks:

> Every parent already knows, serve soda and candy at a children's birthday party and you'll get loud, hyperactive behavior followed by tears and tantrums. It works like this: Blood-sugar levels jump suddenly after you eat sugar, which initially gives you a burst of fresh energy. But then your blood sugar falls, and you become lethargic and sleepy. In an attempt to prevent blood-sugar levels from falling too low, your body produces adrenalin, which makes you irritable and explosive.
>
> But sugar can't be the only problem. After all, high blood-sugar levels mainly have a short-term effect on behavior. . . . [Research by] Schoenthaler and Gesch indicates changes over a longer period. They suggest it is much more important that you get the right amount of vitamins, minerals and unsaturated fatty acids because these substances directly influence the brain, and therefore behavior.[77]

If sugar so severely damages our health, what about foods that *contain* sugar? Are there no sugars (or carbohydrates) that are safe, or safer, to eat?

The *glycemic index,* invented in 1981 by two researchers at the University of Toronto in Canada, presumably addresses this very issue. The index classifies high carbohydrate foods according to how fast they raise glucose and insulin levels in the blood. Foods that raise blood glucose levels *quickly* have a *high glycemic value,* and are considered unsuitable for blood sugar control. Foods that raise blood glucose levels *slowly* have a *low glycemic score,* and are considered desirable for blood sugar control. At the very low end of the scale are animal proteins, which contain virtually no carbs. Non-starchy vegetables such as broccoli, leafy greens and zucchini are also low-carb. As one might expect, grains, beans, fruits, and root vegetables (like potatoes and carrots) load the system with easily absorbed sugars, as do concentrated sweeteners.

The problem is, the glycemic index system is abused. First, different databases give radically different advice as to what's low carb/low glycemic. According to the Official Website of the Glycemic Index and Database (note the authoritative tone implied by the word "official"), "High is 70 and above; medium is 56 to 69; low is 55 and under."[78] Not surprisingly, we are encouraged to enjoy grains and noodles. Another website encourages the drinking of wine and beer—even though alcohol is a very rapidly metabolized carbohydrate (which is why people are supposed to drink slowly). Since grains and liquor score high on the glycemic index, one way to make them more acceptable is to raise the baseline for a low score. But reassigning starchy foods to the more desirable "low GI" category does not fool the body into assimilating them differently. For many people, foods in even the 30 to 50 range can produce insulin and blood sugar spikes. This is why the more sedate Harvard School of Public Health database states: "In general, a glycemic load of 20 or more is high, 11 to 19 is medium, and 10 or under is low."[79] If you liked to eat carbs, which database would you prefer using?

Another problem with the glycemic index is its lack of precision. Numerous studies show that blood glucose levels from a food can vary, depending on how the food is cooked or prepared, whether it's eaten mashed or whole, and whether the targeted food is consumed with fats and proteins (which reduce the GI of the targeted food). These are too many variables for the GI to be of much use!

Moreover, most people don't realize that controlling blood sugar via insulin levels is only one aspect of managing weight. Another aspect is reactivity to specific foods. Elsewhere in this chapter I discuss the systemic damage that grains and fruit can cause in sensitive people. In light of this information, one must wonder: whose interests are these glycemic index databases serving?

## The Food Pyramid and Carbohydrate Intolerance

Have you ever seen a picture of a pyramid with bread, spaghetti, beans, fruit, vegetables, milk, meat and butter on it? That's the *food pyramid*, shown to every schoolchild in America as an example of the right way to eat. The food pyramid was developed in the 1960s by the United States Department of Agriculture (USDA), in response to a marked increase in heart disease across the country. The goal was to provide an accessible visual image that could tell Americans at a glance what to eat.

The pyramid categorizes various animal and plant foods into groups, and suggests specific amounts to eat daily from each food group. At the pyramid's base are foods to be eaten in the largest volume, with the amounts gradually decreasing as the pyramid narrows to the capstone at the top, at which point foods should be eaten sparingly. The food group at the very bottom is grains, bread and pasta. Oils, fats and sugars occupy the capstone position.

Here is a brief summary of some common nutrient groups:

- *Proteins* (comprised of smaller units called amino acids) support metabolic functions while repairing and building tissue. On rare occasions, they will provide energy when there are not enough carbohydrates or fats available; but the body must perform considerable conversion before the proteins are available for energy needs. Concentrated sources of proteins include red meats, poultry, fish (including shellfish) and eggs.
- *Fats* (which come from the fat storage cells in the body as well as from food) support many different types of metabolic functions, and provide slow steady energy. They comprise 80% of the nerve tissue and brain. Fats are abundant in fatty meats, poultry and fish, nuts and seeds, full-fat dairy products, a few fatty vegetables such as olives and avocados, and of course vegetable oils. Small amounts of fat help promote a feeling of satiation.
- *Carbohydrates* (comprised of simple sugars and more complex starches) break down into simple sugars in the body and provide quick, accessible energy. High-carbohydrate foods include grains (both refined and whole), legumes and beans, nuts and seeds, dairy products, and starchy root vegetables such as potatoes, yams, carrots, parsnips, winter squash, and pumpkin. Low-carbohydrate vegetables include greens of all kinds, celery, and the "flower" vegetables (broccoli, cauliflower, etc.), so they are not considered carbs of any consequence for people on a low-carb diet.
- *Sugars* are processed immediately by the body and provide instant energy. High-sugar foods include fruits, honey and other natural sweeteners, and to a certain extent grains.
- *Fiber* (soluble and insoluble) passes through the gut undigested. Soluble fiber forms a gel when mixed with liquid, whereas insoluble fiber does not. Fruits, vegetables, *whole* grains, seeds, nuts and beans contain fiber. Animal protein contains almost no fiber.

The USDA recommends six to eleven servings per day of grains, bread and pasta. In the book *Life Without Bread*, the authors write:

> One of the greatest myths going today is that you cannot become fat from eating carbohydrates. Yet the production of triglycerides, the form of fat that gets stored in adipose tissue is a result of excess carbohydrate consumption. If carbohydrates are not used immediately for energy, they are converted by biochemical reactions into triglycerides, or into glycogen (sugar stored in the liver). It doesn't take much to fill up the body's glycogen storage bank, so triglycerides are produced from glucose and other sugars. . . . This is where most of the sugar goes.[80]

Most people do not know that grains were awarded the choicest position, in terms of volume, thanks to input from the subsidized grain industry when the pyramid was being formulated. At least where grains (and especially wheat) are concerned, dietary habits in the United States conform to the USDA pyramid recommendations. Is it any wonder, then, that over half the American population is overweight, with a sizeable percentage of those overweight, morbidly obese? High-carb grain meals are cheap, compared to animal protein and vegetables. But the truth is, most people simply cannot handle such huge amounts of carbohydrates, even if they are whole (and not refined) grains. As discussed in detail elsewhere in this chapter, the body can handle only a limited amount of sugars at a given time. If excess sugars are ingested, all kinds of metabolic disorders result. *The same holds true for concentrated carbohydrates*. Carbohydrates are digested rather quickly in the stomach and converted to glucose.

There are other problems with the food pyramid besides the hegemony awarded grains. The USDA recommends only two to three servings of protein, from either animal sources or bean/nut/legume sources. Meat, poultry and fish are placed in the same category

as beans and nuts. But animal and vegetable proteins are quite different. Meat contains valuable phosphorus, as well as Vitamin B12 and other nutrients, while nuts and beans do not. Meats contain virtually no carbohydrates, while nuts and beans are loaded with carbs. And animal protein (as well as fat and non-starchy vegetables) digest much more slowly than even complex carbohydrates. People who absorb sugars quickly into the bloodstream need the slow, steady energy that animal protein provides; they cannot handle the biochemical crashes caused by carbs.

At the top of the pyramid, fats reside with added sugars as though they belong to the same food group, which they do not. There is also no mention of what *kinds* of fats are being depicted. There is a huge difference between fats from clean fish or grass-fed meat and fats from hydrogenated, heat-processed vegetable oils. Also, at least 30% of our food allotment should consist of healthy fats. This is especially true as people age, when the protein intake should decrease and the fat intake should increase. In certain populations, like the Inuit (Eskimos) of North America, fats can comprise almost 90% of the diet.

Americans are so scared of fat and high cholesterol levels, they are wrongly limiting their intake of red meat and eggs instead of reducing their intake of insulin-producing carbohydrates. Of all the populations in technologically advanced countries, people living in the United States are the most malnourished. In 2006, 8% of the entire US population reported to the National Center for Chronic Disease Prevention and Health Promotion that a doctor told them they had diabetes. Please note, these diabetes statistics apply *solely* to people who *know* about their condition.

The food pyramid is inaccurate—and hence, a dangerous teaching tool. Although the USDA recently introduced a new type of food pyramid, it's not much better than the original. Meats are still classified with beans, dairy is "improved" with the removal of its fat, and grains still occupy the greatest volume. (Advice to use whole grains for at least half of one's grain allotment doesn't suffice.) Incredibly, a so-called "diabetes" food pyramid, found on the Internet, has grains at the bottom and is essentially the same as the original—and widely copied and disseminated—USDA pyramid. I have not yet found any food pyramid that advises making truly healthy food choices.

The food industry, attempting to bypass the problems of calories, blood sugar disruption and cavities, has created and marketed new types of sugars, some from natural sources but most developed through laboratory synthesis. Are these "new, improved" versions any more healthful than white table sugar?

One of the clues to how the body reacts to sweet substances lies in our *taste receptors*. Both the brain and the gastrointestinal tract (which includes the mouth) contains these receptors. In response to food in the mouth, the body secretes not only digestive enzymes, but also *hormones*. One scientist suggests that the hormones, which are secreted into the bloodstream, "may have physiological actions on important functions in the body . . . [which] vary with the site at which the hormones act."[81] Some hormones emerge from endocrine-like cells in the lining of the gut, others have been identified in nerves, and still others appear to be located in both the lining of the gut and nerves. Another researcher writes:

> Considerable attention has focused on the sweet taste of sugar because it is such a potent stimulator of eating in humans and many other animal species. . . . Stimulation of [a particular] . . . taste receptor by sugars or artificial sweeteners activates intracellular signaling elements . . . which stimulate peripheral gustatory nerves and, in turn, brain gustatory pathways. The central processing of the sweet taste signal typically activates feeding circuits as well as brain reward systems that promote sweet appetite. Brain autonomic centers may also relay information via the vagus nerve to prepare the digestive system for the incoming carbohydrate-rich food. Digestive and absorptive processing of the ingested food is further coordinated by sugar sensing in the intestinal tract, which modulates nutrient absorption, hormone release, and gastrointestinal motility, and generates satiation signals to the brain that terminate the meal. . . . The same . . . sweet taste receptor that initiates sugar ingestion in the mouth also detects sugar in the intestinal lumen and triggers physiological responses that promote sugar absorption and metabolism. [In this case, sugar "absorption" means the overproduction of insulin.][82]

To summarize the above, sweet foods stimulate sweet-taste receptors, which promote neurological activity and hormone production. These hormones are responsible for feelings of fullness after a meal. *These responses occur regardless of whether a sugar or an artificial sweetener has been ingested*. As I will soon explain in more depth, this

vitally important response negates the claim that artificial sweeteners don't stimulate insulin production and are therefore safe.

Now it's time to talk about specific sugars. Sucrose—most commonly known as "white sugar" and sometimes called "table" sugar—is a good place to start, since it's used as the standard against which all other sweeteners are compared.

***Sucrose (Table Sugar, White Sugar).*** Sucrose is actually a complex molecule made up of equal parts of the simpler "ose" sugars glucose and fructose. It's broken down in the body by naturally-occurring enzymes. White table sugar is so omnipresent, it seems like a "regular" food. But this purified, white crystalline powder is so highly processed, its manufacture more accurately evokes a chemist's lab than a cook's kitchen. White sugar was first derived from sugar cane, and later sugar beets (the majority of which are now genetically engineered).

Before a cheap extraction process for sugar was invented, the delights of cane were limited to people who lived in warm climates where sugar cane grew. They would simply cut a piece off the stalk and suck on it. But sugar cane, which originated in New Guinea, was then brought to Southeast Asia, China, the Pacific and Mediterranean regions, and ultimately other parts of the world. Once people sampled its intoxicating flavor, they began to crave it. It was the attempts to satisfy people's sweet tooth that gave sweet white sugar a very bitter history.

Everything about sugar was labor-intensive and expensive. The plant proved difficult to care for, cane cutting required exhausting manual labor, and the sugar could be extracted only with substantial processing. Plentiful, cheap labor was sought. So in 1512, a slave trade was born when Africans were kidnapped and forcibly brought to the West Indies to work on the sugar plantations.

At the beginning of the sugar trade, the largest market for sugar was Europe. At that time, the confection was so expensive that only royalty and the upper classes could afford it. However, once improved methods of extraction were invented, the price of sugar decreased, and common peasants had the privilege of developing almost as many cavities as their wealthier neighbors.

White sugar goes through many stages in its creation. First the leaves are stripped from the cane. Then the cane is crushed, which liberates the sweet liquid from the inedible fibrous stalk. Then the pulp is boiled at high heat several times to evaporate the liquid and separate it from the sugar crystals. (The dark liquid produced during this phase of manufacturing is sold as *molasses*; see below.) The crystals are then passed through an activated carbon filtration system (which is often made of charred animal bones) to remove what manufacturers call "impurities"—particles that contain the residual trace minerals. Then the crystals are bleached with chemicals. (So-called "raw" sugar, and the more commonplace brown sugar, receive their light brown color from a tiny bit of molasses mixed back in to the crystals.) Sugar made from beets goes through a comparable process.

The vitamins, minerals and enzymes originally in the cane plant are no longer in the white sugar crystals (though they are present in molasses, the *juice* that got separated from the crystals). Regardless of the sugar's source, the manufacture of sugar transforms a living, potentially nourishing plant into uniform crystalline granules with no nutrient content whatsoever. In many ways, eating refined white sugar is like taking a drug. No wonder some writers call sugar "sweet heroin"! Sugar is as different from its original plant as heroin is from poppies.

***Molasses.*** The word *molasses* is related to a Greek word meaning "honey." Molasses, sometimes also called treacle, is the thick syrup produced from boiled sugar cane juice. It was originally considered a byproduct of sugar manufacture. Molasses sold in stores for human consumption is from sugar cane, while beet molasses is considered inedible and is mainly used as animal feed.

There are three grades of molasses: mild, dark, and blackstrap. Mild (the "first" molasses) has been subjected to only one boiling, so it has the highest sugar content. Dark (the "second" molasses), created from a second boiling and sugar extraction, is slightly darker, less sweet, and has a stronger flavor. Blackstrap (the "third" molasses) is from the third boil. Although most of the sucrose from the juice has crystallized (and will be packaged as sugar), blackstrap molasses still has a high sugar content, and most of its calories are from sugar. However, blackstrap molasses does contain significant amounts of iron and a fair amount of manganese, as well as calcium, copper, magnesium, potassium, selenium, and Vitamin B6. Thick, sticky blackstrap molasses is often taken in warm water as a tonic. It has traditionally been added to baked beans and gingerbread, giving them their characteristic flavor.

You can assume that molasses is *sulfured* unless it's specifically labeled *unsulfured*. If the molasses comes from young green (immature) sugar cane, during the sugar extraction process it's treated with sulfur dioxide—partly to lighten the color, but mostly to eliminate bacteria and molds. *Unsulfured molasses*, which is made from mature sugar cane, does not "need" to be treated with sulfur during the extraction process—probably because there's enough sugar present in the cane to act as its own preservative. Many people are allergic or sensitive to sulfured foods, which can cause severe gastrointestinal disorders, respiratory distress, and skin rashes.

Sorghum molasses is made from various species of the sorghum plant, which is cane-like and also has a high sugar content. However, this type of molasses is not plentiful, and is mostly used as cattle feed.

Molasses affects the body in ways similar to refined white cane sugar, though for healthy people its mineral content may mitigate some of the other effects of the sugar.

***Dehydrated Sugar Cane Juice.*** Rapadura® and Sucanat® are two brand names of organic, unrefined, unbleached whole cane sugar. The process is simple: the sugar cane is squeezed, filtered (to remove plant particles, etc.), heated to remove excess water only, and then cooled so that grainy brown granules form. The liquid—roughly equivalent to molasses acquired during conventional sugar processing—is not separated from the sugar; so the basic edible (non-fibrous) contents of the sugar cane plant remain intact. The flavor is reminiscent of caramel.

This sugar is comparable, in amounts and uses, to refined white cane sugar. It also affects the body in the same way.

***Maple Syrup.*** Maple syrup is the boiled, condensed amber sap (literally, plant blood) of sugar maple and black maple trees. It is produced only in eastern North America, in climates that have cold winters. From late winter to early spring, when the nights are still cold or freezing and the days are a bit warm, holes are drilled into the bark, and buckets or trenches near the trees collect the sap. Maple tree sap is thin, watery, almost tasteless, and very low in sugar. It takes a minimum of 40 gallons of maple sap to produce 1 gallon of pure maple syrup. When manufacturing is complete, maple syrup (and solid maple sugar) contain about 65% sucrose.

To a tree, a hole in its bark is a wound, so it tries to seal the wound. To prevent the hole from closing and thus allow access to more sap, syrup processors have routinely placed formaldehyde tablets in the hole. Although the use of formaldehyde is generally discouraged today (and in many places, is against the law), fertilizers and pesticides—as well as chemical anti-foaming agents—are still permitted to be used, unless the label states otherwise or the product is certified organic.

There are no minerals in maple syrup except for a fairly high amount of manganese and a bit of zinc. All the enzymes present in the tree sap are destroyed when the sap is boiled. Ironically, the unboiled unprocessed sap is healthful, and is drunk as a mineral tonic in Asia.

Maple syrup has a wonderful, distinctive flavor. Cheap supermarket imitations contain no actual maple syrup, but are loaded with corn syrup, artificial flavorings and chemicals. Comparable to refined white cane sugar, maple syrup affects the body in the same way.

***Date Sugar.*** Dates are 80% sugar. Depending on the kind of date, and on whether it is soft or dried, the type of sugar will vary. Soft dates contain glucose and fructose, and dry dates contain more sucrose.

To make date sugar, the pits are removed from whole dates, and then the fruit is dried and ground into fine or very fine granules. Date sugar has all the fiber and nutrition of the fresh-picked fruit. It is particularly high in potassium, and contains a few trace minerals (and not too many vitamins). All of its enzymes are intact, as long as the fruit is dried at low enough heat. Date sugar is comparable, in amounts and uses, to refined white cane sugar. It also affects the body in a similar way.

***Honey.*** Honey is made by honeybees from nectar, which they gather from flowers. The nectar—clear liquid that pools at the end of the flower's female sex glands—is comprised of about 80% water, with some complex sugars. After the nectar becomes honey, the nutrient composition is about 80% natural sugars, 18% water, and 2% amino acids, as well as some minerals, vitamins, and pollen. About 70% of the natural sugars in honey are fructose and glucose, though the ratios can change depending on the honey.

Honey's antibacterial hydrogen peroxide ($H_2O_2$) content, along with its high enzyme levels, helps explain why it has been used as a skin dressing for centuries. The $H_2O_2$ is produced by the enzyme glucose oxidase, which is injected into the nectar by the bee during the honey making process. Of all the honeys, *Manuka*, from the tea tree flower, has the highest degree of natural antibiotic properties. (It's also not very sweet, so is less apt to be overeaten.) It is applied externally to wounds and cuts, gargled internally for sore throats, and used successfully to eradicate dental disease. Manuka is also especially effective against more resistant bacteria, including *Staphylococcus aureus* (which causes respiratory infections) and *Helicobacter pylori* (which causes stomach ulcers). All honey is easy to digest, and is used in cough syrups because its smooth, thick texture soothes the throat.

To extract the nectar from the flowers, the bees use their long, tubular tongues like straws. Then they store the nectar in sacs, which function like second stomachs, located in their hind legs. Honeybees must visit between 100 and 1,500 flowers to fill these sacs—and in so doing, they pollinate crops, trees and flowers. At optimal capacity, the sacs on each bee hold about 70 mg of nectar, and weigh about as much as the bee.

Once the sacs are full, the field worker bees return to the hive and pass the nectar to the hive worker bees, who suck the nectar from the sacs. For about 30 minutes, the hive bees chew the nectar, essentially pre-digesting the fluid. Enzymes from their mouths break up the complex

sugars into simpler sugars, and make the honey less susceptible to bacterial infection during the time it's stored in the hive. The enzymes also help the water in the nectar to evaporate, which thickens the fluid.

Finally the bees deposit the nectar into the honeycomb, and continue the evaporation process by fanning their wings over the nectar. Once the nectar has aged and the fluid is thick enough, the bees seal the comb with wax to keep the honey clean and free of contaminants. The honey is stored until the bees need to eat it. It is the bees' sole source of sustenance during cold weather and food shortages. In one year, the average colony of bees eats between 120 and 200 pounds of honey.

Raw unheated honey, although high in enzymes and some minerals, is also so rapidly absorbed into the bloodstream that it can cause extreme drops in blood sugar. If honey is heated (as in cooking and baking), its nutrients are destroyed. With sugar-sensitive people, honey is not much different from sucrose, and in fact may cause even more blood sugar fluctuations. Honey also decays teeth faster than table sugar; there are reports of honey bears with tooth decay.

Some sources warn not to feed honey to infants under one year old, due to possible contamination by spores of *Clostridium botulinum* bacteria. *C. botulinum* causes infantile botulism, which is highly contagious to very young babies due to their lowered immunity and immature digestive tracts. (The bees are presumed to bring the spores back to the hive with them.) However, I have not seen conclusive proof that honey is to blame for this condition. According to a 1999 Health Canada report, "Random surveys of honey produced in Canada indicate that *C. botulinum* spores are rare. Spores of *C. botulinum* are present in less than 5% of honey and are typically found in very low numbers." Furthermore, only "3 of the 16 infant botulism cases (as of June 1999) reported in Canada since 1979 have been associated with honey."[83] A less than 20% chance, over a period of 20 years, hardly constitutes proof to me. Could it be that one isolated report is responsible for the practice of not feeding infants honey? Besides, one would think that the natural antibiotic properties of honey—especially Manuka—would protect against such infection. Finally, it may be that the infants who were susceptible, had exceptionally poor digestion. Had they been breast fed? The report does not say.

A far greater statistical danger to infants than *Clostridium botulinum* spores may be the sudden drop in blood sugar levels that honey (even raw honey) can cause. The blood sugar lowering effects of honey are even stronger than those of refined white cane sugar.

***Fructose.*** Fructose is the naturally occurring sugar found in fruit. When synthesized as fine crystals, fructose is used like sucrose. However, since fructose is twenty times sweeter than sucrose, less can be used at one time. Fructose, which appears in many baked goods and condiments, is heavily marketed to the holistic health sector as an alternative to white table sugar.

How is fructose obtained? One would think it a simple matter to take apples, berries, peaches or other fruits and extract the fructose from them. However, an Internet search suggests that the process is fairly involved. One search yielded 266 patents for fructose *manufacture* (not mere extraction). The white powder can be produced from many substances, including agave (discussed later). However, most fructose is made from corn, a common allergen—and a crop that is usually genetically engineered. According to one patent, "A process is described for the production of fructose from glucose. An aqueous solution of glucose is converted to D-glucosone by an enzymatic process. D-glucosone is then converted to substantially pure fructose by chemical hydrogenation. Fructose may be recovered in crystalline form."[84] Clearly, the manufacture of fructose is not a simple process—unlike, for example, dehydrated sugar cane juice.

Like white sugar, fructose contains no enzymes, vitamins or minerals. Thus, health writer Bill Sanda states, fructose robs the body

> of its micronutrient treasures in order to assimilate itself for physiological use. . . . In humans, fructose feeding leads to mineral losses and, especially, higher fecal excretions of iron and magnesium than [does sucrose feeding]. Iron, magnesium, calcium, and zinc balances tended to be more negative during the fructose-feeding period as compared to balances during the sucrose-feeding period. . . . In studies with rats, fructose consistently produces higher kidney calcium concentrations than glucose. Fructose generally induces greater urinary concentrations of phosphorus and magnesium and lowered urinary pH compared with glucose.[85]

Fructose also actively interferes with copper metabolism. This interference makes the body unable to form collagen, a gelatinous substance found in connective tissue, bone and cartilage. Fructose-induced copper deficiency leads to anemia, blood sugar abnormalities, bone defects, cardiovascular problems, including heart arrhythmia and heart attacks, and infertility.

Some people who are unable to digest fructose exhibit symptoms similar to those of lactose intolerance: abdominal

cramping, diarrhea or constipation, flatulence, stomach pain, and other gastrointestinal problems.

Fructose is a molecule that displays some unique qualities. Unlike glucose, which can be utilized by all of the body's cells, fructose can be metabolized *only* by the liver. But the liver is limited in how much fructose it can transmute and store. For many people, even a small amount of fructose is too much. With just one glass of fruit juice, write clinical nutritionist Ann Louise Gittleman and colleagues, "the conversion process of fruit into glucose and then into fat can be magnified."[86] Such "magnification" can eventually cause fatty deposits and cirrhosis of the liver—similar to problems developed by people who drink too much alcohol.

Fructose also seizes ATP energy stores from the liver. (ATP is an acronym for the energy molecule *adenosine triphosphate*.) When the liver is stressed and depleted of energy, one feels tired. In addition, Sanda writes, "hypertrophy of the heart and liver" develops in growing young male experimental animals. "Liver, heart and testes exhibit extreme swelling, while the pancreas atrophies, invariably leading to death of the rats before maturity. . . . The females did not develop these abnormalities, but they re[ab]sorbed their litters."[87] In other words, the embryos in pregnant females simply dissolved *in utero*.

Fructose is often marketed as a non-reactive sugar for people with diabetes, based on its reputation of slow release into the bloodstream. It's assumed that blood glucose levels will be steady when fructose is ingested. But in reality, declares Sanda, fructose "reduces the affinity of insulin for its receptor, which is the hallmark of [one type of] diabetes."[88] If glucose cannot enter a cell, it cannot be metabolized, and instead it remains in the blood. To drive the glucose out of the bloodstream and into the tissues, the pancreas secretes even more insulin—though at this point, the body can become insulin-resistant. This accounts for the significant elevation of triglyceride levels. Among all the sugars, fructose seems to most readily disable one's ability to feel full.

Apparently, consumers are not thoroughly informed about the effects of fructose. If you want fructose, it seems the most reasonable to get it by eating the whole fruit.

***High Fructose Corn Syrup (HFCS).*** High fructose corn syrup is a relatively new invention. Until the 1970s, most of the sugar we ate was derived from cane or beets. But high fructose corn syrup became plentiful and cheap to produce when the US government began subsidizing commercial corn farming. The syrup mixes well, is easy to store, and extends the shelf life of whatever other processed food it's in. As a result, HFCS is in almost every packaged and prepared food imaginable: bread, cereal, soda, condiments, baked goods, candy, dairy products, canned and bottled vegetables and fruits, sauce, snacks, soup, jam, salad dressings, cough syrup, even meats.

Unlike regular corn syrup, which contains mostly glucose, HFCS contains about 45% glucose and 55% fructose. This makes it much sweeter than its counterpart. And, Sanda points out, HFCS "can be manipulated to contain . . . up to 80% fructose and 20% glucose. Thus, with almost twice the fructose, HFCS delivers a double danger compared to sugar [sucrose]."[89] (Industry wants to change the name to the more innocuous sounding "corn sugar.")

HFCS is manufactured from corn starch. Fermented by three enzymes, the starch is turned into glucose, then processed to yield high fructose levels. A 2009 *Environmental Health* article showed almost half the HFCS samples studied contaminated by mercury.

Again, the corn used in any corn syrup is almost certain to be genetically engineered. Many people are allergic to corn as well. See Sidebar, "Foods Containing Corn Derivatives or Byproducts."

***Agave Syrup.*** The agave species—large succulent (water-retaining) plants probably related to the lily—grow in Mexico, in the southern and western United States, and in central and tropical South America. The nectar-producing plants for the burgeoning North American agave syrup market are in Mexico. Their fleshy spiked leaves cover a pineapple-shaped core that contains a sweet sticky juice. Depending on the species, growing conditions and climate, an agave plant has a lifespan of 8 to 15 years. The leaves of a mature plant are 5 to 8 feet tall, and the plant itself ranges from 7 to 12 feet in diameter.

Agave nectar begins to ferment a few hours after it's taken from the plant. The ancient Mexicans developed a drink made from fermented agave juice, the predecessor of tequila. Modern tequila is made solely from the blue agave plant.

Most agave syrup consists of about 80% to 95% fructose, with the remainder glucose, depending on the plants providing the syrup and the particular manufacturing process that is used. Agave is also claimed to contain inulins, naturally occurring polysaccharides (several simple sugars linked together) that are a primary food for vital friendly intestinal bacteria. (The gas and bloating that some people experience after ingesting inulin are due to the increase in friendly flora, which loosen debris from the intestinal wall.)

Agave dissolves readily in cold liquids and does not crystallize like honey. If agave syrup is substituted for sugar in recipes, the ratio ranges from 3:1 to 4:3 of sugar

to agave, depending on the brand. Since agave is watery, consumers are advised to use less liquid when baking, and reduce the oven temperature by 25°F (about 4°C).

Some brands of agave nectar come in light and dark varieties, like molasses and maple syrup. The darker agave is subjected to less filtering and processing; the lighter, more. The darker liquids, which have a taste reminiscent of molasses, are reported by the manufacturers to contain higher concentrations of iron, calcium, potassium and magnesium. The lighter liquids, which are bland and have practically no taste, are said to contain lower concentrations of minerals. However, I have not seen the percentages of minerals listed anywhere for any agave product.

Proponents of agave cite its lower glycemic score than any other natural sweetener on the market, claiming advantages for people with diabetes. However, agave nectar contains mostly fructose. Knowing what we do about high fructose levels, it's fair to state that continued use of agave can ultimately raise insulin, blood sugar, and triglyceride levels.

What manufacturers state about how agave syrup is produced, and what the patents disclose about its processing, make this fluid seem like two different products. The consensus, according to manufacturers, is that agave is made by expressing the juice from the core of the plant, filtering the juice to remove the solids, and then breaking down the carbohydrates in the fluid into sugars through the use of either heat or enzymes. Finally, we are told, the filtered juice becomes concentrated into a syrup that's a little thinner than honey, but sweeter. I have not been able to find information on any agave website about how this final "concentration" takes place. However, the patents provide much more information.

In 1998, a patent was awarded by the United States Patent Office for a process that uses enzymes to transform the more complex agave polyfructose extract into pure fructose. Here is what the abstract says:

### Foods Containing Corn Derivatives or Byproducts

People with corn allergies, or who want to avoid genetically engineered foods, will want to avoid the following. This is only a partial list.

- Ascorbic Acid: Vitamin C, but most often derived from corn.
- Inositol and Inosinate: found in Vitamin B supplements.
- Lactic Acid: from fermented corn and potato starch.
- Lecithin: from corn or soy, an emulsifier used in supplements and many other products.
- Linoleic Acid: from cottonseed, soybean and other vegetable oils, used in making soaps, emulsifiers and oils.
- Lysine: necessary amino acid, but often derived from corn.
- Oleic acid: from vegetable oils, often used in cosmetics.
- Pectin: could be derived from corn sugars, such as dextrose or fructose.
- Phospholipids: derived from lecithin (see above).
- Phytic Acid: indigestible anti-nutrient from the hulls of nuts, seeds and grains, used because it binds to heavy metals (as well as beneficial minerals such as calcium and magnesium).
- Stearic Acid: from corn oil (or cottonseed oil, which is heavily sprayed), and other vegetable oils, found in fake fats and baked goods.
- Sugars: Dextrose, fructose, maltose, dextri-maltose, maltodextrin, cyclodextrin, diacetyl, amylose, amylopectin, invert sugar, isomalt, levulose, monosaccharide, lactate condensation, polyamino sugar condensate, confectioner's sugar.
- Xanthan Gum: from corn sugar, used as a food thickener.
- Zein: from corn protein, used as a coating for vitamin supplements.
- Other substances: baking powder (some), white vinegar, methanol, citric acid, caramel, excipients (carriers for the actual ingredients you want to impart), pill binders, malt, monoglycerides and diglycerides (fats that emulsify, or blend ingredients), sorbitol, vanilla extract, milo starch.

—adapted from www.thebigcarrot.ca/corn.htm

> A pulp of milled agave plant heads are liquified during centrifugation and a polyfructose solution is removed and then concentrated to produce a polyfructose concentrate. Small particulates are removed by centrifugation and/or filtration and colloids are removed using termic coagulation techniques to produce a partially purified polyfructose extract substantially free of suspended solids. The polyfructose extract is treated with activated charcoal and cationic and anionic resins to produce a demineralized, partially hydrolyzed polyfructose extract. This partially hydrolyzed polyfructose extract is then hydrolyzed with inulin enzymes to produce a hydrolyzed fructose extract. Concentration of the fructose extract yields a fructose syrup.[90]

The numerous patents for producing agave syrup describe several other ways to obtain pure fructose: bathe the nectar in mineral acids; filter the nectar through membranes; soak minced plant parts in a solution of water and inulase (an enzyme) for a little over a day. (Inulase is an inulin enzyme. Could this be the source of the highly publicized inulin in agave?) Or, collect the minerals and other "impurities" with diatomaceous earth, and then eliminate all the debris by spinning the liquid. (Food grade diatomaceous earth is a safe powder of ground-up fossilized one-celled sea creatures called diatoms. It is commonly dusted on animals for insect control, and is even sometimes taken internally to dispel parasites.)

Even if you're not a trained chemist, when reading the patents several questions arise. What happens to the viability of the minerals and naturally-occurring enzymes when the nectar is heated—at 140°F to 160°F (60°C to 71.1°C)? More to the point, if agave nectar is so desirable, and since many cheap high fructose sweeteners are already on the market, why go to all the trouble to "purify" the colored, thin, strong-tasting nectar into a final product that's basically nothing more than clear liquid fructose? Might the exotic origin of a tropical plant induce North Americans to pay high prices for what essentially appears to be glorified high fructose syrup?

Interestingly, all the patents I read rated the final liquid product according to how "pure" (processed) it is. One site states, "A poor quality fructose syrup has a yellow-brownish color and is tainted by the taste and smell of the agave plant."[91] So, even though some agave syrup has apparently still retained some of its color, as well as some of its distinct taste, it's still high in fructose, and heavily processed. Incredibly, some companies call their agave syrup "agave *nectar*," which is highly misleading.

Health writer John Kohler brings in yet another angle: there is no life in this sweetener, despite claims by some manufacturers that their agave is "raw."

> Agave syrup was originally used to make tequila. When agave syrup ferments, it literally turns into tequila. The enzymatic activity therefore *must* be stopped so that the syrup will not turn into tequila in your cupboard. . . . If there is no enzymatic activity, it is certainly not a "live" food.[92]

Of course, none of the other sweeteners (except raw honey) contain enzymes, either. Consumers who don't require their food to be raw might simply settle for a sweetener that is not heavily processed. Unfortunately, it appears that agave syrup is not such a sweetener. In case you still have doubts, one patent site concisely states:

> It is an object of the present invention to produce a high fructose content syrup through the processing of milled agave plant pulp. It is another object of the present invention to produce a high fructose content syrup [while] the aroma and flavor of the agave plant are removed without undue expense. It is another object of the present invention to produce a concentrated fructose syrup which is stable over time and suitable for human consumption in a wide variety of food and beverages. It is yet another object of the present invention to produce a high fructose content syrup in which the color and flavor may be varied by selection of the combination of processing steps and by variation in the length of individual processing steps.[93]

***Xylitol and Other Sugar Alcohols.*** Sugars ending in "tol" belong to the group of *sugar alcohols*—also known as *polyols*—that are actually carbohydrates, whose chemical structure partly resembles sugar and partly resembles alcohol. Some of the more well known "tol" sugars are xylitol, erythritol, sorbitol, maltitol and mannitol.

Most polyols are less sweet than sucrose, but xylitol is almost as sweet. The most common source of xylitol is the sweet, soft center of a corn cob. Other sources include blueberries, plums, raspberries, rowanberries and strawberries. In Europe, birch bark is a popular source of xylitol. Eythritol is found in fruits, fungi and wine, although usually large quantities are manufactured by fermenting plant sugars. Sorbitol and mannitol are made from hydrogen and glucose extracted from corn sugar. All polyols are processed into refined white powder.

Sugar alcohols do have calories. However, the body's inability to completely absorb and metabolize them

reduces their caloric count to a negligible .02 to 3 calories per gram, as compared to 4 calories per gram for other sugars. The incomplete absorption of polyols also accounts for their lower glycemic index than sucrose or other "ose" sugars, although as we have seen, a food's low glycemic index may not indicate safety. The body responds biochemically to a sweet taste (whether from real food or synthetic chemicals) as though sucrose had been ingested. Note that polyols do raise blood sugar levels, and promote electrolyte loss and excessive thirst.

The malabsorption in the gut caused by "tol" sugars is severe. If enough is ingested, they cause abdominal cramping, diarrhea and constipation. Once in the colon, xylitol attracts water and pathogens to it, causing fermentation and the potential proliferation of *Candida* and other undesirable fungi. Misner writes that "prolonged use or large intake [of xylitol] may produce the following side effects: weight gain similar to that associated with high/prolonged sucrose intake, diarrhea, tumor growth, and liver/kidney/brain dysfunction."[94] Nevertheless, xylitol is heavily marketed to people who have diabetes and who want to lose weight.

Although xylitol's future as an acceptable sugar substitute looks bleak, it does have one remarkable and positive feature. Xylitol is so slippery, *it prevents bacteria from adhering to teeth and other surfaces.* For this reason, using xylitol in gum, and especially in toothpaste and as a mouthwash, has proved to be quite effective. Xylitol also makes an excellent sinus wash, mixed with a little sea salt and one or two drops of essential oils such as oregano or tea tree.

Sorbitol and mannitol are widely used polyols and commonly found in the majority of packaged foods. Unlike xylitol, they *do* breed bacteria, such as the cavity-causing *Streptococcus mutans.* Over 50% of erythritol is absorbed into the blood, though it's later excreted in the urine; so it's touted as having a negligible effect on the digestive tract. Erythritol has 60% to 80% the sweetness of sucrose, and almost no calories.

Xylitol can be fatal to dogs. Although xylitol is not absorbed in the human gut, it *is* absorbed in the intestine of a dog. Dogs can suffer extreme digestive upset, including cramping and diarrhea, if they eat xylitol. Once xylitol gets into a dog's bloodstream, it can cause liver failure and sudden drops in blood sugar that may result in seizures and even death. The amount constituting a toxic dose depends on the weight of the dog and how much xylitol is eaten.

Jerry Tennant, MD, the inventor of an electromedical device and expert on nutrition, emphasizes that *all* sugar alcohols are toxic to the body, and advises against ingesting them, period. Of all the polyols, xylitol seems to be the most promising—as long as it's used medicinally, to combat dental decay, sinus infection and other infections.

***Aspartame.*** In Chapter 1, I discussed how aspartame was created, many of its harmful effects, and the successful attempts by various parties at keeping it on the market. Here, I will focus on one other aspect of aspartame relevant to our discussion: its ability to cause weight gain, despite claims that the chemical is an ideal sugar substitute for people who want to lose weight, or who have diabetes.

In an article appearing in a 2008 edition of *Behavioral Neuroscience*[95], two university researchers described three experiments they conducted showing how artificial sweeteners affect weight. Rats who ate lower-calorie, artificially sweetened yogurt had a greater weight gain, more body fat, and impaired ability to stop eating, compared to rats who ate higher-calorie, glucose-sweetened yogurt. The researchers concluded that the saccharin-sweetened foods interfered with the rats' normal biochemical physiological responses.

In another study, researchers used two groups of rats. The first group was given high-calorie drinks. The second group was given drinks sweetened with saccharin. After ten days, both groups were given a sweet, high-calorie snack. The rats that had consumed artificial sweetener in their drinks ate *three times* more calories than the rats that had not consumed artificial sweeteners. These researchers concluded that artificial sweeteners prevent the body from discerning what its caloric intake actually is, and thus encourage overeating.

The above studies were on saccharine. Does aspartame work in a similar manner? Medical doctor James Bowen explains the biochemical mechanism by which aspartame causes hunger:

> The reason aspartame so strikingly stimulates the appetite is it provides over half of its content in a form of a phenylalanine isolate.
>
> The amino acid phenylalanine outcompetes all the others at enzyme sites in the body. This suppresses the formation of dopamine from tyrosine and the formation of serotonin from tryptophan. The serotonin is the neurotransmitter that reports carbohydrate metabolism. When your serotonin levels are not allowed to [rise] as they normally do when you eat carbohydrates, you crave more and more food. The dopamine is the neurotransmitter that lets you feel satisfied, so when you use aspartame you have unsatisfiable cravings. The aspartame also poisons your metabolism so you cannot burn calories.[96]

## Concerning the Use of Products Containing Aspartame (Nutrasweet®) by Persons with Diabetes and Hypoglycemia

On August 9, 1994, medical doctor and diabetes specialist H.J. Roberts published a report on the link of aspartame to diabetes and hypoglycemia. The report basically stated that aspartame reacts harmfully with insulin and can actually cause, if not hasten, the onset of diabetes. Dr. Roberts had been a member of the American Diabetes Association for 35 years. Although his report was rejected by the ADA, it was published in a prestigious medical journal. The doctor wrote in part:

I have treated many patients with diabetes mellitus and hypoglycemia (low blood sugar) in my capacity as a Board-certified internist and an endocrinologist. . . . Since both groups should abstain from sugar, I initially rejoiced that these persons had an acceptable and presumable safe sugar substitute in aspartame. Unfortunately, many patients in my practice, and others seen in consultation, developed serious metabolic, neurologic and other complications that could be specifically attributed to using aspartame products. This was evidenced by:

- The loss of diabetic control, the intensification of hypoglycemia, the occurrence of presumed insulin reactions (including convulsions) that proved to be aspartame reactions, and the precipitation, aggravation or simulation of diabetic complications (especially impaired vision and neuropathy) while using these products.
- Dramatic improvement of such features after avoiding aspartame, *and* the prompt predictable recurrence of these problems when the patient resumed aspartame products, knowingly or inadvertently. I have cited many instances of severe complications in patients with diabetes and hypoglycemia caused by the use of aspartame products in my books and scientific articles. . . .

I now advise *all* my patients with diabetes and hypoglycemia to avoid aspartame products. A number of alternatives are available. I regret the failure of other physicians and the American Diabetes Association (ADA) to sound appropriate warnings to patients and consumers based on these repeated findings. . . . Indeed, the ADA (of which I have been a member for over three decades) even refused to print an abstract of adverse reactions I encountered in 58 diabetic patients that was submitted for its 1987 annual meeting. This abstract subsequently appeared in *Clinical Research* (Vol. 3: 489A, 1988).

The AMA, the FDA, and the ADA dogmatically continue to express the unequivocal opinion that aspartame is completely safe for diabetics—and nearly everyone else.

I have discussed some of the reasons aspartame might aggravate diabetes and hypoglycemia in [my] books. The possible mechanisms include the following:

- Marked changes in appetite and weight as reflected by paradoxic weight gain or severe loss of weight.
- Excessive insulin secretion and depletion of the insulin reserve
- Possible alteration of cellular receptor sites for insulin, with ensuing insulin resistance
- Neurotransmitter alterations within the brain and peripheral nerves
- The toxicity of each of the three components of aspartame (phenylalanine, aspartic acid, and methylester, which promptly becomes methyl alcohol or methanol), and their multiple breakdown products after exposure to heat or during prolonged storage

I have asserted in my publications, and in testimony both to Congress and FDA advisory group, that the current wholesale ingestion of aspartame products by over half the adult population constitutes an imminent public health hazard. Yet, this warning continues to be ignored by the medical profession and the FDA.

In addition to patients with diabetes and hypoglycemia, [people at risk] include pregnant women, children, patients with epilepsy, liver [disease], kidney disease and eating disorders, older persons with memory impairment, and the relatives of aspartame reactors, diabetics and patients with phenylketonuria.

Many also correctly ask: Why is aspartame still on the market? Their concern is intensified by the high incidence of brain tumors in animals (known before FDA approval), and the reasonable doubt I have documented about the apparent contributory role of aspartame in human brain tumors.

—H.J. Roberts, MD
letter excerpt: "Concerning the Use of Products Containing Aspartame (Nutrasweet®) by Persons with Diabetes and Hypoglycemia," August 9, 1994

This is the first time in human history that we have encountered various substances that look, smell and taste like food—but that fail to deliver what they promise. The body "expects" to receive considerable calories when it encounters an artificial sweetener. When these calories are not forthcoming, the body will seek them out—in the form of calorie-laden food. In 2005, at the American Diabetes Association's 65th Annual Scientific Sessions, Sharon P. Fowler reported the results of reviewing 25 years of data. For every diet soda people drank each day, there was at least a 65% chance that they would become overweight or obese during the next seven to eight years. (Obesity is defined as being more than 20% over one's ideal weight.)

***Sucralose.*** I will discuss one more artificial sweetener, sucralose. Manufactured under the trade name Splenda®, sucralose has captured a sizeable part of the artificial sweetener market that was formerly filled by aspartame, and to date is in about 4,500 food and beverage products.

Sucralose was discovered in the mid 1970s by a researcher from India who was working with corporate scientists in London. When a colleague asked him to test the chemical, he misunderstood and thought he had been asked to *taste* it. The substance tasted very sweet; in fact, it's 600 times sweeter than sucrose. The compound was sucralose; the chemical name was chlorinated hydrogen; and what began as a misunderstanding of instructions became a highly lucrative artificial sweetener given the brand name Splenda®.

By 2006, only six human trials on sucralose had been published. Of those, only two were completed and published before the FDA approved sucralose for human consumption. Just 36 subjects were used for those two trials—the longest of which lasted only 4 days, and tested solely for the effect of sucralose on tooth decay. Apparently, research that revealed up to 40% shrinkage of the thymus gland, and the enlargement of liver and kidneys, was not deemed important enough by the FDA to delay or refuse its approval.

Although Splenda® is marketed to people who want to balance their blood sugar levels and/or lose weight, the product helps neither—one, because it's an artificial sweetener, and two, because in addition to sucralose, it contains the simple sugars maltodextrine and dextrose. (The simple sugars, which are caloric, are used as fillers because the amount of sucralose that provides intense sweetness is so minuscule.) But the sucralose portion of the mix is much more troublesome. One writer with a degree in chemistry points out that the sucralose in Splenda® is made from chlorine. (See the section on **Water** at the beginning of this chapter on the dangers of chlorine.)

> When used with carbon, the chlorine atom in sucralose forms a "covalent" bond. . . . Unlike ionic bonds [such as the kind found in sodium chloride, or table salt], *covalently bound* chlorines [are highly dangerous to] . . . the human body. They yield insecticides, pesticides, and herbicides. . . . It's therefore no surprise that the originators of sucralose, chemists Hough and Phadnis, were attempting to design new insecticides when they discovered it! It wasn't until the young Phadnis accidentally tasted his new "insecticide" that he learned it was sweet. And because sugars are more profitable than insecticides, the whole insecticide idea got canned and a new sweetener called Splenda® got packaged.
>
> To hide its origin, Splenda® pushers assert that sucralose is "made from sugar so it tastes like sugar." Sucralose is as close to sugar as Windex® is to ocean water.[97]

The chemistry of sucralose is further explained by Dr. Bowen.

> Splenda®/sucralose is simply chlorinated sugar; a chlorocarbon. Common chlorocarbons include carbon tetrachloride, trichlorethelene and methylene chloride, all deadly. Chlorine is nature's Doberman attack dog, a highly excitable, ferocious atomic element employed as a biocide in bleach, disinfectants, insecticide, [World War I] poison gas and hydrochloric acid.
>
> Sucralose is a molecule of sugar chemically manipulated to surrender three hydroxyl groups (hydrogen + oxygen) and replace them with three chlorine atoms. Natural sugar is a hydrocarbon built around 12 carbon atoms. When turned into Splenda® it becomes a chlorocarbon, in the family of Chlorodane [also known as Chlordane, banned by the EPA in 1983 for all uses except to control termites], Lindane and DDT.
>
> It is logical to ask why table salt, which also contains chlorine, is safe while Splenda®/sucralose is toxic? Because salt isn't a chlorocarbon. When molecular chemistry binds sodium to chlorine to make salt, carbon isn't included. Sucralose and salt are as different as oil and water.
>
> Unlike sodium chloride, chlorocarbons are never nutritionally compatible . . . and are wholly incompatible with normal human metabolic functioning. . . . Chlorocarbons such as sucralose deliver chlorine directly into our cells through normal metabolization. This [is what] makes them effective insecticides and preservatives.[98]

Users have experienced, and researchers have observed, the following effects from ingesting Splenda®:

- Eye problems: spots in vision, cataracts.
- Gastrointestinal disorders (bloating, constipation and diarrhea, cramps, nausea and vomiting).
- Joint pain, especially in the knees.
- Neurological disorders (anxiety and panic, concentration difficulties, depression, faintness, migraines, seizures).
- Skin problems (rash, burning, itching, welts, blisters).
- Enlarged liver and kidneys (which also become calcified).
- Degenerated adrenals.
- Shrunken ovaries and thymus.
- Abnormal decreases in numbers of red blood cells, thyroxin levels, urination levels, and minerals.

You may have wisely given up aspartame, but do you really want to use sucralose instead?

***Stevia.*** Botanically, stevia is part of an entire genus (a certain classification) of about 150 species of herbs and shrubs that are native to South America and Central America. The species *Stevia rebaudiana Bertoni*—known in Paraguay as *Ka'á he'en*, or *sweet leaf*, and simply called *stevia* by Westerners—is a two-foot-high tropical shrub with small leaves. When commercially grown, the plant needs careful attention, as it can be difficult to cultivate seeds that germinate. Much of the commercial stevia crop is obtained from cuttings. Stevia has no calories, has a low glycemic index (for what it's worth), and its extract is up to 300 times sweeter than sucrose. It's also stable when heated to 388°F or 198°C (although some sources say it can tolerate heat up to 392°F or 200°C). For over 1,500 years, various tribes in Paraguay, Brazil and elsewhere have been using different species of the plant not only as a sweetener, but also as a tea to treat heartburn, to balance blood sugar levels, and for other conditions.

Stevia became introduced to non-native peoples after scientist Moisés Santiago Bertoni (1857–1929) emigrated from the Italian section of Switzerland, where he was born, and eventually settled in Paraguay. While researching the ethnography and language of the Guarani Indians (along with his regular studies of botany, zoology, agriculture, biology and meteorology), he was introduced to the plant. In a 1918 edition of a Paraguayan journal, Dr. Bertoni discussed experiments showing that stevia not only was safe, but also that it promoted health. The chemist conducting the experiments, a Paraguayan source points out, was none other than Bertoni's wife, "Eugenia Rebaud Bertoni, with whom he shared the discovery. . . . In the scientific name of the plant, . . . the maiden name of his wife also appears."[99] In 1931, two French chemists further isolated the glycosides (botanical compounds) that give the herb its sweet taste, and named them *stevioside* and *rebaudioside*.

Stevia has a noble history. The results of an extensive literature search, posted on the Internet at www.cookingwithstevia.com/petition.html, is accompanied by an explanation of who had written the early articles on stevia.

> Articles published in scientific journals documenting the safe use of stevia [many published in Spanish and Portuguese] . . . were written by botanists, chemists, and food technologists who are experts qualified by training and experience. Over 120 articles about stevia were written prior to 1958 [and some, written over 100 years ago]. Most of the articles are written by scientists or government officials. Only three of the 120 articles referred to were written by or published for the lay public. All were published in journals and books. Several more articles written after 1958 reviewed the use of stevia as food prior to 1958. Over 900 articles have been published on stevia to date.
>
> Some of the articles written about stevia were funded by the United States Government. Letters on file at USDA chronicle the fact that the US government had samples of stevia leaf and intended to investigate it as a crop for the USA as early as 1921. Articles written by American scholars and published in American journals prior to 1958 clearly state stevia leaf has been used in Paraguay for many years and that no adverse effects have ever been reported from the consumption of stevia leaf.[100]

What made the US government decide not to use stevia? Was it due to pressure from the burgeoning sugar industry? But meanwhile, outside the US, stevia was gaining a great deal of acceptance. The Japanese first produced stevia as a commercial sweetener in 1971, preferring to use something stable and safe instead of the artificial sweeteners saccharin and cyclamate (which at the time were known to be carcinogenic). Japan uses 40% of the world's stevia for packaged foods, soda and table use. Stevia is also widely used in other parts of Asia, in Israel, and of course in South America.

Despite centuries of safe use of the herb, in 1991 the US Food and Drug Administration banned stevia, and perpetrated search and seizure raids against companies that sold it. Although the FDA does not allow stevia to be used as a sweetener in processed food products, on the premise that it's an unsafe food additive, the agency *does* allow stevia to be sold as a dietary supplement. In packaged foods and drinks, stevia legally cannot be called a sweetener or even be referred to as sweet. Ironically, a 1995 petition submitted to the FDA cited over 900 studies on stevia, none of which showed a lack of safety. The herb has also been banned as a food additive in most of Europe and in Canada, but it is allowed as a dietary supplement in Canada. In Europe, stevia is permitted as an additive to animal feed.

Below is just a small sample of research on stevia, from just over 50 years ago to the present:

- In 1954, an article called "Stevioside: A Unique Sweetening Agent," written by a researcher at the Heriot-Watt College, in Edinburgh, Scotland, appeared in *Chemistry and Industry*.[101]
- In 1986, a study published in the *Brazilian Journal of Medical and Biological Research* described stevia's ability to significantly improve glucose tolerance.
- In 1997, three chemistry researchers in Venezuela published an article identifying, for the first time, the anti-fungal and anti-viral effects in some of stevia's compounds.
- In 2004, researchers in Eastern Europe published an article called "Glucose concentration in the blood of intact and alloxan-treated mice after pretreatment with commercial preparations of *Stevia rebaudiana (Bertoni)*." One group of mice was fed stevia, another group was fed stevioside, and a control group was fed neither. All the mice were then given alloxan to induce diabetes. (You may recall that alloxan is a compound commonly found in white bread; see this chapter's previous section on grain.) The scientists reported: "Pretreatment with stevia, and to a greater extent with stevioside, protected test animals from the toxic action of alloxan compared with controls."[102]
- In 2005, a study was published called "Increase of insulin sensitivity by stevioside in fructose-rich chow-fed rats."[103] The researchers concluded that stevioside, taken orally, improved insulin sensitivity, and seemed indicated for either people with diabetes, or for those who consumed large amounts of fructose.
- Also in 2005, another article was published describing a similar study at a Taiwan hospital. Scientists induced diabetes in rats by feeding them fructose, followed up with stevioside. The botanical compound regulated blood glucose levels not only by enhancing insulin *secretion*, but also by enhancing insulin *utilization*.
- In 2006, a published study from Denmark showed that stevia can help normalize the pancreatic cells, and thus help normalize blood sugar levels.

Other studies have shown that stevia contains natural antioxidants; that it does not appear to be allergenic; and that it does not cause cavities. The compound stevioside safely lowers not only blood glucose levels, but also blood pressure. Stevia does not appear to adversely affect growth or reproductive ability. And stevia has anti-fungal, anti-bacterial, and anti-viral properties (it prevents viruses from attaching to cell membranes). Some experiments indicate that stevia may even help prevent cancer. (One study, which reported that the metabolite steviol may cause damage to DNA, appears to have been improperly conducted: the amounts tested were far more than what any human being could conceivably ingest over long periods. Even water can cause harm if drunk to excess.) These studies were done on animals; however, humans in South America have benefited from stevia for centuries—otherwise, they wouldn't have continued to use it. This is quite of lot of benefit from an herb that's so heavily restricted in some countries.

The compounds that give stevia its sweet taste pass through the digestive system without chemically breaking down, though a small percentage of some *metabolites* (byproducts of the original compounds) are absorbed by the gut. The metabolites that are absorbed (such as steviol, from stevioside), are further transformed by the body and are excreted in the urine, undetectable in the blood.

At this time, it's unclear whether in all cases, people with insulin resistance, blood sugar disorders or Syndrome X can conclusively tolerate stevia. One would think that stevia's sweetness could cause insulin, glucose and leptin spikes, similar to the problems caused by other sweet tastes.

### McDonald's Head Launches National Diabetes Week

Bill Glasson, the president of the Australian Medical Association, has described inviting the head of McDonald's to launch National Diabetes Week as like "inviting Dracula to the opening of a blood bank."

—News in Brief
*British Medical Journal,* July 17, 2004

However, perhaps one's tolerance (or lack of it) to stevia *depends on what form of the herb is being used.* Many companies, apparently eager to cash in on this new "miracle sweetener," are making stevia readily available in liquids and powders of various colors (and even flavors!). But what they are not telling consumers is the complete truth about how the herb is processed. And, as with any other food, processing is the key to how the ingredients behave.

The clue to how stevia works can be found only in the whole herb. The plant *is* sweet. But its sweetness is not comparable to sucrose, the sugar alcohols, honey, maple sugar or molasses. The taste of stevia lingers in the mouth longer than most sugars, and the plant has an aftertaste alternately described as bitter, or resembling licorice. Stevia's slightly bitter aftertaste is due to the presence of high amounts of stevioside. It's rebaudioside, the other glycoside, that's responsible for the plant's intense sweetness.

Again, a search of the US Patent Office yields valuable clues. Numerous patents exist (one awarded in 1973) not only for the *extraction* of stevia, but also for *processing* methods. Most of the patents are for ways to substantially decrease the levels of bitter stevioside and increase the levels of sweet rebaudioside. These methods range from manual cross-pollination of selected seed-bearing plants to obtain the desirable characteristics, to sophisticated manipulation in the laboratory. Some companies treat the plant with enzymes to eliminate the stevioside so just rebaudioside remains. One patent, issued October 5, 1999, outlines an intricate separation of the various components to yield only the very sweet glycoside rebaudioside-A. This method involves extraction, dissolving the mixed sweet glycosides with methanol solvents, cooling, concentrating, filtering through resin, and spray drying to obtain a crystalline solid "of desired purity."[104] Does this "pure" white powder sound like anything else? This kind of rigorous processing is far enough removed from the simple drying and powdering of the plant to require—and receive—a patent.

In the United States, stevia is available as a greenish brown powder, greenish brown liquid, white powder, and clear liquid. The green powder is simply the whole dried leaves ground to a powder. The liquid is a tincture made from the dried herb. Anything else leaves the category of edible foods and becomes a laboratory-synthesized chemical. For the most part, white stevia products are synthetic sweeteners, as they contain only selected portions of the plant that the manufacturer has decided are important. In addition, almost all of the white stevia liquids and powders on the market are bleached, and contain preservatives.

As might be expected, the processed powders taste quite different from the whole herb: they are similar to the ubiquitous table sugar. Even more important, it's unlikely that the full range of health-promoting effects of the herb are present in the modified extracts. All of a plant's constituent ingredients tend to interact with each other in beneficial ways.

One stevia company representative voiced similar doubts that a *partial extract* would have the same healing properties of the whole plant. He told me how to obtain good stevia, and also how to use it optimally. To growers and businesses: harvest it once, before the blossoms open; multiple pickings will yield bitter leaves. The stems and the ribs of leaves, as well as the leaves themselves, contain sweet glycosides, so don't throw out any part of the leaf. To consumers: stevia can sweeten only to a certain extent. Use small amounts; more isn't better. Excessive amounts may taste bitter and not sweet. If you do buy white stevia extract, make sure it's processed with water and not solvents. Removal of coloring should be done with high pressure filtration and not bleaching. You can tell that a stevia extract has been filtered by putting it in some water, which adds back a slight bit of color. However, using de-colored stevia seems ill-advised—who knows what valuable components are lost due to filtration?

The stevia company representative also told me that stevia appears to even out blood sugar levels by eliminating both the spikes and drops. Health professionals who have monitored clients using his stevia found that it was particularly potent when taken with the herb *Gymnema sylvestre* (also called Shardunika). When the two herbs were used together, blood sugar levels normalized without the need for medication. In fact, many people report that stevia apparently enhances the effects of other herbs, whether used in herbal teas, or in cooking and baking.

There's a difference between consuming (and testing for safety) extracts of a whole plant, and isolated compounds. In *Healing With Whole Foods*, Paul Pitchford advises that only the whole plant extract is safe. It makes sense that the clear extracts and white powders may lack essential components, thus possibly transforming a safe and effective herb into a drug that could create imbalance. I will address this issue in detail later, in the **Herbs** section.

It should be clear by now that artificial sweeteners are even worse for you than concentrated "natural" ones—and that for the most part, concentrated, so-called natural sweeteners are not that natural. As of this writing, the only sweet-tasting substance that holds any promise is stevia. New technologies to manufacture yet more sweet chemicals are constantly being implemented, instead of addressing what could be done to quiet the sweet tooth that damages our health and shortens our life span. "In the last 20 years," writes Misner, "we have increased sugar consumption in the USA [from] 26 pounds to 135 [pounds]

of sugar per person per year! Prior to . . . 1890 . . . the average consumption was only 5 pounds per person per year! Cardiovascular disease and cancer was virtually unknown in the early 1900s."[105]

I have spent considerable time discussing sweeteners because of their enormous impact on our well-being. Healthy people can often tolerate small amounts of natural sweeteners. Those whose health issues are not too severe may sometimes tolerate them. However, those who are very ill should probably avoid them altogether. As for artificial sweeteners, I can see no valid reason to use them, ever.

If your adrenals and pancreas are functioning properly, and you still crave sugar, the craving may be due to certain foods in the diet that are causing imbalances: the wrong types of fats, grains (even if properly prepared), or inadequate or excessive amounts of animal protein. You could be lacking in essential minerals. Or, you could be suffering from *Candida albicans* or some other microbe that feeds on sugar. Consult a health professional with a solid background in biochemistry and nutrition. You also may want to get yourself a rife machine and start sessions, if you haven't already.

**Preservatives, Dyes, Fragrances and Flavorings**

So-called natural fragrances and flavors are used in cleaners, cosmetics, drugs and skin care items as well as foods, even though their origins were never even edible in the first place. Of the 3,000 additives to foods, half are synthetic flavorings. The majority of flavorings, dyes, and so-called preservatives are manufactured from petroleum. Their contents are legally protected as "trade secrets."

"Trade secrets (as defined by FDA) and the ingredients of flavors and fragrances do not have to be specifically listed," says an *FDA Consumer* article.[106] Even if the label reads "contains natural flavors," the flavors are legally allowed to be adulterated or comprised entirely of synthetic chemicals. Synthetic fragrances can be comprised of up to 5,000 hydrocarbons (derived from petroleum or natural gas), and as many as 200 other ingredients, which instead of being listed separately can simply say "Fragrance." Petroleum, natural gas, and their derivatives are not compatible with living systems, but food companies try hard to convince the public that fake foods are innovations rather than atrocities.

Among other conditions, these synthetic flavorings and fragrances cause cardiac and immune disorders, allergic reactions, digestive disturbances, and damage to the central nervous system, respiratory tract, liver and kidneys. They are even causal factors in cancer.

Artificial preservatives tend to be carcinogenic. BHA (Butylated Hydroxyanisole) and BHT (Butylated Hydroxytoluene), commonly added to oils to delay deterioration, have also been found to damage the kidneys, liver and nervous system. Sodium nitrate and nitrite, commonly added to processed meats to prevent bacterial growth, transform into carcinogenic nitrosamines in the stomach. They also cause neurological damage and gastrointestinal distress. The pink color of nitrate and nitrite treated meats may deceive the consumer into believing that the meat is fresh and wholesome, when it is not.

One chemical commonly used as a "flavor enhancer" is monosodium glutamate, commonly called MSG. This is a poison that in some ways mimics the action of toxic metals and can cause abnormal blood pressure, muscle and joint pain, gastrointestinal and respiratory difficulties, skin rashes, blurry vision, and impaired brain functioning that may include depression, dizziness, migraines, seizures, loss of balance, sleepiness, insomnia, hyperactivity in children, mental confusion and anxiety. In fact, the effects of MSG (as well as aspartame) mimic many neurological disorders, such as Alzheimer's and Amyotrophic Lateral Sclerosis (or ALS, also called Lou Gehrig's disease).

Glutamate (like aspartame) is especially insidious because it can cross the delicate blood-brain barrier, which is a network of tightly packed, specialized capillaries designed to keep dangerous substances from entering the brain. Furthermore, glutamate can keep that blood-brain barrier *open*, which allows other harmful agents to enter.

Although MSG is ubiquitous, and used around the world, this doesn't mean that it's safe. *Excitotoxins: The Taste that Kills*, by Russell Blaylock, MD, describes in detail how and why MSG causes so much harm, and what people can do to minimize the damage. He also provides the many chemical names, and forms, of MSG. This information is wise to have, since many items are legally allowed to contain MSG without having to be labeled as such. See Insert, "The Truth about MSG," for a guide to the chemical names, and what foods contain MSG.

In case you thought that MSG was the ultimate triumph in food additives, the article "Better Disguises through Chemistry" discusses the invention of yet a newer chemical. This chemical

> tricks the taste buds into sensing sugar or salt even when it is not there. Kraft Foods, Nestlé, Coca-Cola and Campbell Soup are all working with a biotechnology company called Senomyx®, which has developed several chemicals, most of which do not have any flavor of their own but instead work

## The Truth about MSG

### *Conditions and Diseases*

What is the flavoring that makes you crave more of whatever it is that you're eating? It's not the food—it's none other than the chemical *monosodium glutamate*, popularly known as MSG.

For decades worldwide, MSG has been used by scientists to create obese mice and rats in diet and diabetes studies. Since rats and mice are not naturally obese, scientists inject them with MSG when they are first born (which triples the amount of insulin the pancreas creates) to make the animals fat. The "MSG-treated rats," as the scientists call them, are not the only ones to become obese. So do humans—because MSG appears in almost every manufactured food that contains more than a few ingredients.

All protein is comprised of amino acids. Glutamic acid, one of the amino acids, is present in protein in its *bound* state. The minute amounts of free glutamic acid in some natural, unadulterated proteins (such as seaweeds) are not enough to induce a reaction. However, monosodium glutamate (MSG) is actually *free glutamic acid* that is released in foods through processing. When large amounts of glutamic acid are released from processed protein (along with other contaminants from the manufacturing), people who eat the food may react negatively even to tiny amounts. The symptoms may occur immediately after ingestion, or as much as 48 hours later. Many researchers have determined that about 30% of the United States population experiences adverse reactions when fed MSG. In their Registry of Toxic Effects of Chemical Substances, The Centers for Disease Control call monosodium glutamate a *mutagen* and *reproductive effector*.

MSG causes many symptoms, including but not limited to:

- Endocrine dysfunction: obesity, reproductive disorders, and diabetes.
- Heart problems: angina, cardiac arrhythmia, high or low blood pressure, and rapid heartbeat.
- Gastrointestinal disorders: diarrhea, nausea and vomiting, stomach cramps, irritable bowel, rectal bleeding and bloating.
- Muscles and joint problems: aches and pains, chills, shakes, burning, tightness and numbness.
- Neurological disorders: depression, mood swings and rage; migraines; dizziness; disorientation; anxiety and panic attacks; hyperactivity, behavioral problems, autism, and ADD in children; Alzheimer's; paralysis, numbness, tingling, sciatica and seizures; brain lesions.
- Respiratory disorders: asthma, chest pain and tightness, runny nose, and sneezing.
- Eye problems: blurry vision, difficulty in focusing, augmentation of glaucoma, and macular degeneration.
- Urinary and genital conditions: frequent bladder pain, swelling of prostate or vagina, irregular menstrual spotting, and frequent urination.
- Skin conditions: hives, rash, and flushing.
- Lethargy, sleepiness, and insomnia.
- Extreme mouth dryness, mouth lesions, and swelling of face and tongue.

### *Where MSG is Always Present*

Despite the harm caused by MSG, the FDA requires a "monosodium glutamate" label *only* for products whose ingredients are a 99% pure combination of glutamic acid and sodium. *Usually, foods that contain MSG do not have to be labeled as such*. Manufacturers are legally allowed to hide MSG under many different names. The following *always* contain MSG:

- Monosodium Glutamate (MSG), Monopotassium Glutamate (MPG).
- Glutamate, Glutamic Acid.
- Calcium Caseinate, Sodium Caseinate.
- Yeast, Yeast Extract, Yeast Nutrient, Yeast Food, Autolyzed Yeast.
- Corn Oil.
- Accent® and Aginomoto® (two brand names for the pure white crystals).
- AuxiGro®, a plant "growth enhancer" that is sprayed on growing crops (since approval from the US Environmental Protection Agency in 1998).

You also know that free glutamic acid is present when you see *disodium guanylate* and *disodium inosinate* on the label. These are expensive food additives that work synergistically with MSG. It's unlikely that they will be used as food additives if MSG is missing—so their presence suggests that the product contains MSG.

MSG is released from protein when the protein undergoes a process called *protein hydrolysis*, or simply *hydrolysis*. Hydrolyzed protein is made through the use

of fermentation, chemicals, or enzymes. The source of the hydrolyzed protein could be anything. Although hydrolyzed proteins *always* contain MSG, the labels usually indicate a type of protein:

- Pea Protein
- Corn Protein
- Soy Protein
- Wheat Protein

If whole peas, corn kernels, soybeans or wheat berries were used whole, they would be identified as pea, corn, soy or wheat! Calling an ingredient "pea protein," for example, indicates that the pea has been at least partially hydrolyzed. And if something is hydrolyzed, processed free glutamic acid is *always* present. The following also *always* indicate the presence of MSG:

- Textured Protein, Textured Vegetable Protein (TVP), Vegetable Protein, Hydrolyzed Vegetable Protein, Hydrolyzed Plant Protein, Plant Protein Extract, Hydrolyzed Protein, Hydrolyzed Oat Flour—in short, *any protein that is hydrolyzed*.

### *Where MSG is Frequently Present*

During processing, MSG can be created in certain food additives. So, the following *frequently* contain MSG:

- Carrageenan (either contains some processed free glutamic acid, or interacts with the milk protein in dairy products to produce MSG). Carrageenan is found in whipping cream, milk, buttermilk, cream cheese, cottage cheese, sour cream, and ice cream.
- Maltodextrin, Barley Malt, Malt Extract, Malt Flavoring.
- Flavorings, so-called Natural Flavorings or Flavors (Chicken, Beef, Pork, etc.).
- Vegetable Broth, Hydrolyzed Vegetable Broth, Bouillon, Stock.
- Gelatin.
- Pectin.
- Seasoning, Spices.
- Soy Protein, Soy Protein Isolate, Soy Protein Concentrate.
- Soy Sauce (especially the cheap kind that hasn't been fermented properly for at least two years).
- Cheeses that are made with powerful enzymes instead of rennet. Enzymes can create processed free glutamic acid because the proteins in the cheese are breaking down too rapidly. (This does not occur when rennet is used.)
- Whey Protein, Whey Protein Concentrate, Whey Protein Isolate. (Whey Protein from reputable companies should not contain MSG.)
- Protease Enzymes. (Protease supplements from reputable companies should not contain MSG.)

MSG could be in:

- Pre-packaged meals.
- Frozen prepared entrees.
- Processed meats.
- Canned fish.
- Soups and stews.
- Chips and other snack foods.
- Breads and crackers.
- Gravy, bullion and stock.
- Salad dressing.
- Fast foods.
- Personal care items: soaps, shampoos, hair conditioners, cosmetics. (The MSG is hidden in ingredients that include the words "hydrolyzed" and "amino acids.")
- Dairy products: ice cream, frozen yogurt, and low-fat milk. (Many low-fat milks are made from powdered milk. Powdered milk includes free glutamic acid due to the way in which it is processed. If a milk does not meet state requirements, a dairy will fortify its milk with powdered milk to make the product acceptable to the state. Also, *ultra pasteurization* uses even higher heat than normal pasteurization, which breaks down even more milk protein—causing such high levels of processed free glutamic acid that MSG-sensitive individuals experience adverse reactions.)
- Binders and fillers for prescription medications, over-the-counter medicines, and nutritional supplements; and fluids administered intravenously in hospitals. (According to the manufacturer, Varivax–Merck Varicella Virus Live vaccine contains L-monosodium glutamate and hydrolyzed gelatin, both of which contain processed free glutamic acid.)

***MSG is Used Purposely***

Manufacturers have known for about 50 years that MSG's effect on the brain makes it addicting. They purposely add MSG to food to make people buy and eat more of their products. The FDA claims that MSG is safe to eat in any amount—despite hundreds of scientific studies with titles like "The monosodium glutamate (MSG) obese rat as a model for the study of exercise in obesity"; "Obesity induced by neonatal monosodium glutamate treatment in spontaneously hypertensive rats: an animal model of multiple risk factors"; and "Hypothalamic lesion induced by injection of monosodium glutamate in suckling period and subsequent development of obesity" (this last study written in 1978).

MSG can cross the placenta and the blood brain barrier of a developing fetus during pregnancy, and portions of the blood brain barrier even in adults. This is partly what makes it so dangerous. Another danger of MSG is that it upsets the amino acid balance in the body. The amino acid transport system of the body is designed to convey small amounts of many amino acids at one time. But when abnormally large amounts of one or just a few amino acids flood the system, they displace other amino acids. We have more than enough glutamic acid in our diets. If there is not enough dietary protein eaten to create "free glutamic acid," the body can create it from other amino acids.

The glutamic acid that's naturally present in intact, unprocessed proteins nourishes us. The glutamic acid that's artificially created from a manufacturing process contains some of the same molecules that exist in antibiotics and in the cell walls of bacteria—and is carcinogenic. MSG is not a nutrient.

—adapted from Russell L. Blaylock
*Excitotoxins: The Taste that Kills,* 1997
and www.truthinlabeling.org/

> by activating or blocking receptors in the mouth that are responsible for taste. They can enhance or replicate the taste of sugar, salt and monosodium glutamate, or MSG, in foods. . . .
>
> While food safety experts applaud efforts to reduce salt, MSG and sugar, they expressed concerns about the new chemicals, saying that more testing needed to be done before these were sold in food. [Nonetheless] since Senomyx®'s flavor compounds will be used in small proportions (less than one part per million), the company is able to bypass the lengthy FDA approval process required to get food additives on the market.[107]

In obtaining GRAS (Generally Recognized As Safe) status for this new additive, Senomyx® tested the chemical for less than 18 months. One of the studies used as a chief determinant of the chemical's safety was a 3-month trial using rats. Michael Jacobson, executive director of the Center for Science in the Public Interest, expressed strong reservations about this protocol: "A 3-month study is completely inadequate. What you want is at least a 2-year study on several species of animals." Unlike other chemical compounds that are listed individually as ingredients, Senomyx® is "lumped into a broad category—'artificial flavors'—already found on most packaged food labels."[108] The company that created this new chemical has announced being awarded at least five patents.

There are some dangerous preservatives on the market, often appearing in packaged foods. There is no reason to use dangerous synthetic chemicals when there are naturally-occurring substances that can safely and effectively preserve food: Vitamin E tocopherols, and ascorbic acid (part of the Vitamin C complex). Fermenting and drying, practiced for countless centuries, are other options.

**Fabricated Fats**

Earlier in this chapter, I discussed the need for Omega 3 fats in the diet. Preferred sources are grass-fed meats, mercury-free fish (krill oil is becoming popular), coconut oil, and (preferably raw) butter.

The fats from fresh, soaked nuts and seeds are Omega 6. The many vegetable oils on the market also contain Omega 6s, mostly spoiled. You may recall that the high heat used in the processing of almost every vegetable oil turns the vegetable fats into rancid *trans* fats (transformed fats), whose rancidity is disguised with deodorizing and more processing.

In addition to high heat and caustic chemicals, another process called *hydrogenation* ruins vegetable oils. The partial hydrogenation of plant oils was developed in the early 1900s, resulting in shortening that's still used today by bakers all over the world. Margarine is also created by this method. Hydrogenation involves the artificial manipulation of an oil's molecular structure so that its inherent shape is changed. The substance becomes *saturated* with atoms of hydrogen gas—hence, the terms *saturated fats* and *hydrogenated fats*. Hydrogenation destroys any Essential Fatty Acids that might have been present in the original oils.

The shape of a fat molecule indicates the compatibility (or incompatibility) of an oil product with living tissue.

Molecules of healthy fats have a natural curved shape (giving them the name *cis*-fats) that insulates the cell membranes and helps protect the cells from chemical and microbial invasion. Molecules of fake fats, on the other hand, are manipulated into being unnaturally straight. When you eat these fake fats, your digestive system does not recognize them as food, and cannot break down or assimilate them. When the fake fat is incorporated into your own cellular structure, your cell membranes become stiffer—*partially hydrogenated, much like the material that was ingested*. Your now-malformed cell membranes also literally become perforated with holes, allowing toxins and other unwanted materials to penetrate the cells. Cellular metabolism becomes disturbed, because it can no longer perform its usual chemical processes. Simply put, the distortions in the molecules of fabricated fats cause your own body to become distorted, too, in both structure and function.

The goal of partial or total hydrogenation is to raise the burning temperature of the fats. This makes them more desirable for baking. It also extends their shelf life. Fake fats are unlikely to spoil, grow mold, or attract flies and rats. Since their excessive processing removes the nutrients, nothing can live on them, including you.

Fake fats also create *free radicals*. Free radicals are atoms with too few electrons in the outer shell to maintain stability. The atoms seek to add more electrons to their outer shell—either by combining with another atom (and thereby producing a more stable compound), or by knocking off an electron from another highly reactive atom. The atom that loses its electron becomes a free radical itself, seeking to stabilize by finding an electron to steal from yet another atom. This starts a chain reaction of atoms that bombard the system like billiard balls. On a chemical level, this produces poisonous waste products.

One way to gain consumer acceptance of synthesized fats is to call them "healthy," and state their origins in nuts or seeds. But even though an oil might be derived from organic corn, for example, the end product is vastly different from the material of origin.

Most commercial baked goods and fast foods, which used to contain butter and lard, now contain trans fats. This includes items from the health food store. There are entire sections of dangerous oils, as well as foods made with such oils, falsely touted as healthy. Due to a loophole in the labeling laws of the United States, packaged foods marked "no trans fats" are actually allowed to contain a certain percentage of trans fats. This gives the impression that the government is doing its job of protecting the consumer, while at the same time rendering the labels useless. If you want to avoid trans fats, you should avoid packaged foods entirely.

**Food Conditioners**

*Food conditioner* is a curious term. The need to "condition" food implies that the ingredient is not in an edible "condition" unless it's radically altered. But in that case, is it really food? And if it's not really food, should one eat it?

There is a pattern to how foods become commodities instead of nourishment. I will briefly summarize a common alteration made to the ubiquitous wheat to transform it into white bread. In bread making, after the bran and germ are stripped from the wheat berry—leaving nothing but the starchy, non-nutritive white endosperm kernel—commercial flour mills use different chemical bleaches. These include oxide of nitrogen, chlorine, chloride, nitrosyl and benzoyl peroxide, mixed with various chemical salts, to make the flour look even whiter (and presumably more attractive). The result is a substance called alloxan, produced when these chemicals combine with whatever proteins are still left in the flour.

Unlike the fairly benign bleaching agents used to whiten flour years ago, alloxan is a deadly poison. It's commonly used to produce diabetes in normal rats, since it creates huge numbers of free radicals in the beta cells of the pancreas, thus damaging the pancreatic DNA. If beta cells are abnormal, they cannot secrete enough insulin, the body cannot properly metabolize carbohydrates, and glucose levels in the bloodstream rise. The end result is diabetes and Syndrome X.

> It is not easy to get permission to tour an oil-pressing facility. Most oil companies do not like the processes to be too well known. . . . If more people knew about how oils are made, what they contain, and what has been taken out, more people would complain, and fewer would buy these oils. . . .
>
> Fully processed oils are the equivalent of refined (white) sugars, and can therefore be called "white" oils. Like sugar, they are nutrient-deficient sources of calories, but in addition, they contain toxins that are not present in sugar [sucrose].
>
> There is great resistance in the industry to make the changes necessary to produce natural, unrefined oils. . . . The changes would make large presses obsolete. Fresh edible oils require a higher level of care.
>
> The care required to make fresh, unheated, EFA [Essential Fatty Acid]-rich oils, with vitamins and minerals kept intact so our body can metabolize them properly, is not the present mandate of the mega oil industry; nor is a distribution system that gets fresh oils to consumers before they deteriorate from exposure to light and air high on their present list of priorities.
>
> —Udo Erasmus
> *Fats that Heal, Fats that Kill*, 1993

Alloxan is often used in conjunction with the artificial sweetener aspartame. Once the aspartame damages the mitochondria (the fuel-burning units of the cells), it's easier for the free radicals produced by the alloxan to cause even more damage.

Studies show that extra Vitamin E supplementation can help reverse the effects of alloxan, although it would be better to avoid the toxic agent in the first place. Ironically, Vitamin E is naturally present in wheat before the germ and bran are removed during the refining process.

### *"Recreational" Drugs*

Some people who are otherwise careful with their diet, put other substances into their bodies that don't belong there. If you are serious about becoming well, a brief mention of "recreational" drugs may be helpful. "Recreational" is in quotes because having fun putting something harmful into one's body seems like a contradiction. This category includes caffeine, alcohol, tobacco and marijuana.

The dangers of caffeine are discussed at length earlier in this chapter. Coffee is the main method of obtaining caffeine, although roasted chocolate and cola drinks provide it as well.

Alcohol is technically the waste product of certain types of yeasts that feed on fruit and grain sugars. Fruit-based alcoholic beverages produce wine and brandies, and grain-based alcoholic beverages produce beer and hard liquors such as vodka. What the yeast is fed, and the type of yeast used to create the drink, determines the type of beverage that's created.

When people become intoxicated from alcohol, they are experiencing the destruction and death of brain cells. It is the decreased transmission of electrical impulses in the brain, due to cell death, that provides the "high." Note the word *toxic* in *intoxicated*. This is an accurate description, because alcohol poisons the liver and clogs the lymphatic vessels with waste. As a naturopath friend once remarked, a hangover is literally lymph poisoning.

Recent studies claim that red wine has beneficial anti-oxidant properties. Red grape skins are known for being rich in antioxidants; so the widely publicized benefits of wine are from the grape skins themselves, rather than from the alcohol.

After the last edition of this book was published, many cities in the United States—and even entire countries overseas—enacted legislation to prohibit smoking in public places. Although these laws seem harsh to some smokers, they do protect the air that we all breathe. The dangers of cigarette smoking, and their augmentation (if not cause) of all types of conditions from asthma and bronchitis to emphysema and lung cancer, are well documented. Studies have shown that secondhand smoke—from the ends of cigarettes, often unwillingly inhaled by non-smokers—causes even more damage than the original smoke.

Nicotine is well known for being physically addicting. But there's a strong emotional component to smoking, too. Initially, cigarettes increase respiration, but then quickly dampen it. Decreased respiration means decreased awareness of emotions, since emotional expression is so connected to the ability to take full, deep breaths. The sweeteners, preservatives, fire retardants, and other toxic chemicals in commercial cigarettes make them much more harmful than plain unadulterated tobacco. Health-conscious people who want to smoke can buy organically grown, untreated tobacco and roll their own cigarettes.

The last drug I want to discuss is marijuana (pot). Pot impairs short-term memory and coordination, and slows reaction time. It often causes anxiety. Marijuana can also increase the heart rate by as much as 50%, as well as cause chest pain in those whose blood supply to the heart is already limited. Some research suggests that infants born to women who use marijuana during pregnancy may be premature, and/or have abnormally low birth weights.

Recently, newspapers have carried accounts of seriously ill people who are lobbying for the right to use marijuana for medicinal purposes. The plant has a well-deserved reputation for relieving the eyeball pressure of glaucoma as well as the pain from cancer and other diseases. Like other mind-altering plants, marijuana has also been used for centuries by native peoples in religious ceremonies to induce mystical experiences. I understand why people may feel a need to use marijuana medicinally. I also respect native cultures whose spiritual traditions teach communion with the divine. However, as with all hallucinogens, marijuana causes highly negative changes in brain chemistry. These plants also unbalance one's meridians and energy fields. Safe and effective substitutes, from enzymes to meditation, can be used instead of marijuana and other hallucinogens, and can help the body heal.

### *The Discoveries of Weston A. Price*

Weston A. Price is considered a hero to anyone knowledgeable about healthy food and native diets—and for good reason. He played a key role in helping to bring real food back into the dietary habits of people not only in North America, but abroad.

Dr. Price was a prominent Canadian-born dentist (later resettled in the United States) who was the head of research for the National Dental Association, had published in many journals, and enjoyed a thriving practice and laboratory. Yet despite his success, Price was unhappy that the dental profession could offer so few solutions to

## The Biochemistry behind "Recreational" Drug Use

Some people inherit a special body chemistry, called sugar sensitivity, which sets them up to develop specific behavioral and psychological traits. Sugar-sensitive people generally have a family history of alcoholism and are very fond of sweet foods and carbohydrates. They are likely to be impulsive in general, may be compulsive about eating or other behaviors, and may be overweight and/or depressed. They may gain weight disproportional to the amount of calories they consume. They feel both physical and emotional pain more deeply. They may have unexplained or disproportionate anger, overreact to stress and fail to get the results they hope for in psychotherapy. Many have experienced childhood trauma or abuse.

Popular antidepressants . . . all help improve mood by increasing brain levels of an important chemical known as serotonin. Low levels of serotonin are associated with obesity, carbohydrate craving, depression, impulsivity and violence. Low serotonin levels are also involved in depression. Low levels of serotonin can cause overwhelming sugar cravings. Many people with bulimia have insufficient supplies of serotonin. Lack of serotonin can disrupt your sleep patterns and lead to insomnia. Migraine headaches are the result of low serotonin levels. Lowered levels of serotonin are also associated with alcoholism. People who have experienced Post Traumatic Stress [Disorder] (PTSD) show decreased levels of serotonin as well.

Serotonin levels are increased during the intake of addictive substances, such as alcohol, tobacco, certain narcotics and caffeine. When individuals attempt to kick these habits, they often develop a chemical withdrawal syndrome when serotonin levels plummet. During withdrawal, patients get the "munchies" and it is known that overeating, in part, is related to chemical dependency withdrawal, a response to low serotonin levels. These same low serotonin levels may also be partly related to the severe depression and sleep deprivation that occur during withdrawal. Low serotonin levels make the withdrawing addict more prone to use addictive substances as the body tries to compensate for its serotonin loss.

Because serotonin directly regulates the body's response to pain, and affects other neurotransmitters involved in pain control (like endorphins), maintaining adequate serotonin levels can relieve such painful syndromes as fibromyalgia, chronic fatigue syndrome, and premenstrual syndrome. Low levels of endorphins may make you feel depressed, impulsive and victimized. You may be touchy and tearful. And you will have a desperate craving for sugar.

Narcotics such as morphine, heroin and codeine work like endorphins because their molecules have the same shape. They can fit into the endorphin receptor sites and fool the brain into thinking that natural endorphin was sent. Alcohol—through not acting on the receptors directly (like narcotics)—has an endorphin effect on the brain, and causes the brain to release additional endorphins to produce the "high" that we associate with drinking.

This heightened vulnerability to the effects of alcohol, opiate drugs and sugars may be particularly true for certain groups, including alcoholics and heroin addicts, women and obese men, and persons from families at risk for alcoholism—all known to have low levels of endorphins. Consequently, the experience of emotional stress by these groups may well lead to increased use of opioid-medicating substances. And use of moderate amounts of sugars or alcohol may well prime greater use of these relief-producing substances and lead to compulsive, long-term addiction.

5-hydroxytryptophan (5-HTP) is a substance that occurs naturally in the human body and helps in the manufacture of serotonin, a brain chemical that is associated with the feeling of well-being and fulfillment. 5-HTP [also] increases beta-endorphin levels, as well as levels of other brain chemicals, including dopamine and noradrenaline. The ability of 5-HTP to affect brain chemicals in the indoleamine family, as well as their cousins the catecholamines, helps explain why it has such a broad spectrum of effects throughout the body. 5-HTP can be particularly important for the sugar-sensitive personality. Laboratory tests show that people who have chronic complaints such as stress, depression, chronic fatigue syndrome, and fibromyalgia have low levels of endorphins. In Europe, 5-HTP has been used for decades as an approved treatment for depression, sleep problems, weight loss, and other medical complaints.

Three natural herbals can complement and enhance the benefits of 5-HTP (besides providing benefits of their own) for the sugar-sensitive person. The first is the relatively unknown Indian herb, *Gymnema sylvestre*—called the "anti-sugar" herb for its ability to cut back/stop sugar cravings—which has been used by Indian healers for nearly 2,000 years and has long been associated with alternative medicine. Another important herb for the sugar-sensitive person is *Ginkgo biloba*. This herb is an effective antidepressant, in part because it counteracts one of the major changes in brain chemistry associated with aging—the gradual reduction in the number of serotonin receptor sites. Besides increasing the number of serotonin receptors, *Ginkgo biloba* may also enhance the effects of 5-HTP by inhibiting the MAO enzyme. [And] *Ginkgo biloba* extract is effective in the treatment of decreased blood flow to the brain.

To enhance the effects of 5-HTP for depression, consider St. John's wort [*Hypericum*]. St. John's wort, unlike any other anti-depressant, . . . exerts a potentiating effect on the three neurotransmitters—noradrenaline, serotonin, and dopamine—that are depleted in depression sufferers.

—excerpted from Cathy Oats
"The Sugar Connection," *Health News*

the rapidly escalating dental problems of his time. So in the 1930s, along with his wife, he journeyed around the world for nearly a decade to learn what was so rapidly contributing to tooth decay in the modern "civilized" world. Since 95% of American children today have dental deformities (which usually indicate other health problems as well), Price's journey was prescient.

Reasoning that the answer would be found if they studied healthy, rather than unhealthy, people, the Prices visited the Inuit (Eskimos) in Alaska; the Maori of New Zealand; the Australian Aborigines; the Malay tribes on islands north of Australia; Indians in north, west and central Canada; Indians in Florida and the western US; Melanesians and Polynesians of the South Sea Islands; isolated Gaelic folk living in the Islands of the Outer Hebrides off the coast of Scotland; Indians in the jungles of Peru; isolated Swiss in the Loetschental Valley enclosed by three high mountain ranges; and various African tribes living according to their ancient customs in what was then Kenya, Uganda, Rwanda, Belgian Congo and Ethiopia. Sometimes the Prices would first have to spend weeks with the natives, to gain their confidence and trust, before Weston could ask them questions about their health and diet through an interpreter.

Price's fascinating book of his findings, *Nutrition and Physical Degeneration*, reads like a combination travelogue, anthropological treatise, restaurant review, and very readable text on medicine, dentistry and nutrition. The documentary photographs of dentally healthy and unhealthy people add great power to the text. "After spending several years approaching this problem [of what causes tooth decay] by both clinical and laboratory research methods," he explained, "I interpreted the accumulating evidence as strongly indicating the absence of some essential factors from our modern program, rather than the presence of injurious factors. This immediately indicated the need for obtaining controls"—people who were not afflicted with the pathological condition he was studying.

> To accomplish this it became necessary to locate immune groups which were found readily as isolated remnants of primitive racial stocks in different parts of the world. [Although Dr. Price used the word "primitive" when describing these people, he never meant it in a derogatory fashion; rather, he meant "original, simple, basic," to signify being connected to one's roots.] A critical examination of these groups revealed a high immunity to many of our serious affections [afflictions] so long as they were sufficiently isolated from our modern civilization and living in accordance with the nutritional programs which were directed by the accumulated wisdom of the group. In every instance where individuals of the same racial stocks who had lost this isolation and who had adopted the foods and food habits of our modern civilization were examined, there was an early loss of the high immunity characteristics of the isolated group. These studies have included a chemical analysis of foods of the isolated groups and also of the displacing foods of our modern civilization.[109]

Price's illustrated book is over 500 pages, condensed from his meticulously taken field notes and his huge collection of photographs of people with good and bad teeth. The book discusses not only dietary habits, but also lifestyle, social customs, attitudes, and birthing practices. The natives who still followed their traditional diets based on locally-grown foods, enjoyed excellent general physical health, as well as healthy well-formed teeth.

A traditional diet depended on what was native to the region. The Inuit's diet consisted of about 80% fat, along with the meat they hunted. The Scottish people of the Outer Hebrides lived on plenty of sea food with oat cakes (oats were one of the few crops that could grow on that perpetually cloudy, damp island). The South Sea Islanders enjoyed coconut and a wide variety of other tropical fruits, along with roast wild pig and crab. And the Swiss of course ate lots of cheese and butter with their sourdough bread. Interestingly, fewer than 10% of the traditional cultures Dr. Price studied consumed dairy on a regular basis.

Natives always ate the organs, glands and fat of an animal along with the muscle meats. Eggs of all kinds were eaten as well. Significantly, the milk, cheese and butter from the animals they raised were eaten either raw or (more often) fermented. Some of the natives ate great quantities of meat; others ate much less. But every culture—even those who subsisted primarily on vegetables or on large amounts of grains and legumes—ate some form of animal protein, even if the diet had to consist of 10% insects. In fact, certain worms high in fat were considered a great delicacy in certain parts of Africa. (In modern Zimbabwe, these worms are still a popular item at markets because they are the only form of protein that many people can afford.) Price, who appears to have preferred not having to eat animals, was disappointed that during his travels he did not discover one vegan group.

In every single case, the onset of degenerative disease was caused by the introduction of processed adulterated food—largely white flour and white sugar—from white civilization, which became available to the natives when new roads were built or more foreign ships visited an island. Significantly, the children of women who deviated from their traditional diets all had narrow dental arches and misaligned teeth, and were much more likely to contract

### When a Pregnant Woman is a Vegetarian

Almost every mother I have ever met who was a strict vegetarian while pregnant, gave birth to children who were prone to many more allergies and respiratory illnesses compared to non-vegetarian mothers. The children also had markedly buck teeth, with spaces in between, and teeth lodged high in the gums at irregular angles above the rest of the normal teeth. I have also noticed a high percentage of miscarriages.

Birth defects, lowered immunity, and structural abnormalities can result from a diet high in sugars and empty carbohydrates, typical of many unbalanced vegetarian diets. Purified wheat gluten, used as the main meat substitute in the US—and especially popular with vegetarians and vegans (who eat a meatless diet without even dairy or eggs)—can also create problems for both mother and infant. Even if the mother does not eat junk, a nutritionally balanced diet is still difficult to achieve if certain animal products are omitted. Vitamins A and D (which help us absorb the minerals in food), Vitamin B6, and the minerals calcium, magnesium, iron, zinc and copper, are much more easily absorbed from animal than plant foods. Nutritionists have also found that the majority of those on vegetarian or vegan diets suffer from a shortage of Vitamin B12, which is found principally in meat and other animal products.

There is also evidence that many cases of Alzheimer's—whose early deficiency signs include fatigue, tingling in hands and feet, sleep disorders, and a tendency toward irrational anger—is actually a Vitamin B12 deficiency. Compared to modern diets, traditional diets contained four times the amount of calcium and other minerals, and ten times the amount of fat-soluble vitamins A, D, E and K.

diseases such as tuberculosis and arthritis. When the women resumed their native diets, the babies they subsequently bore were healthy. Interestingly, the children of well-fed parents didn't cry much, if at all, and were remarkably independent. And the people on traditional diets were even-tempered and content, even if the climate was oppressive.

Dr. Price found great wisdom in how the natives prepared their food. It either was eaten raw, was minimally cooked, was subjected to extended cooking (often after being soaked), or was fermented raw. All of these methods made the food much more assimilable. Raw fruits and vegetables contain some enzymes and especially high concentrations of vitamins and minerals. The soaking of seeds and nuts, and in some cases the removal of the skins, neutralizes the enzyme inhibitors. The soaking of grains and beans (usually overnight), and subsequent slow cooking, break down the indigestible fibers and complex sugars. Soaking and sprouting (and fermenting, about which Price did not make extensive comments) also neutralize the anti-nutrients. One anti-nutrient is the phytic acid (the plant's natural preservative) in the outer layer which—if not transformed—combines with minerals in the intestinal tract and blocks their absorption.

Raw or low-heat dehydrated meats also contain enzymes. Parasites sometimes present in raw meat are less inclined to grow in a healthy body; but Price found that anti-parasite condiments were often eaten with the raw meats to help prevent or decrease harmful effects. For example, wasabi horseradish is a traditional Japanese staple with sushi or raw fish.

One of Price's most important discoveries was the presence of a fat-soluble activator in fish eggs, shellfish, lard, cod liver oil, and in milk and organ meats from grass-fed animals. This activator, which we now know to be Vitamin K2, plays an essential role in the body's absorption and utilization of many minerals, and helps prevent dental caries and insulin resistance.

It's not surprising that native populations all over the world were much healthier before the introduction of commercialized, refined Western non-foods. The rule for healthy eating is really quite simple. Food should not be fractionated, but eaten from its original matrix. The farther away from its origin, the less nutrition it provides. At some point on the processing continuum, the food becomes a non-food—or anti-food. Just as with cigarette smoke and drugs, anti-food—which the body was never designed to ingest—burdens the system with synthetic substances that lack life energy (electromagnetic charge), and forces it to deplete its stores of nutrients and energy to eliminate what to it is a poison.

My favorite cookbook, *Nourishing Traditions: The Cookbook that Challenges Politically Correct Nutrition and the Diet Dictocrats*, by Sally Fallon and Mary Enig, is founded on the discoveries of Weston Price and other nutritional giants. Like Weston Price's own work, this is a multi-dimensional book, full of not only outstanding recipes, but also interesting and essential scientific information that explains why these recipes are included. Additional methods of food preparation that help optimal assimilation are explained in detail. Cooking meat and bones for a long time makes the calcium and other nutrients from the marrow, gelatin, bones and connective tissue diffuse into the water, providing a mineral-rich, nutritious broth. The fermentation of foods likewise makes food more assimilable; it begins a pre-digestion process outside the body and adds beneficial intestinal bacteria. Dairy is best eaten either raw or fermented. Small amounts of fermented vegetables (like cabbage), eaten with each

meal, add valuable enzymes and hydrochloric acid that aid digestion. I consider this book indispensable for readers interested in learning how to cook and prepare food in ways that have sustained human populations for thousands of years.

### *Selected Food Preparation Methods*

Cooking is actually quite simple. It's a process that conveys heat to food via dry air, varying amounts of water, or varying amounts of fat. When foods are heated, the molecules heat up and move faster, and there is a corresponding chemical change of the proteins, fats and carbohydrates.

With air heating, food is placed in an open space (barbeque pit) or enclosed space (oven, or pit covered with rocks). With water heating, water either completely surrounds the food (boiling), covers the bottom of the pan (poaching), or covers the bottom of the pan while the food rests on top of a wire mesh away from the water (steaming). With fat heating, either a small amount of oil is used (sautéing), or a larger amount (deep frying).

This is not a cookbook, so I will focus on only a few aspects of food preparation, and then cookware, that have a significant impact on health.

#### Frying

Most oils degrade when heated. The only edible fats and oils that can be heated without suffering molecular damage or nutrient loss are virgin olive oil, butter and coconut oil. Virgin olive oil can withstand only moderate heat; butter a bit more; and coconut oil can withstand pretty high temperatures for both frying and baking. You can tell that the oil is overheating when it smokes. It makes no sense to obtain fresh unheated oils to avoid trans fats, and then ruin them by heating them at home when frying food.

Frying and especially deep-frying damage food by creating toxic compounds. These compounds impair cell respiration and inhibit immune function, which can create all kinds of disease conditions. Oils chemist Udo Erasmus bluntly states: "Oil kept at 215°C (419°F) for 15 minutes or more consistently produces atherosclerosis when fed to experimental animals."[110] The damage to our physiology and biochemistry comes from

> rapid oxidation and other chemical changes that take place when oils are subjected to high temperature in the presence of light and oxygen. First, antioxidants in the oil (Vitamin E and carotene) are used up. Then . . . free radicals [are produced] that start chain reactions in oil molecules. Under these conditions, many chemical changes take place in oils.[111]

**Animals are smarter than humans when it comes to feeding their children**

Humans are the only species on the planet who actually go out of their way to feed their children crap. All other animals instinctively seek out the best nutrition they can find. Birds find grubs, worms and insects to feed their young, honeybees painstakingly collect pollen and create a nutrient-rich superfood that gives rise to a living queen bee, and even dogs, cats and cows try to find the most nutrient-rich foods to offer their offspring.

But humans? Most of them "reward" their children with junk food, sugary sodas, candy laced with petrochemical coloring additives and refined sugars that promote obesity and diabetes. Most parents don't even make any real effort to follow nutritional discipline at home—they simply buy whatever their children saw advertised on television, caving in to the all-powerful "nag factor" that junk food companies fully exploit when marketing to children.

As a result, *human children are the least healthy youngsters of any species on the planet*. Baby dolphins are healthier than baby humans, for example, and they are born with healthier nervous systems, fewer toxins and a lot more common sense.

—Mike Adams, News Target, April 6, 2007

The oxidation that takes place in fried (heated) oils causes some of the oil molecules to become fragmented, and others to join where they had not been joined previously. This is like nailing some support beams of a house in all different, chaotic directions—and for other support beams, using sawdust instead of solid timber.

More than just oils suffer during frying. *Foods* that are fried in these oils also undergo destructive molecular changes that are quite toxic to the body. The very crispness that makes the taste and texture of fried foods so delicious produces chemicals known as *acrylamides*. Acrylamides, created when oils are heated at very high temperatures, cause cancer and nerve damage.

How likely is the chance of being toxified by acrylamides? One Canadian author writes:

> Both the Food and Drug Administration (FDA) in the US and Health Canada [the Canadian equivalent of the FDA] have evidence that carbohydrate based products heated to 350°F [about 177°C] or more produce . . . acrylamides. . . . A bag of potato chips can have 500 times the amount of acrylamides allowed in drinking water. A single chip may contain as much acrylamides as allowed by Health Canada in an 8-ounce glass of drinking water.[112]

### The Ions in Raw Food

Albert Szent-Gyorgyi, the famous Nobel laureate who discovered Vitamin C, showed that an electron cannot move in a living system unless it is accompanied by hydrogen. It's now evident that a fundamental indicator of vitality in foods may be the presence of negative hydrogen ions, which are completely absent from cooked food. While positive hydrogen ions are acidifying to the system and speed the aging process, negative hydrogen ions are alkalizing to the system and delay aging. Negative hydrogen ions also support metabolic functions, help eliminate waste materials from the body, and ensure that the tissues remain well supplied with absorbable minerals.

Is there no way to enjoy fried food? Erasmus writes:

> Safe frying is a contradiction in terms. Frying temperatures are too high. When foods turn brown, they have been burned. The nutrients in the browned material have been destroyed. Proteins turn into carcinogenic acrolein. Starches and sugars are browned (caramelized) through molecular destruction. Fats and oils are turned to smoke by destruction of fatty acids and glycerol.[113]

Meats that are barbequed or charbroiled cause problems similar to frying. Those tasty charcoaled carcinogenic substances are called *heterocyclic amines*, or HCAs. If you like barbequed meats, just sear the outside lightly.

It does not appear that frying is an option for food preparation—certainly not for people with serious illnesses. However, Erasmus does offer a compromise to frying that helps protect the Essential Fatty Acids and thus our health. It requires more care, but is worth the effort.

> Traditional Chinese cooks first put water in their wok, not oil (North American Chinese cooks have largely abandoned this wise practice). Water keeps the temperature down to 100°C (212°F), a non-destructive temperature. In European gourmet cooking, vegetables placed in the frying pan *before* oil is added protect oil from overheating and oxidation. The food tastes less burned, retains more of its natural flavors and nutrients and, most important, supports our health better.[114]

#### Raw

Once you seriously start investigating holistic ways of eating, sooner or later you will read about eating your food raw or uncooked to preserve the *enzymes*. Enzymes, the chemical catalysts of all life processes, are present in all living organisms, including in the human body and in the uncooked foods that we eat. Enzymes in our foods foster digestion, while the ones produced by the body are necessary for proper immune response, the elimination of toxins, and for digestion. (I discuss enzymes in more detail later in the section, **Selected Nutritional Supplements**.)

Cooking destroys the enzymes in food. Opinions vary as to exactly how much heat will devitalize the enzymes. The average estimate is that temperatures of 110°F (43.3°C) or over destroy enzymes, and that foods dried slowly below that temperature retain their nutritional value. However, even this figure is misleading, because the varied water content of foods causes them to dry at different rates and at different amounts of heat. Temperature designations are also unreliable because the temperature cited for optimal drying is usually that of the air, which especially at the start of the drying process is usually much higher than the temperature of the food.

Dried foods have the advantage of being portable and lightweight to carry. If their low water content makes them too rich and concentrated, soak them in water before eating them.

Enzyme-wise, not all foods are created equal. The most abundant sources of food enzymes are raw meats, fish and dairy; raw honey; tropical fruits such as pineapple and unripe papaya (which contain bromelain and papain, respectively); extra virgin olive oil; sprouted grains, beans and legumes; wine and unpasteurized beer; and fermented dairy products. Fallon and Enig write:

> Most fruits and vegetables contain few enzymes [unless they are pickled or fermented when raw]; exceptional plant foods noted for high enzyme content include extra virgin olive oil and other unrefined oils, raw honey, grapes, figs and many tropical fruits including avocados, dates, bananas, papaya, pineapple, kiwi and mangos.[115]

The most vocal proponents of a raw diet tend to be strict vegans. The diet focuses on uncooked and fermented fruits and vegetables, and soaked or sprouted nuts, seeds and grains. Less strict vegetarians add fermented dairy. However, the metabolic needs (and relatively sedentary lifestyles) of many people make it difficult for them to handle dense, high-carbohydrate foods without adding at least some animal protein to their diets. A less-known raw foods group follows the so-called Paleolithic or Primal diet as popularized by Aajonus Vonderplanitz. Beef and fish are eaten either raw, "cured" or slow "cooked" with

## How to Feed Your Dog or Cat

If you think you are doing your beloved animal companion a favor by buying only the "best" commercial food, think again. Most commercial pet foods contain hormones, antibiotics, artificial dyes and preservatives, sugar, and harmful chemicals such as MSG. The FDA allows pet food to contain up to 15% of its total weight in corn syrup. "Vegetable protein" on a pet food label can legally consist not only of corn and soybean meal, but also rice husks, peanut shells, and other waste material from the milling of grain. Even if the food (called *kibble*) contains whole grains, this is not a natural food for dogs and cats. High-cellulose "vegetable protein" cannot be digested except by cows, sheep, and other grazing animals whose digestive tract is designed to break it down (and even then, they should eat grass rather than grain). If the label reads "animal by-products," "meat or bone meal," or "meat digest," your pets might be ingesting fur, hair, feathers, leather, nails and hoofs, and other indigestible animal parts. Although technically this can be considered the food's "protein content" and is legally allowed to be labeled as such, it offers no nutrition: your pet cannot digest or assimilate it. In the wild, canines and felines eat plenty of muscle and organ meats as well as bones.

What passes for "ingredients" is disgraceful. In most states, it is legal for the diseased parts of chickens, cows and other slaughterhouse animals that failed inspection for human consumption to become food for pets after being "cleaned" with charcoal and toxic petrochemical solvents. The Food and Drug Administration and other groups, including the California Veterinary Medical Association and the American Veterinary Medical Association, admit that when pets, and animals in shelters and pounds, are euthanized, their carcasses are often sent to pet "food" processing plants. Some of the euthanized pets contain sodium pentobarbital (a drug used to kill them), which does not get broken down in processing; and the pets might also be wearing their flea collars when added to the mix. If this sounds too unbelievable, don't take my word for it. You can read exposés of the pet food industry, which have appeared in the last decade, in the *San Francisco Chronicle, American Journal of Veterinary Research, Let's Live Magazine, Earth Island Journal,* and *Nexus*—not to mention the pet food industry's own magazines.

Ironically, until very recently there was no such thing as "pet" food. Pets ate table scraps and raw bones, and were much healthier than they are today. The animals we say we love and cherish are the innocent victims of a major, improperly regulated, billion-dollar-a-year industry's unscrupulous business practices. Think how you would feel if you ate the same devitalized, canned or dried dinner every single day—let alone material that was contaminated with other diseased animals, foreign chemicals and miscellaneous indigestible substances. Wouldn't you be sick, too? No wonder so many pets suffer from flatulence, allergies, itchy skin, dull fur, vomiting, heart disease, dental problems, kidney and liver failure, and cancer!

The dietary guidelines in this chapter that you use for yourself can be adapted for your domesticated animal friends. Advocates of a healthy diet for dogs and cats—following the advice of Australian veterinarian Ian Billinghurst, who discovered that his dogs' health problems disappeared when he fed them natural, raw food meals similar to those of their ancestors—call it the BARF diet. BARF is an acronym for "Bio Active Raw Food" or, more popularly, "Bones And Raw Food." Most dogs and cats thrive on raw meat, with an occasional raw egg and raw milk (especially for cats). Tripe (whole or ground)—the first three stomachs of ruminants, along with the partly digested plant material—provides valuable probiotics. It smells awful to humans, but most dogs love it. In lieu of tripe, some owners feed ground up vegetables along with the raw meat. Raw bones containing marrow, cartilage and gristle should be given to dogs once a week, along with enough meat to cushion the hard bone. Unlike unhealthy cooked bones, raw ones don't splinter, they help clean the animals' teeth, and satisfy the natural instinct to gnaw. Dogs and cats need lots of protein, even more than humans do. Cats require high amounts of taurine, an amino acid that is normally made from other amino acids in the body. However, since cats are unable to synthesize taurine, it must be supplied in high amounts by their diet. Never feed your animals onions or chocolate, which contain compounds that can kill them in high enough amounts.

The BARF diet is based on the fact that animals in the wild—lions, tigers and cheetahs (relatives of the house cat), and wolves, jackals and coyotes (relatives of the dog)—are carnivorous, and don't cook their food before eating it. Even so, our domesticated dogs and cats are unique, just as we humans are. Some animals do better with cooked food; others don't. Observe your pet's likes, dislikes and reactions. The reactions will change, too, according to the animal's health, age and environment.

If you take the time to love your pets in this way, you will save lots of money on veterinarian bills and your animal friends will be happier and healthier.

a little lemon juice and salt (which does not destroy the enzymes), or dehydrated. The dehydration yields a product similar to the pemmican—a forerunner of modern jerky—that was eaten by the American Plains Indians. Perhaps more people would be drawn to a raw diet if they were encouraged to substitute meat and fish for some grains, nuts and seeds.

For some, a raw diet makes the difference between remaining ill and becoming well. However, this way of eating is not for everyone. As Annemarie Colbin points out, most people who live in a cold climate need the heat that cooked food provides. And those who perform heavy manual labor, work with computers, or spend lots of time under fluorescent lights, need the slow steady energy from cooked foods as opposed to the quick, but short-lived, bursts of high energy generated by raw foods.

Cooking does have its place. Many foods are relatively unusable unless they are altered in some way. For instance, even with thorough chewing, humans cannot digest the tough cellulose of many vegetables, from kale to root vegetables like potatoes and carrots. This is why many vegetables must be at least steamed. And some raw meats can be dangerous if they are not heated to kill the parasites, and so on. Cooking allows the vitamins and other nutrients in many vegetables to be assimilated. I think it is worth losing some nutrients, even enzymes, through cooking if it makes the difference between eating and not eating the vegetable. The vegetables can always be juiced to obtain the valuable enzymes and other nutrients.

The potent energy in raw foods can be useful to people trying to recover their strength and vitality lost through illness. But mono-diet systems are chiefly designed to alleviate extreme conditions. Once the condition is eliminated, continuing what was originally a corrective diet may create another imbalance and even illness. You don't have to adhere to a 100% raw foods diet in order to benefit. Consider eating at least some enzyme-rich, living foods every day as part of your overall nutritional program.

### Fermentation

No one knows how fermentation began. But it's hypothesized that some of the most common foods we enjoy today evolved serendipitously. A commonly cited illustration is milk: it was carried across the desert in animal skins, picked up the bacteria in the skins, and curdled, resulting in yogurt and cheese. Every country in the world has its own fermented specialties. Kvass originated from Russia. Umeboshi plum paste, kim chee and miso came from Asia. Sauerkraut was popular in Germany. The range of fermented foods is practically unlimited, as meats, milk, and many vegetables, fruits and grains can be fermented.

The fermentation process always involves bacteria, and sometimes yeasts. It is the *enzymes* from these infinitesimal microorganisms that break down substances, both inside and outside the body. In his excellent book on how to make fermented foods, Sandor Katz writes that not all bacteria are our enemies.

> Microbial cultures are essential to life's processes. . . . We humans are in a symbiotic relationship with these single-cell life-forms. . . . [They] digest food into nutrients our bodies can absorb, protect us from potentially dangerous organisms, and teach our immune systems how to function. . . . They keep the soil fertile and comprise an indispensable part of the cycle of life. . . .
>
> Certain microorganisms can manifest extraordinary culinary transformations. . . . The process of fermentation makes food more digestible and nutritious. Live, unpasteurized, fermented foods also carry beneficial bacteria directly into our digestive systems, where they exist symbiotically, breaking down food and aiding digestion.[116]

The one food I want to discuss here is vinegar, since it is eaten often and can be either beneficial or damaging, depending on how it's made. Naturally brewed vinegar is created through the fermentation of grains or fruits in the presence of oxygen. The first stage is an alcoholic beverage. If the beverage sits long enough, it's transformed into vinegar.

Not all vinegars promote health. White distilled vinegar contains acetic acid. Wine vinegar contains predominantly acetic acid, and sometimes tartaric acid as well. The acetic acid in white distilled and wine vinegars destroys red blood cells, interferes with digestion, and retards the proper assimilation of food. Acetic acid also helps cause cirrhosis (hardening) of the liver, and duodenal and intestinal ulcers.

Raw, unpasteurized apple cider vinegar contains malic acid. The malic acid in apple cider vinegar helps provide energy to muscles, assists in the coagulation of blood, and contributes to healthy blood vessels. Apple cider vinegar is high in potassium, which is used by the body for proper nerve and muscle operation, regulation of blood pressure, and balanced blood sugar levels. It seems clear that vinegar made with anything other than *raw* apple cider is a poison. Vinegar should never be heated. If you do not have a source of apple cider vinegar, get some unpasteurized (unheated) apple cider and allow it to sit for several weeks.

Despite the flavor and other benefits of fermented foods, people with *Candida* and other yeast sensitivities often cannot tolerate these foods, and in fact become more ill if fermented foods are eaten. As usual, pay attention to how your system responds.

### Canned Foods

According to an FDA estimate, 17% of the US diet comes from canned food. Although canned goods are convenient, most of them (except for meats) are not very nutritious. Also, unless the cans are lined with safe enamel, their coating makes the food outright dangerous.

The chemical bisphenol-A (BPA) is used in the epoxy resin that lines cans. BPA disrupts the body in ways that are similar to the effects of synthetic (*pseudo* or false) estrogen. Pseudo-estrogens from plastic are similar enough to the real hormone that they attach to the body's estrogen receptor sites, displacing what the body produces itself. But the fake estrogens are also foreign enough to impair hormonal functioning. Fake estrogen also lowers sperm counts, causes cancer, and is toxic to the nervous system. Damage to cells can occur at concentrations as low as 2 ppb. According to the Centers for Disease Control, levels of 2 ppb were found in 95% of the people examined.

A study overseen by the Environmental Working Group found BPA in over 50% of all name-brand canned goods tested. This includes canned infant formula. Many of the cans contained BPA levels 200 times higher than the government's safe level for industrial chemicals. One to three servings of some canned foods (including chicken soup, ravioli and infant formula) are sufficient to cause harm.

BPA is also widely used to make some types of hard plastic bottles. Such plastic bottles should be avoided as well.

### Microwave Ovens

Microwaving has become a popular method of cooking food, especially for gadget-loving, fast food-hungry Americans. Microwave ovens emit a 2.45 gigahertz (2,450,000,000 Hz) signal to cook the food. But while microwaved food is convenient and fast, the price we pay is high. We can distinguish between the effects of microwave radiation on the water in the food (and thus on the food itself); on the body, once the food is ingested; and on the human body, independent of the ingestion of food. I will discuss each in turn.

The ability of microwaves to cook food is based on its effects on water, which is very sensitive to radiation and exists in all plants and animals (including our food). You may recall from earlier in this chapter that one end of a water molecule has a positive charge and the other end has a negative charge. When subjected to microwave radiation, the water molecules in the food reverse in polarity: the positive ends become negative and the negative ends become positive. This back and forth movement happens continually, and at high speeds—up to one hundred billion times a second! The molecules are jostled so much that the motion creates friction. The friction caused by these repeated changes emits the heat that cooks the food. The disruption of the water molecules is so intense that they are literally torn apart and become structurally deformed. Chemists even have a name for this phenomenon: *structural isomerism*.

What happens to the food as a result of this rapid, chaotic polarity switching? Food cooked in microwave ovens becomes radically altered. "In most research [conducted by the Russians]," Kopp writes, "the foods were exposed to microwave propagation at an energy potential of 100 kilowatts per cubic centimeter per second, to the point considered acceptable for sanitary, normal ingestion."[117] Under these "acceptable" conditions, the naturally occurring chemical bonds between various elements in the food are shattered, causing the molecules to fragment. Chemists have a name for this phenomenon as well: *radiolysis*, the molecular disintegration resulting from radiation. This causes the formation of new *radiolytic* compounds. Some of the changes are as follows:

- Naturally occurring amino acids (the constituents of protein) in milk and grains are transformed into carcinogenic poisons that damage the nervous system and kidneys.
- Microwaved meats contain d-Nitrosodienthanolamines, a class of well-known carcinogens.
- Even brief exposures of raw, cooked or frozen vegetables to microwaves enhance the production of toxic alkaloids. (To give you a basis for comparison, belladonna, morphine and strychnine are all alkaloids.) Many of these alkaloids become carcinogenic.
- There is a 60% to 90% decrease in the availability of various nutrients, including Vitamins A, C, E and B-complex, essential minerals, choline, inositol, and methionine.

Microwaves transform more than our food. The radiation itself directly influences all bodily systems. Once you understand the effects of microwaves on water, it's easy to grasp how living cells are affected by the microwaved foods. One practitioner writes:

> The cells are actually broken, thereby neutralizing the electrical potentials, the very life of the cells, between the outer and inner side of the cell membranes. Impaired cells become easy prey for viruses, fungi and other microorganisms. The natural repair mechanisms are suppressed and cells are forced to adapt to a state of energy emergency; they switch from aerobic to anaerobic respiration [in other words, the behavior of cancer cells]. Instead of water and carbon dioxide,

> the cell poisons, [excess] hydrogen peroxide and carbon monoxide, are produced.[118]

Here is a partial list of the damage that people can suffer from eating microwaved foods:

- Abnormal increase in leukocytes, white blood cells whose elevated numbers usually signify pathogenic effects such as poisoning and cell damage.
- Nervous system damage, whereby the electrical functioning is impeded and messages cannot be transmitted properly.
- A disruption in the electrical potential of the cellular membranes, which impedes the efficiency of nutrients entering the cells and wastes leaving.
- Cardiovascular disorders, including the blockage of coronary arteries and an increase of heart attacks.
- A higher-than-normal percentage of cancerous cells in the stomach and intestines, resulting in digestive disorders, impaired excretory function, and a statistically significant increase in stomach cancer.
- Decrease in levels of hemoglobin, the iron-containing pigment in red blood cells that binds to oxygen and carries the oxygen from the lungs to all the tissues.
- Decrease in levels of lymphocytes, white blood cells.
- Hormonal imbalances.
- Significant loss of vital energy.
- Significant levels of disruption in alpha, delta, and theta brain waves, resulting in psychological disorders including memory loss, inability to concentrate, diminished intellectual functioning, and interrupted sleep.

Microwaved foods contain "hot spots" that can make food explode, or cause burns when you touch it. The toxic chemicals in packaging can leach into the food. Most important, the radiation emitted by even a *correctly working* microwave ovens disrupts the electrical fields of those nearby (microwaves travel easily through inside walls). New research, published in a 2010 *European Journal of Oncology* monograph by Dr. Magda Havas and colleagues, shows that radiation of 2.4 GHz from a cordless phone base—the same frequency used by wireless routers and baby monitors as well as microwave ovens—disrupts the heart and autonomic nervous system. The levels tested were *below* federal safety guidelines. Other research in the same publication shows that virtually every function of the body is disrupted: amino acid formation, brain cognition, cell differentiation and enzymatic activity, collagen synthesis, immune response.

Microwaving can have immediate fatal consequences, too. In 1991, a woman named Norma Levitt entered an Oklahoma hospital for hip surgery and received a blood transfusion. A nurse warmed the blood for the transfusion in a microwave oven, and in an hour and a half Levitt was dead. We may reasonably conclude that it wasn't the surgery or anesthesia that killed her, but the deformed, lifeless blood cells in the transfused blood.

The story of how microwave ovens came to be accepted, even eagerly embraced by the American public, is similar to how harmful drugs reach the marketplace: the suppression of negative evidence. In 1991, Dr. Hans Ulrich Hertel of the Swiss Federal Institute of Technology and Dr. Bernard H. Blanc of the University Institute for Biochemistry published the results of a thorough clinical examination of microwaved nutrients and their effects on the blood and human physiology. Among their findings was an alarming increase of leukocytes (white blood cells), which indicates abnormal conditions such as poisoning or cell membrane damage. Both conditions can lead to a pre-cancerous state. At the time, Hertel was employed by a major international food company. It fired him "for questioning certain processing procedures *that denatured the food*." [emphasis added][119] In 1992, the Swiss Association of Dealers for Electro-apparatuses for Households and Industry pressured a Swiss court to issue a gag order against the doctors. In March 1993, Dr. Hertel was prohibited

> from declaring that food prepared in the microwave oven shall be dangerous to health and lead[s] to changes in the blood of consumers, giving reference to pathologic troubles as also indicative for the beginning of a cancerous process. The defendant shall be prohibited from repeating such a statement in publications and in public talks by punishment laid down in the law.[120]

The decision was finally reversed in 1998 by the European Court of Human Rights. It ruled that Hertel's rights had been violated and Switzerland must pay him compensation. However, by then millions were indoctrinated. Today, many Americans naively believe that microwave ovens are safe.

Not all countries allow their citizens to cook with microwaves. Research on the biological effects of microwaves is said to have been conducted as early as 1942 at Humboldt University in Berlin, Germany. The Russians—who since 1957 extensively studied the effects of microwave ovens at the Institute of Radio Technology—"outlawed their use and issued an international warning about the biological and environmental damage that can result from the use of this and similar-frequency electronic apparatus,"[121] though

the ban was later lifted. However, other Eastern European countries have also set limits for microwave oven usage.

Simply put, because microwaved food is chemically and molecularly altered, its nutrients are lost and harmful compounds are created. The body, exposed to foreign and dangerous substances and further deprived of the nutrients it needs, becomes sick. Is it any wonder that cancer rates are especially high in those eating microwaved food?

Not all technology is bad. Hertel himself once said:

> We, the scientists, carry the main responsibility for the present unacceptable conditions. It is therefore our job to correct the situation and bring the remedy to the world. I am striving to bring [humankind] and techniques back into harmony with nature. We can have wonderful technologies without violating nature.[122]

By the way, there are different types of microwave radiation, not all harmful. The sun emits microwave radiation. But, unlike the excessively high-powered, *alternating* current emissions from microwave ovens (the alternating current changes the polarity of the water molecule), the sun's microwave radiation is low-powered, pulsed, *direct* current, which does *not* create heat through friction. The effects of electromagnetic radiation depend on many factors: the shape of the wave, how it is being administered, and the materials emitting the radiation. This accounts for the safety of the frequencies in the gigahertz (microwave) range that Royal Rife used.

Even the best organic food is ruined by this radiation. When you eat in restaurants, make sure that your food is not being prepared or heated in a microwave oven.

### Cookware

It's easy to focus on food, and not think about the materials comprising our pots and pans. But cookware can make a huge difference in our health.

Aluminum used to be one of the most common materials used in cookware. But it's a heavy metal, poisonous to the body in any form. Acidic foods, such as tomatoes and lemons, can leach aluminum from the pot. Aluminum has been found in the brain of people with Alzheimer's and other diseases. Keep in mind that the use of aluminum foil can produce the same effects.

Aluminum is less commonly used now, but another popular cookware material is Teflon®, well known as the coating on so-called non-stick cookware. This coating, created by the DuPont company, contains PFOA, short for *perfluorooctanoic acid*. According to a statement by the United States Environmental Protection Agency,

> PFOA stands for perfluorooctanoic acid, a synthetic (man-made) chemical that does not occur naturally in the environment. PFOA is sometimes called "C8." Companies use PFOA to make fluoropolymers, substances with special properties that have thousands of important manufacturing and industrial applications. Consumer products made with fluoropolymers include non-stick cookware. . . .[123]

Another fluoropolymer is PTFE, short for *polytetraflouroethylene* (also spelled *polytetraflourethylene*). In discussions about Teflon®, the acronyms "PTFE" and "PFOA" are sometimes used interchangeably.

Fluoropolymer resins were developed in 1938 by scientists working for DuPont, environmental consultant Roberta C. Barbalace reports.

> This new polymer seemed almost indestructible and its qualities promised to make it profitable if they could just find the right market. It was patented in 1944 and used first to line equipment used in the enrichment process of U-235 uranium hexafluoride gas for the Manhattan Project [the building of atomic bombs by the United States] during WW II. DuPont reserved its entire output for government use for the duration of the war with about two-thirds of it being used for the Manhattan Project.
>
> When the war was over, DuPont had to find a new use for its polymer. In 1953, Teflon® was marketed to commercial users. . . . Before long almost everybody in the USA and most of the industrialized world was cooking with Teflon®-lined pans. Teflon® products have been made from a variety of polymers. . . .[124]

DuPont's polymers were widely used in semiconductors, wire insulation and gaskets. They were also used as coatings for clothes, carpeting, furniture and non-stick cookware because, as the manufacturer states, they resist high temperatures, chemical reactions, corrosion, and cracking due to stress.

Non-stick coating on cookware is a really good idea. The problem is, the coating begins to break down and emit fumes when it's exposed to modest amounts of heat. Reviews of health records of workers exposed to the chemical, as well as animal studies, show numerous health risks associated with PFOA. Among them are:

- Chills and headache.
- Fever between 100° and 104°F (about 37.8° to 40°C).
- Respiratory problems, including difficulty breathing, tightness of chest, coughing, sore throat, fluid in the lungs, and death by suffocation.

- Prostate toxicity, tumors and cancer.
- Toxicity and impairment of the brain, kidneys, liver, and thymus.
- Changes in the size of the pituitary gland *at all doses* (the pituitary controls metabolism, growth and reproduction).
- Birth defects and death.

The dangers of Teflon® became well publicized when a 1995 article by Joanie Doss appeared in *The Alaska Club Bird Newsletter*, after which it was widely circulated on the Internet. Doss, a professional bird trainer, began researching the compound after her beloved parrots died in her kitchen while she was cooking in non-stick pots. "In 1951," she wrote, "the first case of human suffering from tetrafluoroethylene problems was reported. It produces flu like symptoms in humans. The tetrafluoroethylene lingers long after the product has been removed."[125]

At what temperature does Teflon® break down? This depends on whom you ask. DuPont's own website advises consumers to cook on low to moderate heat, but also states that Teflon® coating can withstand heat up to about 500°F (260°C) without being damaged; and that only if temperatures reach above 600°F (316°C) does the coating begin to decompose. At this point, the company advises, the cookware can emit fumes that cause a flu-like condition, but whose symptoms are temporary.

The Environmental Working Group, which commissioned its own studies, concluded differently.

> A generic non-stick frying pan preheated on a conventional, electric stovetop burner reached 736°F [391°C] in three minutes and 20 seconds, with temperatures still rising when the tests were terminated. A Teflon® pan reached 721°F [383°C] in just five minutes under the same test conditions, as measured by a commercially available infrared thermometer. DuPont studies show that the Teflon® offgases toxic particulates at 446°F [230°C]. At 680°F [360°C] Teflon® pans release at least six toxic gases, including two carcinogens, two global pollutants, and MFA [monofluoroacetic acid], a chemical lethal to humans at low doses. At temperatures that DuPont scientists claim are reached on stovetop drip pans (1,000°F) [537.8°C], non-stick coatings break down to a chemical warfare agent known as PFIB [perfluoroisobutene], and a chemical analog of the WWII nerve gas phosgene.[126]

(Doss reports that temperatures as low as 285°F (140.5°C) can cause death to birds. However, birds are tiny compared to humans, and as they have extra-sensitive respiratory tracts, they generally react much sooner than humans to toxic air.)

Using Teflon® cookware within strict company guidelines may be problematic. How many cooks put a thermometer to the bottom of their pans to measure the temperature? Even if the pots and pans are carefully used within the recommended temperature limits, as soon as the cookware becomes scratched, the coating can peel off and get into your food.

An Internet search using Google, conducted in March 2008, with the words "DuPont," "lawsuit," and "Teflon®" together, yielded almost 20,000 findings. Apparently, there have been numerous lawsuits against DuPont, both in the past and ongoing, concerning Teflon®. Here are just a few highlights:

- In 2004, DuPont agreed to pay up to $343 million in an out of court settlement of a class action suit that had been instituted on behalf of about 50,000 people living in West Virginia and Ohio near a DuPont plant in Parkersburg, West Virginia. The lawsuit claimed that DuPont had polluted the water in the Ohio River south of their plant with PFOA, resulting in numerous health problems, including birth defects. DuPont settled the suit without admitting liability.
- In March 2006, an EPA panel of scientists recommended that the agency formally label PFOA a likely carcinogen.
- In April 2006, DuPont settled a lawsuit from the Environmental Protection Agency, which claimed that DuPont had been hiding health data about PFOA for twenty years. DuPont was fined $10.25 million.
- In May 2006, DuPont announced that it had received a subpoena from the US Justice Department's Environmental Crimes Section to release documents about PFOA safety.
- Also in May 2006, consumers in twenty states, plus the District of Columbia in the US, filed multiple class action lawsuits against DuPont, charging that the company knew about the health risks of Teflon®, but failed to disclose them.

Reviewing court documents, Ms. Barbalace ascertained:

> By 1984 DuPont was aware of . . . major problems with the production of Teflon®: Chemicals associated with the production of Teflon® had been linked to medical problems with workers, including polymer fume fever, leukemia, and liver damage. They had been linked to medical

problems with test animals, including leukemia, cancer and reproductive dysfunction. Chemicals associated with the production of Teflon® had been linked to birth defects in humans and test animals. Chemicals associated with the production of Teflon® had been shown to accumulate in the blood of exposed individuals. Teflon® had been shown to offgas free radicals that can form toxic fumes at temperatures much lower than reported by DuPont.[127]

According to recent reports, manufacturers have been advised to stop 95% of their production of non-stick cookware by 2010, and stop production completely by 2015. But as these guidelines are *voluntary*, the proposed schedule has no meaning.

The most widely known brand of non-stick cookware may be Teflon®. However, there are many other brand names that contain toxic non-stick coatings, among them Duracote™, Excalibur®, Fluron®, Greblon®, Silverstone®, Supra®, T-Fal®, Resistal®, and Xylon®.

There are safe materials for cookware: glass, stainless steel, good quality ceramic (that won't easily chip) over cast iron, plain cast iron, and carbon steel. Glass can break if you drop it, and has limits as to how high you can heat it. Stainless steel is quite adequate. (If you get surgical quality stainless, its dense molecules prevent metal from being transmitted to food.) Enameled cast iron and plain cast iron also cook well, with a minimum amount of oil (though enamelware with a red, orange, or yellow glaze may contain cadmium, so buy other colors).

Carbon steel is the favorite of many cooks, as it cooks well and is easy to clean. Cast iron and carbon steel require immediate drying and then *seasoning*, or coating the metal with food oil on a regular basis, to prevent rust. If you cook with tomatoes or lemon in an iron pan, a bit of iron from the pan will leach into the food, so make sure your body can handle the extra iron.

It's worth spending a little extra money to ensure that your cookware is safe.

### *A Final Word*

Diets are as varied as the people who eat. Someone with compromised immune function will require a food plan that is different from what a healthy person needs. And within one's lifetime, a person will require different nutrition at different times. Clean drinkable water and wholesome, properly prepared food play a huge part in health.

If you're feeling reasonably stress-free and have generally been well nourished, eating junk once in a while won't hurt you and can be a lot of fun. I have seen people become as ill from the rigidity of their attitudes as from the junk food they ingest. Should you go off your diet, enjoy what you're eating and forgive yourself—you're human.

## HERBS

When you hear the word "herb," it's easy to think about the oregano in mom's spaghetti sauce and forget the thousands of ways in which humankind has used herbs as medicine for centuries.

Cooks use the word "herb" differently than do herbalists. In the culinary arts, a plant's leaves, stalks and flowers are called herbs; and its seeds, bark and occasionally flowers are called spices. Basil, parsley, cilantro and tarragon—all leaves—are herbs. Peppercorns (seeds), coriander (the round seed of the cilantro plant), cinnamon (the bark of a tree), and saffron (the golden orange stigma threads of the autumn crocus) are all spices. In discussing the therapeutic use of herbs, however, I define "herb" as a seed-bearing plant that does not develop woody tissue but dies at the end of a growing season, and which is valued for its medicinal properties. Any part of the plant can be used: stalk, leaf, bud, flower, root, and seed.

How did our ancestors know which plants to use for what ailed them? Through trial and error. When the animals living near them became ill, they observed which plants the animals ate to recover. To find new remedies, the most experienced users (the herbalists or medicine men/women) hiked through the woods with their followers, and when they saw a new, interesting-looking plant they'd stop, pick, smell, chew, swallow, and wait to see what the effects were. As you might imagine, this method produced some casualties; *in vitro* (test tube) laboratory testing hadn't yet been invented. Through centuries of observation, treatment and experimentation, humans learned which herbs worked and under what circumstances. Knowledge was first imparted orally, and after writing was developed, careful records were kept. Herbology has a long and respectable history behind it; see Sidebar, "A Brief Summary of Essential Oils."

Some herbalists classify plants as either medicinal because they are solely used to treat illnesses and chronic conditions, or culinary because they are used as flavoring. However, with these definitions the line between the two groups can be blurry. It is true that some very unpleasant tasting herbs such as goldenseal and valerian root are used solely for medicinal purposes. But other plants used in cooking can be used medicinally, provided they are consumed in sufficient quantities. For instance, turmeric, a root related to ginger—often used in Indian cuisine to impart additional flavor and a distinctive golden color—

### A Brief Summary of Essential Oils

*Essential* oils (from the word "essence") are mixtures of fragrant compounds which can be isolated from plants by the process of steam distillation. In this procedure, steam is driven through the plant material and then condensed, with the subsequent oil and water phases separating out. Since they are volatile in steam and usually have pronounced aromas, essential oils are often referred to as volatile oils. However, this term is not accurate since they have boiling points well above 100°C [212°F]. Often the oil is slightly modified by the steam distillation process, so that it does not exactly reflect what is found in the plant. In some cases, such as chamazulene from German chamomile, steam distillation actually produces substantial quantities of a new chemical.

Other processes are also used to produce essential oils and these include [extraction with] solvent . . . [as well as] enfleurage (oil extraction of delicate essential oils in flowers) and expression (used to produce orange and lemon oils from the peel). . . . Essential oils are important items of commerce, being used for perfumes, food flavorings and personal and pharmaceutical products. They also comprise the medicines of the therapeutic system known as aromatherapy [the inhalation of essential oils to influence mental function, emotional states and physical health].

Essential oils are water-insoluble oily liquids which are usually colorless. Despite the fact that they are called oils, they are not chemically related to lipid oils (fixed oils) such as olive oil, corn oil and so on. . . . They will slowly evaporate if left in an open container and placing a drop of oil on blotting paper can be used as a simple technique to test for adulteration with a fixed oil. If a fixed oil is present an oily smear will remain on the paper a few days later.

Adulteration is an important issue. . . . In some cases, such as oil of wintergreen, trade in the synthetic oil has completely supplanted the natural product. A recent survey found a large variability between the biological activities of different samples of oils and groups of oils under the same general name, including samples from lavender, eucalyptus and chamomile. This reflected on the blending, rectification and adulteration which occurs with commercial oils. Of course, this issue does not apply to oils prescribed as part of the whole plant extract, as used by phytotherapists. . . .

Essential oils are highly concentrated compared to the original plant [and its extract]. . . . Given the great chemical diversity of essential oils, it is not surprising that they exhibit a wide variety of pharmacological activities.

—Simon Mills and Kerry Bone
*Principles and Practice of Phytotherapy*, 2000

has considerable anti-inflammatory properties and inhibits the growth of tumors if used in sufficient quantities. Hot peppers, which provide heat, have also been a staple at meals in India for centuries due to their anti-parasite quality—a valuable property in a tropical land where food can spoil easily. And aromatic spices such as cardamom and cinnamon are used not only to make food tastier, but also to foster digestion.

Likewise, in many parts of the world, bitter greens such as dandelions are eaten as salads because they improve digestion by stimulating the liver to produce bile, increasing the production of saliva in the mouth, and encouraging the production of hydrochloric acid in the stomach. Clearly, there needs to be a much more objective indicator of what constitutes a medicinal plant, since the above considerations seem to depend as much on the intention of the user as on the plant's potency, properties, and the amounts used.

The answer to the classification problem—as well as a truer understanding of what herbology is really about—lies in the science of *phytotherapy*, or the pharmacology and medicinal application of plant drugs and extracts. The practice of phytotherapy is taken so seriously in Australia that herbs are heavily regulated, like drugs. In Australia, an herbologist is called a *phytotherapist*.

Simon Mills and Kerry Bone are well-known phytotherapists in their native Australia, although in the last several years, Bone especially has gained recognition all over the world. In their outstanding research volume *Principles and Practice of Phytotherapy*, Mills and Bone explain that although many laypeople and even some professionals mistakenly believe that "the various nutrients such as vitamins, minerals, . . . enzymes and other proteins, lipids, carbohydrates and chlorophyll . . . and so on are responsible for the pharmacological activity of plants, . . . almost without exception, this is not the case." These nutrients—which phytotherapists call "primary metabolites"—are "necessary to sustain the life of the plant"; but it is the "secondary metabolites" that interest phytotherapists the most. Secondary metabolites "do not appear to be necessary to sustain [the plant's] life," but appear to "have more subtle functions which increase the survival prospects of the plant in its natural environment."[128] Plant survival mechanisms include the chemicals it produces to defend itself against fungi, insects, and other unique stressors in its environment. Since the phytochemicals protect the

plant, chances are they can protect the humans and other animals that eat those plants. It is these chemicals that provide the foundation of phytotherapy, or herbal medicine.

The pau d'arco tree in South America is an example of the above principle. The bark of the tree has been used medicinally by the Brazilian Indians for over 1,000 years, largely due to its ability to resist rot and fungi in a very humid, hot climate. Today, people with *Candida albicans* and other fungal infections make the bark into teas and tinctures to provide enhanced immune function and resistance against yeasts, fungi and mold.

The displacement of herbs by modern laboratory-synthesized pharmaceuticals is a relatively recent phenomenon. White willow bark, which contains salicin, was routinely used for headaches, pain and fever since at least the 5th century BC, until 1897, when the Bayer Company extracted the salicin and synthesized it into the chemically similar acetylsalicylic acid, otherwise known as Aspirin®. (Aspirin has become so commonplace that the word is now used as a generic term.) *Digitalis latana* (foxglove) was used before we had the chemical digoxin. Opium was smoked from poppies to treat pain before morphine was extracted in 1806, and codeine was synthesized in 1832 from the opium. The powdered bark of the cinchona tree was a popular remedy for malaria until quinine was isolated in 1944. The Pacific yew tree was a folk medication long before the drug we call Taxol® was separated and synthesized from the bark for its anticancer properties. (Interestingly, the drug was not nearly as effective as the herb, as it did not contain all the phytochemicals of the bark from which it was derived.)

For centuries in India, the root of the *Rauwolfia serpentina* (a plant in the dogbane family) was taken as a tranquilizer before scientists isolated and extracted specific chemicals to treat hypertension. And witch hazel leaves were made into tinctures and poultices to alleviate congestive blood disorders, long before modern chemists distilled select portions of the plant to obtain the clear liquid we buy today in the drug store.

The list of plant-derived remedies is endless. Mills and Bone conclude, from a review of herbal therapy traditions, that herbal medicines

> were seen as correcting internal disharmonies . . . rather than targeting symptoms. In the absence of modern instrumentation, internal disharmonies were understood as *subjective* matters, often described in climatic or emotional metaphors or by metaphysical constructs (*yin/yang* [from the Chinese], the *doshas* [from Indian Ayurvedic medicine], the [European] humours), that were widely understood among the general population. From the herbalist's perspective most internal disharmonies involved literal or substantial disruptions in the body . . . [involving] equally the body and the mind (and often the spirit), so that one internal disharmony could affect all planes of experience. *There was no Cartesian [mechanized] body-mind split*."[129]

### When New Herbal Substances are Created

There are a few exceptions to the centuries-old tradition of using whole herbs, when certain plants or parts of plants are used for which there is no historical precedent. A good example is Ginkgo.

In the 1960s, German scientists experimented with a highly concentrated extract from *Ginkgo biloba* leaves and discovered that it could enhance memory and cognitive function, increase blood flow, and oxygenate the tissues. Although the nuts of the Ginkgo tree have been widely used in traditional Chinese medicine for centuries, no literature exists on the use of the *leaves* for any purpose. Although the Ginkgo leaf extract is standardized for only its major so-called active ingredients—which would appear to place it more in the category of fractionated drug than whole herb—the formula is stable, works well for the desired purposes, and is apparently quite safe with no "side" or undesirable effects. Therefore, herbalists see no reason not to use Ginkgo leaves.

One of the most serious subversions of herbs, resulting from the mechanized body-mind split, is the practice of extracting and isolating the so-called active ingredient from the plant. From the allopathic perspective, it is perfectly reasonable to extract the "active" ingredient from herbs and eliminate all of the presumably "extraneous" parts of the plant that appear to be irrelevant to the effects we want to create. The problem with this mindset is that these "extraneous" materials are integral to, and synergistic with, the total functioning of the plant. The word *synergistic* is from the Greek *synergetikos*, which means "working together, in cooperation." An herb contains not just the presumably (or only) "active" ingredient, it contains many ingredients that interact with each other in a complex whole, so that the effects of the whole are greater than the sum of its parts.

How does this principle translate to the plant's effect on people? Take the example of *Hypericum perforatum*, otherwise known as St. John's wort, which is used throughout Europe for its anti-depressant effect and is now becoming popular in the United States. When scientists

extracted hypericin and pseudohypericin from the plant—the two "active" ingredients responsible for the anti-depressant activity—the test subjects did not have very good results in overcoming their depression. However, when a third, apparently innocuous compound from the plant called procyanidins was added to the mix, the total anti-depressant activity markedly intensified. Procyanidins do not have any mood-altering effect of their own. However, they help the body assimilate the other two substances by making them more soluble. Again, we learn the lesson that the entire plant is needed, although there are some exceptions. See Sidebar, "When New Herbal Substances are Created."

The allopathic tendency to isolate only what it perceives as the "active" ingredients from herbs also causes problems with so-called "side" effects. With allopathic medication, "side" effects exist because the body is trying to assimilate a "pure"—in other words, fractionated and isolated—chemical. But "pure" chemicals don't exist in nature. The phytochemicals in plants exist in a matrix, where they not only complement each other, but in some cases neutralize the negative effects of the other constituents. A good example of this principle can be seen in the effects of aspirin versus white willow, both of which are taken for headache and other pain. Aspirin, the modern pharmaceutical, can upset the stomach. White willow bark does not. Why? The ingredients in the whole plant provide their own checks and balances against harsh effects like stomach upset. Modern pharmacologists, believing that they can improve on natural plants by eliminating all those unnecessary "extra" ingredients except the one chemical "known" to reduce pain, have produced vastly inferior products.

A properly trained practitioner is so aware of the need for checks and balances when dealing with living systems, that not only are the right herbs painstakingly chosen, combinations of different herbs are also selected very carefully to enhance a desired outcome and mitigate possible undesirable effects. The holistic approach of qualified herbalists is not antithetical to good science. In fact, the vast knowledge of chemistry required for a professional phytotherapy practice indicates a much deeper understanding of rigorous science than is normally displayed by many pharmacists, and certainly most doctors.

> When correctly used, herbs promote the elimination of waste matter and poisons from the system by simple, natural means. They support nature in its fight against disease; while chemicals, not being assimilable, add to the accumulation of morbid matter and only stimulate improvement by suppressing the symptoms.
>
> —Thomas Alva Edison
> American inventor, famous for creating the electric light bulb (1847–1931)

Ideally, one tries to correct the imbalance that creates the need for an herb in the first place. Paul Gagné reminds us that "Drugs themselves . . . are hyperspecialized descendants of herbal remedies, which themselves are extensions of the healing lore of ancient Food Energetics."[130] However, sometimes even the most nutritious food alone is not enough to nourish us, and we need stronger agents to catalyze change in the body. Herbalist Billie Potts presents a similar gentle approach (as well as a political, feminist, grassroots approach to self-care). In her book, *Witches Heal*, she emphasizes that complex combinations of herbs are redundant, and in many cases harsh and unnecessary. For instance, some herbs should not be used at all during pregnancy. And other herbs that are popularly touted as indispensable and suitable for everyone, may not be: for instance, licorice is contraindicated for people who retain water. This points to the wisdom of consulting an experienced herbologist unless you have a good grasp of the scientific literature and know what you're doing.

It's important that an herbalist be well informed. Some insist on distinguishing between what they consider "non-medicinal" and "medicinal" herbs. They erroneously believe that "non-medicinal" herbs cause gentle and slow changes and can be used safely on a regular basis; while the stronger, so-called "medicinal" herbs should be used only under certain conditions because they induce the body to undergo radical changes in a short period of time. But these distinctions are inaccurate. From the phytochemist's perspective, *all* herbs that are being used for their secondary metabolite properties are medicinal in nature. In this context, "medicinal" means that the herb's activity is therapeutic because it supports the body's efforts to restore balance. This is why some phytotherapists refer to an herb as a "biological response modifier." Fundamentally, although an herb can act as an agent to transform bodily functions and tissues, if it is properly administered, it creates change without compromising the long-term integrity of the organism. This is in contrast to synthesized pharmaceuticals, which do not help the body balance itself. So, despite the fact that phytotherapy is very serious science, herbs are not allopathic drugs.

That said, a medicinal herb does not have to be used medicinally all the time. Take turmeric and ginger, common in many kitchens. When used in food, these medicinal herbs are ingested in *seasoning amounts*. When used to alter someone's body that is out of balance—for instance, if the turmeric and ginger are taken for their anti-inflammatory properties—these herbs are consumed in much larger *therapeutic doses*. When the herbs are used in slightly smaller amounts to help anchor the changes that occurred during the time the person was on the therapeutic dose, this is considered a *maintenance dose*. Therapeutic doses are administered often, when you are ill. Maintenance doses are administered less often, and are used only to sustain the progress made when the person was taking more herb, more often.

What are some practical guidelines for the person who wants to take advantage of nature's medicine chest? Despite the centuries-old track record enjoyed by herbs, many people who resonate with holistic healing and living and who have taken herbs for a variety of conditions are disappointed by the results (or lack thereof). But this does not mean that herbal remedies *per se* are not effective. The way in which herbs are grown, gathered, extracted and processed affects their intrinsic potency and effectiveness. Assuming that the person has taken the correct herb, there are many reasons why an herbal preparation might "not work":

- A plant can only be as potent as the soil in which it is grown. Mineral-deficient soil will produce mineral-deficient, weakened plants—which will reduce the potency and effectiveness of the herb.
- The season and even the time of day or night that the plant is picked helps determine its potency, or even if it is effective at all. This is because the presence or absence of light stimulates or suppresses the plant's production of the desired phytochemicals.
- Different parts of the plant—leaves, stalks, flowers, buds and roots—usually have different properties. For instance, a label reading "Contains 100% Panax Ginseng" might seem to indicate a high quality product. However, only the roots are desirable. If the formula contains worthless leaves, this would impair or negate entirely the overall potency of the formula.
- Sometimes, plants look virtually identical and grow in the same location, but are actually different plants containing vastly different chemical constituents. For instance, Goldenseal (*Hydrastis canadensis*)—which is valued for its germicidal properties—might be substituted with the botanically similar, but virtually useless, *Coptis chinensis* or *Berberis aristata*.
- For optimal potency and effect, a tincture (liquid concentration) should be ingested; and the tincture should be produced from dried rather than fresh herbs. This is because the high water content of a fresh plant (typically, around 80%) will dilute the final preparation and yield a much weaker concentration of valuable phytochemicals, thereby making it unlikely that the subject will derive any therapeutic benefit. It is difficult to estimate how much fresh plant should be used compared to the dried plant, since tinctures made from fresh herbs are not recognized as valid therapy in any of the herbology texts. At any rate, even if comparable amounts could be successfully computed, there is evidence that the naturally-occurring enzymes in the fresh plant degrade it and deactivate the other phytochemicals—whereas proper drying of the plant preserves all the constituents intact. Note that some herbal preparations are not useable as tinctures and can only be made into powders. A good example is the group called mucilage, or "water-loving" herbs, such as slippery elm bark. Since the molecules trap water so easily and swell to many times their own size, it is impractical to bottle them as liquids, because in a very short time they could not be poured.
- Many herbs are destroyed if they are heated; so care must be taken not to dry them at too high a temperature since this will evaporate the volatile oils. However, not all herbs are destroyed by high temperatures. The phytochemist must know which herbs can and cannot withstand heat.
- Certain phytochemicals are water soluble, and thus can be extracted from the plant with water. Other phytochemicals, however, can be extracted only with alcohol. It is important that the plants be processed so that all the phytochemicals are bio-available to the body.
- The company that processes the tinctures, and/or bottles and markets the final product, is unlikely to grow the herbs itself or have equipment to test the botanical reliability or potency of the herbs. Therefore, it must accept its supplier's word that the herbs are genuine, and contain the desired phytochemicals. If the supplier is dishonest or ignorant, the company has no way of checking; this loss is passed on to the consumer.
- The herbalist must recommend doses according to the levels of active phytochemicals in the particular plant. Seven to ten grams is generally considered to be a therapeutic dose. If the person is not taking enough tincture or powder, the desired results will not occur.

- If an herb is tested in the laboratory, it might work *in vitro* (in the test tube) but not *in vivo* (in a real live body) because the two media usually function in radically different ways. However, the company might still make claims that the herb works.

Any of the above points can explain why one can have mixed results using herbs. Once, I ran out of white willow bark capsules. Wanting to support a small, local business instead of a larger company, I bought a locally produced brand of white willow tincture instead of my usual capsules. Unfortunately, the tincture did nothing except empty my wallet; I threw it away and bought the capsules. The larger company listed the standardized dosage of active ingredients on the label, whereas the smaller company did not.

Another learning experience involved the safety and potency of echinacea. There is a widespread fable that taking echinacea continuously for more than several days is harmful because the herb eventually depletes the immune system, making it impossible for the herb to work later when you really need it. According to Mills and Bone, this is a misinterpretation of *one* published clinical study showing that daily ingestion of echinacea did indeed increase the activity level of phagocytes (white blood cells that destroy microbes and foreign particles). After five days, the test doses were stopped and the blood samples taken immediately afterward were noted. Phagocyte levels remained high for about two days after the echinacea was withdrawn, but then they returned to their former levels. The experimenters should have continued to monitor the blood levels of the test subjects to see that in fact the immune-stimulation effects *did* subside, and should have presented this data as part of the experiment. The fact that the high white blood cell count remained for two days after the echinacea was withdrawn is a testimony to the herb's effectiveness.

Most tests on echinacea have been poorly designed. Sometimes plants with different chemical constituents were used, and treated as comparable when they were not. Some tests used inappropriately diluted herbal extracts. Incredibly, most research on echinacea uses injections rather than oral preparations—which is not how the herb is taken anywhere in the world, except in a science laboratory. Finally, in one much-quoted study, healthy volunteers were used, whose immune functions were already strong, so no increases of white blood cells were noted—thus giving the impression that echinacea doesn't work!

Besides indicating the need for better testing methods, these experiments illustrate the need to look at history for clues. For centuries, the Native Americans have used echinacea for infections because of its ability to support optimal white blood cell function as well as inhibit the mobility of bacteria. The herb has been used, and can be used, constantly with no ill effects: many times daily during illness, and fewer times a day for maintenance. Throughout the years when I took various brands of echinacea tincture, sometimes I'd notice an improvement in my condition, and other times I would not. It was only when I took a class with a phytotherapist that I discovered the key to the herb's potency: a viable extract will cause the entire mouth to tingle and the tongue to feel somewhat numb. If there is no tingle, the formula is dead.

Herbal preparations should be living, like foods. If you do not feel results, you may be using the wrong remedy, or using it incorrectly. Or, the product may not have been made in a way that preserved the effects of the plant. Ask detailed questions about the company's research and potency evaluation facilities. Only use herbs that have a history behind them. If the herb has been newly discovered, or has only recently been used for a particular purpose, read the scientific literature, or talk to someone you trust who has done or read the research.

Everyone is unique. Just as with foods, certain healing herbs might be wonderful for your friend but not great for you. And different herbs react with each other—sometimes in beneficial ways, sometimes not. Educate yourself about the many effects of herbs. For minor conditions, it might be appropriate to treat yourself by taking one or two herbs, or a combination formula from a company that you trust. But for a serious or chronic condition, see a qualified practitioner who specializes in herbs and can help you design a program uniquely suited to your body chemistry and situation.

"Herbal medicine is not an anachronism practiced by ignorant people. . . . A form of herbal medicine is practiced in every culture and in every country of the world, be it industrialized or not," maintains Kerry Bone in the preface of what is certain to become a classic in the herbology field. "Something deep within us recognizes that there is healing power in the plant kingdom which, after all, is the nourishment of all animal life."[131] The idea that pharmacology can replace plants is not only arrogant, but extremely disrespectful to indigenous cultures as well. Why does "modern medicine" believe that it can improve, in one century, what native peoples have been practicing effectively for thousands of years?

## SELECTED NUTRITIONAL SUPPLEMENTS

### *Why We Need Supplements*

The nutritional supplements industry has grown rapidly in the past decade as people have become more health

conscious. Yet there are many negative myths about supplements. One, we obtain adequate amounts of vitamins and minerals from what we eat. Two, all nutritional supplements are alike. Three, taking supplements may be bad for us. The first two statements are patently false. The third allegation is sometimes true, but only under certain conditions.

I can put Myth #1 to rest quickly. Our farmland lacks essential nutrients, which creates deficiencies in our crops and thus our bodies. As far back as 1936, the United States Senate was informed of the serious depleted condition of our soil. On June 1st of that year, a Mr. Fletcher presented a paper to the second session of the 74th Congress. The paper, reprinted by the United States Government Printing Office in Washington, DC, was known as United States Senate Document #264. It read in part:

> Do you know that most of us today are suffering from certain dangerous diet deficiencies which cannot be remedied until the depleted soils from which our foods come are brought into proper mineral balance? The alarming fact is that foods, fruits and vegetables and grains, now being raised on millions of acres of land that no longer contain enough of certain needed minerals, are starving us—no matter how much of them we eat! . . .
>
> Laboratory tests prove that the fruits, the vegetables, the grains, the eggs, and even the milk and the meats of today are not what they were a few generations ago. No man of today can eat enough fruits and vegetables to supply his system with the minerals he requires for perfect health, because his stomach isn't big enough to hold them! . . .
>
> No longer does a balanced and fully nourishing diet consist merely of so many calories or certain vitamins or a fixed proportion of starches, proteins, or carbohydrates. We now know that it must contain, in addition, something like a score of mineral salts.
>
> It is bad news to learn from our leading authorities that 99% of the American people are deficient in these minerals, and that a marked deficiency in any one or more of the important minerals actually results in disease. Any upset of the balance, any considerable lack of one or another element, however microscopic the body requirement may be, and we sicken, suffer, shorten our lives. . . .
>
> [A medical doctor named Charles Northen] made an extensive study of the soil. . . . "Bear in mind," says Dr. Northen, "that minerals are vital to human metabolism and health—and that no plant or animal can appropriate to itself any mineral which is not present in the soil upon which it feeds. . . . We know that vitamins are complex chemical substances which are indispensable to nutrition, and that each of them is of importance for the normal function of some special structure of the body. Disorder and disease result from any vitamin deficiency. It is not commonly realized, however, that . . . in the absence of minerals they [vitamins] have no function to perform. Lacking vitamins, the system can make some use of minerals, but lacking minerals, vitamins are useless. . . . The truth is that our foods vary enormously in value, and some of them aren't worth eating as food. For example, vegetation grown in one part of the country may assay 1,100 parts per billion of iodine, as against 20 in that grown elsewhere. . . . Some of our lands, even in a virgin state, never were well balanced in mineral content. . . ."
>
> We must rebuild our soils: Put back the minerals we have taken out. That sounds difficult but it isn't. Neither is it expensive. Therein lies the short cut to better health and longer life. . . .[132]

**Vitamins for Chronic Disease Prevention in Adults**

Most people do not consume an optimal amount of all vitamins by diet alone. Pending strong evidence of effectiveness from randomized trials, it appears prudent for all adults to take vitamin supplements.

*—Journal of the American Medical Association*
June 19, 2002

If we obtained everything we needed from our food, so many people would not be sick. But other factors also suggest the need for supplementation. Earlier in this chapter I explained how, when deprived of beneficial minerals, the body absorbs the toxic metals from our soil, air and water. Most municipal drinking water contains chlorine—allegedly used to destroy microorganisms, but which is in itself carcinogenic. Our food supply is likewise contaminated. The animals, eggs and dairy are loaded with antibiotics and hormones, not to mention chemicals from the foods that the animals eat. And, the pesticides and herbicides used on crops go into us.

### *Food-Based versus Synthetic Supplements*

Myth #2 claims that all supplements are alike. This myth reflects the mechanized mindset that has so deeply contaminated the way we live. As I will show, there is a world

### Why So Many Supplements?

Some people, especially those new to holistic health, are surprised or disturbed when told about the number of nutritional supplements, therapies, and protocols that they need. "Why can't I simply do one or two things and get well?" is a common question. It's true that the body can be confused if you take too many nutritional supplements (or drugs) at once, or do too many therapies at the same time. But usually, we need to follow several protocols to get better—especially if the condition took years to develop.

Natural health is based not on an "instant fix," but on giving the body what it needs so that it can heal itself. If you are treating the underlying causes of an imbalance instead of symptoms, healing can take time, especially in cases of severe imbalance.

There are many complementary approaches to wellness that have distinct functions (although there is some overlap among the categories). Each category that follows has its own purpose:

- ***Detoxification/Cleansing.*** The body produces many toxic waste materials each day during its normal metabolic functions. Under the best circumstance, the kidneys, liver and lymph system work hard to eliminate these wastes. But when you're under physical or emotional stress, eating poorly, and/or fighting infection, the body has an even harder time eliminating toxic material—which in turn creates more illness. Herbs, exercise, sauna therapy, colonics, and other detox programs can provide needed support.
- ***Pathogen Removal.*** Ideally, the body should be in a pristine enough condition so pathogens don't have a chance to proliferate. A nutritionally and pH balanced body is less likely to be hospitable to microbes. But sometimes the body becomes so debilitated, that we need extra help. Herbs and essential oils that kill microbes, along with Rife therapy and ozone therapy, all help debilitate pathogens.
- ***Direct Immune Support.*** Often, the immune cells that scavenge microbes, foreign proteins and other bodily wastes are not functioning properly. This is especially true of people with chronic infections. A live blood analysis can reveal white blood cells that are sluggish or immobile from the wastes they are working to eliminate. Sometimes there are not enough immune cells to do the job. Or the immune system may not "remember" how to eliminate pathogens. Transfer factor, echinacea, vitamins, minerals and enzymes can all help support immunity, as can ozone.
- ***Rebuilding the Body.*** The body needs to replenish its nutrients daily, especially during illness. Of course eating organic food and drinking pure water are crucial. But the depleted soil that grows our food, the pollution-ridden environment in which we live, and the stress that many of us feel, make it difficult to obtain what we need solely from the foods we eat and the water we drink. Vitamins, minerals, herbs, and other supplements can give the body what it needs so we can remain in good health even when we're aging.

of difference between natural and synthetic vitamins. The differences are not only due to the ingredients that are used, but also the ways in which those ingredients are put together.

As with herbs, vitamins work best when taken in a form similar to how they exist in their original matrix. In nature, vitamins do not exist in isolation. They are a *complex* or *conglomerate* of many nutrients, which biochemical researchers call *co-factors*. These co-factors include enzymes, co-enzymes, antioxidants, trace elements, and unknown factors that biochemically activate the vitamin.

What exactly are these "co-factors"? For our first example, let's use Vitamin C. The FDA's legal name for Vitamin C is ascorbic acid, and most people have been taught to equate the two. But nowhere in nature can you find plain ascorbic acid. Vitamin C is actually a compound, of which ascorbic acid is just one ingredient. In fact, the "C" portion comprises less than 5% of the total formula. The main function of naturally-occurring ascorbic acid is to preserve the more fragile bioflavonoids, rutin, and other components to which it is bound. Often, the bioflavonoids and rutin are more important for health than ascorbic acid. So, for instance, when you read that Vitamin C helps strengthen capillaries, be aware that pure ascorbic acid by itself is useless for the job, unless combined with all the other factors of the Vitamin C complex. Likewise, if you see a bottle marked "Pure [nothing in here but] ascorbic acid"—intended to imply that this product is the best because it is presumably unadulterated—you may want to avoid it unless a health care practitioner has a good reason for telling you to take it. That said, Chapter 4 discusses a Lyme treatment protocol consisting of sea salt and pure ascorbic acid. Pure ascorbic acid is also a safe and effective preservative for jams, jellies and other condiments that are being stored long-term, in or out of the refrigerator.

A comparable situation exists with Vitamin E. Most consumers don't know that Vitamin E—also called *tocopherol*—actually contains *seven* types of tocopherol. However, the government rates Vitamin E solely according to the amount of *alpha* tocopherol that it contains. Ironically, the tocopherols themselves are not even the main portion of the Vitamin E complex; they only help preserve the rest of the ingredients! These other substances include lipositols, xanthine and (that's right, the mineral) selenium.

Similarly, true Vitamin A is not just Vitamin A palmitate—which is a synthetic form of A anyway (more about that in a moment). Nor is it beta carotene, an isolated precursor to Vitamin A. Whole food Vitamin A supplement contains Vitamins A1 and A2, a full spectrum of the 500 carotenes found in nature, retinal, retinoic acid, Essential Fatty Acids, and more.

Given the inaccurate legal definitions of nutrients—along with the meager education on nutrition that most of us receive—it's easy to mistake nutrient *fragments* for the complete nutrients themselves. Nutrients become fragments when they are extracted from their original matrix, often with rigorous processing that involves many steps. Once the product is processed beyond a certain point, it is no longer natural, but synthetic. Then, it's no longer a nutrient, but a drug. When you take a vitamin isolated from its other components, you are, in effect, taking a drug.

Our bodies are not designed to assimilate partial nutrients. When we ingest whole, food-based supplements, the body selectively extracts what it needs and eliminates the rest. But when given isolated nutrient components—especially high doses, and over long periods—deficiencies of other nutrients can occur. The body, unable to identify the fractionated material as food, cannibalizes the other nutrient "co-factors" from its own tissues to form biologically recognizable complexes, such as the ones found in foods. Thus the body can become depleted in precisely the vitamin or mineral that was originally taken to correct the deficiency!

With nutrition, there is a huge difference between chemistry and *bio*chemistry. That little prefix "bio" indicates the difference between non-living systems and living beings.

It is possible, however, for someone to benefit from synthetic vitamins, and obtain little or no results with natural ones. This usually occurs when one is dealing with a severe deficiency. In such cases, the fractionated supplement works like a drug: its emergency-intervention properties shock the body into a proper response. This is a valid way to use synthesized supplements. Our synthetic, chemical-ridden environment can create such severe imbalances that sometimes, only a chemical can bring the person back into balance. However, after balance is achieved, if one continues to ingest a partial nutrient, a systemic imbalance may begin to emerge again.

### Ascorbic Acid Studies Skewed

If the FDA-defined Vitamin C (plain ascorbic acid) cannot prevent scurvy unless it's accompanied by its bioflavonoid components, why did studies show that ascorbic acid alone prevents scurvy? The answer is: *all* of the experiments showing that *plain* ascorbic acid prevents scurvy were done on rats. As scavengers, rats not only can eat and assimilate foods that humans cannot tolerate, but they can also convert plain ascorbic acid into the Vitamin C *complex*, which humans cannot do.

A good whole food supplement:

- Uses biologically living, mostly organic or wildcrafted ingredients, preferably with a high Brix measurement.
- Is concentrated, usually through drying and extraction. To use one example, a regular-sized portion of broccoli does not contain enough nutrients to have a substantial therapeutic effect. But few people can eat two pounds of broccoli in one sitting, as it contains lots of indigestible fiber. Removing the fiber offers the desired, concentrated amounts of phytonutrients and chlorophyll.
- Is processed in a way that will preserve its vital nutrients. So, for instance, drying is done below certain temperatures.

Few mega-corporations, if any, offer food grade nutritional supplements. One company, well known among health practitioners, that does use whole foods for its supplements is Standard Process. The company owns acres of farmland on which vegetables are organically grown. After the vegetables are picked, they are dried at low heat, concentrated with the fiber removed, and put into tablets and capsules. Many of the supplements (complex formulations of both plant and animal ingredients) are pleasant tasting enough to be chewed. Other examples of small whole foods supplement companies are those bearing the names of herbalists or naturopaths, such as Dr. John Christopher and Dr. Richard Schulze.

So far, I have discussed fragmentation as one feature of drug-like nutrients, compared to the living matrix of natural supplements. Now I want to address another issue: the ingredients used in synthetic versus natural vitamins.

Natural vitamins usually consist of plant materials, and in some cases (as with glandular supplements) portions of animals. (See Sidebar, "Glandulars.") Liquids are the most bio-available. Capsules are next; all they need is a little hydrochloric acid in the stomach to dissolve them (and if you don't have enough stomach acid, you can always take it in the form of a supplement). Tablets can be problematic for many people, who are allergic, or otherwise do not respond well, to some of the binding agents used for the tablets. If it is not possible for the tablets to be chewed, capsules or powders can be taken.

Synthetic vitamins are partially, mostly or completely composed of artificial nutrients. Artificial nutrients are not found in real foods. Instead, they are fabricated molecules, constructed directly from coal tar and other petroleum products. Some health professionals make a distinction between completely synthetic vitamins (which they do label "synthetic") and partially synthetic vitamins (which they usually call "crystalline" and sometimes euphemistically term "co-natural"). But even though crystalline vitamins begin as plants, they are subjected to so much processing—high heat, harsh chemical solvents like benzene, toluene and trichloroethylene, and toxic metal salts that often contain aluminum and lead—that they might as well be completely synthetic. All of this processing, plus the added artificial ingredients, negates most or all of the benefits from the whole plants that were originally part of the formula.

*Nutrition Almanac* calls these alterations of the basic plant material "improvements," since in their view there is no difference between synthetic and natural vitamins. "Synthetic nutrients are added to increase the potency or stability and to standardize the amount of nutrients per capsule or per batch."[133] Proponents of synthetic vitamins tend to argue for standardized doses, which they claim is impossible to achieve with natural vitamins. I agree that each particle of a synthetic vitamin is uniformly consistent with every other particle. And it does take more effort, energy, money and special equipment to standardize dosage and potency in natural vitamins because in real life, there will always be variations among plants. However, the consumer pays a high price for the manufacturer's convenience. As one naturopath writes, "Synthetic Vitamin E is made from . . . turpentine [as well as petroleum]. . . . The human body [was not designed] with receptor sites for synthetic products, especially one whose precursor is paint thinner!"[134]

Although synthetic and natural vitamins are chemically the same, their molecular structures—and therefore functions—are different. A synthetic vitamin might contain the same number of carbon atoms as its natural counterpart. But the ways in which the molecules are configured are radically different, and they function differently in a living body. Conventional chemists usually do not consider these differences important.

The difference in the molecular structure of natural and synthetic vitamins was discovered in the 1930s by a dentist named Royal Lee, who by the way was a supporter of Royal Raymond Rife. To assess foods, Lee used spectrographic instruments, which detect and measure the electromagnetic fields absorbed and emitted by the protons, electrons and other charged particles in atoms. Charged particles move or rotate in various directions,

## Glandulars

Glandular and organ supplements are comprised of the raw glands and organs of animals (mainly cattle) who are ideally raised without hormones or antibiotics. The animal material is processed in various ways, including freeze-drying. Such supplements commonly include the thyroid, liver, adrenals, pancreas, kidneys, ovaries, testes, pituitary, and thymus; but they can also be comprised of lymph, spleen, brain, gallbladder, kidneys, heart, and salivary glands.

Tests conducted in Germany by Dr. A. Kment, and published in 1958 and 1972, revealed something remarkable about organs and glands. By tagging a radioactive isotope onto organ or gland tissue before injecting it into a recipient, Dr. Kment discovered that *the organ or gland tissue from the donor has an affinity for the same organ or gland in the recipient*. So, for example, donor thyroid tissue is absorbed by the thyroid of the recipient, donor liver is absorbed by the recipient's liver, and so on. Incredibly, the cellular attraction is *organ-specific* and *not* species specific. This remarkable affinity is the basis of modern injectable cell therapy.

Although Dr. Kment performed his tests with injectable glandular material, subsequent researchers have found that even when eaten, organ and glandular material survives the stomach acid and travels to the corresponding organ or gland in the recipient's body. This is why individuals with depleted, weak or under-functioning organs and glands can be helped with glandular supplementation. If you want to try this with your dog, try feeding it organs or glands from cows or sheep. Dogs generally like raw organ meats, and it will be a welcome change in your pet's diet. Humans who want to strengthen their liver, kidneys or even heart might want to add these foods to their own diets as well.

### Royal Lee and the FDA

Like his colleague Royal Raymond Rife, Royal Lee was a resourceful inventor. He filed over one hundred patents for various electronic instruments (among them a governor for electric motors and the phonocardiograph), and devised advanced weapons control systems during World War II, assisting NASA with his motor control design for their lunar guidance systems.

However, Lee's most enduring and important legacy—for peace, and not war—was his many devices to extract the nutrients from whole foods without disturbing their molecular structure or energetic integrity. With these inventions, he formed a nutritional supplement company that created high quality supplements from organically produced vegetables, fruits, nuts, grains and animal products. "Dr. Lee," one health writer reports, "once said that it took him longer to develop a nutritional formula than to come up with one of his electrical inventions. This was due to the complexity of factors already present in nature. . . . Because Dr. Lee insisted that foods were therapeutic, he was always in court, fighting the FDA which insisted that only drugs could be called therapeutic."[135]

One of Lee's most vociferous opponents was AMA publicist Morris Fishbein, who had also persecuted Rife and was instrumental in ruining his career. In *Medical Mussolini*, published in 1939, Morris Bealle recounts, in impassioned (if quaint) language:

> Another interesting case is that of the Vitamin Products Company of Milwaukee [now Standard Process], owned by Dr. Royal Lee. This concern manufactures and distributes concentrated or "dried" vitamins—those vitally necessary food elements which "civilized" man cooks or processes out of the whole foods nature gives us. In my own family I have positive evidence of the value of Catalyn®, which is . . . [the primary whole food supplement and the best selling of all] the Lee products.
>
> Dr. Lee was one of those "hardy" souls who refused to pay $30,000 or any other sum for a "test" of his product. As a result he was made an active member of the Fishbein blacklist. He even rated an excoriation in the *Journal of the AMA.*
>
> In a letter to an inquirer Mr. Fishbein overstepped himself. While unqualifiedly branding the proven product Catalyn® as "a crude piece of quackery," he made the amazing admission that neither he nor his Association have ever made an investigation or chemical analysis of the product. However, his stooges in the Food and Drug Administration made what Dr. Lee describes as an "amateur's test." In a letter to another inquirer, an official of the FDA claimed that a "recent analysis of the preparation showed it consisted essentially of starch, bran, yeast, [natural] sugar and oil." Even this analysis—if it can be called such—showed entire absence of harmful substances, which is the only thing the Food and Drug Administration is supposed to protect the public from. [This was prior to 1962, before the law was changed.]
>
> Dr. Lee points out that a vitamin product can only be tested by a biological or clinical test—not by a microscopic and chemical analysis such as Fishbein's "expert" stooges in the Food and Drug Administration used in aiding him to club off the market an independent manufacturer.[136]

depending on the substance. Different movements release different wavelengths on the electromagnetic spectrum, such as infrared or radio frequency. (See the section on **Light and Color** later in this chapter, and Appendix C, for more information about electromagnetic wavelengths.) These electromagnetic emissions are then used as a guide to identify the substance. Lee found that the molecular structures of synthetic and food-based vitamins are the mirror image of each other—and that therefore, the synthetic and food-based supplements have the opposite electrical polarity.

Supplements that are food grade, and those fabricated from coal tar, also refract light differently. You'll recall from Chapter 2 that Rife could see microorganisms through his Universal Microscope because of the way they refracted light. The wavelength (refraction of light) is part of the vibrational signature, or frequency, of an organism. Everything material expresses itself as wavelengths—whether a microbe, plant, person, or vitamin. Do you remember the prior discussion on canned foods? The chemical BPA, in the lining of cans, disrupts the body in ways that are similar to the effects of synthetic estrogen. The estrogenic chemicals latch onto the hormonal receptor sites in the body, displacing the estrogen that the body itself produces and creating problems because it's not the real thing. Similarly, synthetic Vitamin E blocks the absorption of natural Vitamin E from food. Many comparable situations exist with natural and fabricated nutrients.

This brings me to Myth #3, which states that supplementing the diet with vitamins is actually harmful, and worse than no supplements at all. This claim is typically

made by drug companies. Opponents of nutritional supplements cite studies that seem to demonstrate the harm caused by various vitamins. Such studies do exist. But what the public is *not* told is that these studies use synthetic vitamins! Our bodies were not designed to process incompatible substances like petroleum solvents or fractionated molecules, which add disruptive frequencies into the body. Nutritional supplements are not dangerous when they supplement, or add to, the body's depleted reserves. They are troublesome only when they knock the body out of balance and deplete the system's reserves. It's worth the extra effort and cost to give your body the real vitamins that it needs.

How do you know if your vitamins are any good? Find out as much as you can first about the company, the source of all the ingredients in its supplements, and how those ingredients are processed. Most people do not know that the five or six major nutritional supplement companies in the US (as well as many of the smaller ones) contract with the same manufacturing plant(s) to supply them with their tablets and capsules. This means that there is no critical difference between different brands. To ensure quality, consider buying your supplements from smaller companies that honor full disclosure. Unfortunately, most of the companies that claim to sell "natural" vitamins sell crystalline chemicals.

Now a word about fat-soluble and water-soluble vitamins. Vitamins are dispersed by either water or fats. One popular, but incorrect, notion states that you can ingest unlimited water-soluble vitamins because the excesses are simply excreted in the urine if the body cannot use them; whereas continued use of a fat-soluble vitamin over a long period is bad for you because it gets stored in the body's fatty tissues and can build up to toxic levels over time. This notion is simplistic as well as untrue. For instance, some people take lots of ascorbic acid (half a gram to one gram daily), believing that if they get diarrhea, this is simply the body's sign to decrease the amount, and that there are no more repercussions. But ascorbic acid is only a tiny part of the Vitamin C complex. The body's response of diarrhea is more likely a reasonable reaction to a toxic drug. If too much ascorbic acid is ingested, it can concentrate and re-crystallize in the urine. Once in the urinary tract, the sharp little spikes of ascorbic acid crystals can irritate the delicate membranes and cause urinary tract infections. And regarding fat-soluble vitamins: even though a vitamin gets stored in the fat cells, you may still need to be taking high amounts. One naturopath friend tells me that many of her clients with liver damage have a Vitamin A deficiency. In this case, for a certain period, taking more than what is considered the maximum dose is just what they need. One woman I knew had suffered excessive respiratory problems for an entire year. Each day, she took many hundreds of times the recommended daily dose of Vitamin A because it helped her. When she decreased the amount, her respiratory symptoms came back. Obviously, her body needed all the Vitamin A that she was taking; otherwise, she would have manifested symptoms of excess. However, each person is different. Please consult a holistically-oriented nutritionist if you have serious deficiencies.

This brings me to the absurdity of the FDA's phrases, "minimum daily requirement" and "maximum daily requirement." When recommending the minimum daily requirement for nutrients, our government generally applies the amounts needed by chicks, rats or rabbits to human beings. Even if it did not, keep in mind that as our soil is so depleted, most of us can no longer obtain the nutrition we need in food alone. Also, optimal needs for any nutrient is a very individual matter, as people are not clones of each other (yet) and have different needs. They also have different needs at different times. Again, if you have serious health problems, consult a health care practitioner to help you determine what your deficiencies are. Naturopaths are trained to offer this type of assistance.

### *Minerals*

Although vitamins receive the bulk of health-related publicity, minerals may be even more important than vitamins. People certainly suffer more from mineral than vitamin deficiencies, due to the depletion of our soil. This is especially true of boron, chromium, selenium, and other trace minerals.

The section at the beginning of this chapter on **Water** discusses minerals in depth; but a few points are worth emphasizing here. Mineral salts, in proper ratio on either side of the cell membrane, act like miniature batteries called electrolytes, and regulate the transport of all nutrients into the cell. But if the electrical signals in the body are muffled or incomplete, cell functions suffer.

Minerals should always accompany vitamins and other minerals to maintain systemic balance. One illustrious example is calcium, which requires the mineral magnesium to help it cross the cell membranes of bones. If not enough magnesium is present, the excess calcium does not reach the bones, but collects in the soft tissues, causing a kind of arthritis. Vitamin D3 (discussed later in this chapter as really being a hormone) is essential for calcium absorption, as it promotes the mineralization of bones and prevents them from becoming brittle and deformed. And enough boron (another mineral) is needed to help with calcium absorption (boron is thought to activate Vitamin D3). Incidentally, different people require different forms of calcium, which

can bind to various elements. This example of calcium alone shows the degree of complexity possible with nutrient interactions in the body. Consult a qualified professional to help you select the correct nutrients, their forms, and amounts.

### Enzymes

Another vitally important nutrient group is *enzymes*. Enzymes catalyze all types of chemical reactions in the body without being destroyed themselves. Although comprised chiefly of amino acids (the building blocks of protein), a particular enzyme will sometimes contain a single molecule of a trace mineral (such as copper, iron or zinc) in order to function. "In the 1930's," write Sally Fallon and Mary Enig, "when enzymes first came to the attention of biochemists, some 80 were identified; today, over 5,000 have been discovered."[137] Edward Howell, a medical doctor regarded by raw foods aficionados as the original enzyme expert, wrote that what has been referred to as "vitality, vital force, vital energy, vital activity, . . . strength, . . .life energy, life and life force" is none other than enzyme activity, also called "enzyme value, . . . enzyme vitality and enzyme content."[138]

All enzymatic functions relate to metabolic functions, which can be either *anabolic* or *catabolic*. During an *anabolic* process, ingredients are combined to form more complex substances, as in the building up of muscle tissue. During a *catabolic* process, complex materials are broken down into simpler ones, as when foods are reduced into more basic components. There are different ways of classifying enzymes. Chiropractor and nutritionist Anthony Cichoke presents six groups, based on the chemistry of what the enzymes do, the substances they affect, and the types of reactions they induce. A more practical and useable system for the layperson comes from Fallon and Enig:

> Enzymes fall into one of three major classifications. The largest is the *metabolic enzymes*, which play a role in all bodily processes including breathing, talking, moving, thinking, behavior and maintenance of the immune system. A subset of these metabolic enzymes acts to neutralize poisons and carcinogens, such as pollutants, DDT and tobacco smoke, changing them into less toxic forms, which the body can then eliminate.
>
> The second category is the *digestive enzymes*, of which there are about 22 in number. Most of these are manufactured by the pancreas. They are secreted by glands in the duodenum (the upper part of the small intestine) and work to break down the bulk of partially digested food leaving the stomach.
>
> The enzymes we need to consider when planning our diets are the third category, the *food enzymes*. These are present in raw foods, and they initiate the process of digestion in the mouth and stomach. Food enzymes include *proteases* for digesting protein, *lipases* for digesting fats and *amylases* for digesting carbohydrates. Amylases in saliva contribute to the digestion of carbohydrates while they are being chewed, and all enzymes found in food continue this process while it is mixed and churned by contractions in the stomach. The glands in the stomach secrete *hydrochloric acid* and *pepsinogen*, which initiate the process of protein digestion, as well as the intrinsic factor needed for vitamin B12 absorption; but the various enzymes needed for complete digestion of our food are not secreted until further down line, in the small intestine. [emphasis added][139]

Eating a diet high in raw and fermented foods can help alleviate stress. The enzymes already present in the food help digest it, and the body does not have to draw on its own enzyme stores for digestion. As explained earlier in the discussion on raw foods, the enzymes in cooked foods become destroyed by heat. Holistic practitioners advise people who eat cooked food, are ill, or are over 40 years old, to supplement with digestive enzymes.

Functionally, different enzymes are sometimes interchangeable. This is why, for instance, systemic enzymes used for inflammation should be taken on an empty stomach. Otherwise, the activity of the enzymes will be used to digest food instead of scavenge the irritating substances in the bloodstream and tissue that cause the inflammation.

Enzymes are so important to life processes, that many health practitioners consider supplementation mandatory for those with chronic or life-threatening illness. Cichoke writes:

> Enzymes can aid digestion, dissolve blood clots, fight back pain, decrease swelling, speed up healing, fight wrinkles, clean surfaces of dirty wounds, help in delicate surgery, ease hindered breathing, stimulate the immune system, and help fight cancer and HIV/AIDS and other viruses. In other words, enzymes can do an awful lot.[140]

Can one take too many enzymes? "There appear to be no side effects of long-term duration when taking oral enzymes,"[141] Cichoke advises. However, people with clotting disorders, and who are about to undergo surgery,

should avoid taking proteolytic (protein-digesting) enzymes, which could thin the blood excessively.

Since enzymes are extracted from plants and animal organs in a rather complex process, they are more difficult to make than food-based vitamin and mineral supplements, and thus cost more. In Germany and other parts of Europe, enzymes are the most popular over-the-counter preparation for relief of pain and inflammation, as they work well and cause no "side" effects. If you don't have access to enzyme-rich sprouts, raw foods, fresh vegetable juices and especially fermented raw vegetables, consider taking enzyme supplements.

### *Summary*

People who are ill are nutrient starved. Therefore, it makes sense to obtain concentrated nutrition from food supplements. All-vegetable supplements can be extremely helpful, but you might need glandular or other materials from animals in order to heal.

There is a world of difference between natural and synthetic vitamins. Truly natural vitamins are created from whole foods that remain in their original, complex matrix. Synthetic vitamins are manufactured primarily from coal tar and other petroleum products, which makes them nutritionally incomplete and biologically incompatible with living tissue. Not surprisingly, major drug companies, recognizing the potential profit in the health food industry, are now manufacturing vitamin and mineral supplements—all of them synthetic.

People sometimes voice concern that if they keep taking supplements, the body will increasingly depend on them and won't be able to function without them. Similarly, Annemarie Colbin writes that if you take more supplements than you need, this may actually cause harm because you will become hungry, craving the bulk that normally accompanies such concentrations of nutrients. However, these problems are much more likely to exist with synthetic than food-based supplements, for two reasons. One, the high dosages in synthetic supplements tend to unbalance the ratio of other nutrients in the system. Two, the co-factors in food-based supplements—which provide maximum assimilation and other benefits—are not present in the synthetic supplements.

If you have a serious or chronic illness, consult with a knowledgeable professional. Many chiropractors have special training in nutrition and muscle testing, and can tell you right there in the office what you need.

Good quality supplements do what the name suggests. If used correctly, they *supplement*, or strengthen the body so it can operate at peak efficiency and vitality. Don't try to save money by buying cheap vitamins. The proper supplements can make a huge difference in the way you feel and function.

## OXYGEN THERAPIES

For decades, scientists have waged a curious debate over how much oxygen was in Earth's atmosphere thousands or millions of years ago, compared to modern times. Attempts to answer this question have been based on many types of geological testing, from samples of polar ice cores to ancient sedimentary rocks.

Some convincing evidence of greater oxygen levels in the past is discussed in an article, "Gas Bubbles in Fossil Amber as Possible Indicators of the Major Gas Composition of Ancient Air." The authors unearthed data suggesting that "the major gas composition of air ($N_2/O_2$ ratio) has changed appreciably during the past 90 million years. . . . Original oxygen concentrations . . . appear to have changed from greater than 30% $O_2$. . . . (between 75 and 95 million years ago) to 21% during the . . . present-day."[142] Yale University geologist Robert Berner agrees with a 35% rate. But other researchers assert that when the ratio of oxygen to other gases is at 25%, the humidity should be at least 50%; otherwise, numerous materials will easily combust. Therefore, they conclude, it's impossible for the ratio of oxygen to have ever been 25%. So, what appears to be fairly straightforward data is sometimes heavily contested, along with the interpretations themselves.

While it might be difficult to pinpoint exactly what percentage of oxygen used to be on Earth, it cannot be denied that within the last century, oxygen levels *have* decreased to the point where it has become harder to breathe. Just ask the millions of people worldwide who suffer from asthma and emphysema. Even those without an official diagnosis of respiratory disorders know that our atmosphere is becoming foul; one whiff of city air is all it takes, especially in industrialized cities with high pollution levels. We are literally starving for oxygen. It's no surprise, then, that Tokyo—with its high air pollution levels and more people per square mile than any other city in the world—has opened "oxygen bars," where people congregate and inhale oxygen. Oxygen bars now exist in the United States as well.

Our diminishing oxygen supply has cost us our health. Dr. Otto Warburg, who won the Nobel Prize for medicine twice (in 1931 and 1944), showed that a fundamental cause of all degenerative disease is oxygen starvation at the cellular level. Most viruses, fungi, bacteria and parasites are *anaerobic*, or suited to an oxygen-*deprived* environment.

They are unable to survive in an *aerobic*, or oxygen-*rich*, environment. Even those microbes that are aerobic—or which switch from being anaerobic to aerobic—cannot survive in the presence of ozone, a kind of supercharged oxygen (discussed shortly).

Oxygen therapy is not new. The three most common forms of oxygen used for therapy—hydrogen peroxide, ozone, and oxygen in its hyperbaric (concentrated) form—have been used for 100 years or longer. Oxygen therapies perform on many levels. They help neutralize microbes and toxins. They strengthen the body's immune response. And they support normal body tissues and optimize cellular metabolism.

### *Hydrogen Peroxide*

The chemical symbol for hydrogen peroxide is $H_2O_2$, which designates two atoms of hydrogen combined with two atoms of oxygen. Some of you may remember falling down as a child and having your mother apply hydrogen peroxide to the scrape on your knee. It stung as it bubbled, but the liquid did a great job keeping the wound clean, since most microbes cannot survive in the presence of oxygen.

Hydrogen peroxide is applied to much more than skinned knees, though. Industry has long known of its valuable and almost unlimited applications. One source mentions "a special hydrogen peroxide [that] is manufactured for the semi-conductor industry. . . . The transistors and chips are cleaned in hydrogen peroxide just prior to assembly," since "dust of any kind would cause noise [in the finished electrical components] and create problems." The cleaning is done in a special space called a "clean room" which, incredibly, is "up to 100 times cleaner than any operating room in a hospital"! [143]

Hydrogen peroxide has agricultural and food uses as well. It's used for soaking seeds to make them sprout faster, and is sprayed on mature plants to increase crop yield. It acts as a dough conditioner, as a bleaching agent for food and food-related paper products, and is used in aseptic cardboard packaging for fruit juice and other foods.

Did you know that hydrogen peroxide is produced by the body? In *Oxygen Healing Therapies*, Nathaniel Altman clarifies how essential $H_2O_2$ is.

> Hydrogen peroxide is involved in all of life's vital processes and must be present for the immune system to function properly. The cells in the body that fight infection (known as granulocytes) produce hydrogen peroxide as a first line of defense against . . . parasites, viruses, bacteria, and yeast. It is also required for the metabolism of protein, carbohydrates, fats, vitamins, and minerals. As a hormonal regulator, hydrogen peroxide is necessary for the body's production of estrogen, progesterone, and thyroxin. It also helps regulate blood sugar and the production of energy in cells.[144]

This helps explain why, in addition to its medical uses as a disinfectant, antiseptic and oxidizer, $H_2O_2$ is now routinely utilized for a wide variety of conditions—including circulatory disorders, parasitic and microbial infections, and some immune dysfunctions—in human beings, pets and livestock.

Physician William Campbell Douglass notes that since 1920, over 6,100 articles have appeared in the scientific literature pertaining to the scientific applications of hydrogen peroxide. Douglass, who has personally treated many people and reports often (though not always) obtaining good results, describes how $H_2O_2$ helps rid the body of harmful microbes. "The clinical benefit of oxygen saturation of tissue fluid from the oxygen produced by hydrogen peroxide may be of secondary importance," he writes in *Hydrogen Peroxide, Medical Miracle*. Even greater benefit is hydrogen peroxide's role as "a powerful oxidizer. . . . It will oxidize [burn up] toxic and nontoxic substances alike, which is completely separate from its role as an oxygen contributor." [145] Altman agrees. Although $H_2O_2$ delivers "small quantities" of oxygen throughout the body, he writes, its prime way of oxygenating the body is due to

> an extraordinary capacity to stimulate oxidative enzymes, which have the ability to change the chemical component of other substances (like viruses and bacteria) without being changed themselves. . . . The presence of hydrogen peroxide enhances natural cellular oxidative processes, which increases the body's ability to use what oxygen is available.[146]

Despite hydrogen peroxide's potential, it may be the most controversial of all the oxygen therapies. Within the holistic medical community, there is some evidence that it may be unsafe if it is administered orally rather than intravenously. Douglass considers intravenous injections of $H_2O_2$ safe and effective, but cites studies suggesting that hydrogen peroxide taken orally might cause erosion of the stomach lining and even cancer. And one doctor in private practice once told me that she treated a number of people suffering from ulcers or damaged kidneys due to long-term consumption of $H_2O_2$.

Nevertheless, it appears that ingested $H_2O_2$ may cause damage or discomfort only under certain conditions: if it is taken with food, if too much is consumed at one time, or if the person is deficient in certain enzymes that might otherwise help the body handle the large increase of hydrogen peroxide in the system.

One argument commonly made against hydrogen peroxide is its tendency to produce free radicals. The presumed free radical damage from oral $H_2O_2$ is challenged by Ed McCabe, who is so highly regarded as one of the world's experts on oxygen therapies that he has been nicknamed "Mr. Oxygen." McCabe is a vocal proponent of $H_2O_2$. In his book *Oxygen Therapies*, he writes that the body is so effective in attacking pathogens because of the free radicals that the $H_2O_2$ produces.

> Leukocytes (white cells in the blood) produce a natural hydrogen peroxide . . . which surrounds and destroys harmful microbes. The hydrogen peroxide breaks down into water and oxygen ($O_1$). This form of oxygen ($O_1$) is a free radical. Therefore, it is unstable. It attaches to the most unstable structure around it; a virus or harmful microbe fits the bill. It disrupts them electrically, and this kills the bacteria—or disrupts the virus—and the white cells digest the remains. Any leftover peroxide is neutralized by catalase, an enzyme. . . . The cycle of defense is complete. This is our immune system at work.[147]

It's essential to remember that the oxygen *singlet*, in the form of $O_1$, does not harm healthy living tissue. In case large amounts of leftover peroxide might be a problem, McCabe suggests taking the antioxidant superoxide dismutase (SOD), at least several hours away from the $H_2O_2$, to help neutralize it. An alternative to SOD tablets are wheat or barley sprout supplementation, from which SOD is derived. Interestingly, the first physician to recommend taking $H_2O_2$ orally was Royal Rife's colleague, Dr. Edward Rosenow.

When used correctly, $H_2O_2$ can help increase energy and improve immune function. Strong reactions to orally administered $H_2O_2$ may feel similar to the detox response that results from rifing. This could mean either that the hydrogen peroxide is working, or that the amounts are dangerously excessive. Consult your physician, read the literature, and ask other people about their experiences before you decide to drink it. You can find a doctor to administer it intravenously, but this is much more expensive (though more efficient) than an oral program. The goal of self-administered health care must be pursued within the limits of your knowledge, expertise, and common sense.

Researchers disagree about what constitutes a safe oral dose. Both McCabe and Altman suggest rather generous amounts of oral hydrogen peroxide for various purposes, but Douglass is much more prudent. "I don't think $H_2O_2$ is dangerous taken orally as long as the recommended dose is not exceeded (10 drops of 3% $H_2O_2$, three times a day)," he writes.[148] Also—and this is important—the hydrogen peroxide must be taken when the stomach is empty. Otherwise, it will interfere with the digestion of food and cause nausea or even vomiting when it interacts with bacteria in the stomach. This is why veterinarians often suggest feeding a dilute solution of $H_2O_2$ to a pet to induce vomiting if the animal has swallowed a poison.

If you do decide to drink $H_2O_2$, be aware that it comes in different dilutions and grades (purities). Only *food grade* $H_2O_2$ is pure enough to ingest orally. The 3% dilution of the hydrogen peroxide that you buy in the drug or grocery store is not food grade (edible). It is made from 50% "Super D" peroxide, and contains so-called stabilizers such as phenol, acetanilide, acetanilid, sodium stanate, and tetrasodium phosphate. Other strengths of $H_2O_2$ used for bleaching hair or for medical research, for instance, also contain additives.

The most frequently sold dilution of food grade hydrogen peroxide that I have seen is 9%, although 35% and occasionally 50% are available too. Concentrated solutions must be diluted down to at least 3% (and sometimes less) to be safe for the skin or internal consumption. Food grade $H_2O_2$ can be bought in select health food stores, or through the mail, for as little as six or seven dollars a pint. It's perishable, and must be refrigerated. The average consumer, who does not have access to medically administered intravenous hydrogen peroxide therapy, may self-administer hydrogen peroxide at home to eliminate all kinds of infections from *Staph* to *Candida*. Some people object to hydrogen peroxide's strange taste and unpleasant sensation when swallowed, so they mix it with aloe vera juice or a little bit of cinnamon.

Even if you don't want to drink hydrogen peroxide, it has many practical uses. It can be sprayed in the bathroom to get rid of mold. People add it to their bath water, use it for douching, and pour about one teaspoon into a quart of pasteurized milk to prevent unwanted bacteria from growing. Grocers spray $H_2O_2$ on their fruits and vegetables to keep them fresh. Peroxide also makes a wonderful mouthwash, since it kills bacteria that cause gum infections. Hold the 3% (or less) solution in your mouth for at least a minute and then spit it out. Hydrogen peroxide at 35% or (even better) 50% dilution can be used to eliminate fungus and other contaminants in swimming pools and hot tubs, in addition to wells that supply drinking

water. Ed McCabe's books give the precise percentages of dilution.

Concentrated $H_2O_2$ must be diluted down to at least a 3% strength before using it anywhere on or in your body. *If highly concentrated $H_2O_2$ gets on your skin, it will burn it. If highly concentrated hydrogen peroxide gets into your eyes or ears, or if you drink it, you can seriously damage or even kill yourself.* This is the one caution you must use if you buy concentrated amounts for dilution.

However, the caustic nature of concentrated hydrogen peroxide does not indicate *inherent* toxicity. There's a difference between toxicity due to *dilution* and toxicity based on *intrinsic harm*. Take genuine poisons, such as neurotoxins and petrochemicals. Even when diluted to one part per million, although their molecules are more dispersed, this does not change their essential caustic or lethal effects. On the other hand, concentrated food grade $H_2O_2$ loses its ability to cause harm when it is diluted. In fact, when it's dispersed in water, its qualities are completely altered. Consider that the human body itself manufactures a weak dilution of $H_2O_2$, which is vital to the proper healing and functioning of the system.

The principle of dilution affecting function also exists with hydrochloric acid. Highly concentrated hydrochloric acid is such a corrosive solvent that it is sometimes used by industry to eat through metal. Yet the acid is secreted by the stomach, and without it we cannot digest protein. Inherently, hydrochloric acid and hydrogen peroxide are not poisonous: we must simply be careful about the strength or dilution at which they are used. Hydrogen peroxide (as with hydrochloric acid) can be safe and beneficial when handled properly, and used in the correct proportions.

Considering all the harmful medications, food additives, pesticides, and other toxic chemicals that our government allows on the market, I believe that the danger of $H_2O_2$ is overstated. People who take charge of their own health tend to do more research, and thus develop keener discernment, than those who give away their power to doctors and regulatory agencies. I see no reason why highly concentrated food grade hydrogen peroxide should be avoided if you are careful when handling it. Do not allow the bottle to tip. Keep the container in a plastic bag in case of leakage. If you get some on your hands (your skin will turn white), immediately rinse with water. If you spill it on surfaces or get it in your eyes, immediately flush with water. If you accidentally swallow too strong a solution, drink plenty of water and remain standing, and then make sure to seek medical attention.

If you feel hesitant about drinking hydrogen peroxide, or you are not confident about your ability to correctly and safely measure it, you can use other substances that naturally contain $H_2O_2$. Aloe vera—a tropical plant that's applied topically for wounds, and ingested for all kinds of infections and disorders of the digestive tract (including hemorrhoids)—has a very high $H_2O_2$ content. Also, the refreshing feeling you get when near a waterfall is due not only to its positive-effect negative ion content, but also to the naturally occurring high concentration of $H_2O_2$ in the water. Waterfall therapy is also fun! Finally, you can buy products that contain therapeutic amounts of some form of oxygen.

## *Ozone*

The second form of oxygen therapy that a layperson can easily use is ozone. Oxygen is found in nature in a diatomic form (two atoms together), and thus has the chemical designation of $O_2$. Ozone, also found in nature, is triatomic (three atoms together), and thus has the chemical designation of $O_3$. $O_3$ is much more reactive than $O_2$. When ozone enters the body, it immediately breaks into $O_1$ and $O_2$. The extra lone atom of oxygen, $O_1$, combines with whatever it touches in a process called oxidation. This oxidation process commonly occurs with lipid (fat) molecules, bacteria, viruses, fungi and toxins. After I discuss the history of ozone, and describe in some detail how ozone acquired an undeserved negative reputation, I will explain the mechanism by which ozone deactivates microbes and toxins.

### History of Ozone

The word ozone comes from the Greek word *ozein*, which means "to smell." You may remember being outside and smelling ozone created by lightning after a thunderstorm. However, ozone more commonly is created by the sun's ultraviolet radiation, "produced constantly in the upper atmosphere as long as the sun is shining," writes health practitioner and ozone specialist Saul Pressman in *The Story of Ozone*.

> Since ozone is heavier than air, it begins to fall earthward. As it falls, it combines with any pollutant it contacts, cleaning the air—nature's wonderful self-cleaning system. If ozone contacts water vapor as it falls, it forms hydrogen peroxide, a component of rainwater, [which is] the reason why rainwater causes plants to grow better than irrigation with ground water.[149]

Ozone was discovered and named in 1840 by a German chemist working at the University of Basel in Switzerland. In 1856, the gas was used to disinfect operating rooms, and in 1870 it was reported to purify blood in test tubes.

Monaco was the first country to build a water treatment plant using ozone in 1860, followed by Holland, Germany and France. The Germans began injecting ozone in 1898. Meanwhile in America, the Florida Medical Association published a work explaining how to use ozone therapeutically. Dr. John Harvey Kellogg first used ozone in sauna steam cabinets in 1881 at his naturopathic sanitarium in Battle Creek, Michigan, having written in his 1880 book *Diphtheria: Its Causes, Prevention, and Proper Treatment* that "Probably, no agent . . . for the purpose of purifying the air of the sick-room . . . is so useful for this purpose as ozone, one of the most powerful disinfectants known."[150] And "free energy" scientist Nikola Tesla patented his first ozone generator in 1896, and started selling ozonated olive oil to doctors for medical use in 1900.

Throughout the first half of the 20th century, a number of physicians and dentists published detailed accounts of successfully using ozone to treat a wide variety of diseases and conditions, including anemia, asthma, gout, hay fever, syphilis, many kinds of cancers, chemical poisoning, diabetes, influenza, pneumonia, gangrene, wounds, and even insomnia and strokes. A 1904 volume of chemist Charles Marchand's *The Medical Uses of Hydrozone* [ozonated water] *and Glycozone* [ozonated olive oil] is still in the Library of Congress, approved by the US Surgeon General. In June 1909, Dr. William D. Neel of Chicago was awarded a patent for a device that was designed to treat numerous medical conditions by combining ozone with aromatic (essential) oils for inhalation. And during World War I, as was reported later in German medical journals, the Germans used ozone to treat many conditions including chlorine gas burns, gangrene, influenza, and trench foot.

Despite the efforts of prominent medical-pharmaceutical personnel to eliminate ozone therapy as a viable medical treatment, doctors continued working with ozone and reporting their successes. As of this writing, ozone is a medically recognized therapy in Brazil, Bulgaria, Cuba, the Czech Republic, France, Germany, Hungary, Israel, Italy, Japan, Mexico, Poland, Romania, Russia, Singapore, Yugoslavia, four Canadian provinces, and fourteen US states. Ironically, ozone was part of mainstream medicine in the US from 1900 to 1933 before being replaced by poisonous drugs.

### Dispelling Negative Myths about Ozone

There has been considerable negative publicity concerning ozone near the Earth's surface. The United States EPA states that ozone works fine where it belongs—in the upper atmosphere to shield us from the sun's UV rays—but, it claims, no amount of ground-level ozone is good for you (although the agency "settles" for .08 parts per million as acceptable, since there will always be some ozone at ground level). Ozone amounts are most likely to be elevated from around noontime through early evening on hot, sunny days, we are told—a true enough statement, considering that the UV rays from the sun produce ozone, and the sun shines most strongly in the afternoon. But this information is used to persuade people to stay indoors!

The likeminded weather services in the United States and Canada issue a daily "ozone health advisory," which warns the public when these levels are "too" high. We constantly hear reports alleging the adverse effects of ozone, which include all kinds of respiratory irritation from shortness of breath and coughing to chest pain and asthma. It's hard to ignore allegations such as: "Automobile exhaust is the primary cause of ground level ozone and the most serious air pollution problem in the northeast."[151] Or consider: "The poor air quality is due to elevated ground level ozone concentrations. Ozone is a major component of smog and is formed by the photochemical reaction of pollutants emitted by motor vehicles, industry and other sources in the presence of elevated temperatures and sunlight."[152] Even those sympathetic to the medical uses of ozone sometimes misinform, saying for instance that there is "good" ozone and "bad" ozone. All of these statements indicate a gross misunderstanding of what ozone is and how it works.

The best article I have read that explains the conflicting opinions about ozone is called "The Toxicity of Ozone: A Report and Bibliography." First appearing in the February 1950 edition of *Industrial Medicine and Surgery*, it was written by Clark E. Thorp, acting Chairman of the Department of Chemistry and Chemical Engineering at the Armour Research Foundation of the Illinois Institute of Technology. After conducting an extensive review of all the literature on ozone to date, Dr. Thorp realized that researchers differed so vehemently because *they were not analyzing the same gas*. Ozone in one study was created very differently from the "ozone" in another study. (Since ozone doesn't normally exist in high concentrations, it must be created with special equipment.) Investigators who reported *no* (or intrinsically low) toxicity levels for ozone were creating the gas with *pure oxygen* from cylinders instead of mixed-gas air, and/or were also using low current densities in the machines that created the gas. Investigators who reported intrinsically *high* toxicity levels for ozone were creating the gas with *mixed-gas air* instead of oxygen, and/or were using comparatively high current densities in the machines that created the gas. The manner in which the gas was produced determined whether or not the final product was pure ozone, or contained harmful nitrogen oxides that appear when ozone is not made properly. *The nitrogen compounds are toxic, not the ozone itself.*

Unfortunately, many of the researchers whose papers Thorp read did not know the difference between properly made, pure ozone, and improperly made, contaminated ozone—in which case, it really could not be called "ozone." "The majority of the reports claiming ozone to be a highly toxic gas are a direct result of the use of [certain] equipment in making toxicity studies," Thorp explained. And despite the fact that several different scientists "called attention to the harmful effects of nitrogen oxides in ozone as early as 1913, . . . no direct study of the influence of nitrogen oxides on the toxicity of ozone was published until 1941."[153] One researcher even misreported and later recanted.

> After noting the work of Thorp previously mentioned [the author is referring to himself here in the third person], Hill, realizing that oxides of nitrogen had been present in his previous test, decided to rerun the test on an identical basis to determine if pure ozone had higher toxic limits. These later tests showed that pure ozone was definitely non-toxic in concentrations as high as 50 parts per million. As a final result of his work, Hill states: "*Pure ozone is not poisonous in any sense of the word as it breaks down in contact with the mucous membrane and oxygen only remains. For this reason, there are no cumulative effects and pure ozone may be breathed for long periods of time without harm, provided, of course, that immediate irritation of strong concentrations is avoided*." [emphasis added][154]

Thorp's review of the literature showed that research subjects were quite comfortable with pure ozone of concentrations of up to 20 ppm (parts per million), whereas when ozone was mixed with nitrogen compounds, levels of 5 ppm were intolerable. (In a moment, I will discuss in detail the widely publicized concern about ozone inhalation, as well as the difference between ozone's irritation of tissues and an inherent toxicity.)

So, despite the well-researched scientific literature on ozone, most of the mainstream material on ozone is heavily flawed. What most people call "ozone" is the *contaminants* that *accompany* improperly created ozone. If cathode rays, radioactive emissions or high-voltage charge are present, and if the feed gas is air and not oxygen, highly toxic nitrogen oxides and other compounds will be created along with the ozone. The pollutants surrounding ozone have nothing to do with the intrinsic qualities of ozone itself. Pure ozone is $O_3$. It should be self-evident that if ozone contains contaminants or is combined with other compounds, it is no longer $O_3$, but something else. Ed McCabe comments:

> Broadly saying "ozone is toxic" is an uninformed opinion due to oversimplification. It's what you hear from the media, which usually only has time for "one-liners." . . . [In other words, if the ozone is] contaminated, the contaminants are the toxins, not the ozone used at proper levels![155]

We can analogize misconceptions about ozone with leaving a bowl of beef stew out in the hot sun for many hours so it becomes contaminated with *Bacillus botulinus*, eating it, contracting food poisoning, and then deciding that stew is bad for you—instead of recognizing that you got sick because you let the food spoil. Neither the mainstream media nor government agencies seem willing to correct the misconceptions. Toxic contaminants in ozone simply highlight the need for clean sources of power, and for the manufacture of high quality ozone equipment that does not produce harmful chemicals. To save money, some manufacturers of ozone air cleaners use inferior components, which produce toxic compounds along with the ozone. Ethical manufacturers use better components, ensuring that pure ozone is produced.

#### How Ozone Works

How does ozone work as a scavenger and decontaminant? In *Medical Applications of Ozone,* one scientist defines ozone as an "oxygen atom in the body on a rapid transit"[156]—whether in the body, water, or air. The oxygen on rapid transit is *singlet oxygen,* the lone $O_1$ atom that breaks off from the $O_3$ cluster and leaves the $O_2$ behind. The power of ozone lies not in the $O_2$, but in the $O_1$ atom. As Dr. Pressman points out, emphasizing the chemistry of ozone is misleading *because the therapy's effectiveness lies in its electrical nature. Ozone is the delivery system for the $O_1$ electron*. If the oxygen gas were doing the work, the $O_2$ that's routinely administered in hospitals would be sufficient to combat severe infections, and it's not. The electrical charge that ozone carries is so strong, it can literally blast a hole through the outer wall of a microbe, killing even aerobic pathogens. With ozone therapy, $O_1$ is the safe and effective carrier of electricity into the body.

Among other functions, oxygen burns glucose. If there's not enough oxygen in the system, the glucose is incompletely burned, resulting in considerable metabolic debris. But ozone's high oxidative energy allows it to cleanly burn fuel as well as neutralize all sorts of toxins.

To some people, ozone (singlet oxygen) sounds like a free radical. Free radicals are wild, unanchored atoms that try to stabilize themselves by stealing electrons from other

atoms, which causes severe tissue damage. Why doesn't ozone destroy healthy tissue along with microbes and toxins? As mentioned before in the discussion on hydrogen peroxide, normal cells produce generous quantities of enzymes (such as catalase and peroxidase) to protect cell membranes from oxidative damage. Damaged cells do not. Ozone scavenges only unhealthy tissue, leaving healthy tissue intact. But if healthy tissue is too saturated with toxins to produce sufficient protective enzymes, ozone can still help. It will oxidize the toxins, allowing the cells to function again. Thus, when administered properly, ozone precisely targets only those substances (including damaged cells) that impair the system.

Ozone therapy is an electrotherapy. To be useful, ozone must be dispensed in the correct amounts. The concentration of the gas must be high enough to kill aerobic pathogens without over-saturating the cells to the point where it damages them. (See Sidebar, "Too Much of a Good Thing: Immunosuppressive Effects of Ozone.")

Ozone also regulates immune function. An abstract from a Russian study, "Influence of intravenous ozone treatment on the level of different specificity antibodies," states in part:

> Medical ozone is the universal stimulator which participates in intracellular biochemical processes. Treatment with intravenous ozone was studied in 35 women [some of them pregnant], . . . three with anti-HLA antibodies, . . . three with anti-sperm antibodies, and seven with antivirus antibodies (*Herpes* 1, 2 and CMV). . . . Ozone treatment is effective for . . . [various] antibody levels in blood. *Medical ozone has direct antiviral activity which induces long term remission and in some cases total elimination of virus from blood. Generally, ozone is a modulator of the immune system, stimulating . . . cell immunity.* . . . Immune regulation . . . in pregnant women was increased. [emphasis added][157]

Kurt Donsbach, DC, ND, PhD, summarizes that oxygen therapies:

- Increase tissue oxygenation, which brings about improvement in metabolic rate.
- Stimulate production of white blood cells, which are necessary to fight infection.
- Decrease blood carbon monoxide load, which frees hemoglobin to carry oxygen.
- Increase hemoglobin disassociation [the ability of hemoglobin in the red blood cells to let go of the oxygen they are carrying], thus increasing delivery of oxygen from blood to cells.

## Too Much of a Good Thing: Immunosuppressive Effects of Ozone

Ozone must be applied to the body in the right concentrations. The gas is a carrier of electricity in the form of $O_1$ atoms. The higher the concentration, the more electricity (electrons) are delivered. If too many electrons pass through a wire, you overload a circuit and blow a fuse. The body responds similarly.

Some information on ozone concentrations came from the research of Professor Bocci at the University of Siena, Italy. He took blood out of subjects, injected it with ozone, and returned the blood to the body. Then he measured the subjects' production of gamma interferon and interleukin 2. When plotted on a graph, the production of these immune substances showed a bell curve. The highest part of the curve lies at about 50 µg/ml, or micrograms of ozone per milliliter of blood. Below that concentration, it is less than optimal, disappearing at about 20 µg/ml. And above 50 µg/ml, it once again falls off, until about 70 µg/ml the response is nil.

More information came from the research of Dr. Jon Greenberg of the Kief Clinic. He experimented with various concentrations of ozone on blood *in vitro*, to try to determine the maximum concentration that should be used. At 90 µg/ml, there was definite crimping and damage seen in the red blood cells. He recommended that medical therapy be limited to no more than 80 µg/ml.

Dr. F. Sweet and colleagues also did work on ozone concentrations, this time *in vitro* with cancer cells and normal tissue. They found that cancer cells were inhibited by ozone in a concentration-dependent manner. Normal cells were undamaged until a concentration of 70 µg/ml was reached, beyond which their growth was suppressed.

It's clear that there is an upper limit on beneficial concentration for internal use, as well as a lower concentration threshold for ozone's effectiveness. All generators sold for medical use should reflect these established limits—with an output set at a single safe level, or controls to regulate the ozone flow. External use (limb bagging or funneling) can have higher limits, but care must be taken there as well.

—Saul Pressman, DCh, LTOH, 2007

- Increase red blood cell flexibility, thus allowing them to squeeze through the smallest blood vessels more easily.
- [Break down] and degrade petrochemicals.
- [Inhibit] the growth of new tissues such as tumors.
- Increase the production of interferon and tumor necrosis factor, used to fight infection and cancer.
- Increase the efficiency of the antioxidant enzyme system, which scavenges excess free radicals.[158]

#### Ozonated Drinking Water

Over 3,300 European cities treat their municipal drinking water with ozone. Likewise, 30 US cities are now ozonating their water supply, including New York, Seattle, Dallas, Tampa, and Los Angeles—whose ozone treatment plant is the largest in the US. If your water supply is ozonated, ozone's half life of 12 minutes means that even though your water is now clean, you won't receive the additional benefits of pathogen and toxin neutralization, or normal cell and immune function, unless you add ozone to your water just before drinking it.

The best way to disperse ozone into drinking water is through a stone bubbler, commonly used to oxygenate aquariums. This can be bought at a pet store.

Make sure the water is filtered; otherwise, the ozone will oxidize whatever contaminants are in the drinking water, instead of doing its work inside your body. Bubble a glass of water for about 10 minutes to saturate the ozone levels. A gallon of water requires about 45 minutes.

If kept in the refrigerator at 40°F (7.2°C) after being bubbled into water for 45 minutes, the ozone will remain intact in the water for three to four days. Frozen in a plastic container, the water can be stored for several months.

If you are drinking ozonated water, be aware that ozone's *oxidizing* properties will cancel out the *antioxidant* properties of various nutrients, including Vitamins C and E. To avoid the conflict of competing agendas, drink ozonated water at least an hour *before* taking supplements, and wait 6 hours to drink it *after* taking supplements. Always drink ozonated water on an empty stomach, at least 1 hour (preferably 2) before a meal, so the food has a chance to digest first.

#### Ozone Insufflation

*Insufflation* refers to the introduction of ozone into the body through an orifice. People insufflate ozone through the ears, rectum, and vagina.

Through the ears is a common way to bring ozone into the body. As the gas easily travels, this method is particularly effective for clearing out the sinuses, the brain, and even the respiratory tract sometimes. Many people suffering from the brain fog of *Candida* and Lyme, or from hard-to-heal sinus infections, report at least partial, and often complete, relief. You can put the hose that emits ozone right to the ear. Some people take a stethoscope with the end drum removed, and attach the dangling hose of the stethoscope right to the output of the ozone unit.

For sinus infections, an alternative to ear insufflation is sinus irrigation using ozonated water. Use *very small amounts*—only a few drops—and let the water soak into the nasal tissues.

Administering ozone through the vagina is, of course, a special privilege of females. This is not only valuable for all sorts of vaginal infections, but it also helps detoxify the abundant lymph nodes in the groin, which are accessible through the female genitalia. The only time this method is not advisable is during pregnancy.

Ozone has also been administered via rectal insufflation. However, it is more common to ozonate water first, and then do a colonic or enema with the ozonated water. Ozone won't eliminate or otherwise negatively affect the beneficial intestinal flora that thrive on oxygen.

#### Ozone Funneling and Limb Bagging

These phrases merely refer to concentrating ozone at specific areas where the skin has first been moistened. With funneling, a plastic funnel (available at kitchen supply stores) is attached to the silicone tube coming from the ozone generator, with the wide mouth of the funnel pressed against the part of the body that you want to treat. "This is especially effective with hepatitis, diverticulitis, pancreatitis and cancer," writes Saul Pressman. "It also involves the person in actively taking responsibility for initiating the healing process."[159] Dr. Pressman has seen very healthy babies whose mothers, when pregnant, funneled over the belly. You can also funnel the liver and colon for detoxification.

Bagging is typically used for limbs. Place a limb inside a heavy, airtight plastic bag, along with the end of the tube leading from the generator. Secure the open end of the bag with a rubber band or string to make the bag airtight and keep the ozone inside. Bagging works nicely for arms and legs that have rashes, wounds or cuts. This method has also been used to reverse gangrene.

#### Injectable Ozone

Ozone can be directly injected into the blood vessels. However, this method requires a physician with considerable skill and experience. It is generally done only for people who are seriously ill with degenerative and infectious illnesses. In Germany and other parts of the world, doctors also remove the person's blood, infuse it

with ozone, and inject the blood back into the body. This method is especially useful for cancer and AIDS.

In the United States, physicians can lose—and have lost—their license and their practice for treating clients with ozone (as well as hydrogen peroxide). The Food and Drug Administration and the National institutes of Health, reports Altman,

> have refused to sponsor human trials for ozone and hydrogen peroxide and have made it extremely difficult for small independent companies . . . to undertake such research. Despite the fact that over 10 million people (including over a thousand AIDS patients) have received ozone therapy in Europe, and that reliable data on the use of ozone and hydrogen peroxide are supported by hundreds of scientific articles and clinical studies, the FDA maintains that bio-oxidative therapies like ozone have not been proven either safe or effective.[160]

For this reason, many seriously ill people who want more medical options travel to Mexico or Europe for doctor-administered treatments.

**Breathing Ozone Through Oils**

Critics of ozone like to point out the respiratory damage that can occur when ozone is inhaled. However, this is a half-truth, isolated out of context and used as a tactic to scare people away from a highly beneficial healing modality.

It's true that inhaling even uncontaminated ozone at too high a concentration through the nose or mouth over long periods can cause lesions or other damage in the delicate mucous membrane lining of the respiratory tract. However, as stated in *Medical Applications of Ozone*, although ozone is "toxic if inhaled, . . . it is only a local toxicity"—and the studies concluding that ozone had negative effects on animals "were done by only observing respiratory tract lesions after *long-term* inhalation of ozone." [emphasis added] [161]

As Pressman points out, even this information from a sympathetic source is misleading, because rats and mice—the most commonly used laboratory animals—are affected adversely only because their lungs are unable to clear fluid as rapidly as animals with more advanced lung protection mechanisms. Physician George Freibott further clarifies the issue:

> All I can say about ozone therapy is good things, as I have never seen it do harm to any patient yet. Even the Armour Report done in the 1950s states the following (this is the report on which most governments and many scientists base their *horror* stories about ozone and its *supposed* harmfulness): "Mice put in an *extremely* high flow of *concentrated ozone* developed pulmonary edema for two days, but by the third day the mice grew *strangely resistant* to the ozone and *no more pulmonary edema was evident*."
>
> The reason no more pulmonary edema was evident was because the *toxicity* or toxic elements *coating* the lungs of these mice was fully oxidized, neutralized and eliminated by day three! The substances being fully oxidized left nothing more for the ozone to oxidize, thus the pulmonary edema and the "sensitivity" disappeared. We have seen it work likewise in patients that have had different respiratory dysfunctions.
>
> Personally, I oftentimes work in atmospheres of ozone (in our laboratories) that exceeds the allowable EPA and FDA standards of allowable ppm (parts per million) by 52,000 times! I suffer *no* diminution in lung capacity (in fact it has increased over the years).
>
> We have given IA [intra-artery], IV [intra-venous], IM [intra-muscular], and by inhalation, doses of ozone and oxygen therapies to patients for over 25 years personally, without any untoward side effects, ever.[162]

Again, *the source of the ozone is critical*. If the gas is made improperly and contaminated with toxic chemicals, lesions on the lungs may indeed form. But again, that is not the fault of the ozone. The word "lesions" does suggest caution, and even a five-minute exposure can cause coughing due to irritation. If you begin to cough, either you are breathing harmful compounds, or the ozone concentration is too high. Open the window, turn off the machine, or turn on the generator only when you're not home.

Ironically, *the inhalation of raw ozone was never meant to be used as a medical therapy* anyway. Informed physicians and laypersons who use ozone for inhalation make sure that it is first passed through olive oil or a suitable essential oil. The aromatic inhaler device invented by Dr. Neel was called "Process of Producing a Medicament [medication]" because the ozone, combined with high-terpene essential oils (such as juniper, pine and eucalyptus), atomized the oils into an unstable terpene gas that penetrated the lungs without causing an oxidative reaction. Thus, 10 times more ozone was present in the lung tissue, with no irritation at all. Neel wrote in his patent application:

> My experiments covering this long period [of time] have convinced me of its efficacy in curing consumption [tuberculosis], asthma and other diseases of the respiratory organs, as well as diseases of the blood. I find that this medicament, when properly administered, increases the red blood corpuscles and hemoglobin and has a general beneficial action upon the system. . . .
>
> Briefly stated, my invention may be said to consist in bringing an active oxidizing agent [ozone] into proximity to or in contact with . . . [an] oil of the terpene group, the resultant product being administered to the patient in an inhalable form.[163]

Today, variations of Neel's original device are used worldwide, with an expanded repertoire of oils that include peppermint, spearmint and tea tree. However, ozone is more commonly bubbled through olive oil. When passed through olive oil, ozone is converted into a long chain ozonide, making it safe for lung tissue while still retaining the benefits of low dose ozone. Inhaling modified ozone has proved to be effective in treating asthma, bronchial infections, and even emphysema.

#### Ozonated Olive Oil Salve

A unique way of utilizing ozone is with a salve. Nikola Tesla's original recipe called for ozone to be bubbled continuously through extra virgin olive oil for about three weeks. (The salve can be made in less time, if the ozone generator is powerful enough.) This process changes the chemical composition of the olive oil several times. First the oil is bleached. Eventually, it gels it into a very dense, paste-like, almost solid consistency. German researchers have found that when the salve is kept refrigerated, it retains its effectiveness for over ten years. "When used during massage," Pressman reports, "the ozonide [the altered ozone in the olive oil salve] enters the tissue and oxidizes lactic acid and toxins, and this has proven to be an effective treatment for many skin problems"[164] including burns, dry skin, fungal infections, insect bites, sunburn, sweat gland infections, and wounds.

Users who are set up to breathe ozone through olive oil can at least create a weaker, more runny version of this salve. As soon as ozone bubbles through olive oil for the purposes of breathing it, the oil becomes chemically altered. As you continue this therapy, eventually the oil becomes thicker and whitish. Even this diluted form of salve has healing properties. To make the very hard and even whiter salve, you must have a very sturdy ozone generator that can be left turned on for three weeks.

#### Oxygen Supplements

A few companies have managed to create formulas that release singlet oxygen when ingested. Among the most common are special magnesium oxide and calcium oxide powders. When mixed in water, they release ozone. Many people find the taste and sensation of these drinks unpalatable, similar to that of hydrogen peroxide. Other, more pleasant products contain *stabilized oxygen*. However, in most cases, ozone is taken in its gaseous form.

#### Ozone for Purifying Swimming Pools and Hot Tubs

Another use of ozone is the decontamination of swimming pools and hot tubs. This is much more widely used in Europe than in the United States. In fact, it is so common in Europe that when the Olympics were held in America, visiting overseas swimming teams—knowing how poisonous chlorine is—insisted on having ozone instead of chlorine to disinfect the swimming pools. (This was done, but once the Olympics ended, the ozone equipment was removed and chlorine was reinstated.) For most industrial (non-medical) uses, it's not as critical that the ozone be free of contaminants; whereas for medical use, the ozone must be pure.

#### Ozone Generators

In order to use ozone, you must invest in some type of ozone-producing equipment. Many people are familiar with air purifiers that emit ozone to help clean up contaminants in their homes. Although these are useful, they generally do not produce enough pure ozone for therapeutic purposes. Ozone equipment that makes medical-grade ozone, and in high concentrations, can range in price from $1,000 to $6,000.

There are several types of units that safely produce ozone. One low-power generator contains a specially designed ultraviolet lamp. It creates ozone from ordinary air by mimicking the activity of the sun. When the unit's narrow band of UV radiation reacts with oxygen, it creates ozone. Such devices are excellent for air purification or modest water purification. However, since there is no way to increase the strength of a UV bulb, the ozone concentrations remain far below that necessary for most laboratory or clinical purposes.

Many ozone generators on the market utilize the *corona discharge* method. Here, two metal rods emit and receive the electrical charge. Current causes electrons to jump from one rod to the other, thus generating an electrical field. The current causes the oxygen in the surrounding air to split apart, and then recombine to form ozone. (For instance, three molecules of $O_2$ split, and then re-form into two molecules of $O_3$.) Layers of quartz glass separate the metal rods to prevent the ozone from

touching the metal and thus becoming contaminated. Corona discharge generators can become quite hot. Since the heat created by the current tends to convert the ozone back into oxygen, even more current is required to maintain a high enough ozone level. Thus, corona discharge units are equipped with fans.

A few ozone generators on the market (and the better ones) utilize the *cold plasma* method. Cold plasma was invented by Nikola Tesla in 1896 to eliminate the problem of excess heat typical of the corona discharge units. Instead of metal rods, he used glass rods filled with noble gas. The gas was a carrier for the voltage that jumped from one rod to another. (This electrostatic approach is used for the neon lights that comprise neon signs. Electromedical devices such as the Violet Ray also use this method.) When high voltage is sent through the rods, the oxygen between the rods becomes so energized by the field that (as with the corona discharge units) its molecules split apart and recombine to form ozone.

Cold plasma technologies can be used for medical applications if they are supplied with pure oxygen, since ozone must have a source of oxygen in order to be created by the generator. One source is an oxygen tank, which is filled with over 99% pure oxygen and must be refilled when the gas is depleted. Oxygen tanks used by welders contain the exact same high quality oxygen as the much more expensive medical oxygen tanks, as welders require pure oxygen for their jobs. An alternative source of oxygen can be supplied from an oxygen concentrator. Using the ambient air in the room, an oxygen concentrator separates the oxygen from the other gases, and then sends the concentrated oxygen to the ozone generator. Sending pure oxygen, rather than mixed-gas air, through these ozone generators guarantees that only oxygen and/or ozone are produced, instead of ozone and toxic nitrogen compounds, or ozone and other harmless, but unwanted gases. Corona discharge units have high concentrations at low flow rates, and low concentrations at high flow rates.

Silicone tubing is used with all generators, since it resists corrosion from ozone.

#### Ozone Saunas

Sauna therapy (discussed later in this chapter) is becoming popular worldwide not only for relaxation, but also as a method of detoxification. The use of ozone in saunas is also growing worldwide. Taking an ozone sauna is one of the best ways for the ozone to enter the entire bloodstream at once. The ozone enters *transdermally*, or through the skin, as long as the skin is moist. (Sweating, with the optional addition of steam, will moisten the skin.) Once the pores are open from the wet skin, the ozone is readily transported to, and absorbed into, all of the tissues, including the lymph and fat. Ozone is especially helpful for cleaning the lymphatic vessels, which tend to get clogged on most people. And, as fat cells hold the majority of the body's toxins, targeting them with ozone is very helpful. There is no need to be concerned about overdosing: after the bloodstream reaches its natural saturation point, the body simply does not accept any more ozone.

There is only one type of sauna one can use with ozone, and that is a cabinet, which allows the head to stick out of the top. An enclosed sauna room should never be used, since, as mentioned earlier, ozone should not be inhaled except through olive and other oils.

Traditionally, steam saunas have been used for ozone therapy. The steam helps open the pores of the skin, and the heat from the steam can also help induce perspiration. However, there is no reason why ozone cannot also be combined with a far infrared sauna cabinet, as long as you are able to sweat. If you have trouble perspiring, shower and leave some moisture on your skin before entering the cabinet. This acts as a "starter" for the body to perspire, but more importantly prepares the skin to better accept the ozone.

All sauna cabinets used with ozone must be constructed of an ozone-resistant material. (See my book, *The Holistic Handbook of Sauna Therapy*, for more information on ozone-resistant materials.) Place the ozone generator near the cabinet and run the tube from the generator to the inside of the sauna through the hole at the top. To avoid breathing the ozone, wrap a towel around the opening of the unit where the head sticks out.

A cheaper option than a hard sauna cabinet is a flexible, ozone-resistant nylon body suit, which covers the entire body except for the head and hands. The person wears the baggy suit, inserts the hose from the machine into any opening in the bag, and then seals the suit at the neck, wrists and below the feet, to prevent ozone from leaking. Body suits are generally made with ozone-resistant materials. However, the tents will degrade over time from the ozone.

Ozone saunas are known for causing intense cleansing reactions. This can feel quite uncomfortable, and even scary, to some people who don't understand how to interpret the symptoms they feel when the body is expelling toxic waste. Cleansing reactions typically resemble the flu, although any symptoms can manifest from the waste materials that are being expelled. The body often tries to eliminate waste materials through the skin, which can cause very itchy skin rashes. The itching can be alleviated somewhat or entirely by taking protease enzymes internally, and by applying soothing creams externally. Ozonated olive oil may also help alleviate the itching.

Dr. Pressman writes that "the more frequent the treatments, the more rapid the healing, and the more severe the healing reactions will be. It may become so uncomfortable that the person will need to reduce the frequency of treatments from once daily to once weekly."[165] Some people follow Pressman's suggestion to take ozone saunas once a day for a half hour. However, other health practitioners as well as laypeople prefer a more moderate approach, such as 20 minutes three times a week.

If you have a heart condition, Pressman advises, stay in the sauna cabinet for only 15 minutes at a lower temperature for the first few sessions, gradually increasing the sauna time to 30 minutes as your body adjusts to the thermal stress. He does not advise ozone saunas at all for those with a history of strokes, as heat causes the blood vessels to dilate, which could potentially loosen another clot. (On the other hand, the administration of ozone via another delivery system is recommended.) Those who wish to focus on specific organs or areas of the body can do funneling while in the sauna.

When combined with hyperthermia, ozone works particularly well to arrest and reverse cancer because, writes Pressman,

> cancer tumor cells are tightly packed as they try to force their way in between other cells, and they are thus less able to shed heat. This accounts for the effect that heat stress has in killing cancer. Both heat stress and ozone kill cancer, so this treatment offers the best opportunity to eliminate cells which are fermenting sugar anaerobically, [and to] halt metastasis and restore healthy aerobic function. Ozone is able to seek out and destroy all the cancer cells with more certainty than the surgeon's crude scalpel. In addition, ozone will oxidize the toxins which caused the original problem, and thus prevent recurrence of the problem. This is in contrast to chemotherapy which is massively immune-suppressive, and radiation which causes cancer.[166]

Although some of ozone's effects replicate, or overlap with, the effects of heat alone, the combination of ozone with conventional body heating methods provides added benefits.

**Summary**

There is a lot that the layperson can do at home with ozone. Do-it-yourselfers who don't like drinking hydrogen peroxide, and who have the financial means, can purchase their own equipment at a moderate price and give themselves ozone therapy for the rest of their lives. Pure ozone—produced without contaminants and used correctly and at appropriate strengths—is safe, and has many healing properties.

While ozone works exceptionally well for bacterial, viral and fungal infections (including cancer), various nervous system conditions such as Multiple Sclerosis, stroke and cerebral palsy, and injuries involving crushed tissue, respond better to hyperbaric oxygen therapy. See below.

### *Hyperbaric Oxygen Therapy (HBOT)*

The third form of oxygen therapy is hyperbaric oxygen therapy, usually called HBOT. (*Hyper* means *above* or *elevated*, and *baric* pertains to *pressure*.) Although this form of treatment is based on a very old practice of administering oxygen to deep-sea divers who emerge too quickly from the ocean, it has achieved public recognition only within the past 15 years. The person is immersed in an air-tight chamber and surrounded at irregular intervals by pure oxygen, whose pressure is increased up to two times the normal atmospheric pressure (equivalent to what a scuba diver would experience at about 22 to 30 feet below the surface of the water). This increased pressure, along with the pure oxygen content of the chamber, provides oxygen to all the body's fluids and tissues at up to 20 times the normal concentration. At the end of the session, the oxygen level is gradually brought back to normal and the person leaves the chamber.

Hyperbaric oxygen is becoming more widely used as a therapy. Ordinarily, oxygen inhaled by the lungs is carried throughout the rest of the system by the red blood cells. But sometimes, an area of the body with an inadequate number of capillaries, or a particularly high microbe count, needs more oxygen than the red blood cells can deliver. "Because HBOT forces oxygen into the body under pressure," write the authors of *Hyperbaric Oxygen Therapy*, "oxygen dissolves into all of the body's fluids, including the plasma, the lymph, [and] the cerebrospinal fluid surrounding the brain and spinal cord"—places that normally do not carry the gas. "These fluids can carry the extra oxygen even to areas where circulation is poor or blocked."[167]

Hyperbaric oxygen is especially useful for tissue repair. The April 2006 edition of the *American Journal of Physiology—Heart and Circulatory Physiology* reported that HBOT increases the number of stem cells in the body by 800%. Stem cells, which are undifferentiated when present in the bone marrow, have the unique ability to travel throughout the body. When they land where they are needed, they become part of the cellular structure of that organ, gland or other tissue. This makes them invaluable for repair during injury and illness.

Oxygen is vital to our health. It provides the fuel for all metabolic functions, kills many microbes, strengthens the functioning of normal tissue, and stimulates the growth of new healthy tissue. Thus, HBOT can help with:

- Necrotized tissue resulting from degenerative conditions such as diabetes and stroke.
- Burns and wounds.
- Bone disorders, including fractures.
- Damage from radiation treatments.
- Brain and nerve disorders, including Multiple Sclerosis, cerebral palsy and coma due to head injuries.
- Cardiovascular disorders.
- Some digestive disturbances.
- Poisoning, including from carbon monoxide.
- Many types of infections, including HIV, *Herpes* and Lyme Disease (for some people; others might do better with ozone).

Dr. Edgar End, a clinical professor of environmental medicine at the Medical College of Wisconsin, Director of the Hyperbaric Unit at Milwaukee County General Hospital, and an acknowledged expert on HBOT, has stated the value of HBOT for the treatment of stroke: "I've seen partially paralyzed people half carried into the (HBOT) chamber, and they walk out after the first treatment. If we got to these people quickly, we could prevent a great deal of damage."[168]

Oxygen levels in the body just slightly higher than the therapeutic HBOT dose may cause temporary impairment of the lungs, ears and central nervous system. People are advised to take time between treatments to recover from abnormal pressure to not only the eardrum but also the eyeballs. (Increased oxygen levels mean metabolic changes in the eyes that may cause blurry vision—after 30 or 40 treatments, a few people have reported permanent nearsightedness.) But HBOT is famous for helping to restore vision after a stroke. *Thus these unwanted "side" effects do not seem to occur at lower pressures.* There are virtually no risks to HBOT if you are treated correctly with the right equipment.

The two classes of hyperbaric oxygen equipment are expensive, high-tech units used in hospitals, and chambers for the layperson. Machines designed for hospitals, which use more air pressure than home units, are potentially dangerous (which is why the therapy must be administered by qualified medical personnel). HBOT chambers for the home are incapable of administering too much oxygen because they're designed for consumer safety.

For people who can self-treat—or secure help to enter, leave and operate the chamber if necessary—a portable home cabinet is a wise purchase, especially if they need HBOT therapy on a regular basis. A one-time purchase ($5,000) is less expensive than repeatedly seeing a doctor. Some companies rent HBOT units.

Oxygen therapies cannot be patented by drug companies, which is undoubtedly why the public does not hear more about their uses or effectiveness.

## COLLOIDAL SILVER

### *History of Silver Therapy*

Silver in various forms has been used for healing for centuries. The ancient Greeks and Romans used silver jars to keep stored liquids fresh. They wore silver frequently, perceiving that it maintained health. European royal families did not become as infected by the plague because they used silver utensils and ate off silver plates. And during the 1800s, American pioneers kept silver dollars in their milk jugs to prevent the milk from fermenting or spoiling. Silver coins were also dropped into water barrels to impede the growth of microorganisms and algae.

One of the first recorded medical uses of silver dates back to 1834, when a German obstetrician named F. Crede administered a 1% silver nitrate solution into the eyes of newborns to prevent blindness caused by eye infections. This practice continues today in hospitals worldwide. The Russians, and the National Aeronautics and Space Administration (NASA) in the US, revolutionized the water purification industry by using silver ions to purify the water in spacecraft. Today, water filters impregnated with silver are standard equipment in water filters.

The bulk of serious scientific study on silver appears to have begun in the early 1900s, with research correlating low plasma silver levels with infections. Silver continued to be used therapeutically until the late 1930s. In addition to being used in the eyes, it was orally ingested, spread inside the nasal passages, applied to wounds, and rubbed into the skin. Silver proved to be an effective healer of infections, both externally and internally.

Then from around the 1940s, silver as a healing agent became hard to find and its merits were no longer publicized. This was primarily because the pharmaceutical industry began to create and promote synthetic antibiotics. But silver's fading popularity was also related to the form in which it was used: it was often combined with other substances to form compounds, resulting in silver proteins, silver nitrate and other silver salts. Mild silver protein (MSP)—silver that is bound to protein-rich gelatin

to keep the large particles suspended in fluid—had such a low particle surface area, it was almost unusable by the body. It was also unsafe: the proteins not only provided food for bacteria, encouraging their growth, but they also encapsulated the silver particles, preventing them from touching and thus killing the bacteria. Today, most silver products ranging from 40 ppm to 20,000 ppm are MSP. Silver compounds are less effective than pure *colloidal* or *ionic* silver (which are not combined with other elements)—but decades ago, no reliable technology to make good quality silver fluid existed.

In the United States, colloidal silver is not approved for medical use. Companies that sell CS or the equipment to make it are forbidden by the FDA to tell their customers about colloidal silver's healing properties. Interestingly, this has not stopped major pharmaceutical companies from producing *other* silver products that *are* approved for medical purposes. These products include silver gels, for cuts, burns and wounds (silver sulfadiazine cream, a compound, is extensively used); silver coated bandages, widely and successfully used in hospital burn units; and various silver compounds, for other purposes. The existence of these products makes it difficult for government agencies to deny the health benefits of silver any longer.

### *Disabling Microbes*

Silver is a broad-spectrum, safe, effective substitute for allopathic antibiotics. Research conducted since the 1970s has shown that silver:

- Deactivates the enzymes that microbes need for respiration. Since the microorganisms are suffocated rather than poisoned, resistant strains will not form, as happens with allopathic antibiotics.
- Oxidizes the pathogen, in a way similar to that of hydrogen peroxide or ozone.
- Binds to bacterial cell walls, which prevents the microbes from functioning properly and ultimately causes their death.
- Replaces substances in the cell wall that microbes require (such as sulphur).
- Repairs broken DNA of a virus—thus rendering it dysfunctional, since a virus by definition can only function inside a host if its DNA is incomplete.

In 1978, a *Science Digest* article reported that silver kills over 650 pathogenic microbes, citing doctors who developed silver compounds and the FDA's endorsement of them. There is ample scientific proof that silver destroys virtually all bacteria, viruses, and most other single-celled pathogens within minutes. An article from a 2006 issue of the *American Journal of Nursing* states:

> Silver is a broad-spectrum agent effective against a large number of Gram-positive and Gram-negative microorganisms, many aerobes [living in the presence of oxygen] and anaerobes [living in the absence of oxygen], and several antibiotic-resistant strains such as methicillin-resistant *Staphylococcus aureus* and vancomycin-resistant enterococci.[169]

Although virtually all bacteria and viruses are killed by CS, its effect on fungi, mold, amoebas and protozoa varies. Silver cannot kill multi-celled worms and other, similarly large parasites, but it can kill the bacteria and viruses living *inside* the parasites. And although CS seems to help prevent viral infection, it can be less effective once an infection has become established. However, CS does prevent secondary infections from bacteria and other sources.

Colloidal silver affects single-celled microorganisms *as long as it physically touches them*. Therefore, even though CS cannot disable pathogens in solids such as bone and feces, it *can* easily disarm them in liquids such as water, blood, urine and lymph. If you take CS on an empty stomach, it will directly contact any *Helicobacter pylori* that's present (*H. pylori* is responsible for ulcers and stomach cancer). And CS traveling directly to a relatively empty gut, with no stool to block its passage, can kill unwanted microorganisms there that cause food poisoning and dysentery. (Similarly, in the laboratory, silver cannot affect microbes in a solid, gel-like nutrient agar, but it *will* affect microbes in a nutrient *broth*.)

Just a few conditions that have been partially or completely eradicated by CS are gastrointestinal disorders (including diverticulitis and salmonella), hepatitis and other liver conditions, Lyme Disease, malaria, pancreatitis, respiratory problems such as emphysema, shingles and other ailments caused by *Herpes,* and the SARS virus.

Recently, researchers at the University of Texas and Mexico University began using silver nanoparticles to kill *Staphylococcus aureus*. Then, in the *Journal of Nanotechnology*, they reported their groundbreaking findings that silver nanoparticles kill HIV-1, and that they expect silver to kill virtually every other virus as well! The silver particle size ranged from one to ten nanometers. *The silver particles killed 100% of the HIV-1 virus* (incubated at 98.6°F or 37°C) *within 3 hours*. The researchers wrote:

> The strong toxicity that silver exhibits in various chemical forms to a wide range of microorganisms is very well known. . . . Silver nanoparticles interact with the HIV-1 virus via preferential binding to the gp120 glycoprotein knobs. Due to

### Yes or No to Nano?

Nanotechnology, nanoparticles and all of the other nano words derive from nanometer, a billionth of a meter, or about one 25-millionth of an inch. That is far smaller than the world of everyday objects . . . but bigger than an atom or a simple molecule. . . . A nanoparticle, an object with a width of a few nanometers to a few hundred, contains tens to thousands of atoms and exists in a realm that straddles the quantum and the Newtonian. . . .

This in-between realm gives rise to an unusual physics where the properties of a material change depending on its size. At the quantum level, one gold atom acts like any other gold atom, and a nugget of gold large enough to hold has the same chemical and electrical properties as another nugget. But two nanoparticles, both made of pure gold, can exhibit markedly different behavior—different melting temperature, different electrical conductivity, different color—if one is larger than the other. . . .

Nanoparticles gain wondrous new capabilities simply because they are so small. Nanoparticles of various sorts are already found in products like sunscreen, paint and inkjet paper. . . . Nanoparticles may help cure disease as well as detect it. . . .

But nanoparticles may have potential dangers that are still not well understood. The fear is that because they are so small, they could slip past the body's immune systems and into cells.

—Kenneth Chang, "Tiny Is Beautiful: Translating 'Nano' into Practical"
*The New York Times*, February 22, 2005

this interaction, silver nanoparticles inhibit the virus from binding to host cells.[170]

For the HIV study, the scientists used specially manipulated, minuscule units of silver called *nanoparticles* (see Sidebar, "Yes or No to Nano?"). Although most people do not have access to such specially prepared silver particles, a solution comprised of small-particle sized silver *can* be made quickly and inexpensively by anyone. (Anyway, colloidal silver has effects similar to those of the nanoparticle-sized silver.) I'll tell you how you can make your own silver fluid; but first, I want to discuss how silver can eradicate cancer, and its effects on immune response.

### *Enhancing Immunity*

For a decade or so, the chemists, holistic health aficionados, and adventurous do-it-yourselfers in the colloidal silver community enthusiastically focused on the microbe-killing power of CS. Then they discovered that in addition to killing one-celled microorganisms, silver supports immune function.

New research, published in the European journal *ChemMedChem*, shows that silver modifies cytokines, the enzymes involved in cell growth and movement. This modification of cytokines leads to reduced inflammation and an increased rate of healing. Since the inflammation response contributes to—or in some cases, directly causes—some diseases, using silver for healing shows great promise. Not only can cells function more normally, but if the immune response is more efficient, viruses can be eliminated even more quickly.

People with serious illnesses may be deficient in silver. Therefore, this trace mineral can be regarded as an essential micro-nutrient for the body.

### *Normalizing Cancerous Tissue*

Silver's immune-supporting function is directly related to its ability to reverse the progression of cancer cells. And it was discovered over 30 years ago, by medical doctor Robert O. Becker. A highly credentialed clinician, professor and researcher, Dr. Becker taught medicine at Upstate Medical Center in Syracuse, New York; was Director of Orthopedic Surgery at the Veterans Administration Hospital, also in Syracuse; and is the respected author of two books related to electromedicine.

Dr. Becker began working with silver in 1971. He was trying to ascertain whether minute amounts of electrical current could cause rats to regenerate limbs, hoping that this would prove useful in healing broken bones in humans. Becker used silver for the electrodes, instead of other metals, because he believed that silver was not chemically reactive with the body's tissues, and that it would also transmit current more efficiently.

After numerous tests and hypotheses, Becker concluded that the silver ions produced by the current, rather than the current itself, were responsible for stimulating the normal growth of human tissue, as in the regeneration of bone and skin. The silver ions reduced healing time by 50%. A paper published by Becker and three colleagues in 1976, "Electrically Generated Silver Ions: Quantitative Effects on Bacterial and Mammalian Cells,"[171] described how, compared to an inferior *compound* (silver sulfadiazine), silver ions inhibited the

proliferation of bacteria between 10 to 100 times more effectively—and without any negative effects on normal mammalian cells. (I will discuss in more detail, shortly, the chemistry of CS and explain how it's different from silver compounds.)

But Becker discovered something even more startling about the benefits of silver: when injected, *it caused abnormal cancerous tissue to become normal again*. Dr. Becker wrote, years later:

We found that as human fibroblast cells (which are common throughout the body) were exposed to the electrically generated silver ions, they dedifferentiated. They were then able to multiply at a great rate, producing large numbers of primitive, embryonic cells in the wound even in patients over 50 years of age. These "uncommitted" cells were then able to differentiate into whatever cell types were needed to heal the wound. *So what we*

## Traditional and Unique Uses for Therapeutic Silver Solution

*Because silver inhibits the growth of bacteria, viruses, and fungi, it will keep items fresh and sanitized, and prevent spoilage and germ growth.*

***Food and Drink:***

- Add to water when traveling or camping.
- Add to foods when canning, preserving or bottling.
- Rinse fruit and vegetables before storing or using.
- Spray on top of opened jam, jelly, and condiment containers and inside lids before replacing.
- Put in cooking water.

***Household, including Kitchen:***

- Spray on cutting boards, kitchen sponges, and pans that the dogs licked.
- Spray refrigerator, freezer and food storage bin interiors.
- Add to swamp cooler water.
- Add to water based paints, wallpaper paste, dishwater, cleaning and mopping solutions.
- Treat shower stall, toilet seat, bathtub, tile floors, sinks, urinals, and shower mats.
- Pour into Jacuzzis and hot tubs.
- Spray air conditioner filters after cleaning, and air ducts and vents.
- Add to laundry final rinse water.
- Treat pools, fountains, humidifiers, dishwashers, and re-circulating cooling tower water.
- Wipe telephones, pipe stems, headphones, hearing aids, eyeglass frames, hairbrushes, combs, doorknobs.

***Personal Care:***

- Spray on abrasions, acne, burns, cuts, rashes, sunburn and wounds.
- Sterilize toothbrushes, surgical instruments and shaver.
- Use as mouthwash, add to shampoo, and use as scalp rinse.
- Spray in shoes, between toes, and between legs.
- Soak dentures, and douche and enema attachments.
- Add to bath water, gargle, douches, colon irrigation, and nasal spray and dental hygiene instrument solutions.
- After bathing, spray on body.
- Spray or wash pillowcases, sheets, towels and bedclothes of people who are ill.

***Pets and Plants:***

- Mix in pet water, or give to pets instead of water.
- Put in birdbath.
- Spray pet bedding and let dry.
- Add to animal shampoo.
- Spray plant foliage.
- Put in vases of cut flowers.

—adapted from Robert C. Beck, "A Few Unique, Plus Traditional, Uses For Silver Colloid," 1998

> *were in fact doing was turning on regeneration in human tissues. . . .*
>
> This circuitous pathway led us back to one of our original aims, the control of cancer growth. If the electrically generated silver ion dedifferentiated normal human fibroblast cells, would it also dedifferentiate human cancer cells? . . . We did find that some human cancer cells in culture appeared to dedifferentiate when exposed to these silver ions. . . .
>
> It is important to realize that this is not simply an electrical effect, but the result of the *combined action of the electrical voltage and the electrically generated silver ions*. [emphasis added] [172]

Most laypeople and even doctors have not heard of Dr. Becker. As his experiments and discoveries became more promising and public, funding for his research was abruptly withdrawn.

In addition to being ingested and applied externally in poultices, CS can be injected intra-muscularly or intravenously. Health practitioners generally add a very pure silver solution to sterile physiological saline, or to Ringer's Solution that contains 9,000 ppm sodium chloride. The late Bob Beck reported that tumors and polyps shrink when CS is injected directly into them.

### *Contraindications*

If made and used properly, colloidal silver has no negative effects on humans, animals, or plants. However, very high amounts of CS use up the body's store of selenium, similar to how an oversupply of some minerals use up other minerals. Therefore, take extra selenium. Selenium is most abundant in Brazil nuts and meats (though the amount of selenium in the soil determines how much of the mineral will be in plants, and in the animals who eat the plants).

As already mentioned, if CS is taken on an empty stomach, it will travel straight to the intestines. This is helpful if you have food poisoning or dysentery. But what if you don't? How might CS affect the *beneficial* intestinal flora? Sources differ as to whether CS destroys beneficial flora or not. Many CS users do not experience digestive upset, and a few do. You can always re-establish the intestinal flora population by eating yogurt or taking flora supplements. Again, if you are drinking CS when there's food in your stomach, the chances that you will de-populate your intestinal flora are slim. (Septic tanks, which house digestive waste, utilize friendly flora to break down the fecal material. So, if your home uses a septic system, don't pour CS down the sink or toilet.)

Almost everyone can use silver preparations, except of course those with an allergy to silver. *Do not use CS if you are allergic to silver.* Silver allergies are rare, but for those who are allergic, reactions can be severe. As a precaution, put a few drops of CS on your tongue and wait for an hour. If there is no discernible reaction, try again with ½ teaspoon or so, held in the mouth for a few minutes before swallowing. If you are indeed allergic, your response will be rapid and obvious. (Many people who are allergic to ingested substances find that the pulse begins to race.) Significantly, records of allergy to silver focus on silver jewelry. It is not the silver to which people react, but rather, the nickel that's included in the mix of metals to make the naturally soft silver harder and more durable. An allergy to nickel-containing silver jewelry will manifest in red skin that burns and itches.

An allergic response should not be confused with symptoms of die-off, also known as a *Herxheimer* reaction. This response is named after Doctors Karl and Jarisch Herxheimer, two physician brothers who identified it near the end of the 19th century. They observed that due to an overload of toxic waste from dead and dying pathogens, symptoms often worsened before people began to feel better. Large amount of CS can be so efficient at killing pathogens, that sometimes the body is a bit overloaded. Cleansing reactions typically resemble the flu, although many different symptoms can manifest from waste materials that the body is trying to expel. Toxic material is eliminated in many ways: via the colon, lungs, sinuses and skin. Therefore, the symptoms can be as varied as diarrhea, excess mucous production and coughing, post-nasal drip and stuffiness, and very itchy rashes. Keep in mind that if toxins are emerging through the skin, they are circulating in the blood too; and if toxins are that plentiful in the bloodstream, they might be putting an extra strain on the liver and kidneys. Since many people who are ill already have a weak liver and/or kidneys, it seems wise to proceed slowly. (This is good advice when you are doing any detoxification program.)

A cleansing reaction can feel quite uncomfortable. It can even feel scary to those who are not used to detoxification programs and don't understand how to interpret the symptoms they feel when the body is expelling toxic wastes. If this occurs, simply reduce or temporarily stop the CS until the healing crisis is over, and then begin taking CS again, but in smaller amounts. If you are feeling weak before you start, begin with a minuscule amount—¼ teaspoon is plenty!—and slowly increase the amount according to your tolerance. Carefully monitor your responses, and reduce or stop taking CS entirely if necessary. I remember that when I began taking CS, all I could manage at one

time was ½ teaspoon in 8 ounces of water, no more than three times a day. Now I can drink an entire glass of pure CS at a time.

### *Making Colloidal Silver, and Particle Size*

CS is a nearly tasteless, virtually clear fluid. It's made by passing a modest electric current through two parallel wires of at least 99.9% pure silver, which are parallel and partially immersed in distilled water. This process yields a concentration of silver from 5 ppm to 15 ppm.

A number of companies sell reasonably-priced, good quality CS generators (see Resource Appendix). There are also plans on the Internet showing how to make your own generator for about $10 in parts. Fancier manufactured generators come with polarity switches, meters for measuring the strength of the solution, automatic stirrers, and other features.

To make safe, effective and stable colloidal silver, at least 99.9% pure (*not* sterling) silver must be used. Common silver alloys such as sterling are allowed to contain large proportions of nickel, copper and other elements; these can be toxic if ingested. Also, distilled water must be used. Spring, tap, well, filtered, or other common forms of drinking water contain dissolved minerals and other unknown impurities. These impurities are unwanted not only because they might contaminate the product, but because they add excess electrical charge that speeds up the process too quickly and creates silver particles that are too large to be ingested.

For the same reasons, never add salt or baking soda to the water when making CS! These items produce an inferior form of silver solution that may cause one's skin to turn gray. I will discuss this in detail shortly. If you want to make CS more quickly, use some already-made CS as a "starter," much as one adds a bit of already-made yogurt to milk to accelerate the fermentation process. Or, heat the water in a glass or ceramic pot. Heat makes the water more conductive, and will thus speed the CS-making process.

A safe and effective silver preparation will contain particles less than .015 microns in diameter, as well as silver atoms and ions with diameters as small as .230 nanometers. Both the particulate and ionic fractions contribute to its effectiveness, are readily absorbed and transported throughout the body, and are safely excreted by the eliminative organs.

The term *colloidal silver* has been used by many different researchers, vendors and users to refer to a number of different medicinal preparations that feature some form of silver, suspended or dissolved in a liquid (usually distilled water). One authority on colloidal silver explains the meanings of various terms:

> The word "colloidal" refers to a condition where, in this case, a solid particle is *suspended* in a liquid (silver in water). The solid particles are too large to be considered *dissolved*, but are too small to be filtered out. This colloidal condition is most easily detected by what is called the "Tyndall effect," where a narrow beam of light is shined through the liquid to produce a cone shaped dispersion of the light. The particles so illuminated also exhibit a random, zig-zag activity called "Brownian motion" when observed under a microscope. When something is completely dissolved, both the Brownian and Tyndall effects disappear.
>
> The word "ionic" refers to a condition where a particle has an electric charge. In the case of "electro-colloidal" silver, this electric charge is *always* positive. Silver will not form a negatively charged ion. So, the truth is that electro-colloidal silver is *both* colloidal and ionic. It is considered colloidal because of the particle *size* and it is considered ionic because of the particle *charge*. In fact, most of the biological studies suggest it is colloidal silver's ionic characteristics that make it such a good germicide. It is also interesting to note that the old chemistry books make no distinction between the colloidal and ionic states of the electro-colloidal metals.[173]

The CS community agrees that a more accurate name for "colloidal silver" is *electrolytically isolated silver* (EIS), since technically, colloidal silver consists of ions that are miniscule silver particles. However, since "colloidal silver" is used generically by the majority of users all over the world, I will use the same term. Please note that a silver fluid made by the EIS process is *very different* from mild silver protein, a product made by chemically combining silver with proteins or other additives. This will be explored more fully in a moment.

Marshall Dudley, an expert on the chemistry of colloidal silver, points out that both ionic and particulate (larger-particle, or colloidal) silver kill pathogens. There are some differences between them, however.

> Ionic promotes healing and prevents scar tissue by allowing injured cells to revert to stem cells. Colloidal helps prevent argyria [a blue-gray discoloration of the skin] by providing seeds for the silver compounds that are eventually made in the body from ionic, something to plate out on. Best

is a combination of them both, with about 10% to 20% being colloidal.

Smaller particles affect viruses better than larger ones. Lower ppm EIS tends to have smaller particles. Higher ppm EIS can have a little hydrogen peroxide added to it to make the particles smaller, and thus be even more effective.[174]

### *Argyria and CS Toxicity Propaganda*

Silver itself has been shown to be harmless to normal human tissue. *No toxic levels are known for properly made colloidal silver.* As the *Journal of Burn Care Rehabilitation* reminds us, any possible toxicity results from the salts or complexes that are used to *deliver* the silver.[175] This is why using pure silver is the ideal approach to avoid local toxicity.

Despite the nontoxic nature of CS, this doesn't stop the pharmaceutical industry—and its numerous allies, including the FDA—from circulating misinformation about CS. This acts as a strong deterrent to people from making and using this inexpensive and effective ingredient.

The only known side effect of exposure to large amounts of silver metal or its compounds is a purely cosmetic condition known as argyria, a blue-gray discoloration either of the skin or of the conjunctiva of the eye (where it is called argyosis). Although cosmetically upsetting, there is no tissue damage or interference with any metabolic function.

Argyria occurs when large amounts of silver are ingested or absorbed over a long enough period of time so that the body's natural ability to excrete the metal through the urine and feces is overwhelmed. Particles of the metal and its salts are deposited in the skin and other tissues, forming photosensitive compounds that darken upon exposure to bright sunlight.

Argyria is quite rare. Most recorded cases are the result of occupational exposure and the use of doctor-prescribed high concentration silver salts during the early 20th century. The only other modern cases involve high concentration silver salt solutions or other compounds. There are a handful of reports of argyria occurring in Caucasians, but no known cases among other races.

Argyria is thought by mainstream clinicians to be irreversible, but current work by some experimenters has shown positive results for reducing or eliminating the discoloration through detoxification and chelation therapies.

Recent pseudo-scientific articles loudly proclaim this one potential "side" effect (just one, compared to toxic drugs!), but in every single one of these "scare" pieces, the authors fail to disclose one or more pieces of vital information:

- Most of the reported cases of argyria occurred in the 1920s and 1930s and involved prescription pharmaceutical products.
- The technology used in early colloidal products was very crude, resulting in very large particles, high concentrations, and large doses of silver.
- Most early preparations were concentrated silver *compounds,* again resulting in very large doses of silver. Some of the more common silver compounds are silver nitrate, silver sulfide, silver chloride, silver sulfadiazine, and various silver proteins.
- Silver compounds have only a *potential* to cause skin discoloration; they usually did not cause discoloration.
- In order for skin discoloration to take place, the product has to be used faithfully every day over a long period of time (two years or more), and the amount taken must be substantial.
- The specific type of product used, its method of manufacture, and/or quantities consumed are not mentioned. Also concealed are obvious flaws in the product's quality and manner of use, as well as the differences between products that cause argyria and properly made CS.

Three widely publicized cases in the US illustrate the above. The first case involves a woman, now in her sixties, who was prescribed nose drops at age 11 for allergies. By age 14, she had turned markedly gray. She cannot identify the exact medicine or the quantities she used. Nonetheless, she has become a vocal opponent of all forms of silver. Although she presents a great deal of solid information on argyria, none of the cases reported, even from the modern era, involve low-concentration electrolytically produced CS.

In the second case, a 2002 US Senate candidate from the state of Montana developed a slight bluish discoloration that was visible on his fair skin under certain lighting. This discoloration came from his homemade so-called colloidal silver. It was not widely publicized that he made his brew with tap water, brewed his batches for one hour until they looked like coffee, and drank 8 ounces a day for two years.

The third incident concerned a fair-skinned man whose skin had turned markedly blue after many years of ingesting, and putting on his skin, a homemade silver solution he had created using salt. In 2007, major US news networks interviewed Paul Karason about how he had adapted to life as a blue-skinned man, as he was not always accepted by others.

## How to Reverse Argyria

Periodically, negative publicity emerges on the presumed dangers of colloidal silver—specifically, its ability to turn skin gray, a condition known as *argyria*. While argyria can and does occur, it is actually quite rare. The purveyors of the emotionally-laden, negative press focus on the shock value of argyria. They do not mention that except for the cosmetic aspect, argyria is harmless. They do not mention why some individuals can develop argyria. Nor do they mention that argyria can be reversed.

Excess silver is normally excreted from the system. By the time a silver color is visible in the skin, the buildup of silver in the body is quite extensive and has occurred over time. *The development of argyria depends on the type of silver that's ingested*. Colloidal silver, which is not bound to other elements, is easily excreted from the system. But silver that's bound to other elements (such as mild silver protein or silver salts) is much more difficult to excrete. Also, people with a slower metabolism are more susceptible to argyria because they do not eliminate silver as quickly as their faster-metabolism counterparts. If thyroid-lowering foods (such as soy, or raw goitrogenous vegetables), or any drugs (such as the antibiotic doxycycline) are taken, one's metabolism will be lowered—thus making one more susceptible to accumulating silver in the body.

One very important piece of information on how to reverse argyria comes from the US Environmental Protection Agency. People with low levels of selenium and Vitamin E may have an increased risk of argyria because both nutrients act as *chelators*. That is, they bind to both heavy metals and also silver (which is a *transitional* or *noble* metal), thus escorting the unwanted elements out of the system.

*Silver can be removed from the tissues*. The following slow, but effective, protocol is adapted from Dr. Schauss, medical doctor Hans Gruenn, and Mark Metcalf, who for many years has helped thousands of people become more educated and empowered by writing about the benefits of colloidal silver.

To reverse the effects of argyria, take the following every morning with one quart (one liter) of water.

- 200 mcg of yeast-free selenium (safe to take on an ongoing basis).
- Vitamin E, 100% mixed natural tocopherols (d-alpha, beta, delta and gamma tocopherols). People over 50 years old who may be at risk of stroke should take 1,000 IU. Those under 50 years old who are not at risk of stroke may take 2,000 IU per day. Since high doses of vitamin E thins the blood, check with your doctor. This supplement may be contraindicated for people on medication to thicken the blood, hemophiliacs, and other high-risk individuals.
- 2 teaspoons organic MSM (sulfur, or MSM, also binds with silver and helps pull it from the body).
- 4,000 mg (4 grams) of vitamin C per day, in 1000-mg (1-gram) doses each.
- 1 high-potency Vitamin B-complex tablet, 100 mg.
- 1 teaspoon kelp powder. (You might also be able to substitute ¼ to 1 teaspoon of liquid colloidal iodine.)
- Liquid or ionic minerals, including trace minerals, 2 ounces or more a day. Minerals containing fulvic acid work better than a formula without fulvic acid.

In addition to the water you take with the above supplements, drink another ¾ of a gallon (6 quarts or 6 liters) of water a day.

—adapted from www.silvermedicine.org/forum/viewtopic.php?t=13 and www.silverprotects.com/argyria.html

What began as a human interest story on tolerance quickly turned into a review of the presumed dangers of colloidal silver, since that's what had caused Mr. Karason's skin discoloration. As of this writing, it's unclear whether Karason will make future batches of CS differently, or avail himself of help that has been offered to him by various individuals and companies involved with CS.

The mainstream media usually prefers to present sensationalized stories about holistic technologies instead of seriously investigating them. I have never seen TV report the findings of Dr. Samuel Etris, a senior consultant at the Silver Institute, who states that there has never been any allergenic, toxic or carcinogenic reactions to CS. It's also doubtful that TV viewers are aware of the World Health Organization's upper limit recommendations for silver:

> It is unnecessary to recommend a health-based guideline value for [colloidal silver and other substances in the same category] . . . because they are not hazardous to human health at concentrations normally found in drinking-water.[176]

The levels of colloidal silver that are drunk for therapeutic purposes are somewhat higher than those found in drinking water. So, for the purposes of our discussion about argyria, *how much* silver are we talking about in order for it to be a toxic load?

Alexander G. Schauss, PhD, is a former professor at John Hopkins University, and the director of the *International Journal of Biosocial Research* at Life Sciences American Institute for Biosocial Research in Tacoma, Washington. An innovative researcher and expert on the effects of silver, Dr. Schauss explains in detail how and why the argyria scare became so widespread.

> Most cases of argyria reported in the medical literature over the last 100 years involved chronic intravenous or intramuscular use of the silver preparations, most often involving a silver drug prescribed by physicians which in most cases contained silver nitrate. Other cases of argyria reported in the medical literature involve application of silver preparations used for many months or years in the treatment of the eye or vagina for certain diseases. We could not locate a single case of orally consumed colloidal silver manufactured in the last 25 years causing argyria in our review of the literature. This is probably due to the low levels of silver contained in such preparations, since only very small amounts of silver are needed for its antiseptic effect. Humans consume approximately 100 micrograms of silver every day in the diet. Additional amounts within this range would be considered safe by all reasonable estimates, especially if the amount needed to develop argyria would be equivalent of 380,000 micrograms (or 3.8 grams) of silver a day.[177]

To summarize, argyria occurs with *im*properly made colloidal silver—such as when spring or tap water is used, or if salt or other impurities are added to the mixture when the silver is being made—resulting in high concentrations and large doses. All remaining cases are not due to colloidal silver at all, but due to occupational exposure and other kinds of silver preparations, composed of silver salt solutions and silver proteins. *In the unlikely event that your skin does become discolored, however, you can reverse the discoloration.* See Sidebar, "How to Reverse Argyria."

Well made, low concentration colloidal silver has yet to cause a single case of argyria. The body excretes the metal as fast as it is absorbed assuring that critical quantities of metal will not accumulate within a lifetime.

*Properly made colloidal silver does not contain flakes or turn dark*. If it does, particles will be visible in the solution, and will settle over time. Do not drink this liquid; the particles are too large to be of therapeutic value. You could try using it for external bathing, poultices and cleaning. However, there is no guarantee that it would work as well as smaller-particle CS, because the therapeutic value of the silver occurs from its tiny micron size.

### *Colloidal Silver Generators for Home Use*

In the United States, colloidal or electrically isolated (ionic) silver preparations between 5 and 15 ppm can be bought in the health food store, generally at the price of $20 for an ounce or two. This cost is excessive, considering that a seriously ill person will need to drink ½ to 1 quart or liter, or more, of CS each day until the condition clears. Mild silver protein (MSP), colloidal silver protein (CSP), and products containing various silver salts are not recommended. They are unsafe (since they promote, rather than deter, bacterial growth), and they are not readily used by the body.

High costs for silver therapy are unnecessary. All you need to make your own CS is a CS generator, a water distiller, several plastic bottles for storage, and an optional ppm meter. You can buy a basic CS generator with silver wire for about $50. Rather than purchasing distilled water in soft plastic containers (whose molecules leach into the water), you can buy a good quality water distiller for a little over $100. After your initial investment, the price of an entire liter of colloidal silver is pennies instead of hundreds of dollars. When you consider the effectiveness of CS as an anti-microbial agent, CS is one of the most cost-effective health products you can use.

There are different styles of colloidal silver generators on the market. All of them operate on the basic principle of sending electrical current through 99.9% silver electrodes to make the tiny silver particles and ions come off into the distilled water. The smaller CS generators are about the size of a cassette tape recorder. They have a simple on/off switch and usually, a light comes on when the silver has reached a certain concentration. If the user wants a higher concentration, the unit is turned off to reset the unit, and a second round of electricity brings the concentration up. If a higher concentration is wanted, the unit is again turned off, and a third round of current is introduced. Generally, such units can make about a gallon at a time.

Professional size CS generators are essential for clinical applications, where large numbers of people need a gallon or more of 12 to 15 ppm colloidal silver on a daily basis. The larger "industrial strength" generators come with their own container, and are also equipped with a mechanism for stirring the batch of CS as it is brewing. For larger

amounts, stirring is a good idea, since it ensures smaller silver particles.

Meters that measure the ppm can be used to monitor the concentration of CS batches. However, in a generator that has a built-in monitor, an external measuring device is unnecessary.

Whatever generator is used should be able to produce particles of at least 12 ppm. Although 5 ppm to 10 ppm (a popular concentration range) brings good results, experience suggests that the minimum concentration required for serious and chronic diseases is 12 ppm. Concentrations of more, such as 15 or 20 ppm, do not seem to be more effective than concentrations of 12 ppm.

### *Storing Colloidal Silver*

The following guidelines are not relevant for people who drink CS as soon as it is made. However, it is useful to know how to keep colloidal silver if large batches are made that will be stored.

- Colloidal silver is thought to store best at room temperature, although extremes in temperatures have not been observed to hurt it.
- Properly made colloidal silver does not seem to deteriorate when exposed to light, so setting it in the sun will probably not hurt it.
- You will know that the stored CS has become contaminated if it turns color such as dark gray or purple (clear and light yellow are fine), or if visible silver particles start to appear in the water or settle to the bottom. If this happens, the CS should be discarded. Visible silver particles, or a darker colored solution, indicates that fewer silver colloids or ions are suspended in the liquid—and the fluid will be less effective for killing pathogens.
- Preliminary research suggests that glass is not the best material for storing CS, because the silver may "plate out"—that is, break down into larger particles—onto the glass, thus lowering the concentration of silver in the liquid. Plastic is actually a better material for storage. The safe plastics are #5 PP, #2 HDPE, and #4 LDPE.

Incidentally, if CS is boiled, the increased agitation of the particles due to heat can cause them to clump together. Likewise, if frozen, the particles are forced to crowd into the unfrozen part, until they combine. Although this does not seem to do any harm, it's possible that the silver can precipitate out of the solution, so the benefits of CS would not be as pronounced. We do not have enough information at this time to know the complete effects of heating and freezing. However, some people do cook with CS, with the benefits apparently remaining intact (see below).

### *Therapeutic Applications and Amounts*

#### Internal Use

Since colloidal silver has almost no taste, it can simply be swallowed, or swished in the mouth for a few minutes to speed absorption into the bloodstream and reduce tooth decay. It can be used as a sinus wash or a nasal spray, and also substituted for cooking water without any loss of its therapeutic properties. It can also be put into drinking water to purify it.

Some people cook with colloidal silver, using the liquid instead of the water that ordinarily would go into soup, stew, batter, etc. One naturopath colleague attributes the robust health of his children to their effortless daily intake of silver from the moment they were born. Since the CS is homemade, the cost is minimal. In answer to the whether heating the silver causes it to precipitate out of solution, Mike Devour, a veteran maker and user of CS for many years, states: "If you use your low concentration CS (EIS) in cooking, you will at most be adding back a little of the trace amounts of silver that would have probably been in there if the ingredients had come from fertile soil."[178] Any salt added to the food will convert the ionic portion of the silver to silver chloride, as does stomach acid, but without causing harm.

Incidentally, I add alkaline minerals to my CS *after* making it. Distilled water tends to be acidic, and thus makes the silver solution acidic. For many people, drinking acidic water is not beneficial. Willard Water and other alkalizing preparations appear to alkalize the fluid without destabilizing the silver. See the **Water** section at the beginning of this chapter for more information on distilled, alkaline, and Willard waters.

#### Inhalation Therapy

Colloidal silver has been successfully used in treating respiratory ailments when inhaled through a medical nebulizer. A nebulizer is compressor that delivers the CS in ultra-fine droplets of mist through a tube attached to a face mask or breathing apparatus. The nebulizer should produce droplets of 2 to 5 microns in size. The effectiveness of the silver is often improved with the addition of small amounts of essential oils (lemon, oregano, tea tree, lavender); methylsulphonylmethane (more commonly known as MSM); or dimethyl sulfoxide (more commonly known as DMSO).

#### External Use

Colloidal silver is simple to use. It can be used to clean and sterilize wounds. It can substitute for bath water,

or be used as a poultice. Simply saturate a bandage or clean cloth and apply it to the skin, making sure to keep it wet. Healing will be faster, and pain and scarring will be reduced.

For virulent or life-threatening diseases such as malaria or HIV, the *concentration* or *strength* of CS should be no less than 12 ppm. Although concentrations of 12 to 25 ppm can be made, it is not really necessary to have higher strength.

Since colloidal silver is not harmful in any way, one cannot "overdose" on it. The amount you take should be determined by observed effect and the level of discomfort caused by the Herx symptoms. A half-liter per day, divided into several servings throughout the day, is a reasonable amount. However, those with cancer, Lyme, or HIV/AIDS may benefit from drinking at least one gallon or more daily (again, divided up into smaller amounts throughout the day).

### *Summary*

Colloidal silver:

- Causes all bacteria and many other single-celled pathogens to die, almost instantaneously, by disabling the enzyme they need for respiration.
- Does not create microbial resistance due to the mechanism by which it operates.
- Does not affect microbes in solids, but does affect single-celled microorganisms in a fluid medium (bloodstream, water, etc.).
- Appears to have an anti-inflammatory effect when rubbed in wounds.
- May be an essential nutrient, as it appears to encourage proper immune response and the regeneration of healthy cells and tissues.
- Is painless when being applied or drunk.
- Can be drunk, added to food and drink, inhaled through the nose, put into a nebulizer (a machine that turns a fluid into a fine mist and sprays it into the nose), bathed in, and applied to the skin.
- Is easy to make, and requires simple equipment to produce it.
- Is completely safe and never poisonous in any amount, as long as it is properly made.
- That is not properly made and is comprised of concentrated silver compounds has only side effect (which can occur only if the fluid is taken in large quantities over a very long period): a blue-gray discoloration of the skin, *which can be reversed*.
- Tastes almost like pure water, so is very easy to take, even for small children and picky eaters.
- Is effective for serious illness such as HIV, AIDS, cancer, and malaria at concentrations of 12 ppm.
- Does not need to be more than 12 ppm, but may go up to 25 ppm.
- Appears to increase immune function in mammals, independent of its microbe-disabling properties.

### How to Remove Skunk Odor from a Dog

Skunks don't like to be bothered. Anytime a dog has been sniffing around a skunk, the humans know—because of a wretched smell that won't go away. An old folk remedy suggests bathing the dog in tomato juice. But this only removes some of the odor.

The following recipe, developed by materials engineer Paul Krebaum from Lisle, Ohio, has been found to be highly effective at removing oily sulfur compounds. It works by *oxidizing*, or adding oxygen to, the compounds. In case you have a smelly dog that has encountered a skunk—or if there are other odors you want to tackle—I thought this formula was too good not to share; so here it is. *Make sure to mix these ingredients in a large open container, as the mixture foams profusely and might explode if left inside a closed container.*

- 1 quart 3% food grade hydrogen peroxide
- ¼ cup baking soda (sodium bicarbonate)
- 1 teaspoon of pure liquid soap, such as Dr. Bronner's unscented

Work this mixture into the fur, avoiding the eyes. (Although the formula is safe, it will sting if it gets into the eyes.) When you no longer smell the noxious odor, the solution has done its work and you can rinse off. If this is a longstanding odor—say from an old skunk attack—you may need to leave the solution on longer, or apply it a second time.

With the media's constant publicizing of bird flu and other assorted vague, terrifying infections, it seems unwise not to have your own colloidal silver making apparatus.

## COLON CLEANSING

People reared in so-called "polite" society—particularly those unfamiliar with holistic health—sometimes laugh uneasily when they hear about cleaning their colon. Our Victorian influenced culture teaches us to become embarrassed about toilet functions. But colon cleansing certainly brings this taboo subject to the foreground! Although the lowest part of the digestive tract is the colon (also known as the large intestine or bowel), for many people, the phrase "colon cleansing" refers to the entire digestive tract.

Respect for a healthy colon partly stems from the Natural Hygiene movement, which reached its apex in early 20th century Europe, particularly in Germany. Natural Hygiene proponents advocated what were considered revolutionary practices at the time: fresh, raw foods; adequate exercise and sleep; a positive emotional state; moderation in outlook, word and deed; and plenty of time outdoors in the sunshine—often nude, to allow the entire skin surface to absorb the sun's healing rays. In retrospect, it seems strange that all this common sense advice was thought radical.

From a Natural Hygiene perspective, one major component of efficient digestion involved a clean colon. Although we are not machines, in this case it might help to analogize the human body to a car. If the car's fuel injection system is dirty, the gasoline won't reach the engine evenly, the engine will misfire, the fuel won't burn completely, and then the car won't run smoothly and its mileage will be lower. Other parts of the car will also undergo more wear and tear due to the inefficient burning of fuel. Results will likewise be poor if the oil is not changed or the spark plugs aren't cleaned. Similarly, if our food pathways or elimination system are clogged, the digestion and absorption of food will be incomplete. Then, the entire body will suffer from low energy, impaired in its ability to rebuild tissue.

Digestion is a combination of mechanical and chemical action on food. Food is pushed and squeezed along the digestive tract through a series of rhythmic, wavelike muscular contractions called *peristalsis*. The enzymes and digestive juices that help to break down the food are produced by various organs and glands along the route. After our food is chewed, it enters the stomach, which mashes it into liquids and fine particles. Then the food reaches the small intestine, where the majority of the nutrients are absorbed into the cardiovascular and lymphatic systems through the intestinal lining (though some of the liquid does pass through the large intestine.) Finally, the remaining, unusable material is pushed along into the colon and out the rectum as fecal matter.

Breakfast eaten at 8:00 a.m. is ready to be evacuated between eight and eleven hours later that same day (probably if the diet consists chiefly of raw fruits and vegetables), or first thing the following morning (if the meals contain animal products). But in many people, the peristaltic activity is uneven or sluggish, which causes the food to move too slowly. In many cases, the part of the digestive system that malfunctions the most is the colon. There are many reasons for this, but one major factor is the many little nooks and crannies that comprise the colon, called pockets. These pockets can easily become filled with waste, and with mucous produced by the body in response to that waste. The colon not only can become distended, but the breakdown of that waste produces even more poisons that then leak out of the colon into the lymph tissue and the blood. This encourages parasites, protozoa and worms to thrive in the pockets of the colon and the mucous membranes that line both the large and small intestines. It can be hard to get rid of these parasites, especially if layers of waste are tightly impacted and adhere to the colon wall.

There is always impacted junk on the walls of a dirty colon. This material narrows the passage through which waste moves. When more fecal material is forced through a smaller opening, constipation develops, even if new waste is not impacted. This overly narrow passageway can cause some of the blood vessels lining the colon to break, a condition called hemorrhoids when it occurs at the anal opening. Constipation also tends to clog the ileocecal valve, the one-way shutter between the small intestine and colon designed to prevent waste from backsliding from the colon into the small intestine. Usually, when this clog occurs, the valve is stuck open, causing systemic toxicity from what is now poison.

There are other ways in which our digestive apparatus can malfunction. If the stomach does not produce enough hydrochloric acid, proteins are not completely digested, and leave the small intestine as unassimilated large particles that circulate through the bloodstream, irritating joints and soft tissue (arthritis), and causing other symptoms that we often refer to as allergies. If the small intestine does not receive enough pancreatic juice from the pancreas to digest starches, the food sits there rotting, causing bloating and flatulence. If the colon is riddled with *Candida albicans*, long tendrils of the fungus invariably perforate the intestinal lining, which allows toxic waste material into the bloodstream (this is known as *leaky gut syndrome*).

Sugar is the food of choice for the fungi and yeasts that live in the intestines. When the sugar-fed fungi proliferate, they overpower the friendly intestinal flora, and our ability to assimilate food dwindles. The more the digestive system is stressed, the more unbalanced the gut ecology tends to be. The bacteria in the gut should be at least 85% beneficial. For more information, see Sidebar, "The Importance of Friendly Flora."

## The Importance of Friendly Flora

To paraphrase a line from a popular song, no one is an island. You may think that you are the only consciousness inhabiting your body, but that's not true. You have at least one hundred trillion bacteria in your gut, and 400 different kinds. At least, you should. And they need to be the right kind of tenants: *friendly flora*.

"Friendly flora" may sound like the girl next door, but I am talking about even more eminent neighbors. Also known as *beneficial bacteria*—or *probiotics* (as opposed to their opposite, antibiotics)—intestinal flora inhabit the small intestine of all mammals in a mutually beneficial symbiotic relationship. Unlike the harmful kind of bacteria we're accustomed to hearing about, and that rifing is designed to eliminate, these critters are indispensable. True, they do nibble on some of the food we eat (Jerusalem artichoke is one of their favorite meals). But the flora give much more than they receive. They break apart our food, so we digest it better. As a by-product of their own digestion, they release vital enzymes and other nutrients, including B12 (not available in many foods) and Vitamin K (which helps clot blood and build strong bones). They also have a positive effect on the metabolism, including ways in which the body metabolizes bile. The introduction of various strains of friendly flora changes the dynamics, and even entire populations, of intestinal microbes. Of course, different strains of probiotics produce different effects. Some flora amplify the (positive) effects of other gut bacteria.

Beneficial bacteria also boost the activity of various immune cells. Sometimes they even produce natural antibiotics as a byproduct of their own metabolism, as with *Streptococcus thermophilis*. Finally, friendly flora provide vital housecleaning services. They stimulate the production of fluid, which helps move waste out of the body. And they help keep the intestinal wall clean. Without the vital assistance of the friendly flora, all kinds of digestive disturbances might occur: bloating, gas, heartburn, diarrhea, constipation, even nausea and vomiting.

Some friendly inhabitants include *Lactobacillus acidophilus*, *bulgaricus*, *casei*, *reuteri*, *rhamnosus*, *plantarum*, *salivarius* and *sporogenes*; *Bifidobacterium bifidum*, *infantis* and *longum*; *Streptococcus faecium*; and *Lactococcus lactis*. The greater the numbers of friendly flora residing in our gut, the less room there will be for unfriendly guests, such as *Candida, E. coli, Clostridium* and *Proteus.* The expression, "That person has guts," really means something, as the gut plays an important role in determining a person's metabolic makeup. You may manifest different diseases, including diabetes and obesity, depending on which types of microbes are inhabiting your intestine. The unfriendly kind are linked to conditions you don't want, whereas the friendly kind heal.

Of the *un*friendly flora, which ones should you specifically avoid? The pleomorphic bacterium *Lactobacillus licheniformis* (also called *Bacillus licheniformis* or simply *B. licheniformis*), which resembles a bacterium reported in 19th century studies, has been isolated from canine mammary tumors by a contemporary researcher in the UK. Rife researcher Jeff Sutherland, PhD, and other scientists agree that *Bacillus licheniformis* morphs into the cancer virus. Incredibly, this bacterium can be found in some intestinal culture formulas on the market, and even in a few dog foods. A representative of one very popular company told me that while *Bacillus licheniformis* does not appear in the formula itself, it is used in "making" the formula. Even the residue of *B. licheniformis* does not seem safe, however.

Another potentially problematic probiotic bacterium is *Enterococcus* (aka *Streptococcus*) *faecalis,* linked to Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcus (PANDAS) in children. In *unhealthy* and *immune-compromised* persons, the bacterium—mistaken by the body for a more dangerous form of *Strep*—can trigger immune cells to attack the person's own brain tissue. This is why many PANDAS ailments range from Obsessive-Compulsive Disorder to Tourette's syndrome.

Get your flora from real food, if possible. Yogurt and kefir are good sources. For those who cannot eat dairy, some supplement companies provide intestinal cultures that are not milk-based. They are usually more expensive than the dairy-based ones because they're more difficult to grow.

If you ingest intestinal cultures just before bed, on a reasonably empty stomach, you will give the bacteria a chance to multiply during the night, uninterrupted in their reproductive escapades by the presence of food. If you administer the cultures rectally, with a small bulb syringe, put them in whey, and do it before going to bed when you can remain still, so the friendly bacteria will be absorbed during sleep.

If friendly flora ever decides to jump ship, we're in big trouble. Keep your gut hospitable to these bacteria at all times. You need them as much as they need you—possibly more.

A dirty colon affects other systems, too. The lymph vessels are designed to pick up toxins from the colon and process them so the body can remove the waste. Excess mucous in the colon can overwhelm the lymphatic channels, impairing the body's immune function. (See the **Exercise** section in this chapter for more details on the lymphatic system.) These conditions, and more, can occur anywhere in the digestive tract.

What clogs the digestive tract? The number one culprit is chemical-laden, fake food (discussed in depth earlier in this chapter). Refined grain is another. Stripped of its fiber, the pure starch sticks to itself—and also to the colon wall. (This attribute of white flour has spawned an entire craft industry of shellacked sculptures made from white bread.) Yet the bran and germ from whole grain fiber can cause many health problems (see earlier Insert, "Dangerous Grains").

This is why the best fiber to keep matter moving is from high-cellulose vegetables, especially leafy greens and stalks like lettuces, kale, spinach, chard and celery. Pectin-rich apples and other fruit (especially berries) also help. Wild rice (the seed of a North American marsh plant) works very well. If your colon isn't healed enough to accommodate raw fruits and vegetables, eat them cooked.

Colon health can also be maintained with herbs. Herbs used for the digestive tract are usually called "laxatives," but there are really different types. *True laxatives* or *purgative laxatives* (such as cascara sagrada, senna, buckthorne and rhubarb) induce peristalsis either directly or indirectly. They stimulate the colon nerve endings, or they promote the secretion of bile from the liver. Although excellent for emergencies, laxatives should not be used for longer than a year, as they can eventually tax the liver through constant over-stimulation, and even damage the colon nerves. *Stool softeners* (sometimes called *lubricating laxatives*), on the other hand—such as aloe vera and powdered slippery elm bark—can be used whenever necessary because in addition to emulsifying (making slippery) or softening the fecal material, they also soothe and heal the inflamed mucous membranes of the colon wall. Flax and psyllium seeds lubricate. By absorbing fluid and swelling to many times their size, they gently dislodge other material as they leave the intestine.

Other herbs used for the colon include white oak bark (to tightens the colon wall), black walnut and wormwood (to eliminate parasites), and fennel root and seeds (to relieve colic, gas, nausea, abdominal cramping, and mucous accumulations). Ginger root, which eliminates gas and nausea, produces excellent results and is safe enough to use during pregnancy. One fairly mild but effective combination is powdered psyllium seeds and bentonite, an edible food grade clay. The bentonite loosens old dried material from the colon walls, and with the hydrophilic (water-loving) psyllium to help push the toxic residue out, the colon becomes cleaner.

Some herbs, such as milk thistle, detoxify the liver. Among other functions, the liver breaks down toxic compounds into substances that are less toxic, and it secretes bile, a greenish fluid that emulsifies fats and encourages peristalsis. But when the liver is blocked or sluggish, bile flow is greatly reduced, causing constipation. A liver cleanse protocol can be found in Chapter 5.

A cleanse doesn't have to be harsh to be effective. To ensure that the herbs you use are suitable for your needs, consult a qualified herbalist. You may need to strengthen a particular organ or gland before embarking on an ambitious detoxification program.

To remove debris from the digestive tract and help restore normal peristaltic motility, practitioners sometimes recommend *colon irrigation*, also known as a *colonic*. A colonic is like an enema, except that it reaches higher into the colon. The subject lies on a table, wearing a loose gown open at the back. A trained professional, using special equipment, gently inserts, into the rectum, a tube attached to a water tank. When a valve is opened, water flows into the descending colon, across the transverse colon (horizontal at the belly button), and around through the ascending colon as much as comfort will allow. When the abdominal area gets too full, the water leaves through the tube, out through another attachment into the building's plumbing system. The combination of water flowing high in the colon, and certain cleansing herbs such as chlorophyll, mechanically dislodges waste. To help expedite the passing of waste, the colon therapist should massage the belly and the outside of the thighs. These areas contain reflex points for the colon, and thus stimulate peristaltic activity.

All of the books I have read on colon therapy mention that long strings of mucous, unbelievable lengths of once-impacted fecal material, and even whole worms are expelled by this method. Considering the prevalence of digestive disturbances—and the fact that there are reflex points across the entire colon corresponding to various bodily systems—it makes sense to pay attention to your colon. The late medical researcher Dr. Norman Walker describes how colds, the flu, backache, asthma, poor eyesight and hearing, prostate trouble, allergies, thyroid deficiency, and diabetes, as well as digestive disturbances, cleared up when his clients received colonics. Keep in mind, though, that not every colonic may produce such spectacular results.

If you can't find a qualified colon irrigation therapist, you can at least irrigate the lower bowel by giving yourself an enema. You'll need an enema bag and enema tube, which come in various sizes and lengths. Purified water

is used for the enema, although many colon therapists put other liquids into the water, such as wheatgrass juice and clean herbal tinctures. Organic coffee is sometimes used because the caffeine and other volatile oils are absorbed into and travel along a major blood vessel from the colon to the liver, stimulating the liver and gall bladder to release stored toxins. However, coffee enemas may not be a long-term protocol. According to Dr. Saul Pressman, they interfere with calcium metabolism, and may cause osteoporosis. Also, some people get very jittery from coffee enemas, so pay attention to your reactions. If you ozonated the water you use for an enema, make sure not to combine it with other ingredients.

Colon irrigation, and even the more mild self-administered enema, is not helpful for everyone, and in some cases may cause problems rather than help. Some people react negatively to having a tube placed into the rectum and having water circulating in the colon. They perceive this as invasive, especially if there is a history of sexual abuse, physical beatings or forced enemas. Be aware that colonics and enemas are meant to be a short-term remedy, to clean out sludge. Receiving colonics too often disables the body's peristaltic ability. When you do clean your colon, be sure to replenish both the friendly intestinal bacteria and the electrolytes that are flushed away with the water. Friendly flora and minerals play a key role in maintaining peristaltic activity and healthy digestion. While repairing your colon, you may have difficulty digesting raw foods, especially if the ileocecal valve tends to stay open. Do what's right for you. And consult a health practitioner.

## EXERCISE

### *Benefits of Exercise*

In the past, before high-rises, cars and elevators, humans walked and trotted and climbed. We didn't plop our bodies at desks for most of the day and ruin our eyes gazing at computers. Nor did we need to walk on stationary treadmills at the local gym or health club in order to meet our quota of exercise. These are indeed strange times in which to be alive.

Although not everyone lives in a city today, often even countryside dwellers don't get enough exercise. Diabetes or a pre-diabetic condition now affect over one-quarter of the population. And almost half the children living in the United States are overweight, many of them obese. What better time to begin an exercise program?

Exercise can help promote the following:

- Cardiovascular endurance—the ability of the heart to pump blood through the circulatory system.
- Muscular endurance—the ability of large muscle groups to exert force for extended periods of time.
- Muscular strength—a muscle's capacity to push or pull against an opposing force.

### Choosing the Correct Tempo When Working Out

Studies have shown that listening to music during exercise can improve results, both in terms of being a motivator (people exercise longer and more vigorously to music) and as a distraction from negatives like fatigue. But are certain songs more effective than others? . . .

Generally speaking, there is a science to [using] an effective exercise soundtrack, said Dr. Costas Karageorghis, an associate professor of sport psychology at Brunel University in England, who has studied the effects of music on physical performance for 20 years. . . . One of the most important elements, Dr. Karageorghis found, is a song's tempo, which should be between 120 and 140 beats per minute, or BPM. That pace coincides with the range of most commercial dance music, and many rock songs are near that range, which leads people to develop "an aesthetic appreciation for that tempo," he said. It also roughly corresponds to the average person's heart rate during a routine workout—say, 20 minutes on an elliptical trainer by a person who is more casual exerciser than fitness warrior. . . .

For a stroll walker going at a pace of around 3 miles an hour, a [good BPM] . . . track has a count of 115 to 118 BPM; for a power walker going 4.5 m.p.h. [miles per hour], the count is 137 to 139 BPM; while the BPM for a runner elevates to 147 to 160. . . .

Dr. [Oliver] Sacks is fond of swimming, and said the one-two-three cadence of his strokes often leads him to play a waltz in his mind. "Neurologically, it makes no difference if you're listening to music or imagining it," he said. "Vivid imagining activates motor parts."

—Steven Kurutz
"They're Playing My Song. Time to Work Out," *The New York Times*, January 10, 2008

- Flexibility—the range of movement of which a joint is capable.
- Improved body tissue composition—the ratio of fat to lean muscle and bone.
- Increased protection from infectious diseases and degeneration due to aging.

### *Aerobic and Anaerobic Exercise*

Exercise is classified into two types: *aerobic*, which utilizes large amounts of oxygen, and *anaerobic,* which does not.

Aerobic exercise involves large-muscle groups—typically involved in steady physical activity such as running, jogging, brisk walking, swimming, bicycling, skating, dancing, skiing and other sports—occuring over a long enough period of time that more air is taken into the lungs. During aerobic exercise, the heart functions more efficiently than when the person is resting, in order to provide the body with increased amounts of oxygen. The body is also more efficient at extracting and using the oxygen that it needs. Aerobic exercise increases levels of endorphins, cortisol and growth hormone, substances that increase pain tolerance and improve muscle tone. It also induces sweating, which excretes toxins through the skin. (Sweating can be augmented with a visit to a hot tub, steam room or sauna; see the section on **Sauna Therapy** later in this chapter.)

A word about swimming. In the US, most public swimming pools (and hot tubs) are cleaned with chlorine instead of ozone. In small amounts chlorine causes skin rashes and allergies; in larger amounts, it can be carcinogenic. Chlorine seeps directly into the bloodstream through the skin's pores, so swimming in a chlorinated pool is the equivalent of drinking gallons of chlorinated water. Thus, even though swimming is wonderful exercise, it can also be a health hazard.

Anaerobic exercise does not require large expenditures of oxygen. Stretching and weight lifting used to be considered anaerobic, but these classifications are no longer clear-cut. Weight lifting, for example, can *become* aerobic, especially if it's done with lighter weights and many steady repetitions.

### *Exercise and the Lymphatic System*

One important benefit of exercise is the easier movement of the toxin-laden *lymphocytes* (immune cells) of the *lymphatic system*. Most people are familiar with the cardiovascular or circulatory system, but less so with its lymph counterpart. The lymphatic system is a vast network of channels that run somewhat parallel to the blood vessels. I want to spend some time explaining how the lymph system works because these channels provide critical detoxification and immune support—and if they are not maintained properly, the entire body can malfunction.

The nourishment and waste collection processes of the body are intricately connected to each other. Whereas oxygen exchange occurs in the red blood cells of the cardio vascular system, waste collection occurs in the lymph capillaries, and both systems deal with nutrient exchange. First I will discuss the circulatory system, since they are the partners of the lymph network.

In the cardiovascular system, large arteries leave the heart on the left side, picking up (from both lungs) fresh oxygen carried by red blood cells. It is the oxygen that gives the arterial blood its bright red color. All other nutrients are carried by a thick viscous liquid called blood plasma. Blood plasma is clear, and is the medium in which red blood cells and other substances float.

As arteries become smaller, they eventually branch out into tiny capillaries. Capillaries reach every single cell in all the tissues to deliver oxygen to the body. When the capillaries arrive at the tissue sites, the red blood cells in the capillaries release the oxygen they were holding and pick up the carbon dioxide that's a normal byproduct of cell metabolism. At this point in the oxygen-carbon dioxide transfer, the arterial capillaries are called venous capillaries. However, note that we are dealing with the *same continuous capillary structure*.

Their job complete, the carbon dioxide-filled capillaries—which are now called veins as they become larger—return to the heart. It is carbon dioxide that gives the venous blood its dark red color. This concludes the discussion of how the blood travels.

There is one more piece pertinent to our discussion. Capillaries are so tiny, they can hold red blood cells only if the cells pass through single file. Once blood reaches a capillary, there is so little room—and such high pressure—in the capillary channel, that some of the thin plasma fluid is squeezed from the capillary. This nutrient-rich, watery fluid then bathes each cell, supplying the needed nutrients. The fluid squeezed from the blood plasma that surrounds each cell is now called *interstitial fluid*. After the cells extract their nutrition from the interstitial fluid, they dump, into this same fluid, the toxic waste products of their metabolism. This is the point at which the lymphatic system performs its valuable service of managing the waste materials from the body's tissues.

Unlike the blood capillaries, which by design do not allow particulate matter to enter, the lymph capillaries are *permeable*. The waste-filled interstitial fluid gravitates

Researchers have discovered that exercise helps not only people with heart disease and inflammatory illnesses; it can also help people with cancer. A team of researchers studied about 200 women with breast cancer who enrolled in a supervised 12-week exercise program in Scotland. Exercise included fast walking. Greater shoulder mobility and improved psychological profile, reported by the women, extended for six months after the end of the exercise regimen.

Researchers who reviewed 48 earlier studies found that postmenopausal women who exercised reduced their risk of breast cancer by up to 80%. For pre-menopausal women, exercise had a 20% protective effect.

—reported in the *British Medical Journal* (2007) 334: 484–5, and in *Epidemiology* (2007) 18: 137–157

to the nearest tiny lymph capillary, where it is now called *lymphatic fluid*. (It should be noted that the lymph vessels are only near the venous capillaries and veins, not the arterial capillaries and arteries.) The lymphatic fluid then travels through the lymph capillaries to larger and larger lymph vessels, eventually arriving at cleaning stations called *lymph nodes*.

The major lymph nodes are quite large. They are clustered in the back of the throat (where they are called *tonsils*), at the neck (where they are called *lymph glands* or simply *glands*), at the armpit, and in the groin area between the legs. In these lymph nodes, the lymphatic fluid is cleaned, and the toxins are neutralized by the white immune lymphocytes and other immune cells. Afterwards, the lymph fluid seeps through the lymph channels back into the bloodstream. (Any parasites, bacteria, fungi, viruses, and miscellaneous impurities remain in the blood, where the white immune blood cells called *leukocytes* gobble them up.)

Unlike the blood, which is pushed through the body by the heart, the lymphatic fluid has no comparable pump. *A Massage Therapist's Guide to Pathology* states:

> The immune system is unique. . . . It is a nebulous, incredibly complex collection of cells and chemicals stationed all over the body whose coordinated function is . . . fundamental to keep[ing] the whole organism alive.
>
> If everything is working well, fluid levels in the tissues should be constant, but not stagnant. The amount of fluid being squeezed *out* of circulatory capillaries should be almost equal to the amount being drawn *into* lymphatic capillaries. . . . But a backup anywhere in the system could result in major changes in fluid balance. If lymph vessels or nodes are blocked, for instance, the body won't stop producing interstitial fluid. This fluid will accumulate between tissue cells. It will cause swelling and quickly become a hindrance to diffusion and other chemical reactions. . . . This is the problem with many of the diseases of the lymph system. . . .[179]

Lymph tissue is extremely dense. It moves when subjected to mechanical pressure, to alternating heat and cold (which expands and contracts the tissues), and to deep breathing (which moves lymph fluid in the diaphragm area). The mechanical pressure moving the lymph can be either externally applied, as with massage, or generated from within, as when exercising. "When muscle fibers squeeze down around lymphatic vessels," write the authors of *A Massage Therapist's Guide to Pathology*, "they push [lymphatic] fluid through just like a hand squeezes around a tube of toothpaste."[180] This helps explain why exercise is so important! When we don't move, we contribute to our own autointoxication, and eventually illness. Once the lymph vessels become too clogged, you may detect a strong odor from the feet, armpits, and the rest of the body. You may also experience swollen glands, low energy, foggy thinking, and perhaps depression.

### *Exercise and Anti-Inflammatory Effects*

Exercise fulfills another important function. Exercise expert and naturopath Jade Teta writes:

> Properly performed exercise releases signaling molecules that stimulate a unique healing response that couples both inflammatory and anti-inflammatory mechanisms to repair, regenerate, and grow stronger tissue. . . . High-intensity, short-duration movement that is tailored to the individual, uses short rest periods, and engages the whole body may be the chief means of attaining anti-inflammatory effects from exercise.
>
> As muscle [voluntarily] contracts, the genes controlling IL-6 [Interleukin-6, a type of *myokine* or protein secreted by muscles] are turned on. . . . When released from muscle [IL-6 is produced elsewhere in the body as well as in the muscles], and in high concentrations without [certain other biochemicals], IL-6 is anti-inflammatory.[181]

Exercise also protects against illness, including diabetes, cardiovascular diseases, dementia, depression, and even

cancer. This points to the role of inflammation in these conditions. Fibromyalgia—inflammation and chronic pain in the muscles—benefits from *light* exercise. Some doctors point out that people with fibromyalgia, whose pain and fatigue may discourage them from exercising at all, are among those who need it the most.

### *Exercise and Anti-Aging*

A recent study from King's College in London, England, showed genetic differences between people who exercise regularly and those who don't. The difference is in the *telomeres*, proteins at the ends of chromosomes that can be analogized to the plastic tips at the ends of shoelaces. Presumably inert in themselves, telomeres prevent the exposed ends of genetic material from sticking to nearby cells, thus helping to protect the DNA from destruction. Every time a cell divides to create another cell, a bit of telomere tip is removed and the total amount of telomere material becomes a little less. After the protective telomere tip wears away—leaving a DNA "frayed shoelace"—the cell can no longer replenish itself.

The white blood cell telomeres in people who exercise regularly are longer than in those who don't exercise. (Similarly, the telomere tips of people who feel stressed are almost 50% shorter than in their less stressed counterparts. In addition, the biological age of stressed subjects averages 9 to 17 years older than in their calmer counterparts of the same chronological age.)

The longer the telomeres, the more time it will take for them to deteriorate. This means that the body's cells live longer. Thus, the erosion of telomere material indicates aging. Exercise prolongs the survival of the telomeres—and hence the cells, and hence the lifespan of the person.

### *When and How Much*

Moderate exercise is defined as causing a slight increase in breathing and/or heart rate. This includes brisk walking and bicycling, and tasks such as gardening and vacuuming. Vigorous exercise is defined as causing a large increase in breathing and/or heart rate. This includes aerobics, running and heavy manual labor. However, it has recently been discovered that interspersing numerous weight training periods with a 60-second burst of cardiovascular activity causes the greatest fat reduction and number of calories burned.

Any movement of large-muscle groups helps the cells excrete waste material, increases heart and breathing rates, and improves oxygen utilization. However, brisk activity may be more beneficial for reducing the incidence of cardiovascular disease. At least 30 minutes of moderately demanding activity, five days a week—or 20 minutes of rigorous activity three days a week—is required. Nevertheless, even brief periods of brisk walking can significantly help improve health, as shown by a recent study conducted by researchers at the University of Ulster in Northern Ireland. Twenty-one inactive men and women in their mid-40s briskly walked for either 10 minutes

#### Mindful Exercise

Simply by telling 44 hotel maids that what they did each day involved some serious exercise, the Harvard psychologist Ellen Langer and Alia J. Crum, a student, were apparently able to lower the women's blood pressure, shave pounds off their bodies and improve their body fat and "waist to hip" ratios. Self-awareness, it seems, was the women's elliptical trainer.

At the start of the study, Langer and Crum quizzed 84 maids at seven carefully matched hotels about how much exercise they got. Fully a third of the women said they got no exercise at all, while two-thirds said they did not work out regularly. Langer and Crum took several measures of the women's basic fitness levels, which indicated that they, indeed, had the poor health of basically sedentary people. Then just over half the women were told an unfamiliar truth: cleaning 15 rooms daily—pushing recalcitrant vacuum cleaners, scrubbing tubs, pulling sheets—constitutes more than enough activity to meet the surgeon general's recommendation of a half-hour of physical activity daily. The researchers even provided specifics: 15 minutes of scrubbing burns 60 calories, 15 minutes of vacuuming burns 50. The basic message and the details were then posted in the maids' lounges in the hotels where the 44 women worked, to serve as reminders, while a control group was left in the dark.

A month later, Langer and Crum checked back with the women to find . . . remarkable results. The average study-group maid had lost 2 pounds, while her systolic blood pressure had dropped by 10 points; by all measures the 44 women "were significantly healthier." Yet there were no reported changes in behavior, only in mind-set, with the vast majority of the women now considering themselves regular exercisers. Langer sees the study as a lesson in the importance of mindfulness. . . .

—Christopher Shea, "Mindful Exercise," *New York Times Magazine*, December 9, 2007

### Eating Correctly for Exercise

When your body is accessing fat for fuel, any motion (except short bursts of speed, such as sprinting) will increase the fat burning process. . . . [You can analogize] fat [as] being a log, and carbohydrate is the kindling. Trickle in small amounts of carbohydrate (kindling to start the fat burning process), and the fat (log) will burn long and steady. Dump in too much carbohydrate and you get a flash fire that flares quickly and then burns out.

—Jay Robb
*The Fat Burning Diet,* 1996

three times a day, or for 30 minutes once a day, five days a week for 6 weeks. After a two-week rest period, each group switched to the other group's walking routine for another 6 weeks. Both groups experienced a boost in beneficial cholesterol levels, and improved their aerobic ability and psychological well-being.

A lot of people feel that exercise must be frenzied in order to be beneficial. Exercise physiologists suggest that even gentle walking for 20 or 30 minutes per day can do wonders for both the cardiovascular and the lymphatic systems—providing, of course, that the right foods are eaten. (See Sidebar, "Eating Correctly for Exercise.") When I was living in New York City, I noticed that many members of my local health club seemed determined to push themselves beyond reasonable limits. This "no pain, no gain" mentality is often adopted by bodybuilders, weight lifters, and people taking high-impact aerobic classes. They huff and puff, straining and struggling and contorting their faces. I believe that movement and strength training should be pleasurably challenging, rather than negatively stressful. If you're straining to the point where you really hurt, and the pain does not lessen within a few days, this is a signal that you're hurting your body—hurting yourself.

For a long time, scientists said that an excess of lactic acid in the blood was the biochemical counterpart to over-exercising, or not adequately resting between normal periods of activity. This was thought to be the cause of dizziness, fainting, and what is sometimes called "exercise-induced asthma." Now, at least some physiologists believe that exercise fatigue is the result of impaired calcium flow in the muscles.

> Ordinarily, ebbs and flows of calcium in cells control muscle contractions. But when muscles grow tired, . . . tiny channels in them start leaking calcium, and that weakens contractions. At the same time, the leaked calcium stimulates an enzyme that eats into muscle fibers, contributing to the muscle exhaustion.[182]

Whatever the reason for muscle fatigue, it seems clear that one should stop exercising before reaching that state.

Did you know that part of the massive bulk in a very beefy weight lifter is scar tissue? Normal exercise induces the body to create more muscle fibers. But too much strain, pressure and weight on the muscle causes the fibers to tear; and when they heal, irregular scar tissue forms. Unlike normal tissue, scar tissue has no blood supply. And it has almost no strength, flexibility or elasticity (muscle tone). The main purpose of scar tissue is to cover and protect the injured areas. If the scar tissue is not broken up and reabsorbed into the body—for instance, through massage or ultrasound—it prevents the surrounding healthy tissue from receiving an adequate supply of blood and oxygen. Eventually, movement is inhibited throughout the body and one's posture suffers. The presence of scar tissue also indicates a disruption in the healing process of the tissues. Acupuncturists have long known that scar tissue obstructs energy in the body.

If you have a medical condition that makes strenuous activity difficult for you, or if you are not used to exercising, *start slowly*. You do not have to contort your entire body in elaborate dance patterns, or wildly wave your limbs, to benefit from the aerobic effects of exercise. Be easy on your joints. Taking a walk at a brisk pace is sufficient. Don't forget to stretch; but don't push your muscles farther than they can comfortably go. There is a difference between the discomfort that results from giving the muscles a nudge, and the kind of pushing that causes the muscles to become injured. Injury to a muscle, tendon or ligament is ripped fibers.

Without use, muscles become stiff and eventually atrophy. Walking, stationary bicycling, gentle movements in water and yoga are good forms of low-impact exercise. A rebounder (miniature trampoline) moves lymph without stressing the body. Unlike a trampoline, a rebounder does not require one to lift the feet off the surface in order to bounce. Merely bending the knees slightly, and then straightening them, facilitates movement. Someone who is very ill, or unable to stand and bounce themselves, can benefit by sitting on the rebounder when someone else is bouncing. Alternatively, a partner standing on the ground can press up and down on their shoulders to promote movement. This exercise, though mild, is very effective: gentle movement just three or four times a day for even a few minutes is helpful.

The timing of a rigorous workout is as important as the intensity. Evenings, and just before bedtime, are not

good times to charge the system. One holistic practitioner writes:

> My experience with training athletes, as well as with my own training, has been that people naturally train better when their cortisol levels are high. Since cortisol levels rise with the sun, reaching peak blood levels around 9 a.m. to 11 a.m. and then progressively set with the sun, most of you will find that you get your best performances in this timeframe."[183]

Cortisol, you will recall, is a stimulating hormone secreted by the adrenal glands. It's unwise to raise cortisol levels—and hence metabolism and body temperature—when the system should be preparing for sleep.

After exercise is a good time to receive a massage. See **Bodywork**, below.

## BODYWORK

### *The Physiological and Emotional Implications of Touch*

The recently deceased sociologist Ashley Montagu was a generous soul who wrote many books about the biological influences on human relating. Having been raised in stiff, upper-class Great Britain, he recounted, the British fear of physical intimacy frustrated and saddened him. Not surprisingly, the taboo against touching that runs rampant in Western countries is a recurring theme in his books.

Montagu cited some interesting studies conducted in public places such as restaurants, where lovers, families and friends were watched to see how many times an hour they touched each other. Latinos were found to be the most tactile (and correspondingly, also the most emotionally expressive). Scandinavians were deemed moderately tactile, and people who speak Anglo-Saxon-derived languages proved to touch the least. In Spain, people touched over 100 times an hour, in America about four, and in Britain, a pitiful zero.

These statistics for touch-deprived American and British cultures are especially significant if you consider the origin of the skin. In the developing embryo, a portion of the outer, skin-like covering turns back into the body to become the brain, spinal cord, and the entire central nervous system; while the rest of the outer covering becomes the hair, nails and teeth as well as skin. In his wonderful book *Touching: The Human Significance of the Skin*, Montagu wrote that the nervous system is

> a buried part of the skin, or alternatively the skin may be regarded as an exposed portion of the nervous system. It would, therefore, improve our understanding . . . if we were to think and speak of the skin as the external nervous system, an organ . . . which from its earliest differentiation remains in intimate association with the internal or central nervous system.[184]

The skin, then, is a much more exquisitely sensitive organ than many people might think. It is essentially one giant covering of nerve tissue that happens to be on the outside of the body instead of the inside. This remarkable connection between the skin and the human nervous system reflects just how sensitive we really are to external stimuli, including touch.

It is no accident that we use the word *touched* to indicate when we are affected on a deep emotional level. For human beings, as with all other mammals, touching is inseparable from love (especially in infancy), since our first

> Understanding that the mind governs the body is the first vital step towards understanding the body and its functions. The mind uses the body to translate thought into physical reality. A sense of oneself as being small can, through physical tension, transform even a tall person into a stooped, slumped, cramped, "small" person. Likewise a sense of strength and power can cause a small person to move with such energy and expansiveness that his or her size becomes irrelevant and may even be unnoticed. The mind can re-educate the muscles in ways that are harmful or helpful. Through the mind, the process of physical degeneration can be reversed. We can eliminate the idea of the inevitability of disease. If we feel weak, small, or helpless, we can practice exercises—physical and mental—which give us a sense of expansiveness. If we notice any tendency in the body to improve, any sign that a process of degeneration is reversing, we should do everything in our power to encourage it. We can allow the body to become more at ease with itself, more flexible, and less stressed. Even if we have undergone damage to nerves or muscles, that tissue can be regenerated through a program of mental and physical exercises. To do this we have to work with both body and mind, so that the non-material concept of health is manifested in our material being. This takes a lot of work. The loving hands of a friend, therapist, parent, or mate can help bring healthy stimulation to our muscles and nerves.
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> —Meir Schneider, *Self Healing: My Life and Vision*, 1987

experience of communion in life is through bodily contact. Despite the highly sophisticated, symbolic language that we develop later, we never outgrow our need for touch. This is illustrated by a study done by psychologist Rene Spitz, in the 1940's, on human babies isolated from their mothers. The mothers, too poor to care for their infants, had placed them permanently in a foundling home. The children were kept in what Spitz called "solitary confinement": cribs with sheets hung from the sides, so that the only thing the babies could see was the ceiling. Nurses seldom looked in on them more than a few times a day. And even when feeding time came, the babies were left alone with just the companionship of a bottle. Hygiene in the nurseries was impeccable. But without being held, loved, and woven into the fabric of a social web, the babies suffered from lowered immunity. Thirty-four out of 91 died. In some of the other foundling homes, the death rate climbed to a devastating 90%.

One of the most famous studies on touch is the animal-behavior experiment with monkeys conducted by psychological theorist Harry Harlow in the 1950s. For many critical months during their development, Harlow separated infant monkeys from their mothers and put them into a room with two monkey "mothers" made of wire. One wire figure had a bottle attached to it for feeding. The other wire structure contained no bottle, but was covered with soft cloth to simulate the mother's fur. Much to the surprise of Harlow and his associates, the young monkeys stayed with the food-and-wire figure only long enough to obtain the food they needed. They then spent the rest of the time clinging to the cloth "mother." The cloth figure was the primary means of communication and comfort for those baby monkeys. That this experiment is instantly recognized as cruel demonstrates our instinctive understanding that pleasurable bodily contact is a basic need. Researchers' later experiments with primates revealed that infants who were neglected or mistreated by their parents were impaired not only in their ability to relate to other primates, but in their ability to take proper care of their own babies once they grew up. The adult primates did not know how to mate, and were even overtly hostile to their newborns.

In this respect, the needs of human beings are similar to those of monkeys and other mammals. Feeling close to others gives us a sense of well-being, pleasure, and a greater ability to develop close emotional relationships with others later in life. But something is missing when our need for intimacy with others is thwarted. Our physical needs for food and shelter might be met—but, like Harlow's monkeys, if we are not held, caressed and played with, we grow up starved for love, presuming we don't die first from its absence.

In the United States and other highly industrialized parts of the world, the emphasis of the supposed superiority of the mind and the "baseness" of the emotions relegates the body to little more than a mobile unit to transport the esteemed head. People are taught that their own bodies are not a chief, or even valid, barometer of their experiences. Children are taught to mistrust their perceptions, sensations and emotions. The educational system and media encourage children to become consumers of other people's data, fantasies and beliefs instead of experiencing their own truths. The ways in which people minimize and numb themselves to their true feelings and desires would require another book. However, what I can address here are some of the effects of emotional repression on the physical body. These play a direct role in illness.

A major way to avoid feeling is to *inhibit the breathing*. When the breath is held, the lips stiffen or turn inward, the jaw clenches, the throat tightens, and diaphragmatic motion lessens. Normally, during full respiration, rhythmical waves encompass the chest and lungs all the way down to the abdominal area and even the base of the spine. But when feeling is suppressed, respiration is confined to the chest area and abdominal movement is restricted. This abdominal muscle contraction limits peristalsis, the normal wave-like motion of the intestines. A tight abdomen causes the intestinal wall to lose its muscle tone. The digestive tract becomes sluggish, resulting in the putrefaction of food and inflammation of the intestines.

Shallow breathing also brings less oxygen to the cells, which depresses the immune response. It also encourages harmful anaerobic microbes to thrive. The red blood cells also lose some of their electrical charge, which causes them to become flattened instead of round, clump together, and lose their ability to carry the oxygen that's still in the body.

The adrenal glands malfunction from emotional constriction, too. Normally, during a fight-or-flight response, the body shifts into running or combat mode. Blood travels away from the stomach and other internal organs to the periphery of the body, so we can use our legs for running and our arms for attack. (The decrease of blood in the stomach area impedes digestion, which is why it's unwise to eat when you're afraid, angry or stressed.) And the pupils of the eyes dilate, allowing more light to enter so we can see the danger before us more clearly. (This is the origin of the expression, "blinded by fear.") After the danger has passed, the system returns to its original state of dynamic equilibrium. But "continual crisis" is a contradiction in terms, since by definition crisis is sudden, short-term danger. If the crisis persists long enough, and

the adrenals glands don't get a chance to rest, they ultimately lose their ability to function properly. In addition, the body cells that contain receptors to adrenaline and cortisol remain in a constant state of agitation, because they receive messages to remain alert to an ambiguous danger that never materializes.

Being vigilant without relief is emotionally draining and physiologically exhausting. Since the fight-or-flight hormones are by now at a relatively low level (because the adrenals are so fatigued), the underlying emotion tends to be uneasiness and low-level anxiety, rather than fear or outright terror. But by now, the person has become literally poisoned by his or her own fear.

Medical doctor Mona Lisa Schulz describes the role of the adrenals in converting negative emotions into physical symptoms, to which we ascribe the names of specific diseases:

> When we're undress stress, or feeling certain stressful emotions, our brains [tell the adrenal glands to] release the hormone cortisol. Chronic stress or any chronic emotion—anger, hostility, fear, or sadness—is an important factor that will cause the body's adrenal glands to start to express those emotions in symptoms mediated by cortisol. Chronically elevated levels of cortisol are known to change the behavior or certain organs. The arteries begin to get stiff and hardened (arteriosclerosis). Hostility, a specific form of anger, is an emotion that's associated with hardening of the arteries. Chronically elevated cortisol has also been related to cancer. The cancer can affect various organs depending on what situations or settings the emotions occur in.[185]

All immune-related cells produce—and have identical receptor sites for—the same chemicals that control emotions in the brain. Therefore, suppression of emotion is synonymous with suppression of immune response, and vice-versa. Schulz describes the role of stress in immune disorders:

> The immune system . . . requires adequate levels of cortisol to function properly. This means that we need a certain amount of stress or stimulation in our lives to function efficiently and to feel alive. Otherwise we go to sleep. . . . Excessive cortisol, however, can rev up the immune system dangerously. . . . You're constantly living on the edge of the cliff of fear and ignoring your body's language of fear—trembling knees, racing heart, and sweaty palms. . . . So your body begins to interpret the whole world . . . as something to be feared. It secretes more cortisol and begins to make immune cells and molecules against all the dangers out there, real and imagined, reacting as though the outer world were a giant Petri dish of bacteria. You wind up making immune cells against everything. This is what happens with people who get chronic colds, chronic bronchitis, or chronic fatigue. Ultimately, because they're making so many excess antibodies, the antibodies turn against the body itself. The result is autoimmune disease, such as rheumatoid arthritis, lupus, or vasculitis.[186]

> In life, if you focus on possibilities, they become probabilities. How you perceive the world and everything in it affects how the world influences you. A belief that you're not safe and secure and the world is a dangerous place, feelings of helplessness and hopelessness, have been associated with increased susceptibility to illness and reduced immunity. Memories from past emotional experiences, trapped in your tissues, memories associated with certain emotions you've never fully resolved, thus affect your physical health. If you focus on the world as being unsafe, if you believe "I will always get sick," then you may in fact be more likely to get sick than someone who believes the world is full of germs, but who has no sense of being hopeless and helpless. . . . Memories in the brain and the body, activated by your intuition, are your soul's attempt to move you to change your life, to nudge you in directions that will lead to greater happiness and health.
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> — Mona Lisa Schulz, *Awakening Intuition*, 1998

Another way to avoid feeling, besides holding the breath, is to *inhibit expression*. The expression can be vocal—we exclaim with excitement, cry with grief, scream with fear, yell with anger, laugh when something is funny, and so on. Or the expression can be an act generated by the larger muscle groups. This includes running, hitting, hugging, and so on. Physical therapist and psychotherapist Elizabeth Noble writes that when someone's "inner desire to interact with his or her surroundings" is "inhibited by shame, guilt, panic, or defeat, . . . personal resources are not translated into movement." The muscle can either suffer from poor tone, representing "a lost impulse, a giving up before a movement was even begun," or the muscle can become tense because "the movement was initiated but then suddenly suppressed. . . . Certain muscles become active at specific phases of development,

therefore variations in muscle tone provide a map of a person's preverbal being."[187]

Damage can occur whether the body's muscles are flaccid or taut. On a short-term basis, one might experience "only" physical tension, exhaustion, or aches and pains. Over a longer period, the emotionally-based tension impedes circulation, further decreasing the supply of oxygen to the cells.

Tension contributes to disease in yet another way: by slowing lymphatic drainage. The section on **Exercise** explained that the lymph system does not have a heart to pump waste through the vessels. Instead, the lymph can move only in response to exercise or massage. Chronically held muscles, due to emotional holding patterns, can impede movement in the lymph vessels. It's not uncommon for emotionally contracted people to suffer from congestion of the lymph nodes.

How can a person possibly remain contracted for such long periods of time? Fear is an effective (if ruthless) teacher. Tightening the muscles and restricting the breath saps one's focus, and cannot be maintained indefinitely on a conscious level. The musculature, obeying a now-forgotten message, retains its contracted state because there is no longer energy available for expansion and relaxation. This response is now completely automatic—the point at which suppression by the conscious will is transformed into unconscious repression.

The frozenness of the body reflects the emotions that originally caused it to freeze. The body's rigidity, in turn, causes further emotional blockage. The muscles from which the energy has been withdrawn are more than simply chronically contracted. They also prevent the person from *expressing* that emotion. Eventually, the contraction prevents the person from knowing what the original feeling was, from being aware that it existed, or even from recognizing that the person is holding back! Body-oriented (body-mind) psychotherapy can help not only by addressing issues cognitively and behaviorally, but also by working with physical blocks through touch —and thereby catalyzing emotional release.

In today's stressful world, one may not feel that s/he has the luxury of working with emotions on a regular basis with a trained professional. However, work-related injuries are common. Whether a job involves heavy manual labor (construction) or repetitive motion (typing at a computer all day), most people are now developing physical stresses. Bodywork that focuses overtly on physical problems such as injuries and mechanical dislocations may be preferable to emotionally-based work. Whichever you decide, if you give the body what it needs, it can start to repair itself. It's beyond the scope of this book to address bodywork in depth, so I will present just a few highlights of some effective modalities.

### *Massage*

In many Western cultures that de-emphasize—and even outright discourage—the need for touch, it's not surprising that massage is underrated. In the United States, people sometimes tend to regard massage therapy as an exotic luxury, or even as something weird and kinky. In truth, massage therapy is neither. Done correctly, it can be a vitally important therapy for healing.

Massage and touch were part of the regular routines in hospitals from the 1800s through the 1940s, until people became dependent on pharmaceuticals and the focus shifted from the human element in healing to technology. Although massage therapy is intended to overtly address the physical aspects of health, it also does "touch" the underlying unresolved emotions that make us tense. Among its many benefits, massage:

- Relieves aches, pains, cramping and stiffness in the muscles.
- Reduces pain and swelling in injuries such as sprains and pulled muscles.
- Helps reduce or eliminate chronic pain by stimulating the production of endorphins.
- Stimulates lymphatic flow so toxins can be eliminated.
- Eliminates waste materials from the bloodstream by improving circulation and bringing more oxygen to the cells.
- Improves immune function by increasing the production of endorphins in the body.
- Eliminates excess water that can be held in the tissues.
- Increases joint flexibility and the capacity to move with greater ease.
- Increases agility and grace, which helps prevent accidents and job-related injuries.
- Eases anxiety and stress by promoting relaxation and a sense of well-being.
- Shortens the recovery time of injuries.
- Promotes better, deeper and more restful sleep.

During most forms of massage, the client is draped with a towel or sheet at all times except for the part of the body that is being worked on. However, the field of massage is broad, with its own sub-specialties; so some forms can be done with the client fully clothed.

Probably the most well-known massage technique is Swedish. Its main purpose is to move the lymphatic fluids, and thus help the body eliminate toxins. (See the sections in this chapter on **Water**, **Exercise**, and **Sauna Therapy** for details on the lymphatic system and the necessity of eliminating systemic poisons.) While lymph drainage is very important, a versatile massage therapist will be able to address other physical problems, too. Other forms of bodywork involve applying deep, yet gentle pressure to help release the tissues. For instance, during Trigger Point Therapy, specific points are worked on to produce an opening of muscular and energetic blocks. Trigger Point Therapy is based on the innovative work of Janet Travell, who discovered particularly tender, specific areas in muscles that, when pressed and released, help release pain in other apparently unrelated areas of the body, thus providing greater freedom of movement as well as pain relief. And Neuromuscular Therapy, which focuses on posture as a diagnostic tool, works specific areas with particular kinds of pressure to achieve improvement in posture, as well as eliminate chronic pain.

Massage is much more sophisticated than simply smearing a little oil around. Chances are, people who are unimpressed with massage have been exposed only to a light Swedish technique, and not to other forms of more effective deep tissue work and medical massage. My life partner is an excellent massage therapist, with over 15 years of experience. Recently I slipped and fell, and had a very hard time walking without limping in pain. I was astonished at how much more easily I was able to walk—pain-free—after just one massage from him. If you don't feel drawn to massage, you probably never had a really good massage therapist.

### The Power of Positive Touch

A massage therapist friend of mine named Martin told me a remarkable story about one of his clients, a pregnant woman whom he massaged five days a week, every single week during her pregnancy. "She said she wanted to do everything possible to help the baby," he declared. "I did deep tissue work, spending lots of time on her belly to open up and relax the area."

It turned out that Martin was really administering to two clients—the pregnant woman *and* her infant—for at the end of the nine months, the baby clearly seemed to have been affected, too. Martin described the mother's labor. "She gave birth almost instantaneously. It took exactly one-half hour from the start of her contractions to when the baby popped out. The doctor couldn't even put on the second glove, it happened so quickly."

I asked him what the infant was like. "I have never seen a baby like this," my friend replied. "By the end of four months, he cried every time he needed to eliminate. His mother would hold him over the toilet and he would go. When he started eating solid food, his mother fed him mostly organic, but not always. If the food wasn't organic, he spit it out."

What about his development? "He walked at the age of one year," Martin reported. "Now at age two, he speaks in complete sentences, English and Chinese" (the parents' native language).

And is the child happy? "Very," Martin said. "He is content to play by himself for hours. He is a remarkable little boy. I don't know if all those massages were responsible, but the mother is convinced they made the difference."

### *Myofascial Release*

*Fascia* is the name for the thin moist connective tissue membrane that surrounds all of the muscles. Typically, there are several muscles grouped together inside of one individual fascial sheet. The fascia separates and supports the muscles as they glide back and forth inside their envelope.

One bodyworker explains that the fascia

> binds specific cells into tissues, tissues into organs, organs into systems, cements muscle to bones, ties bones into joints, wraps every nerve and every vessel, laces all internal structures firmly into place, and envelops the body as a whole. In all of these wrappings, cables and moorings it is a continuous substance, and every single part of the body is connected to every other part by virtue of its network.[188]

The fascial network, as it turns out, plays a significant role in rifing. You'll find out more about this in Chapter 4. But even without the element of rifing, the role of fascia in bodywork is worth noting.

Ideally, the muscles should easily slide along, and move inside of, this flexible envelope. When a muscle is stuck to its fascial sheath, it can no longer move correctly. Sometimes, people incorrectly interpret this restriction of movement as resulting from muscular malfunction, rather than from glue-like adhesions that fuse the fascia to muscle. Once the muscle is unstuck from the fascia, the muscle's own natural rhythm of movement is again restored, and pain usually vanishes.

From my perspective, massage should routinely include fascial release, although not all massage therapists work with the fascia. Some modalities, however, focus solely on the fascia. One such technique is called Myofascial Release.

Myofascial Release is based on the work of Ida Rolf, who taught her students how to release the fascia through a technique commonly known as Rolfing. Having the fascia kneaded can be painful, but the increase in mobility can be profound, resulting in a complete change in posture.

The fascia can also be affected without being physically kneaded. See below.

## *Oriental Energy Modalities*

### Acupuncture

Oriental methods are quite different from Western massage. Instead of moving lymph or trying to tone muscles, most healing arts from Asia address the movement of *chi* or *qi* (pronounced "chee") along energy channels in the body, most commonly known as *meridians*. Obstructions to this flow of energy, or a deficiency of energy, affect the functioning of muscles, organs and glands—thus contributing to, or outright causing, health problems.

Acupuncture—one aspect of Traditional Chinese Medicine (TCM)—is probably the most well known of all the Oriental techniques that help balance energy. Tiny thin needles, placed in specific points along the meridians, manipulate and conduct energy (qi) through the body. (One practitioner analogizes the needles as literal antennas that make scalar wave energy more available to the physical body. See Chapter 4 for more information on scalar waves.) Acu*pressure* modalities of Shiatsu, Jin Shin Do and Jin Shin Jitsu are similar to acupuncture; but instead of needles, hand pressure is applied to the meridians and acupoints. Shiatsu follows the meridians of acupuncture, while Jin Shin Do and Jin Shin Jitsu follow other channels that connect the main meridians to each other. Amma (from Korea) and Tui-Na (from China) are among the many other modalities that also work with the body's energy channels.

TCM teacher Daverick Leggett describes the function of the meridians:

> The meridian permeates its associated organ along its pathway and we may consider the physical organ to be part of the meridian. The meridian/organ is an aspect of Organ, which in Chinese medicine is a set of related functions. So the meridian may be defined as a structural aspect of Organ function. It exists to integrate the function of the Organ with the physical body and is the means by which the Organ is made flesh and translated into movement.[189]

Meridians are not merely an abstract idea of some intangible, invisible lines that transport mystical energy and seem to connect different areas of the body. But since meridians do not follow the known pathways of the circulatory, lymphatic or nervous systems, for years allopathic doctors ridiculed Oriental techniques and denied that meridians even existed—despite the fact that acupuncture has been used successfully for thousands of years! Finally, with instruments sophisticated enough to take readings of the electromagnetic energy along the meridians and at the acupoints, there can be no doubt that these channels do exist, and that they react very differently from ordinary tissue.

Meridians manifest physically in several ways. The layers of skin are thinner along meridians. The ends of nerves along the channels are connected to specialized cells called mast cells, involved in inflammation and allergic responses. And meridians are more responsive than other tissue to electric current and infrasound.

There is also an anatomical reality to meridians: something is physically present. That "something," it turns out, is *fascia*. In the previous section on Myofascial Release, I mentioned that thin sheets of connective tissue cover groups of muscles that slide back and forth in their membranous envelopes. Meridians appear along the fascia between muscles, muscle and bone, or muscle and tendon. In 1999, German medical doctor H. Heine wrote:

> Recent anatomic research has shown that therapeutic effects of acupuncture may well be explained scientifically: . . . acupuncture points (APs) are characterized by a nerve-vessel bundle wrapped in a sheath of loose connective tissue (mesenchyme). Eighty-two percent of all classical AP [acupuncture points] are . . . perforations of the superficial body fascia pierced by a nerve-vessel bundle. In body areas not covered by this fascia (i.e. face, skull, fingers and toes) the principle of the mesenchyme-covered nerve-vessel bundle can also be demonstrated for APs.[190]

Connective tissue cleavage planes were also identified by two researchers at the University of Vermont College of Medicine. Using ultrasound imaging, they found an 80% correspondence between the locations of acupuncture points and those of connective tissue planes. "Now we know that acupuncture points (and it seems the majority of trigger points) are structurally situated in connective tissue," writes an osteopath-naturopath practitioner, "but how does application of a needle or pressure in one part of the fascia translate to distant sites? How does the fascia communicate with other parts of the body?"[191] The answer may lie in the following, Leggett notes.

> The flow of qi in the meridians is best described at the physical level by the flow of electrons. The interstitial fluids [fluids between the cells] of the fascia, which feed in and out of the lymph and capillary systems, may also be seen as part of the flow of qi through the body.[192]

"The fascial system," writes one acupuncturist,

> being a continuous sheet of connective tissue, permits a virtual connection of all the cells of the body. . . . Bioelectricity and biomechanical energy can be conducted to any part of the body through the fascia. *The meridians are the energetics of the fascial system*. . . . Through the stimulation of acupoints [both acupuncture and acupressure] we are creating an effect on the fascia of the body. [emphasis added][193]

It's no accident that four-fifths of acupuncture points are also used as myofascial trigger points in other therapies. The relationship of the meridians to fascia helps explain why acupuncture helps improve muscle function (because it releases the fascia), and why direct massage of the fascia helps increase energy (because it stimulates the meridians).

Western medical doctors most often use acupuncture for pain relief, since acupuncture is known to stimulate the pituitary gland to release endorphins, hormones that block pain. But meridian therapy is also key in helping people heal from gastrointestinal, hormonal, neurological, and even microbial infections and emotional issues. The importance of the fascial network cannot be underestimated. Leggett writes:

> How we see the meridians reflects both the strengths and limitations of our practice. The plumber, seeing the meridians as pipes, will better be able to understand the distributive function of the meridians as they carry nutritive qi to feed the body. The electrician, seeing the meridians as wires, will better understand their communicative function as they carry impulses. The engineer, seeing the meridians as framework, will understand their role in supporting the body structure.[194]

#### Qigong

For those who want to improve the flow of qi through their meridians, but don't like needles and don't want to depend on seeing a practitioner to improve their health, consider the ancient art of *qigong*. Qigong is like a gentle dance that the person does by himself or herself. The Qigong Institute website states, "qigong is moving meditation for prevention of illness, reducing stress, and managing chronic illness."[195] This "moving" meditation engages the meridians (and stretches the fascia), thus allowing energy to flow more evenly to all the organs, muscles and bones throughout the body. In eliminating energy blockages, qigong not only alleviates stress, but it can be used to treat degenerative conditions and serious diseases, including cancer. Once practiced only by the wealthy elite, at the end of the Chinese Cultural Revolution, qigong became accessible to everyone.

There are many forms of qigong, although tai chi is the most well known. One form, Chi-Lel™ qigong, has the largest medicine-free hospital in China. People are taught to heal themselves using various movements; but the seriously ill can receive treatment from Chinese practitioners. On one videotape, a few practitioners use their hands to transmit energy to someone with a tumor, while a live ultrasound picture shows the tumor rapidly shrinking and disappearing, probably in under five minutes. The hands are primarily used to transmit energy, but other parts of the body can also emit qi. The books sold on the Chi-Lel™ Qigong website, www.chilel.com, contain many inspiring testimonials of people who healed serious conditions using qigong.

Those who practice qigong faithfully say that their health improves, and have medical records to prove it. They also feel empowered because they take their health into their own hands, literally.

### *CranioSacral Therapy*

One Western technique that in many ways matches the subtlety of the Eastern modalities is CranioSacral Therapy (CST). The seeds of CST were first sown in 1970, when osteopathic physician John E. Upledger assisted during a neck surgery and observed a subtle but unexplainable rhythmic movement of the head, neck, spine and tailbone. Upledger then discovered the theories of a Dr. William Sutherland, who in the early 1900s had declared that the bones of the skull are constructed to allow for movement. So from 1975 to 1983, Dr. Upledger sought to expand and refine Sutherland's theories by working with anatomists, biophysicists, bioengineers and physiologists at Michigan State University, where he was a Professor of Biomechanics. The research team confirmed the existence of cranial bone motion. It described the mechanism behind this motion. And from this research, Upledger developed a therapy to correct the mechanism when it wasn't working properly.

The craniosacral system consists of the *membranes* and the *cerebrospinal fluid* that surround and protect the brain

and spinal cord, as well as the attached bones: the skull, face and mouth (which comprise the *cranio* or *cranial* part), down to the tailbone or sacrum (which comprise the *sacral* portion of the therapy). Often compared to the pulse of the cardiovascular system, the craniosacral system has an intrinsic, natural rhythm that can be felt throughout the body.

However, the craniosacral system does not always function properly; obstructions or restrictions in the rhythm are fairly common. This means a break in the flow of bioelectrical impulses, resulting in incompletely or incorrectly transmitted messages from one part of the body to another. Not surprisingly, poor function of the brain and spinal cord can cause sensory, motor, and neurological disabilities.

The goal of CST is to improve central nervous system function. Using a soft touch about the weight of a nickel (5 grams), a skilled CST practitioner detects irregularities or stoppages in the rhythm at key points along the head and spine. Corrections—done with a similarly light touch—help the body release restrictions and blockages, and make corrections on its own. The therapist does not decide how the body needs to correct itself, but instead follows the movements of the body as it unwinds, layer by layer.

### The Truth

We chiropractors work with the subtle substance of the soul. We release the prisoned impulse, the tiny rivulet of force, that emanates from the mind and flows over the nerves to the cells, and stirs them into life. We deal with the magic power that transforms common food into living, loving, thinking clay; that robes the Earth with beauty, and hues and scents the flowers with the glory of the air.

In the dim, dark, distant long ago, when the sun first bowed to the morning star, this power spoke and there was life; it quickened the slime of the sea and the dust of the Earth and drove the cell to union with its fellows in countless living forms. Through eons of time it finned the fish and winged the bird and fanged the beast. Endlessly it worked, evolving its form until it produced the crowning glory of them all. With tireless energy it blows the bubble of each individual life and then silently, relentlessly dissolves the form, and absorbs the spirit into itself again.

And yet you ask, "Can chiropractic cure appendicitis or the flu?" Have you more faith in a knife or a spoonful of medicine than in the power that animates the living world?

—B.J. Palmer, Chiropractor (1882–1961)

CST has been used for a wide range of medical problems, such as migraines, temporomandibular joint dysfunction (TMJ), chronic neck and back pain, digestive disturbances (including colic), mental and emotional problems (including post traumatic stress disorder, autism and learning disabilities), insomnia, fatigue, and of course neurological disorders (including brain and spinal cord injuries, and learning disabilities). Many people who choose CST are people with chronic injuries who have not been helped by other therapies.

Practitioners taught CST include all types of physicians (naturopathic, osteopathic and medical), chiropractors, doctors of Oriental Medicine, psychiatrists, psychologists, dentists, physical therapists, occupational therapists, nurses, acupuncturists, and massage therapists.

CST is extraordinarily gentle, making it ideal for children, and for infants suffering from birth trauma. This therapy is also especially beneficial to people with head, neck or back injuries. And CST is safe and effective. This is a good example of when "less is more."

### *Chiropractic*

While chiropractic does deal with the central nervous system, it's quite different from CranioSacral Therapy. Chiropractors specialize in realigning the skeletal structure—particularly the spine—to release any nerves that are pinched or compressed so that nerve impulses can again flow unimpeded throughout the body.

Chiropractic was discovered in 1895 by D.D. (Daniel David) Palmer during an encounter with a man who operated a janitorial service in the office building where Palmer worked as an energy healer (called "magnetic" healer at that time). Palmer restored the man's hearing by moving back into place some bones in his middle spine—untwisting nerves that had been so compressed, the man had been deaf for 17 years. It was D.D. Palmer's son, B.J. (Bartlett Joshua), who brought chiropractic from obscurity to the public as a bona fide profession.

It's amazing what can be accomplished in the hands of a skilled chiropractor. Unfortunately, chiropractic adjustments are still ridiculed and opposed by many allopathic doctors, who are so fixated on breaking the will of (as they see it) an uncooperative body, they cannot conceive that if the body simply receives the right kind of gentle and supportive guidance, it can correct and heal itself.

When the spine is out of alignment, it's called a *subluxation*. Correcting the subluxation can cause many positive physical changes. Extensive documentation shows that chiropractic adjustments can improve a wide range of conditions. Aside from the obvious expected elimination of pain in the arms, legs or back, chiropractic can

help clear many serious conditions including colitis, sinus infections and indigestion. Adjustments can even improve poor vision, sharpen reflexes, and restore memory.

These apparently magical changes are not mysterious once you realize that all of the nerves governing voluntary and involuntary processes in the body meet at the spine. If one of the bones (vertebrae) in the spine compresses any of the nerves, the amount and kind of information traveling to the specific organ, gland or muscle at the end of the nerve chain is severely compromised. Like massage therapists, chiropractors (with a few exceptions, depending on the laws where they are practicing) do not diagnose or treat disease. They free the stuck bones and nerves that have been interfering with the body's ability to function. One chiropractor writes:

> The chiropractic philosophy is based on the deductive principle that the universe is perfectly organized, and that we are extensions of this principle, designed to express life (health) and the universal laws. Since vertebral subluxations (spinal-nerve interference) are the grossest interference with the expression of life, the practice of chiropractic is designed to analyze and correct these subluxations, so that the organism will be free to evolve and express life to its fullest natural potential.[196]

As with massage, the methods of chiropractors vary. They range from the extraordinarily light and specific touch of non-force techniques to the rigorous bone-swiveling adjustments that people normally associate with chiropractic sessions. It's worth the effort to find a chiropractor whose temperament and techniques work well for you. Seeing a chiropractor could avert a surgical procedure. It might even save your life.

### *Rubenfeld Synergy*

Whatever modality you decide to use, keep in mind that there may be an emotional component to the physical symptoms you are experiencing. The emotion might be based in childhood or early life, in unresolved traumas such as sexual violation, or in severe conflicts with family members, friends and lovers. Or the emotional component may be present-day frustration and upset over being ill. Physical problems that are rooted in recent emotional upset are generally much easier to deal with and eliminate than problems based on unresolved past issues.

Often, negative emotional charge from current life situations that are not too intense can be diminished through talking; and your bodyworker should be amenable to being a sympathetic listener. However, most bodywork practitioners are not trained to deal with the intense emotional content that tends to get stirred up or expressed in the sessions. Everyone who receives bodywork should receive adequate emotional support. If you are a client, consider body-mind psychotherapy in addition to physically-oriented modalities. If you are a health care provider, even if you don't want to focus on helping your client through the emotional mine fields that may arise, you still need to be comfortable enough with strong emotion to provide compassionate understanding. All bodyworkers should have mandatory training in the processing of emotions. Sometimes, being in therapy oneself is necessary to manage and face one's own fears—and the anguish of one's clients.

A good description of a body-mind approach is provided by Ilana Rubenfeld, who created the body-mind therapy called *Rubenfeld Synergy* in the 1960s. Rubenfeld was not always a renowned psychotherapist. She began as a classically trained musician who through a series of serendipitous events was inspired to develop a new therapeutic modality that combined aspects of the Alexander Technique, Gestalt Therapy, Feldenkrais work, and other methods. She describes the events leading to this creation:

> While studying at the Juilliard School of Music, I played the viola, oboe, and piano [and was also] a conductor of orchestras. . . . This strenuous activity eventually took quite a toll on my body. . . . [We were not taught] how to stand, how to move, how to conserve our energy, and how to take care of ourselves. As a result, some of the other students and I developed back spasms. I went from doctor to doctor to alleviate the pain; and, with sprays and injections, they were able to provide relief temporarily for a performance. But then the pain would return.
>
> Finally, friends concerned for my health recommended that I look into the Alexander Technique, a method designed to teach a more efficient use of the body. . . . During a lesson, [my teacher] Judy would make subtle adjustments in the way I was standing, sitting, or moving. She touched me with a unique touch which seemed to have a thought in it. I was very moved by what she did, but I had no framework with which to understand what was going on. [As I continued to "let go"—evidenced literally by giving up control of my head and allowing Judy to hold my head for me] . . . I noticed that I kept feeling better.
>
> One day in the middle of a lesson, while Judy was touching me gently, I began to cry. Not just to cry: to sob from a very deep place. She hadn't

pushed or intruded; she had just put a gentle hand on me. After several sessions, since I was continuing to cry, she recommended that I go to a therapist. I followed her advice, in spite of the fact that therapy was not for "normal" people in those days. My Alexander teacher was helping my body feel better, but now I could not contain the emotions which the work had released. . . .

The analyst I went to was wonderful. But by the time I would get to him, the released emotions from the Alexander lesson could only be analyzed as a distant memory. So, I had one person who touched me but would not talk to me about it; and another who talked to me but would not touch me. Between the two of them, I created my own holistic therapist.

Today we regard it as obvious that the body, mind, emotions, and spirit are all connected. But only as short a time ago as 1960, this "simple" wisdom was considered esoteric.[197]

### *Do It Yourself: Skin Brushing*

To those who like to take your health into your own hands (so to speak), you can help move waste through your lymph tissue by sweeping your skin with a natural bristle brush. When working on the lower body start at the feet, using upward motions toward the major lymph nodes in the inner thigh area. When working on the upper body, begin at the hands and work your way up to the armpit, the site of another major cluster of lymph nodes. Brushing yourself also removes dead skin cells and stimulates circulation.

### *Summary*

In some parts of the world, the erroneous association of touch with sex has prevented massage and other forms of bodywork from gaining acceptance as valid healing therapies. Don't let shyness or fear prevent you from experiencing these powerful and effective modalities. An excellent book that includes the history of massage, anatomy and physiology, Eastern and Western techniques, and therapist-client protocol is *Healing Massage Techniques* by Frances M. Tappan.

## LIGHT AND COLOR

### *Our Therapeutic Sun*

As far back in history as we know—from the Arabians and Chinese to the Incas and Aztecs—human beings have worshipped the sun as the source of life, fertility and healing. Over 3,000 years ago, an Egyptian high priest-king founded a religion of the sun god. Two thousand years ago, Zoroaster (also known as Zarathustra) taught the Persians about the power of the sun. Five hundred years later, in his health temple on a Greek island, the physician Hippocrates—whom the modern medical profession calls the "Father of Medicine"—relied not only on hydrotherapy (water baths of various temperatures), diet, water, rest, and exercise as his chief medicines, but also the sun. All over the world, solariums have been found in the archaeological ruins of private homes.

The ancients were not the only sun worshippers. Less than a century ago, proponents of Natural Hygiene in Europe advocated spending at least a few hours every day naked in the sun. Bernarr Macfadden, the Natural Hygiene proponent in the United States (where it was called Physical Culture), pointed out that

> Whenever sick and wounded animals can do so, they place themselves where they can secure as much sunlight and sun *heat* as possible. . . . By doing so they recover with comparative rapidity. Humans, who may know nothing whatever of ultraviolet and infrared rays, or of the curative effect of these rays, likewise turn instinctively to sunlight and sun warmth, or to artificial warmth, when indisposed or ill.[198]

The sun is actually a giant star that emits many different frequencies on the electromagnetic (EM) spectrum. The electromagnetic waves from the sun vary in length from 3,100 miles (4,990 kilometers) long for electric waves on the very large end, to .00001 nanometers for cosmic rays on the very small end. (A nanometer is one-billionth of a meter, and a meter is about three feet.) Most of the frequencies on the EM spectrum are invisible to the human eye except for the small band of visible light, which we see as colors. (For more information, see Appendix C, "Healing with Electromedicine and Sound Therapies.")

Visible light comprises a very small portion of the sun's emissions. Most sunbathers are familiar with the invisible ultraviolet (UV) portion of the spectrum. (Although UV is sometimes called "UV light," it technically is not light, as it's not on the visible portion of spectrum.) The invisible infrared rays, which are the source of the sun's heat, comprise 80% of the sun's emissions. The so-called heat rays "are not heat in the ordinary sense," wrote John Harvey Kellogg, surgeon and creator of the electric light sauna cabinet, over 100 years ago, "but a form of energy which is capable of being converted into heat, and which becomes heat when brought in contract with an opaque

body—that is, a substance which offers resistance to the passage of the rays."[199] The heat (thermic) rays from the sun are the visible red (luminous) and invisible infrared rays. The specifically chemical (actinic) wavelengths, which cause biochemical reactions in living tissue, are the visible blue, visible violet and ultraviolet rays. These different wavelengths affect virtually every cell of the human body, including the eyes, skin, and pineal gland.

Despite the sun's benefits, in the US people are avoiding the sun more than ever, fearing skin cancer. Sunscreen lotions, creams and oils are selling in record amounts. It's easy to be alarmed by the rapidly rising cancer toll—currently one in three, and projected to soon claim one in two. But is the fear of the sun realistic? How could the sustainer of all life really be that dangerous? What is the basis of the Natural Hygiene claims that being in the sun can cure heart disease, tuberculosis, eczema—in fact, almost anything that ails you? Moreover, if the sun is so healthful, how did we stray so far from the truth?

One major reason given for avoiding the sun is skin damage and worse, due to the burning caused by overexposure to the sun's ultraviolet (UV) rays. But, as with so many other natural healing modalities, fears that might seem legitimate on the surface don't tell the whole story.

### *Ultraviolet Wavelengths*

For thousands of years, our ancestors successfully utilized the sun's healing rays by sunbathing sensibly. Correct tanning technique involves gradually building up exposure to the sun so the skin has time to produce layers of melanin, a pigment that protects against sunburn. Light skin contains less melanin than dark skin, so fair complexioned people burn much more easily than darker people. Among light-skinned folk, redheads and blondes burn more easily than those with auburn, brown and black hair. Virtually all people living in tropical countries around the equator are black, brown or olive skinned, an evolutionary adaptation. (Nevertheless, the sun does seem harsher than it was 30 years ago, probably due to higher levels of pollution; so sunbathing seems less pleasurable than it used to be.)

Most of the fear surrounding the danger of ultraviolet (UV) rays originated from frankly idiotic laboratory tests, described by optometrist Jacob Liberman:

> In 1981, . . . monkeys were tranquilized; then their eyelids were pried open with lid clamps. With the monkeys' pupils fully dilated, researchers beamed light into their eyes from a 2,500-watt xenon lamp [that contained high levels of UV radiation] for 16 minutes. . . . Although the results of the study showed that there was some retinal damage, it is hard for me to imagine that the researchers could have concluded anything else. They gave these monkeys a highly abnormal exposure to ultraviolet light *that would never happen in real life*. In real life, monkey's pupils and eyelids *would naturally adjust* to protect their eyes, *just like the pupils and eyelids of humans do*.
>
> Another argument science makes against ultraviolet light is that it causes cataracts. The same kinds of studies on laboratory animals concluding that UV light causes retinal damage are frequently used to conclude that UV light also causes cataracts. Of course the eyes in these studies were damaged. Did they expect vision to improve? Similar studies, in which the skin of animals is repeatedly burned with high levels of UV light, also have been done to "prove" that ultraviolet light causes skin cancer. . . . It is impossible to come to valid scientific conclusions based on these experiments, because they are performed under extremely unnatural conditions that do not and never will exist in reality and would be considered highly abusive if they were attempted on humans. . . . [This research] leads to but one conclusion: *the abuse of the animals in their studies causes cancer, blindness, and death!*[200]

It is difficult to comprehend how any sane (or compassionate) scientist could conduct such atrocious experiments and believe that they have merit. But not all scientists are scientific. "When too much oxygen is given to premature babies in their incubators, it causes blindness, deafness, and brain tissue damage. Fortunately, this has not resulted in any recommendation that we should try to get along without oxygen," wrote the late Dr. John Ott, widely respected as a pioneer on light and its effects on living organisms.

> Yet that is exactly what is happening in prevalent views about ultraviolet. . . . Without doubt, too much ultraviolet is harmful—particularly the short-wavelength . . . ultraviolet that is mostly filtered out of sunlight [anyway] by the atmosphere, and especially the upper ozone layer. [However] fear of too much ultraviolet is causing many people to overprotect themselves from sunlight, to the point of creating a deficiency in a very essential environmental life-supporting energy.[201]

Ultraviolet wavelengths, discovered by the German physicist Johann Wilhelm Ritter in 1801, lie between visible light and X-rays. And the UV radiation band itself is

subdivided into three wavelength bands: near-UV (UV-A), Mid-UV (UV-B), and far-UV (UV-C). All of the rays within these ultraviolet bands can tan or burn the skin, but each bandwidth has its own unique properties. UV-A has the longest wavelengths, ranging from about 320 to 400 nanometers (nm). It's sometimes referred to as blacklight because of its ability to make colors glow in the dark. About 50% of these very long wavelengths penetrate to the blood vessels that feed the skin, while a tiny percentage penetrate considerably deeper. UV-B ranges from about 290 to 320 nm. These wavelengths activate, within the skin, the production of Vitamin D3, which among other functions helps the body absorb calcium, phosphorus, and Vitamin A. (See Sidebar, "Sunlight and Vitamin D.") UV-C, ranging from about 100 to 290 nanometers, is largely blocked by the Earth's ozone layer. However, it's still a highly effective germicidal agent; many microbes are killed by 254 nm. About half of the 290-nm wavelengths penetrate to just under the surface of the skin, while a very small percentage penetrates slightly deeper.

Within the medical community, UV is well known for its powerful germicidal abilities. In *Sunlight Could Save Your Life*, medical doctor Zane Kime writes, "Not only does the sun have a direct bacteriocidal effect on the skin, but it also changes the oils in the skin into bacteriocidal agents themselves. Even the vapors rising from natural skin oils . . . are capable of killing bacteria."[202] Scientists researched UV's germicidal capacity as far back as 1886, beginning with experiments on *Bacillus anthracis* (anthrax), and followed by *Pasteurella pestis* and *Streptococcus* in 1887. The bacteria for tuberculosis, cholera and *Staph* infections were tested by 1892; *E. coli* was tested in 1894; and the *Shigella* bacterium that causes dysentery was tested in 1909. All of the researchers who

## Sunlight and Vitamin D

When the sun's UV rays strike the skin, the cholesterol in the skin (which is more highly concentrated than in any other part of the body) changes into Previtamin D. In turn, continued exposure to the sun transforms this Previtamin D into several other substances needed by the body. Vitamin D3, however—one of the materials into which Previtamin D is transformed—is converted not from continued sun exposure but *from the warmth of the body itself*. It takes about twenty-four hours for half of the Previtamin D that has not converted into other products to be formed into Vitamin D3 by the body's heat. Vitamin D3 can be toxic in large amounts, but the body compensates for this in two ways: one, the vitamin is released very slowly, and two, excess Vitamin D3 always reverts back into Previtamin D.

This natural regulating process takes care of even high levels of Vitamin D3 produced by the body. However, various forms of *synthetic* Vitamin D (in both its D2 and D3 forms), which are added to commercially processed foods (called "fortifying" the food), do not produce the same benefits as the natural substance. In fact, they cause problems. Researchers have found that the body's absorption of calcium and phosphorous does not increase when the subject consumes synthetic Vitamin D—in fact, people suffer bone loss even when consuming large amounts. However, exposure to even minimal amounts of *sunlight* significantly increases the absorption of these minerals.

At high enough levels, Vitamin D2 is toxic, even deadly. It can cause hardening of the arteries and calcification of the soft tissues in the body. Rats and mice fed the synthetic vitamin as 0.1% of the diet died within 48 hours. Perhaps synthetic Vitamin D's toxicity relates to the new discovery that Vitamin D is not a true vitamin, but rather a hormone called *calciferol*. "It would seem that the public should at least be offered the choice of receiving their Vitamin D safely from the sun, as nature intended," reflects Zane Kime. "Supplementation of food with a hormone, the intake of which cannot be regulated, is in reality an example of a mass experiment. . . . This seems strikingly unnecessary when we can safely obtain all the Vitamin D that we need by just spending a few minutes in the sunshine. . . . One researcher mentioned that exposing the face of a baby to the sunlight for a few minutes during the middle of the day, even during the winter, would produce enough Vitamin D to protect the child from a Vitamin D deficiency."[203]

The disadvantages of synthetic Vitamin D cannot be denied. However, recent research suggests that at locations some distance away from the equator, the oblique angle of the sun does not generate sufficient Vitamin D-producing UV-B rays to help us produce the vitamin. "The current suggested exposure of hands, face and arms for ten to twenty minutes, three times a week, provides only 200 to 400 IU (International Units) of Vitamin D each time . . . during summer months," writes Krispin Sullivan. Although this amount will help prevent rickets in children, we require 4,000 IU every day to ensure the health of all vital functions. "What the research on Vitamin D tells us is that unless you are a farmer, lifeguard or a regular sunbather, you are highly unlikely to obtain adequate amounts of Vitamin D from the sun. The balance must be obtained from food."[204] Vitamin D is abundant in animal fats, raw butter, fish and eggs—in naturally raised animals only, since factory farming deprives the animals of what they would eat in the wild and thus alters their nutrient composition.

exposed their germ colonies to UV light reported the same good news: UV light kills pathogenic microbes involved in infectious diseases— perhaps, at least in part, because it stimulates the production of ozone in the body. Based on this knowledge, natural sunlight and UV therapy using special lamps, were utilized for many different conditions.

In 1903, Swiss physician Auguste Rollier established the first European clinic in the Alps for the non-surgical treatment of tuberculosis using solar energy. This proved so successful that England, the US, France, Austria, Israel, Italy, and other countries established similar clinics. That same year, Niels Finsen from Denmark won the Nobel Prize for being the first person to successfully treat skin tuberculosis with UV therapy. All over the world, doctors were prescribing sunbathing (often nude) for people with erysipelas (an infection of the skin with a mortality rate of 10%), tuberculosis of the skin, bone tuberculosis, lupus, and other diseases.

Then in 1935, a researcher left Petri dishes of *Staph* in the open air of an operating room during the time that surgery was being performed. He collected the dishes after one hour, Kime reports.

> Having suspended a bank of ultraviolet lights from the ceiling of the operating room, he found that all the bacteria within 8 feet of the lights could be killed in 10 minutes, even though the intensity of the lights was reduced to a point where blonde skin at a distance of 5 feet would not react with reddening until after 80 minutes of exposure.[205]

Knowledge that UV light remains beneficial for quite a while before its effects become destructive, and that the rays destroy germs in the air as well as on the skin, eventually led to widespread use of UV lamps to disinfect hospitals and clinics. In the former Soviet Union, factory

### The Truth about Sunburn, Skin Cancer and Cataracts

In our so-called civilized world, we are taught that exposure to the sun will bring not only sunburn, but also cataracts and skin cancer. It's true that people have gotten sunburned and skin cancer from sun exposure, and that even low exposure to UV-B rays significantly increases the risk of cataracts. But, as researchers are discovering, these conditions occur much more frequently if one is eating fake food. The effects of the sun's rays can be either harmful or healing, *depending on the types of fats in one's diet*.

Royal Lee, the whole foods supplement manufacturer, discovered a substance mostly in oils that he called *Vitamin F*. People who did not consume enough Vitamin F, he said, were much more likely to develop thickening of the skin, sunstroke, canker sores (from the herpes virus), itchy skin and hives, and skin cancer. Since many people *did* get enough sun exposure to produce enough Vitamin D—and they still developed those conditions—there must be another factor involved. What is usually considered a Vitamin D deficiency, Lee surmised, is actually a deficiency of Vitamin F—otherwise known as *polyunsaturated fatty acids* in scientific textbooks.

Vitamin F has specific functions that complement those of Vitamin D. Each balances the effects of the other. Vitamin D pulls calcium from the gut and the tissues and deposits it into the blood. Vitamin F pulls calcium from the blood and deposits in into the tissues. If a person has plentiful Vitamin D but no F—which occurs more often than the other way around—there will be plenty of calcium in the blood but not enough in the bodily tissues. Since calcium helps the body's immune response (in addition to helping the formation of bone), insufficient Vitamin F in the tissues can not only augment health problems, but even *cause* them. Of course, there must be enough calcium in the body at all times for the bloodstream, the gut, *and* the tissues.

It's easy to become deficient in Vitamin F if one eats the Standard American Diet (SAD) of fake food (junk food). In the manufacture of synthetic fats (margarine, shortening, and liquid vegetable oil), Vitamin F is destroyed, and misshapen fats called *trans fats* appear in the final product. The body cells, which are forced to work with what they are fed, surround themselves with straight trans fat molecules instead of the horseshoe-shaped Vitamin F fat molecules. The malformed, straight trans fat molecules literally create gaps in the cell membranes through which carcinogenic materials can enter relatively easily, since the cells no longer have adequate protection.

Fake fat molecules also reflect the presence of highly unstable atoms at the quantum level: free radicals. This means that lone electrons are knocking other electrons out of place—so that before long, electrons are acting like billiard balls, destroying the integrity of cells and decreasing their ability to metabolize oxygen. When the body is low in oxygen, all kinds of disease conditions can develop, including cancer.

This is how the ingestion of the wrong kinds of fats—fake fats—can lead to cancer. Despite what the food industry would like consumers to believe, the sun is not the culprit. If anything, being in the sun "sheds light" on what we may need to correct in our lifestyle.

workers were exposed to special low intensity UV lights that weren't strong enough to cause reddening of the skin, but decreased bacterial contamination of the air by 40% to 70% and cut employee illness by half. Articles continue to report highly successful treatments for mumps, asthma, blood poisoning, viral pneumonia, childbirth infections, peritonitis, even cancer. One study of people with tuberculosis showed that among those receiving UV treatment, three-quarters lived compared to about one-quarter of those treated surgically or by other allopathic methods.

These favorable results inspired the practice of removing some blood from a subject, infusing it with UV light, and then injecting it back into the subject. Apparently a small amount of UV treated blood can impart germicidal properties to the entire bloodstream, even those portions that were not extracted and treated. This procedure is more popular in Europe than in the US; but all over the world, UV is used to purify water systems.

UV radiation does more than kill germs. It stimulates the skin to create beneficial Vitamin D. And, points out German medical doctor Alexander Wunsch, UV inactivates excessive amounts of steroids, some of which accelerate the growth of cancer.

In some ways, it's difficult to separate the different properties of the sun's individual electromagnetic wavelengths since many rays augment and complement each other. Consider one known relationship between UV and another group of wavelengths, far infrared (FIR). Macfadden wrote:

> Sunburn is not, in reality, a burn at all, for it does not appear for several hours after the causative exposure; it is simply an . . . inflammation resulting from irritation by the peculiar [biochemical] action of the ultraviolet rays. . . . [The Swiss physician Rollier] asserts that, because his patients with deep-seated tuberculosis are cured when they become deeply pigmented and those who do not pigment respond far less favorably to the treatment, the pigmentation must render possible the deep penetration of the long [FIR] rays. This theory would suggest that the long, heat rays are the curative rays, while the short, actinic rays are merely servants preparing the way so that the heat rays may enter the body.[206]

Ultraviolet, then, has another important function: it sets up a biochemical reaction in the body that allows the FIR to penetrate more deeply. This makes sense when you consider that *melanin*, the pigment created by the skin in response to UV, contains copper. Copper is a good conductor of electricity, which undoubtedly bolsters the penetrating power of the FIR. Let's take a look now at far infrared, and the larger spectrum of which it is a part, infrared.

### *Infrared Wavelengths*

Like UV wavelengths, infrared (IR) wavelengths are also invisible. And they, too, exert incredibly powerful effects on living organisms.

As mentioned earlier, 80% of the sun's radiation is infrared, and IR is responsible for heat. Even though IR from the sun is filtered by atmospheric gases, wavelengths still reach the Earth. Infrared radiation heats in a most unusual way. Rather than directly affecting the air itself, which is impervious to being heated, IR penetrates and warms matter. As with UV, infrared emanations are divided into several categories. Near infrared, the shortest wavelengths, range between about .72 and 1.5 microns. Middle infrared, medium length wavelengths, range between about 1.5 and 5.6 microns. And far infrared, the longest wavelengths, range between about 5.6 and 1000 microns. (One micron equals one-millionth of a meter.) All matter above the temperature of absolute zero (minus 459.67°F, or minus 237.6°C) emits some degree of IR.

The heating properties of *far* infrared (FIR) were discovered in 1800 by German astronomer Frederick William Herschel, when he tried to measure the temperature of color rays and put two thermometers outside the range of visible light. The FIR rays, which are next to the red color band, turned out to be the hottest of all the wavelengths he tested.

FIR accelerates many biological functions in the body. It increases the number of lymphocytes, a type of white blood cell in the front line of the body's immune response. It stimulates the lymphocytes to produce larger amounts of the biochemical interferon. (Interferon is so helpful in fighting infection that it has been synthesized by drug companies and given to people with various cancers.) FIR increases the levels of enzymes, which the immune cells use to help transform and remove toxic chemicals. FIR increases the amount of hemoglobin in the red blood cells, helps the hemoglobin release oxygen and carry away carbon dioxide more easily, and helps the cells of the body to better utilize the oxygen they do receive. The heat from FIR helps relieve pain by relaxing the tissues. And FIR elevates the production of hormones—including thyroxin from the thyroid, which means a faster metabolism.

For good reason, far infrared heaters are very popular in modern saunas. The next section, **Sauna Therapy**, discusses FIR heaters in more detail. But for now, let's examine the effects of light on the body.

### The Pineal Gland and Light

The human body's most obvious receptor to visible light is the eye. But two glands inside the skull are also affected: the pituitary and pineal. Until the last couple of decades, not too much was known about the pineal gland, a tiny pine cone-shaped structure deep inside the brain between the two cerebral hemispheres. Although the medical establishment recognized that the pineal secretes hormones involving growth (and possibly skin pigmentation and sexual stimulation as well), it considered the gland inconsequential, and not worth further investigation.

In the *Textbook of Medical Physiology, 3*rd *Edition*, Arthur C. Guyton writes: "Embryologically, the pineal gland [in the human being] is derived from a third eye that begins to develop early in the embryo."[207] This "third eye" is *literal*. Prominent in the first weeks of gestation, it appears in the center of the forehead just at the surface of the skin before it gradually recedes into the brain, leaving little or no discernable sign that it was ever there. In the 10th edition of the same textbook, Guyton writes with co-author John E. Hall: "It is known from comparative anatomy that the pineal gland is a vestigial remnant of what was a third eye located high in the back of the head in some lower animals."[208] But *vestige* means: "a bodily part or organ that is small and degenerate or imperfectly developed in comparison to one more fully developed in an earlier stage of the individual."[209] We now know that light travels through the eyes along the optic nerve to the part of the brain that records visual impulses, that it continues to more specialized nerve clusters in the neck, and that it ultimately reaches the pineal gland, which converts it into hormonal transmissions inside the body. The pineal is so sensitive, Guyton and Hall report, that in hamsters,

> greater than 13 hours of darkness each day activates the pineal gland, whereas less than that amount of darkness fails to activate it, with a critical balance between activation and nonactivation. . . . [The human pineal is] controlled by the amount of light . . . seen by the eyes each day.[210]

This is quite a sophisticated function for an "undeveloped" structure! I would hardly consider the pineal gland "vestigial."

In all non-human mammals, the pineal is directly responsible for normal mating behavior. Most animals tend to become pregnant in the winter, in time for a spring birth when the young can be kept comfortably warm and food is plentiful. In lizards and birds, the pineal can absorb light without relying on the eyes to feed it. A lizard's pineal manifests as a visible bump on the skull, and plays a role in the regulation of seasonal reproductive cycles. The "vestigial remnants" of the pineal on the skulls of birds are not only photoreceptor cells, but they also monitor magnetic fields, thus helping the birds align their bodies in space to navigate.

The ways in which messages are transmitted to, and translated by, the pineal gland—as well as the messages themselves—are subtle and complex. Although the pineal is stimulated somewhat differently in humans than it is in birds and lizards, there is every reason to assume that the human gland plays an equally important role in development. Medical research has not finished deciphering the role of the pineal gland in human functioning. No wonder the French philosopher Descartes believed that the pineal was the seat of the soul! Similarly, Eastern philosophies refer to the place in the center of the forehead, just above the eyes, as the psychic and spiritual center, otherwise known as the "third eye."

In human beings, the pineal secretes several hormones, including dopamine, serotonin and melatonin. Lately, melatonin has received quite a lot of publicity as the hormone that induces drowsiness. Melatonin levels increase at sundown. They are plentiful during the night, especially between 2:00 and 3:00 in the morning, when the hormone is secreted at 10 times the amount of its lowest level. Then by morning, the levels diminish; and they become even lower during bright daylight hours.

The ebb and flow of melatonin forms the foundation of our biological time clock. Besides regulating our sleep cycles, the hormone regulates metabolism, the menstrual cycle, and the size and function of the thyroid and adrenal glands. Melatonin also helps alleviate depression, decreases pain, maintains brain acuity, encourages immune response, and even slows the aging process. Newer research shows that melatonin not only scavenges free radicals, but it also inhibits the growth of many types of cancers, including breast and lung, renal cell carcinoma, hepatocellular carcinoma, and brain metastases from solid tumors. Melatonin also appears to lower LDL cholesterol levels. Some researchers suspect that unusually low melatonin levels are a factor in Multiple Sclerosis, coronary heart disease, epilepsy, and postmenopausal osteoporosis. These reports, while preliminary, further suggest the range of melatonin's potential. The variety of functions does not seem unusual, considering the pineal gland's role as light receiver and light transformer.

### Light Therapy for SAD

It has long been observed that mammals set their biological clocks according to how much light the sun emits, and for how long. In the Northern Hemisphere, the sun appears the least during the winter. In the Southern Hemisphere,

the sun appears the least during the summer (the equivalent of a Northern winter). The farther away from the equator the land is, the less sunshine one receives. In parts of the world where the seasons discernibly change and the sun is present for the fewest hours, all life undergoes a major biological shift. In animals, the metabolism automatically decreases. This causes the body to store fat and induces the animal to sleep or nap, in a period of complete or partial hibernation, until the Earth thaws and green plants grow again.

This evolutionary pattern makes sense for an animal when food is scarce and the animal needs to keep itself warm in a secure shelter. But the same adaptive mechanism in humans conflicts with our modern lifestyle. Most people hold jobs and have other responsibilities that do not allow them to slow down for introspection, spiritual reflection, or simple quiet time. Nonetheless, they suffer from a slower metabolism as though they were going into hibernation. Many people not only overeat carbohydrates and gain weight, but they also become irritable and fatigued, sleep excessively, engage in less sex, and even suffer from lowered immunity.

As you might guess, it's more than the cold that affects us adversely. So does the lack of adequate sun. This condition of light deprivation is called *Seasonal Affective Disorder*, also known as SAD (not to be confused with the same acronym that stands for *Standard American Diet*). The acronym SAD is indeed appropriate, since many people experience sadness—if not outright depression—if they lack adequate light.

In warm locations closer to the equator, SAD is practically non-existent. But in the Scandinavian countries, Greenland, Northern Canada and Alaska, SAD is common. The Earth's tilt, together with its elliptical orbit around the sun, makes it receive the sun's rays at an angle. This results in 24 hour periods of light during the peak of the summer, and 24 hour periods of darkness during the peak of the winter. (Hence, any of these countries are sometimes called "the land of the midnight sun.") With such unremitting periods of darkness during the winter in these locations, there is a higher than normal incidence of depression and suicide.

The increase in melatonin production, resulting from fewer daylight hours, is responsible for SAD. The light-dependent hormone, so desirable at night for its soporific effects, causes depression when too much is secreted at other times. (This is why too much melatonin supplementation can cause depression; so if you use it, make sure you take just enough, and at the appropriate time.) SAD is such a worldwide phenomenon that the 1988 book, *The Hibernation Response*, is appropriately subtitled *Why You Feel Fat, Miserable, and Depressed from October through March—and How You Can Cheer Up Through Those Dark Days of Winter*. (This book was obviously written for a North American audience living far north of the equator.) The entire book is devoted to strategies to counteract our genetic tendency to become sluggish, fat and depressed during the hibernation periods. The primary treatment? Exposure every day to bright lights, between one-half to four hours depending on the climate, the individual, and the severity of the condition. A similar program is recommended to help regulate a woman's menstrual cycle. Exposure to light at certain intervals can correct menstrual cycles that are too short or too long.

There is abundant data showing that we are harming ourselves by substituting artificial light for natural sunlight. Liberman writes:

> Until 1879, when Edison perfected the light bulb, people spent most of their time outdoors and received adequate daily doses of natural, full-spectrum sunlight. Although Edison's invention was a quantum leap in technology, it simultaneously created a situation in which people lost respect for nature's daily light/dark cycle and began "burning the candle at both ends." With the growing availability of the light bulb, life became largely an "indoor event," which drastically reduced the amount of time to which people exposed themselves to full-spectrum light. . . . Artificial lighting and its effects on physiology and behavior obviously needs to be evaluated. By spending an inordinate amount of time under artificial lights, we may be subjecting ourselves to *malillumination*, in much the same way as we subject ourselves to malnutrition by eating an unbalanced diet.[211]

Liberman acquired the term "malillumination" from John Ott, one of his teachers. Ott had some wonderful insights into how electromagnetic frequencies are used by the body. All nutritional substances and drugs, he wrote, have a specific wavelength at which they are absorbed. If those wavelengths are missing in the light source to which a person is exposed, "then no biological combustion will take place and the nutritional benefits of the particular substance will not be utilized."[212]

> The European Society for the Study of Drug Toxicity has reported that the lethal dose rate for most drugs is higher when administered during the daytime than during the night. We also know that light received through the eyes stimulates the pineal and pituitary glands These glands control the endocrine system that regulates

the production and release of hormones controlling body chemistry. This would then seem to me to be a carryover of the basic principles of photosynthesis in plants—sometimes referred to as a conversion of light energy into chemical energy—to animal life, a phenomenon not heretofore recognized. Thus the wavelengths that are missing in various types of artificial light or that are filtered from the spectrum of natural light by window glass, windshields, eyeglasses (particularly tinted contact lenses or deeper shades of sunglasses), smog, and even suntan lotions, are causing a condition of malillumination, similar to the malnutrition that occurs when there is a lack of a proper nutritional diet.

Those minerals and chemicals in the individual cells of our bodies that would normally be metabolized by the wavelengths that are missing remain in the equivalent of darkness, even though other wavelengths are present. The end result is an incomplete metabolic or biological combustion process.[213]

Ott spent years researching and conducting experiments. Some studies showed that mice and rabbits living under pinkish or bluish lights compared to their full spectrum counterparts developed much higher rates of cancer. Other studies showed that school children who learned under normal blue-white fluorescent bulbs exhibited considerably more behavioral, emotional and learning problems than when the classrooms were installed with full spectrum fluorescent lighting (which was also specially shielded against unwanted X-rays that are normally emitted from the ends of the tubes). The students' aggression levels decreased, and they became more cooperative and peaceful. Even their blood pressure dropped an average of 20 points when they were beneath the full spectrum lights. Significantly, even the behavior and attitudes of blind students improved—a testimony to the nourishing aspect of electromagnetic radiation in the visible wavelength band.

The sun provides all wavelengths. Most indoor lighting does not. Spending too much time indoors skews our biochemical reactions by depriving us of essential EM wavelengths. Ott cited many studies involving laboratory rats, bean seeds, plants, children, and adults. When exposed to unshielded television radiation, unshielded fluorescent lights, X-rays, unshielded computer monitors etc., plants grew crooked. Children and animals became abnormally hyperactive, aggressive, irritable, and/or lethargic. Adults had physical problems including eyestrain, nausea, headaches and backaches. The repercussions of malillumination are so extensive that some farmers and livestock raisers who don't let their animals outside enough install plastic windows that allow UV radiation into the barns and henhouses. The message is clear: we need natural light in order to remain healthy.

If you lack the opportunity to lie naked in the sun, you can use indoor electrical lighting as long as it's *full spectrum* and not incandescent. Full spectrum lighting contains all wavelengths (colors) emitted by the sun. Regular incandescent bulbs contain more of the yellow and red colors emitted by the sun, and most fluorescents are too bluish. Compact fluorescent light bulbs, pushed onto a public fearful of global warming, are not full spectrum either. (They are also extremely dangerous, as they contain mercury and emit small amounts of fumes when heated. Should they break, the mercury vapors they release into the air can cause serious neurological damage.)

The sun may be the original healer. Repeated exposure to sunshine:

- Destroys pathogenic microbes.
- Stabilizes blood sugar levels (both diabetes and hypoglycemia).
- Reduces excess harmful cholesterol in the bloodstream.
- Lessens harmful lactic acid buildup in the muscles, even without exercise.
- Slows, deepens and eases breathing.
- Decreases the resting heart rate.
- Helps the lungs absorb more oxygen.
- Helps the muscles better utilize the oxygen that's already in the body.
- Helps the body develop muscles and eliminate fat, even when inactive.
- Increases blood supply to the deep internal organs as well as muscles, due to the stimulating effect on the sympathetic nervous system.
- Normalizes hormonal levels in the body, which cause beneficial changes ranging from a more rapid healing of wounds to stress reduction.

This is quite a list of benefits for a modality that doesn't cost a penny!

### *Single-Color Light Therapy*

Sometimes an organism lacks not just sunlight (which contains a wide range of electromagnetic waves), but a

*particular* EM wavelength in the *visible light* range—which we perceive as a color. Ott once remarked that organisms respond to specific, narrow bands of particular wavelengths of visible light, and "not just to the difference between light and dark."[214] When specific wavelengths are missing from an artificial light source, "the biological receptor responds as if it were in total darkness, even though other wavelengths are present."[215] This points to the biological hunger for all colors.

We know, based on chloroplast response in plants, that green growing things require specific wavelengths. Chloroplasts are plant cells containing chlorophyll, that are arranged in certain patterns. Depending on the color of light shone on a plant, the chloroplasts will assume either orderly or chaotic designs. Corresponding cellular activity also occurs in animals. In 1966, looking through a phase-contrast microscope, Dr. Ott saw that the biological responses of live rabbit eye pigment cells changed, depending on the color filter he was using. Ott remarked, "If a particular ailment can be treated with certain wavelengths of light, we might logically assume that living under an artificial light source that lacks these wavelengths can contribute to causing the ailment in the first place."[216]

Ott's conclusion makes sense, considering that humans evolved while becoming acclimated to all of the electromagnetic wavelengths emitted by the sun—all of which have specific properties. Acupuncturist Anna Cocilovo and physician Ron Rosen write:

> Colored light has a particular ability to balance the autonomic nervous system, which is crucial in most chronic and functional disorders as it regulates all of the automatic processes of the human body: breathing, the beating of the heart, the functioning of the digestive tract, the stress response. Light as an environmental stimulant, is second only to food in its impact on controlling bodily functions. Interestingly, light through the eyes reaches not only to the visual centers of the brain, but also the hypothalamus. The hypothalamus is the brain's brain. It . . . houses the body's biological clock, . . . organizes information from our external and internal environments, initiates the stress response, regulates immune function, reproduction, thirst, hunger, temperature, emotions, and sleep patterns.[217]

Different colors produce different effects. For example, red light is stimulating. It increases muscular strength, eliciting 5.8% more electrical activity in the arm muscles compared to other colors.

Pink light calms the nerves, inducing effects that are not only psychological but physical, too. Liberman reports that in inmates placed in small holding cells painted bubblegum pink, "a reduction of muscle strength happened . . . within 2.7 seconds. [This particular shade of pink] has been proven to calm the most jangled nerves within minutes. Where brute force or sedative drugs were once the only treatment option, . . . pink holding cells are now used to significantly reduce the incidence of violent and aggressive behavior."[218] It's reasonable to suppose that violent individuals, for whatever reason, might suffer from a deficit of that particular wavelength of electromagnetic radiation, which is visually perceived as pink light.

Blue light is so famous for its therapeutic effects, that it has been used by the mainstream medical community for half a century to treat babies born with jaundice. The distinctive yellow skin color of jaundice—a condition found in over 60% of prematurely born infants—is caused by bilirubin. Bilirubin is a yellowish chemical from the liver that accumulates in the tissues when the body cannot break it down. Unless given blood transfusions, these babies have always been prone to brain damage and even death. However, in 1956 a nurse named Sister Ward at Rochford General Hospital in England accidentally discovered, and then popularized, the use of light to heal this disorder. Not wanting to leave the babies in the stuffy incubators all day, she wheeled them into the sunlight for some fresh air. When new diapers were placed on the infants, the hospital staff noticed that the skin was bright yellow underneath the cloth, but the rest of the skin was a much paler yellow. It was subsequently discovered that bilirubin levels dropped dramatically in test tube samples that were exposed to sunlight.

Apparently, as Ott later wrote, the blue colored electromagnetic wavelengths pass through the tissues of the body, interact with the bilirubin, and transform it into a harmless substance that the body can easily excrete. This has led to the routine practice of placing jaundiced infants beneath bright blue lights of 450-nanometer wavelengths. The blue lights are somewhat less efficient than pure sunlight, but they can be used indoors, all year long. Liberman comments:

> Some medical researchers think neonatal jaundice is caused by immaturity of the infants' organs. For example, the liver may not be developed enough to remove toxins from the body. Others think the jaundice is artificially created by a lack of sunlight in modern, windowless nurseries. *Since the liver's ability to detoxify the body differs under various lighting conditions,* it is questionable whether neonatal jaundice is truly caused by an immature

> liver or whether it is the direct result of a premature infant's sensitivity to sunlight deprivation. [emphasis added] [219]

Ironically, the use of blue light for bilirubin babies in lieu of simple sunshine may be partly due to the modern appetite for more complicated and high-tech solutions! Still, the need for blue light illustrates the vital role of the visible EM band on our physical, mental and emotional health.

So, the bright red, orange and yellow of a sunrise heralding the energy of a new day, and the blue, indigo and violet appearing at night as we get ready for sleep, are more than just pretty poetic metaphors. Visible colored light appears in nature at specific times for a reason. You might regard a color as a visible corollary of the particular wavelength's *function*, as in the twilight blue wavelengths that stimulate melatonin production.

One of the profound color therapies developed to date is Dinshah's Spectro-Chrome system. This therapy is so beneficial, inexpensive and low-tech, that it's worth exploring in depth. See below.

### *Dinshah's Spectro-Chrome Color Therapy*

Therapy with colored light has been used for centuries. Although our predecessors may not have known exactly *why* the therapy worked, they knew that it *did* work. Among many who furthered the art of color therapy was an American physician named Edwin Babbitt. In his detailed 1878 book, *The Principles of Light and Color*, Dr. Babbitt described his system of applying colored light to the body, and of using sunlight to charge water in colored glass bottles, from which his clients drank. The book also related many case studies of people whom conventional medicine could not help, but whose health was restored by color therapy. Babbit explained that the warm colors (red, orange and yellow) were stimulating and arousing, and could therefore treat depletion-based conditions such as paralysis and exhaustion. The cool colors (blues and violets) were soothing and sedating, and could therefore treat inflammation-based conditions such as meningitis, sunstroke and burns.

Color therapy became much more prominent after Dinshah P. Ghadiali (1873–1966), a man of Persian descent who was born in India, came to the United States as an adult. In many ways, Dinshah's genius and history paralleled those of Royal Rife. By age 11, Dinshah (as he would later be called) was assistant to the Professor of Mathematics and Science at Wilson College in Bombay, India. He spoke over 20 languages competently, gave demonstrations in physics and chemistry, became an electrical engineer and mechanical engineer by trade, and eventually earned MD and PhD degrees. In 1896, Dinshah visited the United States, where he lectured on X-rays and radioactivity; met (among other scientists) Nikola Tesla and Thomas Alva Edison; and was referred to by *The New York Times* as "the Parsee Edison." [220] In 1911, after Dinshah married, he came to live in the United States. At least five of his inventions were patented, including an automobile internal combustion engine fault finder, a color wave projector, and an electric thermometer.

Drawing from Babbitt's writings, his own experiences as a medical practitioner in India, and spectroscopic discoveries by numerous scientists, by 1920 Dinshah refined a sophisticated system of color therapy called *Spectro-Chrome*. The therapy consisted of an incandescent bulb, placed in a box with specially hued glass in the front, that shone light onto areas of bare skin that needed treatment. Different colored glass filters were used, depending on the health issue. Spectro-Chrome was the first color healing modality that utilized red, orange, yellow, yellow-green, green, turquoise, blue, indigo, violet, magenta, and scarlet wavelengths. Dinshah explained that when a person is deficient in a given color, illness relating to the deficiency develops—and that, by restoring that particular color to the person's energy field, the illness is eliminated. The website of the Dinshah Health Society states:

> How can colored light possibly cause a physiologic effect inside a human (or animal) body? . . . Each individual cell in a living organism has a specific function to perform. In so doing, it generates and radiates a specific energy; the cellular energy totality is often termed the "aura." The liver radiates the equivalent frequency (harmonic) of red light, the pituitary radiates green, the spleen violet, circulatory system is magenta, lymphatic system is yellow, and so on. The logic behind color therapy is this: when a particular organ or system is underactive, its auric energy decreases so the appropriate activating color is projected on the affected area (sometimes the entire body). If overactivity is present, such as in excessive fever, the obvious remedy is an opposite (depressant) color. Further, by energizing the natural reparative powers present within us, rather than relying on drugs with their attendant often-dangerous side effects, resistant bacteria are not encouraged. [221]

Colors, as wavelengths (frequencies) in the electromagnetic spectrum, affect us as does any other EM radiation. (See Appendix C, "Healing with Electromedicine and Sound Therapies," for more details.) We respond to color as we respond to food. Thus, *colors are nutrients*.

This "light food" also corresponds to *minerals*. By using spectrometry (which measures the various wavelengths emitted by elements), Dinshah could verify that the minerals he tested emitted the same wavelengths of light (colors) that were needed to treat different conditions.

Spectro-Chrome therapy was becoming more widely used, by both medical professionals and the lay public, when Morris Fishbein initiated what would become years of legal proceedings against Dinshah—with the same venom he had mustered to target Royal Rife. At one of Dinshah's trials, several distinguished medical doctors, each with many years of experience, testified under oath that they had successfully used Spectro-Chrome to treat cancers, cardiovascular diseases, eye diseases (including acute infections, cataracts, glaucoma and hemorrhaging), middle ear infection, diabetes, goiters, nervous system disorders (including meningitis, polio and sciatica), gastrointestinal disorders (including hemorrhoids and ulcers), muscular and joint problems (including arthritis, lumbago and rheumatism), reproductive conditions (including gonorrhea and syphilis), respiratory diseases (including asthma, bronchitis, laryngitis, pleurisy, tonsillitis and tuberculosis), skin problems such as boils and rashes, and an assortment of conditions one might not think color therapy could help (such as appendicitis, drug addiction and radiation burns). In the case of a strangulated hernia, the use of Spectro-Chrome eliminated the need for surgery.

One of Dinshah's most distinguished supporters was Kate W. Baldwin, MD, Senior Surgeon of the Woman's Hospital of Philadelphia. From the 1920s well into the 1940s, Dr. Baldwin used Spectro-Chrome in the hospital. One widely publicized case was of a severely burned child, whom the staff was unable to help and considered incurable (terminal). Baldwin achieved such spectacular success using Spectro-Chrome alone, that later, the hospital board granted her request for more cubicles to administer the therapy. Baldwin wrote:

> After nearly 37 years of active hospital and private practice in medicine and surgery, I can produce quicker and more accurate results with colors than with any or all other methods combined—and with less strain on the patient. In many cases, the functions have been restored after the classical remedies have failed. Of course, surgery is necessary in some cases, but the results will be quicker and better if color is used before and after operation. Sprains, bruises and traumata of all sorts respond to color as to no other treatment. Septic conditions yield, regardless of the specific organism. Cardiac lesions, asthma, hay fever, pneumonia, inflammatory conditions of the eyes, corneal ulcers, glaucoma, and cataracts are relieved by the treatment.
>
> In some unusual and extreme cases that had not responded to other treatment, normal functioning has been restored by color therapy. At present, therefore, I do not feel justified in refusing any case without a trial. Even in cases where death is inevitable, much comfort may be secured.
>
> There is no question that light and color are important therapeutic media, and that their adoption will be of advantage to both the profession and the people. . . .
>
> There is practically no hospital that I know of, that is not using light, plain light or some colored lights, in some way; and there are [a] great many of our physicians, who are using color and light in their private work. . . . I would close my office tonight never to reopen, if I could not use Spectro-Chrome.[222]

For this therapy, it's important to use the exact wavelengths (colors) that Dinshah himself used. His glass plates are no longer available, having been lost or destroyed decades ago. However, Darius Dinshah—one of Dinshah's sons who founded the Dinshah Health Society—recommends an acceptable substitute. Users can purchase transparent colored plastic sheets, originally designed to be used for theatrical lighting, and which emit the same color wavelengths as the old glass plates. In Darius's book, *Let There Be Light*, he summarizes the history of Spectro-Chrome, explains in detail where to apply what color for hundreds of conditions, and advises where to obtain the color sheets at a reasonable cost. The Dinshah Health Society contact information is listed in the Resource Appendix.

Besides shining a light through the color sheets onto the skin, users can also place colored plastic around clear glass bottles to transfer the wavelengths into the water. The effects of drinking the water, combined with applying the color to the outside of the body, are exponentially more powerful than the effects of either method used separately. The colored light can also be shone into a bathtub. This is a good option to use if the condition requires color on both the front and back of the body. Since water is easily imprinted, the color is imparted to both sides of the body at the same time.

Spectro-Chrome is non-invasive, inexpensive, and simple to administer. One huge advantage to this therapy is its low-tech aspect. It does not require electricity; the sun is an excellent source of light. Plastic sheets can be placed on the body, and the sun does all the work while you simply lie down or sit.

Animals as well as humans can benefit from this therapy. A recent newsletter from the Dinshah Health Society reported:

> About 1,400 ducklings, day- and week-old, in a pen had a lemon light shining on them. It had to be turned off to prevent physical injury because they climbed over one another, even five deep, to get near the lemon [yellow-green] color.[223]

### *Summary*

Electromagnetic radiation, in the form of both visible light and invisible wavelengths, has profound effects on living organisms. The physiological, biochemical, and psychological effects cannot be separated.

"The research papers don't seem to address the fact that humans evolved under natural sunlight," Liberman reminds us. "Are we supposed to dismiss five million years of evolution because science doesn't understand the supreme wisdom of nature?"[224] As Bernarr MacFadden wrote, almost 75 years ago:

> For innumerable years the world has not required science to give it sunlight. . . . Life on the planet has survived because it received enough of these rays to maintain life and health. What is needed now from science is not so much help in the application of the rays as help in removing the conditions that prevent them from reaching us.[225]

People ignored the benefits of sunshine—and even became afraid of it— during the late 1930s. This was the beginning of widespread manufacture and use of antibiotic drugs. Coincidence?

## SAUNA THERAPY

If you ever travel to Finland and are lucky enough to be invited to someone's home for a cup of tea, don't be surprised when you're asked to remove your clothes. You are not being seduced; your hosts are simply requesting your presence in the sauna. To the Finns, an enjoyable evening consists of disrobing and entering a dimly lit, closed, hot, somewhat dry room of at least 160°F (71.1°C), maybe even 212°F (100°C), for a relaxing chat and sweat. The chances of this happening are not as remote as you might think: currently, the ratio of saunas to people in Finland is estimated to be one sauna for every three people.

The many different methods of body heating available today are based on practices that are thousands of years old. In India—where some researchers believe sauna use originated—an Ayurvedic medicine document from 568 BC was found, recommending 14 different methods of inducing sweat. The baths of ancient Greece and Rome included steam chambers, hot baths and cold pools. The Native American sweat lodge consisted of curved branches covered with animal skins, with large heated stones on the dirt floor in the center of the lodge. For centuries, all over the world, different peoples developed different methods of body heating in areas ranging from small cubicles of clay that held one person, to huge wooden rooms that held dozens. While the materials for these sweat houses evolved through the years, the reasons for sweating did not: it is cleansing to sweat, especially after you're out of the heat and have washed the toxins off your skin.

Sweating is not highly regarded in the United States. Although everyone normally does it, it's considered unattractive and even sometimes embarrassing (unless you're an athlete). But the act of perspiring has some very important functions—enough to propel people into various types of steam cabinets, hot baths, and dry hot air saunas. Before I discuss saunas, I want to briefly explain how the body regulates temperature.

In a healthy individual, the body temperature should remain at 98.6°F (37°C). The temperature regulation mechanism in the hypothalamus portion of the brain constantly receives feedback from nerves inside the body and at the surface of the skin. The nerves inside the body report its temperature, and the nerves at the skin (the mediator between the body and the external environment) report the outer temperature. If the environment gets too cold, the temperature regulation mechanism directs the body to produce heat by shivering. Also, the blood vessels at the skin's surface are told to contract. This forces more warmed blood to the core of the body to protect the vital internal organs (which is why the limbs are the first to freeze during very cold temperatures).

When the environment is too hot and the body likewise overheats, the temperature regulating mechanism behaves differently. The blood vessels in the body and the capillaries at the skin's surface dilate. This allows heat to travel from the core to the surface, and then dissipate. The dilation of blood vessels also helps the body cool by driving *blood plasma* (just the thin liquid, not the red blood cells) into the spaces between each tissue cell. At this point, the plasma is called *interstitial fluid*. The interstitial fluid then migrates to the sweat glands, located deep in the skin just above the fat.

There are 625 sweat glands in one square inch of skin, or approximately 2.5 million sweat glands in the average person. The bottom third of a sweat gland is coiled into a ball, and then straightens into a single vertical channel

(duct) that opens into the top layer of skin. The sweat glands absorb excess interstitial fluid, remove some of the salts (which are recycled back into the body), and then the fluid that is now called *sweat* leaves the body through the pores of the skin. (The fluid that we call blood plasma, interstitial fluid, lymphatic fluid, urine and sweat, with some slight variations in the presence or absence of proteins, mineral salts and toxins, are all basically the same liquid. We call them by different names, depending on their function and location in the body.)

## The Health Hazards of Fabric Softener

The most amazing variety of noxious chemicals are eliminated via a regular protocol of sweat therapy. One group of chemicals that often get released is known collectively as fabric softener. Although poisonous, fabric softener is sold in bottles or in chemical-impregnated sheets in supermarkets nationwide—and promoted as essential for the laundry! Incredibly, many people use fabric softener in their homes several times a week, while they unknowingly make themselves sicker and sicker, and sometimes become terminally ill.

Fabric softener harms more than those who use it. The chemicals permeate clothing fibers, and disperse into the air over long periods. So, in addition to entering the body through the skin of everyone who wears the clothing, fabric softener enters the bloodstream through the nose and lungs. Its strong odor indicates that molecules of the actual toxins are contaminating the system. These chemicals can pollute the air for hundreds of yards from their source, so that even those who prefer not to use fabric softener must endure its ill effects whenever they pass a home where laundry is being done—or whenever they are near someone who has it on their clothes.

The following is a brief summary of the chemicals in fabric softener. Central nervous system (CNS) exposure symptoms include aphasia (brain injury, causing the inability to produce or comprehend language), blurred vision, disorientation, dizziness, headaches, hunger, memory loss, numbness in face, pain in neck and spine. Specific diseases associated with the central nervous system include Alzheimer's, Attention Deficit Disorder, dementia, Multiple Sclerosis, Parkinson's Disease, seizures, strokes, and Sudden Infant Death Syndrome (SIDS).

- *Alpha-Terpineol (A-Terpineol):* CNS damage, including ataxia (loss of muscular coordination); severe respiratory tract irritation disorders, including inflammation of lungs and fatal edema; severe mucous membrane irritant; hypothermia.
- *Benzyl Acetate:* Known involvement in pancreatic cancer; eye and respiratory passage irritant.
- *Benzyl Alcohol:* CNS damage; gastrointestinal disturbances (nausea and vomiting); and is a respiratory tract irritant. Industry literature indicates that in severe cases, death results from respiratory failure.
- *Chloroform:* Causes CNS damage; gastrointestinal disturbances (nausea and vomiting); respiratory distress, loss of consciousness, kidney and liver damage. On the Environmental Protection Agency's Hazardous Waste list as carcinogenic. Industry literature (Material Safety Data Sheet) warns against breathing vapors, as inhalation can be fatal; and advises to avoid exposing the substance to heat.
- *Ethanol:* CNS damage. On the EPA's Hazardous Waste list.
- *Ethyl Acetate:* Eye and respiratory tract irritant; narcotic (can cause stupor); kidney and liver damage; anemia. On the EPA's Hazardous Waste list.
- *Limonene:* Carcinogenic; eye and skin irritant; causes respiratory distress.
- *Linalool:* Causes CNS damage; depressed heart activity; respiratory distress, sometimes leading to death.
- *Pentane:* Causes CNS damage; eye irritation; gastrointestinal disturbances (nausea and vomiting); major respiratory damage; skin rash (dermatitis). Industry literature (Material Safety Data Sheet) warns that inhalation of vapors may cause loss of consciousness, and advises that as this chemical is harmful if inhaled, to avoid breathing vapor.

There are nontoxic substitutes for fabric softener. Add ¼ cup of baking soda to the wash cycle to soften fabric. Or, add ¼ cup of white vinegar to the rinse cycle to both soften fabric and to eliminate static cling (but don't use bleach at the same time, which may create toxic fumes). Also to reduce static cling, don't dry the clothes completely, and allow them to finish air-drying. Synthetic material, which causes most of the static cling, will dry quickly when hung inside or in the sun.

Fabric softener is not a necessity. It's a poison.

Water evaporating from the skin can cool the body as long as the water evaporates faster than the body can produce sweat. This is why the body cannot cool itself well in very humid climates. Even though the air is hot, there is so much moisture already in the air that the air cannot hold any more dampness—and so the sweat remains on the skin. This is why we don't sweat substantially in steam baths. The air is already so saturated with water vapor that the sweat has no place to go and therefore does not evaporate. People tend to sweat more (and more efficiently) in a fairly dry sauna than they do in a steam room.

Nevertheless, some moisture is necessary. Many modern saunas use a slight degree of water to moisten the air; the Finns and Native Americans (among others) have a practice of throwing water on the hot rocks used to heat the sauna. This small bit of moisture helps prevent the respiratory tract from becoming too dry. When there is obvious moisture inside a sauna, it ceases to be a sauna and instead becomes a Turkish or Russian steam bath.

A sauna should be able to raise the internal body temperature by at least a couple of degrees. The idea is to approximate, as much as possible, conditions resembling a fever. A fever is the body's way of combating infection by "cooking" microbes. Most pathogenic microorganisms cannot survive in temperatures over 103°F or 104°F (39.4°C or 40°C). During a fever, the body produces more biochemicals called *endorphins*, which suppress pain. And more *enzymes* are produced, which the white blood cells need to destroy pathogens. Even if the body is not as hot as it gets during a fever, the nerves and tissue fibers will be more pliable. This helps explain why people feel relaxed and in less pain from sauna use.

Perhaps the most important feature of sauna therapy is the *elimination of toxins*. Toxins in sweat come from two places: the interstitial fluid, and, more often, the adipose (fat) cells. The interstitial fluid seizes the waste products of normal cell metabolism. The fatty tissue is a huge storage area for many poisonous chemicals from the environment (including food additives and heavy metals), which tend to be fat soluble. When the body stores these poisons in the fatty tissue, it keeps them out of the bloodstream and prevents them from causing even greater damage to the organs and muscles. When we sweat, most of the toxins that are excreted through the skin come from the fatty tissue, which begins to break down due to the high heat.

Sweating, whether from playing sports, exercising or sauna therapy, takes the burden of processing the toxins off the lymph system, urinary tract, and liver. As the products of cell metabolism and chemical wastes tend to be acidic, sweating may also raise the pH of some bodily tissues to a more alkaline state. This helps explain why people feel better when they perspire more than usual.

### The Salt and Baking Soda Bath

If you can't do a sauna, try this powerful and relaxing bath. The recipe is simple. Pour ¼ cup of sea salt (refined is okay, as long as it's free of preservatives) and ¼ cup of baking soda into your warm-water tub and soak for at least 20 minutes. Or, experiment with 2 parts soda to 1 part salt. A warm-water salt and soda footbath is also effective, with ⅛ teaspoon of each (or a baking-soda-to-salt ratio of 2:1). This soak helps clear the lymphatic system and speeds detoxification. Afterwards, you may feel a bit light-headed or drained, so recharge your cells by lying in the sun.

Toxin accumulation is not limited to seriously ill people. In a Spring 2001 PBS special on the chemical industry's suppression of evidence that their own products cause cancer, newsman Bill Moyers had his blood drawn and analyzed. Out of 150 common industrial chemicals, Moyers's blood contained over 80. The sample included alcohols, solvents, pesticides, petroleum-based synthetics, PCBs, and Persistent Organic Pollutants (POPs). Fifty years ago, there were fewer chemicals than there are today. If Moyers—who is in his sixties—has these levels of contaminants in his body now, what must it be like for a young child or infant today, whose immune response is not as strong as that of an adult? Surely many of us are as toxic as Mr. Moyers. Toxic chemicals, combined with microbial die-off from rifing, make a strong case for using a sauna on a regular basis.

The type of sauna one uses can make a difference between successful and unsuccessful detoxification. Around the early 1900s, medical doctor John Harvey Kellogg tested three kinds of heating chambers to see which one produced the most beneficial effect. Using sophisticated devices that he invented, Kellogg measured the amount of toxins in the urine and sweat of healthy volunteers who took steamy Russian and Turkish baths, and relatively dry sessions in the doctor's own electric light cabinet. Kellogg's device produced more toxins in the skin and urine than did the other steam treatments. The test subjects also became hotter, faster. Why? The excess moisture from the Russian and Turkish baths did not allow for adequate evaporation of sweat. But more important, *the heat wavelengths in the electric light bath were largely in the far infrared range*. Someone in a weakened state—who's less likely to produce FIR in abundance—can benefit greatly from these biologically compatible wavelengths.

Emissions in the FIR range can penetrate about an inch into the body (past the sweat glands in the skin), so FIR heat is ideal to use for a sauna system. Today, more sophisticated heaters have replaced Kellogg's breakable bulbs, but the wavelengths emitted are the same. FIR heaters use very little electricity, since about 80% of the emissions travel through the air to directly heat the body.

Earlier in the **Oxygen Therapies** section, I discussed adding ozone to sauna cabinets. Ozone is more commonly used in steam cabinets than FIR cabinets, but there's no reason why it couldn't be combined with FIR. Since ozone degrades in the presence of steam, it's released before and after the steam fills the cabinet. As long as the pores are open, the ozone can enter the body and circulate throughout the bloodstream. Since pure ozone is not meant to be breathed, it should not be used in rooms, but only in cabinets, which allow the head to stick out.

People who are environmentally ill or have chemical sensitivities need to pay special attention to the materials comprising the sauna. Some woods, such as cedar, are allergenic due to the natural oils that contain terpenes.

Probably the best literature on chemical poisoning is the four-volume set *Chemical Sensitivity*, written by medical doctor William Rea. An allopathic physician by training, Rea changed his approach to holistic after he himself developed multiple chemical sensitivities and was helped only by holistic methods. After he recovered, Rea founded the Environmental Health Center in Dallas, Texas. For more than 25 years, the center has helped over 40,000 people with, among other conditions, multiple chemical sensitivities (also called environmental illness), lupus, neurotoxicity, cardiac problems and cancer. About 1990, Dr. Rea and his colleagues began using saunas, both Swedish (hot air) and far infrared.

A 20-minute sauna session with deeply penetrating heat can increase blood flow to the skin by 50% or more. A profusely sweating person can lose between 1½ and 3½ quarts of water per hour; so drink plenty of water afterward. (People with sluggish lymph systems who tend to retain water should be careful not to over-drink.) Although more water is lost proportionately than minerals, some minerals can still be lost through sweating, so an electrolyte drink might be helpful.

People with serious medical conditions should be under a doctor's care if they want to use the sauna. These conditions include cardiovascular problems, epilepsy, hemophilia, lupus and Multiple Sclerosis. If you have a pacemaker, silicone implant, or metal implant, ask your doctor and device manufacturer if prolonged high heat will damage the device or hinder its effectiveness. Pregnant women and prescription drug users should also seek medical advice before using the sauna. Sauna manufacturers understandably list many medical conditions that contraindicate sauna use, but all the doctors to whom I spoke told me that anyone can use the sauna as long as there is proper medical supervision. Fortunately, the majority of people can probably use the sauna safely without medical supervision. But if you have any questions, consult your doctor.

Most people find that 20 to 30 minutes is sufficient for a satisfying sauna session. People who are clogged with toxins may want to use the sauna every day, while others may want to use it less often. Before entering the sauna, don't eat a heavy meal. Digestion concentrates blood in the stomach region, and it's important to have sufficient blood circulating in your head to avoid feeling lightheaded. Also, as chemicals and poisons leave your system, you might feel nauseated. If you have a lot to detoxify, you might feel a lot worse before feeling better again. But keep going, unless there's a medical reason for you to stop.

Don't use the sauna if you're drinking alcohol or taking "recreational" drugs. You might pass out, or in some way be unable to manage your environment. As certain prescription drugs can interfere with the effects of body heating, check with your doctor and pharmacist. During your sauna, if you feel faint, dizzy or uncomfortable, leave immediately. This isn't an endurance contest. The body reaches a saturation point when it can no longer adapt to the heat and shuts down. This is why historically, various cultures have alternated hot air and hot water baths with cold water. After you finish your sauna, shower or bathe to prevent the toxins that have accumulated on your skin from being reabsorbed. For more information—on the history, theory, and "how to" aspects of taking saunas—see my comprehensive book, *The Holistic Handbook of Sauna Therapy*.

Sauna therapy plays a vital and multi-faceted role in any health regimen. Sweating on a regular basis can exponentially increase the speed at which one heals. Hundreds of well-researched clinical studies report that people with all kinds of conditions benefit from sauna therapy: cancer, colds and fevers, gout, multiple chemical sensitivity, infections of all types, neurological disorders including neuralgia and sciatica, obesity, respiratory ailments including bronchitis, rheumatism, skin conditions including boils and rashes, and toxemia. New data also shows that autistic children respond remarkably well to saunas. They become more focused, articulate and calm. This indicates that autism may be largely caused by chemical contaminants that pass the brain-blood barrier and enter directly into the brain.

If you are rifing, adding sauna detoxification to your repertoire can help cut your healing time in half.

## SLEEP, REST AND MEDITATION

### *Sleep*

#### Effects of Sleep Deprivation

Two very interesting obituaries appeared in 1999 in *The New York Times*. The first reviewed the accomplishments of psychiatrist Louis J. West, who during his lifetime became an expert on brainwashing. The second described the research of Dr. Nathaniel Kleitman, who in 1953 discovered the importance and meaning of the rapid movements that the eyes make during certain hours of sleep (which was later termed *REM*, or *rapid eye movement*, sleep). Working independently, each man discovered that disrupted sleep, or a complete lack of it, can make someone irritable, unable to concentrate, tense, exceedingly withdrawn or aggressive, cognitively disorganized, physically ill, excessively hungry or not hungry at all, and paranoid to the point of hallucinating.

We experience different problems from sleep deprivation, depending on whether the phase of sleep that is interrupted is the dreaming or deep slumber cycle. But all disruptions are serious, even over a relatively short period of time. Sleep helps us repair and replace cells. Active and stressed parts of the body have time to recharge. And during sleep, the brain cycles into different frequency ranges that correspond to dreaming, movement in the body, hormone production, kidney activity, and so on.

Regular sleep is crucial to the formation of new brain cells—and hence, the proper development of memory. In one study, rats deprived of sleep for 72 hours had significantly higher levels of the stress hormone corticosterone. Elevated levels of corticosterone inhibit the production of new cells in the hippocampus region of the brain (involved in memory formation). Once the rats were allowed normal sleep patterns and corticosterone levels were constant, it took two weeks for the hippocampus to produce normal numbers of new cells again.

> Experiments show that when people learn a new skill, their performance does not improve until after they have had more than six and preferably eight hours of sleep [consisting of both dreaming and dreamless sleep]. Without adequate sleep, . . . skills and even new factual information may not get properly encoded into the brain's memory circuits. . . . [Between the stage of sleep occurring at the beginning of the night and early in the morning] the brain undergoes physical and chemical changes whose interaction may be what strengthens memory traces.[226]

**A Brief History of Medicine**

*I have an earache.*

2000 B.C. – Here, eat this root.

1000 A.D. – That root is heathen. Here, say this prayer.

1850 A.D. – That prayer is superstition. Here, drink this potion.

1940 A.D. – That potion is unscientific. Here, swallow this pill.

1985 A.D. – That pill is ineffective. Here, take this antibiotic.

2000 A.D. – That antibiotic is artificial. Here, eat this root.

Sleep is so important that it is commonly used as a political tool. In the 1950s, Louis West was appointed to be a member of a panel "to find out why 36 of 59 United States airmen captured in Korea confessed or cooperated in charges of war crimes against the United States." The findings showed that the airmen did not suddenly turn unpatriotic or suffer "a collapse of will" that caused them to be branded cowards. Nor did the opposing side find "drugs or mysterious methods to induce 'brainwashing.'" By interviewing the men, Dr. West was able to discover that the reason for their political insurgency

> was both simpler and more important . . . [and] enabled us to rule out drugs, hypnosis or other mysterious trickery. . . . It was just one device used to confuse, bewilder and torment our men until they were ready to confess to anything. That device was prolonged, chronic loss of sleep. That, combined with the constant fear of harm and the total dependency on their captors, led the airmen into startling and fairly long-lasting personality changes. Dr. West's work saved the airmen from court-martial. It also demonstrated the vulnerability of people in general.[227]

Another author describes in greater detail how sleep deprivation, combined with psychological techniques, were used to control the airmen.

> This technique uses three phases. First, the victim is kept awake in isolation and becomes disoriented and disillusioned. Second, he is questioned at length and at all hours of day and night to deepen his confusion. Third, after he has been deprived

> of regular meals and sleep, of companionship and reading materials, a man becomes depressed and loses his sense of personal identity. It is at this point that he is ready to accept almost any human contact, regularity, and set of political or moral convictions. By such a simple disruption of normal rhythms, many American prisoners of war were induced to sign confessions opposite to their moral and ethical beliefs.[228]

The physical effects of sleep deprivation are as devastating as the mental ones; even a few nights of broken sleep can catalyze the onset of illness. Sleep deprivation can cause increased heart rate and blood pressure, headaches, digestive problems, and ironically, insomnia. In a 1999 issue of the *Journal of Rheumatology*, one study reported that when the deepest levels of sleep were interrupted for as little as three consecutive nights, the subjects suffered from lowered immunity, which cascades into increased pain levels, fatigue, and inflammation. Lack of sleep also interferes with the body's ability to metabolize fat. According to the book *Mastering Leptin*, nine hours after dinner the body begins drawing on its stored fat and using that for fuel. Lack of sleep (and eating just before going to bed) not only interrupts this process, but also increases one's cravings for carbohydrates.

#### Darkness and Sleep

Eliminate as much light as possible in your sleeping quarters. As discussed earlier in this chapter, melatonin—a hormone secreted by the pineal gland that (among other functions) induces sleep—is produced primarily during darkness. Since the presence of light suppresses the pineal's melatonin (and serotonin) production, it helps to install heavy "blackout" curtains in the bedroom to eliminate stray light. Sleeping in total darkness can make an enormous difference between a restful sleep and even not sleeping at all.

There is some debate about whether the quality of sleep you get by going to bed after midnight is as restful as the sleep you get if you go to bed before midnight. Some sources claim that eight hours is eight hours, and it doesn't matter when you begin the cycle. I disagree. The body is regulated by an innate biological, cyclical clock that depends heavily on cues from light and the Earth's electromagnetic field to secrete various hormones. For thousands of years, the Chinese have recognized that a meridian (representing specific organs and glands) has a peak period of about two hours when it is the most active before leveling off, and at some point a period when it is the least active. For example, the adrenal glands do most of their recharging between 11:00 p.m. and 1:00 a.m. Western doctors are finally taking advantage of the body's natural energetic and hormonal fluctuations by performing surgery and dispensing medications at specific times to ensure an optimal response in their clients. It seems foolish to omit the sleep cycle from this total, biorhythmic picture.

Also, the melatonin responsible for restful sleep is produced in abundance only during darkness. So, even if you sleep for a long time during daylight hours, the sleep will be less restful than sleep during total darkness—unless you have blackout curtains on the windows, and use full spectrum lighting during the time that you are awake at night.

#### Sleep-Inducing Food and Supplements

For people with insomnia, sleepers whose bedrooms receive too much ambient light, or folks whose sleep patterns have become disrupted from jet lag or a night shift job, melatonin supplementation can make an enormous difference between a good night's sleep and not sleeping well. Quickly and easily absorbed into the bloodstream when taken orally, melatonin is a highly safe sleeping aid. Depending on the person's size and sensitivity to the hormone, a standard dose is anywhere from 0.5 mg to 3 mg, taken about one-half hour before bedtime. In general, people report feeling more alert and rested the following morning. However, the very reasons for melatonin's success—the induction of a soporific state—explains why melatonin should not be taken during the day. It can aggravate depression in people who are prone to it.

In the 1990s, the sale of the amino acid tryptophan—which has a naturally calming effect on the brain and nervous system—was made illegal by the FDA. Charles Walters, editor of the holistic farming newspaper *Acres USA*, explained that

> this perfectly safe food supplement became a target for prohibition when Japanese scientists encoded genetically modified organisms [GMO] for economic production [and put it into the supplement]. . . . The GMO product also produced a toxin, and [it is] this poison [that] killed around a hundred people. . . . The FDA failed to identify the reason and promptly canceled the product even when naturally produced.[229]

Tryptophan was again allowed to be sold in 2000. I mention its rocky history to point out that at any moment, a nutritional supplement that is relied on by countless people can always be yanked off the market. In lieu of trying to find a food supplement that contains tryptophan or its precursor (something that chemically combines with something else to form the ingredient you really want),

consider eating a dinner of free-range turkey or chicken, which contain high levels of tryptophan. (Incidentally, it is illegal for baby formulas to be sold unless they contain a certain amount of tryptophan, because a baby will not develop without it.) Sometimes I drink a little chicken soup to get some tryptophan into my system without the stress of digesting solid food.

Some herbs induce sleep. Chamomile flowers make a soothing, relaxing and tasty tea. Other safe herbs that help settle the mind and calm the nerves are valerian, hops and skullcap.

Large dinners can be a major impediment to getting a good night's sleep—especially if you eat after 7:00 p.m.—because the body is being forced to work extra hard to digest food when the timing of the biological clock is set to give the message to slow down and prepare for sleep. If you must munch at night, follow two guidelines: eat small amounts, and eat carbohydrates (starches and sugars) rather than animal protein. Concentrated protein tends to keep people awake and carbohydrates tend to induce sleep. (People have different metabolisms, however; so the opposite may work better for some.) Some airline crews and passengers who cross time zones on plane trips have successfully navigated the time changes by eating meals containing mostly animal protein or mostly carbohydrates, depending on whether they wish to go to sleep extra early or remain awake and alert for longer periods of time.

### A Proper Mattress

Don't underestimate the importance of a comfortable bed, one of the most important purchases of your life. It can make the difference between sleeping well and good health, and sleeping poorly (or not at all) and ill health. In the early 1990s, my partner and I devoted considerable effort to testing mattresses in a New York City showroom. We dragged the mattresses onto the floor (to replicate our wooden platform bed), lay down, and bounced on the mattresses and each other. This attracted lots of attention—it was a weekend sale, and the store was packed—but I'm glad we were willing to risk a little short-term embarrassment for long-term health benefits. We had a great night's sleep for almost 15 years, until the mattress wore out.

There is tremendous variation in the quality of mattresses, more than one might think. In the United States, most mattresses are made with noxious synthetic materials doused with fire retardants and other toxic chemicals that produce foul odors from the outgassing. Even bed *frames* may emit odors if they're made from cheap particleboard (wood chips held together with glues and adhesives). If you purchase bedding constructed with such materials, it can be an expensive mistake to assume that over time the outgassing will stop. It may take a few weeks for the outgassing to stop—or never.

It's wise to invest in a mattress made of natural fibers without chemicals. Natural fibers include cotton, wool, hemp, and real rubber (from the rubber tree). Even though these materials cost more initially, you'll ultimately save money because you won't become ill from the poisonous fumes. Don't assume that the mattress isn't outgassing just because you can't smell it. When the olfactory cells are constantly barraged by odors (pleasant *or* unpleasant), eventually they stop being receptive to the stimulation and then they become numb. If you're surrounding yourself with chemicals, you may be causing yourself harm without realizing it.

### Inclined Bed Therapy (IBT)

The angle of the bed can be as important as the materials with which it is constructed. Recently, a new way of sleeping, called Inclined Bed Therapy (IBT), was developed in the United Kingdom by Andrew K. Fletcher. The head of the bed is elevated initially between three and four inches, and gradually raised to an optimum eight inches. This mode of sleeping may sound strange, but its origins are sound.

Fletcher first became interested in how we can make gravity work for us by investigating the mechanism by which trees draw water from the soil. This led to a public experiment conducted before an audience that included Forestry Commission scientists and the local press. Using a series of tubes, chambers, water and minerals, Fletcher showed that water travels upwards much higher than one might think—as long as it's part of a feedback loop where heavily mineralized water can flow down, and non-mineralized water can flow back up.

> Any concentration of minerals suspended in water results in the production of heavier water. Heavy liquids produced in the uppermost parts of the tree must fall towards the roots because of the effect of gravity. But, for every action there must also be a reaction, and the reaction is that any downward flowing pulses of heavy mineral laden sap will cause a far greater volume of a lighter, dilute solution, in adjoining tubes, to be lifted. . . .
>
> Some of [the heavy downward-flowing fluids] are used in the continuous cycle of growth [of the tree], while any remaining heavy liquids which reach the roots are re-diluted by incoming water and flow back to the leaves having become lighter, drawn up by downward flowing concentrated solutions in a continual cycle.[230]

The water utilization of trees applies to that of humans, too. Heavily mineralized blood plasma flows down as a result of gravity, and blood plasma that is *not* heavily mineralized flows back up. Due to the pumping action caused by the heavy mineral-laden fluid and the lighter fluid containing fewer minerals, there is no stagnation of movement. However, there is stagnation when the body is horizontal. By sleeping on an incline, we make gravity work for us, and not against us. Fletcher pointed out that

> baboons and other primates sleep in anything but a horizontal position in the branches of trees in order to avoid predators. Cattle and sheep, when given a choice all sleep facing uphill. Birds sleep standing in an upright position. Emperor penguins, for instance, are able to withstand the harsh conditions of Antarctica's winter as they huddle together in an upright posture for several months without food. . . . The eggs, which they incubate, are maintained at a temperature near to that of our own body temperature. Clearly then, the metabolic rate that maintains our own and every other creatures body temperature is linked, in some way, to the force of gravity, but how?[231]

(Although a five degree incline used while sleeping has some similarities to an upright position, the two are quite different. I will address this in a moment.) Once Andrew Fletcher secured the help of his family (including pets) in his experiment with inclined beds, he was able to measure the biochemical and physiological changes that result in the body. First, urine pH was found to test highly acidic during the first morning visit to the bathroom, compared to when sleeping flat. In addition:

> Measurements were taken [of heart and respiration rates] while they slept both horizontally and in the inclined position. Over several weeks, it was constantly observed that in all cases the heart rate decreased by around 10 beats per minute during inclined sleep, and the respiration rate decreased by 4 to 5 breaths per minute when compared to horizontal sleep. These measurements were later repeated and electronically confirmed by a nurse working in the Operation Recovery Room of Derriford Hospital, Plymouth. Yet the circulation and metabolism in all cases was higher in the "inclined" sleep than the horizontal or traditional sleep [position].[232]

One can imagine Fletcher's excitement as his investigation extended beyond his family to willing friends and neighbors. Reports of enormous healing benefits began pouring in.

> All who took part [in the inclined bed therapy experiments] experienced benefits, some being almost beyond belief. Several people have shown that it is possible to reverse damage to the central and peripheral nervous system, including complete spinal cord injuries and nerve damage caused in chronic progressive Multiple Sclerosis, including damage to the optic nerve. Varicose veins, leg ulcers, edema, arthritic conditions, lethargy, muscle wastage (atrophy) and osteoporosis have all responded well to this therapy.
>
> Some respond in four weeks while others may take four months or more. An improved resistance to infection has [also] been observed and I am hoping that this will enable people suffering from immune deficiency disorders to achieve a stronger resistance to seasonal viruses and bacteriological infectious organisms.[233]

These results do sound too good to be true, don't they? Yet Australian rifer and massage therapist Ken Uzzell has reported major improvements from sleeping on a slanted bed. "I crushed my neck and lower back from an accident many years ago. Since IBT"—Ken had been doing it for only nine months when he wrote me about this—"I haven't had any therapy or pain killers. Plus, my pelvis doesn't go out. It's like I never had injuries. I am close to being the fittest I have ever been."[234]

Uzzell also observed major improvements with his massage clients who began doing IBT. All sorts of conditions were lessened or eliminated entirely: acid reflux, arthritis, back pain, edema, Multiple Sclerosis, metabolic disorders, Parkinson's, and respiratory distress that included sleep apnea and snoring. Some of Uzzell's clients are professional athletes. When they began using IBT, he recalls, their coaches were "staggered" by their performance increase. "I was told not to spread the word too aggressively, since after all, people like their competitive advantage."[235]

There are sound physiological reasons for this apparently disparate list of improvements during IBT. One, with vastly improved circulation of bodily fluids—even though the heart is not working as hard as it does during horizontal sleep—nutrient conveyance and waste removal are more efficient. Two, the reduced compression on the spine allows the lymph tissue to move more freely and drain more easily. Three, the fascia, or membranes

enveloping the muscles, unwind. "This is eight hours of low level prolonged traction that is unwinding the fascia," Uzzell points out. "Rife therapy unwinds the fascia as well. Relaxing the fascia is a huge boost to every system of the body."[236] Four, the more efficient flow of blood and lymphatic tissue allows for much better temperature regulation. This is why IBT subjects feel warmer during cold weather and cooler during hot weather. Five, the slant allows the entire spine to elongate. This encourages better hydration in the spinal discs and the fluid sacks in the joints, which leads to lessening or total elimination of back and joint pain.

The mild traction effects on the spine can produce dramatic results. "Some very nasty spinal degenerative conditions appear to be reversing without the need for surgery or drugs," Uzzell writes on his website. "Bones actually grow longer, you will grow taller. [However, for a period of one to eight days, you will feel] initial aches in muscles as they elongate and reset."[237] Note that some people feel worse before they feel better, especially involving spinal injuries. However, this is a common reaction with corrective therapies that address the underlying causes rather than just the superficial symptoms. Fletcher writes:

> We found that the first week or so feels a little strange and some people experience a slight ache in the spine, that appears to move upwards into the neck, causing a slight stiffening; however, this soon disappears and seems to be a threshold that needs to be passed before the full benefits of this therapy are experienced. Several participants, including myself, have reported a slight increase in height, suggesting the spine is adopting a more upright posture and is probably due to a gentle easing or stretching in the spine.[238]

With such a marked increase in circulation and waste removal, are there any detoxification effects on the body? "You may initially get rapid detox and resulting headaches," Uzzell advises. "But eventually, all systems in the body will respond and normalize. From my observations, physical trauma exits the body in about six weeks, and emotional trauma releases in three to four weeks."[239]

Having known Ken for years as an enthusiastic rifer and dedicated scientist, I could not resist the temptation to experiment. Fortunately, my partner was also willing. He raised the head of our bed with cinderblocks to four inches (later upgrading the cinderblocks to wooden bed risers). We bought a sturdy wooden bed frame with a headboard and put the headboard at the foot of the bed to prevent the mattress (and especially blankets) from sliding downward. After a couple of weeks sleeping much more soundly, we decided to raise the bed to the highest recommended slant of 8 inches. To my surprise, it didn't take long for us to get used to the slant—in fact, my body seemed to crave it. Although I had one fairly rough week of increased neck and back pain, accompanied by pinched nerves (I assumed that the fascia was indeed unwinding from prior injuries), I noticed afterward a marked increase of energy and far less pain. My partner stopped snoring almost immediately, another surprise since it had been such a serious ongoing problem. I feel confident that our health will continue to improve the more we sleep in this manner.

Now, the difference between standing upright and lying down with your head raised at a 5-degree slant. Ken explains:

> Edema, swollen legs due to the break down of the lymph system, is resolved. It sounds as though it should be opposite, and the legs should be elevated as per doctors instructions, but I have seen the reverse to hold more value with this problem than raising the legs. When standing upright, the fluid in the legs will not be discharged, but it is at 5 degrees.[240]

Humans are not the only ones who like IBT. "I've tested the 5 degrees with numerous pets, cats and dogs," Uzzell reports. "After shuffling around a little, they always choose to sleep uphill, and then they won't move for the duration of their sleep."[241] This certainly cannot be attributable to a so-called "placebo" effect. In any case, animals will not allow themselves to be uncomfortable.

If you have a painful and/or degenerative spinal condition, it's important to ease into the change of angles very gradually. Start with a two-inch incline and increase it only every few months. When you become used to the shift, this is your signal to raise the bed a bit higher. The bed can be raised with bricks, wooden wedges or blocks, or pieces of hard foam.

Inclined Bed Therapy costs almost nothing, is totally self-administered, can eliminate pain, decrease your doctor appointments, and increase the quality of your life. Since it's not drug-related, studies on IBT may not appear soon in the medical journals. But since it doesn't cost much money or effort, consider trying it. You might be surprised and delighted.

### *Rest*

Rest is different from sleep, but equally important: it helps restore physical, emotional and mental balance.

Some people think that they are resting while they read, watch television, or listen to music or the radio. One can certainly derive pleasure from these activities. But especially with very ill people, even passively receiving input from the external environment involves "doing something." This minimal expenditure of energy can hinder the body's ability to focus on healing, since it's preoccupied with processing information. Only you know what type of rest is the most rejuvenating for you.

Rest generally means lying down, in a quiet place that's a comfortable temperature. Few people can truly rest with loud, extraneous input such as pounding rock music. Loud music negatively impacts the nervous system. Among other effects, it lessens the production of enzymes and beneficial brain transmitters. Being in nature is a different story. Many people find it healing to be near a lake, on the beach, in a field or by the side of a mountain, listening to a waterfall or birds, while feeling the warmth of the sun and taking in sunlight through closed eyelids.

Even though you might appear to be "doing nothing" while you rest, your entire system is actually quite busy! The liver replaces all of its cells every six weeks, we grow a new skin each month, bone cells are replaced every three months, and the stomach gets a completely new lining every four days. People who are ill not only deal with the normal systemic repair and replacement of cells, but their metabolic, excretory and immune functions are also working overtime. Unfortunately, in the United States, self-worth is too often equated with superior achievement and pushing oneself. So it's easy to feel that if we're not trying frenetically to "make something of ourselves," nothing is happening and we aren't really doing anything. But this isn't true. Healing is a major job.

New research indicates that naps taken during the early part of the afternoon recharge and replenish the mind and body, and actually decrease the amount of sleep needed at night. For centuries, people in many cultures have taken afternoon siestas. Now, a number of businesses in the West are emulating this practice. Sleeping lounges have been set up for office employees, complete with couches, blankets and alarm clocks. Employers are discovering that the 20 or 30 minutes a worker is absent from the job to take a nap more than exponentially increases work efficiency and productivity, as well as morale.

### *Meditation*

In some circles, meditation is regarded as something exotic or esoteric. The most common notion of a "meditator" is a circumspect, ragged sage who renounces all worldly possessions and climbs into a secluded cave somewhere in the Himalayas. But you don't have to be a yogi to meditate. Many people are surprised to learn that meditation merely augments natural, positive body processes that occur many times during one's waking hours.

During meditation, alpha brain waves—typically 7 to 14 cycles per second—are prominent. Everyone, whether formally meditating or not, enters this state many times each day, based on the brain's need to rest (as with muscles, or any other part of the body). A typical cycle of prominent alpha wave brain activity occurs naturally every 1½ to 2 hours. For 10 to 20 minutes at regular intervals, the cognitive brain shuts down. During sleep, this brief (but potent) interval manifests as dreaming. During waking hours, this interval causes lapses in attention that range from barely perceptible to overtly obvious. This lack of focus is often commonly called daydreaming.

Especially with people who push themselves without accommodating the brain's normal physiological cycles, even one correctly performed daily meditation session helps the brain de-stress and provides needed rest. In Western culture, we have become so out of balance emotionally, mentally and physically, that a daily meditation session may not be a luxury, but a necessity.

The main components of meditation are a quiet environment, comfortable position, receptive attitude, and an auditory, visual or kinesthetic cue. To entice the brain into this tranquil state, all meditation techniques teach the meditator to focus either on some aspect of the environment, or on one's internal state. An environmental stimulus can be a sound (drumming or chanting), visual (a candle flame or symmetrical design called a *mandala*), the environment as a whole, or even an activity (tea being poured, as in numerous Oriental tea ceremonies). One's internal state can consist of thoughts, feelings, the breath or other physical processes, imagery, or inner sound (called a *mantra*).

Some people meditate as part of their spiritual practice, while others do it simply to relax. Still others do it for mental clarity. I will address the physical, mental and emotional benefits without commenting on anything spiritual, which is a very personal and subjective matter.

One of the most widely known meditation techniques is the Transcendental Meditation® program (commonly called "TM®" for short). I will describe TM® in depth because, of all the meditation techniques practiced today, this modality has probably undergone the most rigorous scientific scrutiny.

The TM® technique utilizes a silently voiced mantra, consisting of a one- or two-syllable Sanskrit word. TM® is promoted as inducing a settled, peaceful mind, and imparting physical benefits that include decreased heartbeat rate, increased skin resistance to an electrical current, decreased blood pressure, an increase in alpha brain waves, and decreased blood lactase levels. Over time, people

enjoy faster reflexes, increased perceptual ability, better motor coordination, a need for less sleep, and generally improved health.

During the past few decades, considerable research has been conducted on TM®. The official TM® website is packed with dozens of citations of articles from such respected publications as *Scientific American*, *American Journal of Physiology*, *Electroencephalography and Clinical Neurophysiology*, and the *International Journal of Neuroscience*. The authors publishing in these journals have PhD and MD degrees, and some of them work in prestigious universities.

Consider just one study, reported in *Psychosomatic Medicine*, on the effects of TM® on the amount of medical care needed. Two thousand people across the United States who regularly practiced the Transcendental Meditation® and the (more advanced) TM-Sidhi® programs found a marked decrease in the number of medical services required over the course of five years. Their rate of overall hospitalization was an astounding 56% lower than average. When sorted into specific conditions, the figures for meditators, compared to a control group of non-meditators, were impressive. The meditators' rate of hospitalization for cardiovascular disease was 87% lower; for cancer, 55% lower; for conditions of the nervous system, 87% lower; and for nose, throat, and lung problems, 73% lower. No one could possibly rationalize these figures as statistical accidents!

Meditation can also profoundly affect pain levels. In a 2006 study, using imaging techniques of the brain that highlighted its structure, function and pharmacology, scientists found

> a 40% to 50% lower brain response to pain [in 12 healthy, long-term meditators] compared to 12 healthy controls, reported a *NeuroReport* article. . . . Furthermore, when the 12 controls then learned and practiced Transcendental Meditation® for five months, their brain responses to pain also decreased by a comparable 40% to 50%.[242]

Significantly, reduction in pain was not due merely to an altered *perception* of pain, or to "just an attitudinal change," but rather, to "a fundamental change in how the brain functions. . . . [It was a change in physiology that accounted for] a more balanced outlook on life and greater equanimity in reacting to stress."[243]

The authors of *The Relaxation Response* describe physiological changes that occur during helpful meditation as

> part of an integrated response *opposite* to the fight-or-flight response. . . . Lowered oxygen consumption, heart rate, respiration, and blood lactate [which in excessive amounts can cause anxiety] are indicative of *decreased* activity of the sympathetic nervous system and represent a *hypometabolic,* or *restful,* state. . . . [In contrast,] the physiologic changes of the fight-or-flight response are associated with *increased* sympathetic nervous system activity and represent a *hypermetabolic* [or *non-restful*] state. [emphasis added][244]

Medical reporter Sandra Blakeslee concurs, citing research showing that meditation "is good for the brain. It appears to increase gray matter, improve the immune system, reduce stress and promote a sense of well-being." Regular meditating also facilitates the ability to pay closer "attention" to one's environment.[245] That Blakeslee's account appeared in *The New York Times* indicates the respected place that meditation now occupies in conventional medical circles.

Deepak Chopra, a physician from India trained in both allopathic and his native Ayurvedic medicine, has written many books on healing. In them, he has consistently emphasized the importance of meditating (first he advocated the TM® technique, and later he began teaching his own system). In all cases, he offers the perspective of a physicist. Deep relaxation of the nervous system, Chopra explains, results in clarity of thought and "purity" of emotions. By "purity," Chopra means *coherence*.

> The basic principle is like that of a laser. Normally, light is emitted as scattered, or incoherent, waves. But when light is generated in a laser, a small number of photons are aligned coherently, forming uniform waves, and their influence is enough to trigger a huge outpouring of coherence in all the other photons. The result is . . . coherent light moving in unison. Laser light is much more powerful than normal light: it can cut through steel or travel to the moon and back without losing focus.
>
> As applied to meditation, the theory is that thoughts are also incoherent and weak in the usual waking state, but that meditation makes them more coherent by hundreds of times. (In fact, researchers have demonstrated strong brain wave coherence through TM®. . . . ) By the power of coherent mental functioning, the meditators have an influence on the whole of collective consciousness, just as a few photons do for the whole laser beam. As a result, coherent awareness increases in general, and the most incoherent behavior among people—crime and war—is defeated at its

> source. . . . As more people meditate, the negative tendencies in society decline. [See Chapter 4 and Appendix C for more information on lasers, and Chapter 6 for more information on the science of thought, emotion and intent.] [246]

There is some dispute as to whether techniques other than TM®—such as Zen sitting, Hatha Yoga, autogenic training, and progressive relaxation—are as effective as the official TM® program. The *Relaxation Response* authors, citing research on TM® that began in the 1960s at Harvard Medical School, maintain that "There are several techniques, most of which are used as relaxation therapy, which evoke the same physiologic changes. . . . There is not a single method that is unique in eliciting the [so-called] Relaxation Response." [247] In response, one interesting research paper, called "The Effects of Transcendental Meditation® Compared to Other Methods of Relaxation and Meditation in Reducing Risk Factors, Morbidity, and Mortality," explains how different forms of meditation achieve different results.

> Just as it is commonly recognized that drug therapies differ in their results (and side effects), it is not unreasonable to consider that relaxation and meditation techniques may also differ in their effects. . . . Ordinarily, the mind is in an active, even agitated state, moving from thought to thought. Because concentration methods try to calm the mind by holding it on one point to prevent it from wandering, these techniques require some degree of mental effort. Because contemplation techniques utilize the meaning and significance of elevating words or phrases, they also keep the mind occupied on more active levels of thinking. Thus, both concentration and contemplation practices engage the active, thinking levels of the mind. On the other hand, the TM® technique is said to allow attention to settle from active to quieter levels. . . . The correct use of the sound [mantra] allows the ordinary thinking process to spontaneously settle to progressively quieter, more subtle levels until even the subtlest thought is transcended and a unified wholeness of awareness beyond the ordinary division between subject (knower) and object (known), termed "transcendental consciousness," is experienced. In this completely silent self-referral state of "restful alertness," awareness is said to be fully awake to itself alone, with no other object of thought or perception. [248]

> Be careful about reading health books. You may die of a misprint.
>
> —Mark Twain, American writer and satirist (1835–1910)

In other words, trying to "do something" during meditation to achieve a particular goal may keep the mind busy. This causes activity in the same portions of the brain that are normally used during daily life. But some forms of meditation, in which the practitioner mentally repeats certain syllables, without striving towards a goal—other than going back to the mantra, if the mind strays—are designed to bypass or *transcend* cerebral cortex activity, thus *quieting* the mind (and body). Such techniques help the meditator access a place of absolute stillness, or still point, within. When in this place, the boundaries between self and not-self become blurred, and the usual stresses of life slip away, yielding to an inner peace that's difficult to describe.

Is this response unique to TM®? Perhaps not. Several meditative methods may produce these effects. Of special interest is Natural Stress Relief© (see www.natural-stress-relief.com). This procedure was conceived by a former TM® teacher, who objected to the $2 thousand it costs to learn how to meditate—and to the $16 thousand it now costs teachers to become re-certified in order to continue as official TM® instructors. Natural Stress Relief© uses a Sanskrit syllable as a mantra, although the word is different from any that have been used in the TM® program. The physiological effects of NSR© have also been studied, though not as extensively as those of its predecessor. Most important, NSR© is more accessible to a greater number of people, since the book and CD—which come with a money-back guarantee—cost less than $50. Interestingly, the late Maharishi Mahesh Yogi, who founded the TM® technique, is reported to have stated, at a press conference several years ago:

> Thirty or 40 thousand teachers of TM® I have trained, and many of them have gone on their own . . . They may not [necessarily] call it Maharishi's TM®, . . . they [may be] teaching it in some different name . . . [but it] doesn't matter. As long as the man is getting something useful to make his life better, we are satisfied. [249]

Although meditation is usually equated with profound rest and relaxation, the phrase "meditative state" has also been used to refer to a relaxed, but alert and focused mental state. Psychologist E. Signy Knutsen writes,

"The most basic form of meditation is giving your full attention to whatever your are doing, be it preparing a meal, driving in your car, or simply talking to another person." Another word for this focus of being in the present is *mindful*.

Our culture does not encourage us to slow down and be mindful. If we were so focused, we would naturally gravitate towards holism. Knutsen continues:

> Creating a time each day for inner reflection and communion "in the moment" is one of the nicest gifts you can give yourself. When Baba Ram Dass told us to "Be Here Now" [the title of his very popular book published in the 1970s], he was describing the basic ingredient of meditation. . . . [Meditation is] an attitude rather than a technique or process. Once you've mastered the attitude, you've pretty much attained the goal of meditation, whatever form it may take.[250]

Whatever definition of meditation you prefer, de-stressing and becoming more mindful are imperative in order to function in today's world. When we become *un*mindful, our energy dissipates, and we become less efficient and less response-able.

Sometimes, people find it easier to be unmindful than conscious. Becoming more conscious may involve confronting painful emotions, overwhelming sensations or negative beliefs. If one can ignore these distasteful aspects with distracting activities such as TV, shopping or drugs, it's easy to forget that "be here now" is even an issue. But being unconscious stresses the entire system. Muscles are in a constant unnecessary state of contraction, the adrenals spring into a chronic fight-or-flight mode, and breathing becomes shallow, restricting the flow of oxygen and nutrients. These stressors create illness. They also create more unconsciousness because the stress itself is so uncomfortable to feel.

In this chaotic age, the need for quiet time has been forgotten. If you have a life-threatening illness, if you've been sick for a long time, or if you simply feel run down, giving yourself time to repair and heal is essential. You're already trying to get enough sleep. And you've promised yourself to rest more. So why not also meditate as part of your new wellness protocol? You won't need as much sleep, and you'll be giving yourself a profound form of rest. There are a wide range of techniques from which to choose. For those who feel drawn to creating their own method, *How To Meditate* by Lawrence LeShan is a good place to start.

If you feel too frenzied to meditate, this may indicate how much you need it.

***Whatever program you follow, please consult the health practitioner of your choice.***



**ENDNOTES**


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*Unless we put medical freedom in the Constitution, the time will come when medicine will organize itself into an undercover dictatorship to restrict the art of healing to one class of [people] and deny equal privileges to others.*

—Benjamin Rush, a signer of the Declaration of Independence

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# Chapter 4

# All About Frequency Devices and Rife Sessions

## INTRODUCTION: HOW TO USE THIS CHAPTER

This chapter contains all the "how-to" aspects of rifing. First, you will be told who may safely use this technology, who should not, and who may use it under certain conditions. Then you will learn about the various features of frequency devices, how to choose a unit that's right for you, and what to look for in a manufacturer. You will be given a crash course on how frequencies affect microbes and the body, and how to select the correct frequencies for your condition. You will also be guided step-by-step on how to give yourself a rife session. This includes session length, duration between sessions, and how to manage the mycotoxic waste resulting from the microbial die-off. A few complementary protocol suggestions for cancer and Lyme are included. The most up-to-date information on high-powered microscopes, and rifing in other countries, will also be discussed.

Before we continue, I want to emphasize three points.

- *It's essential that you read* **Special Precautions for Using This Equipment**, *below.* As with any healing modality, there are circumstances under which you can safely use this technology, times when it is *not* safe to use it, and circumstances when you can safely use it *if you are receiving medical supervision*. If you don't understand the limits of this technology and you don't use it responsibly, you may not get results—or, more important, you may actively harm yourself.
- *Drink plenty of water during and after the session* (for at least 12 hours afterward), regardless of your condition or what device you are using. This may mean 1 or 2 quarts of water, possibly more. Water flushes out the toxic debris that rife sessions release.
- *I am not offering medical advice*. Rather, I am reporting discoveries gleaned from reliable researchers, and describing what works and why, based on reports from experimenters worldwide. It is up to you to use your intelligence, intuition and common sense to discern what is suitable for you and what is not. *As always, if you are ill, consult with a qualified health practitioner of your choice.*

## SPECIAL PRECAUTIONS FOR USING THIS EQUIPMENT

Rife researchers are very clear about when you should limit your exposure to the rife frequencies, or not experiment with them at all. Please exercise caution if you want to experiment with this technology. Some equipment is safe for people with certain conditions but not others. **Types of Machines**, immediately following this section, describes different styles of units in detail.

### *If You Have a Heart Condition, But Are Not Wearing a Pacemaker*

You must limit your experimentation with rife technology, or even avoid it altogether, depending on what type of unit you use. They are as follows:

**Electrode (Pad) Unit**

Do not under any circumstance use an electrode unit that transmits the frequencies by means of an electrical current. The electrodes can be in the form of metal hand-held cylinders, flat metal plates on which you rest your bare feet, electrode patches that stick to your skin, thin metal sheets covered with a wet cloth, or metal pans of water, in which you place a part of the body. The electrical current emitted by electrodes may disrupt the beating of your heart and could even kill you. These same warnings, by the way, apply to other electrical devices that touch the body such as ultrasound machines and TENS units. (TENS is an acronym for Transcutaneous Electro-Nerve Stimulator, a medically approved device commonly used for pain management.)

**Radiant Plasma Light Unit**

This technology is considered safe. However, your unit may come with an optional foot plate for grounding. This is similar to an electrode. *Therefore, do not use the foot plate.*

### *If You are Wearing a Pacemaker for Your Heart Condition*

A pacemaker is a small battery implanted under the skin on the left side, usually below the collarbone, and connected to the heart with wires. It monitors the heart rhythm. If the heart starts to beat too slowly, the pacemaker sends electrical impulses to the heart, causing it to contract. (Pacemakers have no effect on rapid heartbeats, discomfort in the chest area, or weakened heart tissue.)

In order to address frequency device safety for pacemaker wearers, I need to first briefly summarize how pacemakers operate and general safety precautions for pacemaker wearers advised by the medical profession.

The earliest pacemakers were not very sophisticated electronically. As with recent pacemakers, their function was interrupted by even mild electrical current that touched the body. But older pacemakers also malfunctioned when exposed to *RF frequencies* transmitted through air and space. (A certain range of frequencies is known as *RF*, short for "radio frequency," because radio broadcasts are transmitted on them.) In addition, older pacemakers malfunctioned when microwaves were emitted by leaky microwave ovens. Early pacemakers were so crude that some restaurants displayed signs warning wearers that a microwave oven was being used on the premises. Even if the chances were slight that a customer's pacemaker would be affected by microwave leakage, restaurant management understandably didn't want to risk any negative reactions or lawsuits.

Due to these serious malfunctions, around the mid-1980s pacemaker manufacturers began *shielding* the devices so that they would continue functioning even when exposed to various electromagnetic signals in the environment. Although new pacemakers are theoretically shielded, it's possible, one manufacturing rep told me, that not all of them are—especially if they're being used in less technologically developed countries. Older persons who received pacemaker implants years ago are also more likely to carry unshielded models.

Even with the majority of new pacemakers that *are* shielded, due to so many high-tech devices on the market, a shielded pacemaker wearer must still be cautious. Exposure to electromagnetic interference can affect a pacemaker's function by readjusting its settings (although the battery, which generates the rhythmic pulses, usually is not damaged). But even a slight possibility of irregular settings requires pacemaker wearers to recognize the symptoms of pacemaker malfunction, among them dizziness and rapid heart rate. It's critical to be supervised by an experienced doctor whom you trust, who can closely monitor your pacemaker, provide follow-up evaluations, and offer immediate aid if necessary.

Every person in whom a pacemaker is installed is supposed to receive a detailed booklet from the manufacturer stating whether or not the pacemaker is shielded, and what special protocols must be followed. Hospital personnel typically advise their clients that they can safely use computers, copiers, electric blankets, electric tools, radar detectors, radios (AM, FM and citizen band), electric razors, televisions, and other appliances. (The dangers of some electromagnetic fields are discussed elsewhere in this chapter.) Areas of greater concern include leaning over the idling engine of a car, and leaning against metal detectors found in airports and department stores (walking through them is okay). Areas of serious concern include nearby high-tension electric wires, high-voltage sites, and arc welding machines. Household cordless telephones, which are not considered "wireless," are safe to use; but the electromagnetic field from cellular phones could be a problem if the phone (while on) is held near the pacemaker (for instance, in a shirt pocket) instead of near the ear.

Numerous hospital tests and medical procedures, including radiation (for cancer), defibrillation and electrical cauterization, should be done carefully even with a shielded pacemaker; and the device should be assessed afterwards to make sure it's working properly. Another area of particular concern is magnetic force fields from either magnetic resonance imaging (MRI) or other modalities that use oversized magnets. I mention this because some electromedical devices, which ordinarily are safe and effective, operate via magnetic fields that could disrupt pacemakers.

Clearly, wearing even the most modern, shielded pacemaker invites certain risks. This is why it's so important to know about your particular pacemaker unit before trying rife technology.

Our pacemaker summary concluded, who among pacemaker wearers is most at risk for using a frequency device? Depending on what type of frequency device you want to use, your experimentation will be *limited or contraindicated entirely. Please read the information below carefully—your life may depend on it!*

#### Electrode (Pad) Unit

If you wear a pacemaker, do not under any circumstance use an electrode unit that transmits the frequencies by means of an electrical current! The electrodes can be in the form of metal hand-held cylinders, flat metal plates on which you rest your bare feet, electrode patches that stick to your skin, thin metal sheets covered with a wet cloth, or pans of water, in which you place a part of the body. The electrical current emitted by electrodes may not only disrupt the beating of your heart, it can also interfere with the function of the pacemaker and kill you. These are the same warnings given by manufacturers of other electrical devices that touch the body, such as ultrasound machines and TENS units.

#### Radiant Plasma Light Unit with Radio Frequency (RF)

Since electrode units are out of the question for a pacemaker wearer, the only possible safe choice is a plasma light unit.

There are two types of radiant light units: those that use radio frequency (RF), and those that do not use RF. The RF is in addition to the microbe-disabling and biological frequencies that the user programs into the unit. (See **Types of Frequency Devices** later in this chapter for more information on machines that use RF.) Ask the company if the device is using RF to send the frequencies into the body, and explain why you need to know.

Most Rife researchers have assured me privately that radiant light units are perfectly safe—at least for those wearing shielded pacemakers—whether or not a unit is emitting RF, and whether or not a unit is touching the body. Some manufacturers of RF-carrier units claim that you may use the equipment if the RF isn't strong enough to interfere with pacemaker function. The manufacturers also suggest sitting beyond the range of the RF, usually 6 feet from the unit. It's true that radio frequencies do dissipate. But how can the average layperson determine what a "safe" distance is? One may not feel comfortable relying on a company's assurance.

A more prudent viewpoint is expressed by Rife researcher Jimmie Holman, who manufactures a radiant light device that emits very high levels of power without any RF. He emphasizes some important differences between radiant units that emit RF and those that do not emit RF. (See **Types of Frequency Devices** later in this chapter for more information on machines that use RF.)

> Some of these light tube units are excellently constructed. But they emit enough electromagnetic interference to screw up a TV set badly. One of my [earlier, experimental] RF plasma tube units had some of the cleanest, lowest voltage emissions on the market—but in the wrong hands, improperly tuned, it could cause problems. Even a loose cable can be responsible for severe RF leakage. This is why I now refuse to sell such units.[1]

The key here is "properly tuned." One of my favorite frequency devices has an RF carrier wave of 27.12 MHz. A correctly working RF unit can be highly effective.

Check with both your doctor *and* your pacemaker manufacturer to make sure your pacemaker is shielded. If it's not, you will need to consider the pros and cons carefully. If I were wearing a pacemaker and had a terminal illness that did not respond to other treatments, I would use an RF unit. Fortunately, modern pacemakers are supposed to be manufactured so that they are shielded properly.

As an alternative, there are effective frequency devices on the market that do not use RF; see below. If you wear a pacemaker and do decide to use an RF plasma tube device: your unit may come with an optional foot plate for grounding. This is similar to an electrode. *Therefore, do not use the foot plate.*

#### Radiant Plasma Light Unit without Radio Frequency (RF)

Since electrode units are out of the question for a pacemaker wearer, the only safe choice is a plasma light unit.

Ask the manufacturer if the device is using RF to send the frequencies into the body, and explain why you need to know. Fortunately, not all radiant light units emit RF. If the equipment does not utilize RF or emit any other known signal that could disrupt pacemaker function, you may freely use the machine.

Please note that this discussion of RF safety concerns interference with pacemaker function *only*. And it concerns *only* those plasma light units that use RF. There are many frequency devices that do *not* use RF.

Regardless of what type of pacemaker you have: your unit may come with an optional foot plate for grounding. This is similar to an electrode. *Therefore, do not use the foot plate.*

### *If You Are Pregnant*

Nutrients that the mother ingests, chemical pollutants to which she is exposed, and the hormones she secretes, all travel through her bloodstream to the baby. So will the microbial waste and other toxins that flood the system as a result of rifing. Since a developing fetus can't eliminate toxins as efficiently as an adult can, it's wise to avoid experimenting with rife frequencies when pregnant *unless there is an emergency and/or you are consulting a doctor.* If neither the mother nor child are ill, there will be nothing in the system to be killed by the frequencies and the sessions will simply have no effect on the body.

#### Electrode (Pad) Unit

Use of an electrode unit is not a good idea during pregnancy because the electrical current in the body may adversely affect the baby—especially if current flows through the abdominal region.

#### Radiant Plasma Light Unit with Radio Frequency (RF)

The answer is *no*, for reasons similar to those given previously for pacemaker wearers.

#### Radiant Plasma Light Unit without Radio Frequency (RF)

If the mother wants to use the technology, a radiant unit that is lit by high voltage rather than radio frequency is recommended. See **Types of Frequency Devices** later in this chapter for more information on machines that use RF.

Your unit may come with an optional foot plate for grounding. This is similar to an electrode. *Therefore, do not use the foot plate.*

### *If You Are Nursing*

"Do not use if pregnant or nursing" is a standard disclaimer found on the labels of drugs, herbs and even homeopathic remedies. This is because nutrients that the mother ingests, chemical pollutants to which she is exposed, and the hormones she secretes, migrate to her milk to become part of the baby's diet.

Although I have not heard any reports of babies being harmed from nursing when their mothers are using rife equipment, it is probably a good idea to avoid combining the two. *However, if you are nursing there is still a way for you to give yourself rife sessions if you need them.* Express (pump out) extra breast milk before you start rifing, and refrigerate or freeze the milk. (Although freezing destroys some of the nutrients, it may be necessary to freeze the milk if you plan to rife for a long period.) This way, your baby will have an adequate milk supply during the period that you are using the machine. To prevent your milk from drying up, pump your breasts as often as necessary during the rifing period, and throw away the milk since it might contain too much microbial waste. As soon as you feel well again, you can stop rifing and resume nursing.

### *If You Have Blood Clots*

Frequencies can dissolve blood clots. If a clot breaks off into small pieces and travels through the bloodstream, it can lodge in the brain and cause strokes. If you have a history of blood clotting or strokes, check with your doctor before using this equipment.

### *If You are Taking Pharmaceuticals or Herbs*

Sessions on all sorts of electromedical devices can greatly lessen the need for either drugs or natural substances such as herbs. The reason for this reduced intake is increased efficiency in cell function.

One aspect of improved cell function is the desirable separation of previously clustered cells. (Clustering is common in people who are ill). Each cell maintaining its individual integrity allows for much better absorption of oxygen, nutrients and medications. If the medicine has been administered in its suggested maximum amount (usually toxic), and the body's tissues are now more permeable and receptive to whatever they are being fed, rifing without monitoring the dose's effects may cause an even worse problem than what you were originally addressing. Even nontoxic herbs may cause unforeseen effects by now being more readily absorbed. Overdosing—whether it's on medications, or some herbs, vitamins and minerals—may cause permanent organ damage.

If you are rifing and receiving chemo for cancer, *make sure to tell your doctor so your chemo levels can be monitored!* The same holds true for herbs and any other supplement.

### *If You are Wearing Metal Implants, Stents, or Breast Implants*

#### Metal Implants

This pertains to titanium screws used in hip replacements, etc. In general, people with metal implants have reported safely using both radiant plasma and electrode frequency devices.

However, occasionally there may be sensations such as warmth and tingling in the area of the implant. These sensations are likely caused by the transfer of energy (called *inductive coupling* by engineers) within the metal object. Depending on the wavelength of the signal, metal implants can act as receivers because—like the DNA in

biological tissue—they are like miniature antennas, and thus resonate.

The type of unit you use can determine whether or not you experience negative reactions. Internal metal may attract too much current from electrodes, whereas an implant will not attract current from a plasma tube. If the area feels warm, this may indicate internal burning. In such cases, Holman explains, "it's best for the user to either use different frequencies entirely, or reduce the session time to shorter periods, possibly separating one longer session into several shorter sessions."[2]

There are usually several frequencies for the same malady or microbe; so even though one frequency interferes with your implant, there may be another that does not. On very rare occasions, rifing may have to be discontinued indefinitely.

#### Stents

A stent is a tube-like structure inserted into blood vessels or ducts to dilate them. Although stents are generally composed of wire mesh, rifers report having no problems. However, be alert to possible symptoms similar to those from other types of metal implants. Stop rifing immediately and notify your doctor if you experience any discomfort in the area of the stent.

#### Breast Implants

No problems with any type of unit have been reported for people with silicone implants. However, as silicone is quite dense, it will be harder for the frequencies to penetrate the area, so you may need to spend extra time rifing near areas containing silicone implants. Newer style breast implants that contain saline are covered with silicone, so more time with the frequencies may also be necessary with these types.

### *If You Are Especially Sensitive to High Levels of Concentrated Electromagnetic Radiation*

Some individuals have strong negative reactions to various types of emissions on the electromagnetic (EM) spectrum. These EM fields may be generated by hair dryers or vacuum cleaners, or even sonic alarms beyond the range of human hearing, such as those installed in banks. (See Sidebar, "Electromagnetic Radiation and Your Health.")

The emissions from radiant light devices are usually experienced as positive, and negative responses are not too common. Sometimes, rife sessions may rectify whatever is causing or contributing to your sensitivity. However, everyone is different. If you know that you have a history of extreme sensitivity, ask detailed questions of device manufacturers to find a unit (if any) that suits your needs. (By the way, modern homeopathic remedies are available that help people deal with EM sensitivity, so consult an experienced homeopath.)

### *If You Cannot Adequately Eliminate the Toxic Waste Materials Released by the Rife Sessions*

The importance of drinking water while rifing cannot be overemphasized. Water prevents your system from being overloaded by microbial die-off.

This technology may be less effective, and in some cases may actively harm you, if your kidneys, liver, colon, lymph system or immune functions are substantially impaired. If you don't know whether you can handle the effects of rifing, consult with a health care provider who is knowledgeable about cleansing. You may have to build up one or more avenues of detoxification before giving yourself sessions.

### *If You Want to Give Sessions to an Infant or Small Child*

To my knowledge, reliable statistics on the effects of rife technology on infants or older children do not exist in the US. There are good reasons for this lack of data. In the last decade, parents pursuing holistic treatments for their offspring—often at the child's request—have been forced by government authorities to vaccinate the child; medicate the child with Ritalin® or Prozac®; or forcibly subject the child to chemo, radiation, surgery or other allopathic treatments under threats that the sick child would be removed from the home if they did not comply. It's not surprising that many parents who give their children rife sessions don't tell their doctors.

Therefore, except for parents' anecdotal reports of success with rifing their children, we must make an educated guess as to how rifing will affect a particular child, based on what we know about rifing and children's response to illness. German naturopath Harald Sievert writes: "In my opinion, children are far more resilient than we adults believe. This is clearly demonstrated in our therapeutic measures where children eliminate better, react quicker and produce positive results more rapidly with holistic treatment."[3] This suggests that a child will be strong enough to handle the microbial die-off from a session.

Rifing infants should be done on a case-by-case basis, as infants are fragile. The brain and nervous system, digestive tract, reproductive organs, endocrine system, and immune function are immature and still developing.

Nonetheless, should your children ever be ill enough to warrant a doctor's prescription for antibiotics, this may be the time to rife them instead. Unlike drugs, rifing does not contain chemicals that poison the body. Many parents

have reported success with infants even as young as a few months old.

If my infant or small child had a dangerous disease for which a doctor wanted to administer toxic drugs, I would first try rifing without hesitation. However, it may be unwise to use the technology for routine and relatively mild childhood illnesses (such as the German measles) unless the child is excessively uncomfortable or ill. These illnesses stimulate the child's system to produce antibodies (proteins that catalyze the body to defend itself against foreign microbes). Once the antibodies are produced, the system's immunity to those particular microbes is established, and the body can better protect itself against these and other diseases in the future. Like a muscle that becomes stronger when given a moderate workout, when the immune function is "exercised," it matures and strengthens. However, if not given the chance to recognize foreign microbes and deal with them on its own terms, the body as a whole becomes weaker and less efficient (see Chapter 1). Many natural practitioners believe that the milder childhood illnesses can help the body through tougher times later.

As might be expected, Dr. Sievert points out, children and adolescents tend to have different health issues than do adults. These include:

> latent susceptibility to infection, lacking in vitality, tired, poor concentration, [and] allergic stress. [Children also] suffer from digestive disorders, lack of appetite and frequently exhibit deficiencies. . . .
>
> We generally find a combination of food allergies and latent intolerances, infestation with intestinal fungi, often already at the chronic stage, with attendant dysbiosis together with post-vaccinal complications and inherited toxic stress, energetic blocks, etc.[4]

Sievert also reports that children and adolescents "increasingly display a tendency to relapse. This leads to chronic processes which may manifest themselves in long-term disturbed development. You only have to think of the alarming rise in ADD and ADHD."[5] This information can be helpful in deciding which programs to use when giving your children rife sessions.

*If you have any questions about the advisability of rife sessions for your child, consult with a health care provider who is supportive of holistic methods.*

For a child, I believe that it's better to use plasma light than electrode devices. The different types of machines are discussed in detail later in this chapter. If you are using

### Electromagnetic Radiation and Your Health

One of the least publicized contributors to ill health is human-made electromagnetic (EM) radiation, be it from electrical current (which can create a magnetic field) or a magnetic field (which can create a flow of electricity). Research begun in the 1950s by Robert O. Becker, an orthopedic surgeon at the VA (Veterans Administration) Hospital in Syracuse, New York and teacher at the Upstate Medical Center, showed that the application of infinitesimal amounts of electrical current could stimulate salamanders to regrow parts of their bodies that had been severed. This led Becker to use electrical current (again, minute amounts) to stimulate bone fractures to heal in record time. However, Becker recognized the dangers of these applications as well. He correctly surmised that if electromagnetic currents could be used to heal, they could also be used to harm. And that is precisely what scientists and researchers have been discovering about EM fields.

Before 1900, the primary electromagnetic field in the environment was the magnetic field of the Earth itself, to which humans, animals and plants had hundreds of thousands of years to adapt. But EM fields from various appliances are high voltage, and not compatible with living systems. The list of harmful EM field emitters is almost endless. Just a sample is car engines, refrigerators, toasters, hair dryers, vacuum cleaners, televisions (especially those with large screen cathode ray tubes, or CRTs), computers (especially large CRT computer monitors), fluorescent lights, electric space heaters, ceiling fans, toaster ovens, electric blankets and waterbed heaters. (The last two are particularly dangerous because most people are exposed for long periods of time.)

Many reliable studies have shown that people who constantly work around machinery or fluorescent lights—or who live too close to high-voltage power lines, microwave towers or radio transmission towers—suffer from abnormal or altered hormonal secretions, increased susceptibility to infectious diseases, nervous system disorders (including emotional and mental problems), statistically higher incidences of leukemia and other cancers, genetic abnormalities, birth defects, and more. The list is endless. Every chemical and hormonal reaction in the body has an electrical and magnetic component, just as electrical and magnetic fields can induce chemical and hormonal reactions. If you remember that all living organisms operate like tiny batteries, the effects of incompatible EM fields is not hard to understand.

a plasma tube device, run each frequency for the same amount of time as you would for an adult.

Anyone who has rife sessions should drink fluids. It can be a challenge to get enough mineral-rich water into the infant to flush out toxins; so substitute liquid foods such as chicken soup, low-sugar vegetable juice, and raw milk. Even though most of these fluids are digested as food, at least more liquid will be available to help the body flush out wastes.

Should you decide to give your infant or child rife sessions, investigate other non-invasive modalities, too. You may need medical supervision to confirm that the child's system can handle the effects of microbial die-off (if there is any). One of the safest, most effective, and most researched substances that can accomplish this is transfer factor supplementation. Transfer factors, present in a nursing mammal's "first milk," are the molecules that literally confer immunity to the newborn. They are identical molecules, whether the milk is from a human, cow, goat, sheep, camel, or other nursing mammal; so this form of supplementation is not foreign to the body. If your child was not breast fed—or if s/he was, but could use some help with immunity—giving transfer factor powder is a wise and logical choice. Transfer factor is discussed later in this chapter, in Chapter 5, and in the Resource Appendix.

### *If You Want to Give Sessions to a Pet, Farm Animal, or Zoo Animal*

Many people rife their pets. Dogs and cats are the most common session recipients; but people also rife their rabbits, hamsters, mice and birds. A number of rifers have told me that they initially bought a device for their pet; but the animal improved so much, they began using the equipment for themselves. The humans were equally impressed that the animals would jump on their laps or sit on the floor next to the equipment, apparently waiting to be rifed. There are many reports that pets are attracted to, and soothed by, the light.

Some holistically inclined farmers use this technology for their cows, sheep, goats, pigs, chickens, ducks, and other animals. Veterinarians are quietly rifing animals as well, both in their practices and in zoos. One vet called me to report that she used a frequency device to help a lion at a nearby zoo that was entrusted to her care. The lion improved considerably from the sessions, and with the addition of herbs, homeopathy and special foods, he soon became well. There is a growing market for frequency devices in the horse show and racehorse industry. A lot of this equipment is being used in conjunction with LED and soft laser equipment (discussed later in this chapter).

If your animal is seriously ill, check with your vet to make sure it can handle the microbial debris resulting from a session. Animals, like humans, need to drink more water when they are being rifed—otherwise, toxic waste can build up in the system. If the animal won't drink more water on its own, you can either put more liquid into the food, or give the animal liquid foods—such as chicken soup for dogs or (preferably raw) milk for cats.

## TYPES OF FREQUENCY DEVICES

### *Optimal Features of All Units*

People often ask me, "Where can I find a rife machine?" as if there existed a single device. There are actually many units, made by different manufacturers, that operate on the principles of rife technology. Many of these units do a good job. By "good job," I mean that the devices emit the frequencies you select, in the time period specified, and in such a way that the signal penetrates the body. Following are the most desirable features for a frequency device.

#### Reliable Frequencies

It's important that what you program into the unit, what the display panel says has been programmed into the unit, and what the unit is actually emitting, are identical. Some people have specially designed test equipment to measure what frequency is coming from a machine. However, if you don't have such equipment yourself (and most people don't), you must rely on the company's word that the device is accurate. Make sure you can trust not only the manufacturer's integrity, but also his or her skill in building a quality unit.

#### Signal Acceptance by the Body

Some people subscribe to the paradigm, "If a little is good, more is better." This translates into "Just blast the critter with everything you've got!" However, "blasting"—in other words, bombarding the body with a signal—isn't always optimal or effective. Understandably, you might be tempted to blast because when you're ill you want to feel better *now*. But be aware that *acceptance of the signal by the body does not necessarily correspond to the power with which that signal is being sent*.

I'll repeat the above in a different way, because this point is so important. Chapter 2 discusses how the body can become resistant to, and block, an electronic signal that it perceives as foreign. Some electromedical devices are engineered with such a strong signal output, and the wrong kind of output, that the resulting energy is not bio-compatible with living cells. (This is addressed later in the chapter in the discussions of EM fields and TENS

units.) For optimal results with rife equipment, the signal must be readily passed from cell to cell so the tissues are *beneficially affected* at the same time that the microbes are being destabilized (assuming the signal is meant to affect microbes). If the body does not like the signal, the cell membranes will literally shut down, both bio-electrically and biochemically, and the signal will be blocked. Thus, "ample power" does not necessarily mean that a unit is set for the highest possible output.

(Note that there are two levels of power: what the unit draws from an electrical outlet or batteries, and what the device transmits to the user. So when claims about a unit's power are made, you need to know which level is being addressed.)

Although signal acceptance is a simple concept—the organism either receives the frequencies or it does not—there are several factors (more than one might think) that influence whether or not this takes place. As Jimmie Holman observes, "The smallest changes to circuitry and components can dramatically affect the efficacy, operation and performance of the frequency device. Even slight manipulations of the waveform can have beneficial effects. It's the delivery system as well as the frequencies themselves that determine what the effects on the body will be."[6] Thus, many companies equip their devices with settings that allow the user to select from a variety of wave shapes. Readers who want to know more of the theory behind waveform selection are directed to the Insert, "Signal Penetration: Wave Shapes, Harmonics, and Duty Cycles." Learning the theory is not essential to operating your machine; you can always read it later if these details are more than you want or can absorb right now.

#### Programmable Duration

Normally, for each frequency, a unit requires 2 or 3 minutes of "dwell time," or the amount of time the machine focuses on a frequency. The amount of dwell time depends on the penetration power of the unit, the subject, and the condition being treated. But for people with difficult conditions like cancer, longer periods are required. It is not uncommon, for instance, to linger on a single tumor-dissolving frequency for 30 minutes or more at a time. Frequencies for pain similarly require a long period. The time needed for each frequency may vary greatly—which makes rifing not only a science, but also an art.

#### Memory

This function allows you to program many frequencies in succession into the unit, and then sit back while the device delivers them to you. All professionally manufactured frequency devices have this feature. However, some experimenters, wanting to save money, buy cheap units "at cost" that require the user to manually enter each frequency. For instance, you program 660 to run for 3 minutes, the machine stops, you program the next frequency to run for 3 minutes, the machine stops, you program the next frequency, and so on. With this system, you are primarily focused on programming, instead of relaxing while the frequencies are being run. I think it's worth the extra money to get a unit with memory.

#### Sweep Function

Jimmie Holman gives a definition of sweeping with a great analogy: "Sweeps refer to the shifting of frequency to either side of a central frequency, or the constant shifting of frequency between two separated frequencies, in much the same way one might envision a windshield wiper shifting back and forth to cover a larger area."[7] The range on either side could be 1 Hz (hertz), or 30 Hz or more. Sweeping is desirable because microbes can mutate, and the most common number might just miss its target. Or, the subject might not be able to decide between two frequencies that are very close together. Or, there might be some frequencies fairly close together (for example, 453, 458, 465), and the subject wants to target them all, plus everything in between. The better frequency devices include a sweep feature. Later in this chapter, different types of sweeps are discussed. Some are more effective than others.

### *Basic Unit Construction*

Effective frequency devices might do the same job, but they can be made differently and have different features. Even though rife equipment is a serious purchase—after all, sometimes the buyer is gravely ill—a useful analogy can still be made to buying a refrigerator. There are different styles of refrigerators. The freezer might be on top, on the bottom, or on the side. The refrigerator may or may not have an ice maker or cold water dispenser. The temperature control dial can be in the back or on the side. The refrigerator might be a well-known brand or a relatively unknown brand, and so on. Frequency devices are similar. They can have many "bells and whistles" or just the features considered basic to any unit. One style is not better than another per se; users must decide which features they prefer.

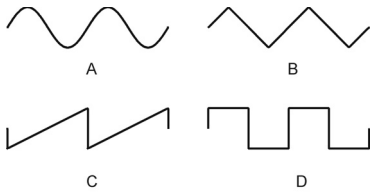
Whatever style you buy, its basic construction will consist of:

- The body of the unit (usually 1 to 3 square feet, but sometimes larger), containing a computerized *function generator*. Usually the electronic components are housed in one box; but sometimes the components may be housed in two or more different containers, either side by side or stacked on top of or next to each other. (A recent development is a very small function generator controlled by a personal computer or palm computer.)
- Built-in dials, push buttons, and/or numbered keypads to program the unit.

## Signal Penetration: Wave Shapes, Harmonics, and Duty Cycles

Besides having the correct frequency, what allows a signal to penetrate the cells of the body, kill microbes, and stimulate the system's healing abilities?

***Wave Shapes.*** The *shape* of the wave determines whether it will penetrate the tissue. Below is a diagram of four waveforms often used in frequency devices. The most common waves are sine and square, although there are variations of these waves. Each shape has unique characteristics. (For more information about the electromagnetic spectrum, See Appendix C, "Healing with Electromedicine and Sound Therapies.")




***Waveforms***
***(A) Sine; (B) Triangle; (C) Sawtooth; (D) Square***

These shapes are not simply visual metaphors. *They are the actual wave patterns as seen on an oscilloscope* (a machine specially constructed to visually depict wave forms). *The shape is a literal indication of what the wave does and how it performs*, because each shape graphically represents the rise and fall times of the energy.

A. A sine wave gently slopes; there is nothing angular about it.

B. A triangle wave is pointy at the top, as though the energy were thrust or transmitted suddenly, like a knife.

C. The same holds true for a sawtooth wave.

D. A square wave is very different from the other waves. It takes a very brief period for the energy to reach its maximum power level (this is called a rapid "rise time"). However, once the power is at its highest level (the horizontal line at the top), that level is maintained for a specific duration of the cycle. (One cycle is one complete wave.) The cycle is complete after the power level abruptly drops to zero and the next wave pattern begins.

Here's an analogy describing how these various wave signals perform, and how the body physically responds to them. If you put your hand on someone's back and exert a steady pressure, she will shift her weight and learn to compensate for your push. The relatively slow rise and fall times of a sine wave gives the body a chance to recognize, make adjustments for, and eventually ignore the signal. If, however, you suddenly push that person with the same amount of pressure, she will fall. The sudden thrusting quality of triangle and sawtooth waves takes the body by surprise. Similarly, the rapid rise and fall time of a square wave does not give the body a chance to compensate. However, the flat top line of a square wave means that after the body is taken by surprise, there is a relatively long period when the signal is steady. The body (and microbes) may or may not reject the signal.

The shape of the wave is important not only because of the rise and fall times of the energy. The wave shape is also important because of the *harmonics* it produces.

***Harmonics.*** A *harmonic* is an additional wave pattern produced by the *fundamental* (main) frequency. Since harmonics are secondary wave patterns, they are not as strong as the fundamental frequency that produces them.

Harmonics are created from the fundamental frequency similar to the way ripples are produced when you drop a pebble into a pond. You see a marked indentation in the water directly where you dropped the pebble. As the water ripples out in circles, the lines produced by the original toss get fainter and fainter. The same holds true for harmonics produced by a frequency device.

The *power* available in harmonics *decreases as the multiplication factor increases*, much as the ripples closest to the pebble are the strongest, and fainter on the periphery. If, during rifing, you use a wave rich in harmonics, you are not strictly employing a single frequency—but rather, *clusters of frequencies that are mathematically related to the original fundamental frequency, as well as the fundamental frequency itself*. The size and nature of harmonics are determined by their mathematical relationship to the fundamental frequency. This is addressed more in Chapter 2, relevant to the discussion of why Rife's best units worked as well as they did.

Keep in mind that there is a finite amount of energy overall available with any given signal. Harmonics utilize energy. Each harmonic drops off in amplitude (power) as you progressively travel away from the main signal. So, when you allocate that energy both for the fundamental frequency *and* for its harmonics, you are dissipating the signal.

Nevertheless, there is an important reason to use harmonics. If you are absolutely certain of the Mortal Oscillatory Rate (MOR) of a microbe, you will get better results if you focus all of the energy on a single waveform that doesn't expend or share its energy with the harmonics spread out across the EM spectrum. But if, on the other hand, you are not certain of the MOR—or, if the actual MOR is higher than what your unit is capable of outputting—a wave shape rich in harmonics may produce results similar to those of a wave shape that is the precise MOR but not rich in harmonics. Every additional higher harmonic brings you closer to the MOR. If your fundamental frequency is set within a higher range, you may have enough power to get the microbe. This may be, researcher and machine builder Jimmie Holman hypothesizes, why some modern frequency devices work better than others.

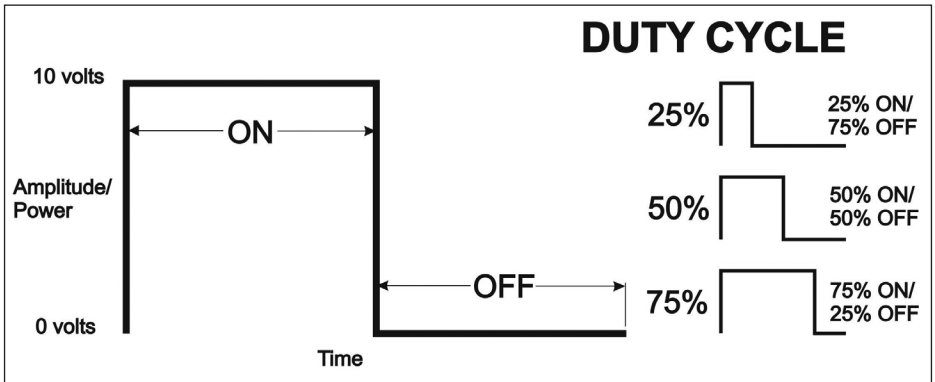
Let us examine specific waveforms to see what kinds of harmonics they are capable of creating.

- *Sine wave.* A sine wave does not contain significant harmonics. If you are absolutely sure what frequency is required to kill a microbe (its MOR), a sine wave may be your best choice. However, microbes mutate. And each person's body is slightly different, which may change the medium in which the microbe grows. Thus, the outcome is not guaranteed.
- *Square Wave.* Of all the waveforms, the square wave is the most rich in harmonics. The harmonics of a perfectly symmetrical square wave are typically frequencies that are primarily odd number multiples—1, 3, 5, 7, 9, 11, etc.—of the fundamental frequency.

  As just stated, if the actual MOR is known, and the equipment can deliver that frequency, a sine wave may be preferable because all power is delivered at that frequency. However, if the MOR is not known, and/or the unit cannot reach the higher ranges, a square wave may be the best choice (added harmonics provide a far better chance of reaching the target MOR).

  Some energy of a square wave is focused on the fundamental frequency, and even more energy is distributed to the harmonics. But the farther away each harmonic is from the fundamental, the weaker the signal becomes. (And the lower the amplitude of the wave, or the "volume," becomes. Think of the visual metaphor of the ripples in the pond.) The amplitude might be so faint, the MOR is no longer effective. Or, so much time might be required to apply the frequency, that treatment is impractical. Nevertheless, with a very few exceptions, square waves remain the favorite shape in the rifing community. Its fast rise times decrease the chances that the body will be resistant to the signal.
- *Triangle Wave.* The triangle wave contains some harmonics, the majority of which are clustered close to the fundamental frequency. Almost all of the wave's power is within this close cluster. (Using the analogy of the stone thrown into the pond, most of the ripples are near where you threw the stone.) This can be a good choice of waveform to use if the frequency being generated lies within close range of the MOR.
- *Sawtooth.* This is actually a modified triangle wave. It is available only in specialized instruments to optimize certain effects, so is not part of this discussion.

***Duty Cycle.*** Some rifers believe that to achieve the highest success rate, odd harmonics should be generated with a particular *duty cycle*—the ratio or relationship (expressed as a percentage) of the amount of time an *individual cycle* or phase is *on* to the amount of time it is *off*. For instance: a square wave with a duty cycle of 50% is on half of the time, and off half of the time, per cycle. A square wave with a duty cycle of 75% is on 75% of the time and off the remaining 25% of each cycle. This relationship is duplicated in each subsequent cycle.




Duty Cycle is an expression of the relationship of the "ON time" to "OFF time" of each cycle.

Note that duty cycle clips a portion of *each individual wave,* changing its shape by making it dip sharply up or down. Don't confuse it with *gating (pulsing),* which briefly stops the transmission of *groups* of waves (allowing some waves through that are intact).

Rife researchers differ as to which duty cycle gives the best results. Michael Tigchelaar offers different duty cycles for different conditions. Dr. Richard Loyd raises the duty cycle the higher the frequency (this is for EMEM units): 30% for 6 Hz, 50% for 150 Hz, 70% for 440 Hz, and 75% for higher Hz settings. Dr. Jeff Sutherland finds a 50% duty cycle sufficient for most organisms except *Candida albicans,* for which he uses a 10% duty cycle in a unit set to a square wave. Jimmie Holman maintains that duty cycle may not be important, depending on the method of application (contact or radiant plasma), the protocol being used, the shape of the wave, and how that wave is produced.

There is a lot more to rifing, and to good equipment, than is generally recognized. "As we understand better the mechanism of how our devices interact at the systemic, cellular, molecular, atomic and even subatomic levels," writes Jimmie Holman, "we can produce more effective results through selection of waveforms, circuitry and components." [8] Both the frequencies *and* the delivery system influence the effects on the body. As we learn more about what makes rifing successful, duty cycle may not play as key a role as it appears to now.

- Display panel, usually digital. Occasionally, the device comes with a full-size computer screen. The display shows the frequencies programmed into the machine, the time period for which the frequencies have been set, and other information.
- Frequency transmitter. This may consist of metal electrodes (in various shapes and styles), or a plasma light tube (which can be freestanding or hand-held). Sometimes a unit will have a combination of the two. Occasionally, a frequency device has LED accessories as well (discussed later in this chapter).

A good frequency device should be well made, easy to use, have a warranty with an accessible manufacturer or dealer in case the unit needs repair, and (very important) sufficiently drive the signal into the body so the frequencies can be utilized. Within these parameters, there are lots of devices on the market today that are called "rife machines." Here is an overview of the different styles, with their advantages and disadvantages.

## *Freestanding Radiant Plasma Light Unit*

### History

The first radiant device on record (which also featured electrodes) was invented by Nikola Tesla, although Royal Rife popularized, refined, and promoted its use. Rife's machine was huge and heavy, expensive to build even by today's standards, and difficult to calibrate and maintain. Today's units are smaller, much less expensive, and easier to operate. The engineering is also quite different. Today, among other features, we use transistors, whereas Rife used tubes.

### Frequency Emitting Component (Tube)

Most freestanding radiant light units have a single tube that rests in, on, or near the machine. Its length usually ranges from one to three feet. The tube's shape can be cylindrical, round, or have a bulge in the middle. The light on Royal Rife's original ray device got very hot, emitted RF, and could not be touched. Some freestanding plasma lights on modern units also become hot, but others don't, depending on how the machine is constructed.

The gases inside the tube are usually argon and neon, with the occasional addition of other gases such as krypton. One manufacturer uses exclusively argon gas to give the machine a greater photon emission capacity. Helium, which emits a soft purple-blue glow, is a favorite of some engineers because it conveys the desired field, and is cool to the touch.

Each gas possesses a different intrinsic quality. Some rifers prefer the feeling of one gas over another, while others cannot tell the difference.

On rare occasions, a manufacturer was known to put mercury into its tubes. Mercury is one of the most poisonous elements on the planet. In its plasma state, mercury emits wavelengths that are readily absorbed by DNA and RNA. A tube made of quartz blocks only about 15% of the mercury emissions. This means that 85% of the emissions come through the glass. Pyrex® blocks about 90% to 92% of mercury emissions, while leaded glass blocks virtually all of the emissions. However, even if you are confident that the glass will remain intact, it nevertheless seems unwise to use a poison as part of the frequency emission process, since rifing is after all an energetic therapy. Ask the manufacturer what gas is used.

### Power and Frequency Emission Range

As discussed in Chapter 2, Rife's very first ray units transmitted the frequencies via very powerful, high frequency signals that oscillated in the MHz (megahertz) range, hundreds of thousands of Hz. After the FCC (Federal

### The Unique Properties of Plasma

Plasma is a state of matter that is neither solid, liquid, nor gas. Only certain gases called *noble gases* can be transformed into plasma. These noble gases are argon, helium, krypton, neon, radon, and xenon. Plasma is created when these gases are excited by electrons. When rifers say that the plasma is "ignited," they mean that the gases interact with electrons in such a way that the gases turn into plasma.

Since the outer electron shells in the atoms of these noble gases are filled with the maximum number of electrons possible, they cannot chemically combine with other elements. The process by which they become plasma is nonreactive. When the noble gases are bombarded by free electrons, their electrons are transformed into charged particles (an equal number of positive and negative ions). This brings the gases into the higher state of matter called plasma.

Communications Commission) forbade the use of such high radio frequency (RF) signals by unlicensed parties, the Rife Ray design was changed. Among other changes, engineer Philip Hoyland caused the machine to emit harmonics in very high ranges, which targeted the microbes as accurately as if the fundamental frequency had been used. Today, researchers are working on ways to duplicate the positive effects of Rife's machines without relying on exceptionally high RF. Some companies use RF carrier waves at a very low power. Alternatively, high voltage or force is blasted through the noble gases to help transmit the frequencies. Either high voltage or high frequency can excite the gas molecules inside the tube to a greater state of energy.

Whether RF or voltage is used to light the tube, the range of the frequency broadcast follows the law of physics stating that the strength of the signal exponentially decreases the farther away you are from the machine. For every 12 inches you move away from the light tube, you lose four times the power.

Some manufacturers of freestanding light units recommend being as close to the unit as possible, and no farther away than 8 feet for maximum effectiveness. Others advise the subject to sit 6 to 12 feet away to eliminate any possible ill effects from the strong electromagnetic field, without loss of effectiveness due to distance.

That said, there are always exceptions to any rule. Some people can feel the effects of the frequencies even as far as 20 feet from a machine. Once, a visitor could tell that I had been recently running my unit, even though it was switched off by the time she entered the room! A residual discharge that she could sense had apparently remained.

#### How the Unit is Used

The user sits or lies near the tube and does not touch it (except at the beginning of a session for certain machines, when a brief pat is necessary to ignite the tube). Many people like the freedom that a freestanding unit provides. They can lie down or sit, and read, knit, watch TV (not always the best choice), or do other things while they are getting treated.

#### Advantages of This Method

There is an obvious advantage to using a machine that does not touch the body. Since the hands are free, the subject can read a book or do other tasks while the machine is running. (When really pressed for time, I occasionally cook dinner while my machine is on; but I don't recommend this way of rifing as optimal.) Most important, if more than one person is in the room, everyone can benefit from being exposed to the ray—provided, of course, that they all need the same frequencies. (Someone who doesn't need the frequencies that are being broadcast will not be harmed; there will simply be no effect.)

Another obvious convenience is the ease of treating animals. Simply place the machine close to where they sit, stand or lie. Also, a unit that does not require the user's direct participation can be very handy if you are treating small children.

#### Disadvantages of This Method

There's only one possible disadvantage to a light tube unit that I can think of, and it affects only a few very sensitive individuals: mental and visual disorientation from the flickering light tube. The flicker occurs only when frequencies lower than 20 or 30 Hz are being emitted. At such low oscillation rates, the movement of light is slow enough to be discerned by the naked eye.

A fair number of experimenters, however, do experience visual disturbances when the *gating* feature (sometimes called "pulsing") is on. These disturbances can occur with frequencies above 20 or 30 Hz. The gate feature is explained later in this chapter. If the light is flickering and it bothers you, simply look away, or close or cover your eyes. You don't have to see the light in order for the frequencies to work.

### *Hand-Held Radiant Plasma Light Unit*

#### History

The tubes on Royal Rife's machines got too hot to touch because of the very high-energy, high-frequency RF fields. Some modern tube devices can be held, since they do not utilize these exceptionally high frequency fields. If they do emit RF, it's at a low enough power level that the tubes can be touched.

#### Frequency Emitting Component (Tube)

A handful of device manufacturers design machines with "cold" tubes that can be either held by the user or used in radiant mode with the user sitting a few feet away. One popular model contains two 6-inch long glass cylinders embedded in plastic. The rifer holds one tube in each hand. After the unit is turned on, the plasma inside the tubes is ignited by the user's skin contact with each glass cylinder. Since the tubes are creating a circuit that the user completes, it's important that the tubes do not touch each other. If the person lets go of the tubes, or of even one tube, the circuit will be broken and the tubes will not remain lit.

Other devices run one or more tubes of the same electrical potential, together with a grounded foot plate or water bath as the return. (There must be at least one positive and at least one negative side to complete the circuit.) Having a "ground" can greatly increase the effects of the signal, since the energy is drawn to the ground instead of dissipating into the atmosphere.

Although most of the tubes are long cylinders or round balls, one company offers spiral glass tubes, including one worn like a bracelet. This has been reported to offer relief from wrist injuries such as carpal tunnel.

Gases inside the hand-held tubes are generally argon, neon and krypton. Users often mention how good the tubes feel to them (as well as comfortably warm). There are reports that some manufacturers put mercury into their tubes. Mercury is among the most poisonous elements on the planet, something to consider if the glass ever broke. But even if the glass remains intact, since this is an energetic therapy it seems unwise to use a poison as part of the frequency emission process. Ask the manufacturer what gas is used.

#### Power and Frequency Emission Range

Frequencies from the contact light units have a radius of several feet. Therefore, someone close by who is not touching the tubes may feel the effects.

#### How the Unit is Used

Although the subject usually holds the tubes, s/he can also put the cylinders someplace else on the body (under the armpit, resting on the knees), or slip the tubes inside clothing. Two people can receive equal benefit of rifing if they sit next to each other holding hands, with the free, outside hand holding one tube. Although each person is holding only one tube, their joined hands are completing the circuit, thus allowing both to be treated.

#### Advantages of This Method

Some people do not mind being attached to a device. A few users tell me that they prefer holding the cylinders instead of just sitting in the same room with a light because it gives them something to do. The simple act of holding a couple of cylinders can help someone feel more in control of the session—and thus their illness, because feeling in control helps stimulate one's immune function. Also, if there is a specific area that needs work—a localized digestive disturbance, kidney infection, or tooth abscess—it may be more beneficial to place the tubes directly on the area.

I have seen mixed results with children. One man stopped giving sessions to his 7-year-old son when the boy insisted on using the glass cylinders as drumsticks, beating out a rhythm on the back of a chair. Fortunately, the glass is sturdy and did not break. It can be unreasonable to expect a child to remain still while holding the cylinders. However, sometimes this modality offers an unexpected bonus. One woman had a 10-year-old son who was very resistant to even the idea of rifing until he saw the pretty, oscillating lavender light in action inside the plasma tube cylinders. He was so enamored of the changing light show whenever a new frequency flashed through the gases, that he exclaimed, "Really cool!" and then became quiet. In fact, he fell asleep for the remainder of the session. If a child can initially be persuaded to sit still, the frequencies usually have a calming effect and the child may go to sleep. (This also applies to grown-ups.)

#### Disadvantages of This Method

There are obvious limitations of having to remain stationary to ensure that you don't accidentally knock over the unit. Also, some people are bothered by the plasma moving inside the clear cylinder—although, with the hands covering most of the glass and the option of slipping the tubes inside one's clothing, this is a minor issue.

### *Electrode (Pad) Unit*

#### History

The freestanding light tube from Royal Rife's original invention was placed within 6 inches of the subject. John Marsh and John Crane, who later worked with Rife to adapt the technology, replaced the light tube with metal electrodes that touched the body. Modern pad units are based on this design.

#### Frequency Emitting Component (Electrodes)

Modern electrode devices transmit frequencies in an entirely different way than plasma light devices. Frequencies are imparted directly into the body via electrical current that flows through two wires to electrodes that touch the user's body. The electrodes can be in the form of cylinders, flat plates, or small patches that stick to the skin. Optional equipment (discussed shortly) can be used in lieu of electrodes.

### Power and Frequency Emission Range

Pad units transmit frequencies only to the person touching the electrodes. Other people in the room will not feel the effects of the frequencies.

### How the Unit is Used

- *Cylindrical Electrodes.* The most common electrodes are cylindrical, and about 6 inches long. They are most often held in the hand, but they can also be placed elsewhere on the body.
- *Foot Plate Electrodes.* These are flat, rectangular sheets on which the user places his or her feet. Since there is usually a gap between the soles of the feet and the flat metal plates due to the natural arch of the foot, the user can increase the amount of current flowing into the feet by placing a wet cloth between the soles of the feet and the foot plates. Although plain water is a good conductor of electricity, conductivity will be increased even more if salt water is used.
- *Electrode Patches.* These flat, flexible pieces are commonly used in TENS units and other medical equipment. They come in a variety of shapes and sizes, ranging from about ½ square inch to a few square inches. A very thin electrode wire leads to the center of the piece, but the entire surface conducts electricity. The patches stick to the skin and are meant to be reused until the sticky surface wears out. A neutral electrode conductive gel, applied to the inside of the patch, extends its life and permits greater conductivity.
- *Wet Pads.* Similar to cloth-covered foot plates, the metal sheeting inside the cloth is flexible. This allows the wet pads to mold to the body when strapped on with cloth or ace bandages. The pads are usually used on the abdomen, lower back, and under the ribs to detoxify areas such as the colon, kidneys, and liver before using other frequency programs. First doing a treatment with wet pads may allow the body to more efficiently handle the waste materials produced by the frequencies. As with the foot plates, the cloth should be wet. Salt can be dissolved in the water for greater conductivity.
- *Pan of Water.* The cords of some units lead to simple alligator clips at the end, which the user then attaches to metal pans containing warm water. The user then rests his or her feet in the pan of water and receives the frequencies through the water. Make sure the water is at least filtered to prevent contaminants (such as heavy metals and bacteria) from entering through the skin. If you use distilled water, adding salt is essential to provide conductivity.
- *Optional RF Signal Emitter.* With a conventional pad device, some power may be lost due to the tendency of the skin to dissipate at least some of the electrical current. To ensure greater signal penetration inside the cells, one company sells an optional RF (radio frequency) carrier signal box to use with the electrodes. Thus there are two frequencies: the one programmed by the user into the machine that matches a specific microbe or condition, and the much higher RF signal to help drive the "main" frequency into the body. With this particular design, the signal does penetrate more deeply into the body. And since the RF is transmitted directly into the body rather than through the air, no FCC laws are broken.

### Advantages of This Method

Some people prefer being attached to electrodes instead of merely sitting in the same room with a light because it gives them something to do. The simple act of holding two cylinders can help one feel more in control of the session, and thus of their illness. Feeling in control helps stimulate immune cells. Also, if there is a localized area that needs work—such as a digestive disturbance, kidney infection, or tooth abscess—the greatest benefit is often obtained by placing the electrodes directly over the afflicted area.

There is another, rather unexpected advantage to electrode devices. When an electrode directly contacts an acupuncture point at the skin's surface, energy appears to be transmitted to the entire acupuncture meridian associated with that point. Simply holding the electrodes in the hands can affect major organs, glands, and systems, even those deep in the body. Users familiar with Chinese medicine can be highly effective with creative electrode placement.

### Disadvantages of This Method

There is an obvious lack of mobility with an electrodes device. Some people prefer not to be attached to equipment, and/or are concerned about accidentally dropping the unit if they move suddenly.

Perhaps the greatest disadvantage is the electrical current itself. Some people are very sensitive to even small amounts of current in the body, and these units make them feel worse. (For this reason alone, you may want a unit from a manufacturer who offers a money-back guarantee. This will be discussed shortly.)

*Do not use a pad unit if you are wearing a pacemaker or have a heart condition. Sending any kind of current—whether carried by RF or not—through the body can upset the heart rhythms and seriously injure or even kill you!*

### *Lasers and LEDs*

Within the last decade or so, some laser and LED (Light Emitting Diode) manufacturers have endowed their equipment with the ability to emit rife frequencies. Conversely, a few frequency device companies have begun offering optional LED attachments. The LEDs and lasers that I will be discussing use single-wavelength light for healing, a process called *phototherapy*.

Although some rifers discover LEDs and lasers after purchasing a frequency device, monochromatic light therapy has been around for decades. Most of the early research and published data, spanning the late 1970s to the early 1980s, were from Russia. Later, various medical organizations and government agencies all over the world—including the National Aeronautics and Space Administration (NASA) in the US—also began using this modality. Today, phototherapy is becoming mainstream as more medical studies and research papers are published.

Most laser and LED therapies differ in some important ways, but they also share similarities. Both light technologies are based on the energetic behavior of electrons. Normally, electrons occupy a fixed place in one or more orbital rings that sequentially surround the atom's nucleus. When they become excited, electrons move faster and jump to higher orbits. When they relax and return to their original position, electrons release energy in the form of light, or photon units. The wavelength of a photon—in other words, its color—is determined by the amount of energy released when the electron drops to a lower orbit. *It is this emitted light that is harnessed in all forms of laser and LED technology.*

Lasers and LEDs can be made to produce any wavelength, and hence any color. The emission of the light (whether it's a red, green, blue or other color wavelength) is never due to colored glass, paint or pigment—it is solely the wavelength of the light itself that gives the emission its characteristic color. Since the wavelength is always one single frequency, the color is known as *monochromatic*. The section on **Light and Color** in Chapter 3 discusses in detail the different qualities embodied by the various visible light wavelengths on the electromagnetic spectrum.

The most popular lasers and LEDs emit the color red, which ranges from about 630 to 670 nanometers. Some clinicians prefer a 660-nanometer wavelength, maintaining that this length wave is the easiest for the tissues to absorb. Others prefer a 630-nanometer wave, based on research published in the *Journal of Clinical Medical Laser Surgery* that bluntly states, "A wavelength of 630 nm appeared to be most commonly associated with bacterial inhibition. The findings of this study might be useful as a basis for selecting LLLT [low level laser therapy] for infected wounds."[9] In this case, "bacterial inhibition" is the retardation of the growth and functioning of pathogens.

Regardless of one's favorite red wavelength, all researchers and practitioners who use red light find that it stimulates blood circulation, increases lymphatic drainage, and promotes cell metabolism. With some exceptions (explained in a moment), the light can be applied to every part of the body—skin, soft tissue, muscle, bone, brain, organs, lymphatic fluid, glands and blood. Used on an artery location, the light can improve the condition of immune white cells, T-cells and B-cells within the bloodstream so they can more efficiently disable viruses, bacteria and parasites.

According to phototherapy experts Anna Cocilovo and Ron Rosen, Dr. Tiina Karu, who is a professor of Laser Biology and Medicine in Russia, discovered that:

> There are photoreceptors at the molecular-cellular level which, when triggered, activate a number of biological reactions: DNA/RNA synthesis, increased cAMP levels [cyclic adenosine monophosphate, a molecule involved in many biological processes], protein and collagen synthesis, and cellular proliferation. The result is rapid regeneration, normalization and healing of damaged cellular tissue. In essence, light is a trigger for the rearrangement of cellular metabolism.[10]

Cell metabolism is stimulated when the light reaches photoreceptors in the mitochondria, which are fuel burning units within the cell. The photoreceptors are able to respond to only a single wavelength of light. If different wavelengths are simultaneously applied to the tissue, the cell receives conflicting signals and cannot respond properly. A phototherapy device can be built to house a single light or many, but only one wavelength at a time should be shone on the body.

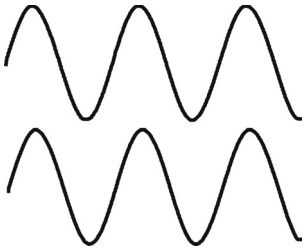
Monochromatic light also activates acupuncture points. Since the light maintains its integrity while radiating, it can travel along the meridians of the body without being dispersed into the surrounding tissues. This makes it very useful for Chinese medicine treatments.

The light of LEDs and lasers can also be set so that for a duration of time at regular intervals, the beam is on, off, on, off, etc. A continuous, steady emission sedates pain, whereas *gating* the beam to go on, off, on, off (sometimes called "pulsing") stimulates healing. Gating is explained more fully later in this chapter.

Lasers and LEDs are sometimes regarded as interchangeable modalities, but their differences are important. I will discuss lasers first.

*Laser* is an acronym *for Light Amplification by Stimulated Emission of Radiation*. The monochromatic light emitted by lasers is *coherent*. This means, from a physics standpoint, that all the peaks and valleys of the waves line up. The waves are high at the same time, and low at the same time. In practical terms, this means that the light is *directional* and *focused*. The concentration and precision of this light allow lasers to do the work for which they are best known: penetrating an object without touching it.

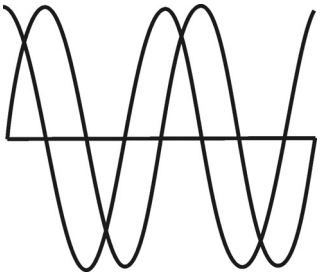
There are two types of lasers, "hard" and "soft." Most people are familiar with the so-called "hard" lasers—high-intensity, high-power instruments that are used by industry (to cut through steel and other metals), or by doctors (used during surgery to make clean cuts into the body, cauterize wounds, and remove unwanted tissue). These high-intensity lasers are legally restricted devices, for obvious reasons.



Waves in phase with each other, an alignment found in lasers of all kinds.

True "soft" lasers—which are low-intensity and low-power, sometimes also called "cold" lasers—emit less power (under 50 milliwatts) than their restricted high-intensity counterparts. (Some lasers that are over 50 milliwatts in power are also confusingly called "soft." However, this increase in power means that they can heat and damage tissue. So, despite the unregulated use of the word "soft" to describe these devices, I am not including them in this discussion of true "soft" lasers.) The cellular healing therapy described earlier that uses genuine "soft" lasers is also known as *low-level laser therapy*, or LLLT. Sometimes these "soft" lasers are used for acupuncture treatments instead of needles. With a little practice, they can be employed safely and effectively for healing by practitioners and knowledgeable laypersons. However, with any laser—be it "hot" or "cold" ("soft")—care must be taken to avoid shining the beam directly into the eyes or even on the closed eyelid, as this can cause tissue damage and eventually blindness. (However, it's doubtful that someone would find it comfortable to hold a laser to the eyelid for a long enough period of time to do damage.)

Now I will discuss LEDs. *LED* is an acronym for *Light Emitting Diode*. It is sometimes erroneously called a *soft laser* or *laser*, but it is not—the monochromatic light emitted by LEDs is *in*coherent. This means, from a physics standpoint, that the peaks and valleys of the waves do not line up. The waves are emitted at random intervals.



Waves out of phase with each other, an alignment found in LEDs.

In practical terms, this means that the light is *multi-directional* and *diffuse*. Its lack of beam precision prevents an LED from slicing through flesh or any other substance. However, this very lack of coherence also makes LED therapy safe enough to be used by anyone, even a child—and difficult to abuse. LEDs can be used directly on the eyelid to regenerate injured eye tissue. An LED array is much less expensive than a soft laser. Proponents of LED therapy cite studies showing that LEDs are 80% as effective as lasers when used for the same amount of time. And LEDs have widespread applications. "In Israel," report Cocilovo and Rosen, "medical doctors utilize incoherent light transmitted by light emitting diodes (LED's) in the practice of neurology, dentistry, dermatology, physiotherapy, and in cosmetic applications to promote collagen and elastin formation."[11]

Until the 1980s, low-level lasers were used almost exclusively for phototherapy because researchers thought that the light needed to be coherent—and prior promising research with *in*coherent light was nearly forgotten. Subsequently, some clinicians determined that coherency did not make a huge difference. "Dr. Karu," state Cocilovo and Rosen, "contends that coherent light is not necessary, that incoherent light is equally effective at producing clinical results. Furthermore, she found that coherent light is converted to incoherent light in the body. The exact effect depends on the wavelength, dose and intensity."[12]

Whether you are using Rife-style equipment with LED attachments, or lasers that can also emit "Rife" frequencies, combining these modalities can speed healing. They can also bring better results than if one modality alone were being used. However, LED attachments are not a mandatory feature with rife equipment. When properly used, this technology is very effective all by itself.

### *General Sweep Unit*

Most frequency devices are designed to emit specific frequencies for a particular condition. However, a few manufacturers

have created a unit that, rather than being programmable for specific numbers, emits frequencies sequentially over a very wide range of thousands of Hz.

Earlier I referred to a sweep function as the ability of a unit to incorporate a (limited) number of Hz on either side of the main signal. The purpose is to catch stray or mutated microbes whose oscillation rates do not correspond exactly to the programmed number. A general sweep unit has little or no capacity to target individual frequencies. But the manufacturer is not concerned with specific numbers. This is based on the premise that if you don't know which frequency to use, you might as well expose yourself to all of them.

Some experimenters have reported great success in eradicating symptoms with this method. However, if you use this type of unit for the same amount of time that you would use a frequency-specific device, the chances are slight that you'll receive adequate coverage of the needed frequency from among the thousands of frequencies emitted. This is why, when using a general sweep machine, you will need to expose yourself to the energy for a much longer period than when using a frequency-specific device. The exception is if you focus on a narrow range. For example, you could first set the machine to run between 1 and 1,000 Hz, then run between 400 and 600 Hz, and so on. This presumes some knowledge of what you want to treat.

Nevertheless, people who don't want to fuss with precision, frequency lists and more complex programming may find such a unit very helpful.

It should be noted that most of the higher range, general sweep frequency devices are not intended to devitalize microbes, but to provide energy to the cells. One of many devices is the Multi-Wave Oscillator (MWO), which ranges from 750 KHz (kilohertz) to 3 MHz (megahertz), with additional harmonics up to 300 GHz (gigahertz). I will briefly describe the MWO because other devices are based on its design.

The MWO was invented by Russian electrical engineer Georges Lakhovsky, author of the 1935 book *The Secret of Life*. Lakhovsky, observing the difference in the electrical properties of healthy cells versus unhealthy cells that had become diseased, discovered that high frequency radio waves could energize malfunctioning cells. Each cell, due to its RNA-DNA spiral, acts as a transmitter and receiver of frequencies. A cell that is properly energized can absorb nutrients and excrete wastes more easily than non-energized cells. Keep in mind that the MWO and similar devices, although they use frequencies, are technically not considered "rife." Royal Rife was primarily concerned with destroying microbes (at least this was what he publicized).

### *Frequencies on CDs and DVDs*

In this modern post-Rife era, some companies embed frequencies onto CDs (and occasionally, DVDs) that usually can be played through an ordinary desktop personal computer (PC).

One of the older forms of frequency generation uses a PC's *internal speaker* (not the sound card, which is a built-in sound system common to most new computers and laptops). The internal PC speaker—originally designed by IBM to report the condition of the computer system by beeping—generates a beep under certain conditions. After finding that the beep can be manipulated with certain software, Rife researchers began experimenting with using it for frequency therapy.

Frequencies pressed onto a CD are played through a PC, which acts as the generator. The signal is eventually sent to a high voltage RF driver hooked up to the computer, which lights a plasma tube. Alternatively, frequencies from an internal speaker are played through a stereo audio amplifier; cables wired to the output jacks of the amplifier can be attached to hand and foot electrodes or to electrode patches.

| Hertz Conversion | |
|---|---|
| 12 Hz | 12 Hz (hertz); cycles per second, single units |
| 12,000 Hz | 12 KHz (kilohertz); thousands of Hz |
| 120,000 Hz | 120 KHz (kilohertz); thousands of Hz |
| 1,200,000 Hz | 1.2 MHz (megahertz); millions of Hz |
| 12,000,000 Hz | 12 MHz (megahertz); millions of Hz |
| 1,200,000,000 Hz | 1.2 GHz (gigahertz); billions of Hz |
| 12,000,000,000 Hz | 12 GHz (gigahertz), billions of Hz |
| 1,200,000,000,000 Hz | 1 THz (tetrahertz); trillions of Hz |

Most (if not all) experienced rifers agree that due to limitations in sound conveyance, frequencies generated in this manner are not as effective as with other methods. "The frequencies tend not to be as accurate as with other devices," advises Rife researcher and machine builder Brian McInturff.[13] Jimmie Holman, who invented one such "poor man's rife machine" (now discontinued), agrees.

> The signal can vary greatly. Both a PC computer speaker system and a PC sound card have deficiencies in both frequency accuracy and waveform output (although the latter can be significantly corrected). Due to hardware flaws, limitations of the circuitry clock and processor speed, and inherent mathematical constraints of the PC design itself, there will *always* be differences in the frequency you want and the frequency that is actually being generated. Sometimes this difference is within acceptable limits, but sometimes it's off by quite a bit.[14]

There is no guarantee that proposed solutions to the above problems will produce results comparable to those obtained with a high-end frequency device created specifically for rifing. However, this method does give someone on a very limited budget a chance to use the technology. "My equipment was designed to get people started," Holman says. "Once they understand it better and experience some benefits, they'll feel more inclined to upgrade to better devices."[15] This method features CDs that can be played through an ordinary home stereo CD unit. According to Holman, pain relief obtained with this method is far superior to results with a TENS unit (the reasons are explained later in this chapter). Manufacturers who choose this manner of frequency conveyance can easily supply data CDs that allow the user to input new frequencies, and provide additional updates via an Internet website.

Blueprints for CD-run frequency devices are available on the Internet. And Ken Uzzell in Australia has developed related technology. He offers a free Internet frequency database called FREX that can be programmed into any home computer.

Since wave form accuracy is limited with these methods, you may not benefit—and thus might become discouraged, thinking that rife technology doesn't work. As with anything else, you get what you pay for. Keep in mind, too, that CD and DVD discs by definition are preprogrammed, and therefore have limitations (described in more detail elsewhere in this chapter).

### *Combination Unit*

One popular rife technology device with hand-held glass tubes also comes with metal hand-held cylinder and foot plate electrodes. It also has been equipped with a variety of (optional) different color LEDs. Another unit is equipped with electrodes and LEDs. Some people like the advantages of LED technology combined with rife frequencies.

Royal Rife himself did not put any outboard equipment onto his ray devices. However, I see no reason to limit ourselves solely to what he developed. Times change, technology advances, and people have many needs. If it works, I think it should be used. I like to believe that if Rife were alive today, his inventiveness and curiosity would have carried the technology a lot further.

### *Summary*

A frequency device should be made so that the average person can operate it, though some units are easier to program and use than others. Electronics buffs are more willing to operate sophisticated equipment than people who don't have an affinity for electronic gadgets. If you like extra accessories, such as LEDs, or require more functions, you may prefer a more versatile and deluxe machine. However, such units may be complicated to operate. If you are very ill or pressed for time, consider getting a simpler device. If you don't want to spend a lot of time learning how to operate a machine, tell your seller.

Design—such as the size and shape of the unit, the kind of knobs or dials, the "touch" or feel of the machine—is a very individual matter. However, unlike with a television, for instance, most people have never even seen a frequency device. So before buying a unit, ask the manufacturer or dealer detailed questions about the device and request a catalogue with pictures and unit specifications.

Basically, you want a unit that does the job of transmitting the frequencies you select into the body. For most people, the biggest question is whether to buy a free-standing plasma light unit or an electrode device.

## WHAT TO LOOK FOR IN A FREQUENCY DEVICE MANUFACTURER

People living in countries where rife technology is freely used in hospitals and clinics have access to more information than those living in countries that legally forbid sellers from making medical claims. Thus, the average consumer must rely on word-of-mouth referrals and anecdotal accounts of success. Although Internet access does

make shopping easier, it can still be difficult to assess a device's track record, as long as the seller is legally prohibited from telling consumers how to use the equipment for medical conditions, and what protocols have been the most successful. Therefore, once you locate a prospective frequency device manufacturer or dealer, please be sensitive to any legal restrictions s/he may face. S/he can give you the engineering specifications of the machine, tell you how to operate the device, and guarantee good service. However, most are legally forbidden to discuss your medical condition with you, or even tell you which frequencies to use! In the eyes of the law, this constitutes medical advice. If such conversations are discovered, the person can go to jail for practicing medicine without a license, and the company may be forced to close.

For these reasons, you will not—or should not, if the company is obeying the law—find references to the diagnosis or treatment of disease in company literature, be it printed or on a website. But this is not the manufacturers' fault. (In fact, many machine builders I know personally became interested in the technology because they needed the equipment to overcome serious illness themselves, or wanted to help their family and friends. They'd probably love to help you even more if they could!) If the seller doesn't want to discuss medicine and disease, it's important to respect personal and professional boundaries.

Below are some codes of behavior and device quality guidelines that I believe are reasonable to expect from a seller. While the following common sense suggestions could apply to a supplier of any electronic device, they are especially important for a machine you are buying to restore your health and possibly save your life.

### *Accessibility*

*Know who you are dealing with before you buy, and make sure the seller is accessible*. If you have questions about how to use the device, or if your machine breaks, you want to be able to contact the seller easily and quickly. A bona fide company has a contact person, an address and phone number, and staff that return your calls within 24 to 48 business hours. Purchase from a reputable company or dealer rather than someone who sells machines "on the side" and doesn't have the facilities for rapid service, tech support, and repair. If possible, purchase a unit that can be serviced in your own country.

I've heard a few stories from upset people who, after paying for their devices, had problems with the equipment and tried to contact the vendors. The sellers didn't answer the phone, or didn't even seem to have a phone. These customers were then stuck with equipment that didn't work. (Did it ever do the job for which they bought it?) Unfortunately, there are charlatans in the health field, as in any other market. A few unscrupulous individuals who take advantage of desperately ill people can ruin the good names of the far greater number of honest sellers. I strongly advise against purchasing a unit from an "under the table" company, even if the unit is much cheaper than

#### Electrical Terms for Non-Engineers

***Voltage:*** The *amount of electromotive pressure (force)* that is driving the signal. Measured in *volts* or *voltage*. The higher the voltage, the greater the *amplitude*, or height (and depth), of a wave. More voltage generally means a stronger, more intensely felt—or "louder"—signal. Applied to a frequency device, this translates to the "volume control" of the unit.

***Current:*** The *number of electrons that flow across a given surface*, such as a wire; rate of flow. Measured in either *amps* (short for *amperes*) or *milliamps* (thousandths of an ampere). Since the exact number of electrons cannot be counted, one amp is a specific, hypothetical number of electrons flowing past a point per second. The larger and/or thicker the wire, the more electrons are able to flow. In a frequency device, current is typically limited for consumer protection. Current is limited by introducing *resistance* into the circuit (see below).

***Resistance:*** The *amount of opposition to the electrical current*. Measured in *ohms*. The conductor (wire) is made of materials that slow or impede this electron flow. The more resistance there is in the circuit, the less current will be available.

***Capacitance:*** The *amount of electrical charge that can be transferred between two unconnected plates*. Measured in *farads* or *microfarads* (one millionth of a farad.) As a charge builds up, electrons flow from negative (–) to positive (+). The *more capacitance* between two plates, the *more charge or current flow* there will be between the plates. This is considered *desirable* with electrode (pad) units.

**Note:** *Devices such as the Bare-Rife unit are high current / low voltage devices and need relatively large amounts of power to operate. The tubes on these units should not be touched, other than the few seconds initially needed to ignite the tube. On the other hand, EMEM and PPET/P3 units are high voltage / low current; in general, they use much less power to operate. Some of the high voltage devices allow for direct contact. The low levels of current are well tolerated by the body at the frequencies used by most experimenters and researchers.*

others. Your health and life, or the health and lives of your loved ones, may depend upon it.

### Customer Service and Technical Support

It's important to feel comfortable with the seller, as s/he is a vital link in your support network as you embark on your healing protocol. You have every right to expect technical support—which includes phone conversations, and not just emails—for setting up the equipment, using it correctly, and troubleshooting for malfunctions. Expect a staff member to return your calls within 24 or 48 business hours, or even sooner if you're ill and it's an emergency.

A reliable manufacturer will always test and re-test the unit before it's shipped. Does he or she expect to make improvements to the machine? As machine technology becomes more sophisticated, upgrades can be important. Ideally, the machine should have been made to easily accommodate future additions and upgrades with a minimum of expense. The company should provide upgrades (if applicable) either for free or for a modest sum.

People with cancer need to use their device regularly, and cannot afford to be without it for long periods of time. Some vendors are nice enough to send out a "loaner" until the customer's is fixed. This is a high level of customer service.

Don't expect to be given medical advice. This isn't the job of a manufacturer or dealer, even though you might be tempted to ask for it (especially since your doctor probably doesn't know anything about this technology). It's understandable if you want the seller to provide medical advice and even emotional support. But remember that in some parts of the world, *dispensing medical advice, in conjunction with selling equipment not legally mandated for medical purposes, is against the law.* The seller could be heavily fined and even go to jail for breaking this law. As a buyer and experimenter, you have every right to expect courteous assistance. But that's all. Should the seller offer any kind of advice, referrals or suggestions about products, that's entirely up to him or her.

Sometimes, frustrated sellers tell me that they spend hours on the phone with a prospective customer, who then purchases the same unit from someone else for a few hundred dollars less. Although this act might initially save the buyer some money, it's counterproductive because the second vendor is unlikely to provide comparable customer service. When you purchase a unit, you're also paying for the seller's expertise: ongoing tech support, and proper maintenance of equipment that could save your life. I respect the seller's time and energy. Buying from someone who cares enough to provide tireless and courteous customer service more than makes up for a slightly higher price. As the saying goes, you get what you pay for.

One more thing. Vendors commonly tell me about getting calls from frantic users who think that the machine has made them sick, when in fact the frequency technology has simply done its job. Remember to drink more water. You may also need to adjust your diet, get into the sauna, and/or use additional complementary therapies.

### Warranty

A standard warranty for most electronic devices is one year for parts and 90 days for labor, or one year each for parts and labor. Some frequency device vendors may guarantee the unit for longer. Is an extended warranty available? If the vendor doesn't have it, ask for one.

### Money Back Guarantee

Some sellers offer a 30-day money back guarantee. All of the vendors I know charge a restocking fee for depreciation of the unit, since it can no longer be sold as new. Depending on the cost of the unit, the fee may range from about $100 to $400. Don't begrudge the seller this charge. It takes time to pack, insure, and ship a unit. You can regard the restocking charge as a rental fee. Access to a frequency device for even $400 a month to see if it suits you is a wise investment, as it may restore your health and even save your life.

A money back guarantee, even with a restocking charge, is a generous policy. It demonstrates the seller's belief in the technology and his or her sincere desire to help others. A seller who's concerned about your health as well as making money is likely to give you quality customer service in all ways.

### Repair Record

Many people are using this equipment to treat cancer, which usually means sessions twice a day. (See **Frequently Asked Questions** in this chapter for information on using the equipment for cancer.) If your unit malfunctions, you need it repaired and returned to you quickly! Find out how well the unit operates with heavy use. If it needs to be repaired, how easily can you pack and ship it? And how quickly is it returned to you? Is there a fee for repairs?

### Ease of Shipping the Unit

This is especially relevant if you need to return the unit for repair or upgrade. Consider:

- *Size and shape of the unit*. Is it easy to wrap, box, and ship? Is it easily breakable? Find out the shipper's reimbursement policy if the machine breaks in transit.

- *Location from where the instrument is shipped*. Is the manufacturer in the same state or province? Across the country? Or in another country? If the manufacturer is in another country, can you send the unit to a dealer or distributor in your own country? Dedicated rifers don't like to be without their machines for long, so proximity to the service location is important. Ask what kind of service comes with the unit before you buy.

### *Fair Price*

Some people new to this technology are surprised when they open the package containing their new equipment and see a little square box with two 6-inch metal cylinders and a few cables. "You spent two thousand for *that*?" family members exclaim, horrified. And if the family doctor starts to criticize and sneer (usually knowing nothing about this technology), doubts really escalate. How can you become a confident and successful rifer when there are potentially so many obstacles to overcome—even before the unit is plugged into the wall?

But—and I speak from personal experience—a good unit is worth the price. Now, some units are nothing more than standard, off-the-shelf frequency generators sporting a new logo on the front, accompanied by some cables and electrodes. (These devices should be the least expensive.) But the features of some other, more expensive and carefully designed units may not be obvious because they're in the internal components that deliver precise frequencies in specific ways. Don't be shy about asking the vendor detailed questions. This chapter gives you the information you need to converse intelligently with the seller and ascertain the sophistication of the unit.

The cost of rife technology units varies widely. Price is not always a good indicator of quality. You can buy an effective frequency device for around $1,800 on up to $4,000 or $5,000. Although even $1,800 may seem like too much money, consider how much you may already have spent on health care, and how little that care may have helped you. Then, think about how much money you may save on health care in the future by owning a rife unit now, and how much more it may cost the longer you delay owning a machine. The price you pay may spell the difference between life and death. Also, remember that you are spending this amount all at once, so the initial outlay may seem like more than it actually is. With a good warranty and proper servicing, a rife device should last a long time, work for many different conditions, and can be used by you, your family, friends, and even your pets and livestock. When the cost of a machine is factored over a period of many years, the price will be less than all those doctor visits you made or would like to make—most of which may not even produce the results that a frequency device would.

## FREQUENTLY ASKED QUESTIONS

### *Frequency Devices and Manufacturers*

**Q. I have a radiant unit. How far from the light should I sit or lie down?**

**A.** This depends on the manufacturer. One company suggests being as close to the light as possible. Another company advises sitting at least 6 feet away. Yet another source conducted studies showing that the tube is still effective at a range of 30 feet. Each unit is made differently, so check with the manufacturer.

**Q. Will the light from a radiant unit hurt my eyes?**

**A.** Plasma can emit both infrared, which is beneficial and felt as heat, and ultraviolet-B (UV-B) radiation, which is harmful. Quartz offers no protection from UV-B. In some instruments, leaded glass is used specifically to filter out the UV-B.

Regarding glass tubes that are not shielded, one researcher assures me that the radiation drops off and is negligible after 3 inches from the tube; so if you are at least 3 inches away, he reasons, there is no cause for concern. Nevertheless, if the tube emits UV light, it's probably a good idea not to stare at the plasma tube—just as you would not stare directly into the sun because it could cause the retinas of your eyes to become burned. Some manufacturers explicitly state that they make tubes from leaded glass or Pyrex® to filter out the UV rays.

No matter what material comprises the glass, with frequencies lower than 20 or 30 Hz, each individual flash of light is slow enough to be discerned with the naked eye. Very sensitive people might experience this as mesmerizing or disorienting. Nevertheless, these reactions are not common. So feel free to experiment with ray tube machines. If the flashing lights bother you, close or cover your eyes.

By the way, never touch the tubes unless the manufacturer gives a specific reason for doing so.

**Q. What if something is blocking the light?**

**A.** It is generally agreed that the best results are achieved if the wave from the light is not obstructed by furniture or other objects. However, some people are sensitive

### Negative Effects of Certain Radio Frequency Wavelengths

The walls and roof of my entire house (though not floors and windows) are shielded from radio frequencies (RF). Friends who come over with their mobile phones have to go outside to use them because the phones don't work in the house. So I have a good experimental space in which I can test RF frequencies.

When I stay too close to my RF plasma system for too long, what I experience is what I call RF loading, and not a Herxheimer [detoxification] effect [due to the die-off of the pathogens in the body]. (I'm talking about an RF field generated by a clean high frequency, and not a chaotic signal generated by a spark plug.) For me, RF loading affects the upper body tissue in the form of compression. The neck and skull muscles, known as the occipitals, become tight; this might be due to fascia tightening on these muscles. When these muscles get restricted, they can affect the cervical artery—that is, reduce blood flow out of the brain, which increases pressure in the brain and will produce nasty migraine headaches that can linger for days and not be relieved by drugs. This binding down of tissue on blood and nerve channels can easily lead to other symptoms.

When I sit outside the subjectively discernible RF field that the plasma transmitter produces, I do not experience these symptoms. However, I still obtain the benefits from the generalized electromagnetic field that conveys the MOR frequencies.

—Ken Uzzell, massage therapist and rifer, 2006

enough to feel plasma light emissions from the next room through a closed door.

One company states that the unit produces better results when used in a fairly darkened room. However, I have not seen any research to either confirm or refute this. Ask the seller about the optimal conditions under which to operate the machine.

**Q. I have been warned about X-rays and other radiation coming from the plasma light tube. Is this a legitimate concern?**

**A.** You don't have to worry. Here is the answer I received from engineer and experienced rifer, Dave Felt:

> It takes very high voltages and a high vacuum condition to get any X-ray radiation from a plasma-type lamp. None of the plasma lamp machines currently on the market have those voltages or that high a vacuum. So there is no need to be concerned about receiving X-rays from the Bare-Rife or EMEM [Electro Magnetic Energy Machine] plasma light devices. Also, the light tubes used in EMEM and Bare-Rife devices simply don't have any mechanism to produce alpha, beta or gamma radiation with normal use."

Dave also points out that some plasma lamp devices may *magnetically* induce signals in the electronics of some radiation detectors. "This may lead one to conclude that there is 'radiation' being given off by the plasma lamps. But there is no radiation."[16]

**Q. Can I be harmed by the radio frequency (RF) emitted by a device?**

**A.** Some manufacturers claim that RF is necessary, while others say it's dangerous. RF in a frequency device can be a carrier wave for other frequencies, the MOR itself, or an emission "by-product." One unit that uses an RF carrier wave (at low power) is the PERL, from Resonant Light Technology in Canada. A unit that emits RF as a "by-product" is any EMEM machine that is constructed with a spark gap. (*Spark gap* simply means that the voltage is arcing in the space between two metal coils or plates inside the unit.)

Radio frequencies span a broad range on the electromagnetic spectrum. Some RF wavelengths cause harm, but others clearly do not—after all, Royal Rife's best equipment utilized RF. (Although frequencies in the Hz range work well for most conditions, evidence suggests that to eliminate cancer, frequencies in the MHz or radio frequency range are optimal.) Royal Rife himself pointed out that decades of exposure to RF did not harm him at all. Nevertheless, there is evidence that some people feel unwell when exposed to specific RF wavelengths emitted by a frequency device.

Rife researcher Bruce Stenulson has had considerable negative personal experience with RF. He has also observed extraordinarily negative responses in others. Mr. Stenulson maintains that not only is radio frequency harmful, there is no reason to include an RF carrier wave in modern-day frequency devices (either on purpose, or as an incidental result of design). It's the cruder EMEM systems, he maintains, that radiate some RF from the high voltage spark plug wires—and this radiation is enough to affect even those who don't normally consider themselves electro-sensitive. He reports:

> It's certainly enough to heavily stress sensitive individuals. Some electro-sensitive individuals cannot even ride in most autos; they are unable to tolerate even low levels of exposure to a common internal combustion spark ignition system without experiencing aggravation and deterioration of their condition. The situation is compounded because people who are highly electro-sensitive may also become chemically sensitive. And with people who were already chemically sensitive, their reactions are now heightened. It's pretty scary to realize that a person who had previously led a "normal" life can become extremely electro-sensitive from supposedly innocuous exposures.[17]

For this reason, Stenulson carefully constructs his units so that they do not emit RF. He says that his devices emit a much more clearly identifiable wave form, as viewed on an oscilloscope.

Stenulson also points out that what people mistake for Herxheimer or detoxification reactions (discussed later in this chapter) may be negative responses to the RF or other aspects of the electromagnetic field. He believes that as long as the frequencies are emitted cleanly and the microbe is correctly targeted, a user can obtain excellent results without the use of RF of any kind. It's hard to argue with Stenulson's personal experience or observations.

On the other hand, there is an equally compelling opposite opinion. Jeff Sutherland, PhD, finds that although the absence of a spark gap is preferable for most purposes, its presence is important to break up cancer tumors precisely *because* of its chaotic, "noisy" signal. Richard Loyd, PhD, writes that people with cancer who use EMEM devices report inadequate or completely unsatisfactory results.

> Three times in the past couple years, cancer patients have complained that their EMEM3D devices did not "work" anymore. The frequencies were correct, and the tubes lit up and looked normal. But the owners insisted that they no longer produced the expected results. In each case, the spark gaps had become dirty, and the connection was no longer clean. So the current went straight through without a spark. Replacing the spark gaps caused them to produce the desired results. [Eventually] the designer of these units found a spark plug that did not foul.[18]

Dr. Loyd has found that EMEM units work very well for virtually every condition *except* cancer. For those with cancer, a dirty or non-existent spark gap appears to impede progress: tumors commonly do not shrink, and symptoms become worse. Tests conducted by some contemporary researchers show that RF does appear to drive the signal much deeper into the body and give better results. However, this may be due to some unknown limitations of their equipment. Manufacturer Jimmie Holman reports excellent results without RF, but his units have a unique design and operate on different principles.

Jeff Garff has installed an RF carrier wave into his electrode device for deeper signal penetration. However, his unit has a switch that allows the subject to turn off the optional RF wave and use only the lower, non-RF frequencies. One plasma tube unit manufacturer suggests sitting 6 feet from the tube if you're concerned about possible negative effects. A 6-foot distance appears to be both safe and effective.

It may be difficult at first to know if you're negatively affected by RF. Some people might have negative symptoms, but not know what is causing them. A few develop extreme sensitivities to EM fields after exposure to the RF from a frequency device. With the increase of artificial electromagnetic fields from electrical devices and transmission towers of all kinds, direct exposure to RF from a frequency device, over an extended period of time, may be the final, significant load that makes someone unbearably sensitive.

However, everyone is different. Many users report that an RF frequency device has saved their life. The only one who can determine if RF is effective and helpful, or ineffective and damaging, is the person using the machine—you. If you're using an RF frequency device to treat yourself for cancer and you suspect that you are reacting negatively to RF exposure, consider the advantages of eliminating the disease over the disadvantages of long-term RF exposure. But consider, too, that you might not be able to eliminate the cancer if you are RF sensitive and your system continues to be debilitated by RF. In this case, try out a device before buying it. Ask the vendor for a money-back guarantee.

One more thing. Equipment that uses RF must be legal. See Sidebar, "Frequency Devices and Electronic Interference."

**Q. Different machines use different RF carrier waves. Which one is the best?**

**A.** Not all devices use carrier waves. But of the more popular units, the BCX Ultra uses 1.67 MHz, 1.25 MHz

### Frequency Devices and Electronic Interference

Some radiant plasma units (whose tubes are used for broadcasting) emit frequencies in the RF (radio frequency) range. Before you purchase a radiant plasma unit, make sure that the RF it transmits are in the range allowed by the Federal Communications Commission (FCC). The FCC's job is to allocate radio frequency bands for specific uses—such as broadcasts, aeronautical and marine transmissions, search and rescue, radiolocation, and amateur (ham) transmissions—as well as to license the users of those bands. Allocation and licensing ensure that vital communications do not interfere with each other. If an operator of equipment causes interference and does not correct the problem, s/he can be fined as much as $10,000 for each violation and $75,000 for repeat or continuing violations. For manufacturers and sellers of obstructive devices, fines are even higher!

Not all devices require licensing, though. The FCC allows *low-power* transmitters to share frequency bands with licensed high-power transmitters if certain restrictions are met, including a transmission range of no more than 200 feet (61 meters). This is important for both the manufacturers who build devices that transmit RF, and the rifers who use them. If your device causes interference, you can shield it. One type of shielding—an enclosure called a Faraday cage—prevents electrical fields originating outside the cage from reaching the inside, and prevents electrical fields originating inside the cage from reaching the outside. However, a Faraday cage is expensive and impractical for the average person.

How do you know if your equipment won't cause problems? In North America, the RF range that medical devices are allowed to use—as long as they don't exceed low-power limitations—is from 26.957 MHz to 27.283 MHz. This is called the *ISM band,* short for "Industrial, Scientific and Medical." Rifers have a responsibility to ensure that their machines do not cause electronic interference for their neighbors.

For more information, see:

www.fcc.gov/mb/audio/lowpwr.html
www.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet63/oet63rev.pdf
www.fcc.gov/oet/spectrum/table/fcctable.pdf

or 1.0 MHz. The GB-4000 uses 2.4 MHz. And the PERL uses 27.12 MHz. All are beneficial.

**Q. I have an electrode (pad) unit. Where should I place the electrodes?**

**A.** Researchers report using hand-held electrodes for upper body problems and foot plates for lower body conditions—*but first make sure you do not have a heart condition*.

You can also focus specifically on problem areas. Hand-held electrodes can be placed so that the targeted area is directly between them. Flat flexible electrode patches can also be stuck to the skin. Patch electrodes are useful for areas such as the armpit (rich in lymph glands), throat (for directly addressing the thyroid), lower back (the location of kidneys and adrenal glands), or any other area needing focused attention. Some common applications are for muscle sprains, for placements in hard-to-reach areas like the lower back, for direct stimulation of areas like the thyroid, for detoxification of a specific area, and for difficult localized infections. Try not to use electrodes on your face, though I have done this for dental infections (discussed later in this chapter). By no means should you place electrodes over the carotid artery. This can severely disable or even kill you!

For special focus use, place the electrodes on either the right and left sides of the afflicted area, or on the front and back of the body. For instance, if you want to try to eliminate parasites in the large intestine, hold the electrodes, or stick the electrode patches, on either side of the belly. For the kidneys, place one patch electrode on either side of the lower back. For a pulled muscle in the shoulder, it may be more effective to place the electrodes at the shoulder in the front and back of the body.

Placing the electrodes closer together makes the signal more intense. You may need to turn down the amplitude (volume) when experimenting with the pads close to each other.

**Q. Sometimes when I use the electrodes, I get skin rashes. What should I do?**

**A.** Crusts, small blisters, and even eczema-type "weeping" are occasionally reported to appear at the sites of the electrodes. This can occur at nearly any frequency, and with waves of all shapes: square, sine, and sawtooth.

The first possible reason for skin problems is that you may have the volume of the unit (the amplitude of the wave) up too high. "Skin burn" may be alleviated by the use of wet cloths or electrode conductive gel. The gel contains electrolytes (minerals) to lower skin resistance and increase the ability of the current to flow. The better gels also contain aloe vera to minimize skin irritation.

Many experimenters prefer square waves not because of the harmonics, but because they seem to feel easier on the skin. (Harmonics were mentioned in Chapter 2, and will also be discussed later in this chapter.) The word "experiment" is operative here. You really do need to experiment to find the wave shape that is the most comfortable while producing the results you want.

The same holds true for the frequency. Try a higher or lower harmonic of the suggested frequency, and see if it works while being kinder to your skin.

Sometimes the amount of skin exposed to the current needs to be adjusted. Also, skin in different parts of the body has varying degrees of sensitivity, so you will have to adjust your volume setting depending on where you are using the electrodes.

Be aware that some electrode machines are equipped with an optional feature that allows you to use RF (radio frequency waves) as a carrier for the actual frequency. Most people are unable to feel the current when it enters the body in this manner. This is worth investigating, especially because the RF has a good track record of ensuring that the frequency penetrates deeply into the body.

By the way, according to some reports, alternating current (AC) devices are easier on the skin than direct current (DC) devices. Ask the vendor what your unit outputs.

If you have factored in all of the above and you are still sensitive to electrical current, you may be better off with a light tube device. Some people simply do not respond well to electrodes.

**Q. Can I use an electrode and light tube device at the same time?**

**A.** This is not commonly done, perhaps because most people own just one frequency device. However, those who have tried this method report that when they use a pad unit for a specific area while using a plasma light unit for a systemic condition, their healing process is accelerated.

One Rife researcher has found that running the same frequency from two light units at the same time produces a more rapid positive change than running a frequency from a single device. However, if you use two machines at one time for two separate conditions, your system might become confused. More input—be it drugs, homeopathic remedies, herbs, nutritional supplements, or frequencies—is not always better. See how you respond.

**Q. I've heard that plasma light devices work better than electrode devices. Is this true? Is one style of machine better than another?**

**A.** Everyone is unique, with different preferences and needs. Therefore a machine that pleases one user may not please another. Also, the strengths of each type of device may make it more suitable for certain conditions and not others.

Opponents of pad units point out that since Royal Rife never enthusiastically endorsed them, they should not even be used. But a more substantial concern is how deeply into the body the electrical current penetrates, based on the structure and function of the body. I want to address this in depth, as consumers are understandably puzzled by contradictory claims from manufacturers of each type of unit.

The body is comprised of about two-thirds water. Humans are naturally constructed to conduct electrical charge due to the dissolved mineral salts (electrolytes). Therefore, the skin is specially designed to insulate us from the constant bombardment of (externally-based) electrical impulses that threaten to confuse our inner electrical environment. This skin barrier undoubtedly explains why the electrode signals coming into the body do not sustain the same shape once they penetrate the skin. However, although the skin does keep a certain amount of charge out of the body, it still can conduct some electricity. This is why researchers are not clear how much protection the skin offers, how much this protection differs between individuals (if any), and whether or not (and how much) our minimal covering significantly interferes with the electrodes. When my engineer friend Howie used a pad unit on his feet, his instruments detected a discernible electrical charge at his head, a clear indication that the current was indeed flowing throughout his entire body. And users who turn up the volume control on their machines—which increases the voltage, or amount of force driving the signal—find that their muscles start to twitch. It makes sense that the muscle twitching would not occur if the charge remained at skin level.

(By the way, muscle twitching is *not* considered necessary or even desirable by many proponents of electrode devices. They feel that the signal gets into the body regardless of the voltage used.)

One health professional has seen even better results with pad units than light units for certain conditions. He offers two novel reasons for the success of pad units. First, if the volume knob of the unit is turned high enough to induce mild twitching in the muscles, there are now two forces at work destabilizing the microbes: the frequencies, and the *mechanical motion* of the twitching muscles. Second, recent tests have indicated that the path of least resistance to the electrical flow is along the acupuncture meridians. Therefore, *if the current from an electrode unit falls on or near enough to an acupuncture meridian, that energy is then transmitted along the entire meridian, and will directly affect the organs, glands, or other body parts that belong to that meridian system*. It is already established that light from a "soft" (non-coherent) laser shining onto an acupuncture point will travel along the entire meridian, so why not current from a pad device?

The simplest promotion of electrode devices is made by archivist and researcher Peter Walker: "The argument that electrical energy applied through pads does not reach every cell has been shown to only apply to short treatments. After 10 minutes [per frequency] of treatment, the body reaches [its] saturation point."[19] This suggests that users of pad devices should extend the time of each frequency for maximum benefit.

Assuming that the electrical charge *is* effective in killing microbes, some question if it is not the electrical charge per se, rather than a specific frequency of electrical charge, that destroys the microorganisms. In other words, how do we know the microbes weren't just electrocuted or stunned? It's well known that specific amounts and types of properly administered electricity can be used for healing, as in the stimulation of new bone growth in people with fractures—in which case, any safe, low-level electrical current might conceivably accomplish our purposes for rife sessions. But if this were the case, rifers would not consistently and emphatically prefer some frequencies over others. For example, many people feel their lungs and sinuses clear when they use 1234 Hz.

It appears that some conditions respond better and faster to machines that use electrodes instead of plasma. These conditions include spasms, cramping, pain, and stiffness in the muscles and joints. For these conditions, many users apply the frequencies with electrode patches.

There are other novel uses for electrode devices. One friend with a dreadful case of shingles (a *Herpes* virus infection of the nerves that causes enormous pain from skin blistering and rashes) almost completely eliminated his condition using a pad unit, perhaps due to increased concentration of electrical charge along the surface of the skin. Another man I know with a serious, longstanding, huge lump in his neck caused by parasites, tried every type of unit on the market without success. He was helped *only* when he ran frequencies through a pan of water into which he immersed his feet.

In my own experience, a severe gum infection responded better to a pad unit than to a light tube unit. Instead of electrodes for the hands or feet, I took special electrodes patches typically used for TENS units, stuck them on my cheeks, and rifed once a day for 6 days. Note that I held salt water in my closed mouth during the entire session, to ensure good conductivity. I feel obliged to caution you about using current near the face, even if the volume setting on the machine is low. If you put electrodes at or on your face, you are experimenting at your own risk!

If electrode units were ineffective, thousands of experimenters would have abandoned the devices years ago. Pad devices are very popular (and legal for medical use) in Europe. My personal experimentation with rife technology began with a standard laboratory frequency generator to which two handmade electrodes made from plumbing pipes were attached. For two years, I saw my symptoms decrease from frequencies transmitted by this very primitive machine. Had I not generally experienced positive results with an electrode unit, I may have discounted the technology entirely.

Nevertheless, I know experimenters who got no results using electrodes but saw their condition rapidly improve when they switched to a plasma tube unit. Every person is different.

To those unfamiliar with engineering or electronics, constructing a rife technology device might seem simple. Yet there are many variables that help make a machine successful: voltage, the gases in the tube, the pressure of the gases, how the tube is wrapped, the positions of the internal components, the lengths of the cables, the shape of the wave—and the *combination* of all these elements. Also, different gases amplify the frequencies in different ways and subjectively *feel* different.

As the Rife research community continues to experiment, the technology can only get better. Ultimately,

## Hand Built EMEM Devices from Experienced Engineers




EMEM stands for "Electro Magnetic Energy Machine." Bubble-shaped plasma tubes are usually used for such units. This particular device is equipped with two tubes. Frequencies are manually dialed using the knobs on the front, making this EMEM an analogue unit. However, a frequency generator such as the ProGen can be plugged into the external input jack, providing many automatic features and thus making the unit digital.

*Courtesy of Dave Nelson*

Another EMEM plasma device. As with the equipment above, frequencies are manually dialed using the knobs on the front, making this EMEM an analogue unit. However, this machine can also be converted to a digital one by plugging a frequency generator such as the ProGen into the external input jack. This device is able to perform many of the signal processing functions found on fancier units. Users have reported feeling its signal output as very strong.

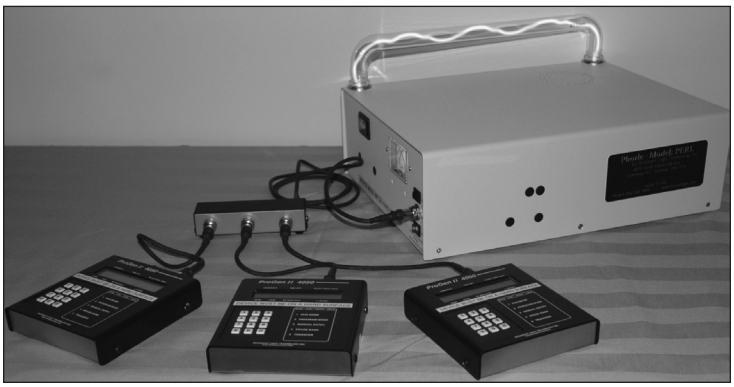
*Courtesy of Dave Felt*



## Frequency Devices from Resonant Light Technology Inc.

The PERL, a high-end freestanding radiant plasma unit, based on the patent held by researcher James Bare, DC. The light tube, which is on, emits a brilliant violet color. There is also an optional hard case for traveling, with storage for an extra light tube, accessories and manuals.



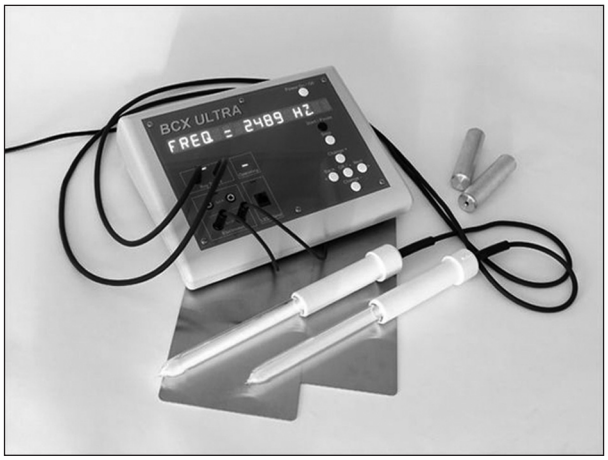
The PERL has multi-signaling capabilities. Here, three ProGens are being used with the PERL to run three different sets of frequencies simultaneously, thus reducing the overall session time.




The new PERL-XL delivers higher power through two tubes, one filled with argon and one with xenon. Each tube has a transmitter and amplifier, and can be controlled independently with its own ProGen. One tube higher than the other creates a horizontal and vertical propagation of the electromagnetic field, as well as a slightly out-of-phase field that is quite effective when one frequency is used for both tubes.

*Courtesy of Resonant Light Technology Inc.*

## Frequency Devices from Whitman Technology




The small portable BCX Ultra, with hand-held electrodes, hand-held ray tubes, and foot plates. (Foot bath and LED attachments are not shown.) The digital readout displays the frequencies, times, and customized gating and waveform features.

This radiant plasma tube, which connects to the main unit, is in the shape of a circular spiral with a large open core. The subject usually sits or lies near the machine, but can also place a hand, wrist or forearm at the center of the spiral to treat injuries.




*Courtesy of Whitman Technology*

## Frequency Devices from Pulsed Technologies



The company's most basic equipment, the Precision Function Generator (PFG or PFG2). This slim, compact box is 6" × 3½" × 1", designed to interface with a computer. It can be used with both a plasma light tube and electrodes. Also shown: power cords and electrode patches.

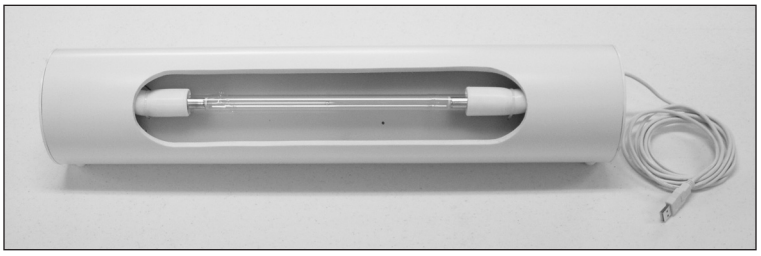


The P3Pro (Precision Pulsed Plasma for Professionals). This freestanding light tube unit has its own carrying case for travel.

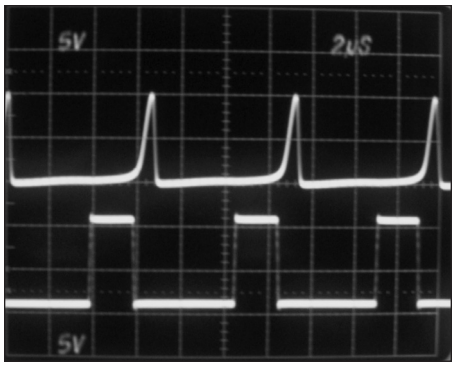


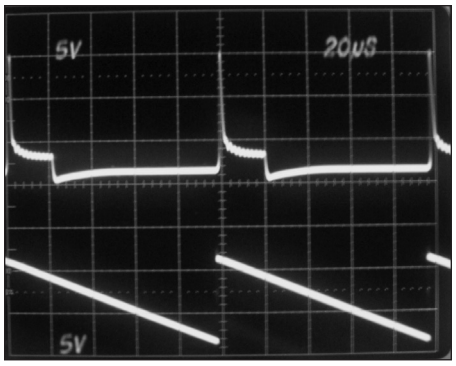
The P3+ (Precision Pulsed Plasma) device. The light tube contains an internal frequency generator, the company's PFG2. The laptop is loaded with the company's software.

*Courtesy of Pulsed Technologies*



The P3c (Compact Precision Pulsed Plasma), at 22" long and 4" diameter.
This unit can either connect to a PFG (see previous page),
or else a PFG can be built inside the casing, with no additional bulk.
The feet at the bottom allow for multiple positioning arrangements.
As with all Pulsed Technologies devices, this runs with a laptop,
though future models will contain a built-in computer.



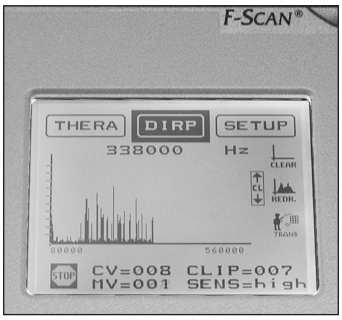

The plasma light units from Pulsed Technologies deliberately manipulate the signal so that
the waveform being sent into the tube by the frequency generator is entirely different
from the waveform coming out of the tube. The fast rise times, and sharp points to the waves,
drive the signal deeply into the body. The above photos depict waves from
two Pulsed Technologies units as seen on an oscilloscope.
At the bottom are the waves sent from the function generator to the tube.
At the top are the waves emitted by the tube.

*Courtesy of Pulsed Technologies*

## Frequency Devices from Health Balances




The Swiss-made touch screen F-Scan is a contact device that uses any type of electrode, including cylinders and patches. Able to analyze which frequencies the person needs, it scans the body for resonating frequencies, or "hits," and then delivers them to the user. This model is 8.5" × 6.1" × 5.5".

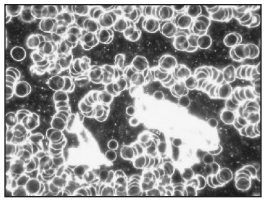



The F-Scan with its touch screen in operation. Peaks on the graph show resonant hits.

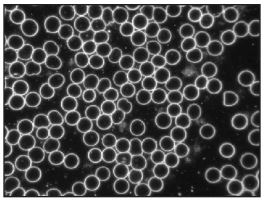



The new F-Scan Compact, small enough to fit into a pocket. Frequencies can be downloaded into it from the larger unit, or it can be programmed by itself. The unit is also equipped with built-in frequency programs. The more advanced Compact model can also scan.

*Courtesy of Timo Böhme*



Live blood, before session with F-Scan.



Live blood, after session with F-Scan.

Rife researcher Richard Loyd, PhD, comments: "In September 2001, I had the privilege of taking part in a seminar in Tokyo. At the seminar, a dark field demonstration was done on a volunteer. The blood was sticky and there was a lot of fibrin, which is often caused by infection. Frequencies were administered using the F-Scan. A second sample of blood showed that the stickiness had broken up and the fibrin was gone. I was told that this demonstration is often done with similar results. Since then I have tried this several times and have noticed that 62,000 Hz and 63,000 Hz are very common hits. The blood always looks much better after the frequencies are applied."

*Courtesy of Dr. Richard Loyd and Wismerll (www.wismerll.co.jp),*
*a manufacturer of medical devices including a dark field microscope for live blood analysis*




One setting on the F-Scan touch screen.

*Courtesy of Timo Böhme*

## Frequency Devices from AAA Production



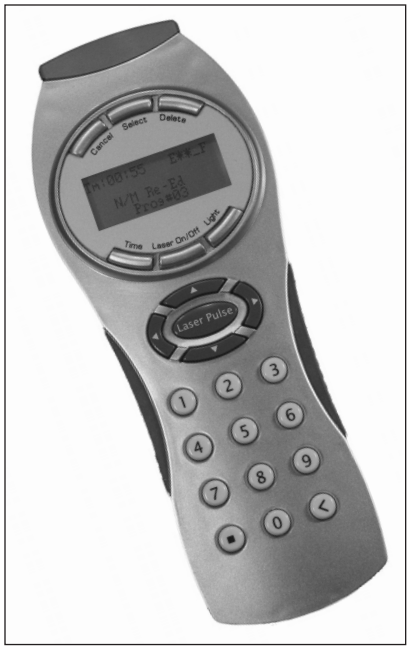

The GB-4000 (on right), a 20-MHz frequency generator that can be used as a contact device with either hand or foot electrodes. When connected to the optional SR-4 10-watt amplifier (left), the GB-4000 can simultaneously run as many as eight frequencies up to 40,000 Hz, and as many as two frequencies up to 20 MHz, thus reducing session time.




This M.O.P.A. (Master Oscillator Power Amplifier) transmitter has been recreated from a design that Royal Rife used, built from original schematics from the 1930s Beam Rays Corporation. Like the original, it uses a tank coil and vacuum tube, and outputs many harmonics and sideband frequencies.

*Courtesy of AAA Production*

## Laser from LED Healing Light Inc.




LazrPulsr 4X LLLT (Low Level Laser Therapy) hand-held unit, the size of a large remote control. It contains hundreds of built-in programs, and can also be programmed by the user. The top is equipped with four diodes. The window to the left is set for the program "N/M Re-Ed," or Neuromuscular Re-Education.




The LazrPulsr 4X, in combination stand and charger. The transformer can be plugged either directly into the laser, or into the stand, which in turn contacts the laser. The unit can be used either on its battery charge, or plugged in.

*Courtesy of LazrPulsr System*

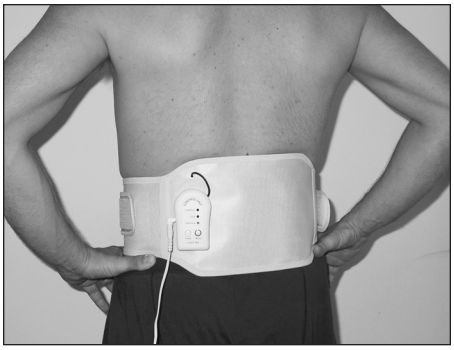
## LEDs from Light Energy Inc.



The battery-powered Light Shaker, which contains one LED. Unit can be applied to anywhere on the body, including a closed eyelid.

The battery-powered Tri-Light, with 3 LEDs. This functions in a similar way to the Light Shaker (above), except that it covers a wider area.



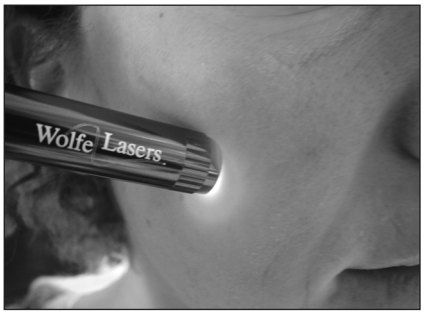



The Light Pad, with 23 LEDs. Pad can be fastened to the back, limbs, or other parts of the body with either string ties or Velcro®. This unit plugs into an electrical outlet.

*Courtesy of Light Energy Inc.*

## LEDs from Good Energy Products



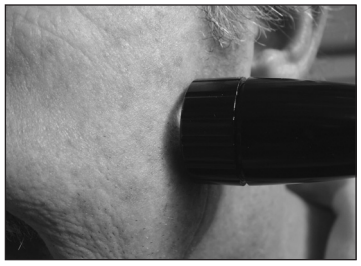




The simplest unit, the Chi Pen®, is 5½ inches long and operates on two AAA batteries. Inside the casing is a vial of water that has been imprinted with the frequencies emitted by healthy organs, glands and bodily tissues. A 625-nm red light (at 900 milliwatts power) passes through the water to the tip of the penlight. Above, a subject is treating her teeth and gums with the light.





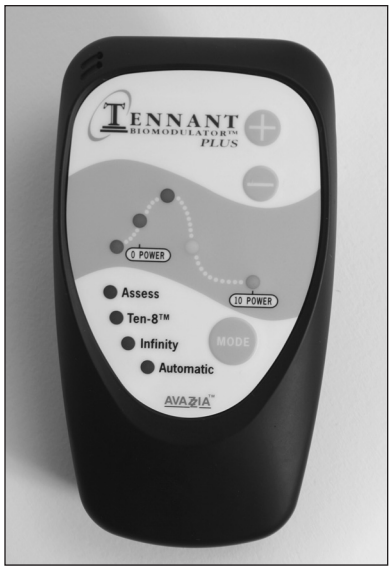




The 10½-inch-long Advanced Chi Stimulato® operates on two AA batteries and contains three light emitters in the infrared spectrum (950 nm at 450 mW power). Blue from one visible light diode allows the user to direct the wave to the targeted area. This instrument comes with eleven interchangeable, programmed, water-filled lenses that are screwed onto the tip of the device. The frequency formulas include: Chi Energy (the same formula used for the Chi Pen®), as well as Detox, Infection, Inflammation, Lymphatic, Root Canal, Sinus, Stimulation, Toothache, Trauma, and Relaxation.

*Courtesy of Good Energy Products*

## Frequency Device from Senergy Medical Group




The Tennant Biomodulator® changes frequency according to how the body responds to the signal. This lightweight hand-held device, somewhat smaller than a remote control, is used for pain management and to help restore tissue function. When the device is not used with accessories, the head of the unit (not visible, on the opposite side of the faceplate) travels across the skin, transmitting minuscule amounts of current to the areas beneath. (See Appendix C for more information.)



Sometimes, accessories that connect to the main unit more easily reach the areas designated for treatment. This scalp electrode, which fits in the hand like a small brush, is used on areas of the body that would otherwise need to be shaved. It can be used for humans or animals.



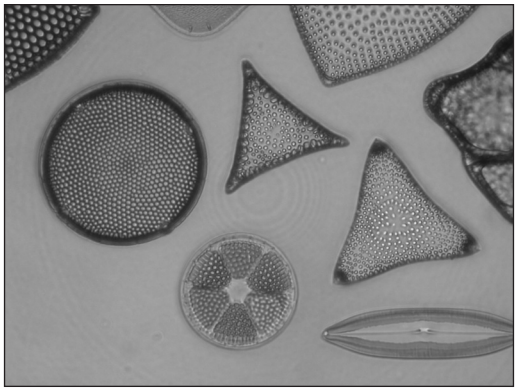
These single weave, seamless limb wraps and gloves are specially wired to transmit current to hands, arms or legs that are inside the wraps.

*Courtesy of Senergy Medical Group*

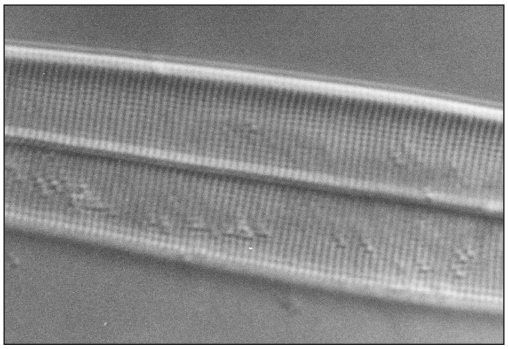
## The Ergonom Microscope from Grayfield Optical Inc.



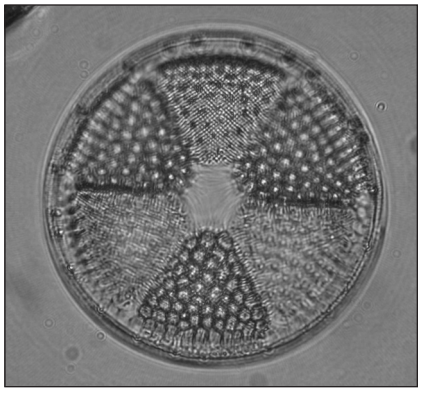
The Ergonom 500, one of several Ergonom models and among the company's most recent instruments. In the year 1976, Kurt Olbrich invented a microscope with slightly higher magnification levels and better depth of field and color contrast than Rife's instruments. Operating on different principles than did Rife's microscopes, the Ergonom is considerably easier to use as it requires no staining, oil immersion or complicated focusing.



Various diatoms, as seen through the Ergonom. These microscopic algae come in different shapes.



*Amphipleura pellucida*, a type of microscopic algae, as seen through the Ergonom microscope. The finely detailed markings on this species are not as clearly visible under typical microscopes.



Close-up of a diatom from the above group. Note its symmetrical design.

*All photos courtesy of Kurt Olbrich and Peter Walker*

you must evaluate a device according to whether or not it helps you. Lifestyle, genetics, approach, degree of comfort with electronic equipment, and state of illness or wellness varies. Surely there is room in the world for different types of frequency machines—as well as other electromedical healing devices.

**Q. My machine doesn't allow me to program real frequencies into it. Instead, it uses code numbers that correspond to pre-programmed channels. I look up the condition I want to address in the operator's manual, and then enter its matching code number into the machine. But I don't know what frequency I'm getting. Does this matter?**

**A.** Some devices use code numbers, representing actual frequencies, which have been pre-programmed into the device at the factory. For example, on one machine code number 1 corresponds to 10 KHz, code number 2 corresponds to 1050 Hz, and so on.

There are many disadvantages to machines that use code numbers in lieu of the actual frequencies. The actual emitted frequency is usually hidden from the user, so s/he doesn't know what is being transmitted. Even if the operator's manual reveals which frequencies belong to which code numbers, what if you want to use a frequency that hasn't been programmed into the machine? With the escalation of new virulent microbes, and new frequencies to treat them, the inability to program a unit with real numbers is a serious handicap.

Some manufacturers of coded equipment now offer upgrades as new frequencies become available. The customer sends in the unit, and the new frequencies are added at the factory. However, this feature keeps the user perpetually dependent on the manufacturer for improvements—not to mention the cost of shipping, and the disadvantage of not having a machine. What if you need a new frequency, but cannot afford health-wise to stop rifing? Consider these points before purchasing a unit that solely relies on code numbers. Similar problems arise with equipment whose frequencies are on CDs.

There is one advantage to coded machines: the convenience of pre-set programs. Since the very ill often lack the energy and brainpower to run their devices, pre-programmed channels can be convenient and easy to operate. However, this feature is no longer a marketing advantage, as some manufacturers of user-programmable devices are now offering preset programs as well. The frequency banks are already in the unit—either as a regular feature at no extra cost, or by special request for an extra fee if the customer asks for it. The experimenter simply punches in a few numbers, and many frequencies are sequentially emitted. This provides the convenience and ease of pre-programming, while allowing the user to remain completely in control of his or her health regimen.

Serious Rife researchers don't work with coded machines. Without the ability to program or verify frequencies, they are unable to develop reproducible protocols—and thus cannot advance the technology.

**Q. My rife machine has a feature called *sweep*. What does this do?**

**A.** Organisms mutate. It's their way of adjusting to a hostile environment. Most mutated pathogens have their own Mortal Oscillatory Rate (MOR), although the MOR mutations tend to cluster very near the original MOR. Programming the machine to cover many frequencies in one move ensures that microbes whose resonant frequency deviates from the average MOR are destroyed, along with those microbes whose MOR falls within the norm.

The *sweep* function allows a generator to run frequencies sequentially, in defined steps. However, within these parameters, sweeping can be implemented differently, depending on the rifer's preferences and on how the machine is constructed. Here are several different ways to program a sweep into a unit:

- *Example #1.* This is a common method. Enter the "main" frequency into the machine. Then tell it how many Hz (plus or minus) to vary on either side of the main signal. Sweeps can range from any increment on either side of the main number—1, 2, 20, 30, 100 or more Hz, depending on the sophistication of the unit. Most machines move in increments of one Hz, but some move in smaller steps of, say, .001 Hz on either side of the main signal.
- *Example #2.* The sweep function causes the unit to emit oscillations that automatically swing between two numbers. Say you want the unit to run between 2000 and 3000 Hz. Two thousand is the lower number that you program into the machine, and 3000 is the upper number.
- *Example #3.* A generator program step that reads "*sweep* 728 – 5 – 1" starts at 728, and has 5 additional, 1-Hz steps going upwards from 728: 729, 730, 731, 732, and 733. Six frequencies total are run.

Incidentally, the instability of some of Royal Rife's units was probably beneficial, as the doctors were

obliged to sweep around the single target frequency. Thus, not only was the "main" microbe targeted, but so were the adjacent mutated offspring. With today's equipment, which is much more stable, we are capable of intentionally programming specific, incremental frequencies in a controlled manner.

**Q. My rife machine has a feature called *converge*. What does this do?**

**A.** *Converge* is similar to a sweep. This is also done to ensure that all the microbes are targeted in case any mutations arise. Some microbes may escape the effects of frequency devices by contorting their cell wall, and even perhaps their DNA, so that when the microbe changes its shape it also changes its frequency.

Some researchers think that a converge works better than a sweep in preventing mutations and covering all the MORs of a microbe. Rife researchers theorize that with a symmetrical sweep, the microbe can keep contorting in sequential and regular intervals, just a little more with each frequency increment. However, with a converge, the microbe cannot as easily adapt because the changes it must go through are more complex. These changes are readily seen in the mathematics of a converge: the frequency alternates above and below the target frequency, decreasing the distance between them with every step.

For example, a program step reading "*converge* 728 – 5 – 1" means that 728 is the main or target frequency, and that five frequencies below it and five frequencies above it will also be run. However, the order will be asymmetrical, to ensure that the microbe will be less likely to adapt to the treatment. The frequencies would run as follows: 733, 723, 732, 724, 731, 725, 730, 726, 729, 727, 728.

**Q. My rife machine has a feature called *gate*. What does this do?**

**A.** Normally, the body tends to become impervious to a signal that is constant, steady and unwavering. Say someone is stroking your arm with a constant rhythm and pressure. At first you notice the motion and sensation; but after a while, the nervous system compensates for the unrelenting stimulus by becoming numb. This is a natural adaptation of the body; it frees the senses to focus on new stimuli that might require more care and attention. Similarly, the area in the body that is housing the microbes may become resistant to the input from a frequency device. If the body blocks the signal, the microbe will not be affected.

To bypass possible resistance from both microbes and body tissues, engineers add a *gating* feature to their equipment. Gating causes a regular pause in a steady signal, similar to opening and closing a gate. The gate is opened to allow a series of signals through, closed briefly, and then opened to allow another series of signals through. This "on, off, on, off, etc.," feature causes a sudden spike on the wave, which drives the frequency into the body so suddenly and forcefully, that the body does not interpret this as a foreign signal and thus does not resist it. This type of wave with an abrupt spike is said by engineers to have a *rapid rise time*.

Most rifers, as did Royal Rife himself, find this type of spiked waveform desirable. However, not all researchers find gating effective. Jimmie Holman writes: "If you are already using well designed equipment that's capable of accurate and consistent delivery at higher frequencies, the use of gating is actually *counterproductive* because it acts as a break in the steady transfer of energy."[20] He illustrates his point with the example of soldiers marching on a bridge, who are ordered now and then to "break step." Since their *unison marching rhythm is a wave—in other words, a frequency*—this can make the bridge shake and sway. Sudden halting breaks the rhythm, dissipates the momentum, and stops the swaying.

It appears that the benefit of gating, or need for it, depends on how the equipment is transferring energy into the body. The goal is to get the body to accept the signal so it can utilize the energy. A very few devices, including Holman's, can do this without using a gate feature. The proof that this works lies in the results achieved by the subject.

Of those who prefer a gating feature, there is some debate as to the most effective rate. One analysis of an original Rife Ray revealed an incredibly rapid gating cycle; but as its rapidity was intricately tied to how the unit was configured to transmit frequencies, the rate cannot be applied to modern equipment. Some contemporary manufacturers have a precise formula for the amount of time the signal is on versus the amount of time the signal is off: in one machine, for example, the signal is on two-thirds of the time and off for one-third of the time.

Some manufacturers build their units to be programmable with varied gating rates. However, the on-off rate may be less important than the fact that the unit can be gated at all. Most RF plasma units cannot operate with abnormally high gating cycles. But since the purpose of gating is to ensure signal penetration, as long as the body and microbes are receiving the

frequencies, the gating rate is not important. One researcher is experimenting with higher-than-usual gating cycles; but as they appear to produce physiological responses rather than kill microbes, and their effects (and benefits, if any) are still largely unknown, they are not recommended for the average user.

*Do not use the gating feature if you are also using the sweep feature.* As. Dr. Richard Loyd points out, if you use both functions together, you may miss some of the frequencies being emitted during the sweep because many of those frequencies will run during the period when the signal is in the "off" portion of the gate.

**Q. My rife machine has a feature called *pulse*. What does this do?**

**A.** The way the term *pulsing* is used by many in the rife community, it means the same thing as gating; see above. "Pulse" technically refers to a burst of energy, but it might be wiser to use the term "gate."

**Q. I just discovered that my brand new unit contains some "custom" programs. It appears that someone else programmed frequencies into the machine, and then forgot to erase them. Does this mean that I got a used or reconditioned unit?**

**A.** Many device manufacturers load some custom programs into their new machines as a courtesy to their customers. They recognize that sometimes, people are too ill to program the units themselves, and welcome this programming. The custom programs are usually popular frequencies for common ailments.

Ask the seller if your machine is used. If it was, you should have received a discount in price.

**Q. Some electrode and radiant machines can transmit several frequencies at the same time. This sounds like a great feature, since I'd like to decrease the amount of time I spend with my device each day. Are such machines reliable?**

**A.** There are two levels to this answer: the engineering viewpoint, and what happens in real life. From the perspective of tests and measurements, a benefit may seem impossible, yet the end user may experience undeniably positive results. Sometimes rifers find great success with machines that, according to engineers, shouldn't be working as well as they do. Keep this in mind as you read.

Jeff Garff, designer of the GB-4000 pad device—which can transmit up to eight frequencies at once—concedes that there's a chance that the frequencies could interfere with each other. However, based on rather consistent success stories from satisfied users, this potential interference does not seem to substantially detract from the unit's effectiveness, and the device appears to deliver what the manufacturer claims.

Curiously, some laboratory readings do not appear to support the claim of benefits. One engineer (who does not sell any equipment himself) measured the wave forms emitted by the device on an oscilloscope, and found that the integrity of the frequencies is not clear. Holman describes it as follows:

> Imagine swinging on a swing. If someone pushes you at the right time, the amplitude (height) of your swing increases and you can go very high. But the pushing has to be in tune with your natural frequency. If someone pushes you at random intervals, chances are it will not cause you to swing much higher. In fact, another hand pushing the swing at a different frequency, at just the right point in time, might even disrupt the momentum already gained and built up, and make you swing less.[21]

This principle applies to more than swings. Earlier, I mentioned soldiers "breaking step" after rigorous marching in synchronous rhythm. The synchronous marching makes the bridge sway, while not marching at the same time halts the swaying. If everyone walks across the bridge at their own pace—meaning in staggered steps—the bridge no longer sways. It might shake, but the momentum produced by one long, continuous wave is considerably reduced or eliminated altogether.

There is also the problem of overall diminished power. There are now more frequencies sharing the same output level, suggesting that the power of each frequency is diluted. But if a waveform consisting of combined multiple frequencies has less power than each individual frequency alone, why is the GB-4000 reported to be so effective? Its efficacy is likely due to its radio frequency (RF) *amplifier,* which drives the signal more deeply into the body. Perhaps, too, there are other, unknown principles involved. In the end, it is the user's own experience that determines effectiveness.

One device emitting two frequencies at the same time, which is highly effective both from an engineering perspective and from an experiential standpoint, is the PERL-XL from Resonant Light Technology in Canada. The unit has two plasma tubes, each regulated separately by its own generator.

**Q. Does rife equipment require special care?**

**A.** Most good rife equipment costs $2,000 or more. *Make sure to use a surge protector*, as you would with any electrical equipment such as a computer or stereo. This will protect the delicate components from being damaged from unwanted surges of power (which can occur during lightning storms). *You cannot afford to have this equipment break down.* Some surge protectors guarantee against equipment damage to $50,000. It is well worth investing $25 or $50 for a good surge protector to preserve and extend the life of your rife unit. As with other electronics, keep the rife unit away from extremes of moisture and temperature. And clean it according to the manufacturer's instructions. You can cover it when it's not being used.

**Q. Will my rife machine affect other electronic equipment?**

**A.** This depends on the brand. The electrode units create the least interference with other machines, because the frequencies are not transmitted through the air. But most plasma light units usually do not affect other electronic devices unless they are not properly grounded. All light instruments emit audio signals that are audible in certain ranges, and can be heard through appliances such as telephones or televisions. But this is a normal phenomenon and does not ruin either the rife frequency units or the electronic equipment that it is temporarily affecting.

If there is too much interference first plug the rife machine into a different electrical circuit, even an outlet in another room. If this isn't possible, get a clamshell RF choke from an electronic supply store. The choke can be clipped around electrical cords of electronic appliances to reduce the effects of a "noisy" rife machine.

**Q. I'm nervous about operating an electronic device that's being used for serious therapy. Aren't rife machines complicated to operate?**

**A.** The ease of giving yourself a rife session depends on how comfortable you are with electronic equipment, the features of the particular machine you are using, and also how ill you are.

A surprisingly high number of people are leery of rife technology because they are intimidated by machines. If you are really technophobic, ask someone who has grown up with computers and fancy electronics gadgets—your son, daughter, grandchild or a kid in the neighborhood—to help you. With a little practice, you soon should be operating the machine like a pro.

Some devices are no more complicated to operate than a simple DVD player. Other units are much more complicated, especially if they have multiple programming options. Here, experience with personal computers can be quite helpful.

People who are very ill often require extra assistance, even if the device is user-friendly and the seller provides competent telephone technical support. If you have a serious health condition, consider asking a relative or friend to help you set up and operate the machine. The following story illustrates this point.

A woman with Lyme and a host of other debilitating infections once sought my help because she was having trouble with her unit. She sent it back to the manufacturer for repair soon after she bought it, and when she received it a second time it still didn't work for her. Fuming, she returned the unit and asked that her money be refunded. Knowing that the manufacturer is very ethical and makes a fine machine, I called a company representative in great surprise and asked what the problem was. She replied that the machine had worked perfectly every time it was tested in the company shop, but the customer's money would be refunded anyway because, she said, "I think she was simply too ill to operate the machine." Having heard the customer herself describe one of her symptoms as "intense brain fog," this made sense to me. Unfortunately, she did not have any support people to operate the machine for her. I urge anyone who wants to try this technology, but feels too ill to operate equipment, to find someone to program the unit and turn the knobs for you until you are well enough to run the unit yourself.

A reliable vendor includes an operator's manual with your unit. Note that an operator's manual is strictly limited to the various functions and care of the device, and how to operate it to transmit frequencies. Unlike a frequency manual, an operator's manual does *not* describe what conditions the frequencies themselves are designed to address.

**Q. Are there any health care providers who have a rife unit that I can try first, to see if the technology works? I'd like to use a machine before buying one.**

**A.** Under most circumstances in the US, it's illegal for a licensed health care practitioner to use rife equipment for clients. However, in Europe and in many countries

outside the United States, it *is* legal for rife technology to be used for medical purposes. Therefore, you might be limited by where you live.

However, there are still ways to try out various units. People with serious conditions such as cancer and AIDS, who live in the United States and Canada, often visit Mexican clinics (if they can't afford to travel to Europe) because the laws in that country allow rife equipment to be used. You can visit a clinic (a good idea anyway if you have a serious condition) to try some equipment. Alternatively, you can ask a vendor if there is someone living near you (a layperson, not a licensed health care provider) who might be willing to let you try their device. However, due to privacy issues this may not be an option. Another alternative is joining a rife chat group on the Internet. Many experimenters network in this manner, and some are quite willing to let others try their equipment.

If you are seriously ill, I encourage you to buy a unit for yourself. For instance, conditions like cancer require the use of a machine twice a day for a minimum of 4 to 6 months. If you use the unit sporadically and skip days, or if you don't linger for a long enough time on the proper frequency, you may end up "tickling" instead of destabilizing the microbe, thus causing it to grow instead of die.

Some manufacturers have a limited-time return policy on their units, minus a standard restocking fee. As there is rarely a return policy on allopathic medical equipment, this service offered by rife technology vendors is quite generous. Consider taking advantage of this option, and regard the restocking fee (should you decide to return the unit) as a rental.

**Q. I've seen diagrams in books and on the Internet on how to build a rife-style device. How hard could it be to build my own machine?**

**A.** *Be very careful! Do not assume that these units are simple or cheap, or that anybody can build them.* Unless you are skilled in electronics and really know what you're doing, you may create a device that not only doesn't work properly, but that could seriously injure you.

I will never forget meeting a man at a holistic health conference some years ago. He liked to tinker with machines and fancied himself an electronics expert. He boasted that not only could he build rife-style equipment, but also that he could improve on the devices that had already been built by people more experienced and knowledgeable than he was. He then volunteered that just after building his first frequency device and turning it on—it is hard to know whether he made so-called improvements to the unit or simply built it incorrectly—he did not notice anything unusual. But his wife, who was many feet across the room, began to suffer excruciating pains in her chest. She repeatedly asked him to turn off the machine, but since he was focused on the machine and not on her, it took a while for him notice what was happening. By the time he turned off the machine, she had suffered heart damage.

Don't let this story dissuade you from purchasing a unit or borrowing someone else's machine—I told it to make a point. Make sure that the unit you do use is produced by an experienced engineer. Reliable companies thoroughly test their units before releasing them for sale.

Although the plans for a rife unit might seem simple, it's not worth risking your life, or the lives of those you love, by building dangerous or malfunctioning equipment. If you are a beginner trainee in electronics, a frequency machine is not a wise first project! Even if the unit you build is merely ineffective rather than dangerous, if you wish to use it for a life-threatening or chronic condition, you will lose valuable time working with a machine that does not perform well.

**Q. These devices cost so much! The electrode units seem like ordinary frequency generators to me, with common metal cylinders used as electrodes. And some of these light tube units don't seem very sophisticated. Why do the manufacturers charge so much? Don't they care about people's health—and people's lives?**

**A.** The best answer I can give you is directly from a frequency device builder.

> These machines are built from custom components that must be shipped in from all over the world. The same holds true for the oscillators, front bulb connectors, many internal parts and components, shields, grounding tubes, and just about everything else that is developed to improve this technology. The bulbs are custom fabricated and hand blown.
>
> Hours are spent in research and development. Something as simple as upgrading to a new oscillator may involve up to a hundred hours to retrofit it into a previous machine. Few people understand or realize what is behind this technology. And the work doesn't stop with the sale. Frequently I give 10 hours of additional support or more to each customer. There is also the cost of providing warranty service.

> If these machines were mass produced like computers, the prices would be a fraction of what they are now. But at this time, frequency devices are used by a limited number of people. Consider, too, the constant risk factor from various medical and government agencies that may decide to destroy your years of investment at any given time. It is a wonder that anyone is willing to produce these machines at all. [This is for the US. In Europe, for instance, devices are less expensive because they are legal for medical use.][22]

Manufacturers have to eat, too. Earning a living wage from the sale of rife devices is an honorable profession. If a particular device does not seem to be suitable for your needs, keep looking. The Resource Appendix lists some manufacturers as well as Internet rifing groups. Many experimenters are eager to share their experiences and will be glad to tell you what has or hasn't worked for them.

**Q. I'm convinced that I need to purchase my own unit. But shouldn't I try to obtain a real rife machine? We know that some of his units at least had a good track record.**

**A.** If by "real rife machine" you mean Rife's best Beam Rays device, it would be difficult to find a working model available for public use. Most modern frequency devices are based on Rife's original technology as much as possible, given the legal restrictions imposed on manufacturers for building their units and incomplete knowledge of how Rife's equipment worked. Although contemporary devices do not work exactly the same way that Royal Rife's original machines did, they do kill microbes and help normalize body systems.

The best present-day frequency devices have a good to excellent track record in reversing illness. Considering the negative effects of drugs and the trauma of surgery, I can't imagine why anyone wouldn't want to own and use a frequency device.

**Q. Some rife units in the United States are approved by the FDA. Are these machines better than the ones that aren't approved?**

**A.** First, the FDA has proven unfriendly toward any equipment associated with the name "Rife." Of the few units that *are* legitimized by the FDA, the companies never use the word "rife." Also, "approved" is not the correct term. Any company claiming that its units are "approved" either does not understand the terminology, or is trying to make its units more marketable.

Next, equipment is *listed* with the FDA. This simply means that the company has notified the agency that it's doing business and selling units. Then the equipment is *cleared* as a TENS unit. This means that the company has undergone audits and is allowed by the FDA to sell. Finally, at the most advanced level of FDA involvement, the equipment is *accepted* (*not* "approved"). This means that the equipment has been subjected to double blind studies and has passed the tests.

In the US, a very limited number of frequency devices are *accepted* by the FDA for *pain relief*—as *TENS units*. If the company claims that its devices are "approved," if the words "cure" or "treat" are used in association with the device's attributes, or any disease conditions are mentioned, this is your clue that ignorance or outright deception are present. If you are a layperson, as long as the device works, these legalities may not matter to you. If you are a doctor, naturopath, massage therapist, chiropractor or other licensed professional, it may matter a great deal to you to buy and use devices only from companies that obey the law.

Ironically, the principles by which resonant technology devices operate, and their effects on the body, are quite different from those of TENS units. A TENS unit controls pain by emitting current at much higher levels than that produced by the body, so certain nerve fibers are numbed and deadened. Thus the machine "works" by temporarily suppressing symptoms, not by restoring cell and tissue function. Nevertheless, if a frequency device company wants government acceptance of its product, it must comply with the law—which in most cases means undervaluing, and not officially disclosing, the advantages of its unit. All uses other than pain relief are *off label*, and at the practitioner's discretion.

### *Rife Sessions—General Questions Pertinent to All Machines*

**Q. How many frequencies should I use per session?**

**A.** Use your judgment and common sense. Most people tackle the symptom picture that has existed the longest, is giving them the most trouble, or poses the greatest threat to their well-being. Increase the number of frequencies until the desired results are achieved.

**Q. For how long should each frequency be administered?**

**A.** This is a question that people often ask. The short answer is usually about 3 minutes per frequency. However, it's worth reading the long answer, because there are so many variables that influence the transfer of energy in the body, both between cells and within the cells. Some of these variables include your body chemistry, diet (amounts of nutrients and salts consumed), the severity of your condition, and your stamina. Other factors include the unit you're using, the penetration power of the frequencies, and even the time of day that you are rifing. These circumstances vary not only between rifers, but even with the same person over time.

Given all these variables, sessions can range from 30 minutes to several hours a day. The longer sessions (typically for cancer) are usually divided into two equal sessions with at least a 4-hour break in between. For sensitive people, just 10 minutes a day is sufficient, particularly until their detoxification pathways become more resilient and can more easily eliminate the toxic waste from the now-debilitated microbes.

Some rifing experts suggest that regardless of what type of unit is being used, first apply 30-second frequency sessions and then gradually increase the amount of time of each frequency. I have felt effects from as little as 30 seconds when using a very powerful radiant light unit. Royal Rife himself recommended no more than 3 minutes per frequency; but this was based on his device and on the diseases people had during his time. With modern equipment and today's increased chemical and microbial load, I think that longer session times are mandatory, along with a greater number of frequencies. Here are some more details about a few previously mentioned factors that help determine how long you should run a frequency:

- *The power and capabilities of the device you are using.* Radiant units typically require less time per frequency than electrode units. The most powerful plasma light machines often use from 1 to 3 minutes per frequency, with longer periods for difficult conditions like cancer (20 minutes or, in some cases, an hour on just one frequency). Most electrode devices require more time per frequency—at least 3, and up to 10 minutes per frequency, to ensure that the signal saturates the body tissues. The exception to this time frame is the pad unit equipped with an optional RF carrier wave amplifier. This drives the signal into the body more deeply and more quickly, so shorter session times are possible. With radiant plasma units, power—and thus tissue penetration—may also depend on how close you are to the light tube.
- *The condition of the subject.* Cautious researchers advise initial sessions of no longer than 30 seconds per frequency if the individual is highly toxified—and especially if the unit is very powerful. But no matter what device you are using, if you suspect you are too ill to handle a sudden onslaught of toxic die-off, consult a knowledgeable health care provider. You must keep your lymph channels moving, your colon clear, your liver unclogged, and your kidneys optimally functional. Remember to drink plenty of water to flush the toxin load from your system. If your diet has played a role in providing a favorable terrain for the proliferation of microbes, change it.
- *The urgency of the condition.* For conditions that cause rapid degeneration, such as Lyme Disease and cancer, it's wise to use an aggressive approach. But what if the illness is so severe that the person's system is severely toxified? Sometimes, the need to shorten the rife sessions because of systemic toxicity becomes secondary to the need for an aggressive approach because the illness is life-threatening. In this case, there is little to lose if you *are* aggressive. Nevertheless, please seek supervision from a health practitioner who can help you clear your detoxification pathways and closely monitor your response to the frequencies.
- *The body's resistance, and microbial response, to the frequencies.* Remember that the body may become resistant to a steady signal that is being emitted for several minutes or more. Or, a microbe can mutate, which requires a slightly different frequency than the main or original number given. This is a good time to use the gate feature of the machine, if it has one. See the discussion on gating earlier in this chapter.

To give you an idea how unique people's responses are to the technology, I want to relate one user's experiences. "Usually, on the basis of what Royal Rife himself recommended, I run frequencies for no more than 3 minutes," he related. "I found that this was sufficient until I had a problem." The problem was that certain frequencies aggravated the very conditions they were supposed to be helping. Realizing he had nothing to lose, and being a creative experimenter, the man decided to flood his system. "I turned on the machine and let it run without limiting myself with time," he

reported. "I did chores around the house while the unit was on, so it really didn't interfere with what I needed to do. By dealing with my condition in this manner, I got better in a very short time."

Sometimes rifing aggravates conditions that don't clear up immediately and in fact seem to get worse. For example, another experimenter ran some frequencies that elicited so much toxic debris, she developed arthritic symptoms. When the symptoms did not improve with the use of arthritis frequencies, she stopped using the device, drank more water, and took some nutritional supplements. Once her pain abated, she resumed rifing.

Sometimes there is simply too much toxic debris for your system to handle. When this occurs, you need to drink plenty of mineralized water, and perhaps support your system nutritionally in other ways as well. Additional detoxification protocols may be required, such as colonics, a liver or kidney cleanse, and/or sauna therapy (see Chapter 3). A long enough period of time for one person—of either rifing or doing something else instead—may be too short for another, and vice-versa. *Everyone is different*. You must monitor your own responses, and adjust your protocol accordingly.

**Q. How many days should I allow between sessions?**

**A.** This depends on your situation. Many people prefer a gentle schedule of sessions, spread out over time. A general guideline is: if you experience uncomfortable symptoms of toxic die-off, wait until the reactions abate before beginning your next rife frequency session—especially if your daily functioning is severely impaired or you have a particularly weakened immune response. This may mean rifing every third or fourth day. *However, Rife researchers agree that if you have a condition like cancer, a growing tumor requires a much more aggressive approach*. People with cancer usually rife themselves twice a day, each session consisting of up to 2½ hours. If you have any questions about how fast you should be going, consult a qualified health care practitioner.

Handling detox reactions properly during a serious illness is critical. In some instances, severe detox reactions impede healing. Make sure you have adequate time to recover from the effects of the microbial die-off. For some people this might be a couple of hours; others may need a couple of days. Since you won't know how much "recovery" time you'll need—especially when first experimenting with sessions—allow yourself at least one day where your presence elsewhere isn't essential, so you can see how you feel from the rifing. The more experience you have with this technology, the better you can pace yourself.

**Q. After I'm free of symptoms, for how long should I continue the sessions?**

**A.** Most Rife researchers suggest continuing the sessions even after the symptoms are gone—which incidentally is the same protocol used for taking antibiotics—after which you gradually decrease the number and duration of sessions. This protocol will handle any residual pathogens while your body is busy repairing and re-balancing itself. Use your judgment and experiment; each person is different. In cases of stubborn conditions such as Lyme Disease or so-called terminal cases like cancer or leukemia, most researchers suggest continuing for 4 months to even a year after all symptoms have disappeared. However, the sessions won't have to be as long or as frequent when you are on a maintenance program.

**Q. Can I rife after eating or drinking?**

**A.** Drinking plenty of water is necessary to flush out toxins, so drinking extra fluid before or during sessions is not a liability. Eating, however, is a different matter. Digestion slows the detoxification process. The body generally starts to detoxify as soon as the frequencies are administered. Since the body can't put its energy into cleansing when it is also busy digesting food, one or the other (or both) will suffer if you rife on a full stomach. Eating and rifing can cause nausea from the mycotoxins and killed microbes that start flooding your system. Therefore, it's optimal not to have a heavy meal in the stomach while rifing. Normally, it takes about 2 hours for food to leave the stomach after it has been eaten.

**Q. Should I wear special clothing for the sessions?**

**A.** With a pad device, the frequencies usually enter the body through the hands and/or bare feet. With a hand-held plasma tube unit, the frequencies are activated when the tubes touch bare skin—generally the hands, but sometimes people slip the tubes inside their shirt or pants. Frequencies from a freestanding plasma light unit can penetrate clothing and go right into the body.

For all types of machines, your clothing should be somewhat loose. This provides direct access to body

areas if necessary, as well as maximum comfort during your therapy. Some people with external tumors expose their skin directly to the light. Although the radiation from a light tube does penetrate clothing, it's still better not to be covered with piles of blankets. Make sure the room is a comfortable temperature for you so you can wear light clothing.

**Q. What about wearing metal jewelry or glasses?**

**A.** Remove all metal jewelry if you're having sessions with a pad unit. Metal conducts electricity. If you're wearing a ring or bracelet and they contact the electrodes, you may get a shock.

By the way, some people feel more comfortable removing their metal-framed glasses. Health practitioners who do kinesiology (muscle testing) show that metal touching the body—especially if it cuts across the face or the center meridian that divides the two halves of the body—has a weakening effect on the system. This is why many people report feeling more energized after they replace metal frames with plastic.

**Q. My unit is large and heavy. When I put it on a metal cart to wheel it from room to room, the display on the monitor becomes distorted. Is this a problem?**

**A.** A metal object can act as an antenna. This means it can absorb, dampen, conduct, change, or otherwise interfere with the plasma tube's signal. Assuming there is nothing wrong with the cables or ground wires leading in or out of the device, the problem is due to signal interference from the metal cart. The change in the monitor's picture indicates distortions in the magnetic field around the monitor as the metal conducts a portion of the field back into the circuitry of the device. Use a wood or plastic cart to avoid interference.

**Q. Do either I or the machine need to be in a special environment? What about lighting, temperature and moisture?**

**A.** Ideally, for healing purposes the ambiance of the room should be calm. Watching a blasting television, for instance, is unlikely to support immune function. One manufacturer says that his unit is more effective when the lights are dimmed. As with any electronic device, extremes in temperatures and high levels of moisture may adversely affect the unit.

**Q. Is one time of day better than another to do sessions?**

**A.** Unless it is an emergency, I suggest not rifing in the evening because this is when the system starts preparing for repair and sleep. The extra microbial waste could irritate the nerves and keep you awake. Some people report feeling energized by the frequencies, so sessions at night can upset the body's rhythms.

Also, during sleep you cannot drink water. A whole night's worth of not flushing out your system will allow the toxic load in your body to accumulate, and you might feel horrible the next morning with headaches, dry mouth, or other symptoms.

Of course, there are always exceptions. One woman told me that whenever she runs her plasma device at night after she's in bed, she sleeps particularly well, despite the extra illumination from the light tube. Bryan Rosner, who has written two books on holistic therapies for Lyme Disease, says that rifing at night for Lyme sufferers is often preferred because it helps them sleep.

**Q. What can I expect to feel during a rife session?**

**A.** Ken Uzzell, an Australian rifer and massage therapist, defines a hit as "an immediate physiological response that the body generates as a result of a frequency."[23] Any unusual or notable sensation felt during a session could be a hit. These sensations may include itching, pricking, or burning on the scalp and skin, watering eyes, the clearing of sinuses, runny nose, tightness in the chest, churning stomach, altered breathing or difficulty in breathing, quickening pulse, nerve tingling, noise in the ears, increase or decrease of pain in the joints, sudden weakness, fatigue, warmth, sweating, spasms or aching in the muscles, and twitches (some of which might be focused in the feet or hands). You might feel more relaxed or more energized. Or, you may simply have a vague sense that "something" is happening. Uzzell reports that users experience tingling at the site of tumors and fatty lumps that are being kneaded while his plasma device is running.

Why might someone feel such a variety of responses to rifing? Jason Ringas, of the Rife Research Group of Canada, writes:

> A sensation is felt when using audio frequencies [frequencies below 20,000 hertz], which act upon the nervous system. The frequency response of the nervous system is in this range. Now, Rife said that the subjects did not feel

> any sensations. Why? Because he wasn't using these low frequencies. He was targeting the organism directly, as verified under the microscope. If you're targeting an organism with an MOR, it still takes time for the organism to clear out and for the damaged tissue to repair. But when people talk about feeling a "hit," what they are describing is clearly a physiological response. There might also be an MOR effect taking place, but that effect can't be felt. The audio frequency physiologic effect is very important in its own right, but it cannot be explained in terms of the MOR effect.[24]

It's important to distinguish between *the person's physiological sensation*, and *a microbial reaction to the Mortal Oscillatory Rate (MOR) frequency of the microbe*. So, while sensations experienced during a session can provide clues about which frequency is affecting you physiologically, you may not be able to tell which frequency is responsible for disabling a microorganism.

If you are very ill, it might be difficult to detect a hit, since the pain and discomfort of an illness could disguise your response. But if you don't feel anything while rifing, don't be concerned. What happens *after* the session is even more important. See below.

**Q. Why do some people feel worse immediately after having a rife session, while other people feel better?**

**A.** Assuming that your frequency device has adequate penetration power, and that the correct frequencies have been selected, how you feel largely depends on the degree to which your body can detoxify.

During or after a rife session, you may feel better—lighter, clearer, less congested, a decrease in pain, or a partial or even complete elimination of symptoms. But you may also feel worse, depending on the amount of microbial die-off. Symptoms of die-off can closely mimic feelings of illness or detoxification. (They may also mimic some of the physiological responses felt *during* a session.) These sensations can include dizziness, moodiness and irritability, an inability to focus, fatigue, aching or swelling in muscles and joints, nasal congestion, churning stomach or nausea (with or without cramping), skin rashes, a temporarily irregular heartbeat and/or quickening of the pulse, slower or faster breathing rate, watering eyes, and other signs that waste materials are being released into the bloodstream. If your urine has turned bright yellow (and the intensified color is not due to unassimilated vitamin supplements), this means that pathogens were killed and are being excreted as waste. Some people find large numbers of parasites or worms in their stool.

Mild toxicity usually produces lethargy and headache. Moderate toxicity can cause nausea and sometimes vomiting. And severe toxicity can induce rashes or boils, indicating that there is so much waste material in the body that some of it has to be eliminated very rapidly through the skin, rather than being processed through other detox pathways (liver, colon, urinary tract). *These reactions indicate that the body is trying to eliminate poisons, rather than a sign of illness per se.*

Detox symptoms can be alleviated, or sometimes eliminated entirely, by drinking mineralized water. However, if your diet, stress levels and lifestyle are encouraging pathogens to proliferate, water alone will not quell the symptoms. You will need to evaluate what is allowing the microbes to proliferate. Chapter 2 discusses the many environmental conditions that contribute to the recurrence of symptoms.

The part of the microbe that was devitalized or killed may also play a role in how ill you feel. Some frequencies target a portion of the pathogen's DNA, a protein inside the cell wall. These frequencies devitalize the microorganism and cause it to die slowly, over the course of days or even weeks. Other frequencies target the cell wall of the pathogen and cause it to shatter within minutes. When a microbe is simply being immobilized, the immune cells of the body can scavenge it whole. But if a microbe's cell wall is broken, mycotoxins ooze out and circulate throughout the bloodstream—leaving much more poisonous material, and over a greater area, for the body to eliminate. James Bare's video (on the Internet, and featured in many films about Rife), which shows a paramecium being disemboweled and disintegrated from a plasma wave, is a good illustration of the mess that shattering can create. While dramatic, this manner of killing microbes suggests that a less rapid immobilization—while requiring more sessions—may be preferable, as it's easier on the body.

Are you spending enough time with your unit? You may need to approach your condition more aggressively, either by spending more time at the machine or allotting more time per frequency.

Rifers usually experience changes either during their first session, or shortly afterward. Some people sense a shift in the first 10 minutes—for instance, I usually feel my sinuses clear up within a minute of receiving the first or second frequency—although

reactions can be delayed. As a general guideline, if you don't feel something within 6 hours after the rife session, you have not used the correct frequencies. But everyone is different, so responses will vary.

*Be extra careful if you have a sluggish colon, kidneys, liver or lymph system; a history of long-term viral infection such as polio or Epstein-Barr; or a chronic condition such as Candida, cancer or Lyme* (caused by a particularly nasty pathogen, a corkscrew-shaped spirochete that burrows deep into the tissues). Make sure that your organs of elimination can handle the sudden release of mycotoxins into the bloodstream. (See Chapter 3, "Complementary Therapies," for more information.)

Pace yourself according to the requirements of your condition, your intuition, and the advice of your health care provider. If you feel better after your session, you can do another one the next day. If you have an extreme negative reaction, wait until you feel tolerably better before rifing again. This pertains to most conditions *except severe progressive illnesses like cancer*. If you have cancer, most Rife researchers agree to a protocol of rifing twice daily to eliminate the spread of abnormal cells and ultimately reverse the condition.

**Q. What is a *Herxheimer* reaction?**

**A.** A *Herxheimer* reaction is another name for *detoxification response*. It is named after the Austrian dermatologist brothers Jarisch Adolf Herxheimer and Karl Herxheimer, who—working independently in 1895—discovered and catalogued the response. They found that "Herxing" was the result of the foreign proteins released by dying microbes.

Excessively large amounts of microbial waste hinder the body's ability to adequately eliminate it through the usual channels (breakdown by the liver, through the colon or urinary tract). So instead, the toxic material is discharged through the lungs, sinuses and skin. Symptoms can include a flu-like condition; heavy perspiration and night sweats; fever, with or without chills; headaches; malaise; diarrhea, nausea and vomiting; pain in joints and bones; and itching, flushing, and red areas of skin.

**Q. What's the difference between a detox (Herxheimer or Herx) reaction from rifing and actually being sick? Both situations feel similar to me.**

**A.** On one level, it doesn't really matter *where* the symptoms are coming from when you're feeling awful. But there are important differences between the two as well as similarities. First I will describe a Herx reaction, also known as a healing crisis, and then I'll define illness.

The symptoms of illness are the body's attempt to clear out toxic debris. For instance, fever is a strategy that the body devises to literally "cook" microbes to death (most microbes cannot survive in high heat). Coughing is a natural reflex of the respiratory tract to expel germs that have become embedded in the mucous membrane lining of the lungs. By sneezing, the body tries to clean out foreign particles (such as dust or pollen) that have migrated up through the nose. The production of excess mucous itself is the body's way of trapping microbes and other debris that might otherwise seep into the bloodstream. The throat feels sore from lymph nodes in the neck that have become swollen from the extra white blood cells they create to fight an infection. Vomiting and diarrhea are the body's way of discharging poisons (spoiled food or dangerous chemicals) in the stomach. And an eruption of hives, boils or a rash signifies too much waste for the body (usually the liver) to handle internally, so the debris must be expelled through the skin.

Thus, "symptoms" are merely the body's ways of trying to eliminate what doesn't belong in it. When people try to alleviate or abolish "symptoms," they usually halt a process that should have been allowed to finish, as long as the symptoms themselves are not life-threatening. *When you prevent the body from doing its job—that is, when fevers, coughing, sore throat, vomiting, diarrhea, rashes, sneezing, etc. are unduly suppressed—many of the toxic waste materials remain.* If the waste materials are living microbes, they may exist at what is called a "sub-clinical" level—too low to be detected by standard allopathic tests, but nonetheless present in enough quantity to make a sensitive person feel unwell.

So when someone uses rife equipment—someone who has (at any point in their life) arrested a cleaning out process when they have been ill—*they become ill again*. One of the reasons that a detox response and an illness are so alike is that *a detoxification response can be the result of an arrested disease*. When the microbes that have remained in the body are finally targeted by the correct frequencies, the person feels as though s/he is getting sick all over again: the mycotoxins and other waste materials are released, causing the body to again go through an elimination cycle (sore throat, skin rashes, nausea, diarrhea, etc.).

A detoxification response can also result from *incompletely metabolized foods and incompletely discharged waste materials* that are not microbe related. Many people who go on a juice fast, or a simple diet of raw fruits and vegetables, experience uncomfortable, even painful symptoms such as nausea, runny nose or muscle weakness. The lighter diet rests the digestive organs and evokes a cleaning-out response in the body as old junk gets pulled out of the fat cells and other tissue. Keep in mind that toxins—previously stored in the fat and now circulating through the blood—might make you feel worse if they are circulating at a higher rate than you can excrete them. This is why experimenters commonly take nutritional supplements (herbs, or amino acids in the correct proportions) that help bind and excrete the toxins before they can seep back into vulnerable tissues.

The line between a healing or detox response and a disease crisis is crossed when the body can no longer eliminate poisons, and begins to degenerate. During a healing response, the body rids itself of accumulated waste and then revitalizes itself. During a disease crisis, due to weakness or too many poisons, it can no longer revitalize. At this point, medical intervention may be required. See Sidebar, "Distinguishing a Healing Response from a Disease Crisis."

Regardless of whether you are experiencing a detox response or disease crisis, if microbes are involved, they need to be disabled or killed. Frequency devices can also help restore cell function, another reason why rifing is so useful for so many different types of situations.

**Q. If a temporary irregular heartbeat is one possible consequence of microbial die-off, how can this be distinguished from the medical condition known as arrhythmia?**

**A.** According to Rife researchers, temporary irregular heartbeat can indicate not only microbial die-off, but mineral depletion as well, since the body uses up its nutrient stores when it tries to re-balance itself. The most basic minerals—used by the body to process debris created by rifing—include magnesium and selenium (two minerals important to the heart), as well as potassium, calcium and sodium. It is vital to consume adequate amounts of these minerals, along with water—no matter what your condition, and especially if you have any heart problems.

Temporary arrhythmia can also indicate food allergies. If there is a history of heart trouble in your family, if you believe that there is a problem with your heart, or if you suspect that you have allergies, consult a health professional.

**Q. I cannot run rife as often as I need to, due to a Herxheimer response. How can I lessen or eliminate these detox reactions?**

**A.** Drink enough water! But—unless you need to drink a lot at one time, due to having exercised, sweated or been in a sauna—don't drink too much at once. Four ounces per half hour is the customary amount of fluid that the kidneys are able to process. Also, make sure you replenish your mineral supply, since minerals will be flushed away with the water and the body uses more

**Distinguishing a Healing Response from a Disease Crisis**

| Healing Response | Disease Crisis |
|---|---|
| Person feels bad, but then feels better. | Person feels bad, with little or no relief. |
| The response occurs over a short period. A general rule is one month of healing for every year the person has been ill. | The response occurs over a long period. A health care professional can help assess how long is "too long." |
| There is a retracing of prior symptoms, often from decades ago. | There is a continuation of prior symptoms, often with the addition of new ones. |
| Organs, glands, and the body in general function better. | There is wide-ranging degeneration of organs, glands, and perhaps the body in general. |

minerals than usual when it detoxes. See Chapter 3 for more information about kinds of water, and the desired mineral content of water.

In addition to trace minerals, make sure to obtain necessary amounts of magnesium, potassium, selenium, sodium, and zinc. All of these minerals should be chelated (bound), to another substance to make them more absorbable (for example, calcium citrate, zinc gluconate, etc.). The major minerals are mostly used to process debris that can cause detox reactions. For this purpose, the minerals appear interchangeable. Brian McInturff has found that if a good quality salt, with all its trace minerals intact, is put into the water, the salt alone in most cases is enough to supply the minerals necessary to fight the reaction. "I know someone," he says, "who used a frequency device to fight a large malignant tumor and suffered horrible detox reactions. He started using water with ever increasing amounts of natural salt until he found the amount that would quickly relieve him of his detox symptoms."[25] (The section on **Water** in Chapter 3 discusses the importance of drinking mineralized water on a regular basis, even when you are not sick.)

A doctor friend of mine recommends two grams of Vitamin C immediately before a session; 1 teaspoon of baking soda in water immediately after; and for the next 24 hours, as much homemade lemonade as possible, consisting of 2 tablespoons of fresh lemon juice and 2 tablespoons of maple syrup in 8 ounces of water. He says that he has not seen a full Herxheimer reaction since suggesting this protocol.

The salt-and-C protocol has become popular, particularly among those with Lyme Disease, although people with other chronic ailments have also benefited from this protocol. The procedure consists of taking between ¼ and 1 teaspoon each of salt and Vitamin C every hour, 12 times a day, or as often as you can tolerate. Table salt without additives is fine to use, although many people prefer the healthier Celtic sea salt from France. Those who use salt and Vitamin C report greater effectiveness in eliminating microbes and cleansing symptoms when both salt and Vitamin C are taken together than if only one or the other were used alone. See an in-depth discussion of the salt-and-C protocol later in this chapter under the discussion of Lyme Disease.

Enzymes also substantially lessen detox reactions, as they are used by lymphocytes (immune cells) to scavenge pathogens and clean up debris. In Germany, one brand of an enzyme mix (which contains additional high amounts of pancreatic enzymes as well) is the most popular non-prescription anti-inflammatory item. In addition to fighting pain, enzymes rebuild body tissues. When taken on an empty stomach, the enzymes go directly into the bloodstream and are used for repair and immune functions rather than the digestion of food. Virtually all enzymes can be taken safely in large doses. Raw foods, especially fresh squeezed vegetable juices, are excellent sources of not only enzymes but vitamins and minerals.

If your colon, kidneys or liver are clogged or sluggish, there are herbs and other supplements that cleanse and stimulate them. See the sections on **Herbs** and **Colon Cleansing** in Chapter 3 for more information. For an excellent and inexpensive intestinal stimulation agent, take ¼ teaspoon to 1 teaspoon of Vitamin C powder—either plain ascorbic acid or magnesium ascorbate—with plenty of water.

**Q. I have a serious wound that I want to treat. Is it okay to put an electrode directly on it?**

**A.** If electrodes touch an open scab or wound, the water in even somewhat moist flesh (such as a scab) will conduct the electricity much more efficiently than dry skin, and may cause discomfort or pain. Therefore, bandage all wounds and scabs. Place the electrodes 2 inches or more from the edge of the wound or scab. You can always move them closer if the sensation is comfortable.

**Q. With my electrode unit, do I have to feel the current in order to know that the machine is working?**

**A.** The volume knob on a frequency device increases the *amplitude*, or *height of the wave*, thus sending more voltage through the body. Some people, believing "more is better" and "no pain, no gain," increase the volume—or voltage, or force with which the electrons are being sent—to such an extent, that they feel pain. But you do not need an excessively strong electrical signal for the frequencies to be effective! It's sufficient to feel a mild tingling sensation. If you experience pain or discomfort, or if your muscles start to twitch, the volume is too high. Don't forget, the body may become resistant to the frequencies if the signal hurts or is too forceful.

Be aware that current above 10,000 Hz oscillates so rapidly that most people cannot feel it even if the volume is high. It is the frequencies below 10,000 Hz that are commonly felt. Turn down the volume of the machine when you switch from a higher to a lower frequency so you don't jar your system. Even if the volume remains the same, low frequencies such as

9.6, 20 or even 95 Hz subjectively feel stronger than the higher numbers set at the same volume. (This phenomenon occurs because the wave form of low frequencies is larger than that of higher frequencies. See Appendix C, "Healing with Electromedicine and Sound Therapies," for more information on waveforms.)

For this reason, most people try to administer the lowest numbers first, working progressively to the high numbers. If your electrode unit has the ability to dispense many frequencies sequentially, program it to begin with the smallest number and end with the largest one. If your program goes smoothly from lower to higher numbers, you can simply increase the volume gradually as the numbers go higher. But if the numbers skip around, you may experience an unpleasant "shock" sensation when the machine stops transmitting a high number and suddenly skips to a lower one.

**Q. I heard that the metal used for the electrodes may sometimes get into the body, and that certain metals are safer than others. Is this true? If so, what can I do to minimize harm?**

**A.** It's true that the body can absorb toxic metals from metal electrodes. Electricity sent through metal causes a phenomenon known as electrolysis, wherein electrons break off from the metal and migrate into the surrounding area. For this reason, copper pipe electrodes should not be held directly. Stainless steel electrodes probably emit fewer metal ions during use. Gold plating is sometimes favored, though it's expensive. But if you have any type of problem with toxic metal accumulation, cover the metal electrodes first with cotton fabric (preferably organic and undyed) saturated with salt water, or with paper towels (preferably unbleached), also saturated with salt water. Since water is a good conductor of current, holding onto these wet electrodes will mean that you'll have to turn down the volume (amplitude) of the unit.

**Q. Can I do other therapies along with the rife sessions?**

**A.** Most, if not all, holistic therapies that nourish the body and support healing are compatible with rifing. These include acupuncture, bodywork, colonics, herbs, homeopathy, meditation, nutritional supplements, ozone therapy, saunas, and more. If you have any doubts or questions about the suitability of a modality for your particular needs and constitution, consult a health care provider. See Chapter 3 for more information on modalities that can complement your frequency sessions.

**Q. Do I need a special diet or nutritional support while rifing?**

**A.** Most people don't eat what their body needs, and they eat too much of the wrong thing. Refined carbohydrates, too many carbohydrates including grains, blood sugar-altering sweets, and junk loaded with chemicals, preservatives and dyes create illness rather than wellness. See the section on **Food** in Chapter 3 for information on real food versus fake food, and the different types of food plans that people use when they are ill.

It's a good idea to rife when your stomach is empty, since the body needs to focus on eliminating toxic materials instead of digesting food. Two hours is the average time it takes for the stomach to empty. Since some people respond to the presence of microbial corpses with nausea and even vomiting (a classic detox response), it makes obvious sense to not have a stomach full of food.

I already mentioned the need for extra water and minerals elsewhere in this chapter and also in Chapter 3, but the information is worth repeating. When rifing, drink enough water to flush out the microbial poisons. At least 2 quarts per day are recommended for an average size adult. However, drinking that much water will also flush out nutrients, especially minerals and water-soluble vitamins. You need to replenish them; otherwise, you may rapidly suffer severe nutritional deficiencies. You'll probably find yourself needing more potassium, sodium, calcium, and magnesium (liquid minerals are very absorbable). Consult a knowledgeable health practitioner if you have questions about your particular requirements.

Most rifers take extra supplements, especially since they are ill. When the body is depleted, even without frequency sessions, nutritional needs are heightened.

**Q. I'm doing many complementary therapies in addition to rife sessions. How do I know which therapy is really helping me?**

**A.** Unless you have access to sophisticated electromedical diagnostic equipment, are being muscle tested, or are seeing a holistic health practitioner, you may not know which therapy among several is the most helpful.

It's reasonable to want to eliminate repetitious or unnecessary parts of your healing protocol, especially

if they are time-consuming and costly. However, there are many facets to health. Usually several protocols are needed, as they all provide complementary support. Understanding the *functions* of the different health protocols will help you decide which modalities you need and which ones you don't need at a given time.

**Q. My partner is ill, and uses a radiant machine daily. I am concerned about the effects of the frequencies when my children and I are in the room. Will we be negatively affected?**

**A.** Many of the frequencies programmed into a frequency device correspond to the Mortal Oscillatory Rate (MOR) of microbes. Some frequencies appear to enhance cellular function. And still other frequencies seem to both affect pathogens negatively and affect body tissues positively.

First I will address the MORs of microbes. If you are harboring a pathogenic microorganism whose MOR is being transmitted by the machine while you are in the room, that microbe will become destabilized. So even if you do not consider yourself ill, a reaction after exposure to one or more frequencies may indicate that there were microbes in your system that were disabled or killed. Most people know when microbes have been devitalized in their body because they experience thirst, nausea, fatigue, weakness, or any of the other indications that a detoxification process is occurring. If you are *not* harboring any microbes that correspond to the MOR being emitted, then being near the device will simply have no effect. You can be reasonably certain of the absence of pathogens in your body because you will not experience detox reactions, and you'll feel fine *not* drinking extra water.

Frequencies that normalize or stimulate body tissue may have an effect as well as the frequencies that are the MORs of microbes, although the effects will be different. You may experience increased energy or an augmented feeling of well-being. Keep in mind, however, that there is a difference between frequencies that *normalize* or *regulate*, and those that *stimulate*. *Normalizing* or *regulating* an organ or gland calms it if it's over-exerting, and gives it more energy if it's lethargic. *Stimulating* an organ or gland increases its output of activity. Whereas depleted body parts may benefit from carefully applied stimulation, organs or glands that are already overworking should not be forced into more activity. The few frequencies that appear to be stimulating to various organs or glands (as opposed to simply normalizing) may have an unwanted effect on you if you do not want that particular body part to be stimulated. That said, although the effects of frequencies are still not completely understood, this technology seems quite safe. I have not heard reports from people who, for instance, felt that their adrenal glands were excessively boosted.

If you are using radiant rife equipment and there are other people or animals in the room whom you suspect should not be rifed, keep them out of the room. The checklist of candidates for rifing is at the very beginning of this chapter. If you believe that others could benefit from the frequencies, even as "incidental recipients," treat them as you would any other rifer. Make sure they drink enough water to handle the effects of microbial die-off, should they experience this. Monitor their responses in case they have detox reactions. And ask them if they feel better from the rifing.

**Q. I had a bad cold, and was giving myself a session with a light tube device in the den. My daughter, who had a bad cold, too, and was in a room that shares an adjoining wall, insisted that she felt something when the unit was on. The next day, not only was my cold better, her cold was completely gone. Could the light really penetrate through a wall?**

**A.** Some radiant units are powerful enough to send their signals through walls. Even though the gases in the tube light up to produce the frequencies, it is the resulting *electromagnetic (EM) field*—what some rifers call the "field effect"—that conveys the healing, not the luminescence from the light.

We live in a sea of many types of radiation fields. The human body is both a transmitter and receiver of these fields. Years ago, during experiments with a plasma unit equipped with two hand-held glass cylinders, several people reported feeling its energy radiating about 8 feet across the room as soon as I activated the tubes by picking them up. On other occasions, a very sensitive woman could tell as soon as she entered the room that a (different) frequency device had recently been turned on. Sometimes, people are aware of receiving signals from frequency devices through walls, as "after-images" from lingering radiation, or even over longer distances.

**Q. Does it matter which direction the light tube is facing?**

**A.** Occasionally, people are affected by the radiant tube's energy field regardless of the direction in which the tube is facing. However, you will probably get a

stronger effect with a directional light. The light tube on most units has a piece of metal across one side that acts as a reflector. Face the portion of the light toward you that is not covered by the metal.

**Q. What if I don't get any results from the frequency sessions?**

**A.** See the Insert at the end of this chapter, "A Short Course on How to Give Yourself a Rife Session." It contains information on what to do if you're not getting results.

**Q. I was getting very good results when rifing for a chronic condition until I took a 2-week break. Now, the same frequencies don't seem to be working. Why?**

**A.** There are two possibilities. One, the microbes may have developed a resistance to the frequencies and changed their rate of oscillation. Thus, the frequencies that used to work no longer match the current MOR of the microbes in your system. Two, the rifing did such a good job reducing the microbial load, your body no longer senses such an urgent need to eliminate the pathogens.

If the device has the capability, run a converge or a sweep to address possible mutations. Also try different frequencies. This situation illustrates the importance—especially for those with chronic, difficult or life-threatening conditions—of persisting with rife therapy for longer periods of time.

**Q. Shouldn't I see a doctor or qualified rife practitioner for sessions, instead of buying my own machine? I'm afraid I won't know what I'm doing and will hurt myself.**

**A.** In the United States in most cases, it is illegal for licensed health care practitioners to administer rife sessions. If they are caught, they can lose their license and even go to jail. It is also illegal for a layperson to provide rife sessions to another for a fee. (See Appendix B for more details.) Therefore, it's not surprising that health professionals of all types—physicians, chiropractors, naturopaths, etc.—do not advertise "rife therapy" as part of what they offer.

Assuming it was legal for a health provider to administer rife therapy, I strongly suggest that you find a way to purchase your own unit anyway. Even though the initial cost is more than a single doctor visit, over a period of time it will be much less expensive for you to have your own machine than paying the practitioner every time you want to use his or her equipment. Besides, you get to keep the unit and use it for yourself and anyone else, long after your last appointment with the health provider has ended. In my opinion, people who are serious about rifing—and are chronically ill, or have a condition that requires daily use—need their own unit.

*Don't be intimidated by this equipment! That's why I wrote The Rife Handbook*. If you apply what you read in these pages, you'll have an excellent foundation to take charge of your own health.

### When a Patient Becomes a Client

I have never liked the word "patient." That word turns the client into a weak, obedient and dependent child—with no ability to discriminate or question—and the doctor into an all-knowing parent or god.

Objecting to the "doctor-patient" paradigm is more than linguistic nit-picking. Being a "patient" not only discourages you from helping yourself; it often actively hinders healing. In *Cancer As A Turning Point*, psychologist Lawrence LeShan writes about many cancer "patients" who did exactly what their doctors ordered them to do. Yet despite their eager compliance and strict adherence to protocol, they became weaker and sicker and lost the will to live. However, those who either disobeyed their doctors, or became (from the doctors' perspective) demanding, irritable and uncooperative, went into remission. Their taking responsibility for their own condition on a psychological and emotional level corresponded to the mobilization of their immune cells on a physical level, allowing them to heal from their cancer. The very act of questioning their doctors' authority meant a positive difference in their attitudes, in their immune response, and how their very energy flowed. In short, they took their lives into their own hands.

**Q. I would like to find a doctor I can work with while giving myself rife sessions. What's the best way to find someone?**

**A.** Sometimes, taking charge of your own health means that you need to seek guidance from an experienced, trained health practitioner. This can be a broad-minded MD, or a chiropractor, naturopath, homeopath or osteopath. The right one can be a excellent guide. Due to his or her training, and access to equipment and tests, s/he can spot problem areas that a layperson may not recognize. The benefits are especially apparent for life-threatening conditions.

One manufacturer tells me that without exception, all of the complete recoveries he has seen—some from people labeled "terminally ill"—have occurred with people who are being supervised by holistic practitioners. Legally, rife machine vendors are not allowed to provide such assistance, even if they are licensed health professionals.

The type of guidance that you require may run the gamut from nutritional and educational to psychological and spiritual. Your health care provider should be a facilitator and co-creator in your process, not an authority in whom you place blind trust. (See Sidebar, "When a Patient Becomes a Client.")

As the one who is paying for medical services, you have a right to know the doctor's training and philosophy of wellness before you give up your hard-earned money. Ask to speak to the doctor, or a staff member, to discuss your concerns before you step inside the office. Ask if the doctor will work with you while you use your frequency device. If the doctor doesn't know about it and doesn't want to know about it, you will not have help integrating your home care with the protocol you receive from the practitioner. At the very least, you need someone who can help you determine if your detoxification pathways are clear, and discover and help you eliminate problems that may occur from the die-off. You may need to keep looking until you find a good match.

If you select an allopathically-trained physician, make sure that s/he understands what this technology is about—and if s/he does not, that s/he is open to learning as much as possible. (Most health care providers have been taught to condemn rife technology without investigating or understanding it.) Sometimes, an allopathically-trained physician who also understands and embraces holistic approaches is just the guide you want, especially if you have a serious illness such as cancer. Other times, a fellow rifer with years of experience navigating the medical field will be able to provide the help you need.

Whatever assistance you choose, remember that even though others may have more knowledge, or experience with the technology, you are still the final expert on your own body. But in order to become the best expert you can be, you need to learn as much about health as possible. Don't be afraid to "step on your doctor's toes." If your doctor acts threatened or dismissive when you start asking questions, s/he is obviously more interested in defending his or her position than in helping you heal.

### *Frequency Selection and Microbe Response*

**Q. How do the frequencies work?**

**A.** There are two ways in which the frequencies can be said to "work": by negatively affecting the microbes, and by positively affecting the body. I'll discuss the effects on microbes first.

One popular film sequence, which is often included in documentaries on Rife and shown on many Internet sites, depicts a protozoan "undergoing evisceration, membrane transport disruption, and disintegration"[26] as it's being exposed to a plasma wave of 1150 Hz. However, the actual shattering of a microorganism, although visually dramatic and certainly compelling, is likely the exception, rather than the rule, of how frequencies disable microbes. If a microorganism is not shattered outright, the frequencies may:

- Disable specific enzymes or proteins in the microorganism.
- Disrupt the microbe's ability to metabolize, replicate or reproduce.

Now I will discuss the positive effects of frequencies on the body, independent of killing or disabling microbes. The frequencies appear to affect one or more of the following systems in the body:

- Focus the attention of the immune cells on an organism that was not previously recognized as a threat.
- Normalize or stimulate various organs, glands, tissues, or body functions by beneficially reorganizing the RNA/DNA; by making the flow of ions across cell membranes more efficient; or by increasing the number of stem cells (which speed healing).

The recently deceased Dr. Robert P. Stafford, who had worked with Royal Rife, John Marsh and John Crane, believed that the frequencies stimulated the adrenal glands besides providing other immune-enhancing properties. Engineer and equipment builder Dave Felt likewise concentrates on the immune-building properties of the frequencies. Ordinarily, when cells start to die from old age, infection or disrepair, fluid leaks out of the cell membrane. Other cells in charge of immune protection recognize this leakage as a message to scavenge what is now waste. Felt believes that the frequencies may cause or speed up the leakage of unhealthy cells, thus encouraging their removal. James Bare focuses on immune response as well, referring to studies

showing that "pulsed EM fields activate heat shock proteins that act to stimulate the dendritic cells of our immune system."[27]

*Blast It!* author Carol Nichols draws on her many years of experience working with pad devices. She writes that electrode units in particular "have a unique ability to stimulate atrophied muscle tissue, increase circulation of blood and lymph, stimulate regeneration of damaged nerve pathways, and rectify low tissue conductivity."[28] Peter Walker, who researches and reports on rife technology in Europe, also highlights pad devices, as they are extensively used by European doctors in their clinical practice. He writes, "Pad devices have a positive effect because they can tonify the body and help improve its energy levels. Plasma units are great for killing parasites."[29] And the late engineer Aubrey Scoon believed that "magnetic and electric fields are inducing electrochemical changes in cell membranes which affect electrochemical pumping mechanisms."[30]

However one explains the benefits of rifing, it's clear that since we are electromagnetic beings, an electromedical device that causes the electrical charge of a cell to improve will assist with healing. Cells and other structures that are too weak or diseased to contain the charge that a healthy cell can hold, will lose their structural integrity and become part of the body's waste load (as they should). Similarly, microbes that absorb too much energy (more than they can hold) will undergo a similar fate. A healthy body whose cells have the proper resistance, capacitance, and inductance—simply put, are functioning correctly and have the proper electromagnetic signature—will be impervious to microbes, and will perform their jobs efficiently.

At some point, you may hear researchers talk about the *rife effect*. This effect can be any or all of the effects just described.

### A Massage Therapist Talks About Rifing

Pathogens are probably the cause of some responses people feel during rifing. When the right frequencies are used on people suffering from *Candida*, colds and flu, the "hit" is felt strongly at the pathogen location in the body, and the symptoms totally fade from a few minutes for colds and flu, to a few days for heavy *Candida* infections. Hits can also be experienced at the site of cancer tumors and cells; although I wouldn't know if this response comes from the cancer cells themselves, or associated pathogens, mold and fungus present at the cancer site.

I have also observed fascial release in frequency sessions on friends. The fascia, a thin membrane encasing the muscles, can become traumatized, bound up and tight, restricting movement. During rife sessions, I have seen the fascia release trauma and thus function better—correctly hydrate again and instantly encourage a huge improvement of electrochemical and fluid movement within the body's pathways. I believe that this is a major contributing factor when people experience an almost instant normalization of blood pressure and a very fast return to health during massage. I also believe that this is the mode at work when we hear of miracle healings attributed to frequency therapy sessions. When deep and complete levels of fascial release occur, miracle healings are to be expected, as the body has huge resources to quickly combat disease.

The fascia is a good tissue for resonance and response, from a frequency session standpoint. A trained massage therapist can easily check to see if a major fascia trauma release response has occurred. I have noted this on several occasions. From my observations, frequencies between 50 Hz and 1,000 Hz generate this release. As the bound fascia structures will always be different in the body (even different from day to day), the frequencies may differ as well.

—Ken Uzzell, massage therapist and rifer, 2006

**Q. How were the frequencies in this *Rife Handbook* calculated?**

**A.** The frequencies are from several sources. Among them are:

- *Royal Rife's Original Lab Notes.* Fourteen frequencies listed in the Frequency Directory (Chapter 5) were used with Royal Rife's #4 machine. These frequencies correspond to some common microorganisms such as *Bacillus anthracis, Clostridium tetani, E. coli, Salmonella typhi, Staphylococcus,* and *Streptococcus.*
- *In Vitro Studies.* Sometimes, researchers view pathogens on a slide to see how they respond to various frequencies. Other times, Petri dishes are used. In experiments in Romania supervised by Jimmie Holman and Paul Dorneanu, pathogens were cultured, exposed to different frequencies, allowed to incubate, and then counted so the rates of slowed or stopped growth could be determined. For these living microbe experiments, most researchers use a dark field microscope that shows

larger microorganisms such as bacteria. A few scientists use the more accurate, higher powered Ergonom that can show tiny viruses.

- *Live Blood Analysis.* Live blood analysis consists of examining, under a microscope, freshly drawn, living blood before and after a subject has been exposed to various frequencies, to see which ones were effective. The dark field microscope must be good quality, and generally requires immersing the glass slide in oil to better illuminate the features of the specimen. However, for viewing blood, it does not need to be as high-resolution as the Ergonom microscope.

- *Muscle Testing or Applied Kinesiology.* This method was developed in 1964 by Michigan chiropractor George Goodheart. The practitioner pushes or pulls on different muscles—most often the finger muscles or the deltoid muscle in the arm—and, based on the muscular weakness or strength, determines the client's allergies and conditions. Later practitioners include John Thie (author of *Touch for Health*), and John Diamond (author of *Your Body Doesn't Lie*).

  Related modalities include Touch for Health and Contact Reflex Analysis (CRA). The tester can also exert pressure on reflex points in the body to obtain information. All these modalities have been used to determine which frequencies the subject needs. Sometimes, people can learn to do muscle testing on themselves, usually using their fingers.

- *Dowsing.* This method uses an object—a metal or wooden rod, a weighted ball, or other object swinging from a cord (pendulum). A pendulum amplifies the electrical signals in the nervous system and externalizes them into muscle movements, similar to the movements that are detectable through Applied Kinesiology or muscle testing. The advantage to dowsing is that it can be performed not only by the person who is the subject, but also by a tester without the presence of the subject. Dowsing is not regarded as "scientific" in most circles, but some people find it very effective in finding frequencies. Dowsing differs from Applied Kinesiology in that with dowsing, the subject uses an external object, rather than the body, to detect the responses to a frequency or substance.

- *Jeff Sutherland, PhD.* In addition to being a Rife researcher, Jeff Sutherland is famous for innovative software inventions and has received a grant from the National Institutes of Health. After many years of experience using the F-Scan frequency device (discussed in more detail elsewhere in this chapter), Dr. Sutherland has developed a unique method to find frequencies with a sensitive dowsing instrument called the Cameron Aurameter. After being taught by a California dowser how to detect minute changes in the body's energy system, Sutherland discovered that the Aurameter could be used to identify the exact digits for specific organism frequencies, chemical compounds, heavy metals, and various mutated cell types. The frequencies obtained through an Aurameter inspection are then cross-checked by scanning the subject with the more mechanically objective F-Scan. Dr. Sutherland has found that the combination of these two approaches has proven to be a fast and accurate diagnostic tool. He offers frequency finding services, described on his website www.frequencyfoundation.com.

- *John Garvey, LAc.* Some highly effective frequencies, which began appearing on the Internet in 1993, were calculated by acupuncturist and homeopath John Garvey. Dr. Garvey's frequencies are included in this *Handbook*, and also appear on Brian McInturff's online CAFL (Consolidated Annotated Frequency List). Brian's list is free to anyone with Internet access.

- *Charlene Boehm.* A breakthrough by researcher Char Boehm is now allowing us to utilize frequencies that show great promise in destabilizing microbes. Ms. Boehm, a musician and self-taught mathematician with a scientific mind and talent for perceiving numerical patterns, made the groundbreaking discovery that the MOR of microbes can be calculated by applying a complex mathematical formula to the size of the pathogens' DNA structures, either in whole or in part. In a paper entitled "A Look At the Frequencies of Rife-related Plasma Emission Devices," Boehm describes her thought processes and what led to the discovery of the mathematical computation of which frequencies would debilitate microorganisms. "What exactly might be the destructive mechanism that is affecting each organism?" she initially asked herself.

  > Is it a resonance related to its full size, or perhaps that of the nucleus, mitochondria [tiny bodies inside a cell that provide it with energy], or capsid [the outer protein shell of a virus particle]? Is it a correlation with some type of biochemical resonance? Why

> does each organism seem to need a specific frequency? Could the phenomenon be related to its DNA, and if so, what is the resonance relationship? These questions and more have kept folks that use or explore Rife-related technologies awake into the wee hours of the morning on many occasions, and have been the focus of endless animated discussions.[31]

Boehm knew that the length of any object correlates to its *wave*length: "For instance, a person's height has its own resonant wavelength and resultant frequency." Therefore, she wondered, "Is it possible that an organism's entire DNA genome [genetic material] could also possess a resonant wavelength and frequency related to its total length?" After examining the published analyses of DNA structure from biologists, she devised a formula for calculating the wavelength of a microorganism. Then she utilized a commonplace physics equation to determine the frequency. "It is interesting to note," she writes, "that this frequency falls at the high end of the infrared section of the electromagnetic spectrum (near visible light), and in the general area of the spectrum that Royal Rife had under consideration in his microscopic work."[32]

Boehm's final step was to formulate a way of converting these very high figures to workable numbers that accommodated both the permeability of human and animal body tissue and were within the capacity of Rife instruments to transmit. Interestingly, Boehm found that a debilitating frequency could be found that corresponded to either the entire wavelength of a microbe, or one particular part within its complete structure.

The result? Boehm's numbers very closely correlate with the frequencies in Rife's original lab notes! Sometimes her frequencies exactly match those of Rife and modern researchers; sometimes they are within 1 to 5 Hz. But these differences are negligible, considering that Rife himself was not always able to pinpoint the exact frequencies.

Ms. Boehm was awarded a patent by the US Patent Office (# 7,280,874) for her DNA frequency method, formally titled "Methods for determining therapeutic resonant frequencies," on October 9, 2007. Her work holds enormous promise for the successful use of rife technology as newer and more dangerous microbes continue to emerge and we need to find the debilitating frequencies quickly. She provides customized frequency-finding services on her website, www.dnafrequencies.com.

**Q. I have a diagnosis from my doctor. How do I know which frequencies to use?**

**A.** See the beginning of Chapter 5, which explains how to use the Frequency Directory. Be aware that although many people are satisfied with the results they get from the frequencies listed, further experimentation may be needed.

**Q. What if I don't have a diagnosis, and don't know which specific microbes are involved in my condition?**

**A.** Here is a brief set of guidelines to help you decide which frequencies to use—whether those frequencies are from this *Rife Handbook* or from another source. During and after your session, don't forget to monitor your responses so you can determine which frequencies offered the greatest relief.

- *Diagnosis that is microbe specific.* In many cases, it would be best to have the name of the particular microbe that's infecting you. Simply look up the frequency for that microbe. For example, *Babesia* is a microbe.
- *Diagnosis of a disease.* Do you have the diagnosis of a disease? Often, the name of the disease is simply a slight variation of the name of the microbe. For example, Babesiosis is the name of the disease caused by the microbe *Babesia*.
- *Diagnosis of an illness, microbe unnamed.* Sometimes this is easy. For example, as stated in Chapter 5, dysentery is caused by the protozoa *Entamoeba histolytica*. You can either treat yourself for amoebic dysentery or the microbe *Entamoeba histolytica*. It makes no difference because the frequencies are the same.
- *General symptoms without a diagnosis.* Let's say you have a cold. This can be caused by any number of microbes. If you don't know which microbes are involved, use frequencies that have a track record of helping the most people. You can make an educated guess. For example, if you know that a particular strain of flu is being transmitted, assume that you have it and use those frequencies.

Be aware that most diagnoses do not indicate the *cause* of the ailment. For example, multiple sclerosis can be caused or exacerbated by mycotoxins, by a

particular microbe, or by heavy metals. A migraine can be caused by an allergy, toxified liver, or *Candida albicans*. You will enjoy greater success with frequency selection if you have some knowledge of how the body works and how the same microbe can cause different symptoms in different parts of the body. Chapter 5 will teach you about these issues, and more.

Some common frequencies that are often implicated in a majority of symptom pictures include 465, 660, 690, 727.5, 776, 787, 802, 880, 1550, 1552, 2008, 2127.5, and 2489. Other important frequencies are 20, 72, 95, 125, 444, 600, 625, 650, 784, 832, and 1865. If your machine has a sweep function, try a sweep from 420 Hz to 482 Hz. (Sweeping is explained earlier in this chapter.)

If you feel too ill to troubleshoot, if you find it too inconvenient or time-consuming, or if you have a condition such as cancer that requires absolute precision, consider using an electrode unit called the F-Scan. The F-Scan sends a series of signals into the body. Then, based on the body's response of recognition and resonance, the device displays on a screen those frequencies that are *hits*. Then it delivers those frequencies. The F-Scan can transmit frequencies in the high KHz (kilohertz) range, which is optimal for cancer and some parasitic infections. Due to the high range output, the current is felt very little, if at all.

A step-by-step guide to giving yourself a rife session is at the end of this chapter. And, at the beginning of Chapter 5—the Frequency Directory, which contains an extensive alphabetized listing of microbes, diseases and symptom pictures—is another guide, which explains how to use the Frequency Directory.

One more thing. By enhancing your knowledge and your ability to think holistically, to a certain extent you can be your own diagnostician and healer. Don't be shy about doing this. Some people feel uneasy about being proactive about their own health. They think, "But my doctor is the expert. I'm just a layperson. How can I possibly know what to do?" But, while I respect the grueling program and years of study required of physicians, I am also aware of the limitations of that training. Most doctors are taught to focus on pathology rather than on optimal function. They are given illness training, not wellness training. As a result, they often fail to understand the body as a functional organism of interdependent systems and parts. In reading this book, you will acquire practical knowledge and understanding of relationships and concepts that some conventionally trained doctors do not have. So don't devalue what you already know. Be open to learning more. And be aware that you may have more choices of treatment modalities than you have been led to believe.

**Q. Is muscle testing a valid way to figure out which frequencies will work for me?**

**A.** While muscle testing (also called Applied Kinesiology) can accurately determine which frequencies the body needs, most people who use this procedure correctly are chiropractors and other health practitioners who have been specifically trained in it. Despite the numerous books on how to do muscle testing, there are some variables—including dehydration, reversed polarity, and a lack of objectivity on the part of the tester—that can make it difficult to master the technique.

There is another, related frequency checking method you can try, although it cannot be done alone and requires a tester. It is based on an objective physiological response called the Vascular Autonomic Signal (VAS), discovered by medical doctor Paul Nogier in 1966. The method involves the circulatory (radial) pulse on the wrist, which can be found with a little practice. The tester holds the subject's wrist while the subject is exposed to a frequency. When a frequency is emitted that the body may need, a sudden change occurs in the pulse. The change in the pulse can feel like excitation (jumping or throbbing), or weakening (slower, less obvious). This VAS test may be the most practical for those without access to either custom designed frequency programs or a powerful microscope that can show changes in the blood before and after the administration of frequencies. It also may be preferred by people who find muscle testing difficult.

Incidentally, there's always the "Try this and see how you feel" method. While this method is admittedly limited, some people have reported good results by simply guessing or using their intuition.

**Q. Why do we need individual frequencies at all? Why can't we simply blast the microbes with every frequency in succession, especially if we don't know which ones to use?**

**A.** Rifers have differing opinions about this "shotgun" approach. Some people want to ensure that all possible microbe mutations are covered, so they use all the frequencies they can think of. Other rifers feel that this method is not efficient, and that it's not necessarily even the most effective, as the body might become overwhelmed. So they prefer a more targeted approach.

**Q. Why are different frequencies sometimes listed for the same condition? And why are the same frequencies often given for two distinctly different microbes?**

**A.** Assuming that the numbers are correct, when the listings contradict each other by a few Hz, this may reflect differences between the human hosts. Body moisture, tissue density, terrain (biochemical composition), pH, temperature variations, and even different geographical locations can create varied strains of the same microbe, thus causing changes in its MOR. Also, different frequencies for the same microbe may correspond to distinct body parts. One number might be the resonant frequency of the entire microbe, while another number might relate to a specific cellular part. Still another frequency might be mathematically related to the fundamental MOR (see question directly below).

Sometimes, the numbers are for unidentified secondary infections. Or, the frequencies stimulate the host's immune response rather than debilitate pathogens. And sometimes, the numbers vary greatly because they are experimental and Rife researchers aren't yet sure which ones are the most effective. Since some frequencies are more effective in disabling microbes than others, you may want to try all of them.

**Q. I've heard that higher frequencies work better than lower frequencies. Is there any truth to this?**

**A.** For the most part, frequencies in the so-called *audio range* are quite effective for most conditions. However, especially for those dealing with cancer, it's better to use numbers in the higher MHz (megahertz) range.

The phrase *audio range*, commonly used by engineers, can be confusing. Theoretically, every frequency on the electromagnetic spectrum corresponds to a sound—if we could hear it. A so-called audio frequency is simply a wavelength that is in the range of human hearing if the frequency were translated into a tone.

The human ear can hear tones from about 20 Hz to 20 kilohertz (KHz), which is 20,000 Hz. The lowest pedal notes of a pipe organ range from 16 to 32 Hz. Bells and cymbals are in a relatively high range of 16,000 Hz.

Some devices can emit frequencies over 20,000 Hz and even into the millions of Hz. This is beyond the range of human hearing, beyond the audio range.

**Q. My unit goes up to only 20,000 Hz. But my condition requires many frequencies that are over 60,000 Hz. What should I do?**

**A.** Set your unit for a square wave and use this formula from some rifers:

> Take the original MOR of a microbe—the high number—and divide it by 2. If that number isn't low enough for your unit, again divide it by 2. Keep dividing it by 2 until the resulting number lies within the range of your machine.

For example: let's say you want to use a high frequency of 140,000 Hz. Divide it by 2, which brings it down to 70,000. Then divide 70,000 by 2, which brings it down to 35,000. Then divide 35,000 by 2, which brings it down to 17,500. Some units can handle this number. If yours can't, divide the 17,500 by 2, which brings it down to 8,750.

You can also "step down" a fundamental frequency with powers of 2: 2, 4, 8, 16, 32, 64, 128, 256, 512, etc. (each number is double the number before it). Say you have determined an optimal experimental frequency of 128,512 Hz for a given microbe. But your machine will only generate frequencies up to 5,000 Hz. So, using any one of the string of numbers that are powers of 2 in order to step down the frequency—in this case, we're using 64—you would divide 128,512 by 64 to obtain the frequency of 2008 Hz.

Some experimenters have also successfully used powers of 10—that is, dividing by 10, 100, 1000, etc.

In James Bare's experience, these formulas work only for fundamental frequencies that you are making lower through division. "You can obtain results with the lower octaves of a fundamental frequency [MOR]," he says, "but your numbers will *not* be effective if you multiply *up* from the fundamental frequency."[33] Some Rife researchers disagree with him, saying that this formula works as well for multiplying up as it does for dividing down. Other experimenters have had good results after multiplying up by 2, powers of 2, or powers of 10.

Regardless of a rifer's favorite formula, it does appear that the original MOR works best. Also, although stepping down the fundamental frequency is effective for most health problems, people with cancer may prefer to use a unit that can reach the MHz range. Higher frequencies appear to more effectively destroy microbes, except perhaps for two tumor frequencies, 2008.35 and 2127.5. Why do the higher numbers work better for cancer? The higher numbers most likely reflect the actual Mortal Oscillatory Rates of the cancer virus. See Chapter 2 for more information.

**Q. I've heard that you get better results using a higher number derived from a calculator found on the Internet. Where can I obtain this calculator and how does it work?**

**A.** This calculator is from Jeff Sutherland, PhD, produced through a series of detailed computations. In the course of conducting over one thousand experiments, Dr. Sutherland found that some frequencies worked better than the numbers obtained by multiplying or dividing by 2. He reported that the numbers he calculated

> cut the time required to kill a pathogen by more than 50% over binary octaves. Years ago I abandoned binary octaves of frequencies, i.e. dividing by 2 to get lower octaves of primary frequencies . . . [that were usable] on plasma devices that only generate frequencies up to 10,000 Hz. I found a method of calculating scalar [scale-related] octaves that I now use consistently. Simply divide or multiply by exp(3), exp(6), or exp(9).[34]

Although Sutherland is not able to explain the theory behind his octave-related calculations, he nevertheless reports excellent results with these numbers. An automatic calculator for scalar conversion can be located on the website page www.royalrife.com/lists.html. Simply right click on "Scalar Octave Calculator" and put it on the desktop of your computer.

**Q. Some frequencies are said to regenerate an organ or gland, rather than kill microbes. How is this possible? And why didn't Royal Rife address this?**

**A.** Killing a pathogenic microorganism that doesn't belong in the body obviously helps the body function better. But what about direct effects on the cells? Could the emissions from some electromedical devices be rejuvenating or healing to the body?

Dr. Rife himself did not specifically focus on frequencies we would call "rejuvenating"; he was involved strictly with the destruction of microbes (at least, that's what the public was told). However, new evidence suggests that at least some rife machines *do* normalize cell function. We know that plasma tubes emit a certain amount of beneficial far infrared radiation, which stimulates cell growth and repair. (See the section on **Light and Color** in Chapter 3 for more information.) However, in most cases FIR by itself is not enough to account for these specific—and sometimes dramatic—healing effects.

Experimenters speculate as follows:

- Frequencies that debilitate microbes and the ones that restore human tissue are transmitted differently.
- Square waves kill microbes, while sine or truncated triangular waves rejuvenate cells.
- Microbes are adversely affected by the very electromagnetic fields that are compatible with healthy tissue.

Perhaps, though, the overt microbe-killing goal of rife technology has obscured solid research on tissue regeneration that has emerged from other areas of electromedicine. In "The Electrical Properties of Cancer Cells," medical doctor and clinical nutritionist Steve Haltiwanger describes in detail how the body is a living electrical circuit. Cells and tissues have various functions. They are conductors—that is, they allow for electron flow. They are insulators—that is, they inhibit electron flow. They are also semiconductors—that is, they allow for electron flow in only one direction. And they act as capacitors—that is, they accumulate and store charge, and later release that charge. In addition to transmitting and receiving energy, each cell has its very own frequency with which it oscillates. Also, scientists have discovered that in humans, the sinuses, some facial bones, and various bodily tissues contain magnetite, which responds to magnetic fields.

Not only is every cell in the body a transmitter and receiver of electromagnetic information, *it is these various electromagnetic frequencies that precede and correspond to biochemical functions*. For example, healthy cells oscillate at higher frequencies than do unhealthy cells like cancer. The lower frequency of cancer is reflected by aberrant biochemical reactions within the cell. Likewise, the biochemical differences between normal healthy cells and cancer cells correspond to the differences in the electrical properties of each. The same holds true for magnetic fields. Magnetic fields correspond to biological activity. A change in the field means a beneficial or injurious change in the cells.

There is one more important piece to the regeneration function of some rife devices, and that is the presence of *scalar waves* (sometimes called *longitudinal waves*). The regenerative qualities of Rife's technology—which are separate from the microbe-killing aspects—appear to result from the balancing influence of these scalar waves.

Scalar waves are a form of energy not on the electromagnetic spectrum. However, they are produced by any unit capable of emitting rapid, sudden electromagnetic spikes. These EM spikes seem to unleash and activate the scalar fields that are already present.

Scalar fields affect the cells like charging a battery that has lost its power. Some rife machines may strengthen the external scalar field, thus making it easier for the person to access them. The machines may increase a person's receptivity to these scalar waves by strengthening his or her individual energy field. Or perhaps the devices actively engage the scalar waves and harmonize them. This would enable the particles comprising the scalar fields to communicate with each other and also with the body, transmitting information that allows the cells to function properly and heal. One manufacturer hypothesizes that the energy from this healing scalar field is more accessible through the use of his unit.

Electromedicine is still in its infancy. I believe that if we keep an open mind regarding the existence of non-EM energy, many different types of healing applications will be discovered.

**Q. My unit has settings for different shaped waves: square, sine, and sawtooth. What's the difference between the waveforms?**

**A.** See the earlier Sidebar, "Signal Penetration: Wave Shapes, Harmonics, and Duty Cycles." For now, the brief answer follows.

Dr. James Bare says that square waves probably work best for electrode devices, while sine waves are most often used for plasma tube units. But these preferences may be due to the limitations of some modern units. (Royal Rife's best equipment, all plasma devices, transmitted RF with plenty of harmonics, which accounted for its success.)

Bare explains harmonics in his paper, "Understanding Our Frequencies through Harmonic Associations." I quote Dr. Bare in some detail because people with cancer experience the most healing when mathematical formulas are used that convert frequencies below 20,000 Hz into higher numbers.

> To understand our modern day frequencies involves an understanding of harmonics. . . . Harmonics are often presented in terms of some multiple of a fundamental frequency. That is, harmonics may be derived though the process of multiplication. For example, a fundamental frequency of 3000 Hz will have harmonics at 3000, 6000, 9000 and so on. The mathematical opposite of a harmonic is known as a sub harmonic. A sub harmonic is derived by the process of division. A sub harmonic of 3000 Hz might be 1500 Hz or 600 Hz. Both 600 and 1500 Hz are divisors of 3000 Hz, as are 500, 1000, 200, 300 and 50, among many others.
>
> In examining some of the letters written by Dr. Rife, the proper term for an audio range frequency which is a sub harmonic (exact or near exact divisor) of the fundamental frequency is "Coordinative Resonance Frequency," or CRF. *All of our modern day frequency devices utilize Coordinative Resonance Frequencies in the treatment of disease*. . . . [emphasis added]
>
> CRFs can be created and classified via several different methods. The first method is known as the octave method. One simply divides the fundamental frequency by factors of two. That is 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192, and so on. The second method generates what might be called log frequencies as a basis of divisors of 10. That is 10, 100, 1000, 10000, 100000, 1000000 and so on.[35]

Square waves contain more harmonics than sine waves. So, if you're unable to use a high frequency MOR, it's better to use a square shaped wave that has a good track record. That said, users report success from many combinations of waves and devices.

**Q. How do I know that the frequencies are safe? If they kill microbes, won't they harm me?**

**A.** Although rife technology is to some extent regarded as experimental, researchers generally agree that it is safe. The differences between highly complex human beings and much simpler microbes are substantial. Human cells are distinct from microorganisms in size, shape, density, chemical composition, electrical charge, and function. All these factors make it highly remote that any of the microbe-destroying frequencies would affect us adversely. Even assuming that the resonant frequency of a particular microbe does resonate with some part of our physiology, *the amount of power needed to damage a human cell is so many times greater than the power needed to destroy a microbe, that a properly made rife unit will not harm us or other complex organisms*. The following analogy might be helpful: think of the amount of pressure required to smash a small ant with your finger. Now touch your arm with your finger, applying that same

amount of pressure. The motion that kills an ant hardly affects you.

**Q. Most rife units that shatter or disable microbes under a microscope or in a Petri dish are unable to achieve the same result in live human beings. Why? Is there something wrong with the machine?**

**A.** There's nothing wrong with the machine. As discussed in Chapter 2, Rife's best ray device successfully destroyed microorganisms in both live mammals (*in vivo*) and in Petri dishes and microscope slides (*in vitro*) because it transmitted in the very high MHz ranges and produced abundant harmonics. Modern manufacturers—legally restricted in the components they are allowed to use—have been forced to build devices that convey frequencies in a different manner, and which in many cases use different (though related) frequencies. This accounts for the discrepancies between what Royal Rife's units could do and what today's frequency devices can accomplish.

With this understanding, let us examine why modern devices can destroy microbes in living bodies but not in Petri dishes and slides, and vice-versa. There are several reasons.

One, a living human or animal body functions very much like an antenna; the soft tissue and fluids are moving constantly. Since by their movement they possess natural resonance, they receive and process frequencies much differently than a nutrient medium containing microorganisms, which by contrast is rather static. Two, the contents of a Petri dish and the body of a human being or animal have much different densities, water content, and electrical activity. In fact, one researcher points out, the body is composed of a mixture of chemicals similar to that of seawater, which is highly conductive. (He proposes designing *in vitro* tests that use a similar conductive medium, as this may more accurately simulate the effects of a frequency device on the body.)

A third possible reason for the difference in results *in vivo* and *in vitro* is that the velocity of the same signal is different in these two media. An analogy to this phenomenon is the way the pitch and tone of an audio signal sound different when transmitted underwater, as compared to through the air. These differences may change the frequency required to address a pathogen. Rife sometimes put cultures inside large slabs of meat before exposing them to his ray device. Some researchers think that this may have been to simulate the frequency shift.

James Bare has been able to explode paramecia with the same machine he uses on his live pets. However, the machine is less than 2 feet from the microbes. If you are looking for a rife unit that can destroy microbes outside a living body as well as inside a Petri dish, make sure to ask the seller if that particular brand is compatible with your research goals.

**Q. If the frequencies are so effective, why do I need to use the machine more than once?**

**A.** The first, obvious reason for lack of results is that the frequencies you are using are not the ones you need.

But the body's acceptance of the signal is as important as the correct frequencies. Some inventors interpret this to mean that the more power the unit has, the fewer number of sessions you'll need. In this instance, *power* means the force with which the frequencies are transmitted by the machine into the body. The power of a machine can depend on the gases in the plasma tube, the electronics, and the strength of the current that feeds the unit. Virtually all units have adjustable controls, which provide more power. If the manufacturer says that it's safe, you can try moving closer to the machine.

But "force" or "strength of the signal" doesn't always mean "*acceptance* of the signal." The body's tissues may become resistant to the frequencies. This is why it's so important to use a device that has been carefully engineered to be compatible with living tissues.

Often, the symptom picture involves many different types of microorganisms. Dr. Jeff Sutherland, who has considerable experience helping others with severe conditions, points out that usually, illness-causing pathogens reside in multiple layers. For instance, viruses often live inside bacteria, and bacteria often live inside protozoa and worms. Rife himself wrote that certain bacteria such as *E. coli*, and the bacilli for tuberculosis, typhoid and other diseases may release a form of virus. So although one pathogen is killed, another pathogen might emerge from it. A protozoan might be devitalized, only to expel a viable bacterium—which in turn might force out a virus! This is why experimenters must be creative and use different frequencies that cover viruses, bacteria, and parasites. There is almost always the possibility that a smaller microbe lives inside a larger one.

Sometimes, bodily conditions support the existence of different pathogens that do not live inside of each other but nonetheless co-exist in a symbiotic relationship. If you are harboring different microbes, targeting them all in one session might produce too strong a

detoxification response. Therefore, it would be wise to regulate the die-off by not exposing yourself to all of the required frequencies at once. Even if you're hosting only one type of microbe, with a chronic or severe condition, killing or disabling all of them at once could similarly produce too strong a detoxification response. Therefore, it's wise to limit the time you spend with the equipment.

Usually, additional sessions will be needed if you are using a frequency for too short a period and the frequency only stuns, rather than completely disables or kills, the microbe. Experiment to find how long you need to run a frequency. If the microbe is particularly resistant, use the sweep, converge, and gate functions if your unit has them.

Sometimes the tenacity of the illness requires a more aggressive approach. For instance, there is a special protocol for people with cancer. Most rife twice a day for 4 to 6 months (depending on the machine being used and the state of the person's health). The tumor comes off in layers when rife technology is used, much like an onion that is being peeled. After the person appears healed, there is a maintenance period when the unit is used once a day or several times a week, over the course of another several months to one year.

The elimination of parasites requires a particularly aggressive strategy. Frequencies that disable an adult worm will not affect it in its earlier stages as an egg, since the two forms are so different from each other. Usually, those afflicted with worms must wait for the eggs to hatch into mature adults before rifing can have an effect. Thus, more sessions are required.

Related to more sessions is more time per session. Some Rife researchers theorize that people sometimes need longer sessions because microbes often hide deep in the tissues of the host. The fields of the surrounding human tissue cover or mask the frequencies of the individual microbes, much as an individual violin cannot easily be perceived when played with an entire orchestra.

Viruses may be especially difficult to kill, as they lack their own RNA and DNA (a fact that induces them to use the RNA and DNA of the host). RNA and DNA are very sensitive to electromagnetic fields; but a virus, lacking these chemical building blocks, may find it easier to resist the effects of the frequencies.

Another reason to use the machine multiple times is the natural mutations of "offspring" microbes.

Finally, don't forget that the body needs time to alter the terrain that initially allowed the microorganisms to grow. If the terrain is not altered, the microbes will continue to proliferate—or leave, only to return. One researcher says that using some form of frequency instrument is usually an "80% solution." What he means is that even when the correct frequencies are used at sufficient power, the best that can be hoped for is a reduction of 80% of the pathogen population (and possibly 90% when using the sweep function). For someone with minimal toxin accumulation and a healthy immune response, killing 80% of the pathogen population may offer enough support so the body can control the remainder of the infection. However, for someone with limited immune function and excess accumulated toxic waste (which provides a fertile feeding ground for microorganisms), killing 80% of a population may not be sufficient. Even if a frequency device killed 90% of the microbes, fast-growing fungi or bacteria can multiply so quickly that within 24 hours the population can re-grow to its original size. Altering the terrain is essential to prevent this from happening.

**Q. Are there any circumstances under which rife frequency technology might actually make microbes grow? For instance, it is common for microbes to become resistant to antibiotics. Can they react to frequencies in a similar way?**

**A.** Yes to both questions! Recall the earlier analogy of the soldiers on the bridge, who "break step" to bring the swaying bridge to a halt. Also think of the swing analogy. One person pushing the swing does so in a regularly paced, constant rhythm. This allows the swing to gain momentum. Now another person comes along who pushes the swing at a different rate. If the swing is not pushed at precisely the right moment, the push from this new pair of hands may disrupt the momentum the swing had from the first person, and may even make it stop altogether.

Confusing the body with too many frequencies, or not giving the subject enough time with each frequency, may merely "tickle" or stimulate the pathogens instead of disabling them. This gives the microorganisms time to mutate. Put another way, too short a session doesn't rattle them enough and provides what might be called positive stress. However, an adequately lengthy session provides copious amounts of negative stress (to the microbe, that is).

This is why you need to give yourself enough time with the device. You can compensate for the microbes' adaptation mechanism by programming the machine to perform a sweep. All good rife units come equipped with this feature.

Incidentally, there may be some natural small variations in the oscillatory rate of microbes. Some researchers suspect that microbes change their rate every 20, 15 or even 10 years as a matter of course, although the changes are slight.

**Q. How much frequency drift is allowable for the rife equipment to still be effective in destroying microbes?**

**A.** This question refers to the capability—either random or deliberately programmed—of a signal to drift, or meander a bit under or over the number to which it was set. Say you set the frequency at 660. The indicator on the machine might initially read 660 and then go up to 661. Or the indicator might go down to 659. These small shifts naturally occur due to the components, rather than being deliberately programmed into the unit. However, some machines can be set to drift plus or minus any number of Hz on either side of the main signal.

There is a lively debate among investigators as to how much drift on either side of the signal is acceptable before the frequency ceases to have the desired effect. Some researchers feel that the signal should be absolutely steady for the most beneficial effect. Others maintain that a small waver in the signal is preferable, in case the microbes have mutated to a slightly higher or lower frequency—after all, something that is alive is never static. I think that both positions have merit. Sometimes the lack of precision doesn't seem to matter; other times, it does. To ensure that you have targeted the microorganism, set the machine to do a sweep a couple of Hz before and after the main signal.

Precision matters more with low numbers than high ones, because the percentage of how much the number is off will be greater with a low number. Say you want 1.2. If your machine drifts to 1.3 or 1.4, this is a huge deviation—almost 10%—from the number you are trying to get. But if you want 802 and the machine registers 800, the deviation is only 9/10 of 1%. Make sure that your machine can handle decimal points. Some numbers do need to be precise.

**Q. There are some units that deliver frequencies in rapid succession, usually in the high range. Is this Rife? And are these machines effective?**

**A.** There are devices on the market that rapidly deliver frequencies in succession, covering a wide range (including RF). Just a few are the Multi-Wave Oscillator, the BELS machine, a similar unit called the VIBE, the Tesla Lights™ machine, and the Molecular Enhancer. These units apparently normalize cell function, regenerate tissue, and alleviate pain more than they kill microbes.

Satisfied users of these devices report feeling recharged. I personally found the Molecular Enhancer quite helpful for pain management after a severe auto accident. The company's literature states that the machine raises the electrical potential of cells.

These devices may not be suitable for everyone, however. The wide range of frequencies is produced by a spark gap, or voltage that leaps across a space between two components. Whenever a spark gap is used, most or all of the resulting signal is chaotic. In addition, some of the signal is in the RF range. Some people react negatively to both RF and to chaotic signals. Jimmie Holman does not like such units because of the chaos. He believes that their "shotgun" approach is simplistic, and wonders if the chaotic signals induce biologically incompatible chaos into otherwise working systems.

Nevertheless, one cannot discount reports from people who feel better from using such devices. Also, many effective electromedical devices operate on similar principles. Is it possible that people who feel worse after using these devices lack the cellular strength to resist chaos? Might they simply be overly sensitive to RF?

Results from wide-ranging, variable-frequency devices depend on the subject's condition. If you decide to experiment with such devices, monitor your responses carefully and stop using the machines if you don't feel better within a reasonable period of time.

**Q. My doctor says that if rife technology really worked, he would know about it. So how can I be sure that this modality is effective?**

**A.** Given the historical attempts to suppress this technology, it's unlikely that your doctor would have learned about it in medical school. You are the one who has experience with this machine, not your doctor—so ask yourself the following questions. Did you have any reactions to the rifing, positive or negative? Are these reactions the expected and normal effects of detoxification? Or might they be something else? Is your health practitioner sincerely knowledgeable about detoxification, and able to properly monitor you as you continue your experimentation? *The bottom line is, if you are helped by the frequencies, they work.*

Rifing is still an experimental technology. Had the medical authorities allowed Rife and his colleagues to continue their studies and clinical treatments—rather

than confiscated equipment and destroyed valuable records of all the cures that were achieved—we would not be now, in effect, trying to re-invent the wheel. It is my earnest hope that this *Rife Handbook* will encourage more researchers to come forward with the documentation they already have, and inspire other qualified researchers to begin serious study of this exciting and growing field of frequency healing.

### *Specific Health Conditions*

**Q. I have a serious illness and need to be supervised by a health practitioner. How do I find one who's knowledgeable about rife therapy?**

**A.** First, be aware that in the United States in most cases, it's illegal for a licensed health care provider to use rife technology. It's also illegal for anyone to charge a fee to others for using the technology. Therefore, you'll be using the equipment yourself and seeing a professional for medical supervision. It's important to be monitored, especially if your elimination channels (colon, kidneys, liver and lymph) are weakened. Rifing can create a lot of toxic debris in the system.

The primary health care providers most likely to be sympathetic to rifing are those trained in either naturopathy or osteopathy. They consider their job to facilitate and augment the client's ability to heal by analyzing the underlying causes of illness, rather than merely eliminating or suppressing symptoms. Both naturopaths and osteopaths receive rigorous medical training similar to that of allopaths: anatomy, physiology, pathology, etc. Additional medical training may include organic chemistry, and a hospital internship in internal medicine or surgery. In most programs, the overtly holistic training includes nutrition, herbs, various forms of bodywork such as massage and trigger point release, Oriental Medicine, hydrotherapy, counseling, aromatherapy, meditation, and energetic therapies.

Some Western medical doctors seek additional training in the holistic arts after they graduate their conventional schools. They can be excellent resources as well.

**Q. Is there a special protocol for dealing with cancer?**

**A.** According to Jimmie Holman, the most common mistake that people make is to use the cancer frequencies *before* using other frequencies to stimulate, support and regenerate the system. As tempting as it might be to immediately destabilize the cancer, strengthening the cells and detoxification pathways first ensures that the body is strong enough to handle the toxic die-off that will occur later.

Every person has a different constitution, terrain, needs and responses. Keep in mind that the following guidelines for people with cancer are general, and should be adapted to the individual.

- *The Most Common Protocol: Regular Sessions Every Day with No Rest Intervals.* Most people who successfully eliminate cancer tell me that they adhere to the following guidelines:

  Two sessions every day, one in the morning and one in the mid or late afternoon. Sessions normally last between 1½ and 2½ hours each. (This means up to 5 hours a day of session time.)

  This twice-daily protocol is followed for *at least 6 months.*

Does this seem like too much work? To some people, it is. They feel that rife technology requires too much time and commitment, as they'd rather be doing something else. But if you are willing to take responsibility for your health, you will appreciate that these guidelines were developed because the elimination of cancer requires a very aggressive approach. Under the best of conditions, it generally takes about 10 days to 2 weeks to halt the spread of cancerous tissue before the body can then start to reverse the condition. I like to use the analogy of a speeding jet. You cannot bring the jet to a screeching halt immediately; it takes persistence and power to gradually slow it down. Then, it takes time to reverse the jet's course so it arrives at the place from which it began its journey. People with cancer need dedication and patience to fully halt the tumor growth before it can be reversed.

- *First Alternate Protocol: Regular Sessions Every Day for 5 Days with 2-Day Rest Intervals.* Some people who successfully eliminate cancer tell me that they always give themselves breaks between sessions:

  Two sessions every day, one in the morning and one in the mid or late afternoon. Sessions normally last between 1½ and 2½ hours each.

  This twice-daily protocol entails 5 days on the machine, then 2 days off, to give the body time to get rid of the accumulated waste materials. The schedule is followed for at least 6 months.

It should be noted that the above program began being promoted by one device manufacturer after the staff noticed that customers did well on this program *with their machine*. If you have a different device, this protocol may or may not work as well for you. If you aren't moving quickly enough, use your machine every day or obtain custom frequencies. Everyone is different; pay attention to what works for you.

- *Second Alternate Protocol: Regular Sessions Every Day for 1 Week, with 1-Week Rest Intervals.* Occasionally people will gravitate toward a different rhythm of session time and rest time.

  One session 2 to 3 hours a day for one week, every other week for several months.

  Two 1½-hour sessions a day for one week, every other week for several months.

One man helped his partner overcome cancer in just 2 months with one 2- to 3-hour session once a day for one week, with one week off. (The doctor had given her just three months to live.) However, this scenario is not common. Most people require longer periods with the unit every day, and without such long intermissions. Keep in mind that long intermissions may allow the microbes to mutate.

| | Holistic Medicine | Conventional Medicine |
|---|---|---|
| **Philosophy** | Based on the integration of allopathic (MD), osteopathic (DO), naturopathic (ND), energy, and ethno-medicine. | Based on allopathic medicine. |
| **Primary Objective of Care** | To promote optimal health and as a by-product, to prevent and treat disease. | To cure or mitigate disease. |
| **Primary Method of Care** | Empower patients to heal themselves by addressing the causes of their disease and facilitating lifestyle changes through health promotion. | Focus on the elimination of physical symptoms. |
| **Diagnosis** | Evaluate the whole person through holistic medical history, holistic health score sheet, physical exam, lab data. | Evaluate the body with history, physical exam, lab data. |
| **Primary Care Treatment Options** | Love applied to body, mind, and spirit with diet, exercise, environmental measures, attitudinal and behavioral modifications, relationship and spiritual counseling, bioenergy enhancement. | Drugs and surgery. |
| **Secondary Care Treatment Options** | Botanical (herbal) medicine, homeopathy, acupuncture, manual medicine, biomolecular therapies, physical therapy, drugs, and surgery. | Diet, exercise, physical therapy, and stress management. |
| **Weaknesses** | Shortage of holistic physicians and training programs; time-intensive, requiring a commitment to a healing process, not a quick fix. | Ineffective in preventing and curing chronic disease; expensive. |
| **Strengths** | Empowers patients to take responsibility for their own health, and in so doing is cost-effective in treating both acute and chronic illness; therapeutic in preventing and treating chronic disease; and essential in creating optimal health. | Highly therapeutic in treating both acute and life-threatening illness and injuries. |

—Robert S. Ivker, DO, ABIHM, FAAFP
Co-founder and Past-President, American Board of Integrative Holistic Medicine
Past president, American Holistic Medical Association
Former Assistant Clinical Professor of Family Medicine, University of Colorado School of Medicine
Adapted from material originally appearing in the Winter 1999 issue of "Holistic Medicine: The Journal of The American Holistic Medical Association." Also at www.ahha.org/articles.asp?Id=38

- *Seldom-Used Protocol: Irregular Sessions Using Variable Frequencies, with Irregular Rest Intervals.* This method can be used when the subject or supervising practitioner can accurately determine which frequencies should be used, and how much rest time is required. This method is specific for the person or animal, and should be tried *only with expert guidance*.
- *Follow-Up Maintenance for Everyone*. The Rife researchers I know recommend that after the cancer is gone—and the subject is either pronounced "cured," as established through lab reports, or the cancer is said to be "in remission"—the person follow a maintenance program.

  One rife session once a day for several weeks or one month. Then gradually add intervals of days, and then weeks, between sessions.

  One rife session every other day for several weeks or one month. Then gradually add intervals of days, and then weeks, between sessions.

  One rife session once a week for several weeks or one month. Then gradually add intervals of days, and then weeks, between sessions.

*Do not make the mistake of stopping your sessions prematurely*. This includes taking a break just as you are starting to feel better. *Continue rifing for one or two months even after all traces of the cancer are gone! Afterward, do a maintenance program until you have a clear indication that you are balanced enough to stop.*

Some friends of mine learned this lesson the hard way. They were treating their Labrador retriever for bone cancer. After three weeks, the dog, who had been lethargic and barely able to walk, was joyously bounding through the woods. The sessions had apparently eliminated his pain, even though a large tumor on the leg was still visible. Encouraged, his humans devoted less time to rifing the dog, even though I advised them to continue. Then my unit suddenly stopped working and had to be shipped to the manufacturer for repairs. By the time my operational unit was returned to me, the dog had been without sessions for a little over a week, and he was limping again. My friends put the dog back on the same program, but the frequencies no longer worked, and the noble creature died.

Why did this happen? The buildup and transfer of energy you are creating takes *time* to achieve. Irregularities or pauses in a protocol weaken or completely counteract the effect, and you must start all over again. Stopping the dog's program for a week, and then resuming, was like starting a brand new program from the very beginning. The dog's cancer was so advanced that his humans simply didn't have time to build up the momentum again. Also, since the same program no longer appeared to have an effect, it's possible that the microbes had mutated.

I relay this story not to scare you, but to emphasize that life-threatening conditions need very focused attention. Most people with cancer rife twice a day for at least 6 months. Even if they become symptom-free after 3 months, they maintain the same intensive regimen for at least another 3 months. The creators of two of the most powerful plasma light units tell me that about 80% of cancer patients see improvements within 1 to 2 months, sometimes the first week or even day after beginning the sessions. However, if you don't follow this pattern, don't allow yourself to get discouraged. It took time for the cancer to develop, so you need to take time to eliminate it.

**Q. Are certain frequencies especially effective for cancer?**

**A.** For most health problems, frequencies below 20,000 Hz work well. However, for cancer, frequencies in the MHz (megahertz, or millions of Hz) range are much more effective than lower numbers—and sometimes the lower numbers don't work at all. (Radio frequencies are in the MHz range. Modern frequency devices that are capable of RF are legal as long as they transmit a lot less power than did Rife's early instruments.) *People with cancer who are rifing are strongly urged to invest in a device capable of transmitting in the MHz range, so they can use Royal Rife's original frequencies.* Frequencies from Dr. Hulda Clark are also in the MHz range.

Many frequency devices cannot transmit higher than 20,000 Hz. If yours cannot, there are two excellent major tumor frequencies in the lower range, 2008 (or 2008.35) and 2127.5, which according to Jeff Sutherland are best used for *one hour each*. Note that 2127.5 is usually seen on various lists as either 2127 or 2128.

Relevant research from German scientist Kurt Olbrich is cited by Peter Walker.

> There is not just one frequency for cancer! The frequency to use must be determined individually by testing the virus obtained from each patient under the microscope—just like what Royal Rife did. Every person has their own systemic weaknesses and the development stage of cancers differs accordingly, according to the environment in the patient's body.

> Most people do not know that viruses do not have a fixed size. They are smaller when young and larger when full size; and this effects their resonance frequency, too.
>
> When treating cancer, it is very important to determine the exact frequency to use. Otherwise, the cancer virus will not be destroyed and in some cases may even grow faster.
>
> By the way, although Kurt sometimes does consulting work for drug companies, he says that in most cases the most effective method against viruses is bio-resonance, and not drugs.[36]

While cancer does require more specialized attention than other conditions, many people have still obtained good to excellent results using the general frequency lists for rifing. If you don't own an F-Scan (which can detect and then deliver the frequencies you need), or have access to a source for a customized frequency program, the general lists are a good place to start.

**Q. I've heard that certain frequencies actually stimulate the growth of cancer cells. Is this true?**

**A.** This is true, but in a very specific and limited context. Over the past 30 years, Australian medical doctor John Holt (now retired) was using a frequency of 434 megahertz (MHz)—or 434 million Hz—as part of an overall treatment to eliminate cancer cells. Peter Walker reports:

> Activated cancer cells are vulnerable to low levels (150 rads) of X-ray radiation. . . . Normally, only a small number of cancer cells are active at any one time, making cancer very difficult to treat [with X-rays]. . . . [However,] Holt discovered that by exposing the body to 434 MHz radio waves, all the cancer cells were activated for a short period (about 20 minutes) and could thus be destroyed by subsequent low level X-ray radiation. . . . Over 35,000 patient records stretching back over a period of 30 years . . . [indicate Holt's] high success rates for treating cancer. . . . Dr. Holt's work became known to the Rife research groups in 2004 after an Australian television program, "A Current Affair" reported positively about Holt's work. . . . Yet his work had been largely ignored by cancer research organizations in Australia and elsewhere. . . . Despite several requests for his method to be scientifically validated in proper clinical trials, these requests were largely ignored except for two bogus trials that, according to Dr. John Holt, were not set up to properly validate his methods and were designed to discredit his work. . . . AMA doctors had not even bothered to look at his methods for over 15 years.[37]

After Holt was denied access to X-ray equipment, he developed an alternative method to kill cancerous tumors by injecting them with a glucose blocking agent and then subjecting them to 434 MHz radio waves. To stop and reverse the progression of cancer, a glucose blocking agent is not as effective as X-rays, but it does help in many cases, since cancer cells require glucose in order to grow.

Incidentally, according to Dr. Holt, the main cancer-stimulating frequencies are in the radio wave range of 430 MHz to 440 MHz. However, Holt found that frequencies in the microwave range above 2 gigahertz (GHz)—or 2 billion Hz—could also cause cancer cells to grow. Many cell phones operate in these ranges. There is substantial evidence that, when placed close to the head, such high-frequency cell phones cause brain tumors to develop. Therefore, you may want to think twice about using cell phones on a regular basis. If you do need to use a cell phone, keep it on "speaker" mode away from your ear, or use a specially designed earpiece that helps protect the ear. You can also choose a cell phone that's rated as emitting the least amount of dangerous radiation.

**Q. Is one frequency device better than another when treating cancer?**

**A.** As mentioned above, two major tumor frequencies are 2008 (or 2008.35) and 2127.5. However, these are used with equipment that cannot reach the MHz range. *In many cases, higher-range (MHz) frequencies work better for treating cancer than lower-range (Hz) frequencies.* As most units do not have MHz transmission capability, ask the vendor before you buy.

Whether you use an electrode or plasma tube device, the signal must be able to penetrate deep into the tissues. For an electrode unit, many rifers prefer the GB-4000, which has an optional amplifier attachment that emits RF. (The RF emission is low power and therefore legal; but it does drive the signal deep into the body.) For a plasma tube unit with a similarly low power (and therefore legal) RF carrier wave,

many rifers prefer the PERL from Resonant Light Technology. The GB-4000 also has a radiant plasma attachment. Tube machines from Pulsed Technologies do not emit RF (they work on a different principle), but their signals still penetrate the cells of the body.

Another promising machine is the F-Scan, an electrode device that reaches the MHz range. The unit can also analyze which frequencies the subject needs. This makes it optimal for people with stubborn or hard-to-treat conditions—including cancer, whose pathogens can morph so rapidly.

**Q. I've been using my frequency device faithfully twice a day since I was diagnosed with cancer. But my tumor seems to be growing larger, not smaller. And now I feel pain, when I didn't before. Why?**

**A.** After you've been rifing for a while, it can be scary to feel a tumor that appears to be getting larger and is causing more pain. But these changes do not necessarily indicate that the cancer is growing and spreading. Consider the following responses of tumors to rifing:

- *The tumor becomes larger before it gets smaller.* This may be a sign of healing. What seems to be an increase in tumor size may be the body's natural response to toxic material: debris is surrounded so it does not migrate to other areas. Swelling and inflammation occur after a tumor starts to break apart because the body is sending lymphatic fluid (comprised of blood plasma, liquid without the red blood cells) to cushion the area, and white blood cells (one type of immune cell) to scavenge the wastes. This material surrounding the tumor is spongy or soft. If the tumor *is* being destroyed, the area will eventually become smaller.
- *The tumor becomes smaller immediately.* This scenario is much easier to handle emotionally than if the tumor first swelled before becoming smaller. One Rife researcher has reported that sometimes tumors become harder before disappearing.
- *You feel pain where no pain was felt before.* According to Dr. Richard Loyd, increased pain can be a good sign. The pain can accompany enlargement. Tumors often swell and get inflamed just before they disappear.

Whatever changes you undergo, *carefully monitor the tumor.* Make sure your detoxification pathways (kidneys, liver, colon and skin) are clear enough to eliminate waste. Drink plenty of mineralized water to help flush the waste from your system.

Also, *spend enough time with each frequency.* Three minutes per frequency is usually the minimum time, but for people with cancer, some frequencies are more effective if they are used for one hour each.

If you are using a pad unit or a plasma tube device whose tubes are meant to be held, and you know where the tumors are, work on a 6-inch square area at a time. Two tumors that are very far apart should be treated as two distinct areas. When using a freestanding plasma device, you can try treating different tumorous areas as distinct locations by pointing the light close to those areas.

**Q. I have cancer. Despite rife sessions twice daily, my CEA levels are increasing, not decreasing. Is there reason to be concerned?**

**A.** CEA is an acronym for *carcinoembryonic antigen*, a protein found in embryonic tissue but not in normal infant, child and adult tissue. During pregnancy, CEA proteins assist in the rapid growth of the fetus. Cancer cells, which have abnormally rapid growth similar to that of a developing fetus, are thought to contain these proteins as well.

Cancer specialists typically use CEA levels as an indication of cancer in the body. But CEA tests may not be reliable. Not all cancerous tissue produces CEA; this protein may be limited to the lung, breast, ovary, pancreas, and a few other sites. Increased CEA levels can also indicate states *unrelated* to cancer, such as some types of inflammation, liver conditions and stomach ulcers. In addition, smokers tend to have higher CEA levels than non-smokers.

New York City-based medical doctor Nicholas Gonzalez—the recipient of a $1.4 million grant from the National Center for Complementary and Alternative Medicine, and specialist in the Kelley cancer protocol (raw foods, coffee enemas and huge amounts of pancreatic enzymes)—has a more comprehensive understanding of CEA readings. The reason CEA tests are so unreliable, Gonzalez says, is that when a tumor breaks down, it releases measurably high amounts of CEA into the bloodstream. Ironically, the healing due to the breakdown of a tumor is often misinterpreted in lab reports to mean that the person is becoming sicker, which is the opposite of what is actually occurring. As an illustration, Gonzalez mentions one person with cancer who completely recovered—but with a CEA of 350,000, the highest in medical history.

### Using Two Units to Treat Cancer in the Hz Range

Several years ago, a researcher in the UK reported that if he ran a frequency from two separate sources at the same time, the results were much better than if the frequency were run from a single source. He said that the frequencies would be out of phase with each other and a fraction of a Hz different from each other.

Some experimenters have applied this concept by running a pair of frequencies that are 1 to 2 Hz apart. This combination seems to work about five times better than a single-source frequency. One person reported destroying a tumor in just a week, using an EMEM unit that can emit dual frequencies. For those who have this setup or an equivalent one, the following programs can be used, all at a duty cycle of 73:

- 727 and 728, for 30 minutes
- 2007 and 2008, for 45 minutes
- 2127 and 2128, for 45 minutes

People with brain tumors or lung cancer will have to start slow, with fewer minutes per program, as a tumor that's destroyed too rapidly can cause serious complications.

—Richard Loyd, PhD
www.royalrife.com, 2008

I would never tell anyone with cancer not to see a medical doctor. However, negatively evaluating CEA results without thoroughly understanding what the numbers may indicate, can generate unwarranted fear. This is why I would recommend a holistic practitioner as primary caregiver.

**Q. I have prostate cancer. Since I've been giving myself rife sessions, my PSA count has gone up, not down. Why? Does this mean the sessions are making me worse?**

**A.** PSA, an acronym for *prostate-specific antigen*, is an enzyme produce by the prostate gland. Normally, the prostate secretes small amounts of this enzyme into the bloodstream. According to allopaths, when too much PSA enters the blood, or if it enters the bloodstream too quickly (even when levels are within so-called normal range), this indicates enlargement, infection, or disease in the prostate gland. The first protocol that doctors suggest for men with high PSA readings is high doses of pharmaceuticals.

Most men with elevated PSA levels, afraid of dying from cancer and unfamiliar with holistic concepts, understandably follow their doctor's advice. However, a holistic perspective gives a much different story. This situation is similar to that of CEA readings (see previous question). When a prostate tumor starts to break down, the PSA count can rise in response to microbial die-off. A PSA test doesn't distinguish between viruses that are living and viruses that are killed by the body. If the viruses are killed by the body, it means that the immune response is working properly.

An experiment described in the *Journal of the National Cancer Institute* contradicts the conventional medical model, exposing it to be an assumption rather than fact.

> Measurement of serum levels of prostate-specific antigen (PSA) is widely used as a screening tool for prostate cancer. However, PSA is not prostate specific, having been detected in breast, lung, and uterine cancers. In one study, patients whose breast tumors had higher levels of PSA had a better prognosis than patients whose tumors had lower PSA levels. . . . To our knowledge, this is the first report that PSA may function in tumors as an endogenous anti-angiogenic protein [which prevents cancerous tumors from developing new blood vessels]. This function may explain, in part, the naturally slow progression of prostate cancer. Our findings call into question various strategies to inhibit the expression of PSA in the treatment of prostate cancer.[38]

Since the publication of this experiment in 1999, the medical community has put more energy into developing procedures that deprive rapidly growing cancerous tissue of its needed blood supply. But many doctors, and men with prostate cancer, still believe that high PSA levels indicate illness, and respond inappropriately according to what they believe rather than to the facts.

In Dr. Nicholas Gonzalez's experience, people with high (one hundred or over) PSA levels for long periods are *recovering* from cancer. To him, increased PSA levels clearly signify a positive, healing response by the body.

**Q. I've already had chemotherapy and radiation treatments for cancer. Can I still use rife technology?**

**A.** Chemical "therapy" consists of the administration, via either intravenous drips or injection, of poisonous substances. The rationale (or hope) is that the tumors

will die from these poisons before the rest of the body does.

Some enlightened doctors are achieving better than average results, and with reduced amounts of chemicals, if they apply heat, and/or inject mistletoe (an herb), at the tumor sites first. Since heat and mistletoe make tumors more vulnerable to being destroyed, much lower doses of chemicals can be used, and the chemo toxins are local rather than systemic. This makes rifing much easier on the system. It also means that someone with cancer may be able to give themselves rife sessions soon after receiving chemo, or even possibly on the same day.

Unfortunately, most people with cancer are given chemicals that do not remain local, but spread throughout the entire body. This is not sound science. Sometimes the body is simply too weak and tired to adequately eliminate the toxic chemicals along with the debris from any killed cancer tissue. Chemo can overwhelm the liver and impair its ability to break down toxic materials into substances that are less harmful. Yet the medical-pharmaceutical industry uses the word "therapy" to describe this chemical poisoning. Should the word "therapy" be used for a protocol that involves poisoning?

That said, I will address your question directly. There are two schools of thought regarding rife technology and chemo. The first says that rifing does *not* work as well for people with prior or present chemo experience as it does for people who have not had it, due to the harmful effects of noxious chemicals on an already weakened system. In fact, the chemo causes so much stress—if not outright debilitation—that when the frequencies start destroying cancerous tissue, the body cannot excrete all the toxic waste. This does not indicate anything negative about rifing; it simply demonstrates that the frequencies are doing their intended job.

A contrasting viewpoint says that chemo can actually work *better* if the person is rifing. At the beginning of this chapter, I discussed how the energy fields from electromedical devices (including rife units) can cause cell membranes to become more permeable. By definition, a cancer cell has low membrane potential. This means that it doesn't have enough energy to pump toxins out, so the chemo poisons remain inside the cell and kill it. Since rifing helps chemo work more effectively, *the chemo dosage may have to be lowered if you are also rifing. You must also be carefully monitored to ensure that the dosage is always correct*.

People who have already undergone chemical treatments for cancer and want to use a rife unit should take precautions. First, be reasonably sure that you are strong enough to handle the elimination of waste materials. A qualified health care practitioner can check your colon, kidney, liver and lymph function. Second, you may want to wait 2 to 5 days between your last chemo treatment and your next rife session. This is especially important if you are seeing an oncologist or other medical specialist who isn't familiar with rife therapy and is unable to provide the monitoring you need.

Some people who are diagnosed "terminal" figure they have nothing to lose, so they undergo chemo and rifing at the same time without a waiting period. If you do this, please seek appropriate guidance.

As for radiation, Rife researchers have found that rifing does not seem to noticeably affect, or be affected by, radiation treatments. Ask your doctor or holistic practitioner how to proceed.

Whatever path you choose, it can be very helpful to join a support group of other experimenters to share experiences with frequency devices. Several Internet support groups are listed in the Resource Appendix.

> Modern conventional medicine does not test for cell-wall-deficient bacteria during the process of diagnosing diseases. Hence, there is a wide range of symptom presentations having these bacteria as a root cause which end up being diagnosed with nonsense disease labels such as "fibromyalgia," "chronic fatigue syndrome," or "depression." These disease labels (and many others like them) are flawed because they provide only a description of symptoms but absolutely no useful information about the cause of the problem. Such diseases are those known in the conventional medical community as "idiopathic." The word means "without known cause" but is really just a fancy way to say "we have no idea what is wrong with you." Diagnosing muscle pains with the label "fibromyalgia" is like diagnosing a broken transmission in your car with the label "It Just Don't Work No More."
>
> —Bryan Rosner, *The Top 10 Lyme Disease Treatments*, 2007

**Q. I have Lyme Disease. Is there a special protocol I need to follow?**

**A.** To answer this question, I consulted with Bryan Rosner. Rosner, badly infected with Lyme, systematically tested on himself a broad range of allopathic and holistic protocols. He also observed the success or failure of these protocols with other Lyme sufferers. This resulted in two very informative books, *Lyme Disease and Rife Machines* and *The Top 10 Lyme Disease Treatments*.

Doctors commonly prescribe allopathic antibiotics to treat Lyme. But there are some major problems with this approach. One faulty assumption, Rosner writes, is that the Lyme bacterium is always treatable, when in fact it

> exists in three different morphologic forms (and is capable of shifting from one form to another as the environment changes), each having different characteristics and vastly different vulnerabilities. Two of the bacterial forms are active and symptom-producing: the spirochete (a spiral shaped pathogen with an outer cell wall) and the cell-wall-deficient form (sometimes referred to as variant or L-form) with no cell wall. The third bacterial form is dormant and not symptom-producing: the cyst form, an irregular, compact ball with a dense outer capsule that makes it completely resistant and impenetrable to most environmental threats (including antibiotics). . . . Since antibiotics cause Lyme Disease bacteria to rapidly convert to the near-invincible cyst form, antibiotics can have a self-limiting effect.[39]

Since Lyme is one of the most difficult diseases to treat, a combination of holistic and allopathic modalities is often needed. Some of the most helpful therapies that Rosner recommends are:

- *Rife Therapy.* Rosner unequivocally states:

  > Rife therapy is by far the most useful treatment for chronic Lyme Disease. It prevents an active Lyme Disease infection from worsening, and also slowly reduces the bacterial load. Total recovery time ranges from between 6 and 42 months, depending largely on severity of the infection; how long a person has been infected; exercise, nutrition and lifestyle choices; and other unknown factors which may include genetics and the particular strain of bacteria.[40]

- *Antibiotics.* Conventional antibiotics alone can work only if the condition is treated within a few weeks of exposure; otherwise, a multifaceted approach must be used. Medications should always be used in moderation. Different forms of Lyme bacteria require different types of medications. Be aware that bacterial resistance is often seen before a significant percentage of the bacteria have been eliminated. The best way to utilize antibiotics of all types is in conjunction with rifing.

  > When pharmaceutical or non-pharmaceutical antibiotics are in use, rife machine treatments are needed less. In the same way, because of rife machine therapy, pharmaceutical and non-pharmaceutical antibiotics are needed less. . . . Rotating therapies like this also increases antibacterial effect as you hit the elusive and resilient bacteria from different angles.[41]

- *Magnesium.* Unlike most bacteria, the Lyme spirochete utilizes magnesium, and not iron, to proliferate. As a result, people infected with Lyme tend to have a severe magnesium deficiency—compounding the magnesium deficit often seen in the population as a whole. One highly absorbable and assimilable form of magnesium is magnesium chloride. The least expensive form of pure magnesium chloride is sold as *nigari*, the coagulating agent used in the manufacture of tofu. Magnesium in the form of magnesium malate breaks up lactic acid accumulations that cause muscular pain.

- *Coenzyme Q10.* This vital nutrient is used as an antioxidant and for energy production in the body. It also protects the nervous system and boosts immunity. Known as critical for healthy heart function, Coenzyme Q10 has also been discovered to be deficient in people with Lyme.

- *Transfer Factor.* Transfer factors are tiny immunity molecules found in the colostrum of a nursing mammal for only a couple of days before the actual milk flows. The typical immune response works in the following way. First, properly working immune cells identify the pathogen as a threat. Next, they devitalize and eliminate the pathogen. Finally, they remember the pathogen so it can be abolished in the future. Transfer factor molecules are part of the immune response. By transferring information from cell to cell, transfer factors teach new cells, creating a strong immune system that can withstand infectious diseases. This is why medical studies show that babies who nurse have much better lifetime protection from infection and disease than those who do not nurse. See the "Autoimmune Diseases" entry in Chapter 5 for more information, and the Resource Appendix for an excellent source of transfer factor supplementation.

- *Lithium Orotate.* As discussed in Chapter 1, lithium is a vital nutrient. It plays an important role in Lyme because of its ability to protect the brain from the effects of heavy metals, pharmaceuticals

and mycotoxins. Lithium also appears to hinder the reproduction abilities of many kinds of viruses. According to the late medical doctor Hans Nieper from Germany, the best form of this nutrient is lithium orotate. Only a small amount is required for optimal absorption and effectiveness.

- *Colloidal Silver.* Widely used not only in the holistic arena but, more recently, in allopathic circles as well, silver is known for its ability to kill one-celled microorganisms. However, evidence suggests that in addition to its properties as a natural antibiotic, silver is also a vital nutrient and helps immune function. It may be quite depleted in seriously ill people. See Chapter 3 for a detailed account on the history, uses, and home production of colloidal silver.

- *Marshall Protocol.* Since Lyme causes considerable pain and debilitation, many sufferers are understandably open to unusual treatments. The protocol from Trevor Marshall, PhD, is controversial. Some people swear it's the only therapy that has worked for them; others report severe systemic damage. After successfully eradicating his own sarcoidosis (inflammatory nodules on organs and glands), Marshall applied the same protocol to Chronic Fatigue Syndrome, Crohn's disease, fibromyalgia, rheumatoid arthritis and Lyme.

  The treatment is partly based on findings that some bacteria (including Lyme) hide from the immune cells in various body tissues and also in the immune cells themselves—which, when infected, release inflammatory *cytokines* (proteins that cause pain and fatigue). Marshall maintains that some bacteria create substances that can bind to, and decrease the activity of, the body's receptors for (disease-fighting) Vitamin D—and that to correct the faulty biochemistry, one should receive long-term numerous antibiotics, along with the drug Benicar™ (Olmestartin Medoxomil). Originally FDA-approved for lowering blood pressure, the drug's off-label use, Rosner writes, is for "modulating the immune system and reducing infection-related, non-productive inflammation so the immune system can better detect and fight infections." Lyme endures "because the infection creates chronic inflammation that short circuits the immune system." In addition to opening the Vitamin D receptors, Benicar™ "reduces or eliminates excessive inflammation . . . [so it may] cause the Lyme Disease bacteria to lose its ability to persist inside the body."[42]

  This protocol also requires reducing Vitamin D levels in the body, thus shutting down an intricate cascade of reactive biochemicals. This is accomplished by changing the diet, and by completely avoiding sunlight for up to two years. Outdoors, the skin is kept covered and special sun-proof glasses are worn. Once the bacteria are killed, the Vitamin D receptors are reactivated and the body can again produce its own potent, broad-spectrum, antimicrobial peptides.

  Even proponents of the Marshall Protocol acknowledge that it's difficult to follow. Benicar™ "side" effects include anxiety and irritability, digestive upsets (nausea, cramping and diarrhea), fatigue, difficulty focusing and concentrating, increased risk of heart failure and erratic blood pressure, muscle pain and weakness, respiratory distress, vision problems, and weight gain. Treatment must be medically supervised at all times. And those on the protocol must be highly motivated: most subjects who successfully complete treatment don't feel substantially better until after 18 months or more.

  The sun's beneficial emissions of (germicidal) UV rays and (biologically compatible) FIR (see Chapter 3) make the Marshall Protocol seem counterintuitive. True, sunlight helps the skin produce Vitamin D. But since the unbalanced Vitamin D metabolism is an effect, and not a cause, of Lyme, a better (and non-pharmaceutical) way to eliminate inflammation may be the ingestion of huge amounts of enzymes (see Chapter 3). Leukocytes (white blood cells involved with immune response) require enzymes to devour pathogens. MSM (methylsulphonylmethane) and curcumin extract (from turmeric root) are also anti-inflammatory.

- *Herbs. Boswellia serrata,* cat's claw and chaparral have strong anti-inflammatory properties. The latter two herbs are also anti-microbial, and excellent choices for Lyme sufferers. Teasel root is popular, as it relieves inflammation, promotes circulation, strengthens bones and ligaments, and soothes the digestive tract.

- *Salt with Vitamin C.* While rifing may eliminate most of the Lyme bacteria, the remaining can be quite difficult to eradicate; so symptoms persist. This "do it yourself" salt-and-C protocol gained prominence after being reviewed in a 2007 edition of *Townsend Letter.* For many people, the protocol promises not only significant relief, but a deep-seated cure. The customary amounts for adults are

## Make Liposomal Encapsulated Technology (LET) Vitamin C

People who are very ill often require high amounts (grams, not milligrams) of Vitamin C. But large amounts taken orally can cause diarrhea, and intravenous drips are expensive. Recently, the naturally-occurring *Liposomal Encapsulated Technology* (LET) was successfully applied to Vitamin C. Phospholipids (fats) and Vitamin C, together in solution, are subjected to enough pressure that the lipids totally surround the Vitamin C. When taken orally, the solution bypasses the digestive tract and the "Vitamin C bubbles" travel through the bloodstream directly into the cells.

LET Vitamin C is expensive to purchase. But thanks to research from Brooks Bradley, you can make inexpensive LET Vitamin C. Bradley found that the solution was about 70% encapsulated, and 5 grams of LET Vitamin C yielded results comparable to 50 grams of intravenously administered Vitamin C.

You'll need a 2-cup ultrasonic cleaner, either item #03305 from Harbor Freight or a more powerful unit. Some people use a high-speed blender, but you'll get stronger liposomal qualities with an ultrasonic cleaner. Since you'll need distilled water, it's worth buying your own water distiller. You can buy a distiller for a little over one hundred dollars.

**Directions:**

1. **Completely dissolve 3 level tablespoons of lecithin granules in 1 cup of distilled water in a covered quart jar.** Granular lecithin is made from soy (make sure the soy is not genetically engineered). If you're allergic to soy, you can use raw liquid sunflower lecithin, but the liquid will clump and take longer to dissolve.
2. **Dissolve 1 tablespoon of ascorbic acid powder (Vitamin C) in ½ cup of water.** Get ascorbic acid powder that is not made from corn, is not genetically engineered, and is not made in China. You can obtain such powder from the Vitamin C Foundation (phone: 800-894-9025).
3. **Pour the dissolved Vitamin C solution into the quart jar with the dissolved lecithin and shake.**
4. **Pour the entire mixture into the ultrasonic cleaner bowl and keep the unit running until the fluid is homogenized. It will have a milky appearance.** (The abovementioned Harbor Freight cleaner automatically stops about every 3 minutes, so simply push the "on" button to continue. Repeat for about 12 minutes). You may keep the cover open and stir the fluid with a plastic straw to facilitate mixing.

**Yield:** About 12 grams (12,000 mg) of Vitamin C product. Refrigerate the solution.

¼ teaspoon of pure sodium chloride with at least an equal amount of Vitamin C at the same time. The salt and Vitamin C can also be measured in grams. This translates to 1 gram of salt with at least 1 gram of Vitamin C. One teaspoon of salt is equal to approximately 6 grams. About 8 to 16 grams of salt are ingested per day. Amounts taken should be relative to body weight. This means that small children would daily ingest 4 to 6 grams each of the salt and Vitamin C.

The salt and C are taken every hour, 12 times a day—or as many times a day as you can tolerate. Some people begin taking salt and Vitamin C 3 times a day, and gradually build up the amounts.

Commercial table salt is never recommended because it contains harmful additives (see Chapter 3). Opinions differ on the benefits of using natural unprocessed salt, which lacks additives and contains other minerals in addition to sodium chloride. Although the other minerals are highly beneficial, it can be difficult to correctly assess how much sodium you are getting. Many people prefer 1-gram sodium chloride USP tablets (pharmaceutical grade), available without prescription from most pharmacies. (See Appendix A for source.) These tablets contain pure sodium and do not need to be measured. As for Vitamin C, most forms are acceptable. However, the buffered form (Ester-C) is better tolerated than plain ascorbic acid and other kinds, because it is not as acidic.

How does the salt-and-C protocol work? All microorganisms rely on a delicate balance of sodium and potassium to survive. The increase of sodium and corresponding decrease of potassium upsets the balance and leads to the death of the spirochete. A human can tolerate much more sodium than a microbe can. Salt also increases the activity of elastase, an enzyme. This enzyme, released by a type of white blood cell, helps destroy pathogens. The Vitamin C helps rebuild and detoxify cells, and restores immune function.

Is this program safe? Yes, if you follow two guidelines. First, drink plenty of water—*at least 8 ounces of water with each measured quantity of salt and Vitamin C!* To put the amount of salt into perspective, until recently our ancestors

consumed about 20 grams of salt a day. Meats used to be preserved with lots of salt. And farming and hard outdoor labor made people sweat profusely, so the sodium was always replaced by eating lots of salt. Since both salt and Vitamin C are water-soluble, drinking enough water will ensure that whatever is not being used is excreted.

The second guideline is tricker to follow. Many people are low in potassium. Excess sodium and not enough potassium can cause muscle pain and atrophy, and even cardiac failure. Medical supervision is strongly suggested to ensure that potassium, and also Coenzyme Q10, levels are sufficient.

How long should this protocol be followed? Spirochetes lie dormant in the body. So, even if you improve, continue for at least 6 months after your health seems normal.

Rife sessions with additional holistic protocols hold great promise for those suffering from Lyme. "Complementary therapies," says Rosner, "accelerate progress and dramatically reduce symptoms, but they should never be used as a replacement for rife therapy, the foundation that allows for continual progress."[43]

**Q. Is there a particular type of frequency device that's best for Lyme?**

**A.** People with Lyme use the GB-4000 (along with its RF amplifier), units from Pulsed Technologies, the PERL from Resonant Light Technology, EMEM5 devices, and the coil machine (also known as the "Doug device"). And some rifers use other devices too, such as the high power magnetic pulser. It's not a rife technology device, but emits an intense magnetic field that disables microbes. Each person responds differently to different equipment; no one unit will work well for everyone.

Only experimentation will help you discover which device works best for you. Some of the most successful cures occurred when the subjects drank one or more quarts of homemade colloidal silver a day, in addition to rifing.

**Q. Is there a special protocol for *Candida*?**

**A.** Preliminary data on nutritional supplements from physician Lee Cowden—in conjunction with frequency research under the auspices of Jimmie Holman and Paul Dorneanu—holds great promise for the elimination of *Candida* infections. But before discussing the supplements, I want to briefly explain why *Candida* can be so difficult to treat, and the reason why certain supplements may be needed.

### Does Rifing Work?

I believe there is a valid argument that Rife machines are as safe and effective as any other "proven" treatment for Lyme Disease. Rife machines have had the chance to show negative side effects over their 15+ year period of use, and have failed to show negative side effects. Rife machines are clearly useful because they help people get over longstanding Lyme Disease infections. If the help people get from Rife machines is the "placebo effect," why didn't the placebo effect show up to save the day when the sick Lyme Disease sufferer was trying hundreds of other therapies in desperation, without gaining benefit from them?

A risk/reward ratio evaluation often leads most people with chronic Lyme Disease to the conclusion that Rife machine use is justified.

—Bryan Rosner, *Lyme Disease and Rife Machines*, 2004

In its most harmless state, *Candida* exists as a one-celled yeast form (which reproduces through cell division). In a balanced body, *Candida albicans* lives in the intestinal tract, vagina and mouth without harming us. But when we become unbalanced—either through poor diet, illness, numerous medications (such as antibiotics, birth control pills and cortisone, which itself produces excess stress-inducing cortisol in the body), or physical and emotional tension (also cortisol-producing)—the trouble starts.

Normally, in the digestive tract, the beneficial bacteria ("friendly flora") residents—which help us break down our food and assimilate nutrients—exist at high enough levels to prevent *Candida* from proliferating and changing form. In fact, some of the friendly bacterial species, such as *Lactobacillus acidophilus* and *Lactobacillus bifidus*, actually dine on *Candida*. But when the flora die, or become too few in number, *Candida* flourishes. It also changes from its innocuous yeast form into a dangerous *mycelial*, or fungal form. The organism develops spores. It also grows rhizoids, which are very long, stiff, root-like stalks. These stalks attach onto their food source—you!—and then burrow deep into the body. If the fungus is in the intestines, it punctures the intestinal wall and then gets carried to other areas in the body through the bloodstream. Similarly, *Candida* punctures the mucous membrane lining of the mouth, a condition known as thrush. In the vagina, unchecked *Candida* causes the itching, burning, and cheesy discharge simply referred to as a "*Candida* infection," Candidiasis, or simply

"candida." Since *Candida* is most commonly found in the intestines, digestive problems are among the most common symptoms of *Candida* overgrowth. But the places that can harbor excess *Candida* fungus are virtually unlimited.

*Candida* not only punctures our cell membranes and spreads, but it also excretes dangerous chemical wastes called *mycotoxins*. According to *Candida* expert Dr. William Crook, at least 79 different toxins are released as byproducts of the fungus's metabolism. One major problematic—and surprisingly recognizable—toxin that *Candida* excretes is alcohol. The alcohol is created when the *Candida* ferments the sugars in either the gut or the bloodstream. (Alcoholic beverages are created by adding yeast to either grain or fruit, upon which it feeds—resulting in the excretion of a highly prized, toxic waste product.) Alcohol is especially problematic because it breaks down into *acetaldehyde*, a very dangerous and even more potent toxin. Acetaldehyde—which is chemically related to formaldehyde, a fluid used to embalm corpses—interferes with the body's neurotransmitter pathways, metabolism, immune response, and nervous and endocrine systems. That's virtually every important bodily function. Like the *Candida* spores, the mycotoxins also get dumped into the bloodstream and circulate freely among all the tissues in the body. This harms us as much as the physical cell damage from the *Candida* stalks. The tendency of acetaldehyde to accumulate in the brain, spinal cord, joints and muscles is what creates such a wide variety of debilitating symptoms. Between the Candida puncturing the body's cells, and the poisons being carried in the bloodstream throughout the system, symptoms can range from leaky gut and allergies to eczema and motor nerve impairment.

The anti-*Candida* program is multifaceted. Of course the body's vitality must be restored. But before that can occur, the fungus must be killed and its mycotoxins must be excreted. First, the *Candida*-killing regimen:

- *Frequencies*. In 2008, lab technicians in Romania, under the direction of Jimmie Holman and Paul Dorneanu, cultured *Candida albicans* in Petri dishes and bombarded the fungus with dozens of frequencies. Chapter 5 lists the pathogen-killing frequencies in descending order from "excellent" to "very good," according to the percentage of *Candida* killed from one exposure. Most of the numbers are in the 50 KHz range and higher. Keep in mind that Holman and Dorneanu used the equipment that they themselves manufacture. If your unit cannot transmit these very high MORs, Jeff Sutherland advises using square waves, which produce the widest range of harmonics, and setting the unit for a 10% duty cycle.

  If you feel you need more than frequencies to kill the *Candida*, you can use the following adjunctive protocols:

- *Colloidal Silver*. As with many Lyme subjects, most *Candida* sufferers who use colloidal silver tend to drink it by the glass in one sitting. In fact, it's not unusual for even a few quarts (liters) a day to be ingested. However, not everyone can tolerate this amount, at least initially. Years ago, when I was dealing with a severe case of systemic *Candida*, ¼ teaspoon of a 20 ppm (parts per million) solution killed enough fungus to induce severe brain fog! You may need to build up your amounts gradually.

  Be aware that *Candida* in the digestive tract can be killed only if the silver is drunk on an empty stomach, as CS disables only those one-celled pathogens it directly contacts. Also, continual ingestion of CS means that you'll need to purchase or make your own colloidal silver maker. See Chapter 3 for more information on making, storing and using CS. The Resource Appendix contains reputable manufacturers of CS generators, available at very modest prices.

- *Ozone*. In addition to supporting immune function, ozone kills pathogenic microbes without harming healthy tissue or beneficial flora. You can drink ozonated water and take ozone saunas. See Chapter 3 for detailed information.

- *Herbs and Essential Oils*. There are many effective anti-fungal herbs that can be taken as powders, tinctures, teas or in their essential oil form. Just a few are chaparral, olive leaf, cat's claw and pau d'arco. Pau d'arco bark is generally prepared as a tea, and the other herbs are put into capsules. The four essential oils that are anti-bacterial and anti-viral as well as anti-fungal, are eucalyptus, oregano, tea tree, and thyme. Essential oils are quite strong, so if you take them internally, make sure that they are food or therapeutic grade (intended for ingestion), and take them diluted in water or an edible "carrier" oil such as olive.

Effective rifing can cause the release of *Candida* mycotoxins, which disrupt neurotransmitter pathways, metabolism, immune function, and the nervous and endocrine systems. Portions of the following nutritional

program were developed by Lee Cowden, MD, to help neutralize the mycotoxins and repair the body.

- *Pantothenic acid (B5).* Among other functions, this B-vitamin helps the body metabolize proteins, fats and carbohydrates, and helps support the adrenal glands. Most relevant to this discussion is its ability to neutralize the alcohol-rich *Candida* toxins. Suggested amount is 450 mg daily, at one time.
- *Biotin (B7).* This B-vitamin also helps the body metabolize proteins, fats and carbohydrates, as well as control blood sugar levels. Most important, it prevents the *Candida* yeast from transforming into its more dangerous fungal form. Biotin is usually taken three to four times a day, 1,000 mcg each time. Amounts may need to be increased, based on individual need. Consult with your doctor.
- *Probiotics: Lactobacillus acidophilus a*nd *Lactobacillus bifidus* (also known as *Bifidobacterium bifidus*). These friendly flora, especially *acidophilus*, feed on *Candida*. They also produce biotin, in whose presence the *Candida* yeast cannot transform into a fungus. These flora also suppress *Candida* by excreting hydrogen peroxide (see **Oxygen Therapies** in Chapter 3). Recommended portion is at least double the suggested amount on the bottle, until the fungus is more under control.
- *Magnesium.* As discussed in the section on **Water** in Chapter 3, many people are deficient in this mineral. Magnesium is needed for hundreds of functions, including the efficient transport of electrons and nutrients across cell membranes. According to Dr. Cowden, the best form of magnesium to take is magnesium *malate.* As deficiency levels can be high, many people take more than the commonly recommended amounts.
- *Activated Charcoal.* Charcoal is created by heating (usually) wood or coconut shells at very high temperatures, around 1,000°F (538°C). This eliminates the volatile organic compounds, leaving behind only the carbon. The charcoal becomes *activated* when it's exposed to oxygen, which creates millions of tiny pores in the carbon.

  These tiny pores give activated charcoal its *ad*sorptive (not *ab*sorptive) quality. *Absorption* occurs when a substance passes into or through something else, as when water soaks into a sponge. *Adsorption*—characteristic of activated charcoal—occurs when a substance accumulates on the surface of another material, as when a toxic chemical latches onto the many bonding sites of the charcoal. Due to its porous nature, activated charcoal (AC) attracts and traps a great many carbon-based impurities: (so-called organic chemicals), chlorine (making it ideal for water filters), and other poisons. These include the acetaldehyde wastes from *Candida albicans*.

  The AC is not digested; but instead, it remains in the digestive tract and goes directly to the colon for excretion. This makes it an ideal remedy for poisoning from all types of chemicals and spoiled foods—in fact, its uses were documented as early as 1550 BC by the Egyptians. Since activated charcoal adsorbs many substances, including nutrients, it should be ingested at least one hour (preferably two) away from food and supplements. In cases of food or chemical poisoning, AC is taken within 30 minutes of ingestion of the poison. (Note that AC cannot be used to treat poisoning caused by corrosive acids or bases such as lye, or petroleum products like gasoline and kerosene. In addition, AC is not effective if the poison is lithium, cyanide, iron, ethanol or methanol.)

  Activated charcoal is completely safe, odorless, and tasteless. It costs pennies, especially when bought in bulk. It can neutralize thousands of times its own weight in gases, heavy metals, toxins, chemical poisons, pathogens and mycotoxins. To give you an idea how effective AC is, 50 grams, powdered to a very fine particle size, have the surface area of 10 football fields. The one caution to follow when taking AC is to make sure you take it with enough water; otherwise, you can become dehydrated and constipated. The usual dose is 1 teaspoon with every 8 ounces of water, following by 4 to 8 ounces more. Used externally, as a pack for wounds, AC requires no special cautions.

  When stirred in water, activated charcoal rises into the air like black smoke. However, this is a small price to pay for such a versatile product. When rifing for *Candida*, taking AC (away from meals and supplements, of course) can be useful.

Along with various substances that disable *Candida* and neutralize its mycotoxins, it's important to eat food that nourishes you without also feeding the fungus. This generally means a diet high in animal proteins and non-starchy vegetables, while avoiding (at least for the first several months) even complex carbohydrates such as grains, nuts and fruits. Some people find it helpful to eat raw sauerkraut, due to the presence of friendly flora.

Keep in mind that *Candida* feeds on heavy metals. *Heavy metals* refers to a class of minerals that are dangerous to humans and animals, and should never be ingested or inhaled. These include arsenic, mercury, cadmium and lead. These dangerous metals now contaminate our water and air, as they are deliberately added to thousands of consumer items from adhesives, batteries, carpets, compact fluorescent light bulbs and fabric softener to dental fillings, drugs, thermometers, and vaccines. If your diet does not promote *Candida* overgrowth and you have not used any fungus-promoting pharmaceuticals, consider testing for heavy metals.

By using the appropriate supplements, following an anti-*Candida* diet, and of course using the frequencies in Chapter 5, you will begin to see success in eliminating a widespread and debilitating condition. Don't forget to see a health professional for additional guidance.

**Q. Is there a special protocol for parasites?**

**A.** Parasites can be difficult to treat. Sutherland writes:

> Over the past decade, I've eliminated thousands of parasite infections from clients. Everyone has many of them. Most go unnoticed.
>
> To eliminate parasites requires the precise frequency for each stage of the parasite life cycle (at least four, often seven or more). This requires careful testing of the person along with the specific parasite strain, although it can be done remotely with a high resolution digital photo.
>
> Frequencies that are not within a few hertz of the exact frequency and zappers usually annoy parasites rather than kill them, often stimulating them to move around and proliferate as you have noticed. Also, killing one parasite, or one strain of a parasite allows other strains to proliferate. And killing a parasite infected with another parasite, virus, bacteria, etc. releases those pathogens into your system. Taking the random frequency or shotgun approach to parasites can generate a Herxheimer reaction.
>
> So usually, I figure out what the parasites are infected with and try to kill that first. Then I eliminate the parasite in all its stages, then watch for what starts to proliferate and kill that.
>
> While herbal protocols will clean out your digestive tract, the parasites will often move to other parts of your body, particularly the brain and sometimes the cardiovascular system which can cause high blood pressure, high pulse rates, or erratic heartbeats. So you really want to use frequency devices that provide a whole body effect. The right herbs are a good adjuvant therapy to keep the parasite body loading down while you eliminate the stragglers with frequency devices.
>
> Finally, a parasite may hole up in a very specific organ or portion of an organ system and nothing will eliminate it without plate zapping. So you need to have a means of detecting where in the body a specific parasite is hiding, figuring out what it is infected with, determining the stages of its life cycle and the specific frequencies for those stages, along with slightly different frequencies for different strains of the same parasite.
>
> It's a daunting task. As a result, most people do not get consistent results with Rife frequencies for parasites. With exactly the right frequency set, however, frequencies will eliminate a specific parasite strain quickly and consistently.[44]

**Q. Is there a special protocol for dental infections?**

**A.** Sending electrical current through the face is generally not advised. If the current is too strong, the sensitive skin will burn. Plus, it's dangerous to pass current though the carotid artery (located on each side of the neck, under the jaw), as this might damage the heart. However, some people report excellent results using electrode patches on the cheeks, *at the lowest possible volume,* while holding salt water in the closed mouth. The highly conductive salt water ensures that the current penetrates the tissues. With this delivery system, it's the electrical current, rather than specific frequencies, that disables pathogens. European practitioners suggest using any frequency below 1000 Hz. Six consecutive days of 1-hour sessions works for many dental problems.

**Q. Rifing relieved pain I had for decades. If the frequencies are supposed to kill microbes, why would they work for pain?**

**A.** Michael Tigchelaar reports that for 26 years, a friend of his suffered hip pain due to an old football injury that was completely relieved in one 30-minute session. He writes:

> It is possible that the electrical impulses generated by this set mimic the electrical discharges of the central nervous system and instruct the brain and body to generate specific neuropeptides, the key chemicals used by the body to heal. Proper communication between the brain

> and the area of pain may then invoke a rapid healing process that previously may have not been possible.[45]

The effects of various types of beneficial radiation are discussed in more detail elsewhere in this chapter, in Chapter 2, and in Appendix C, "Healing with Electromedicine and Sound Therapies."

**Q. Are there any conditions that rifing can't help?**

**A.** There are several conditions that the frequencies may not be able to correct: damage caused by nutritional deficiencies; damage due to drugs or toxic chemicals; severe trauma due to surgery or mechanical injury; and damage due to the effects of electromagnetic radiation, as long as the radiation continues to exist.

That said, it can't hurt to experiment. At best, some of the frequencies may help regenerate some tissue, or at least alleviate pain. At worst, the frequencies won't have any effect.

### *Updates on Rife Technology and Treatments*

**Q. How effective can the sessions be if the machine I am using wasn't built by Royal Rife himself? Is it possible to obtain an original Rife Ray?**

**A.** While it's true that modern units do not perform quite as well as Rife's best Beam Rays unit did, this technology is still remarkable in its own right. Frequency devices that utilize principles similar to what Rife developed have helped hundreds of thousands of people worldwide, and continue to help.

**Q. Are any of Rife's microscopes still in existence? And do they work?**

**A.** Rife's original microscopes that are still in existence are either not working, or are being kept away from public access by their owners. Until recently, Rife researchers, doctors, naturopaths, microscopists, and others were unable to use Rife's superior technology to verify the effectiveness of some frequencies (although some disease organisms *can* be viewed live with conventional microscopes because they are so large). Fortunately, one microscope that even exceeds the power and accuracy of Rife's microscopes is now available for sale. In the early 2000s, the German company Grayfield Optical launched the Ergonom microscope, invented by scientist Kurt Olbrich. The Ergonom not only renders viruses visible in their live state, but it has a depth of field unsurpassed by any other microscope, including those invented by Royal Rife himself. First the company released its top-of-the-line Ergonom. Now it offers less expensive models that allow most pathogens to be viewed unstained, and whose resolution, color contrast, and depth of field are still significantly better than those of normal optical microscopes. This holds great promise for Rife researchers who want to obtain data quickly and easily. See the Resource Appendix for more information.

Meanwhile, in the US, Stanley Truman and W. Eric Rowley are working on an economical instrument called the Nanoscope that can view live viruses. This microscope is still in the development stage.

**Q. If rife technology is so successful, why haven't I heard about it?**

**A.** There are many reasons why the American public has not heard of rife therapy. It's illegal for any type of frequency device to be marketed in the US to treat illness (although a few machines are cleared or approved by the FDA for pain management). Medical journals do not accept research on rife therapy for publication—although ironically, for decades thousands of studies that don't acknowledge Rife and his inventions have been published on the successful use of frequencies to treat illness (see Appendix D). Recently, a US researcher made some preliminary data available on using a Bare-Rife machine to kill leukemia cells *in vitro* (see Appendix E); but whether this therapy will be embraced by mainstream medicine remains to be seen.

In general, though, US doctors caught using rife technology in their practices may have their medical licenses revoked. This is why the majority of medical studies on frequency therapy are conducted outside the US, and the technology is approved for use in countries outside the US.

Many people believe that since they haven't been exposed to this technology, it's either fraudulent or a fairy tale. But nothing could be further from the truth. Let's explore the mechanisms of repression in greater detail.

- *The Lack of FDA Acceptance, and Pressure from the Pharmaceutical Industry.* As discussed in detail in Chapter 1, in the United States the pharmaceutical industry has a cozy relationship with the FDA and the AMA. Depending on many variables, it can cost from $800 million to $1.7 billion or even higher *per drug or medical device* to prove that a drug or device is effective. Pharmaceutical companies quickly and easily recoup their investment because these "testing" fees are built into the cost of the drug. Also, since a drug does not eliminate the root cause of an illness, but instead merely suppresses

symptoms, its use creates repeat customers. A consumer might spend thousands on the same drug over the course of many years or even a lifetime.

In comparison, rife technology can eliminate all or most drugs, the equipment is bought only once (or is replaced or upgraded infrequently), and can be used not only by the purchaser, but by that person's family and friends. Therefore, the profit margin for frequency machines is relatively slim. The few electromedical device companies that have been able to invest considerable sums into testing for the FDA or Health Canada (the Canadian equivalent of the FDA), have received approval not for specific medical conditions, but for pain management.

The FDA clearly favors treatment methods that support allopathic practitioners. To obtain drugs, one must visit a doctor for a prescription. In contrast, rife sessions can be self-administered, often without doctor consultations. Moreover, rifers tend to consult health care providers who are holistic. Holistic practitioners are often harassed by the medical authorities, sometimes arrested, and even have had their licenses seized for promoting non-invasive methods of healing that do not involve drugs.

- *Media Blackout in the Scientific Community and the Mainstream News.* Another reason that rife technology is still relatively unknown is the resistance to its being publicized, in both medical journals and the mainstream news. In the Rife community, respected MDs and PhDs have had their credible research submissions returned to them by the editors of medical journals. And since medical journals will not publish clinical trials on rife technology, newspapers and magazines generally don't report on it. So the vicious cycle continues. People who depend on government approval for safety and effectiveness of a treatment are wary about trying a modality that is neither well publicized nor legally approved for medical purposes.

  In the US, the general public tends to believe that if you haven't read about something in medical journals or newspapers, or heard about it on the 6 o'clock news, then it's not worth knowing about. *But publicity is not the equivalent of quality.* Just because an article is accepted for publication in a medical journal doesn't mean that it's scientifically sound or even worthwhile. Conversely, just because an article isn't printed doesn't mean that its content is trivial or invalid. It might be about the healing modality of the century—but the public will never have the opportunity to find out what it's missing.

- *Peer Pressure and Legal Intimidation of Doctors and Scientists.* Some scientists and clinicians in the US are unwilling to risk publicizing their research because of the notoriety surrounding frequency therapies in general and rife technology in particular. Not only are doctors (understandably) unwilling to subject themselves to unfounded fear and prejudice, but using equipment in a medical context that has not been FDA approved for medical purposes allows a medical board to legally revoke a practitioner's license. Many of Rife's colleagues received threats of losing their licensure. This mentality unfortunately has not changed very much in 70 years.

  Although some manufacturers do conduct their own clinical studies, legal prohibitions against making claims of curing disease force their studies to remain private. Thus, most users—at least in the United States and Canada—must rely on anecdotal reports.

  The average consumer cannot expect to hear about rifing from his or her doctor, either. As discussed in Chapter 6 and in Appendix B, "Legal Implications of Rife Sessions," licensed health care professionals are not allowed to use rife technology in their practice for fear of their licenses being revoked.

  Despite the lack of publicized testing of rife equipment in the US, a fair number of conscientious clinicians and rife therapists are conducting their own clinical trials. On request, they will present medical records such as oncology reports, "before" and "after" X-rays, and other written statements on hospital or doctors' stationery that indicate complete healing of the disease (this often includes remission from cancer). One Rife researcher I know is holding structured sessions with volunteers, and is careful to conduct the following "before," "during" and "after" tests: urine and saliva pH analysis, a 24-hour urine sampling to monitor minerals and trace elements in the body, the quantity of microbes in saliva, and live blood analysis on an ongoing basis. However, medical journals will not publish these reports. Most medical journals contain pharmaceutical ads. Those journals that do not, are financially supported by the drug companies.

  Many countries outside the United States are not only conducting electromedical research, but they are using rife and other equipment to treat serious diseases. Nevertheless, the majority of people in the US believe that this country sets the "gold

standard" for knowledge. This belief is narrow and limiting—not to mention insulting to other cultures! Ultimately, those who choose the path of fewer options will pay a high price. They will sacrifice not only their health, but also their autonomy and freedom.

**Q. Where can I find documentation of successful clinical trials showing that rife technology has cured illness? And where is this technology being used today?**

**A.** Although the climate in the US and Canada is bleak, outside North America the situation is very different. Serious scientific research has been conducted in Australia, Austria, Belgium, China, Finland, Hungary, Ireland, France, Greece, Italy, Luxembourg, Portugal, South Africa, Spain, Romania, Switzerland, South Korea, and the Ukraine, among other places.

In some of these countries, medical clinics and hospitals routinely use frequency devices (many of which are pad units). "In Europe, where I am based," writes Peter Walker, "rife is used in mainstream medicine."[46] Mr. Walker, a Britain-born researcher who speaks fluent German and lives in Germany, regularly posts research on electromedicine on his website. Here is a small sample of some studies and clinical trials that resulted in units being approved for medical use outside the United States:

- The Hungarian/German device company, Oncotherm (www.oncotherm.org/eng), manufactures fully certified electromedical devices for the European market. Their EHY-2000 unit combines rife-style frequency treatments with heat therapy (called hyperthermia in medical circles) for the treatment of cancer, as both cancer cells and microbes cannot survive at high temperatures. The equipment, used in European hospitals, has successfully treated over 100,000 people. One of many studies proving the efficacy of the machine was conducted by Gabor Andocs, DVM, in Budapest, Hungary. In the controlled study using rats, hyperthermia was found to be 17% better than no treatment whereas Oncothermia—as the combination of hyperthermia and rife modulation is called—was found to be 56% more effective than no treatment, and three times more effective than hyperthermia alone. The electrical field of the combined heat and frequencies is directly absorbed into the extracellular liquid of the tissues, thus destroying the membranes of the cancer cells. Treatments have proven successful at eliminating tumors in the bladder, brain, breast, cervix, colon, esophagus, kidney, lungs, ovaries, pancreas, stomach and throat, among other areas.
- The PET machine, made by Electromed in Australia, is a rife unit approved for use in Australia. Although the machine is approved for treating arthritis and back pain, one can use this device to treat a wide range of illnesses. The following medical study on the efficacy of rife technology was performed in Australia:

> The effectiveness of Audio Frequency [rife] Therapy in relieving arthritic symptoms in 49 randomly selected volunteers suffering from chronic rheumatoid and osteoarthritis was investigated in a 3-month placebo study, conducted at the Tuggerah Lakes Community Centre on the Central Coast of New South Wales (10th May 1993 to 14th August 1993).
>
> The net mean reduction in pain of the treated volunteers, when compared with the untreated group, was 21% which is in good agreement with the net mean 26% reduction in oxidative processes in the treated versus untreated groups.
>
> The significant improvement in treated volunteers' signs and symptoms was confirmed in written testimonies requested from each participant at the conclusion of the study. . . . The study results suggest that . . . Audio Frequency [rife] Therapy is highly effective in the treatment of osteo and rheumatoid arthritis. After 36 three-hour treatment sessions of Audio Frequency Therapy, the net mean overall improvement in the arthritic condition of treated volunteers (irrespective of type of arthritis suffered) was approximately 25% (based an analysis of pain levels and HLB blood tests).[47]

Several pad devices, including the Swiss F-Scan, have been given official European medical CE certification (the equivalent of FDA approval in the US) for use by medical doctors.

The Internet has been a major influence in bringing cutting edge material to the public. Perhaps this is one reason that medical organizations—along with some government officials in the US, China, and other countries—are trying to restrict access to this material. In some cases, they have succeeded.

**Q. Where can I find the devices you mention in this *Handbook*?**

**A.** See Appendix A for selected frequency device manufacturers. In addition, you can find electromedicine equipment on the Internet. Keep in mind that rife machine vendors are not allowed to make medical claims for their units, so the data you are given may be less informative and substantial than you'd like. Sellers of equipment are not even permitted to provide anecdotal reports from users about how the machines have helped them. At best, you'll find a good summary about the specs of the unit itself: how much power it emits, its size, features, the range of frequencies it delivers, its programmability, etc. While this is useful and necessary information, you won't get its track record in treating illness.

You can, however, find forums and chat groups on the Internet devoted to rifing and other electromedical equipment. Many users are eager to share their stories of healing (or not) with others. If you have Internet access, spend time online with other experimenters. You will learn a great deal that sellers are legally forbidden to put into writing.

All kinds of electromedical equipment, including rife devices, are on the Internet. You can search for them with phrases such as "rife device," "rife machine," "rife frequencies," "frequency device," "frequency therapy," "resonant light," "pulsed plasma," "pulsed energy," "electromedicine," etc. These keywords may lead you to articles on diseases that are treated with pulsed magnetic or electrical fields, but which do not specifically mention the word "rife." Also, see Appendix D for selected studies using frequency therapies and Appendix E for information on an *in vitro* study using a Bare-Rife machine.

**Q. Why don't you, the author, manufacture or sell frequency devices?**

**A.** In the US, it's against the law to sell a device, supplement, or other item that claims to treat a specific medical condition if the product is not accepted by the FDA for medical use. This means that the labels and literature for the item are very tightly regulated as well. The manufacturer has very specific instructions as to what information is allowed to accompany the device or supplement. This *Handbook* explicitly describes medical uses for a device that's not medically accepted. If I manufactured or sold frequency devices, this manual would be legally construed as medical literature (or a label) that illegally makes claims about the device. Because of that, I could be fined, arrested, and even sent to jail.

One way in which the seller or manufacturer can avoid making what might be construed as a medical claim—but which gives the consumer access to information—is to have a third party write the literature. This strategy is often used by manufacturers of nutritional supplements. Authors not directly affiliated with the company write about the product, thereby allowing the consumer to learn about the product without making the company liable for breaking the law. Currently, with such strict regulations over what is and is not permitted on labels and documents that accompany supplements and healing devices, third-party literature is the best way to provide much-needed information to the public.

There is another, personal reason that I do not sell any rife technology devices. Selling is one of my least favorite activities. My passions are writing and educating. Also, not being financially invested in a particular unit allows me to be more objective in my research.

**Q. I am a health practitioner and want to use a frequency device in my office. What do I need to know?**

**A.** There are three major considerations:

- *For legal reasons, you may want to use an FDA-accepted device.* The FDA most commonly allows a device to be used for two reasons: *research* and *pain management*. An FDA consent for research (secured by the manufacturer) covers a professional's use of a device for investigative purposes. Research can include treatment, as long as the practitioner keeps careful records. Outright FDA acceptance (*not* "approval") of a device for pain management follows the standards set by the familiar TENS unit. Even if the instrument may in fact do much more than help ease pain, "pain management" must be its official designation if the manufacturer wants to acquire and maintain FDA acceptance. Earlier in this chapter, I discussed the meaning of FDA acceptance of a device as a TENS unit.

- *Treat someone for the pain of cancer only if you can do this consistently.* The most popular cancer protocols involve rifing twice a day with no breaks. Do you have the time, energy, facility, and staff to administer to the client for a long-term commitment of 6 months or longer? One practitioner had a client with cancer (now recovered) who lived almost next door to her clinic. Since the woman

was trustworthy, she was given the keys to the clinic so she could let herself in and rife twice a day, even on weekends and holidays, when the clinic wasn't normally open. I mention this unusual situation as an example of the commitment required to help people with cancer. The majority of cancer subjects who take breaks from rifing find that the frequencies no longer work, and their tumors start to grow again because the microbes have mutated. (The F-Scan is an exception to this rule, however, since it can detect which frequencies the body needs.) If, however, you are capable of determining on an ongoing basis what frequencies the client needs, and you can make adjustments for microbe mutations, breaks between sessions will not matter.

- *Make sure the client's detoxification pathways are clear.* This include the colon, kidneys, liver, and lymph system. If they are congested, be ready to help open these channels. Since rifing usually releases plenty of microbial die-off, the body must be able to efficiently eliminate wastes.

**Q. How can I find out more about rife therapy?**

**A.** See Appendix A for sources of books, DVDs, Internet chat groups, websites, and frequency devices. See Appendix D for a small sample of published studies describing the use of frequencies to treat infections and degenerative diseases. And see Appendix E for an *in vitro* study on the ability of a Bare-Rife machine to destroy leukemia cells.

Now that you understand how rife technology works, please review the following Insert, "A Short Course on How to Give Yourself a Rife Session." This will help you experiment responsibly with the frequencies listed in the next chapter, in the Frequency Directory. Before the alphabetized listings are given, I explain how the symptom pictures are organized so you can obtain maximum benefit from the chapter.

## A Short Course on How to Give Yourself a Rife Session

### *Part I. The Basics*

1. ***Study the contraindications.*** This therapy may need to be modified or avoided entirely if you have a heart condition, are wearing a pacemaker, are pregnant, are nursing, have blood clots, are taking strong medications such as chemo, are wearing metal implants or stents, have breast implants, or are especially sensitive to radio frequency (RF) or other electromagnetic radiation.
2. ***Make sure your immune response and organs of elimination and detoxification are functioning.*** Expect to experience die-off symptoms as the pathogens are disabled or killed. Organs of waste processing and disposal include the colon, kidneys, liver, lungs, and lymph. If these become overloaded, waste materials may exit through the skin. If you have questions about your ability to detoxify, consult a health practitioner.
3. ***Read the operator's manual and run the unit through all of its steps before your session.*** Make sure the unit and power strip (highly recommended) are plugged into the wall and turned on. Consult your vendor about the assembly or operation of the unit.
4. ***Write down a complete health history, listing all symptoms.*** This includes acute (recent-onset) and chronic (longstanding) conditions, as well as conditions you've had for so long, you've resigned yourself to them as inevitable or unimportant. Continual symptoms can provide clues as to which frequencies are most needed, since some pathogens can linger in the body for years, and ailments not treated immediately can escalate into other conditions. Visualize, and expect, the best possible results. This will help you devise an effective protocol, as well as stimulate your immune cells.
5. ***Obtain a medical diagnosis, if possible.*** It can be helpful (though it is not mandatory) to have a diagnosis from a medical doctor. However, sometimes a doctor does not order all the necessary tests, or misreads the results of tests that are done. Also, your doctor does not live in your body. Your own research, common sense and intuition may serve you better than a doctor's diagnosis.
6. ***Look up the frequencies for your condition and/or relevant microbes, and write them down.*** To select the best and most relevant frequencies:
   - If you already know what's ailing you, learn more about your condition from a medical textbook or from Internet medical databases. Diseases are usually named according to either the microbe involved, the body part that's affected, or symptoms. Sometimes the same disease has different names in different countries. If you don't have a diagnosis, make a list of every disease to which your condition is similar.
   - Write down every body part that is affected by the condition, and in what way.
   - Write down which symptoms are the most severe or dangerous. These require priority attention.
   - Don't dismiss using a particular frequency just because you have only a few symptoms. Also, some frequencies work for a wide range of ailments: microbes can be involved in ulcers, Multiple Sclerosis, kidney stones, and even fibromyalgia. Rifing for one condition may help other conditions you might not have thought were related, as the same microorganisms are implicated in many disease pictures.
   - Consider other options. For example, someone medically diagnosed with a brain tumor got no results using frequencies for brain tumors. But when she tried frequencies for meningitis and encephalitis (both also disorders of the brain), she reversed her symptoms.
7. ***Program the frequencies into the unit***. If your machine is very powerful, use each frequency for 2 to 3 minutes. If your machine is not very powerful, if you're using a pad device, and/or if you need a particular frequency a great deal, program that number to run 10 minutes or longer.
8. ***Use the gate and sweep functions if your machine has them.*** In case the body or microbes become resistant to a steady unwavering signal, most devices have ways to bypass this resistance.
   - *Gating* puts a sharp point or spike onto a square wave, which drives the wave more suddenly and forcefully into the body without harming the human or animal host. This feature enhances the penetration power of the frequencies, to compensate for the possible resistance of the pathogens and the body to the signal.
   - *Sweeping* introduces one or more extra frequencies on either side of the main signal or "target" frequency, to ensure that you are targeting all of

the microbes and to compensate for any variations in the Mortal Oscillatory Rate. By sweeping, any stray microbes oscillating outside of the normal range will be caught.

- *Converging* is a type of fancy sweep that straddles the main frequency. With 2004 as the main or target frequency, here is an example of a converge: 2002, 2006, 2003, 2005, 2004. The frequencies around the target frequency are covered; and they are also administered in an asymmetrical way to prevent the microbes from easily adapting. Some experienced rifers feel that doing a convergent group of frequencies may be more effective than administering straight frequencies or even sweeping.

9. ***To maximize your rifing experience:***
   - Before your session, eat lightly rather than a large meal, as the microbial die-off might make you feel nauseated.
   - Wear loose-fitting clothes so you can relax.
   - Keep the room at a comfortable temperature, with a blanket nearby.
   - Place your frequency device at the proper location and distance from you. Consult the manufacturer if you're not sure where to put the machine.
   - Remove all jewelry and metal if you're using a contact device.
   - Sit or (preferably) lie down.
   - Dim the lights.
   - Drink water containing minerals or chlorophyll during and immediately after the session.
   - Don't engage in stressful activity, as your body needs this time to heal. If you watch TV or a movie, make sure it's uplifting and not depressing. Depictions of violence and unethical behavior weaken the immune response. Depictions of caring relationships and positive situations, such as characters taking charge of their own lives, strengthen the immune response.
   - Try not to use the machine after about 4:00 p.m., as the energy from rifing may keep you awake—and anyway, evening is a time to prepare for sleep. Also, drinking is required during and after rifing. If you drink just before going to bed, you'll have to interrupt your sleep to get up to pee. And if you rife without drinking, you may have a headache or other unpleasant reactions the next day.
10. ***For cancer:*** This requires an aggressive approach, but the following guidelines may need to be modified.
    - Spend from 1½ to 2½ hours for each session. Some people do 2 sessions per day.
    - Each frequency is run for about 3 minutes, depending on the power of the unit. But sometimes a frequency needs to be run for 5, 15, 30 or even 60 minutes; and some rifers use a single frequency for 1 to 2 hours with excellent results. It depends on your situation.
    - If you have too many frequencies to fit into 3 or 4 hours per day, create two days of programming and alternate the programs every other day.
    - If you feel a lot worse after a session, this may indicate microbial die-off. If your system becomes too overloaded with waste material, take 1 or 2 days off and resume.
    - Even after they are feeling better, most people give themselves at least one session per day for about 4 to 6 months. This ensures that the illness will not return.
    - Most people feel better within a month, and sometimes within days. If you don't notice any change after your sessions for several weeks, don't be discouraged. Consult a qualified health practitioner who can monitor your condition. And consider changing your protocol.
    - If you are undergoing intensive chemo, consider stopping the sessions until a few days afterwards. Otherwise, your liver and kidneys may be overwhelmed by poisons. Also, some people find that rifing intensifies the effects of the chemo so they need less medication. Consult your doctor.
    - Modern researchers have discovered that the lower hertz (Hz) frequencies work well for just about any condition, but cancer is better managed by the higher frequencies. Try to use a machine that can transmit in the megahertz (MHz) range so you can use Rife's original frequencies and/or the laboratory-tested cancer frequencies from Jimmie Holman. Using the higher frequencies will give you much better results. If your machine can't reach that high, set it to transmit a square wave. The higher harmonics produced by a square wave will give you some of the benefits of a higher main frequency.
11. ***For Lyme:*** Of all the infectious conditions, Lyme may be the most difficult to treat. The enormous amount of microbial die-off and other waste, plus

the depleted and weakened nature of the body, make it necessary to start sessions with less time per frequency and more time between sessions. When first rifing, do no more than 1 minute per frequency. Leave enough time between sessions to recover. You may need several days or even longer.

12. ***For other conditions:*** Consult a health care practitioner and listen to your body. These are general guidelines *only*.
    - Follow the guidelines for #10, but give yourself shorter session times. A general rule is, if you feel better the next day, do another session. If you feel a bit worse, do another session. If you feel a lot worse and dysfunctional, there may be heavy microbial die-off. Wait until you feel somewhat better again, and then do another session.
    - If you don't notice any change after your session, either run another session for a longer period of time, and/or change the frequencies.
13. ***Write down your responses to all of the frequencies used in the session, whether positive, negative or neutral.*** A written record of your physical, mental and emotional responses (if any) can help determine which frequencies were *hits* (produced a discernible response), and which frequencies did not work. This record can also help you plan a long term health protocol. Your reports may also be useful to others, should you decide to share your results.
14. ***Drink water in sufficient amounts, appropriate to your weight, size and toxicity level.*** The water should contain liquid minerals (electrolytes), chlorophyll, Vitamin C, or lemon to make it more assimilable. If you won't drink water, don't give yourself sessions, or you'll risk toxification from microbial waste.
15. ***Don't interrupt the sessions until you're completely well, unless you have a good reason for doing so.*** Some people who take a break from using the equipment before their illness is completely gone experience a recurrence. And sometimes, the frequencies they were using no longer work for them, probably because the microbes have developed a resistance to the frequencies. Be persistent about continuing with your program, *especially if you have cancer, Lyme, or a similar hard-to-treat condition.*



### *Part II. Troubleshooting*

***Let's assume that (a) the unit's working properly, (b) the signal is getting into the body, and (c) you have done everything suggested in Part I. If you are still not getting results with your protocol, and/or your condition is getting worse, see a health practitioner. Also:***

1. ***Be patient.*** Each body is physiologically and anatomically different. Therefore, the signals are processed by your body differently than by your friend's body. However, if you are getting steadily worse, see the following steps. And consult a qualified health practitioner.
2. ***Use different frequencies.*** Microbes can mutate, due to either natural variations in their evolution or differences in the body's terrain. Bodily terrain depends on acid-alkaline balance, diet, hormones, and even climate. Check for anomalous electromagnetic fields that could cause unexpected frequency variations. Check the Internet for updates on frequencies. Also, if you received a medical diagnosis, it may be incorrect. And try using another approach to your symptoms.
3. ***Do longer sessions.*** You may need to take a more aggressive approach, and spend either more time with the machine or more time per frequency. Some people find relief running one frequency for 45 minutes or longer.
4. ***Run frequencies for Candida and parasites, even if you think you aren't affected***. It's amazing how many conditions are either caused or exacerbated by fungi and parasites.
5. ***Eliminate silver-mercury fillings and mouth infection***. Mercury in fillings continually leaks, as vapor, into the mouth. Even in parts per billion (ppb) amounts, mercury is very toxic! See a holistic dentist. Some herbs chelate heavy metals out of the body; and some homeopathic remedies and electromedical devices can nullify the effects of mercury. Also, the mouth is a breeding ground for bacteria and hence disease. Infections not only impede progress, they can cause even apparently unrelated conditions including heart attacks, as the teeth are connected to every meridian in the body.
6. ***Consider that your system might not have adequate amounts of thyroid hormone***. Hypothyroidism—either from insufficient hormone output by the gland, or the inability of the cells to absorb and process the hormone—can exacerbate and cause other

conditions, ranging from cancer to fibromyalgia to heart disease. Fifty percent of the North American population may suffer from hypothyroidism. For more information, see **Glands**, *Thyroid*, in Chapter 5.

7. ***Use the regeneration and healing frequencies***. Your system may not be working the way it should (whether or not microbes are involved), and you may need to focus on glandular and organ support. Some frequencies may stimulate the body's cells to repair and regenerate, independent of any ability to destroy microbes.

8. ***Run the frequencies for chemical and heavy metal toxicity.*** Many illnesses are either caused or exacerbated by chemicals and toxic metals. These contaminants can be in air pollution, vehicle or factory exhaust, foods, cosmetics, carpets, construction materials and drinking water. Illnesses caused or exacerbated by chemical poisoning range from cancers to neurological disorders (such as Multiple Sclerosis, Parkinson's and Alzheimer's).

9. ***Use detoxification protocols for the liver and colon***. Many conditions can be alleviated partially or completely through detoxification. Detoxing may involve an herbal parasite purge, liver or kidney cleanse, sauna, colonic, or chelation to eliminate heavy metals. Just detoxing can make a huge difference in how you feel.

10. ***Try Chinese Medicine diagnosis***. There are relationships among all organs, glands and body systems. You might not be able to affect your condition with frequencies specifically for that condition, but focusing on related points may help. For instance, the spleen "controls" the mouth and lymph. So if the spleen is unhealthy, with deficient or excess energy, you could have a gum infection or clogged lymph vessels. Similarly, the kidneys "control" bone health. So if the kidneys are weak, you could suffer bone loss (osteoporosis). These relationships may not make sense to the Western mind, but they're still valid. Many acupuncturists obtain excellent results using pad units for hard-to-treat conditions by placing the electrodes at the site of meridians and acupuncture points.

11. ***Drink even more mineralized water than you were drinking before***. If the wastes are accumulating faster than the body can eliminate them, water will dilute the toxins to a more manageable level.

12. ***Pay attention to lifestyle: diet, exercise, sleep, and stress levels***. Since the allopathic medical model is so dominant in the West, some people tend to use Rife technology in a strictly allopathic manner. They think that simply zapping the microbes will eliminate the disease, without their having to pay attention to what made them ill in the first place. If your diet is poor, you'll feed the microbes, which thrive on junk. Don't underestimate the importance of food in becoming and remaining healthy. Similarly, if you don't get enough exercise or sleep (or if you get too much), and if you have no way of managing stress, this can help keep you ill.

13. ***Try other therapies***. If you're drinking enough mineralized water (and are using the correct frequencies) and you feel fatigued, congested, nauseated, thirsty, and/or have flu-like symptoms, try some protocols summarized in Chapter 3. These include lymphatic drainage, massage, ozone therapy and sauna therapy. Rife technology is compatible with virtually all holistic therapies. It has been used somewhat less successfully in conjunction with allopathic medicine (drugs), although people do manage to combine rifing with medically necessary surgery.

14. ***Learn to release, manage and make peace with your emotions, and eliminate any beliefs that may contribute to being ill***. Often, some frequencies provide relief from emotions such as anger. This makes sense, as microorganisms constantly excrete mycotoxins that cross the blood-brain barrier and poison the brain. Since the brain is the primary organ of emotions, perception of sensory input, motor function and cognition, mycotoxins will affect mood, motor coordination and ability to think, as well as exacerbate or cause numerous neurological disorders. Nevertheless, approaching emotional and mental issues from a psychological perspective is important, too. See Chapter 3 and the Resource Appendix for more information on some easy-to-use modalities.

15. ***Be aware that there are some conditions that rifing may not be able to correct***. These include: damage caused by nutritional deficiencies; damage due to drugs or toxic chemicals; severe trauma due to surgery or mechanical injury; and damage due to the effects of electromagnetic radiation, as long as the radiation continues to exist. However, it can't hurt to try. Some of the frequencies may at least help regenerate tissue or alleviate pain.

**If you have a medical condition, consult a qualified professional. If you are rifing, find someone familiar with Rife therapy, such as a naturopath, chiropractor, osteopath, herbalist, acupuncturist or holistic physician.**

## ENDNOTES


1 Jimmie Holman, email correspondence, April 11, 2007.

2 Jimmie Holman, email correspondence, April 11, 2007.

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*Some patients, though conscious that their condition is perilous, recover their health simply through their contentment with the goodness of the physician.*

— Hippocrates, "Father of Medicine" Greek physician (460–400 BC)

## *Chapter 5 Outline*
## *Frequency Directory*

Note: This list does *not* include single, stand-alone entries, which are in alphabetical order.


**Arthritis and Joints** ..... 420

**Bacteria** ..... 424

**Blood Sugar Levels** ..... 440

**Bone and Skeleton** ..... 442

**Cancer** ..... 447

**Candida, Fungi, Molds and Yeasts** ..... 455

**Chemical Poisoning / Detoxification** ..... 463

**Dental** ..... 468
- *Mouth and Gums* ..... 469
- *Teeth* ..... 472

**Ears** ..... 474

**Eyes** ..... 477

**Gastrointestinal Tract** ..... 482
- *Systemic Conditions* ..... 483
- *Colon / Large Intestine* ..... 489
- *Small Intestine* ..... 492
- *Stomach and Esophagus* ..... 494

**Glands** ..... 496
- *Adrenals* ..... 497
- *Pancreas* ..... 498
- *Parathyroid* ..... 498
- *Pineal* ..... 499
- *Pituitary* ..... 499
- *Thymus* ..... 499
- *Thyroid* ..... 500

**Headache** ..... 505

**Heart, Blood and Circulation** ..... 506

**Injuries** ..... 514

**Insect Bites** ..... 516

**Liver and Gall Bladder** ..... 518
- *Liver* ..... 518
- *Gall Bladder* ..... 523

**Lymphatic System** ..... 524

**Men** ..... 527
- *Penis* ..... 527
- *Prostate* ..... 528
- *Sexual Functioning* ..... 529
- *Testicles* ..... 529
- *Urinary* ..... 530

**Mind and Emotions**..... 531

**Muscles**.....540

**Nervous System and Brain** .....544

**Parasites, Protozoa and Worms** ..... 553

**Regeneration and Healing** .....564

**Respiratory Tract**.....567
*Lungs* .....567
*Nose and Sinuses*.....570
*Throat and Lymph Nodes*.....572
*Vocal Chords* .....574

**Skin** .....577

**Tuberculosis, All Types**.....585

**Tumors, Benign** .....587

**Ulcers** .....588

**Urinary Tract** .....588
*Bladder and Urethra* .....589
*Kidneys*.....590

**Viruses**.....592

**Women** .....604
*Breasts* .....605
*Menstruation and Menopause* .....605
*Sexual Functioning* .....606
*Uterus and Cervix, Ovaries, and Fallopian Tubes*.....607
*Vagina and Labia* .....608



# CHAPTER 5

# Frequency Directory

## GETTING STARTED

Before you dive into the entries, please review these pages. They describe how the Frequency Directory is organized, and how you can best navigate through the many types of listings. At the end of these instructions is an outline of all categories contained in the Frequency Directory.

***Alphabetical Order***. *Every single* entry in this Frequency Directory is in alphabetical order. Most of the entries are also sub-divided into *categories*. Before you become familiar with the categories, you may find it easier to *first search alphabetically*. Begin by looking up either the *name of the microbe*, the *medical term for the disease*, or the *general symptom*. For example, in straight alphabetical order you will find:

1. The *microbe* involved in the symptom picture—***Entamoeba histolytica***, the parasite that causes amoebic dysentery, under **E**;
2. The *medical term for the disease*, **Amoebic Dysentery**, under **A**;
3. A *general symptom*, such as **Diarrhea**, under **D** (which might or might not be a symptom of amoebic dysentery caused by the *Entamoeba histolytica* parasite).

Exception: The *one exception* under which the medical term for a disease will *not* be listed separately is when the disease name derives from the microbe itself. For example, the disease "Borreliosis" designates the condition caused by *Borrelia burgdorferi* or one of many other *Borrelia* strains. The alphabetical listing contains both terms: ***Borrelia***, all types **/ Borreliosis**.

## THE CATEGORIES

An alphabetical listing will sometimes remain as a stand-alone entry if a condition cannot be easily classified. Usually, however, you will be directed to the appropriate category to obtain the full listing. A full listing consists of frequencies and (almost always) descriptive text. *Most* conditions will be found under categories.

There are *four categories* under which frequencies are listed: **1**. **Microbe**; **2**. **Affected Body Part or Body System**; **3**. **Common Name of Condition**; **4**. **Stand-Alone Entry**. Each is discussed below, in turn.

1. ***Microbe***. Whenever possible, each disease is linked to a particular pathogen or pathogens. Pathogens are listed under either:
   - **a**. **Bacteria**
   - **b**. **Candida**, **Fungi**, **Molds and Yeasts**
   - **c**. **Parasites**, **Protozoa and Worms**
   - **d**. **Viruses**

In the microbe sections, entries are generally listed *first* with the name of the pathogen, *then* with the medical name for the disease, and *then* with the common name(s) of the disease (if there are any).

- **Example**: For *Lyme Disease*, go to **L**. You will see:

  **LYME DISEASE**
  See "*Borrelia*, all types / Borreliosis / Lyme Disease" under **Bacteria**.

If you are accustomed to calling Lyme by *either* the name of the microbe *Borrelia burgdorferi*, *Borrelia garinii*, etc., *or* the medical term "Borreliosis," go to **B**. You will see:

  ***BORRELIA*, ALL TYPES / BORRELIOSIS**
  See "*Borrelia*, all types / Borreliosis / Lyme Disease" under **Bacteria**.

In these two examples above, there is the microbe (*Borrelia*), the name of the condition containing the name of the microbe (Borreliosis), and the common name (Lyme Disease).

- **Example**: For *Shingles*, go to **S**. You will see:

  **SHINGLES**
  See "*Herpes* Virus Type 3 / *Herpes Zoster* / Chicken Pox / *Varicella* / Shingles" under **Viruses**; or "Shingles" under **Nervous System and Brain**; or **Skin**.

In this Shingles example, you are introduced to the category of ***Affected Body Part*** (addressed in greater detail below). The *Herpes* virus is under the large category, **Viruses**. However, *Herpes* can also be found under **Nervous System and Brain** and under **Skin**, because these are the body areas where the virus produces symptoms.

Now, if you are accustomed to calling Shingles by the name of its pathogen, *Herpes Zoster*, go to **H**. You will see:

  **HERPES, ALL TYPES**
  See under **Viruses**; **Men**, *Penis*; **Women**, *Uterus and Cervix*, *Ovaries*, *and Fallopian Tubes*; or **Skin**, *Shingles*.

2. ***Affected Body Part or Body System***. This is the second category under which the frequencies are organized. The majority of all entries in the Frequency Directory are in categories according to *where the symptoms appear*, such as:
   - **Bone and Skeleton**
   - **Gastrointestinal Tract**
   - **Glands**
   - **Men (body parts specific to men)**
   - **Muscles**
   - **Respiratory Tract**
   - **Urinary Tract**
   - **Women (body parts specific to women)** . . . and so on.

Some of the ***Affected Body Part or Body System*** categories are further divided into sub-categories. For instance:

- **Glands**
  *Adrenals*
  *Pancreas*
  *Parathyroid*
  *Pineal*
  *Pituitary*
  *Thymus*
  *Thyroid*
- **Gastrointestinal Tract**
  *Colon / Large Intestine*
  *Small Intestine*
  *Stomach and Esophagus*

It is very useful to look for frequencies according to the system that's affected, because when browsing, you may find other conditions whose frequencies apply to your situation.

- **Example**: For *Duodenitis*, go to **D**. You will see:

  **DUODENITIS**
  See under **Gastrointestinal Tract**, Small Intestine.

- **Example**: For *Crohn's Disease*, go to **C**. You will see:

  **CROHN'S DISEASE**
  See under **Gastrointestinal Tract**, *Colon / Large Intestine*.

Exception: *All cancers*, *no matter which part of the body they appear in*, are listed under **Cancer**, as cancer can migrate; and the protocol for all types is essentially the same.

Exception: Sub-categories are in alphabetical order at all times, except when *general* sets are listed.

- **Example**:

  **VIRUSES**
  **General** [this comes first, before all other alphabetical entries]
  **Adenoviruses**
  **AIDS**
  **Aphthovirus**
  etc.

3. ***Common Name of Condition***. This is the third category under which the frequencies are organized. Occasionally, frequencies are found under the common name for a general symptom. For example:
   - **Injuries**
   - **Insect Bites**
   - **Tumors**, **Benign** . . . and so on.
4. ***Stand-Alone Entry***. This is the fourth and last category under which the frequencies are organized. A very few entries that are not easily classified under other categories appear alphabetically, under their name, as stand-alone entries.

- **Example**: For *Fibromyalgia*, go to **F**. You will see it listed in alphabetical order.

## EXPLANATORY TEXT IN EACH ENTRY

Each entry (a complete entry, not a re-direct line) contains many possible names for a condition, a description of symptoms, and the frequencies that eliminate or manage the symptom picture. Many entries also summarize how the pathogen is transmitted, and suggest therapies that complement rife sessions.

## DIFFERENT FREQUENCY POSSIBILITIES

Most of the frequencies are divided into several sets.

1. The first frequency set in an entry consists of the main numbers that experimenters find useful for that condition. In addition, frequencies associated with particular researchers are usually considered primary.
2. A second frequency set (if applicable) is for related frequencies, often related to co-infections.
3. A third frequency set (if applicable) is for frequencies that might or might not be related, depending on your particular condition.

Whereas frequencies attached to the name of a researcher should be considered primary, no one researcher's frequencies take precedence over any other researcher's frequencies in a given listing.

1. The following frequencies are from Dr. Hulda Clark.
2. The following frequencies are from Dr. Jeff Sutherland.
3. The following frequencies are from Michael Tigchelaar.

## WHAT THE NUMBERS AND SYMBOLS MEAN

**Hertz**. If a frequency contains only numerals, without any periods or commas, it is in Hz (hertz).

465 is 465 Hz
522 is 522 Hz
2008 is 2008 Hz

**Decimals**. Some frequencies contain one, two, and sometimes even three decimal places. Decimals are very important; so if your unit can handle them, use them. If your unit cannot handle decimals, program a sweep to make sure that the number you need is included. For example, if your unit can do 9 or 10 but not 9.6, program a sweep from 9 to 10 so that 9.6 will be covered. Allow extra time for this sweep to ensure that you have received enough time on 9.6.

**When a "K" is after a number**. "K" stands for ***kilo-hertz,*** which means "thousands of hertz." So, a "K" after a number stands for three zeros, or 000. For example:

2K = 2,000 Hz
5K = 5,000 Hz
10K = 10,000 Hz
20K = 20,000 Hz

**When a comma (,) is present**. Unless semicolons are present (see below), *commas after the numbers separate the frequencies and make each number distinct*. The commas are not part of any number.

**When a semicolon (;) is present**. Occasionally, a semicolon appears after the numbers. *A semicolon separates one frequency from the next*. Semicolons are used when the frequencies are in very high ranges and extend for seven digits or more, making it necessary to use commas *within one frequency* to make it easier to read.

**When a plus sign (+) is present**. Sometimes a plus sign connects several numbers. *All numbers connected by a plus sign must be run in the same session*. One number might be the main (targeted) microbe, while another number might be a co-infection or pathogen inhabiting the first.

## LENGTH OF TIME FOR EACH FREQUENCY

The default amount of time for each frequency is 3 minutes, unless otherwise specified. However, each user has different needs, and different units have varying degrees of power. Therefore, you may need more or less time. So you will need to experiment.

## THINKING HOLISTICALLY

Approaching illness—and wellness—with a holistic mindset presented many challenges in the creation of this Frequency Directory. Since the body is a unified organism with interrelated systems and parts, and disease occurs when the terrain is favorable to microbes, a clear-cut relationship between a pathogen and a disease doesn't always appear. This is one reason *not* to say, "Such-and-such microbe causes such-and-such disease." However, there is another side. So many aberrant pathogens have appeared since Rife's time—with new superbugs emerging regularly, and even healthy people becoming ill—that sometimes, a direct cause-and-effect relationship seems obvious. This is one reason to say, "Such-and-such microbe causes such-and-such disease."

My ultimate decision was based on ease of reading. I thought it awkward to keep saying, "This microbe has been involved in the following symptom pictures." Therefore, in many listings the text reads, "Such-and-such microbe causes such-and-such disease." I made this concession even though there can be many "causes" of a condition.

The limitations of Western cataloguing also made it difficult to classify some body parts. For instance, the immune system was once considered to be comprised of the lymphatic vessels, the thymus, and the bone marrow. But hormones formerly classified as immune system hormones are now being found *everywhere in the body*. Where, then, should we stop in our attempts to locate the immune "system"? The entire body is an immune system! (This is why I usually call it the *immune response* or *immune function*.) And where should we draw the line in classifying other systems as well?

A similar situation presented itself to me with **Heart, Blood and Circulation**. It is well known that the heart is a muscle. It is also considered an organ. But recent data shows that the heart secretes a hormone, and thus shares characteristics with endocrine glands. How, then, should the heart and circulatory system be labeled?

My solution was to classify the body systems and parts according to conventional guidelines, since these are the ones with which most people are familiar. Below is a list of all the categories in the Frequency Directory, so you can organize your search accordingly.

## OUTLINE OF ALL CATEGORIES IN FREQUENCY DIRECTORY

Note: This list does *not* include single, stand-alone entries, which are in alphabetical order.

**Arthritis and Joints**
**Bacteria**
**Blood Sugar Levels**
**Bone and Skeleton**
**Cancer**
**Candida, Fungi, Molds and Yeasts**
**Chemical Poisoning / Detoxification**
**Dental**
- *Mouth and Gums*
- *Teeth*

**Ears**
**Eyes**
**Gastrointestinal Tract**
- *Systemic Conditions*
- *Colon / Large Intestine*
- *Small Intestine*
- *Stomach and Esophagus*

**Glands**
- *Adrenals*
- *Pancreas*
- *Parathyroid*
- *Pineal*
- *Pituitary*
- *Thymus*
- *Thyroid*

**Headache**
**Heart, Blood and Circulation**
**Injuries**
**Insect Bites**
**Liver and Gall Bladder**
- *Liver*
- *Gall Bladder*

**Lymphatic System**
**Men**
- *Penis*
- *Prostate*
- *Sexual Functioning*
- *Testicles*
- *Urinary*

**Mind and Emotions**
**Muscles**
**Nervous System and Brain**
**Parasites, Protozoa and Worms**
**Regeneration and Healing**
**Respiratory Tract**
- *Lungs*
- *Nose and Sinuses*
- *Throat and Lymph Nodes*
- *Vocal Chords*

**Skin**
**Tuberculosis**
**Tumors, Benign**
**Ulcers**
**Urinary Tract**
- *Bladder and Urethra*
- *Kidneys*

**Viruses**
**Women**
- *Breasts*
- *Menstruation and Menopause*
- *Sexual Functioning*
- *Uterus and Cervix, Ovaries, and Fallopian Tubes*
- *Vagina and Labia*

**You now have the tools you need to use the Frequency Directory effectively.**
**If necessary, please review "A Short Course on How to Give Yourself a Rife Session" in Chapter 4.**

# –A–

**ABDOMINAL INFLAMMATION, PAIN, AND ALL INFECTIONS**
See "Abdominal Inflammation," "Abdominal Pain," and "Colitis / Irritable Bowel Syndrome (IBS)" under **Gastrointestinal Tract**, *Colon / Large Intestine*; also see other entries under **Gastrointestinal Tract**.

**ABSCESS, GENERAL**
Cavity formed by the disintegration of tissue, which creates pus, an accumulation of dead white blood cells. This can occur anywhere in the body, including the mouth. See more frequencies under **Dental**. Also see "*Staphylococcus pyogenes aureus*" under **Bacteria**, as this microbe is a frequent cause of abscesses.
190, 428, 444 + 1865, 450, 464, 465, 500, 660 + 690 + 727.5, 760, 787, 802 + 1550, 880, 2170, 2720

**ACID REFLUX**
See "Acid Reflux / Gastro-Esophogeal Reflux Disease (GERD)" under **Gastrointestinal Tract**, *Stomach and Esophagus*.

**ACIDOSIS**
A disturbance of the acid-base balance of the body. See a health professional.
20, 146, 660 + 690 + 727.5, 776, 787, 802 + 1550, 880, 10K

**ACNE**
See under **Skin**.

***ACTINOBACILLUS***
See under **Bacteria**.

**ACTINOMYCES ISRAELII / *ACTINOMYCOSIS***
See under **Bacteria**.

**ADDICTION TO DRUGS**
See under **Mind and Emotions**.

**ADENOIDS, SWOLLEN**
See under **Lymphatic System**; and **Respiratory Tract**, *Throat and Lymph Nodes*.

**ADENOMA, CERVICAL**
See "Cervical Adenoma" under **Women**, *Uterus and Cervix*, *Ovaries*, *and Fallopian Tubes*.

**ADENOVIRUS, ALL TYPES**
See under **Viruses**.

**ADHESION**
Body parts that should not be attached, stuck to each other through scarring. Internal and external scars can interfere with the flow of energy in the meridians and with blood and oxygen flow elsewhere.
190, 660 + 690 + 727.5, 760, 776, 787, 880, 802 + 1550, 2170, 2720

**ADNEXITIS**
See "Fallopian Tube Inflammation / Adnexitis" under **Women**, *Uterus and Cervix*, *Ovaries*, *and Fallopian Tubes*.

**ADYNAMIA, GERIATRIC**
See **Fatigue**, **Geriatric / Adynamia**.

**AFLATOXIN**
See "Aflatoxin" and "*Aspergillus flavus*" under **Candida**, **Fungi**, **Molds and Yeasts**.

**AFRICAN TRYPANOSOMIASIS**
See "*Trypanosoma brucei gambiense* / African trypanosomiasis / Sleeping Sickness" under **Parasites**, **Protozoa and Worms**.

**AGITATION**
See "Akathisia / Agitation" under **Nervous System and Brain**.

**AIDS (ACQUIRED IMMUNE DEFICIENCY SYNDROME)**
See under "HIV (Human Immunodeficiency Virus) / AIDS (Acquired Immune Deficiency Syndrome)" under **Viruses**.

**AKATHISIA / AGITATION**
See under **Mind and Emotions** or under **Nervous System and Brain**.

**ALCOHOLISM**
See under **Mind and Emotions**.

**ALLERGIES, AIRBORNE**
See under **Respiratory Tract**, *Nose and Sinuses*.

**ALLERGIES, FOOD RELATED**
See various entries under **Gastrointestinal Tract** and **Candida**, **Fungi**, **Molds and Yeasts**.

**ALOPECIA**
See under **Hair Loss / Alopecia**.

***ALTERNARIA TENUIS***
See under **Candida**, **Fungi**, **Molds and Yeasts**.

**ALZHEIMER'S DISEASE**
See under **Nervous System and Brain**.

**AMOEBA HEPAR ABSCESS**
See under **Liver and Gallbladder**, *Liver*.

### Animals Naturally Use Frequencies

Many fish are able to detect prey using their lateral system as a sort of antenna. Shrimp vibrate at 40 hertz, the frequency their archenemy Pagothenia, an Antarctic fish, is tuned to. Pagothenia hones into the shrimp's wavelength and goes directly to its next meal. The shark is very sensitive to frequencies around 200 hertz, which is, coincidentally, the same as the vibrations of a helicopter rotor. Rescues at sea are made more dangerous by the song of the rotor blades summoning sharks in the area to the scene.

—Warren Thomas and Daniel Kaufman
*Dolphin Conferences, Elephant Midwives, and Other Astonishing Facts about Animals,* 1990

**AMOEBAS**
See under **Parasites, Protozoa and Worms**.

**AMOEBIC DYSENTERY / DYSENTERY**
See "Amoebic Dysentery / *Entamoeba histolytica*" under **Gastrointestinal Tract**, *Systemic Conditions*; or "*Entamoeba histolytica* / Amoebic Dysentery" under **Parasites, Protozoa and Worms**.

**AMYOTROPHIC LATERAL SCLEROSIS (ALS)**
See under **Nervous System and Brain**.

**ANAPHYLACTIC SHOCK**
See **Serum Sickness / Anaphylaxis / Protein Sensitization**.

**ANAPHYLAXIS**
See **Serum Sickness / Anaphylaxis / Protein Sensitization**.

***ANCYLOSTOMA CANINUM***
See under **Parasites, Protozoa and Worms**.

**ANEMIA, SICKLE CELL**
See under **Heart, Blood and Circulation**.

**ANESTHESIA, DETOXIFYING FROM**
See "Anesthesia Detox" under **Chemical Poisoning / Detoxification**.

**ANEURYSM**
See under **Heart, Blood and Circulation**.

**ANGINA PECTORIS**
See under **Heart, Blood and Circulation**.

**ANKYLOSING SPONDYLITIS**
See under **Arthritis and Joints**.

**ANOSMIA**
See "Smell, Loss of / Anosmia" under **Respiratory Tract**, *Nose and Sinuses*.

**ANTHRAX**
See "*Bacillus anthracis* / Anthrax" under **Bacteria**.

**ANTHRAX SPORES**
See "*Bacillus anthracis* Spores" under **Bacteria**.

**ANTISEPTIC EFFECT, TO PRODUCE**
See under **Chemical Poisoning / Detoxification**.

**ANUS, ITCHING**
See "Anus, Itching / Pruritus" under **Gastrointestinal Tract**, *Colon / Large Intestine*.

**APHTHOVIRUS**
See "Aphthovirus / Foot and Mouth Disease / Hoof and Mouth Disease" under **Viruses**.

**APOPLEXY**
See "Stroke Paralysis / Apoplexy" under **Nervous System and Brain**.

**APPENDICITIS**
The appendix is a twisted, tiny tube protruding from the right side of the colon. Until recently considered a non-functioning, "vestigial" organ, it is now recognized as essential to the body's immune response. Specialized lymphoid follicles in the appendix produce antibodies to prevent pathogenic bacteria in the colon from infecting other areas (such as the small intestine and bloodstream), particularly in early life. The appendix houses beneficial bacteria needed in the gut. And it can help create and instruct white blood cells.

Appendicitis is inflammation of the appendix. Symptoms include acute abdominal pain, nausea, vomiting, fever, and increased pulse. Do not wait; go to the emergency room immediately! You may require immediate surgery to remove the appendix. Do not eat or drink anything. The frequencies are good for after surgery or while you are awaiting it.

10, 20, 72, 95, 522, 125, 146, 190, 380, 440, 444 + 1865, 450, 600 + 625 + 650, 660 + 690 + 727.5, 787, 802 + 1550, 804, 807, 880, 1570, 1770

**APPETITE, EXCESSIVE**
See **Obesity / Overweight**.

**APPETITE, LACK OF**
This is the end result of any number of probable, deeper causes. Check for depression. Make sure that you are not suffering a serotonin deficiency. See **Blood Sugar Levels**; **Candida**, **Fungi**, **Molds and Yeasts**; **Mind and Emotions**; **Parasites, Protozoa and Worms**; and **Glands**, *Thyroid*.

**ARM PAIN**
See "Neuralgia, Brachial," under **Nervous System and Brain**.

**ARTERIAL SPASM**
See "Intermittent Claudication" under **Heart, Blood and Circulation**.

**ARTERIOSCLEROSIS**
See under **Heart, Blood and Circulation**.

**ARTERY, DILATION OF**
See "Aneurysm" under **Heart, Blood and Circulation**.

**ARTHRITIS AND JOINTS**
Arthritis (sometimes called arthrosis or arthralgia) is a catch-all term for swelling in the joints. Arthritis is hereditary. A genetically disposed person who is severely stressed will have a weakened immune function, and consequently experience severe inflammation and pain.

The stress that catalyzes symptoms can take many forms: injury, infection, vaccines, emotional distress, and metabolic imbalance. The "wear and tear" injury type of arthritis can result from rupture of a tendon, ligament or muscle; so although the word "joint" technically refers to the rubbery cartilage that provides cushioning between bones, these frequencies may also help other tissues. Precipating infections can be any opportunistic disease, such as rheumatic fever, gonorrhea, and tuberculosis. Vaccines are huge stressors too because they contain mercury and microbes that were never meant to be injected into the body. When emotional distress occurs, acidic stress hormones pour into the bloodstream. With metabolic imbalances, if the system is too acidic (or too alkaline), in order to preserve the pH integrity of the bloodstream, the body will deposit the accumulated waste material in the joints. The common denominator to all of these stresses is waste products. In rheumatoid arthritis, wastes are also involved—but there is predominantly an autoimmune component (see below).

Many different organisms can be implicated in arthritis. Even after one has recovered from an illness, there may be a subclinical number of harmful microorganisms lying dormant ready to erupt when the systemic terrain is once again favorable to their re-population. If you feel that you never completely recuperated from a particular illness; if you observed ill effects from vaccinations; or if you were vaccinated and felt no ill effects but are still concerned about the possible mutation of the inoculation microbes into more virulent ones; you may want to use frequencies as a prevention against arthritis.

Avoid fake foods (chemicals, preservatives, etc.) and adulterated dairy (see the **Food** section in Chapter 3). Also eliminate all foods in the nightshade family (tomatoes, eggplant, white potatoes, bell and hot peppers), and avoid tobacco (also a nightshade). In susceptible individuals, these plants hinder the metabolism and absorption of calcium and phosphorous, which causes inflammation, muscle spasms, pain and stiffness due to deposits in connective tissue, damage to ligaments and tendons, mineralization on the walls of major arteries and veins, and changes in bone density. In a number of studies, over 70% of subjects saw moderate to significant improvement when they avoided nightshades.

Supplements are often helpful. Glucosamine sulfate promotes the formation and repair of cartilage. Chondroitin sulfate promotes water retention and elasticity in cartilage and inhibits enzymes that break down cartilage. Enzymes are anti-inflammatory: white blood cells require enzymes to break down the waste products of inflammation and infection. And the herb *Boswellia serrata* reduces inflammation as well. For immune-related arthritis, transfer factor or a similar immune modulator (not stimulator) is often used. Also try massage (not during flare-ups), heat on painful areas, and moderate exercise to grow capillaries and build circulation. Make sure to drink plenty of clean water. The emotional component to arthritis is usually anger.

Try frequencies other than the ones listed here, with your particular symptom picture in mind. The frequency 10K is used for all types of inflammation. Also see "*Mycoplasma*, many types" under **Bacteria**, since these pathogens have often been found in the blood of people with various forms of arthritis.

First try: 2720 and 10K for general pain.

Then try: 1.2 + 250, 1.5 (for 10 minutes), 3 + 230, 7.69, 7.7, 9.39, 9.4, 9.6, 10, 20, 25, 26, 28, 30, 40, 60, 80, 120 (for 20 minutes), 512, 660 + 690 + 727.5, 770, 787, 802 + 1550, 880, 1500, 1664, 2720, 3K, 5K, 10K

***Ankylosing Spondylitis / Bechterew's Disease***

A degenerative inflammatory condition involving the spine and adjacent soft tissues, and often the hip and shoulder joints, causing pain and sometimes fever, anemia and great fatigue. In Europe, this condition is called Bechterew's disease.

1.2 + 250, 7.69, 7.7, 10, 28, 35, 60 + 100, 95, 110, 428, 600 + 625 + 650, 680, 660 + 690 + 727.5, 776, 787, 802 + 1550, 880, 3K

***Arthritis related to Gout***

Gout is a metabolic disease of excessive uric acid in the blood. Also see **Gout**.

9.39, 9.4, 20, 660 + 690 + 727.5, 787, 880, 3K, 10K

***Arthritis related to Nervous System Paralysis***

9.39, 9.4, 10K

***Arthritis related to Stomach Infection***

9.39, 9.4, 10K

***Arthritis related to Tonsil Infection***

9.39, 9.4, 10K

## What Is Arthr-IT IS?

### *Medical terms for the layperson*

During my first quarter of graduate school, I had to take a course in medical terminology. As I found out early on, chiropractic school was not much different from medical school. We had to learn to diagnose and, interestingly enough, terminology was the key to diagnosis.

One of the first words we learned in that class was the term "-itis." Itis is Latin for inflammation of. Other terminology included some words that probably sound familiar to you:

- *Arthro* means *joint*.
- *Stoma* means *stomach*.
- *Bursa* is short for the *fluid-filled sack* in many joints.
- *Fibro* means *muscle fiber*.
- *Mya* means *muscle*.
- *Cepha* means *head*.
- *Tendons* connect bones.
- *Ligaments* connect muscles to bones.

My classmates and I often laughed as we learned these words because we realized the vast majority of medical diagnoses weren't actually "diagnoses" at all, but merely turning the name into Latin or something fancy to impress our patients. It's also done . . . to make an impact on the patient so they'll be satisfied they have a diagnosis. So if you're told you have "arthr-itis," "tendon-itis," "burs-itis" or "stomat-itis," it means your joint, tendon, bursa sack or stomach hurts. . . . *Algia* is another interesting one that means *pain*. Therefore, "Cephalgia" is a *headache*. . . . "Fibromyalgia" means *muscle fiber pain*.

There's one very serious problem with diagnosing: People feel they have a "condition." Everyone knows, once you have a "condition," you always have a "condition." . . .

Arthritis, tendonitis and fibromyalgia are not death sentences. They're merely Latin terms, combined with fancy medical English phraseologies, for pains doctors don't understand and conditions for which they have no effective treatment. . . . Most doctors are only diagnosing and treating side effects, not the true cause of the problem. . . .

When someone says his or her right knee has arthritis because "I'm old," here's how I typically respond: "Really, how old is the other knee?" Properly functioning joints don't degenerate. . . . Common medical wisdom is that if you have arthritis, essentially you're doomed. This could not be farther from the truth. The body does heal.

Arthritis is due to a physical or chemical irritant in a joint or the system. If the cause of this irritation is avoided, removed or corrected, your body has a chance to heal. There are endless stories of athletes and people who assumed their physical lives were over, only to reverse the effects of arthritis through a change in lifestyle or help from a chiropractor and go on to become champions. . . .

The majority of carbohydrates, particularly refined carbohydrates, can aggravate and even cause degeneration. Excess acids in the system do exactly what they sound like they do: They deteriorate and damage cells. Additionally, the body's survival mechanism will attempt to neutralize these acids. (Calcium from bone is an exemplary acid neutralizer.) Therefore, as you consume sugar, flours, grains and other refined carbohydrates, your blood stream ends up in acid overload and you actually give yourself degenerative arthritis. Dairy and caffeine are two additional major acid culprits. . . . Fats play a major role in the inflammatory process. Excess Omega 6 and Omega 9 fats will add fuel to the fire of arthritis, while taking a high quality fish oil helps to quench "the fire.". . .

Structurally, the only person you can go to is a chiropractor. The job of a chiropractor is to balance posture and correct misalignment in the spine and other joints. . . . Chiropractic rehabilitative exercises are actually designed to cause "regeneration," the reversal of arthritis and rehydration of discs. . . .

Arthritis is not a terminal disease. If that's what you've been told, fire your doctor.

—Ben Lerner, DC, 2005
www.articles.mercola.com/sites/articles/archive/2005/01/12/arthritis-part-seven.aspx

**Arthritis with Parathyroid Disturbances**

Parathyroid disturbances affect calcium metabolism and cause either an excess or deficiency of calcium.

First try: 9.6, 10K

Then try: 326, 328, 4760.5, 673.1, 771

**Bunion**

Inflammation and thickening of a joint, often in the big toe.

20, 10K, 2720

**Bursitis**

Inflammation of connective tissue, mainly around joints. This condition may be caused by a great many organisms. Also experiment with the arthritis, tendomyopathy, and sprain frequencies. Since white blood cells require enzymes to break down the waste products of inflammation (as well as infection), taking enzyme supplements may help.

660 + 690 + 727.5, 787, 880, 10K

**Elbow Pain / Epicondylalgia**

1.2 + 250, 26, 160, 3K, 10K

**Fluid in Joints and Tissues, to Reduce Excess Amounts**

15, 24.3

**Hip Pain**

20, 660 + 690 + 727.5, 787, 880, 2720, 10K

**Knee Pain**

See a chiropractor to rule out subluxation or other structural causes.

1.2 + 250, 3 + 230, 7.69, 7.7, 9.39, 9.4, 9.6, 20, 28, 73, 160, 660 + 690 + 727.5, 787, 802 + 1550, 880, 2720, 3K

**Osteoarthritis**

The most common form of arthritis in the United States, osteoarthritis begins with the erosion of cartilage between the joints of fingers, knees, hips, and spine. The function of cartilage is to cushion the bones and help the joints move easily and smoothly. As it breaks down, the ends of the bones thicken and the joint may lose its shape. The ends of the bones may knock against each other as well, giving the person a "crunching" feeling or the sound of bone rubbing on bone when the joint is used. Damaged joint tissue can cause the release of certain substances called prostaglandins, which can also contribute to the pain and swelling. Also, bony protrusions may start to grow where they don't belong.

Other symptoms include steady or intermittent pain in a joint, stiffness after periods of inactivity, swelling, and tenderness. The wrists, elbows, shoulders, and ankles can also be affected. If this condition occurs in a joint not commonly affected, there is usually a history of injury or unusual stress to that joint.

Osteoarthritis symptoms usually build up gradually. In the early stages, joints may ache after physical work or exercise, and then repetitive injury and physical trauma advance the condition. Older and overweight people tend to get osteoarthritis, and women are particularly susceptible to osteoarthritis after menopause.

15, 324, 326, 528, 770, 1500

**Polyarthritis**

Inflammation of a number of joints. Also see other entries in this section.

Use 512 along with other frequencies specific to your condition.

**Reactive Arthritis**

Called "reactive arthritis" because chronic inflammation sets in after an initial infection by one of several bacteria, including *Chlamydia trachomatis*, *Shigella flexneri*, *Salmonella*, *Yersinia*, and *Campylobacter*. The initial bacterial infection can be transmitted through sexual contact or through food. Symptoms can include pain and swelling in joints, eye inflammation, and urogenital tract discomfort including painful (burning) urination and lesions on the penis. See the various entries for the microbes listed above under **Bacteria**.

From Hulda Clark: 394K or 976.63 (for devices unable to accommodate frequencies in the kilohertz range)

**Rheumatism**

Severe joint pain, inflammation and swelling, often aggravated by inclement weather. May be accompanied by fever.

262, 333 + 523 + 768 + 786, 376, 776, 829, 10K

**Rheumatoid Arthritis**

Rheumatoid arthritis is actually an autoimmune disorder with similarities to Lupus erythematosus. It can occur suddenly. The immune cells malfunction and over-perform, attacking the body's own healthy connective tissue in the joints (as though the person's body itself were an unwanted foreign element, like a microbe). Inflammation of the joint lining (the synovium) can cause pain, stiffness, tenderness, heat, redness, and inflammation. The affected joint may also lose its shape, resulting in loss of normal movement. Some people develop pea- or walnut-sized lumps of tissue under the skin of the elbow, hands, back of scalp, over the knee, or on the feet and heels, called rheumatoid nodules. The nodules usually aren't painful. Both sides of the body are usually affected at the same time.

Rheumatoid arthritis attacks more than the joints of the wrist, fingers, neck, shoulders, elbows, hips, knees, ankles, and feet. Sometimes there is inflammation of the tear glands, salivary glands, spinal column, lining of heart

and lungs, and the lungs themselves. Other symptoms may include disorientation and dementia; fatigue and malaise; and occasional fever. Rheumatoid arthritis can last a long time with active symptoms, or there may be few to no symptoms. Death can occur from this disease.

Although there is a genetic pre-disposition to this condition, there also must be a trigger. See the beginning of this section about arthritis in general. The microbial involvement must also be managed. The suddenness of this condition, along with the trigger, leads me to strongly suspect *Mycoplasma* infection. See "*Mycoplasma*, many types" under **Bacteria** since *Mycoplasma* infection is often the beginning of autoimmune conditions. Also see "*Chlamydia trachomatis*" under **Bacteria**; "Antiseptic Effect, to Produce" under **Chemical Poisoning / Detoxification**; and "General (unspecified)" under **Parasites**, **Protozoa and Worms**. Also see "*Helicobacter pylori* / Peptic (Stomach) Ulcer" under **Bacteria**, since new research from Finland shows the presence of this microbe (which also causes ulcers) in a high percentage of people suffering from rheumatoid arthritis.

First try: 15, 324, 528 (these three frequencies worked for one person on record), 1.2 + 250, 7.69, 7.7, 9.39, 9.4, 9.6, 660 + 690 + 727.5

Then try: 3 + 230, 20, 28, 262, 600 + 625 + 650, 776, 787, 802 + 1550, 880, 10K

*End of Arthritis and Joints section.*

### *ASCARIS*, ALL TYPES
See under **Parasites**, **Protozoa and Worms**.

### *ASPERGILLUS*, ALL TYPES
See under **Candida**, **Fungi**, **Molds and Yeasts**.

### ASTHMA
See "Asthma / Bronchial Asthma" under **Respiratory Tract**, *Lungs*.

### ASTROCYTOMA
See "Brain Tumor / Astrocytoma" under **Cancer**.

### ATAXIA, ALL TYPES
See under **Muscles**; and **Nervous System and Brain**.

### ATHLETE'S FOOT
See under **Skin**.

### ATTENTION DEFICIT DISORDER (ADD) / ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD)
See under **Mind and Emotions**.

### AUTISM
See under **Mind and Emotions**.

### AUTOIMMUNE DISORDERS
Normally, in the early stages of infection when the body is attacked by (for example) a virus, it releases chemical messengers called *interferons* from healthy cells to help them resist infection. The offense entails specific lymphoid cells, known as Natural Killer T Cells or NK Cells, which attach to infected body tissue and expel lethal chemicals. This destroys both the virus and body cell. Destroying the body cell limits the reproduction of new viruses because they cannot reproduce without a host cell. The body increases its NK Cell production, and these cells completely destroy the infected body cells and foreign invaders. The NK Cells will also recognize foreign invaders during a future infection and react even more quickly. (Fortunately, microbes that have mutated still possess markers that the immune system can recognize. NK Cells can recognize and attack intracellular bacteria and *Mycoplasma*—bacteria without a cell wall—because they recognize "non-self" and then go inside the cell.)

Another type of normal immune response is the creation of antibodies, produced in response to an antigen—which can be a foreign protein, microbe, pollen or other substance as well as microorganism. Antibodies neutralize the infection by binding to the virus, thus reducing its ability to attach to a cell or penetrate it. These antibodies also help the body resist becoming reinfected.

There are many aspects of the body's immune response that can malfunction. In people with chronic viral conditions such as Epstein-Barr, HIV and AIDS, the viruses attempt to slow the immune response by infecting the immune cells themselves. This is a clever survival tool for the virus, since malfunctioning immune cells are not able to respond. In many autoimmune disorders, the NK Cells cells turn against the body as though the person's tissues were foreign invading pathogens. With all autoimmune disorders, the body's immune cells attack the person's own tissues. Autoimmune disorders are often due to the presence of tiny *Mycoplasma*—so-called "stealth pathogens"—whose lack of a cell wall allow them to invade our cells and assume some of the properties of our own tissue. Our immune cells sense something hiding in our cells, and attack them.

If the *Mycoplasma* invade the central nervous system, the disease is Multiple Sclerosis (although MS can also have a non-autoimmune origin). If the *Mycoplasma* invade our joints, the disease is rheumatoid arthritis. If the body attacks its own tissues that it mistakes for foreign proteins, resulting in a severe inflammatory response anywhere, the disease is Lupus erythematosus. If the body exhibits severe, progressive muscular weakness—causing difficulty in swallowing and breathing that can lead to death—the condition is called Myasthenia gravis. If certain symptoms manifest in the thyroid, it's called Graves' or Basedow's Disease. Fibromyalgia, actually a syndrome of assorted symptoms rather than a disease condition per se, is also considered an immune disorder. These and similar illnesses are also caused by vaccines; see Chapter 1 for more information.

A body that cannot respond effectively to current or future pathogens needs a supportive foundation. Ozone therapy (see Chapter 3) not only destroys microbes, it helps restore damaged body cells to their original function. Building up the body through nutrition is key. Holistic clinics routinely give raw green vegetable juices to people with chronic and life-threatening conditions. A fast of lemon juice in distilled water is a potent liver detoxifier. Doctors are also finding that estrogen hormone supplementation may interfere with proper immune function and trigger autoimmune diseases.

Transfer factor supplementation is also highly recommended by some of my top colleagues in the Rife field. Transfer factors are tiny "immune messenger molecules" that pass information from immune cell to immune cell about what type of external or internal immune threat is present, and how the body should properly respond to this threat. These molecules are naturally found in colostrum, the fluid produced by a nursing mammal (including humans) for the first 72 hours before the actual milk starts to flow. Since the amino acid sequences are the same in the colostrum of all species, supplements made from colostrum extracts of, say, a cow will work for humans. Transfer factors mobilize and activate whatever healthy NK Cells are still in the body before an infection becomes entrenched. Transfer factors create, and educate, a large number of Helper T Cells involved in the manufacture of neutralizing antibodies. T Cells are specific for a given virus. They circulate throughout the bloodstream to seek and destroy those cells that have been virally infected. And transfer factors help restore body cells that are already damaged. This explains why, in clinical trials, people with chronic viral infections improve. (See the Resource Appendix for more information on transfer factor supplementation.)

Another component to autoimmune conditions is hypothyroidism, which is either underactivity of the thyroid gland or the inability of the cells to properly utilize thyroid hormone. Over half the hypothyroid population suffers from excess mucin, a sugar-protein compound normally present in connective tissue. The accumulation of high amounts of the hydrophilic (water-loving) mucin damages the connective tissue of skin, blood vessels, lymph channels, muscles, nerves and other parts of the body. Lupus, a disorder of the connective tissue, is one of many conditions that could be corrected with proper thyroid hormone supplementation. See "Thyroid, Underactive / Hypothyroidism" under **Glands**, *Thyroid*.

See "*Mycoplasma*, many types" under **Bacteria**, as well as your particular condition. Since a major weakener of the body's immune function is toxins, see the many entries under **Chemical Poisoning / Detoxification**. Also see frequencies under **Lymphatic System**, including the entries for "Spleen" and "Thymus."

.24, 1.2 + 250, 3, 5.09, 7.69, 7.7, 9.39, 9.4, 9.6, 20, 28, 32.5, 75.85, 95.75, 146, 175, 456, 465, 522, 600 + 625 + 650, 660 + 690 + 727.5, 776, 784, 787, 800, 802 + 1550, 880, 927, 1850, 10K

# –B–

### *B. COLI OR BACILLUS COLI*
See "*E. coli / Escherichia coli*" under **Bacteria**.

### *BABESIA* / BABESIOSIS
See under **Parasites**, **Protozoa and Worms**.

### *BACILLUS COLI* OR *B. COLI*
See "*E. coli / Escherichia coli*" under **Bacteria**.

### BACKACHE, INCLUDING SPASMS
See under **Injuries**.

### BACTERIA
According to conventional medicine, the three classes of pathogenic bacteria are 1) *Cocci*, which are round or spherical in shape and exist singly, in pairs, chain formation or clusters; 2) *Bacilli*, which are shaped like rods; and 3) *Spirilla*, which are formed like a spiral or corkscrew, singly or in segments. Most bacteria reproduce through cell division (dividing themselves in half), although very large bacteria create "babies" inside the parent cell, which are then released through a small slit in the parent's cell wall. Some bacteria thrive in an aerobic or oxygen-rich environment, while others are anaerobic, living only in an absence of oxygen. Still others adapt to their environment, surviving both aerobically and anaerobically. Since bacteria are larger than viruses, most can be seen individually under a microscope.

Bacteria feed on diseased organisms—further fermenting tissues that still possess some vitality—and also on material that is already dead. What people experience as disease is either the result of microbial attack (for instance, when they destroy red blood cells), or the poisonous waste products (including pus and gas) that the microbes excrete into the bloodstream and surrounding cells.

Recently it has become apparent that the divisions between various microbes is less distinct than was previously thought. Nevertheless, the conventional labeling systems are still useful. If you do not know the classification of a particular microbe, look up its name in this Directory according to its first letter; all conditions are alphabetized.

If you are using the correct frequencies but feel no relief, see "General (unspecified)" under **Parasites**, **Protozoa and Worms**. Parasites in the system can slow or prevent the healing from any other condition. Also, if your illness stems from, or is related to, conditions in your gastrointestinal tract, consider ingesting beneficial flora in fermented food or in supplements. As more friendly flora reside in the gut, fewer pathogenic bacteria will be able to live there.

Try the following general frequencies: 20, 465, 660 + 690 + 727.5, 664, 784, 787, 800, 802 + 1550, 832, 866, 880

## Bacteria Have a Rich Social Life

These single-celled creatures, long viewed as independent and self sufficient . . . lead a rich social life. They rarely live alone. They travel in packs, cooperate and are willing to be sacrificed so their fellows may survive. Some aggregate so closely as to mimic a multicellular organism. Others bind themselves together into a cluster for protection against an enemy. . . .

*Escherichia coli* bunch together in tight balls to protect themselves when they are exposed to antibiotics or noxious stimuli; to do this, the bacteria secrete amino acids that serve as attractants. . . . When [some types of] bacteria are exposed to noxious chemicals, like hydrogen peroxide or antibiotics, they secrete amino acids that direct them to aggregate in tight little spheres for protection. . . . An invading bacterium seems to signal others to join it. The groups of bacteria that congregate in certain body tissues then clump together to resist attacks by antibiotics. . . .

[Bacteria] display an even greater degree of cooperation during times of scarcity [of food]. Faced with starvation, the bacteria turn into tough spores, resistant to freezing and drying, in which they survive in suspended animation. The individual spores clump together, a hundred thousand or so at a time into a cylinder.

The bacteria also have a signal that is emitted when there are enough of them—10,000 to 100,000. . . . The signal that this density has been attained is a mixture of eight amino acids. On sensing it, the cells group together and form into a pile as neatly ordered as logs in a cord of wood. . . .

[One doctor] was fascinated by the "fantastic geometric patterns" made in Petri dishes by colonies of *E. coli* and *Salmonella typhimurium*. . . . The patterns seemed to her to be clear evidence that the bacteria must somehow be communicating with each other.

—Gina Kolata
"Bacteria Are Found to Thrive on a Rich Social Life"
*The New York Times,* October 13, 1992

***Actinomyces bovis* / Actinomycosis (in animals)**

A pathogenic bacterium found in mammals that can infect the brain, jaw, lungs and gastrointestinal tract, which causes "lumpy jaw disease" in cattle.

From Royal Rife's #4 machine: 192K

Then try: 488, 565, 672, 674, 678, 766, 768, 773–778 (sweep), 822, 885, 887, 7877, 9687, 42664, 42666, 46668, 46787

***Actinomyces israelii* / Actinomycosis (in humans)**

Infection usually manifests as lumps in the neck and head, as a sinus infection, or as pus-filled cavities in the mouth. (Pus is an accumulation of dead white blood cells.) Try frequencies for Actinomycosis in animals too (above), in case there is cross-contamination.

1.1 + 73, 20, 23, 160, 220, 222, 228, 231, 237, 262, 465, 488, 567, 660 + 690 + 727.5, 747, 784, 787, 887, 2154, 2890, 7880, 10K

***Bacillus anthracis* / Anthrax**

Bacillus anthracis causes anthrax, an infectious and sometimes fatal disease of warm-blooded animals, especially cattle and sheep. It is transmissible to humans through contact with animal hair and hides, and characterized by ulcerous sores in the lungs or gastrointestinal tract and also an accumulation of dead white blood cells.

From Royal Rife, used on his #4 machine: 139,200

First set: 622, 623, 624, 627, 628, 629, 632, 633, 634, 637, 638, 639, 642, 643, 644 (you may want to set your equipment to do a sweep for at least 45 minutes)

Second set: 4K, 16655, 1370, 1365, 930, 900, 768, 633, 500, 420, 414, 400, 273, 224, 129

From Char Boehm: Frequencies are for a *portion* of the bacterium's DNA or RNA, and not for the *entire* microbe. The names of entries are designations from molecular biology. Boehm's original patented frequency derivation formulas use publicly available information from biology, physics and mathematics. Each number is double the number before it, known as an octave.

plasmid pX01:
797.3, 1594.6, 3189.2

plasmid pX02:
752.5, 1505.1, 3010.1

toxin factors:

lethal factor (lef) –
(Octave Set 1) 465.8, 931.7, 1863.3, 3726.7
(Octave Set 2) 754.8, 1509.7, 3019.4

edema factor (cya)-
942.1, 1884.3, 3768.5

toxin-related protective antigen (pagA) –
986.5, 1973, 3946

Spore germination proteins:
(Octave Set 1) 572.6, 1145.3, 2290.5
(Octave Set 2) 573.8, 1147.6, 2295.1
(Octave Set 3) 588.1, 1176.2, 2352.4

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz sets:
393500 (lower limit), 395K (most effective), and 398K (higher limit of same organism)
363200 (lower limit), 364K (most effective), and 365300 (higher limit of same organism)
359400 (lower limit), 368K (most effective), and 370500 (higher limit of same organism)

Hertz sets:
975.39 (lower limit), 979.11 (most effective), and 986.54 (higher limit of same organism)
900.28 (lower limit), 902.27 (most effective), and 905.49 (higher limit of same organism)
890.86 (lower limit), 912.18 (most effective), and 918.38 (higher limit of same organism)

More Clark frequencies—stay on each number for at least 5 minutes each.
*Bacillus* ranges from 393.5 to 398.05; from 363.2 to 365.3; and from 359.4 to 370.5.
Spores range from 386.95 to 391.45.

You can also try: 398.05
For more complete coverage, keep multiplying the base number by 2. Double 398.05 to 797, and sweep 2. Then double 797 to 1594, and sweep 2.

You can also try: 364
For more complete coverage, keep multiplying the base number by 2. Double 364 to 728, and sweep 2. Then double 728 to 1456, and sweep 2.

You can also try: 387.25
For more complete coverage, keep multiplying the base number by 2. Double 387.25 to 774.5, and sweep 2. Then double 774.5 to 1549, and sweep 2.

Higher numbers, also Hulda Clark:
19665.89, 18122.49, 18321.64, 19317.38, 961.76

Also try: Sweep from 622 to 644

#### *Bacillus anthracis* Spores

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 386950 (lower limit), 388K (most effective), 391450 (higher limit of same organism)

Hertz set: 959.15 (lower limit), 961.76 (most effective), and 970.31 (higher limit of same organism)

Also from Dr. Clark: 386.95 to 391.45.

#### *Bacillus botulinus* / Botulism

Botulism, an often fatal form of food poisoning, is from *Bacillus botulinus*. Symptoms include nausea and vomiting, intense abdominal cramping, fatigue, headache, difficulty swallowing, distorted vision, diarrhea, paralysis, and later shock and unconsciousness leading to death. This bacterium, which produces a potent neurotoxin, can proliferate from spoiled food that has either been improperly canned or left unrefrigerated in hot weather. Also see the various "*Salmonella*" entries in this section; and "Antiseptic Effect, to Produce" under **Chemical Poisoning / Detoxification**.

172, 518, 533, 639, 660 + 690 + 727.5, 683, 691, 802 + 1550, 831, 1372, 1552, 10K

#### *Bacillus coli* or *B. coli*

See "*E. coli* / *Escherichia coli*" in this section.

#### *Bacillus licheniformis*

This microbe has been shown to morph into cancer. Some historical literature that mentions the "cancer germ" describes it as a Gram-positive, non-acid fast anaerobe, all characteristics of *B. licheniformis*. This bacterium has different forms. It produces short and long rods, cocci, and branched filaments that superficially resembled a fungus. Be aware that some probiotic supplements, and even dog foods, include this in their formulas! The frequencies below are from Dr. Jeff Sutherland.

2655, 21554

#### *Bacillus thuriniensis*

520, 902, 1405, 2551

#### *Bacteroides fragilis*

633 to 637

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz sets:
324300 (lower limit) and 325K (most effective and higher limit of same organism)
325700 (lower limit) and 326K (most effective and higher limit of same organism)

Hertz sets:
803.86 (lower limit) and 805.59 (most effective and higher limit of same organism)
807.33 (lower limit) and 808.07 (most effective and higher limit of same organism)

Also from Dr. Clark: 16180.80, 16230.58, 808.07, 805.59

#### *Bartonella quintana* / Febris wolhynia / Wolhynia Fever / Trench Fever / Quintan Fever / Shin Bone Fever

The infection from *Bartonella quintana*—called "Trench Fever" because the symptoms were first noted in Allied soldiers who fought in the trenches during World War I—has also migrated to Mexico, North Africa and other places. It is sometimes called Urban Trench Fever, as it now primarily affects the homeless, alcohol abusers, and inner-city folk of low income. The bacterium *Bartonella quintana* proliferates in the gut of the body louse. The disease is transmitted when people rub infected louse feces into chafed skin or the whites of the eyes (conjunctiva). Symptoms, which occur suddenly, include high fever, headache, back and leg pain, a fleeting rash—and, more recently, endocarditis (infection of the heart and large blood vessels). *Bartonella quintana* is also involved in a disease called bacillary angiomatosis, which affects people with HIV. Recovery can be a month or more,

and relapses are common if the person is being treated conventionally.

This disease can be confusing because it has so many names. Even the bacterium has changed names. A member of the *Rickettsia* family, it used to be called *Rochalimaea quintana* and was recently re-classified "*Bartonella quintana*."

356, 547

#### *Bordetella pertussis* or *Bordetella parapertussis* / Whooping Cough

The *Bordetella pertussis* (also called *Bordetella parapertussis*) bacterium causes whooping cough, a serious disease that can permanently disable infants or even cause death. Symptoms include runny nose, diarrhea, fever, and a persistent cough that (mostly in people over six months of age, before adulthood) ends with a "whoop" noise when the person breathes. The coughing spells can lead to vomiting and choking.

First try: 46, 284, 526, 660 + 690 + 727.5, 697, 765, 906, 9101

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 329850 (lower limit), 331K (most effective), and 332250 (higher limit of same organism)

Hertz set: 817.62 (lower limit), 820.47 (most effective), and 823.57 (higher limit of same organism)

Also from Dr. Clark: 16479.52

Also try: 776, 787, 802 + 1550, 832, 880, 1234, 7344

#### *Borrelia,* all types / Borreliosis / Lyme Disease

Borreliosis, or Lyme Disease, is caused by numerous forms of the *Borrelia* bacterium (which is related to the syphilis bacterium). Called a *spirochete* because of its spiral or corkscrew shape, *Borrelia* is so powerful that it can bore into bone by spinning. This accounts for the extreme damage to the mammals and birds it infects.

*Borrelia* is transmitted by numerous insects, including deer ticks, through kissing and other contact between humans, through contact between humans and animals, and through contact between animals. The spirochete has been found in blood, urine, spinal fluid, and semen. There is evidence that some form of the *Borrelia* spirochete was genetically engineered within the last 30 years in a Plum Island laboratory in Lyme, Connecticut.

Typical signs of Lyme Disease are chronic fatigue, intense pain in joints, bones and muscles (including the heart), fever, blindness, deafness, and enlarged liver and spleen. Many Lyme subjects report brain fog, the loss of cognitive abilities, and short term memory loss. The many devastating symptoms from Lyme are undoubtedly due to the bacterium's ability to induce complex responses of inflammation and autoimmunity in any part of the body. Thus, subjects with Lyme are often diagnosed as having myriad other conditions, such as autoimmune ailments (including Lupus and rheumatoid arthritis), cardiovascular problems (including angina, heart failure and irregular heart rhythm), neurological disorders (including ADD, amyotrophic lateral sclerosis, Bell's Palsy, Multiple Sclerosis, Parkinson's disease and Reflex Sympathetic Dystrophy), and psychiatric illnesses (including autism and schizophrenia). The subject's constitution, combined with specific cell receptor site sensitivities, helps determine what symptoms s/he will exhibit. In some instances, Lyme can even cause death.

In *Cell Wall Deficient Forms: Stealth Pathogens*, the late Dr. Lida Mattman noted that the Lyme bacterium is pleomorphic, changing from a spirochete to a cell-wall-deficient form, and back again. Without a cell wall, *Borrelia* can evade the immune cells of the body because they cannot recognize it. *Borrelia* also circumvents the immune cells when it lodges in the brain and spinal cord, because pathogens residing in the central nervous system—which is isolated from the rest of the body—are undetectable by antibodies created by the blood. The central nervous system is also an ideal incubator for *Borrelia* because the spirochete appears to express a new set of genes once it's in the brain. Finally, *Borrelia* in its cell-wall-deficient form cannot be harmed by antibiotics. By definition, antibiotics work by breaking down bacterial cell walls; and when the bacterium lacks a cell wall, drugs cannot affect it. The lack of a cell wall—and hence, the lack of antibodies in the system—also helps explain why most tests for Lyme are inaccurate. If you have been diagnosed with another disease and have symptoms that won't abate, there's a good chance that you have Lyme.

The mediocre track record of antibiotic treatment, plus the scarcity of accurate tests for Lyme, make this disease very difficult to treat. However, people willing to go outside conventional medicine have found relief—and even permanent cure—with various holistic modalities. Electromedicine equipment, including the magnetic pulser, are popular. So is homemade colloidal silver, taken by the quart or gallon (see the **Colloidal Silver** section in Chapter 3). People have also achieved success taking ¼ teaspoon each of pure sodium chloride (simple salt) and Vitamin C every hour, up to 12 times a day (see Chapter 4). Intestinal flora supplementation is usually necessary. Read Bryan Rosner's *Lyme Disease and Rife Machines* for more detailed suggestions.

Clinicians have found that many people with Lyme also suffer from an underactive thyroid. Hypothyroidism (which lowers immune function) may make one more susceptible to contracting Lyme; but conversely, the *Borrelia* spirochete and/or its toxins may also impair the gland. See "Thyroid, Underactive / Hypothyroidism" under **Glands**, *Thyroid*.

Variant strains of the highly adaptive *Borrelia* pathogen include *Borrelia burgdorferi*, *Borrelia afzelii*, *Borrelia garinii*, *Borrelia lonestari* and *Borrelia valaisiana*. All cause Lyme disease in America and Europe, and are genetically similar to each other. Since the microbes can lie dormant for long periods, many months of sessions are usually necessary to completely obliterate the disease. Except where indicated, the frequencies below do not distinguish between *Borrelia* varieties. Lyme often occurs with other similar illnesses carried by the same insects, so also see "*Ehrlichia chaffeensis* / Ehrlichiosis" and "*Rickettsia rickettsii* / Rocky Mountain Spotted Fever" under **Bacteria**; and "*Babesia* / Babesiosis" under **Parasites**, **Protozoa and Worms**.

The first four blocks of frequencies were tested in a Romanian laboratory by colleagues of Jimmie Holman.

Main program: 34086, 41055, 55055, 55062, 58443, 72912, 74520, 75141, 78864, 86940

If more help is needed, try: 24304, 26288, 34086, 34224, 38115, 41552, 54027, 54096, 54234, 53303, 55055, 56810, 57040, 56925, 58305, 58374, 58443, 58512, 72912, 77715, 78864,79534, 79695, 79856, 83655

Then try: 24840, 25047, 28980, 29095, 35955, 40894, 41055, 41400, 41745, 50094, 50148, 50163, 50232, 52164, 52371, 52578, 52785, 54924, 54993, 55062, 55131, 58443, 59925, 63756, 64009, 64262, 64515, 65025, 74520, 75141, 75348, 75647, 75946, 76245, 83490, 83895, 83605, 86940, 87630, 87975

And then try: 34086, 41055, 41124, 41193, 41262, 42978, 51888, 51957, 52026, 52095, 57960, 58098, 58167, 58236, 68425, 68540, 68655, 68770, 86250, 86365, 86480, 86595 86710, 86825, 89845

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 378950 (lower limit), 380K (most effective), and 382K (higher limit of same organism)

Hertz set: 939.32 (lower limit), 941.93 (most effective), and 946.88 (higher limit of same organism)

Also from Dr. Clark: 18919.09

***Borrelia afzelii***: 387500

***Borrelia burgdorferi***: 380K

***Borrelia garinii***: 382K

#### *Borrelia* Hatchlings and Eggs

203, 412, 414, 589, 640, 667, 840, 1K, 1072, 1087, 1105, 8554

#### Deer Tick

271, 289, 671, 737, 738, 773 (one person reported success experimenting with these frequencies), 7989

#### Microbes that inhabit the Lyme spirochete

From Dr. Jeff Sutherland. A semicolon separates each frequency. Run each one for 6 minutes unless otherwise noted.

444,444 (use for 1 to 2 hours); 20,070,324; 644,736; 544,444; 333,667; 243,331; 133,332; 73,445; 43,776; 24,566

#### *Branhamella catarrhalis* / *Moraxella catarrhalis*

Causes acute, localized infections in the ear, sinuses, respiratory tract, and life-threatening, systemic diseases in the heart and brain.

579, 581, 687, 770, 772, 775, 778, 2013

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 394900 (lower limit), 396K (most effective), and 396700 (higher limit of same organism)

Hertz set: 978.86 (lower limit), 981.59 (most effective), and 983.32 (higher limit of same organism)

#### *Brucella*, all types

*Brucellaceae* is the category covering the various species of *Brucella* (see below). *Brucella* is most known for causing undulant fever in animals and sometimes humans. Evidence suggests that *Brucella suis* was the first pathogen used by the US military as a weapon in the 1950s: the National Center for Biotechnology Information calls *Brucella suis* a "potential bioterrorism agent." *Brucella suis* may be implicated in Multiple Sclerosis, but there are no known frequencies for it at this time.

#### Brucellosis / Brucelliasis / Undulant Fever

Numerous bacteria of the *Brucella* family cause Brucelliasis, or undulant fever. Symptoms include convulsions, enlarged spleen, overheating, and swelling of joints in cattle, sheep and goats. Humans experience fever; headache; sweats; weakness; fatigue; constipation; aches and pains in nerves, bones and muscles; a tender and enlarged spleen; and even depression. See entries below. Also see "Epstein-Barr Virus / Infectious Mononucleosis / Chronic Fatigue Syndrome (CFS)" under **Viruses**.

#### *Brucella abortus* / Bang's bacillus

Causes undulant fever in cattle. Symptoms include convulsions, enlarged spleen, overheating, and swelling of joints.

1423

***Brucella melitensis* / Undulant Fever, another form**

*Brucella melitensis* causes undulant fever in goats and sheep. Symptoms include convulsions, enlarged spleen, overheating, and swelling of joints.

643, 695, 748

***Campylobacter***

Causes sudden infectious diarrhea in both newborns and adults.

333 + 523 + 768 + 786, 378, 732/733, 1633, 1834, 2222

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 352K (lower limit), 355K (most effective), and 357200 (higher limit of same organism)

Hertz set: 872.52 (lower limit), 879.96 (most effective), and 885.41 (higher limit of same organism)

***Chlamydia pneumoniae***

A form of *Chlamydia*—see below. Recent research implicates this microbe in Multiple Sclerosis. Run each frequency for 5 minutes.

*Program 1:* If your unit can't do decimals, round up or down to the nearest number: 4710.5, 470 to 472, 479, 620, 940.1, 942.9, 1880.1, 1885.9, 3760.3, 3771.7, 7520.5, 7543.4

*Program 2:* 471, 942, 1886, 3772, 7543

***Chlamydia trachomatis***

A sexually transmitted microbe that can cause conjunctivitis (inflammation of the mucous membranes of the eyes), lymphogranuloma venereum (venereal disease characterized by inflammation and ulceration of the lymph glands), urethritis (inflammation of the urethra or urinary tube), and proctitis (inflammation of rectum and anus). If not treated, the infection may result in miscarriage and infertility in women. It can also be passed to infants in the birth canal, causing eye infections and pneumonia. This organism may play a developmental role in Multiple Sclerosis, so get treatment. Also see "*Chlamydia pneumoniae*" in this section; "Lymphogranuloma venereum (LGV)" under **Men**, *Penis* or **Women**, *Vagina and Labia*; and "Uterine Cancer or Tumor" under **Cancer**, as Pelvic Inflammatory Disease (PID) caused by *Chlamydia trachomatis* may also be associated with ovarian cancer. Cervical cancer is also sometimes associated with *Chlamydia trachomatis*.

430, 555.7, 620, 624, 840, 866, 1111.4, 2213, 2222.8

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 379700 (lower limit), 381K (most effective), and 383950 (higher limit of same organism)

Hertz set: 941.18 (lower limit), 944.40 (most effective), and 951.72 (higher limit of same organism)

Also from Dr. Clark: 18968.87

***Clostridium difficile* / Pseudomembranous Colitis**

Spore forming bacteria in the colon, *Clostridium difficile*, produce a toxin that causes frequent, foul smelling, watery diarrhea. With more severe symptoms—bloody and mucous-filled diarrhea, abdominal cramps, and even abnormal heart rhythm—the condition is called pseudomembranous colitis. In some instances, this microbe can migrate to the brain and cause autism in children. These conditions usually develop after the ingestion of antibiotics; the beneficial intestinal flora are overpowered by *Clostridium difficile* and other pathogenic bacteria.

387, 635, 673

***Clostridium tetani* / Tetanus / Lockjaw**

The bacillus *Clostridium tetani* causes the infectious and painful disease called tetanus, commonly known as lockjaw. The person suffers persistent, continual contraction of some involuntary muscles. The spasms are focused in the jaw, throat, and face. Tetanus is often contracted by being punctured with a rusty nail. The homeopathic remedy *Ledum* is commonly used to treat this condition.

From Royal Rife, used on his #4 machine: 234K

Also try: 120, 244, 352, 363, 458, 465, 554, 600 + 625 + 650, 628, 660 + 690 + 727.5, 787, 880, 1142

***Corynebacterium diphtheriae* / Diphtheria**

Diphtheria, caused by *Corynebacterium diphtheriae*, is rare in the United States. Symptoms of this infection include sore throat, fever, rapid heartbeat, nausea, chills and headache. This bacterium may also cause heart and nerve damage due to microbial toxins.

151, 340, 432, 590, 624, 776, 788, 925

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 340K (lower limit), 342K (most effective), and 344K (higher limit of same organism)

Hertz set: 842.78 (lower limit), 847.73 (most effective), and 852.69 (higher limit of same organism)

***E. coli* / *Escherichia coli***

Commonly found in the colon, which is involved in infections in wounds and the digestive tract when the body becomes unbalanced. If after using these frequencies you develop a cold, see the "Adenovirus" entries under **Viruses**. Note that the older name for this bacterium is "*Bacillus coli*" (or "*B. coli*")—the name that Royal Rife often used in his lab notes.

From Royal Rife, used on his #4 machine:

417K (rod form)

770K (filterable virus)

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 392K (lower limit) and 393K (most effective and higher limit of same organism)

Hertz set: 971.67 (lower limit) and 974.15 (most effective and higher limit of same organism)

Also from Hulda Clark: 356K or 882.44 (for devices unable to accommodate frequencies in the kilohertz range) and 17724.20, 19566.32

282, 289, 327, 332, 358, 413, 539, 548, 642, 798, 799, 800 to 802, 802 (for 10 minutes) + 1550, 804, 832, 834 (for 10 minutes) 957, 1320, 1550 to 1552, 1722, 1729, 7847, 7849

***E. coli,* Mutant Strain**

556, 632, 634, 776, 934, 1242, 1244, 1703

***E. Coli,* Rod Form and Other Forms**

First try: 282, 289, 327, 333, 413, 548, 642, 787, 799, 800, 802 + 1550, 804, 832, 880, 957, 1320, 1552, 1722, 2872, 7849

For related infections: 660 + 690 + 727.5

***Ehrlichia chaffeensis* / Ehrlichiosis**

*Ehrlichia chaffeensis* and any of the other *Ehrlichia* microbes cause human monocytic Ehrlichiosis, transmitted by ticks and probably other insects, too. Symptoms include fever, headache, nausea, vomiting, muscle pain, respiratory disturbances, and in severe cases meningitis and kidney failure. Not all the frequencies for the *Ehrlichia* bacteria are available (*Ehrlichia ewingii* and *Ehrlichia phagocytophila* are currently unavailable). So try what you have.

Since Ehrlichiosis often occurs with other similar illnesses carried by the same insects, also see "*Rickettsia rickettsii* / Rocky Mountain Spotted Fever" and "*Borrelia*, all types / Borreliosis / Lyme Disease" under **Bacteria**; and "*Babesia* / Babesiosis" under **Parasites**, **Protozoa and Worms**.

These numbers are relatively untested: 300, 336.4, 382.2, 394.7, 528.4, 672.7, 749.2, 764.4, 918, 1200, 1317.2, 1345.4, 1369.8, 1364.9, 14980.5, 1836

***Ehrlichia equi* / Ehrlichiosis**

Human granulocytic Ehrlichiosis, caused by *Ehrlichia equi*, is spread by the bite of the deer tick or common dog tick. This is a sampling of many frequencies.

1.2 + 250, 295, 354.2, 349, 406, 469.7, 590, 637.9, 698, 7080.5, 939.3, 1180, 1223.4, 1416.9, 1878.7, 2833.9, 3248.3, 3757.3

***Francisella tularensis* / Tularemia / Rabbit Fever / Deer Fly Fever**

The bacterium *Francisella tularensis*—given its Latin name from the United States county in which it first appeared, along with the doctor who researched it—affects and is carried worldwide by over a hundred species of wild animals, birds and insects. Besides cottontail rabbits, the animals include mice, groundhogs, squirrels, beavers, coyotes, muskrats, possums, sheep, game birds, ticks, lice, deerflies, and mosquitoes.

Symptoms in a rabbit include a white spotted liver, swollen spleen, and ulcerated raw area where the animal was bitten by an insect. Humans contract tularemia from the bite of an infected insect, when broken skin touches an infected cottontail rabbit or contaminated pelt, by drinking contaminated water, or inhaling dust from contaminated soil. Symptoms include ulcers, inflamed and swollen lymph glands, fever, headache, sudden chills, weight loss, abdominal pains, vomiting, fatigue, and headaches. A fatal form of pneumonia can develop.

Careful cleaning and handling of killed rabbits (wearing protective rubber gloves) will reduce the risk of infection. Cook rabbit meat thoroughly.

First try: 324, 427, 823

Also try: 323, 694, 913

***Gardnerella***

Bacteria that often infect and inflame the vaginal mucosa.

320, 329, 485, 695, 782, 995

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 333K (lower limit), 340K (most effective), and 342550 (higher limit of same organism)

Hertz set: 825.42 (lower limit), 842.78 (most effective), and 849.10 (higher limit of same organism)

Also from Dr. Clark: 16927.60

***Gordona sputi***

Can cause lung infections.

381.2,400.6, 429.1, 435.4, 762.3, 801.2, 858.2, 870.7, 3432.8, 1524.7, 1602.3, 1716.4, 17410.5, 3049, 3204.6, 3483

### *Helicobacter pylori* / Peptic (Stomach) Ulcer

An ulcer is a sore on the mucous membranes anywhere in the body, usually accompanied by pus (decayed white blood cells). It can be transmitted to and from people, dogs, cats, sheep, gerbils, and pigs. *Helicobacter pylori* is most noted for causing peptic (stomach) ulcers as well as stomach cancer, although researchers are now also finding it in people with glaucoma. Also see longer frequency set under "Ulcer—General, Duodenal, and Stomach" under **Gastrointestinal Tract**, *Stomach and Esophagus* and **Gastrointestinal Tract**, *Small Intestine*. Also see "Rheumatoid Arthritis" under **Arthritis and Joints**, since new research from Finland shows the presence of this microbe in a high percentage of people suffering from rheumatoid arthritis.

660 + 690 + 727.5, 676 (run for 10 minutes), 880, 2167, 2950

### *Klebsiella pneumoniae* / Pneumonia

*Klebsiella pneumoniae* causes severe pneumonia, an infection and inflammation of the lungs, which fill with copious amounts of fluid and mucous. Symptoms include high fever, chills, and cough. In case there are other microbes involved in the infection, also see "*Mycoplasma pneumoniae* / Pneumonia" in this section, "*Pneumocystis carinii*" under **Parasites**, **Protozoa and Worms**; and "Pneumonia / Bronchial Pneumonia" under **Respiratory Tract**, *Lungs*.

First try: 412, 413, 660 + 690 + 727.5, 746, 765, 766, 779, 783, 818, 840, 2838.5

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz sets:

393450 (lower limit), 401K (most effective), and 404660 (higher limit of same organism)

416900 (lower limit), 419K (most effective), and 421900 (higher limit of same organism)

Hertz sets:

975.27 (lower limit), 993.98 (most effective), and 1003.05 (higher limit of same organism)

1033.39 (lower limit), 1038.60 (most effective), and 1045.79 (higher limit of same organism)

Also from Dr. Clark: 19964.61, 20860.78

Then try: 20, 450, 452, 550, 578, 600 + 625 + 650, 688, 683, 709.2, 776, 787, 802 + 1550, 880, 975, 1238, 1474, 1862, 2688

### *Legionella pneumophila* / Legionellosis / Legionnaire's Disease / Pontiac Fever

The Gram-negative bacterium *Legionella pneumophila* is associated with the relatively mild Pontiac fever and the more serious Legionnaire's disease. Legionnaire's disease acquired its name in 1976 when a pneumonia-like outbreak occurred among attendees of an American Legion convention in Philadelphia, Pennsylvania. Although the bacterium had been recognized before then, in honor of the occasion it was named Legionella.

Symptoms of Legionnaire's disease (usually appearing two days to two weeks after exposure) include fever, chills, a dry cough, and sometimes muscle and headaches. A more advanced infection may spread to the gastrointestinal tract (causing abdominal pain, diarrhea and nausea) or to the central nervous system (causing disorientation and confusion), or to the kidneys and liver (causing organ damage); or to the respiratory tract (causing severe pneumonia that does not easily respond to antibiotics). Legionnaire's disease can sometimes cause death. Pontiac fever causes flu-like symptoms—fever, head and muscle aches usually lasting for two to five days—but pneumonia does not develop and infection does not spread beyond the lungs. Symptoms disappear without treatment, and without causing further problems.

The *Legionella* bacteria are usually found in water, growing best in the warm water of hot tubs, whirlpools, hot water tanks, and large plumbing systems. The bacteria are not spread from person to person, but rather when people breathe contaminated vapor or mist. Older people, smokers, people with chronic lung disease or weak immune function, and people who have cancer, diabetes, or kidney failure are more likely to get sick from *Legionella* bacteria.

Another bacterium in this family is *Legionella micdadei*. This bacterium can cause flu-like symptoms and pneumonia symptomatic of a *Legionella pneumophila* infection. However, there are no frequencies for this other strain (it is said to respond well to antibiotic treatment). The frequencies below are for *Legionella pneumophila* only.

660 + 690 + 727.5, 693, 723, 724, 897, 975, 8120, 8856

### *Leptospira* / Leptospirosis

The spirochete bacteria *Leptospira* causes Leptospirosis, an inflammation that spreads to humans through water, food, or urine contact from an infected animal or other human. Symptoms include fever, headaches, rashes, chills, sore muscles, abdominal pain, vomiting, diarrhea, jaundice, and red eyes. If not treated, it can lead to kidney and liver damage, meningitis, anemia, miscarriage, and even death. The bacterium lives in a temperate or tropical climate.

612, 663. Also do a sweep for at least 25 minutes from 600 to 680

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 397050 (lower limit), 399K (most effective), and 401100 (higher limit of same organism)

Hertz set: 984.19 (lower limit), 989.02 (most effective), and 994.23 (higher limit of same organism)

Also from Dr. Clark: 19865.04

### *Listeria monocytogenes* / Listeriosis

The spirochete *Listeria monocytogenes* causes Listeriosis, a serious illness sometimes called the "circling disease" because the affected ruminants (animals with more than one stomach, such as cows) are often seen walking in circles. Pigs, cows, sheep, goats, hens, dogs, cats, and rodents are also affected. The disease can also spread to humans through animal urine and improper handling of food.

Symptoms include nervous system disorders, fever, loss of appetite, and sometimes liver degeneration and fever, fatigue, nausea, vomiting, diarrhea, inflammation of the brain and heart, and miscarriage. Other, more subtle symptoms include uncoordinated movements and progressive paralysis. Death among animals can occur anytime within two weeks. Humans catch the disease by eating affected animals. Thankfully, it is easy to control this disease. *Listeria monocytogenes* lives aerobically, not only in soil whose pH is higher than 5.4, but also in fermenting animal feed. If the animal raisers feed their livestock unspoiled food—or better yet, allow the animals to graze—there is no opportunity for the animals to contract the disease. Not surprisingly, healthy animals are resistant to the infection. Also see the various "*Streptococcus*" entries in this **Bacteria** section.

377, 471, 626, 628, 634, 714, 724, 744, 2162, 7867

### Lyme

See "*Borrelia*, all types / Borreliosis / Lyme Disease" in this section.

### *Micrococcus tetragenus*

Often involved in infections of the seminal vesicles, the sacs that temporarily store semen before it is emitted through the penis.

393, 433, 2712

### *Mycobacterium avium* / Bird Tuberculosis

*Mycobacterium avium* causes tuberculosis not only in birds, but sometimes in cattle and other animals. Symptoms of cough, fatigue, fever, weight loss and night sweats can also be caught by humans, particularly those with compromised immune function. Most of the frequencies below are completely experimental.

First try: 529.3, 590, 608.4, 615.7, 617.8, 619.7, 625.9, 632.2, 642.2, 674.3, 680.4, 680.8, 694.1, 700.9, 769.6, 770.6, 773.3, 786.7, 803.4, 818.5, 824.5, 825.7, 830, 857.6, 858.2, 860.2, 896.9, 937.4, 953.6, 1001.2, 1037.3, 1058.6, 1148.3, 1180, 1235.7, 2075, 2117.1, 2471.3

Also in the "First try" set, these Mycobacterium TB-related frequencies from Hulda Clark: 21508.01, 1070.82

Also try these general frequencies: 802 + 1550

### *Mycobacterium leprae* / Leprosy / Hansen's disease

Chronic infectious disease resembling tuberculosis, causing lesions on the skin (especially of the hands and feet), in the mucous membranes of the eyes and nose, and nerves outside the brain and spinal cord. The bacteria can enter the body through the nose and possibly through broken skin, especially after prolonged close contact. Children may be more susceptible than adults.

The disease is prevalent in Africa, Latin America, parts of Asia, and islands in the Pacific Ocean. In 1995, the World Health Organization estimated that between two and three million people were permanently disabled due to leprosy. Some countries still have leper colonies, due to the stigma of having this disfiguring disease. Allopathic treatment uses drugs, taken from six months to two years.

20, 428, 440, 444 + 1865, 450, 465, 500, 600 + 625 + 650, 660 + 690 + 727.5, 700, 760, 776, 787, 802 + 1550, 832, 880, 1500, 1600

### *Mycoplasma,* many types

*Mycoplasma* are about one-tenth the size of regular bacteria. They affect humans, animals, and plants. Normally they do not cause serious damage; however, over half of the 200 species of *Mycoplasma* are now considered proven pathogens. In addition, recent strains of highly destructive *Mycoplasma* have been found with unusual gene sequences that could only have resulted from deliberate genetic engineering over the past 40 or 50 years. Although these new *Mycoplasma* can survive for only two hours outside the body, they can live anywhere in the body, stealing nutrients from the host cells. These pathogens invade organs, blood, spinal fluid, bone marrow, urine, lungs, nose, mouth, and nervous system. They even cross the blood/brain barrier, and are known to infect developing fetuses. Slow-growing, they can remain in the system for years and even decades, until chemicals, sizable emotional stress, injury, vaccination, or other trauma sets them off.

*Mycoplasma* can bind with virtually any cell type and interfere with protein, RNA, and DNA synthesis. The resulting cellular abnormalities can result in cancer. The ability of *Mycoplasma* to invade the body's lymphocytes, bind to them, and reduce their numbers, considerably weakens immunity so the person is susceptible to many other infections as well. When a *Mycoplasma* emerges from a cell, it takes a piece of the host cell membrane with it. Later, the immune system attacking the *Mycoplasma* cannot differentiate the *Mycoplasma* from the body's own

cells and attacks the host cells, too. This is the beginning of all types of autoimmune conditions, such as rheumatoid arthritis, Crohn's Disease, fibromyalgia, thyroid and adrenal dysfunction, Lupus, Multiple Sclerosis, and Amyotrophic Lateral Sclerosis (ALS). Other *Mycoplasma* diseases include Gulf War Syndrome / Gulf War Illness, Chronic Fatigue Syndrome (CFS), chemical sensitivity, HIV / AIDS, and Alzheimer's.

The most well-known of these pathogens is *Mycoplasma pneumoniae*. However, the strain *Mycoplasma fermentans* incognitus is now becoming known in a small circle of researchers, war veterans, and laypeople who are aware of its creation as a biological warfare weapon.

Do not eat soy, a favorite food of *Mycoplasma* (researchers actually use a soy-based broth in which to grow *Mycoplasma* cultures!). Some allopathic physicians treat *Mycoplasma* infection with rotating doses of broad-spectrum antibiotics. However, this further compromises one's immunity. Many people successfully treat *Mycoplasma* infection by drinking large amounts of colloidal silver. (See the **Colloidal Silver** section in Chapter 3.)

Since all strains of *Mycoplasma* produce similar symptoms, and frequencies are currently known for only a limited number of pathogens, try all the frequencies below if you suspect that you are infected.

Run for at least 3 minutes each: 388.6, 543.6, 709.2, 777.2, 1087.2, 1554.5, 2174.3, 2838.5, 3109, 4348.6, 6217.9

Also try: 254, 484, 610, 644, 660 + 690 + 727.5, 688, 777, 790, 864, 975, 986, 2688, 2900

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz sets:

322850 (lower limit), 323500 (most effective), and 323900 (higher limit of same organism)

342750 (lower limit), 346K (most effective), and 349300 (higher limit of same organism)

Hertz sets:

800.27 (lower limit), 801.88 (most effective), and 802.87 (higher limit of same organism)

849.59 (lower limit), 857.65 (most effective), and 865.83 (higher limit of same organism)

Also from Dr. Clark: 16106.12, 17226.33

#### *Mycoplasma fermentans* / *Mycoplasma fermentans incognitus*

This type of *Mycoplasma* fuses with lymphocytes (one type of immune cell) and impedes their immune function, inducing production of inflammatory substances in the body. Technically, *Mycoplasma fermentans* (*incognitus* strain) is probably neither a bacterium nor a virus. Some researchers think that it came from the nucleus of the *Brucella* bacterium (making it a mutated form of *Brucella* bacterium), and was combined with a Visna virus, from which the *Mycoplasma* was then extracted. However, since *Mycoplasma fermentans* is commonly referred to as a bacterium, and artificially created pathogens are hard to classify, I have included it under **Bacteria**.

Found in high amounts in the blood of people with other illnesses, including rheumatoid arthritis, Chronic Fatigue Syndrome, Gulf War Syndrome, fibromyalgia, Lupus, HIV / AIDS, autoimmune diseases such as diabetes, Amyotrophic Lateral Sclerosis (ALS), psoriasis and scleroderma, Irritable Bowel Syndrome, cancer, endocrine disorders, Multiple Sclerosis, and urogenital infections and diseases. Also see **Gulf War Syndrome / Gulf War Illness**; other "*Mycoplasma*" entries in this section; "HIV (Human Immunodeficiency Virus) / AIDS (Acquired Immune Deficiency Syndrome)" under **Viruses**; and "Epstein-Barr Virus / Infectious Mononucleosis / Chronic Fatigue Syndrome (CFS)" under **Viruses**.

254, 484, 610, 644, 660 + 690 + 727.5, 706.7, 790, 864, 878.2, 880.2, 986, 2900

Sweep: 5044 to 5061; 5355 to 5458

#### *Mycoplasma pneumoniae* / Pneumonia

*Mycoplasma pneumonia* causes severe pneumonia, an infection and inflammation of the lungs, usually caught and spread by children and young adults. Symptoms include copious amounts of fluid and mucous in the lungs, high fever, chills, cough, nasal congestion, sore throat, tracheobronchitis, pharyngitis, and sometimes blood in the mucous of the lungs. This condition is also associated with joint, central nervous system, liver, respiratory, autoimmune, and cardiovascular and blood conditions. Among them are asthma, heart disease, leukemia, polyarthritis, urinary tract infections, Irritable Bowel Syndrome, encephalitis, and meningitis. Also see "*Klebsiella pneumoniae* / Pneumonia" under **Bacteria**; "*Pneumocystis carinii*" under **Parasites, Protozoa and Worms**; and "Pneumonia / Bronchial Pneumonia" under **Respiratory Tract**, *Lungs*.

First try: 660 + 690 + 727.5, 688, 709.2, 777, 975, 2688, 2838.5

Then try: 20, 412, 450, 452, 550, 578, 600 + 625 + 650, 683, 766, 776, 787, 802 + 1550, 880, 1238, 1474, 1862

#### *Mycoplasma buccale*

Implicated in diseases of the mouth, in particular diseases of the gingival crevices, and respiratory tract.

***Mycoplasma faucium***

Implicated in diseases of the mouth, in particular diseases of the gingival crevices, and respiratory tract.

***Mycoplasma genitalium***

Involved in nongonococcal urethritis and Pelvic Inflammatory Disease. Also implicated in arthritis, other urogenital infections and diseases, infertility, and HIV / AIDS.

***Mycoplasma hominis***

Implicated in all types of reproductive disorders, as well as conditions afflicting newborns. These include infertility; problem pregnancies; infection and premature rupture of placental membranes; wound infections from Caesarian sections; Pelvic Inflammatory Disease (PID); nongonococcal urethritis; vaginitis; pyelonephritis; neonatal pneumonia and conjunctivitis; and low birth weight infants. Also thought to be a cofactor in HIV infection. As a recent medical study has linked a *Mycoplasma hominis*-like microbe to *Chlamydia pneumoniae*, also see "*Chlamydia pneumoniae*" in this section.

***Mycoplasma lipophilum***

Implicated in diseases of the mouth, in particular diseases of the gingival crevices, and respiratory tract.

***Mycoplasma penetrans***

Thought to be a cofactor in HIV infection, urogenital infections and diseases, and autoimmune disorders.

***Mycoplasma pirum***

Thought to be a cofactor in HIV infection and urogenital infections and diseases.

***Mycoplasma salivarium***

Implicated in arthritis, TMJ (temporomandibular joint) disorders, eye and ear disorders and infections, and mouth and gum infections, including gingivitis, periodontal diseases and even cavities.

253, 279, 420, 453, 761, 832 (run each for 18 minutes after building up time tolerance)

***Ureaplasma urealyticum***

A type of *Mycoplasma*. Causes, in pregnant women, chorioamnionitis (infection of the placenta and amniotic fluid), and premature delivery. Frequently transmitted from mothers to their infants, symptoms include pneumonia, high blood pressure, chronic infection of the central nervous system, and lung problems. Also implicated in all types of reproductive disorders, as well as conditions afflicting newborns. These include infertility; problem pregnancies; wound infections from Caesarian sections; Pelvic Inflammatory Disease (PID); nongonococcal urethritis; vaginitis; pyelonephritis; neonatal pneumonia and conjunctivitis; and low birth weight infants.

756

***Neisseria gonorrhoeae / Gonococcus* / Gonorrhea**

Symptoms of gonorrhea, from the *Gonococcus* bacterium, include inflammation of the genital mucous membrane with painful urination. There can also be inflammation in the joints, and in the mucosa of the eyes, mouth and rectum. An infection can exist on a sub-clinical level. Although men usually experience burning during urination with possibly a drip or discharge from the penis, many women do not even feel symptoms. If untreated, the microbe can migrate to many areas of the body and produce complications that we know of as other diseases, such as arthritis, prostatitis, epididymitis, orchitis, cystitis, Pelvic Inflammatory Disease (PID), and endocarditis. Also see related entries under **Women** or **Men**.

From Royal Rife, used on his #4 machine: 233K

600 + 625 + 650, 660 + 690 + 727.5, 712

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 333850 (lower limit), 334K (most effective), and 336500 (higher limit of same organism)

Hertz set: 827.53 (lower limit), 827.90 (most effective), and 834.10 (higher limit of same organism)

Also from Dr. Clark: 16628.88, 927.90

***Nocardia asteroids* / Nocardiosis**

*Nocardia asteroids* is transmitted mainly through soil, causing nocardiosis. Symptoms include abscesses in the lungs, fever and cough that can last several months, and possibly heart damage and lesions in the brain leading to meningitis.

228, 231, 237, 694, 710, 887, 2890

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 354950 (lower limit), 355100 (most effective), and 355350 (higher limit of same organism)

Hertz set: 879.83 (lower limit), 880.20 (most effective), and 880.82 (higher limit of same organism)

Also from Dr. Clark: 17679.39

***Pneumococcus***

See "*Streptococcus pneumoniae*" in this section.

***Propionibacterium acnes***

Lives in the skin's sebaceous glands (glands that secrete sebum, or oil) and can cause acne. Also implicated in corneal ulcers, endocarditis, and infections after the surgical implant of heart valves and shunts (tubes connecting various body parts that aren't normally connected to each other). May be a secondary cause of some prostate cancers.

Sweep from 5996.1 to 6078.1 for 20 minutes. Also run 6046.9 separately for 6 minutes.

From Dr. Hulda Clark: 19267.60, 959.28

***Proteus vulgaris***

Found in soil, water, sewage and the large intestine, this bacterium often infects the urinary tract, and sometimes causes gastrointestinal, ear, sinus, and skin infections, causing high fever, chills, and abscesses. The microbe can survive both aerobically and anaerobically. It also has the ability to degrade urea into ammonia.

424, 434, 594, 600 + 625 + 650, 776, 834

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz sets:

408750 (lower limit), 413K (most effective), and 416450 (higher limit of same organism)

333750 (lower limit), 336K (most effective), and 339150 (higher limit of same organism)

327200 (lower limit), 328K (most effective), and 329500 (higher limit of same organism)

Hertz sets:

1013.19 (lower limit), 1023.72 (most effective), and 1032.28 (higher limit of same organism)

827.28 (lower limit) and 840.67 (most effective and higher limit of same organism)

811.05 (lower limit) and 816.75 (most effective and higher limit of same organism)

Also from Dr. Clark: 20562.06, 16728.45, 16330.16, 832.86, 813.03

***Pseudomonas aeruginosa***

Causes infections in various places, including the urinary tract, ears, lungs, and on the skin of people with burns and wounds.

174, 178, 191, 405, 482, 633, 731, 785, 1132, 3965, 5311, 6646

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 331250 (lower limit), 333K (most effective), and 334600 (higher limit of same organism)

Hertz set: 821.09 (lower limit), 825.42 (most effective), and 829.39 (higher limit of same organism)

Also from Dr. Clark: 16579.09

***Pseudomonas mallei* / Glanders / Farcy**

*Pseudomonas mallei* causes Glanders, primarily involving the mucous membranes of the mouth and respiratory system. It occasionally migrates into the lymph nodes (where it is called Farcy). It mostly affects horses, mules and donkeys, but occasionally it is transmitted to humans, goats, sheep, cats, and dogs. Glanders is not common in the United States or Europe, but it still appears in Asia, Africa and South America.

First try: 501, 660 + 690 + 727.5, 687, 743, 774, 857, 875, 1273

Also try: 20, 787, 880

***Pseudomonas pyocyanea***

Commonly found in wound, burn, and urinary tract infections.

437

***Rhodococcus equi***

Originating in horses and found in people with severely compromised immune function.

124, 337, 432, 682, 720, 764, 835

***Rickettsia* / Q Fever**

The infectious Q Fever is caused by microbes in the *Rickettsia* family. Symptoms include headache, fever, dry cough, muscle aches, chills, sweating, nausea, vomiting, and liver inflammation. Induced by drinking infected milk, or contact with sheep, cattle, goats, cats, dogs, birds, rodents, ticks and other insects harboring the bacteria *Rickettsia* and *Coxiella burnetii*. Also see "*Rickettsia rickettsii* / Rocky Mountain Spotted Fever" under **Bacteria**.

129, 521.2, 523, 549, 607, 632, 720, 726, 943, 1062, 1357, 2084.8

***Rickettsia rickettsii* / Rocky Mountain Spotted Fever**

*Rickettsia rickettsii* causes Rocky Mountain Spotted Fever, an infectious illness carried by wood or deer ticks and other insects. Symptoms include fever, severe headache, gastrointestinal tract, pain in bones and muscles, and later on seizures, jaundice, and heart disturbances.

Since Rocky Mountain Spotted Fever often occurs with other similar illnesses carried by the same insects,

also see "*Ehrlichia chaffeensis* / Ehrlichiosis" and "*Borrelia*, all types / Borreliosis / Lyme Disease" under **Bacteria**; and "*Babesia* / Babesiosis" under **Parasites**, **Protozoa and Worms**.

First try: 76, 308, 375, 468, 521.2, 570, 788, 862, 943, 1583, 1584, 2084.8

Then try: 129, 549, 632, 720, 726, 1062

From Michael Tigchelaar: 7989, 4880, 4870, 1590, 1455, 4996.9, 5054.9 884, 846, 797, 758, 693, 673, 579, 578, 577, 422, 417, 239, 128

#### *Salmonella* / Food Poisoning

There are many different types of *Salmonella* bacteria. Two prominent strains that cause food poisoning (also known as *Salmonella*) are *Salmonella enteritidis* and *Salmonella typhimurium*.

Food poisoning is transmitted to humans mostly from animals. Symptoms include dehydration, fever, abdominal pain, constipation, diarrhea, nausea, vomiting, and a rose-colored skin rash. Also see "*Bacillus botulinus* / Botulism" in this section.

First try: 59, 92, 165, 420, 643, 664, 707, 711, 717, 719, 752, 972, 1244, 1522, 6787, 7771

Then try: 546, 693, 754, 762, 773, 1634, 8656

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 382300 (lower limit), 385K and 386K (most effective), 386550 (higher limit of same organism). Use *all* these frequencies.

Hertz set: 947.63 (lower limit), 954.32 and 956.80 (most effective), and 958.16 (higher limit of same organism). Use *all* these frequencies.

Also from Dr. Clark: 19168.02, 19217.81

#### *Salmonella enteritidis* (only)

760

From Hulda Clark: 329K or 815.51 (for devices unable to accommodate frequencies in the kilohertz range) and 16379.95

#### *Salmonella paratyphi* / *Salmonella paratyphi A* / Paratyphoid Fever

*Salmonella paratyphi* causes paratyphoid fever. Symptoms include high fever, headache, loss of appetite, vomiting, abdominal cramping, and constipation or diarrhea.

776

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 365050 (lower limit), 368K (most effective), and 370100 (higher limit of same organism)

Hertz set: 904.87 (lower limit), 912.18 (most effective), and 917.39 (higher limit of same organism)

Also from Dr. Clark: 18321.64

#### *Salmonella paratyphi* / *Salmonella paratyphi B*

Grows only in humans and is contracted by coming into contact with fish tanks (aquariums). Symptoms include fever, vomiting and diarrhea.

59, 92, 546, 643, 707, 717, 972, 1634, 7771

#### *Salmonella typhi* / Typhoid Fever

Acutely infectious and sometimes life-threatening, Typhoid Fever—also called *Salmonella* (which is the name of the microbe as well)—is transmitted through sewage or contaminated food, to humans by humans. The bacterium (which used to be called *Bacillus typhosis*) penetrates the intestinal lining, multiplies, and spreads through the bloodstream, where it can then enter the bone marrow, liver, and bile ducts. Symptoms include high fever, headache, chills and sweats, abdominal bloating, diarrhea and constipation, skin lesions, dry cough, weakness, and sometimes delirium.

Each year, Typhoid Fever affects about 21.5 million people, mostly in countries that are still developing their hygiene and sanitary conditions: parts of Asia, Africa, Central America, and South America. A small number of people are carriers: they recover from the illness, but continue to carry the bacteria. When traveling to high-risk countries, drink only bottled or boiled water, avoid raw foods, and be careful to wash your hands.

Also see "*Vibrio cholerae* / Cholera" in this section, "*Entamoeba histolytica* / Amoebic Dysentery" under **Parasites**, **Protozoa and Worms**; and "Hepatitis A" under **Liver and Gallbladder**, *Liver*.

From Royal Rife, used on his #4 machine: 760K (rod form); 1,445K (filter passing form)

Also try: 660 + 690 + 727.5, 712, 714, 802 + 1550, 804, 824, 1770, 1800, 1862, 1865, 3205

#### *Shigella*

This is the name of the microbe as well as the disease it causes. Usually transmitted through contaminated food, it infects the gastrointestinal tract. Symptoms include nausea, vomiting, diarrhea, fever, abdominal pain, headache, dehydration, and blood, pus or mucous in the stool. Also see "Amoebas" under **Parasites**, **Protozoa and Worms**.

26, 621, 762, 769, 770, 802 + 1550, 832

From Hulda Clark: 390089 or 966.93 (for devices unable to accommodate frequencies in the kilohertz range) and 19421.39

***Shigella flexneri***

Accounts for just under one-third of the cases of *Shigella* infection in the US, and is linked to depression. Can also lead to a chronic condition called reactive arthritis, symptoms of which include joint pain, painful urination, and irritation in eyes.

From Hulda Clark: 394K or 976.63 (for devices unable to accommodate frequencies in the kilohertz range) and 19616.10

***Staphylococcus / Staph***

*Staph* is a very common bacterium. When on the skin it is harmless, but when it enters the body via an open cut, it causes infection. Infections can lodge in the skin, eyes, mouth, heart and circulatory system, gastrointestinal tract, and respiratory tract.

Short Set; run for 10 minutes each: 48, 60, 453, 550, 634, 674, 660 + 690 + 727.5, 1089, 1109, 7160

Longer Set: 6.8, 48, 60 + 100, 95, 120, 125, 160, 200, 300.2, 424, 453, 465, 550, 634, 643, 666, 674, 678, 727.5, 736, 738.3, 740.7, 742.2, 784, 786, 787, 802 + 1550, 875, 880, 885, 943, 952, 960, 999, 1050, 1089, 1109, 1184, 1241, 1266, 1560, 1840, 1998, 2K, 7160, 8697

Related infection: 333 + 523 + 768 + 786

***Staphylococcus coagulae* positive**

643

***Staphylococcus mutans***

Implicated in plaque and other dental conditions.

1980.47

***Staphylococcus pyogenes aureus***

Found on the skin, in infected cuts and pimples, and in the nose and throat. It causes nausea, vomiting, diarrhea, boils, carbuncles, abscesses, tooth infection, and heart disease. It can also contaminate already existing tumors.

424, 644, 647, 660 + 690 + 727.5, 738, 744, 745, 786, 943, 1050, 5906.25, 8697

Also try: 333 + 523 + 768 + 786

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 376270 (lower limit), 378K (most effective), and 380850 (higher limit of same organism)

Hertz set: 932.68 (lower limit), 936.97 (most effective), and 944.03 (higher limit of same organism)

Also from Dr. Clark: 18819.51, 18968.87 and 381K, or 944.40 (for devices unable to accommodate frequencies in the kilohertz range)

***Staphylococcus albus***

From Royal Rife, used on his #4 machine: 478K

***Streptococcus / Strep***

*Streptococcus* is one of the most common bacteria that live in the nose and upper respiratory tract. Its presence has become so widely associated with red and white patches on the throat, and swelling of the tonsils and vocal cords, that many times people will refer to any sore throat malady, whether caused by the bacterium or not, as "*Strep* throat." Other common symptoms caused by *Strep* include fever, headache and upset stomach. Immune support, liquids and Vitamin C can help. If this bacterium festers inside the body at sub-clinical levels, other conditions may occur later, including rheumatic fever, scarlet fever, and even kidney disease.

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 369750 (lower limit), 375K and 380K (most effective), 385400 (higher limit of same organism). Use *all* these frequencies.

Hertz set: 916.52 (lower limit), 929.53 and 941.93 (most effective), and 955.31 (higher limit of same organism. Use *all* these frequencies.

Another *Strep* set from Dr. Clark (use the hertz set for devices unable to accommodate frequencies in the kilohertz range):

Kilohertz set: 380600 (lower limit), 385K (most effective), and 387400 (higher limit of same organism)

Hertz set: 943.41 (lower limit), 954.32 (most effective), and 960.27 (higher limit of same organism)

***Streptococcus enterococcinum***

Often present with digestive and urinary tract infections.

409, 686

***Streptococcus haemolytic***

Found in blood infections.

128, 134, 318, 333 + 523 + 768 + 786, 334, 368, 443, 535, 542, 563, 611, 660 + 690 + 727.5, 675, 691, 710, 712, 880, 1203, 1415, 1522, 1902

***Streptococcus mitis***

This organism, which lives in the mouth, throat and sinuses, is generally thought to be harmless

in most cases except to those with compromised immune function. When it does create an infection in the mouth and teeth, it can cause inflammation in the heart. This microbe is resistant to penicillin and some other antibiotics, so in addition to the frequencies use colloidal silver and essential oils with germicidal properties (all discussed in Chapter 3).

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 313800 (lower limit), 318K (most effective), and 321100 (higher limit of same organism)

Hertz set: 777.83 (lower limit), 788.24 (most effective), and 795.93 (higher limit of same organism)

Also from Dr. Clark: 18919.09, 18670.15, 941.93, 929.53, 15832.29, 788.24

#### *Streptococcus,* Mutant Strain

First try: 114, 437, 600 + 625 + 650, 660 + 690 + 727.5, 848, 883, 994

Also try: 108, 433, 488, 687, 732, 745, 754, 764, 833, 8686, 8777, 9676

#### *Streptococcus pepto*

Can infect digestive tract.

201, 629

#### *Streptococcus pneumoniae*

Can cause pneumonia, middle ear infections, endocarditis (inflammation of the membrane lining the heart), peritonitis (inflammation of intestinal mucous lining), arthritis, and meningitis (inflammation of membrane surrounding the brain and spinal cord).

From Dr. Richard Loyd: 11,780,000

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 366850 (lower limit), 368K (most effective), and 370200 (higher limit of same organism)

Hertz set: 909.33 (lower limit), 912.18 (most effective), and 917.63 (higher limit of same organism)

Also from Dr. Clark: 18321.64

Also try: 231, 232, 683, 688, 776, 846, 8865

#### *Streptococcus pneumoniae,* mixed flora

158, 201, 645, 801

#### *Streptococcus pyogenes* / Scarlet Fever

The *Streptococcus pyogenes* strain causes scarlet fever (an airborne infection usually contracted by children) and other infections, including cellulitis and impetigo. Symptoms of scarlet fever include rash, sore throat, flushed face, chills, abdominal pain, head and muscle aches, and a thick white coating on the tongue that peels after several days, giving a strawberry-like appearance. The child may not feel ill, but sometimes untreated scarlet fever can cause heart and kidney damage.

From Royal Rife, used on his #4 machine: 720K

Also try: 437, 660 + 690 + 727.5, 784, 875 to 885, 2K, 10K

And then try: 20, 465, 787, 880

#### *Streptococcus pyogenes / Strep* Throat

The *Streptococcus pyogenes* strain, sometimes along with other microbes, is responsible for the condition commonly referred to as *Strep* throat. Symptoms include skin inflammation, sore throat, and sores filled with pus (dead white blood cells).

From Royal Rife, used on his #4 machine: 720K

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 360500 (lower limit), 373K (most effective), and 375300 (higher limit of same organism)

Hertz set: 893.59 (lower limit), 924.57 (most effective), and 930.28 (higher limit of same organism)

Also from Dr. Clark: 18570.58

Also try: 20, 465, 660 + 690 + 727.5, 784, 787, 875 to 885, 880, 2K, 10K

#### *Streptococcus viridans*

425, 433, 445, 935, 1010, 1060, 8478, 457, 465, 777, 778, 1214, 1216

#### *Treponema pallidum* / Syphilis

The spirochete *Treponema pallidum* causes syphilis, a highly infectious disease that can cause lesions in the sexual organs, fever, headache, swollen glands, rash on the hands and feet, and ultimately blindness, heart disease and insanity if not treated.

From Royal Rife, used on his #4 machine: 789K

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 346850 (lower limit), 347K (most effective), and 347400 (higher limit of same organism)

Hertz set: 859.76 (lower limit), 860.13 (most effective), and 861.12 (higher limit of same organism)

Also from Dr. Clark: 17276.11

Also try: 20, 120, 177, 600 + 625 + 650, 658, 660 + 690 + 727.5, 700, 902

#### Typhoid Fever

See "*Salmonella typhi* / Typhoid Fever" in this section.

#### *Vibrio cholerae* / Cholera

Cholera, caused by *Vibrio cholerae*, is an extremely infectious bacterial infection of the small intestine. Symptoms include copious watery diarrhea—which can quickly lead to severe dehydration if treatment is not received—vomiting, muscle cramps, and weakness. Cholera is spread by contaminated water and food (often raw and improperly cooked seafood), and rarely is transmitted by person-to-person contact. The bacterium is found in salt water and near plankton. Cholera epidemics have appeared in Russia, Iran, Iraq, Bangladesh, India, West Africa, Latin America, Indonesia, and other countries of eastern Asia. Until 1992, only *Vibrio cholerae* serogroup O1 was recorded as causing epidemic cholera. More recently, other serogroups have been identified—including O139 (dubbed "Bengal"), which has been reported in epidemics in eleven countries in Southeast Asia.

Most people can manage by drinking to replenish their bodily fluids; some become so dehydrated that fluids must be given intravenously. Keeping food clean and washing hands after going to the toilet are paramount. Also see "*Salmonella typhi* / Typhoid Fever" in this section.

First try: 330, 556, 591, 660 + 690 + 727.5, 691, 843, 844, 968, 1035

Also try: 450, 802 + 1550, 787, 880

#### *Yersinia (Pasteurella) pestis* / *Pasteurella* / Bubonic Plague / Black Death

The rod-shaped bacterium *Yersinia pestis*, reclassified from its former name *Pasteurella*, causes the contagious Bubonic Plague. In the 14th century, when one-third the population of the Middle East, China and Europe died from the disease, Bubonic Plague was called Black Death because many of the people who died had dark color in their faces. This infection occurs mainly in wild rodents, but it is transmitted to people who are bitten by fleas from infected rodents (especially rats), or contact infected animals such as domestic cats. Bubonic Plague can also be passed from person to person through the air or direct contact. Symptoms include high fever and chills, rash, vomiting and diarrhea, and the formation of buboes or swollen lymph nodes (particularly in the groin), which gives the disease its name. Pneumonia and other respiratory infections can lead to death.

Similar microbes cause the Pneumonic Plague (primarily infecting the lungs), with symptoms of fever, difficulty breathing, cough, bloody mucus, severe headache, and rapid heartbeat; and Septicemic Plague (primarily infecting the bloodstream), with symptoms of fever, chills, abdominal pain, shock, and internal bleeding. All of these infections are dangerous and require immediate medical treatment.

Some strains of these microbes have become resistant to antibiotics. They are also reported to be used in biological warfare. Proper hygiene, pure drinking water, and healthy food can really help build the body's immunity.

20, 210, 216, 333 + 523 + 768 + 786, 500, 660 + 690 + 727.5, 787, 880

#### *Yersinia* infections, other (unspecified)

323, 694, 913

*End of Bacteria section.*

### BAD BREATH

See "Halitosis" under **Dental**, *Mouth and Gums*.

### BANTI'S DISEASE

See under **Liver and Gallbladder**, *Liver*.

### BARLEY SMUT

See "*Ustilago nuda* / Barley Smut" under **Candida**, **Fungi**, **Molds and Yeasts**.

### *BARTONELLA QUINTANA*

See "*Bartonella quintana* / Febris wolhynia / Wolhynia Fever / Trench Fever / Quintan Fever / Shin Bone Fever" under **Bacteria**.

### BASEDOW'S DISEASE

See "Graves' Disease / Basedow's / Diffuse Toxic Goiter" under **Glands**, *Thyroid*.

### BECHTEREW'S DISEASE

See "Ankylosing Spondylitis / Bechterew's Disease" under **Bone and Skeleton**.

### BED WETTING

See "Bed Wetting / Enuresis" under **Mind and Emotions**.

**BEDSORES**
See under **Skin**.

**BEHAVIORAL DIFFICULTIES**
See applicable entries under **Mind and Emotions**.

**BELL'S PALSY**
See under **Nervous System and Brain**.

**BILIARY CIRRHOSIS**
See "Cirrhosis of the Liver / Biliary Cirrhosis" under **Liver and Gallbladder**, *Liver*.

**BILIARY HEADACHE**
See under **Liver and Gallbladder**, *Liver*.

**BILIOUSNESS**
See under **Liver and Gallbladder**, *Liver*.

**BILIRUBINEMIA**
See "Jaundice / Bilirubinemia" under **Liver and Gallbladder**, *Liver*.

**BIPOLAR DISORDER**
See "Bipolar Disorder / Manic Depression" under **Mind and Emotions**.

**BIRD TUBERCULOSIS / MYCOBACTERIUM AVIUM**
See "*Mycobacterium avium* / Bird Tuberculosis" under **Bacteria** or **Tuberculosis**.

**BITES FROM INSECTS**
See **Insect Bites**.

**BLACKHEAD**
See under **Skin**.

**BLACK WIDOW SPIDER BITE**
See under **Insect Bites**.

**BLADDER CONDITIONS, ALL**
See under **Urinary Tract**, *Bladder and Urethra*.

**BLADDER CANCER**
See under **Cancer**.

***BLASTOCYSTIS HOMINIS* / BLASTOCYSTOSIS**
See under **Parasites**, **Protozoa and Worms**.

***BLEPHARISMA JAPONICUM* AND *BLEPHARISMA UNDULANS***
See under **Parasites**, **Protozoa and Worms**.

**BLISTER**
See under **Skin**.

**BLOOD PRESSURE, ALL**
See "Blood Pressure" entries under **Heart**, **Blood and Circulation**.

**BLOOD SUGAR LEVELS**
In our junk food culture, blood sugar disorders abound. The brain is the only part of the body that cannot adapt well to—or compensate for—erratic changes in blood glucose (a type of sugar) levels. That is why symptoms of blood sugar disorders are as varied as the many functions of the brain, which is involved in every sensory, motor, perceptual, cognitive, and emotional function in the system. If the brain is not fed properly, it is easy to become unstable.

People with blood sugar disorders commonly have severe nutritional deficiencies, including Vitamin B3 (niacin) and the minerals chromium and vanadium. Sugar handling conditions may indicate a greater-than-usual requirements of these nutrients. A teaspoon of the amino acid L-glutamine (a naturally sweet powder), taken in a glass of water several times a day, is successfully used to curb carbohydrate cravings and help repair the gut. The herbs shardunika (*Gymnema sylvestre*), cedar berries (*Juniperus monosperma*), neem, and licorice help balance blood sugar levels, as do cinnamon and stevia. For either end of the spectrum, you will exacerbate your condition if you eat refined carbohydrates or sugars—and in some cases, any carbohydrates or sugars at all (including whole grains and high-fiber fruit), especially if carbohydrate intolerance or insulin resistance exists. A diet high in animal protein can be helpful, as it nourishes without straining the pancreas or causing erratic secretions of insulin.

In 2006, the American Chemical Society published research showing the relationship between mercury and blood sugar disorders. Mercury disrupts the function of insulin, disables the beta cells of the pancreas (which are responsible for producing the hormone insulin), and disturbs the insulin receptor sites in all of the body's cells. Heavy metals such as arsenic, lead and aluminum disrupt glucose metabolism as well.

Blood sugar problems require a comprehensive approach due to their many causes. Ozone therapy can be very helpful. Also, a surprisingly large number of people test positive for pancreatic flukes, so make sure to cover those frequencies. Parasites can disrupt the functioning of organs and glands, even to the point of causing degenerative diseases.

#### Diabetes / High Blood Sugar / Hyperglycemia

This complex condition causes a craving for sweets or carbohydrates. Other symptoms include susceptibility to infection, slow healing of wounds and bruises, poor circulation, and sometimes depression. If untreated, diabetes can lead to acidosis, featuring abdominal pain, drowsiness, nausea, vomiting and difficulty breathing, and ultimately coma.

Diabetes is synonymous with excessively high glucose levels in the bloodstream. The condition is sometimes notated according to the age at which people are affected. However, classifying diabetes according to its presumed or suspected causes is more common and more informative. In Type 1 diabetes, the pancreas is not producing enough insulin to assist the glucose across the cell membranes. This pancreatic insufficiency or imbalance may be due to autoimmune destruction of the insulin-producing cells. In other people, malfunctioning adrenal or pituitary glands may affect the amount of insulin secreted by the pancreas, as well as the timing of the secretion. In Type 2 diabetes, the pancreas produces enough insulin and there is enough insulin in the bloodstream; but the cells of the body are either resistant to insulin, or lack the necessary insulin receptor sites to allow the hormone to permeate the cells.

It is crucial that the blood sugar levels remain within a certain range. If glucose is not immediately being utilized as energy by the cells and is left to circulate in the bloodstream, microorganisms will feast and rapidly proliferate. The tissues will also become acidic. This explains why diabetics are prone to infections. Sometimes, the flesh becomes so decayed that limbs are amputated. This extreme level of decay indicates fermentation, which denotes the presence of fungi. An associated symptom is malformed red blood cells, which clump together due to insufficient oxygen in the bloodstream (and corresponding faulty electrical charge). The resulting inability of red blood cells to pass through tiny capillaries explains the poor circulation characteristic of diabetics.

Recent medical discoveries suggest the degree of autoimmune involvement in diabetes. In 1999, Dr. Hans Michael Dosch published a paper on the similarities between diabetes and Multiple Sclerosis. Noting an overabundance of pain-signaling nerves around the insulin-producing cells of the pancreas, he and a colleague injected capsaicin (the phytochemical that makes chili peppers hot) to kill the overactive pancreatic sensory nerves in diabetic mice. Almost overnight, normal insulin production began and the mice became healthy. The doctors concluded that the lack of insulin production was due to inflammation (and eventual death) of insulin-producing cells. Eliminating the inflammation allowed the cells to function properly. The inflammation apparently also caused insulin resistance. The second link to autoimmune malfunction was made when researchers at the University of Helsinki, Finland, noted a marked increase in diabetes in people who had been fed cows' milk as very young infants. The bovine insulin proteins that had remained intact in the cow's milk were initially treated as a foreign substance by the human immune cells. After a decade or two, in some adults the human immune cells began attacking the pancreas cells that produce human insulin. It is believed that something in the environment or diet triggered the later autoimmune response. The development of diabetes in children who were breast fed was significantly lower than in those fed cow's milk. The studies did not mention whether the cow's milk was raw or adulterated (pasteurized and homogenized) or if the cow's milk was free of additives such as bovine growth hormone. The milk was probably pasteurized. Raw milk is healthful for most people, whereas milk subjected to high heat is a poison.

The dried bitter sap of the aloe vera plant is a traditional remedy for diabetes in some parts of the Middle East. One study showed that one-half teaspoon of aloe daily for four to 14 weeks significantly reduced the fasting serum glucose level in all participants. Clinical trials also show that the herb Pata de vaca, which grows in the Amazon rainforest and has been used by natives for centuries, is a very effective natural substitute for insulin. Ginseng improves glucose control, as do onions and garlic; although the mechanism by which the pungent vegetables affect blood sugar levels is not completely known. The insulin-producing beta cells of the pancreas can also be regenerated by shardunika (*Gymnema sylvestre*) or cedar berries (*Juniperus monosperma*).

Be careful with the frequencies below between 2000 and 2080. Many users have reported a substantial (and sudden) drop in blood sugar levels when using these frequencies.

Also see "Adrenal Glands, to Balance and Normalize" under **Glands**, Adrenals; "Pituitary, to Balance and Normalize" under **Glands**, Pituitary; "Pancreas, to Balance and Normalize" under **Glands**, *Pancreas*; "Thyroid Gland, to Balance and Normalize" under **Glands**, *Thyroid*; "*Eurytrema pancreaticum* / Pancreatic Fluke" under **Parasites**, **Protozoa and Worms**; and "Heavy Metal Detox" and "Mercury Detox" under **Chemical Poisoning / Detoxification**. Also see "Mucormycosis / Zygomycosis" (which often accompanies diabetes), and specific fungal forms under **Candida**, **Fungi**, **Molds and Yeasts**.

From Bruce Stenulson: 324, 528, 15 Hz for about 4 minutes each, in this order. These frequencies are also for high blood pressure.

1.2 + 250, 6.8, 9.39, 9.4, 15, 20, 35, 40, 48, 72, 95, 125, 240, 302, 440, 465, 484, 500, 522, 600 + 625 + 650, 700, 787, 800, 802 + 1550, 803, 880, 440, 444 + 1865, 428, 1K, 1550, 1800, 1850, 1865, 2K, 2003, 2008, 2013, 2050, 2080 (for 3 minutes), 2127.5, 2170, 2720, 4K, 4200, 5K (for 15 minutes), 10K

#### Associated Infection

20, 80, 190, 660 + 690 + 727.5, 800, 2020

#### Circulation

2000 to 2200 range (sweep)

#### Diabetic Toe Ulcer

Also see the "*Staphylococcus*" entries under **Bacteria**; "Antiseptic Effect, to Produce" under **Chemical Poisoning / Detoxification**; and applicable entries under **Heart, Blood and Circulation**.

1.2 + 250, 20, 333 + 523 + 768 + 786, 832, 1050, 5K

### Hypoglycemia / Low Blood Sugar / Hyperinsulinism

A complex condition causing a craving for sweets or carbohydrates, vertigo, cramps, abdominal bloating, rapid heartbeat, cold hands and feet, trembling from skipped meals, fatigue, fainting, indigestion, headaches, muscle pains, difficulty in concentrating, and depression and moodiness.

Although not as well-known in our culture as diabetes, hypoglycemia can be a precursor to diabetes. However, it can usually be prevented, as well as managed or eliminated altogether, through proper nutrition. Normally, the pancreas secretes insulin to help transport glucose (a type of sugar) across the cell membrane and nourish it. However, if the person has eaten too many carbohydrates or sugars at one sitting, too much glucose will be released into the bloodstream; and the pancreas, responding to this abnormally high outpouring of glucose into the blood, oversecretes insulin. With excess insulin in the blood, too much glucose reaches the cells too fast, resulting in a sudden drop of available energy. This drop in energy causes the symptoms of hypoglycemia, including the classic hunger and food cravings. The person typically eats something sweet or starchy to bring up their energy level, and the whole cycle repeats all over again. This yo-yo effect puts enormous stress on many glands the pancreas, adrenals, pituitary, liver, thyroid and sometimes even the ovaries or testes.

The strong emotional component to hypoglycemia is due to the hormones released in the body. If there is not enough glucose in the blood to feed the brain, it sends a signal to the adrenal glands to produce adrenaline, which in turn stimulates the liver to release its stored glycogen into the bloodstream as glucose. But adrenaline is also the "fight-or-flight" hormone—and can result in moodiness, depression, and even panic.

To control and ultimately reverse hypoglycemia, a diet high in animal protein that eliminates sugars and refined carbohydrates is crucial. Animal protein is the only food to provide a slow, steady supply of energy that doesn't cause the pancreas to react in "alarm" mode. Read Carlton Fredericks's definitive *New Low Blood Sugar and You*. Since faulty digestion can play a role in hypoglycemia, I have included some (not all) frequencies for *Candida albicans*, for common protozoa and worms, and for the improvement of digestion.

Also see entries under **Glands**, *Adrenals*; "Pituitary, to Balance and Normalize" under **Glands**, *Pituitary*; "Pancreas, to Balance and Normalize" under **Glands**, *Pancreas*; "Thyroid Gland, to Balance and Normalize" under **Glands**, *Thyroid*; and "*Eurytrema pancreaticum* / Pancreatic Fluke" under **Parasites, Protozoa and Worms**. Also see "*Candida albicans*" and other entries under **Candida**, **Fungi**, **Molds and Yeasts**, since many fungal forms are often present with blood sugar disorders.

1.2 + 250, 3 + 230, 10, 20, 26, 72, 95, 125, 444 + 1865, 600 + 625 + 650, 465, 660 + 690 + 727.5, 776, 787, 802 + 1550, 832, 880, 1500, 1600, 1800, 2008, 2127.5, 2170, 2720, 2489

*End of Blood Sugar Levels section.*

## BOIL

See under **Skin**.

## BONE AND SKELETON

Bone is a living, ever-changing tissue, consisting of many types of cells that are fed by blood vessels. Some cells form a hard connective tissue made of collagen. Other cells help to mineralize the bone with calcium phosphate and other mineral salts. And still other cells produce hormones such as prostaglandin. The different types of cells are arranged as either random fibers, or in a mesh-like, spongy matrix, structured somewhat like a honeycomb. Despite its density, bone is very lightweight. And although brittle, it possesses some degree of elasticity. Bone marrow, made and stored mostly in the long bones of the body, produces cartilage, more bone, and new blood cells (leukocytes, red blood cells, and platelets). The stem cells also present in the bone marrow can transform into many kinds of tissue. Bones are connected to muscles by tendons, and are connected to other bones at the joint by ligaments. The skeletal bones in the body are made of slightly different material than the teeth, which are even harder to withstand the stress of grinding and chewing.

One of the most common problems with bone is a fracture. If aligned properly and held together by a splint or cast, the bone will repair itself by forming new cells—which first are chaotically arranged, and then shape themselves into a pattern, over time. Repeated stress on a bone (such as from a fracture) generates small amounts of electrical voltage. It is this charge that allows the bone to repair itself—a process that doctors are now duplicating with electromedicine devices, to speed healing. In *The Body Electric*, Dr. Robert Becker describes applying minute amounts of electrical current to fractures to help the bone mend quickly.

Degenerative conditions of bone breakdown are also common. These are due to immune malfunction, mineral imbalances in the blood, and even thyroid disorders. However, dietary changes can favorably alter the condition of bone. Since bone dissolves to give the body calcium salts (which it needs in the blood for metabolic purposes), bone

can also reabsorb these salts once the calcium levels in the blood are normal.

If bones are out of position, chiropractic adjustments can be helpful. However, if the muscles are tight, they may pull on the bones and again cause misalignment; so also pay attention to any muscles that might be in spasm. For more frequencies involving more than bones—for instance, muscles and nerves—see entries under **Muscles** and under **Nervous System and Brain**. Also see **Injuries**.

#### Ankylosing Spondylitis / Bechterew's Disease

A degenerative inflammatory condition involving the spine and adjacent soft tissues, and often the hip and shoulder joints, causing pain and sometimes fever, anemia and great fatigue. In Europe, this condition is called Bechterew's disease.

1.2 + 250, 7.69, 7.7, 10, 28, 35, 60 + 100, 95, 110, 428, 600 + 625 + 650, 680, 660 + 690 + 727.5, 776, 787, 802 + 1550, 880, 3K

#### Back Pain, to Reduce

Sweep from 326 to 328

#### Backache, including Spasms

A spasm is a movement due to a sudden involuntary muscular contraction, and it can be quite painful. Many microbes can be involved, particularly *Staphylococcus*. Please note that these frequencies are not a substitute for a chiropractic adjustment if the skeletal alignment is off or the spinal cord is torqued or twisted. Also see frequencies under **Urinary Tract**, *Kidneys*, since pain in the lower back can sometimes indicate kidney inflammation or infection.

26 (for 15 minutes), 33, 41.2, 120, 146, 160, 212, 240, 305 (for 6 minutes), 326, 333 + 523 + 768 + 786, 424, 464, 465, 466, 522, 528, 555, 660 + 690 + 727.5, 760, 784, 787, 789, 800, 802 + 1550, 880, 1552, 2112, 3K, 5K, 10K

#### Bone Spur

See "Spur, Bone" in this section.

#### Bones, to Stimulate Healing of Fractures

First try 25; then try 7.0, 50

#### Calcium Metabolism and Utilization, to Improve

Parathyroid disturbance can cause either an excess or a deficiency of calcium.

First try: 9.6, 10K

Then try: 326, 328, 4760.5, 673.1, 771

#### Cerebrospinal Conditions

10K

#### Costalgia

Rib pain, several possible causes. Also see frequencies under **Muscles** and **Nervous System and Brain**.

880, 787, 660 + 690 + 727.5, 160, 26, 3K, 1500, 802 + 1550, 2720, 10K

#### Disc, Herniated

The "shock absorber" cartilage between each vertebra of the spine changes structure and/or shape in such a way that it presses on the spinal cord or nerve rootlets, often causing pain.

First try: 15, 25.4, 324, 660 + 690 + 727.5

Then try: 787, 2720, 10K

#### Disc, Slipped / Spine, Misaligned

Misaligned vertebra of the spine that pinches a nerve, causing pain and interfering with the posture and function of the body. Some researchers believe that slipped discs are a result of spasms from microbial toxins. However, you will still need a chiropractic adjustment to align the disc once the bone is out of place.

20, 26, 57, 72, 95, 125, 146, 333 + 523 + 768 + 786, 555, 787, 660 + 690 + 727.5, 880

#### Dystonia, Osteitis that accompanies

The inflammation of bone that often accompanies flabby muscle tone in the gallbladder, which is comprised of muscle fiber.

2.65, 20, 724, 736, 743, 770, 787, 660 + 690 + 727.5, 880, 3K

#### Elbow pain / Epicondylalgia

1.2 + 250, 26, 160, 2720, 3K, 10K

#### Fracture, Cuts, and Trauma

3 + 230, 220, 380, 660 + 690 + 727.5, 787, 802 + 1550, 880, 2720, 10K

#### Fusion

See "Ankylosing Spondylitis / Bechterew's Disease" in this section.

#### Infection in Bone

47, 600 + 625 + 650, 660 + 690 + 727.5, 787, 776, 880, 1600, 1800, 10K

#### Inflammation in Bone

See "Osteitis" in this section.

#### Kieferosteitis

A type of bone inflammation with enlargement and pain.

384, 432, 516

**Loss of Bone, to regenerate**

In addition to the frequencies, supplement the diet daily with 800 IU of Vitamin E, 1000 mg of Omega 3 fish oil, calcium, magnesium, and boron.

7, 424, 465, 660 + 690 + 727.5, 784, 787, 880, 1552, 1560, 1577, 2720, 10K

**Mastoiditis**

Inflammation of the mastoid bone, behind the ears.

287

**Multiple Myeloma**

See under **Cancer**.

**Neck Pain**

15, 17, 326

**Numbness and Tingling from Pinched Nerve / Paresthesia**

This is not a substitute for a chiropractic adjustment. Also see "Subluxation / Spine Distortion" in this section.

5.5

**Osteitis**

Inflammation of bone with irregular cells. It may be accompanied by gallbladder dystonia, or impaired tone of the muscle fibers that comprise the gallbladder.

2.65, 20, 660 + 690 + 727.5, 724, 736, 743, 770, 787, 880, 3K

**Osteoarthritis**

The formation of bony protrusions, often in the joints.

770, 1500

**Osteomyelitis**

Inflammation of the bone marrow, or of the bone marrow with the bone.

2.65, 660 + 690 + 727.5, 770, 776, 787, 802 + 1550, 832, 880, 1500, 1600, 1800, 2008, 2127.5, 2170, 2720, 2489

**Osteoporosis**

Softening and degeneration of bone. The stooped posture commonly observed in elderly people is usually ascribed to osteoporosis, even though many people with lightweight bones do not have postural conditions. The body, which needs calcium for vital metabolic processes such as the transport of nutrients across the cell membrane, leaches calcium from the bones when there is not enough free calcium in the body. However, calcium is not the entire story. Without magnesium and boron, a proper acid-alkaline balance, Vitamin D, and balanced electrolytes, the calcium is unavailable to the body. Sherrill Sellman points out how osteoporosis was purposely misdiagnosed by the pharmaceutical industry in order to sell drugs—that synthetic hormones, dairy products and most calcium supplements can actually make the problem worse. A knowledgeable holistic practitioner will be able to provide you with suitable nutritional support. Bone deterioration can not only be stopped, but reversed. I would rely on more than frequencies to deal with this problem.

470.5, 600 + 625 + 650, 660 + 690 + 727.5, 776, 787, 880, 1600, 1800

**Paresthesia**

See "Numbness and Tingling from Pinched Nerve" in this section.

**Slipped (Misaligned) Disc**

See "Disc, Slipped / Spine, Misaligned " in this section.

**Spur, Bone**

A knob of bone or hard tissue that protrudes through the skin, causing pain, numbness, sensory loss, and sometimes muscular atrophy. Bone spurs are formed when soft tissue adjacent to a stressed structure becomes calcified. Weak joints, a misalignment of adjacent bones, and an increase in weight can stress and inflame a joint and surrounding area enough to cause a calcium growth. Since bone spurs can crush nearby nerves, blood vessels and soft tissue, surgical removal might be necessary. Also see "Heel Pain / Plantar Fascitis" under **Injuries** and "Rheumatoid Arthritis" under **Arthritis and Joints**.

1.2 + 250

**Subluxation / Spine Distortion**

Twisting of muscles and spine. Dislocation of bones or organs, which can pinch nerves and cause pain. This is not a substitute for a chiropractic adjustment. Also see "Numbness and Tingling from Pinched Nerve / Paresthesia" in this section.

9.1, 9.6, 66, 110

*End of Bone and Skeleton section.*

### *BORDETELLA PERTUSSIS* OR *BORDETELLA PARAPERTUSSIS* / WHOOPING COUGH

See "*Bordetella pertussis* or *Bordetella parapertussis* / Whooping Cough" under **Bacteria**.

### BORNA VIRUS / BORNA DISEASE VIRUS (BDV)

See under **Viruses**.

### *BORRELIA* / BORRELIOSIS

See "*Borrelia*, all types / Borreliosis / Lyme Disease" under **Bacteria**.

***BOTRYTIS CINEREAS***
See under **Candida**, **Fungi**, **Molds and Yeasts**.

**BOTULISM / *BACILLUS BOTULINUS***
See under **Gastrointestinal Tract**; or "*Bacillus Botulinus* / Botulism" under **Bacteria**.

**BRACHIAL NEURALGIA**
See "Neuralgia, Brachial" under **Nervous System and Brain**.

**BRAIN DISORDERS**
See various entries under **Nervous System and Brain** and **Mind and Emotions**.

**BRAIN FUNGUS**
See "*Gliocladium* / Brain Fungus" under **Candida**, **Fungi**, **Molds and Yeasts**.

**BRAIN PARASITE**
See "*Naegleria fowleri* / Brain Parasite" under **Parasites, Protozoa and Worms**.

**BRAIN TUMOR**
See "Brain Tumor / Astrocytoma" under **Cancer**.

***BRANHAMELLA CATARRHALIS***
See "*Branhamella catarrhalis* / *Moraxella catarrhalis*" under **Bacteria**.

**BREAKBONE FEVER**
See "Dengue Virus, Types 1, 2 and 3 / Dengue Fever / Breakbone Fever" under **Viruses**.

**BREAST CANCER**
See under **Cancer**.

**BREAST, FIBROID CYSTS AND FIBROADENOMA**
See "Fibroadenoma of Breast" and "Fibroid Cysts in Breast" under **Tumors**, **Benign** or **Women**.

**BREAST INFLAMMATION**
See "Breast Inflammation / Mastitis" under **Women**, *Breasts*.

**BREATH, BAD**
See "Halitosis / Bad Breath" under **Dental**, *Mouth and Gums*.

**BRIGHT'S DISEASE**
Generic term for acute and chronic disease of the kidneys, which can involve many types of dysfunction. See various entries under **Urinary Tract**, *Kidneys*.

**BRONCHIAL ASTHMA**
See "Asthma / Bronchial Asthma" under **Respiratory Tract**, *Lungs*.

**BRONCHIAL CANCER**
See "Lung Cancer" under **Cancer**.

**BRONCHIAL PNEUMONIA, BRONCHIECTASIS, BRONCHITIS, AND BRONCHOPNEUMONIA BORINUM**
See the "Pneumonia / Bronchial Pneumonia," "Bronchiectasis," and "Bronchitis" entries under **Respiratory Tract**, *Lungs*.

**BROWN RECLUSE SPIDER BITE**
See "Brown Recluse Spider" under **Insect Bites**.

***BRUCELLA* / BRUCELLIASIS, ALL TYPES**
See "*Brucella*, all types" under **Bacteria**.

**BRUISE**
See "Bruise / Contusion" under **Injuries**.

**BUBONIC PLAGUE**
See "*Yersinia (Pasteurella) pestis* / *Pasteurella* / Bubonic Plague / Black Death" under **Bacteria**.

**BUNION**
See under **Arthritis and Joints**.

**BURNS, MOST TYPES, INCLUDING FROM RADIATION**
190, 200, 465, 660 + 690 + 727.5, 787, 880, 10K

**BURSITIS**
See under **Arthritis** or **Injuries**.

***BX* VIRUS**
See under **Cancer**.

***BY* VIRUS**
See under **Cancer**.

## –C–

**CALCIUM METABOLISM AND UTILIZATION, TO IMPROVE**
Parathyroid disturbance can cause either an excess or a deficiency of calcium.

First try: 9.6, 10K

Then try: 326, 328, 4760.5, 673.1, 771

**CALMING, TO PRODUCE**
See under **Mind and Emotions**.

***CAMPYLOBACTER***
See under **Bacteria**.

## Essiac® Herbal Formula for Cancer and Other Illnesses

### *A Brief History of Essiac®*

In the 1920s, Canadian nurse Rene Caisse noticed some scar tissue on the breast of an elderly woman who had been previously afflicted with cancer, but had avoided surgery and lived. Instead of receiving surgery, she had treated herself with an herbal formula that she'd learned from an old Indian medicine man (believed to be from the Canadian Ojibwa tribe). Thirty years later, she shared the formula with Caisse.

This was the beginning of Caisse's journey to refine the herbal formula, offer it to people with cancer, and witness miraculous cures from the herbal tea. After testing numerous combinations on mice and humans, the nurse decided on four herbs, calling the formula "Essiac®," her name spelled backwards. For decades, Rene Caisse treated thousands of people with cancer without charge. Eventually, however, the Canadian government threatened Caisse with arrest until she finally halted her free public treatments. Most of her extensive lab notes were found and burned, and the formula was suppressed until recently.

Despite the silencing of Rene Caisse, a number of physicians have spoken favorably of the anti-cancer properties in Essiac tea®. Dr. Frederick Banting, who discovered insulin, apparently surmised that Essiac® helps regulate pancreatic function. Today, many people take Essiac® not only for its anti-cancer effects, but also for its ability to normalize blood sugar levels, regulate immune function, and detoxify the liver and other elimination organs. Essiac® is used all over the world.

### *About the Herbs*

**Burdock Root** (*Arctium lappa*): Purifies the blood. Helps neutralize and eliminate poisons, including radiation, from the body. Supports the bladder, kidneys and liver. Has anti-tumor properties.

**Sheep Sorrel** (*Rumex acetosella*): Reverses the growth of cancer tumors. Has significant anti-leukemia properties. Protects against free radical damage. Stops hemorrhages. Diuretic. *Caution*: Make sure you are getting genuine sheep sorrel, and not yellow dock or garden sorrel or French sorrel (which are sometimes substituted for the desired herb).

**Slippery Elm** (*Ulmus rubra*): Soothes mucous membranes. Reduces inflammation in digestive and urinary tracts. Has anti-cancer properties.

**Turkey Rhubarb Root** (*Rheum palmatum*): Anti-tumor properties. Diuretic. Laxative. Anti-inflammatory. Anti-bacterial. *Caution*: Make sure you are getting herbs that are not irradiated or fumigated (sometimes the imported herbs are treated).

### *How to Prepare a Homemade Essiac-like Formula*

6½ cups burdock root, cut
1 pound sheep sorrel herb, powdered
4 ounces slippery elm bark, powdered
1 ounce turkey rhubarb root, powdered

- Mix the dry herbs thoroughly. Store in glass in a dry, dark place until ready to prepare.
- The best pot to use is glass or enamel, then stainless steel. Do not use aluminum. Use ½ cup of herb mixture to one gallon of water. (Dr. Gary Glum suggests adding 2 or 3 cups of extra water to replace the water lost through evaporation during boiling.)
- Boil hard for 10 minutes, with the pot covered. Then turn off the heat. Let the tea steep for about 12 hours.
- Again heat the liquid until it's steaming hot.
- Let the mixture settle a few minutes, and then strain into clean bottles. When you strain the Essiac-like tea, do not use cheese cloth or a kitchen sieve with very fine mesh—otherwise, these may filter out the viscous and gelatinous slippery elm. The herbal residue that settles into the bottom of the jar can be used for poultices, given to pets and farm animals, or even eaten.
- Refrigerate the Essiac-like tea as soon as possible. Discard the tea if mold appears on the surface or if the tea does not taste right.

### *Amounts*

- If you are taking the above Essiac-like formula to treat an illness or to eliminate toxins, take 2 ounces (¼ cup) three to four times a day. Make sure to drink plenty of extra water to flush out toxins from your system. Do not eat or drink anything except water one hour before to one hour after taking the formula.
- If you are taking a maintenance dose of this formula, 2 ounces (¼ cup) once or twice a day, diluted with about ½ cup hot water, is a common amount. Make sure to drink plenty of extra water to flush out toxins from your system. Do not eat or drink anything except water one hour before to one hour after taking the formula.

### *Miscellaneous Notes*

*Do not alter this formula, either with the addition or subtraction of herbs.* The healing properties of this formula depend on the synergistic combination of its ingredients. There is some debate as to whether this formula will work if it's made into a tincture (herbs in alcohol). We do know that when prepared as a decoction, as above, all of the nutrients and volatile oils are extracted from the herbs. It's generally agreed that this formula will not work when taken in capsules.

Some people are concerned about high levels of oxalic acid from the sheep sorrel. Although some ready-made preparations contain disclaimers, doctors experienced with the formula report no ill effects whatsoever from Essiac©. This formula has a reputation of complete safety along with effectiveness.

## CANCER

Cancer is a complex condition, carried by the blood. Its early stages manifest as unexplained persistent bleeding, injuries that do not heal, and sudden changes in moles and other growths. Symptoms of full-blown cancer are larger masses of abnormal cells whose genetic programming has deviated from their holistic blueprint.

A tumor is the body's way of trying to encapsulate the deranged tissue so it does not spread. Tumors are storage containers for systemic waste. The waste can range from abnormal proteins resulting from inefficient metabolism, to environmental toxins like pesticides or heavy metals. Rife researcher Gary Wade, PhD, believes that cells become cancerous after a microbe releases various chemical compounds into a cell, which disrupt cell membrane ion gates (pumps). This causes a gene sequence—normally open only during early embryonic development—to open up again, thereby stimulating the cell to become cancerous.

Some people have a biopsy, a procedure where a tissue sample from the suspected site is removed so their doctor can examine it for abnormalities and thus confirm or refute the cancer diagnosis. But, if you do have cancer, the biopsy itself may cause the cancer to spread because once the protective tissue surrounding the diseased cells is broken, cancerous cells can leak into the bloodstream. Also, when the cancer virus is attacked, it sends out "daughter" shoots elsewhere to propagate itself. If the cancer spreads at a distance, it's called "metastasizing." If the spread is local, it's called "invasion."

Biochemist and Nobel Prize winner Otto Warburg emphasized that cancer cells are different from normal cells in significant ways. The cellular membrane potential of cancer cells is much lower than that of normal cells. This is why electromedicine therapies that increase cell voltage are so successful. Also, cancer cell respiration is anaerobic (without oxygen) instead of aerobic (with oxygen). Unlike normal cells, cancer cells lack the enzyme catalase, and thus cannot protect themselves from being oxidized by large amounts of ozone and hydrogen peroxide. This is why ozone therapy is favored in countries that understand its benefits (see **Oxygen Therapies** in Chapter 3). Saturating cancerous tissue with ozone neutralizes toxic materials, creates a climate unfavorable to abnormal cells, and strengthens healthy cells and immune function. Warburg also emphasized that cancer cells metabolize about eight times faster, but much less efficiently, than normal cells (which is why people with cancer become so tired). Since cancer cells cannot metabolize in the presence of oxygen, the cells must ferment glucose. This is why a no-sugar diet is essential. This may also explain why people with high blood sugar levels, and/or a resistance to the effects of insulin, have been thought to sometimes suffer a higher risk of cancer than people with normal blood sugar levels and normal responses to insulin.

The intense need of cancer cells for sugar accounts for the success of a therapy in which coated drugs, specifically targeted to kill cancer cells, release their poisonous content only in the presence of sugar. Another therapy utilizes Vitamin B17 (also known as amygdalin), which is present in bitter almonds and apricot and peach kernels, and synthesized as the drug Laetrile®. In high enough amounts, amygdalin works selectively on cancer cells. The sugar in the apricot pits, which surrounds the phytochemical nitriloside, is eaten by the cancer cells, at which point the nitriloside is released. The cancer cell then discharges the enzyme beta-glucosidase, which combines with the nitriloside to create the poisons hydrogen cyanide and benzaldehyde—but only locally, at the cancer site. This procedure kills the cancerous tissue, while leaving normal tissue unharmed.

The drug Artemisinin® (derived from *Artemisia annua*, or sweet wormwood) has shown an almost 100% success rate (within 24 hours) for colon cancer and leukemia, and moderate success for cancers of the breast, central nervous system, kidneys, ovaries, prostate and skin. The types of cancer that require iron for cell division are susceptible to the effects of the drug, which kills cancerous tissue (and also the malaria parasite) in the presence of iron. The high iron content of many types of cancer cells has also inspired the use of magnetism, which generates heat. Cancer cells are much more sensitive to heat than normal healthy cells. Mistletoe, when injected at a tumor site, sensitizes the tumor to higher temperatures that kill the cancer without harming normal tissue. Sauna therapy (with or without ozone) is indispensable, because in addition to weakening the cancerous tissue with higher temperatures, it causes sweating, which eliminates the cellular and chemical debris that has caused the systemic toxicity.

Specific dietary protocols are essential. William Kelly and Max Gerson focus on a diet of 80% raw living food, high in fresh vegetable juices. There is strong evidence that all cancer is fungally related (see next paragraph). Therefore, fermented foods such as soy sauce, vinegar and cheese are forbidden; these often aggravate fungi and yeasts. So do sugars, even those naturally occurring in fruits. Alcohol, caffeine, tobacco and other toxic drugs are avoided.

Dentist William Donald Kelley (he died in 2005) eliminated cancer in himself and about 30,000 other people using very high amounts of pancreatic enzymes. Studies from the 1940s on have shown that pancreatic enzymes, rather than being destroyed in the gut, are absorbed into the bloodstream and circulated throughout the system. Kelley and the doctors who later followed his protocol maintain that the purpose of pancreatic enzymes is to scavenge and destroy cancer cells (as well as other wastes in the system)—and also to help normal cells repair and rebuild.

German biochemist Johanna Budwig (a six-time nominee for a Nobel Prize who died in 2003) discovered that people seriously ill with cancer were deficient in some essential natural nutrients, notably phosphatides and lipoproteins. When these were ingested over a three month period, tumors gradually receded, symptoms from liver dysfunction to diabetes were eliminated, and energy was restored. The best way, Dr. Budwig stated, to ingest these ingredient in the daily diet was by mixing 1 tablespoon of flax oil and 2 to 4 tablespoons of low fat cottage cheese several times per day. When eaten together, the life-giving properties of each was released. Typically, people take one batch per 50 pounds of body weight per day, with a maximum of four batches throughout the day. Flax oil must be fresh when bought (it turns rancid quickly), but it can easily be stored in the freezer without becoming frozen itself and with no ill effects. For those who are dairy intolerant, 1 ounce of flax oil can be taken with 2 large capsules of MSM (methylsulphonylmethane), twice daily. MSM, an organosulfur, substitutes for the sulfur in the cottage cheese.

Recently, scientists at the Northern California Cancer Center and other institutions found that moderate exposure to sunlight—even as little as 15 minutes a day—significantly decreases the risk of many types of cancer, including of the prostate, breast and colon. Vitamin D3 radically improves immune function, controls cellular growth, helps with the absorption of calcium from the digestive tract, and inhibits the growth of cancer cells and tumors. Additional holistic treatments can be found in *An Alternative Medicine Definitive Guide To Cancer*.

Cancer can take the form of many different viruses and bacteria, depending on its environment. In 2002, the BBC reported that University of Sheffield scientist Milton Wainwright discovered that a strain of *Bacillus licheniformis* could induce cancer. The carcinogenic strain of the microbe resembled a fungus. Other evidence also strongly suggests that the most developed form of cancer may be fungally-related. Ronald Gdanski points out that up to 96% of cancerous mass grows in membrane and connective tissue, and mostly in open vessel or duct areas that have a low resistance to fungi: the bile duct, bladder, breast, colon, lymph node, pancreas, and prostate. His review of the medical literature on chemo treatment shows that all chemo drugs are actually potent anti-fungal agents that kill fungi by blocking their functions in one of several different ways. This data explains why people with cancer are riddled with recognizable *Candida albicans* and other fungal forms. It also points to the importance of balancing the pH of the tissues and blood, which will clean the terrain and thus eliminate the pathogens' food supply.

Medical personnel are finding that people with cancer also harbor other bacteria, viruses and fungi that might be a precursor and/or accompaniment to the disease. One leading microscopist, finding a preponderance of *E. coli* infections in people with cancer, includes frequencies for *E. coli* in all rife sessions. Recent research shows the Epstein-Barr virus in large numbers of people with Hodgkin's Disease, lymphoma and aggressive breast cancer. Dr. Hulda Clark found that a majority of her clients with cancer harbored the *Fasciolopsis buski* parasite. When the parasite was eliminated, the cancer would not progress. If the parasite returned, so would the malignancy. Due to the high prevalence of parasites in people with cancer, Rife scholars often advise doing all common parasite frequencies including intestinal flukes, along with the cancer frequencies.

#### All Cancers

Rife used high MHz (megahertz) frequencies rather than low Hz (hertz) frequencies to eliminate cancer. Lower Hz frequencies work well for most illnesses, but *not* for cancer. Make sure your device can transmit in the higher ranges, at least to 90,000 Hz. *And no matter what form of cancer you have, try to use Royal Rife's original frequency:* 1,604K. Jeff Sutherland has further refined this number of 1,604,378 exactly. If your unit cannot reach the MHz ranges, use lower harmonics of the MHz numbers and set the machine for a square wave. Keep dividing by 2 until the

range is within your machine's capacity. In the Hz range, two primary cancer frequencies are 2127.5 and 2008. Some people use these numbers daily for one hour each. To ensure that all the pathogens are covered, program a sweep of 2 to 3 Hz on either side of the main signal. (See Chapter 4 for more information on the sweep function.)

You can also do sweeps across the 450 to 900 Hz ranges, to which most bacteria, molds and some viruses appear to respond. According to Dr. James Bare, viruses also seem to respond in the 1450 to 1850 Hz ranges, so do sweeps here too. When sweeping, set your unit for 30 seconds per one Hz step. The resulting program may be about 3 hours long, but if your condition is severe, it's worth trying.

According to Dr. Richard Loyd, all tumors contain mercury, so see **Chemical Poisoning / Detoxification**. Also see "Hepatitis C" under **Liver and Gallbladder**, *Liver*; the "*Herpes*" entries under **Viruses**; "*Chlamydia trachomatis*" under **Bacteria**; and all applicable entries under **Parasites**, **Protozoa and Worms**. Also see "*Candida albicans*" and similar entries under **Candida**, **Fungi**, **Molds and Yeasts**, due to the fungal nature of cancer.

From Jimmie Holman's Romanian laboratory tests: 24024, 25520, 28392, 31800, 32760, 37128, 41496, 43120, 44520, 44688, 45000, 45864, 50232, 58968, 61712, 63336, 67704, 68208, 72072, 74480, 76440, 76560, 80808, 85176, 89544, 99506 (use this last one with great care, as there may be a lot of die-off).

From Dr. Richard Loyd:

11,430K for 30 minutes minimum, twice daily.

11,780K for 30 minutes minimum, twice daily.

In these high ranges, sweep 100 Hz on either side of the main signal. If your machine cannot generate numbers in these high ranges, dividing 11,780,000 several times by 2 gives you 736,250. And dividing 11,430,000 several times by 2 gives you 714,375. These lower numbers are the lower harmonics of the original high frequencies.

Methodical program: In addition to whatever you have determined are the "basic frequencies" unique to you and your particular condition, one researcher recommends three different programs for Day #1, Day #2 and Day #3, since the frequencies for most cancers (when using a lower range instrument) are in the 2000 range.

On Day #1, use frequencies between 2093 and 2205 in intervals of 8: 2093, 2101, 2109, 2117, etc.

On Day #2, use frequencies between 2096 and 2208 in intervals of 8: 2096, 2104, 2112, 2120, etc.

On Day #3, use frequencies between 2099 and 2211 in intervals of 8: 2099, 2107, 2115, 2123, etc.

Cancer not killed by 2008 or 2127.5: 2180, 2182, 2184

From Dr. James Bare: 10025, 10026, 10027

Experimental sweep: 10,022 to 10,029

Additional experimental: 6.8, 55.56, 440, 663, 778, 1050, 2180, 3672

Run for 4 minutes each: 644, 901, 1352, 2098

Pain from cancer, all types: 95, 660 + 690 + 727.5, 2008, 2127.5, 2720, 3K, 10K

Maintenance (after an apparent remission, to prevent recurrence): 2 + 250, 120, 428, 465, 600 + 625 + 650, 660 + 690 + 727.5, 776, 784, 800, 802 + 1550, 832, 880, 1489, 1600, 1865, 2K, 2012, 2100, 2170, 2490, 2730

#### Adenoma, Cervical

See "Uterine Cancer or Tumor" in this section.

#### AIDS

Some researchers consider AIDS a form of cancer. However, since most people think of it as a distinct virus, see "HIV (Human Immunodeficiency Virus) / AIDS (Acquired Immune Deficiency Syndrome)" under **Viruses**.

#### Astrocytoma

See "Brain Tumor / Astrocytoma" in this section.

#### *Bacillus X* Virus

See "*BX* Virus" in this section.

#### *Bacillus Y* Virus

See "*BY* Virus" in this section.

#### Bladder Cancer

329, 635, 847, 867, 9889

#### Bone Cancer

These frequencies were successfully used for a dog. Also, its affected paw was soaked in colloidal silver and Willard Water (see Chapter 3). He was also fed hydrazine sulfate tablets and apricot seeds, a natural source of the nutrient Vitamin B17. (Laetrile, a natural refined version of B17,

### Black Salve ("Cansema") Treats Cancer

Based on a Native American recipe, this highly caustic cream separates tumors from healthy tissue. Depending on the ingredients, it may also remove skin tags, moles and warts, and can be taken internally. The original recipe contained bloodroot and galangal, but the cream can also include burdock, chaparral, comfrey, graviola, marshmallow and mullein. In mid-19th century London, Dr. J.W. Fell applied a paste of bloodroot (whose alkaloids are known tumor destroyers) and zinc chloride, and eliminated cancers within four weeks. In the 1930s in the US, Dr. Frederic E. Mohs described his method of excising tumors using black salve in *Chemosurgery: Microscopically Controlled Surgery for Skin Cancer* (last published in 1978).

is discussed in *World Without Cancer*.) Use all frequencies for at least 4 minutes each.

2008, 2125, 2128, 2131, 2140, 2145, 3524, 3672, 3713, 6130, 6601, 6672

#### Brain Tumor / Astrocytoma

This includes tumors in the spinal cord as well as brain. Be aware that when cancer microbes are killed, water is left behind. In the brain (and also the lungs), there is no place for the water to drain, so you may have to pace your rifing at a slower pace until the water gets re-absorbed. Also see "Encephalitis" and "Meningitis" under **Nervous System and Brain**.

7.69, 7.7, 9.19, 9.2, 8.25, 20, 463, 466, 543, 590, 641, 664, 660 + 690 + 727.5, 720, 800, 832, 853, 855, 857, 880, 2008, 2127.5, 2170, 2180, 2182

#### Breast Cancer

According to the American Cancer Society, men account for 1% of all breast cancer cases. Women, however, are particularly susceptible, due to their higher percentage of body fat. Toxic fat-soluble chemicals, including parabens (used in most cosmetics and body care products), are directly absorbed by fat cells, abundant in the breasts

Another major contributor to breast cancer is deodorant/antiperspirant. When the sweat glands are plugged up with antiperspirant, they are unable to perform their natural function of sweating out toxic waste through the skin; and once this waste is prevented from leaving the body, it goes right back into the bloodstream. Even if "only" a deodorant is used (without antiperspirant properties), it always contains plastics (such as [anything] glycol), usually a solvent (any alcohol), and often a toxic metal, such as aluminum (which is a deadly poison and present in many disease pictures, including Alzheimer's). These chemicals are deadly; don't use them! Instead, dust your underarms with arrowroot powder, and/or spray them with tea tree oil and/or colloidal silver. If your body emits a strong unpleasant odor, you probably have too much waste material lodged in your cells—in which case, a detoxification program would be helpful. When men use deodorant, much of it sticks to their underarm hair and never reaches the skin to be absorbed into the bloodstream.

Evidence suggests that women who regularly wear brassieres are three to four times more likely to get breast cancer than women who do not wear bras. Binding the breasts obstructs blood flow and hinders the normal circulation of lymph tissue in the armpit (an area that commonly develops cancerous cells). Immobilizing the breasts also diminishes the tone in the ligaments found in the dense connective tissue that attach to the rib cage and support the breasts. Despite a woman's fears that her breasts will sag unless she wears a bra, the ligaments in the breasts (as elsewhere in the body) can atrophy if prevented from performing their weight-bearing tasks. Studies are now showing that women in Japan who recently began wearing bras for the first time experienced sagging of an inch in just a few months—and that they, and other women, reverse breast sagging when they stop wearing bras. If you must wear a bra, make sure that it is loose fitting and constructed of natural rather than synthetic fibers. The bra must not contain "support" materials of wire, plastic or bone, which in the name of "beauty" interrupt the circulation of blood and lymph and thus prevent nutrients and oxygen from reaching the area.

Another contributor to breast cancer is the ingestion of coffee and chocolate, both of which contain caffeine and other volatile oils. I cannot emphasize enough how important it is to omit these from the diet. Sometimes the elimination of these foods alone will cause cysts to either shrink or disappear entirely. Also, according to David Brownstein, MD, people who get breast cancer tend to be deficient in iodine. Replenishing the system with mg (not mcg) amounts of iodine can help eliminate the cancer. Some women apply liquid iodine directly to their breasts.

Many breast cancers also develop in the presence of estrogen. But the environment, as well as women's bodies, contains estrogen-like substances (plastics, some chemicals) that latch on to the estrogen receptor sites on the cells, producing hormone-like effects. So do unfermented soy products. Their phytoestrogens (plant-based estrogens), not broken down during processing, are hundreds of times more powerful than natural human estrogen and disrupt many bodily functions. See **Food** in Chapter 3 for more information.

Also see "Epstein-Barr Virus / Infectious Mononucleosis / Chronic Fatigue Syndrome (CFS)" and "*Herpes* Type 6," both under **Viruses**, since recent medical research indicates that these viruses are prevalent in aggressive breast cancer. The following frequencies were calculated by Jimmie Holman. As they are a mathematical conglomeration of prior frequencies, there are fewer. Since they are in a higher range, they're more effective.

10800, 10980, 12464, 13055, 13862, 14700, 14896, 16720, 19024, 19600, 19764, 20978, 21648, 22693, 22550, 22800, 23100, 27084, 27976, 32144, 32175, 34400, 32940, 34894, 36080, 39165, 40260, 40546, 43120, 43188, 43407, 43491, 45000, 45264, 46367, 49042, 53625, 61698, 63632, 66154, 66204, 68000, 68,076, 69993, 75000, 75075, 75950, 83926, 88150

#### Bronchial Cancer

See "Lung Cancer" in this section.

#### *BX* or *Bacillus X* Virus (from Royal Rife)

Rife's name for a carcinoma strain of cancer. The frequency read from one of Rife's Beam Rays instruments was 1,604,000 hertz. Jeff Sutherland has further refined that number to 1,604,368 exactly.

Another number to try is 2127.5, often seen on various lists as 2127 or 2128. Use the higher frequency if your

## The Percentage of Chemo-Assisted Survival Rates after Five Years

In a 2004 issue of *Clinical Oncology*,[1] the authors reported that the contribution of cytotoxic chemo "therapy" to 5-year survival in adults is an estimated 2.3% in Australia and 2.1% in the US. They concluded that the benefits of cytotoxic chemo are minor, and urged the medical community to reconsider the need for this protocol due to its high cost and negative impact on quality of life. Here is a summary of success (or failure) rates with some common cancers:

| Location of Cancer | % Successes, Australia | % Successes, US |
|---|---|---|
| Bladder, Kidney, Pancreas, Prostate, and Uterus | 0.0 | 0.0 |
| Stomach | 0.7 | 0.7 |
| Colon | 1.8 | 1.0 |
| Breast | 1.5 | 1.4 |
| Lung | 1.5 | 2.0 |
| Brain | 4.9 | 3.7 |
| Esophagus | 4.8 | 4.9 |
| Ovary | 8.7 | 8.9 |
| Non-Hodgkin's lymphoma | 10.5 | 10.5 |
| Cervix | 12.0 | 12.0 |
| Hodgkin's disease | 35.8 | 40.3 |
| Testes | 41.8 | 37.7 |



## The Simoncini Baking Soda Treatment for Cancer

Italian oncologist Tullio Simoncini—upset by allopathic medicine's failure rate in the treatment of cancer—recently began using a solution of sodium bicarbonate (baking soda) of 5% or higher for people with all types of cancer. The protocol is based on Simoncini's observation, and his review of data from at least four other researchers, that cancerous tissue is fungal in nature (observed in no less than 79% of subjects). The fungus involved in cancer is the ubiquitous *Candida albicans*, although three other *Candida* strains have been detected as well. A tumor, Simoncini explains, is the body's way of trying to prevent the fungus from spreading by encapsulating the fungal overgrowth.

*Candida* tends to attack connective tissue, which is everywhere in the body and lacks the biochemical and structural means to prevent fungal invasion. The highly adaptable *Candida* can survive in almost any environment by altering its genetic structure. Thus the different types of cancer and almost unlimited locations of tumors—rather than being isolated diseases—simply point to the variety of shapes and forms that *Candida* can assume, depending on its container (the part of the body in which it lives) and the terrain on which it feeds.

*Candida* is so aggressive that it rapidly recovers from exposure to toxic fungicides, including chemo. The ability of these poisons to compromise the host's immunity allows the fungus to damage the weakened host even more. These factors, along with the organism's adaptability, contribute to the abysmally low success rate of chemo.

Although *Candida* is very hardy, the highly alkaline sodium bicarbonate creates a very inhospitable environment: it diffuses easily in the tissues and impedes the fungus's ability to reproduce. Because the baking soda must directly contact the tumor, it's administered with a special catheter right into the arteries that lead to the affected area. (Occasionally the bicarbonate is ingested.) The baking soda must also be taken continually, in concentrated doses. This is not a do-it-yourself therapy; it's imperative to be under a doctor's care.

Dr. Simoncini reports that on the third or fourth day tumors begin to shrink, and on the fourth or fifth day they collapse. As might be expected, conventionally trained physicians consider this treatment unacceptable. Simoncini's website is www.cancerisafungus.com.

unit can emit it. If not, keep dividing by 2 until you get a number in the range of your machine. Also see "*BY* Virus" (below), since Royal Rife's research suggested that there may be another form of the cancer virus.

First try, if your unit can go this high: 1,604,368. If not: 2127.5, 1049.5, 1199.5

From Dr. Richard Loyd: 11,780,000

From Dr. James Bare: 10025, 10026, 10027

Also try: 2876, 3713

#### *BY* Virus

Rife's name for a sarcoma strain of cancer. Some researchers believe that this is an enlarged form of the *BX*. These frequencies are not from Royal Rife, and should be used in addition to—not instead of—those of the "*BX* Virus" (above). Use the higher frequency if your unit can emit it. If not, keep dividing by 2 until you get a number in the range of your machine.

From Dr. Richard Loyd: 11,430K.

From Dr. James Bare: 10025, 10026, 10027

Also try: 2008, 3524, 20080

#### *Candida* Carcinomas

A malignant tumor encased in connective tissue accompanied by *Candida albicans*. Make sure to also do the frequencies for "*Candida albicans*" under **Candida**, **Fungi**, **Molds and Yeasts**.

465, 2167, 2182

#### Carcinoma

Malignant tumor enclosed in connective tissue. According to the Australian Naturopathic Network, *Euphorbia peplus* (radium weed) has been found to help sun spots, basal cell carcinoma and squamous cell carcinoma to drop off. Also see specific area and/or condition, and "*BX* Virus" in this section.

From Dr. James Bare: 10025, 10026, 10027

55, 127, 304, 462, 590, 644, 660 + 690 + 727.5, 787, 852, 856, 880, 901, 1352, 1582, 1820, 2008, 2098, 2104, 2112, 2120, 2127.5, 2120 to 2130 (scan), 2136, 2144, 2152, 2160, 2168, 2176, 2184, 2192, 2200, 2217, 5K, 9999

#### Cervical Adenoma or Cervical Cancer

See "Uterine Cancer or Tumor" in this section.

#### Colon Cancer

Also see "Intestinal Cancer" in this section.

656

#### Fibrosarcoma

Malignant tumor containing connective tissue developing rapidly from fibrous tissue.

1744

#### Gastric Cancer

676

#### Glioblastoma

See "Brain Tumor / Astrocytoma" in this section.

#### Glioma

See "Brain Tumor / Astrocytoma" in this section.

#### Hodgkin's Disease / Lymphogranuloma, Malignant

Malignant enlargement of the spleen, lymph tissue and liver, often accompanied by weight loss, fever, night sweats, increased white blood cell count, and anemia. Hodgkin's Disease is unusual for cancer because the tumors do not contain much abnormal tissue. Also see "*Chlamydia pneumoniae*" under **Bacteria**; and "*Herpes* Virus Type 3 / *Herpes zoster* / Chicken Pox / *Varicella* / Shingles" under **Viruses**—a large percentage (25% or higher) of people with Hodgkin's Disease are also afflicted with *Herpes*. And see ""Epstein-Barr Virus / Infectious Mononucleosis / Chronic Fatigue Syndrome (CFS)" under **Viruses**, since recent medical research indicates that this virus is also prevalent in Hodgkin's Disease.

10, 440, 880, 552, 1522

#### Intestinal Cancer

Caused by *Fasciolopsis buski*, otherwise known as a fluke (or type of flatworm), which is also implicated in ulcers. Also see "Colon Cancer" in this section.

55, 15, 2K

From Dr. Hulda Clark: 21607.59, 1075.78 (adult and eggs), and 21508.01, 1070.82 (larvae)

#### Larynx Cancer

327, 524, 731, 1133

#### Leukemia

Malignant, abnormal increase of white blood cells. Exposure to radioactivity, dangerous chemicals, or parasites may be involved. Also see "Leukocytosis / Leukosis" under **Cancer**.

55, 590, 660 + 690 + 727.5, 787, 880, 2008, 2127.5, 2217

##### Leukemia, Feline

Cancer of the blood and bone marrow in cats, spread by contact with urine, feces, saliva or the vomit of an infected cat, characterized by severe depression, dehydration and fever. Cats are stricken suddenly, without apparent warning—a kitten under four months usually dies within two days. Also see "Feline (Cat) Immunodeficiency Virus (FIV)" under **Viruses**, as co-infection may be present.

258, 332, 414, 424, 544, 741, 743, 830, 901, 918, 997

##### Leukemia, Hairy Cell

Symptoms include a shortage of, and abnormal, blood cells.

122, 488, 622, 932, 781, 5122

**Leukemia, Lymphatic**

Malignant, abnormal increase of lymphocytes or lymph cells.

478, 833

**Leukemia, Myeloid**

Malignant, abnormal increase in the number of white blood cells.

422, 822

**Leukemia, T-cell**

Malignant, abnormal increase in the number of T-cells, a type of lymphocyte.

222, 262, 822, 3042, 3734

**Leukocytosis / Leukosis**

Increase of leukocytes or white blood cells, or of the tissue that forms them. This can lead to, or indicate, Leukemia. See "General (unspecified)" under **Parasites**, **Protozoa and Worms**. Also see "Leukemia" in this section.

612, 633, 644, 653, 3722

**Liver Cancer**

Also see "Hepatitis B" and several entries of "Fluke, Liver" under **Liver and Gallbladder**, *Liver*.

214, 393, 479, 520, 734, 3130

**Lung Cancer**

Be aware that when cancer microbes are killed, water is left behind. In the lungs (and also the brain), there is no place for the water to drain, so you may have to pace your rifing at a slower pace until the water gets re-absorbed. Also try breathing ozone through olive oil (see Chapter 3 for more details). Two common viruses have recently been associated with lung cancer, so also see under **Viruses**, "*Papilloma* Virus / Human *Papilloma* Virus (HPV)" and "*Rubeola* / Measles."

462, 776, 852, 1582, 2104, 2144, 2184, 3672

**Lymphogranuloma, Malignant**

See "Hodgkin's Disease / Lymphogranuloma, Malignant" in this section.

**Lymphoma, Non-Hodgkin's**

Symptoms include local or widespread enlargement of lymph nodes, and lesions in the lung, bone, gastrointestinal system or skin. A recent University of Southern California study compared the pesticide exposures of 268 children who had Non-Hodgkin's Lymphoma against the exposures in healthy children. Children whose mothers used pesticides in the home once or twice a week were almost 2.5 times more likely to develop Non-Hodgkin's Lymphoma. If the mothers used pesticides more often, the children were 7 times more likely to develop the cancer. Pregnant women exposed to pesticides by professional exterminators in their homes were 3 times more likely to have a child with the cancer. And children directly exposed to pesticides were 2 times more likely to develop the cancer. For detoxification assistance, see entries under **Liver and Gallbladder**, *Liver*; **Respiratory Tract**, *Throat and Lymph Nodes*; and **Chemical Poisoning / Detoxification**. Also see "Epstein-Barr Virus / Infectious Mononucleosis / Chronic Fatigue Syndrome (CFS)" under **Viruses**, since recent medical research indicates that this virus is prevalent in lymphoma.

First try: 574, 588, 666, 778, 1078, 1120, 1340, 1440, 1744, 3524, 3713

Then try: 2004, 2008, 2012, 2016, 2128, 3672, 7760

**Melanoma Metastasis**

A pigmented mole-like tumor usually on the skin that can move to other parts of the body.

Also see "Mycosis Fungoides" and "Skin Cancer / Squamous Cell Carcinoma / Basal Cell Carcinoma" in this section.

979

## Using Cancer-Causing Radiation to "Treat" Cancer

Cancer is usually treated with chemo and radiation "therapy," dispensed to either a small area or the entire body. We know that chemo consists of poisonous chemicals. But what, exactly, is the "radiation" dispensed as cancer treatment—and how does it work?

The radiation administered under medical auspices is *ionizing radiation* (IR), which can be in the form of X-rays, gamma rays, or radioactive substances such as radioactive iodine. Ionizing radiation is acknowledged to kill cancerous cells because it permanently shatters the natural bonds between DNA strands. But IR also destroys the DNA of normal, healthy cells. IR, reports B. Blake Levitt, "consists of very short wavelengths . . . which have enough power to knock electrons off their nuclear orbits and therefore can cause permanent damage on the cellular level . . . [including] genetic mutations."[2] This destabilization of atoms—in other words, the formation of *free radicals*—corresponds to toxic waste on a biochemical level. A toxic system explains the many "side" effects of this "therapy," which include nausea, hair loss, diarrhea, memory loss and scar tissue. But another "side" effect of this "therapy" is either a recurrence of the original cancer, or the formation of other types of cancers!

It's common knowledge that radiation exposure—whether due to radioactive fallout from nuclear bombs, or meltdowns from nuclear power plants—increases the occurrence of cancer, both in people living near the source and in those farther away. To use radioactive materials acknowledged to *cause* cancer as cancer *therapy,* makes no sense.

#### Multiple Myeloma

Abnormal, diffuse increase of plasma cells in the bone marrow. It is accompanied by anemia (deficiency of red blood cells or iron), and painful swellings on ribs, skull, and spine. Also see other cancer frequencies in this section.

249, 418, 475, 647

#### Mycosis Fungoides

A type of skin cancer resembling eczema. Also see "Melanoma Metastasis" and "Skin Cancer / Squamous Cell Carcinoma / Basal Cell Carcinoma" in this section.

532, 662, 678, 852, 1444

#### Non-Hodgkin's Lymphoma

See "Lymphoma, Non-Hodgkin's" in this section.

#### Pancreatic Cancer

A protocol of very high amounts of pancreatic enzymes on an empty stomach may be especially helpful here. Dr. Hulda Clark has reported liver flukes clogging the pancreas in autopsies of people who died of pancreatic cancer, so also see the various liver fluke listings under **Parasites**, **Protozoa and Worms**.

Run 4 to 5 minutes each: 545, 547, 556, 600 + 625 + 650, 660 + 690 + 727.5, 784, 787, 1560, 2K, 2184, 2455, 2489, 2492 and run 2008 and 2127.5 between 45 minutes and 1 hour per day.

#### Plasmacytoma

A tumor containing plasma cells occurring outside of the bone marrow, such as the inner organs and lining of the nose, mouth and throat. Do not rely solely on the frequency below. See "Multiple Myeloma" and other entries in this section.

475

#### Prostate Cancer

Many men have successfully used a rectal heating unit (a Thermo Therapy unit from Light Energy Company; see Resource Appendix) to contain or eliminate this condition. Also see "*Propionibacterium acnes*" under **Bacteria**, as this microbe may be a secondary cause of some prostate cancers.

20, 60, 72, 95, 125, 304, 408, 442, 660 + 690 + 727.5, 688, 748, 766, 787, 790, 800, 854, 920, 1840, 1875, 1998, 2008, 2050, 2127.5, 2120, 2125, 2130/2131, 2140 (for 3 to 6 minutes), 2145, 2217, 2250, 2288, 2720, 3672 (for 3 to 4 minutes), 5K, 10025

#### Rhabdomyosarcoma

Striated muscular tissue tumor.

660 + 690 + 727.5, 784, 880, 2K, 2005, 2008, 2016, 2048, 2084, 2093, 2100, 2127.5, 2184, 2217, 2586, 6024, 6384

#### Rhabdomyosarcoma, Embryonal

Striated muscular tissue tumor, but this one is undifferentiated, and somewhat resembles an embryo.

Major frequency: 2586

Then try: 2004, 2008, 2016, 2032, 2040, 2060, 2586, 4445, 5476, 6024

#### Sarcoma

Tumor often comprised of connective tissue. Also see specific area and/or condition, and "*BY* Virus" in this section.

From Dr. James Bare: 10025, 10026, 10027

55, 127, 462, 590, 660 + 690 + 727.5, 787, 852, 856, 880, 1582, 1755, 2008, 2120 to 2130, 2127.5, 20080

#### Skin Cancer / Squamous Cell Carcinoma / Basal Cell Carcinoma

Squamous cell tumors are thick and rough and occasionally ulcerated, with a crusted surface over a raised, grainy surface. *Squame* is Latin for "fish scales." Tumors appear most often on the face, ears, lips, neck, bald scalp, hands, shoulders, arms and back. Skin that is injured from burns, chemicals, chronic sores, scars and X-rays—and of course tanning booths, which dispense dangerous wavelengths of UV light—is more prone to cancer. Those with fair skin, light hair, and blue or green eyes, as well as people with poor immune function, are at higher risk than dark eyed, darker skinned people.

If you have chronic inflammatory skin lesions, moles, or sores that don't heal, see a doctor; this may indicate squamous cell carcinoma. Early treatment is generally effective. Despite modern warnings to avoid the sun, Dr. Royal Lee discovered that the sun's rays were either harmful or healing, depending on the person's diet—and that skin cancer tends to erupt if polyunsaturated fatty acids are lacking in the diet. See Chapter 3 for more information.

A preparation called Cansema or Black Salve has been found to eliminate skin cancers. Also see "Melanoma Metastasis" and "Mycosis Fungoides" in this section.

Run 760 and 2116 (for 30 minutes), 2280 (for at least 5 minutes), *and* run for 4 minutes each: 666, 2008, 2125, 2128, 2131, 2140, 2145, 3672, 6601, 6130, 6672.

#### Stomach Cancer

The frequencies below are for the microbe *Helicobacterium pylori*, which is also implicated in ulcers. Make sure to use the general cancer frequencies, too.

676, 660 + 690 + 727.5, 880, 2167, 2950

#### Uterine Cancer or Tumor

Makers of vaccines push the theory that Human *Papilloma* Virus (HPV) is a major cause of cervical cancer, when, in fact, no direct causal relationship has been proven. Rather,

when cancer cells are present and dividing wildly, the cells are more prone to be infected by HPV. Nevertheless, the following viruses have been found in many cases of cervical cancer, so see "*Papilloma* Virus / Human *Papilloma* Virus (HPV)" under **Viruses**; and "*Herpes simplex* 1" and "*Herpes simplex* 2" under **Viruses**, *Herpes*. Also see "Carcinoma" and the general programs in this cancer section; as well as "Pelvic Inflammatory Disease (PID)" under **Women**, *Uterus and Cervix*, *Ovaries*, *and Fallopian Tubes*.

127, 443, 2288, 2944-2968 (sweep, for at least 20 minutes)

*End of Cancer section*.

**CANCRUM ORIS**
See under **Ulcer**.

**CANDIDA CARCINOMAS**
See under **Cancer**.

**CANDIDA, FUNGI, MOLDS AND YEASTS**
The word "fungus" is a broad classification that includes mildew, molds, rust, smut and yeasts, as well as mushrooms, morels, puffballs and truffles. Once classified as plants, fungi are now considered different enough from plants to be placed into a separate category or kingdom. Between 70,000 and 1.5 million species of fungi are estimated to exist.

Fungi feed in three ways. The first group, which grows on dead organic matter (leaves, trees, manure, insects, animals), contains enzymes that digest the cellulose and lignin in the organic matter. We call this process "rotting." Usually, this group eventually eliminates what is being eaten. Members of the second group are parasitic: they live within or upon another organism without killing it, at the expense of that organism. Rather than obtaining their food from dead plants or animals, parasitic fungi attack and kill living hosts, which causes serious damage. The third (and relatively small) feeding group is beneficial. The members form a symbiotic partnership with plants (mainly trees), whereby the tree supplies them with moisture and carbohydrates, and the fungi release minerals and other nutrients into the surrounding soil. Fungi reproduce by releasing spores that are carried elsewhere—either via the wind if they are outdoors, or via the bloodstream if they are living in someone's body.

Infections from fungi can be difficult to treat. According to research from Dr. A.V. Costantini, Mark Bielski, Italian oncologist Tullio Simoncini and others, fungi and their highly poisonous mycotoxins are implicated in an almost unlimited number of diseases, including adrenal disorders, AIDS, Alzheimer's, atherosclerosis, brain inflammation, cancer, Chronic Fatigue Syndrome, cirrhosis of the liver, Crohn's disease, Cushing's disease (related to abnormally high levels of cortisol hormone), diabetes, gout, circulatory problems (including heart failure, inflammation of the heart muscle and blood vessels, and pulmonary hypertension [inflammation of the arteries supplying the lungs]), hypoglycemia, infertility and other disorders of the reproductive organs, kidney stones, muscular dystrophy, osteoarthritis, osteoporosis, rheumatoid arthritis, and skin disorders (including psoriasis and scleroderma).

The majority of people with fungal/yeast issues have an overgrowth in the digestive tract, Not all fungal infections, however, are acquired through ingestion. Many people have violent reactions to mold and mildew in the air. Reactions include respiratory conditions, nausea, severe itching and rashes, eye irritation, acute headaches, even impaired mental function. Increasing numbers of lawsuits are being filed against landlords by people in sick buildings (including schools) that are contaminated with mold.

The presence of fungi indicates an advanced stage of fermentation within the body—the organism is literally molding—so you will need to pay careful attention to diet and acid/alkaline balance (pH). Eat mostly fresh vegetables, animal protein, and good fats (coconut and olive oils, and for those who can tolerate it, raw butter). All of the organisms in the fungus kingdom (as do viruses and bacteria) thrive on sugars, even those naturally occurring in fruits. Therefore, until you have sufficiently healed, avoid high-sugar fruits, as well as dense and high-starch carbohydrates such as grains, potatoes, carrots, peas and beans, and perhaps even nuts and seeds. Since many people with serious fungal infections develop a cross-sensitivity to yeasted and fermented foods, also avoid mushrooms, soy sauce, vinegar, alcohol, cheese, and other yeasted products such as bread. However, sauerkraut, even though it consists of fermented cabbage, could be helpful, as it helps to balance the intestinal flora.

Fungal infections can be difficult to treat, so I would not rely on frequencies alone. One powerful anti-fungal and anti-viral herb is chaparral (creosote bush), indigenous to the American Southwest and used for centuries by the Native Americans for numerous conditions. Another powerful natural remedy is the inner bark from the Brazilian pau d'arco or *Tabebuia avellanedae* tree. Impervious to rotting in a damp climate, it is rightly highly regarded as an anti-fungal agent.

If the digestive tract is unbalanced, take beneficial intestinal bacteria—especially *Lactobacillus acidophilus* and *Lactobacillus bifidus* (also known as *Bifidobacterium bifidus*), which feed on *Candida*. These lactobacilli also suppress *Candida* by excreting hydrogen peroxide. Friendly flora are also present in sauerkraut, kefir and yogurt (though some people become worse when they eat even raw fermented dairy). See *The Yeast Connection*, *Candida: A Twentieth Century Disease*, and *The Candida Albicans Yeast-Free Cookbook*.

There are hundreds of types of fungi, so I have listed only the most common ones below. Run each frequency for at least 5 minutes, longer (10 minutes) if possible. Whatever fungus you are treating, also use frequencies for *Candida albicans*, which is widespread and is implicated in countless disorders. Some rifers benefit from a sweep between 420 and 482, for about 15 to 20 minutes.

Recently it has become apparent that the divisions between various microbes is less distinct than was previously thought. Nevertheless, the conventional labeling systems are still useful. If you do not know whether the microbe belongs in **Bacteria**; **Candida**, **Fungi**, **Molds and Yeasts**; **Parasites**, **Protozoa and Worms**; or **Viruses**, look up its name alphabetically and you will be guided to the appropriate section.

Fermentation in the system generally supports parasites of all kinds, so see **Parasites**, **Protozoa and Worms**. Since Candida and other fungi feed on heavy metals, see the heavy metal detoxification entries under **Chemical Poisoning / Detoxification**. Also see **Blood Sugar Levels** and **Cancer**, since fungi are often associated with these conditions.

#### General Fungus / Molds / Yeasts

20, 72, 132, 158, 222, 242, 254, 321, 331, 333 + 523 + 768 + 786, 344 + 510 + 943, 337, 374, 391, 414, 421, 422, 464, 465, 512, 524, 555, 565, 582, 592, 594, 623, 634, 660 + 690 + 727.5, 732, 766, 784, 787, 802 + 1550, 822, 923, 933, 982, 743, 744, 745, 774, 784, 823 to 829, 854, 866, 880, 886, 942, 943, 1016, 1130, 1134, 1153, 1155, 1233, 1333, 1351, 1463, 1627, 1711, 1823, 1833, 2222, 2411, 2644, 4442

#### *Actinomyces bovis* / Actinomycosis

A fungus that causes Actinomycosis, fungal infection of the brain, lungs, gastrointestinal tract or jaw. Also see "*Streptothrix*" under **Bacteria**.

1.1 + 73, 20, 160, 220, 465, 660 + 690 + 727.5, 787, 10K

#### Aflatoxin

A highly dangerous toxin produced by mold that is often found in improperly stored peanuts and peanut butter. The toxin can produce swelling, especially in the legs and abdomen, and damage the liver. Also see "*Aspergillus flavus*" in this section.

344 + 510 + 943, 474, 476, 568

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz: 177K and 188K

Hertz: 438.74 and 466.01

Also from Dr. Clark: 9359.97, 8812.31

#### *Alternaria tenuis*

A fungus associated with lung ailments.

853, 304

#### *Aspergillus flavus*

Mold found on corn, peanuts and grain, which produces aflatoxin. Also see "Aflatoxin" in this section.

1823, 247, 1972

#### *Aspergillus glaucus*

Blue mold occurring in some human infectious processes.

333 + 523 + 768 + 786, 524, 758

#### *Aspergillus niger*

Common mold that may produce severe and persistent infection.

374, 697 (10 minutes each)

#### *Aspergillus rhizopus*

Common mold that may produce severe and persistent infection.

2127.5

#### *Aspergillus terreus*

Mold occasionally associated with infection of bronchi and lungs.

743 to 745, 339

#### Barley Smut

See "*Ustilago nuda* / Barley Smut" in this section.

#### *Botrytis cinereas*

Fungus that attacks over 200 plants, including tomato, cucumber, lettuce, grape, strawberry and flax, sometimes appearing as a gray mold.

212, 1132, 1545

#### *Candida albicans*

People commonly call a systemic or digestive fungal infestation "Candida"—referring to the most well known strain, *Candida albicans*, although there are actually several different types of *Candida*. *Candida* overgrowth causes a vast array of conditions including but not limited to: poor digestion, mood swings, overweight, craving for carbohydrates (including sweets and alcohol), depression, blurry vision, slurred speech, poor motor coordination, and an inability to focus or remember.

Normally, when *Candida* yeast live in the digestive tract, the *acidophilus* and *bifidus* lactobacilli prevent the *Candida* from multiplying. But poor diet, stress, and antibiotics (which kill the friendly flora) alter the intestinal terrain. This not only encourages the *Candida* to proliferate, but it also allows the relatively benign, less sophisticated yeast form to bloom into a dangerous, full-blown fungus whose fruiting bodies produce long branches or stalks that puncture the lining of the gut. Such extensive damage causes leaky gut syndrome, during which partially digested food escapes the intestinal wall, where it then poisons the bloodstream and inflames the tissues. Moreover, a waste product of *Candida*—

acetaldehyde, which is chemically related to formaldehyde (a fluid used to embalm corpses)—interferes with the body's neurotransmitter pathways, metabolism, immune response, and nervous and endocrine systems. The tendency of acetaldehyde to accumulate in the brain, spinal cord, joints and muscles is what poisons the bodily tissues and creates such a wide variety of debilitating symptoms.

Certain nutritional supplements can help your body eliminate the debris with minimum discomfort. At least 450 mg of pantothenic acid (B5) per day neutralizes the alcohol-rich *Candida* toxins. Considerable amounts (one gram daily for two weeks, then 500 mg daily until symptoms abate) of beneficial intestinal flora eat the *Candida* as well as produce biotin (B7). The biotin thwarts *Candida* from transforming into its more dangerous fungal form. In lieu of one gram of biotin three times daily, one to two tablespoons a day of virgin olive oil is sometimes used. Raw garlic is a helpful, all-around natural antibiotic. Magnesium assists in the intercellular transport of nutrients. And activated charcoal, taken away from food and supplements, mops up the mycotoxins.

Some very important research on *Candida albicans* was recently conducted in Romania under the auspices of Jimmie Holman and Paul Dorneanu. They found that 464, a number commonly found on frequency lists, is a sub-harmonic of *Candida*'s Mortal Oscillatory Rate. Just a 3-minute exposure to 464, using their own equipment, retarded *Candida* growth by about 20%. However, other frequencies were more effective. The actual MORs (below), if your unit can transmit that high, are ideal. Holman and Dorneanu also identified another *Candida* strain, similar to *albicans*, that is discernable only with a complex, expensive test. Although the frequencies for this newer strain may be different from those of *Candida albicans*, treating for *albicans* might still be beneficial. As these lab-tested frequencies are very powerful, run half of them on days 1, 3, 5, 7, etc., and the other half on days 2, 4, 6, 8, etc.

Also try "General (unspecified)" and "*Ascaris lumbricoides* / Roundworm" under **Parasites**, **Protozoa and Worms**, as *Ascaris* and *Candida* often co-exist.

From Jimmie Holman and Paul Dorneanu.

*Excellent to good results, in descending order:* 23485, 51155, 51156, 53940, 58914, 58916, 88740, 23484, 31724, 31725, 33060, 46980, 50460, 54404, 54405, 55250, 57420, 99180, 22620, 29580, 55251, 60900, 64380, 67860, 78300

*Also try* (may work only on Pulsed Technologies equipment, due to the fast rise time of the equipment's wave): 23485 and 8146

*For units unable to reach the higher ranges:* 412, 464

*Organ support, immediately before or after the above numbers:* 23958, 24354, 28251, 29766, 32121, 32670, 36735, 38281, 44506, 44583, 45549, 45738, 54531, 56133, 56376, 57519, 58806, 63336, 67977, 71874, 84942, 86394, 87000, 89298

From Dr. Richard Loyd: first try 3088K, then try 386K

From Dr. Hulda Clark: 19217.81, 956.80

Sweep option: 12006.25 to 12137.5

Also try: 20, 254.2, 381, 386, 450, 465, 660 + 690 + 727.5, 661, 742, 762, 784, 787, 866, 877, 880, 886, 344+ 510 + 943, 1151, 1403, 2127.5, 2644

Then try: 72, 422, 543, 582, 802 + 1550, 1016, 1134, 1153, 2222

And then try: 60 + 100, 95, 125, 152, 225, 240, 427, 442, 600 + 625 + 650, 688, 751, 880, 1146, 8146

#### *Candida* carcinomas

A malignant tumor encased in connective tissue accompanied by *Candida*. In addition to the frequencies below, see "*Candida albicans*" in this section, and follow the protocol carefully to eliminate both the fungus and its mycotoxins.

465, 2167, 2182

#### *Candida tropicalis*

675, 709, 1403, 2182, 2184

#### *Cladosporium fulvum*

A fungus that causes raised, irregular nodules of soft tissue that can be slow to heal.

233, 344 + 510 + 943, 438, 776

#### *Claviceps purpurea* / Ergot

Found in contaminated wheat, rye, triticale, barley, oat, and other grasses and grains, it causes ergot in humans and other animals, especially cattle. Symptoms include vomiting, diarrhea, abdominal and muscular pain, headache, muscle tremors, psychotic behavior, convulsions, and coma.

660 + 690 + 727.5

From Hulda Clark: 295K or 731.23 (for devices unable to accommodate frequencies in the kilohertz range), and 14687.19

#### *Coddidioides immitis* / Valley Fever / Coccidioidomycosis / Coccidiosis

*Coddidioides immitis* is a fungus-like mildew living in soil in warm climates, including southwestern United States. Its seeds and spores are spread by the wind after the earth is dug up. (This is why Valley Fever primarily affects people living in the desert, because new homes are constantly being built that disrupt the sand.) The most common infection is in the lungs, with symptoms such as the flu and pneumonia. Occasionally the disease is fatal, when the spores spread through the bloodstream to the skin, bones,

## Mold and Lyme Toxins

Mold toxins are found in foods such as grains and peanuts. Far more serious are the mold toxins found in buildings with water leaks. Buildings with flat roofs and buildings on a concrete slab at the bottom of a hill are ready-made for mold problems. Mold toxins are the most common of the biotoxins, and are responsible for many of the symptoms of many Lyme patients.

When a building has a water leak or water damage that is not immediately corrected, molds such as *Stachybotrys*, *Aspergillus*, *Acremonium*, *Actiniomycetes*, *Penicillium* and *Chaetomium* are likely to start colonies. The colonies may be visible or they may be hidden in places such as the tops of ceiling tiles or the bottoms of carpets. . . . The molds send out spores which contain powerful biotoxins that are nerve toxins or neurotoxins. When these spores with their neurotoxins are inhaled, about 75% of the population can make antibodies to the toxins and quickly eliminate them. They may sneeze, have a sore throat or have other minor symptoms, but symptoms are temporary. If they spend several days in a moldy building, they may begin to feel sick, but when they are away for a few days they recover.

About 25% of the population have a genetic makeup that makes them unable to produce the needed antibodies for mold toxins. The body simply does not adequately tag the toxins as invaders and it does not eliminate them. The liver can send them to the digestive tract via the bile, but they are quickly reabsorbed back into the blood. The result is that continual or repeated exposures to mold toxins result in an ever increasing amount of these toxins in the body.

Those who can actually smell musty odors where they live or work usually have the worst mold toxin problems. It is estimated that 10 million American children are being exposed to mold toxins (many are medicated with Ritalin as a result) and around 25 million Americans have some degree of mold toxin illness. . . . Many cannot detoxify either mold or Lyme toxins. If they have Lyme Disease, Lyme toxins also build up in the body. These are the people that get very sick and stay sick when they do frequency treatments for Lyme. *For those who get major prolonged die-off reactions, frequency treatments for Lyme are not recommended until the toxin issue is addressed*. . . .

Mold and Lyme toxins attach to fat cells and cause the fat cells to continually release inflammatory cytokines. The result is chronic inflammation with symptoms such as fatigue, pain, brain fog, out of control weight gain and loss of sex drive. When a person has the flu, symptoms are not caused directly by the viruses. The symptoms are caused by the resulting cytokines. So mold and Lyme toxins can cause symptoms similar to a permanent case of flu.

An inflammatory reaction is very useful to help deal with an infection [but] it is devastating. The mold and Lyme toxins cause the fat cells to make a material called NF-kappaB. NF-kappaB causes all kinds of inflammatory chemicals to be released. And these chemicals can have great adverse effects if they are produced over a long period of time. You can see the listed results such as pain, inflammation, heart disease, blood sugar problems, autoimmune diseases, cancer and nerve damage. Another thing that happens is that some of these chemicals actually cause another increase in NF-kappaB! It is like when they turn a PA system up too high and the mike and speaker feedback and you get a very loud and unpleasant squeal. So the body can get stuck in a feedback loop where NF-kappaB increases inflammatory chemicals which increase NF-kappaB which increases inflammatory chemicals.

Cytokines also cause the release of a material called MMP9 that makes people feel terrible. Cytokines also cause reduced circulation in small blood vessels with greatly reduced oxygen and nutrients to the cells. This acts similarly to advanced heart disease, and any exercise can result in a crash that lasts for days. Excess cytokines are also related to autoimmune problems. . . .

Mold and Lyme toxin patients may make antibodies to myelin with resulting nerve damage. MS patients should be checked for mold and Lyme toxins. They may make antibodies to a material called cardiolipin. This causes blood to sludge. Hands and feet are often cold. More commonly, they make antibodies to gliadin which is a protein found in gluten. The result is an inability to tolerate glutinous grains (wheat and wheat relatives, rye, barley). A diet high in sugar and in the starch amylose (wheat, rye, oats, barley, rice, root vegetables, bananas) causes rapid blood sugar and insulin spikes. . . .

The blood-brain barrier . . . [is unable to] to slow down inflammatory cytokines at all, so they enter the brain and block various receptor sites. When the leptin receptor sites are blocked, leptin levels increase and leptin resistance is produced. The excess leptin packs fat into fat cells where it stays until the toxins are removed. People with high leptin can gain weight on 1,000 calories [a day].

When leptin receptors are blocked, the production of a chemical called MSH is blocked. [MSH—which refers to a group of melanocyte-stimulating hormones—are produced by the pituitary gland.] If MSH is low, melatonin production will be low, resulting in sleep problems. If MSH is low, endorphins will be low, resulting in excess chronic pain. MSH also controls pituitary hormone production and if MSH is low, there will be a loss of hormonal control. If cortisol is low, treatment should be to remove the neurotoxins. If cortisol is given, that depresses ACTH production and this can make the person's health much worse. Taking cortisol or steroid drugs

while biotoxins levels are high can result in serious permanent injury. Low MSH can also result in low androgens in both men and women. If androgens are low, symptoms will be much worse. That appears to be why most chronic fatigue patients are women.

Anti-diuretic hormone production by the pituitary is often disrupted, resulting in excess urination even to the point of dehydration . . . [where the person has] excess thirst and excess salt . . . [remains] in the blood. There may also be a layer of salt on the skin. When that happens, the person is a good conductor of electricity and many patients have problems with static electricity shocks. They may damage electronic equipment by touching it.

People who are low in MSH often have leaky gut, which lets in gliadin, which causes more inflammation and further reduces MSH, which causes more leaky gut, which lets in more gliadin [and so on]. [*Gliadin* is a glycoprotein present in wheat and several other cereal members of the grass genus *Triticum*.]

Eighty percent of low MSH patients have colonization in their sinuses by a variety of bacteria called "multiply antibiotic-resistant coagulase negative *staph*. . . ." In most people, this organism is fairly benign. But in low MSH patients, it must be taken care of before they can feel good. Colloidal silver nose drops are a possibility. . . .

[One doctor suggests going] on a low amylose [starch] diet. . . . We have experimented with plant sterols in the form of Cholestepure (2, three times a day) with very good results and little or no negative effects. C-Food from Precision Herbs (4, three times a day) also works well for biotoxin removal. Plan on taking one to two months for this. Stay away from moldy places and moldy foods.

[However] Dr. [Ritchie] Shoemaker reports that about 1% to 2% of the population do not get adequate improvement just by reducing mold and Lyme toxins. . . . To lower inflammatory cytokines, leptin and MMP9 . . . [as well as to] reduce inflammation, we have used a number of products such as Metagenics UltraInflamX, Kaprex and Kaprex AI, and Biotics KappArest. The supplements with "kap" in their names inhibit NF-kappaB. . . . Homeopathics for mold and Lyme could also help. If the molds are actually causing infection, Nano+ or Immune Yeast and Fungus can be used along with a good flora product and a toxin removal program. For much more detailed information, see the book *Mold Warriors* by Dr. Shoemaker.

—Richard Loyd, PhD, 2007
www.royalrife.com/mold_toxins.pdf

and membranes surrounding the brain, causing meningitis. Valley Fever cannot be caught from other people. After one exposure, the body is said to develop immunity.

The following frequencies are from Michael Tigchelaar: 80K (for 40 minutes), 336 and 337 (for 5 minutes each)

***Collectotrichum***

Pathogenic fungi in tropical and sub-tropical regions. It causes diseases in cereals, legumes, vegetables and fruits, including mango, coffee, avocado, and yam.

1482

**Corn Smut**

See "*Ustilago maydis* / Corn Smut" in this section.

***Cryptococcus neoformans* / Meningoencephalitis**

*Cryptococcus neoformans* is a yeast that causes respiratory infections, but may then enter the brain where it causes an infection called meningoencephalitis. Symptoms include headache, nausea, staggering gait, irritability, confusion, and blurred vision.

367, 428, 444 + 1865, 476, 478, 522, 579, 594, 597, 613, 624, 785, 792, 872, 2121, 5880, 5884

***Dematium nigrum***

Soil fungus found in wounds, often appearing as an infected patch of skin.

243, 738

***Epidermophyton floccinum* / Athlete's Foot / Jock Itch**

*Epidermophyton floccinum* is a fungus that attacks skin, nails and feet (where it is called athlete's foot), and the groin (where it is called jock itch). The fungi that attack the skin are often interchangeable and do not confine themselves to any one area. Also see the various *Trichophyton*, *Microsporon* and *Microsporum* entries, as well as "General Fungus / Molds / Yeasts," in this section.

20, 345, 465, 634, 644, 660 + 690 + 727.5, 766, 784, 802 + 1550, 880

**Ergot**

See "*Claviceps purpurea* / Ergot" in this section.

**Fungus flora**

331, 336, 555, 587, 632, 688, 757, 882, 884, 887

***Fusarium*, General**

600 + 625 + 650, 746, 768

***Fusarium oxysporum***

Fungus causing inflammation of the cornea of the eye.

102, 332, 705, 780, 795

***Geotrichum candidum***

Fungus found in feces and dairy products that causes symptoms similar to those of *Candida albicans*.

350, 355, 384, 386, 403, 404, 407, 409, 410, 412, 415, 418, 543, 544, 687, 700, 737, 987, 988

***Gliocladium* / Brain Fungus**

469, 633, 855

***Histoplasma* / Histoplamosis**

A fungus found mainly in tropical countries in the droppings of bats and birds, causing infections in the lungs and elsewhere.

424, 616, 749

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 293300 (lower limit), 302K (most effective), and 304350 (higher limit of same organism)

Hertz set: 727.02 (lower limit), 748.58 (most effective), and 754.41 (higher limit of same organism)

Also from Dr. Clark: 15035.69

***Hormodendrum***

A type of fungus.

532, 627, 663, 678, 695

***Malassezia furfur / Microsporon furfur* / Tinea Versicolor**

Both *Malassezia furfur* and *Microsporon furfur* cause Tinea Versicolor, a skin condition usually appearing on the front of the chest. Symptoms include scaling, reddish or gray itchy patches, and dry brittle hair. The frequencies for Tinea Versicolor are not separated according to microbe. Also see the various *Trichophyton*, *Microsporum*, and *Microsporon* entries, all in this section.

222, 225, 491, 616, 700

***Microsporon audouini* / Ringworm**

*Microsporon audouini* is a commonplace fungus that causes Ringworm, whose symptoms are itching, pain, and roundish red rings and flaking on the skin and scalp. Also see "*Malassezia furfur / Microsporon furfur* / Tinea Versicolor," and the various *Trichophyton*, *Microsporum*, and other *Microsporon* entries, all in this section.

285, 422, 831, 1222

***Microsporum canis* / Ringworm in Humans and Dogs**

*Microsporum canis* is a commonplace fungus that causes Ringworm, whose symptoms are itching, pain, and roundish red rings and flaking on the skin and scalp. This type is prevalent in dogs and cats as well as humans. Also see "*Malassezia furfur / Microsporon furfur* / Tinea Versicolor," and the various *Trichophyton*, *Microsporum*, and other *Microsporon* entries, all in this section.

347, 402, 600 + 625 + 650, 970, 1644

***Microsporum,* other types**

Also see "*Malassezia furfur / Microsporon furfur* / Tinea Versicolor," and the various *Trichophyton*, *Microsporum*, and other *Microsporon* entries, all in this section.

158, 222, 242, 391, 512, 523, 565, 592, 594, 623, 745, 774, 933, 1016, 1130, 1155, 1333, 1463, 1627, 1833, 4442

***Monilia***

See "*Candida albicans*" in this section.

***Mucor mucedo***

A mold that causes rot in fruit and baked goods and is sometimes found on the feet and skin.

488, 612, 735, 766, 1K, 9788

From Hulda Clark: 288K or 713.88 (for devices unable to accommodate frequencies in the kilohertz range)

***Mucor plumbeus***

Similar to *Mucor mucedo* and *Mucor racemosus fresen*.

361, 578, 785, 877

***Mucor racemosus fresen***

A fungus that grows on decaying vegetation and bread and can cause ear infections and, according to Guenther Enderlein, is implicated in most if not all coronary conditions.

First try: 310, 474, 875

Also try: 473, 686, 713, 729, 731, 751, 760, 778, 871, 873, 876, 878, 887, 1200, 7768, 7976, 8788

**Mucormycosis / Zygomycosis**

A serious fungal infection often associated with uncontrolled diabetes or immuno-suppressive drugs. See the other *Mucor* frequencies in this section. Also see **Blood Sugar Levels**.

623, 733, 942

***Neurospora sitophila***

A fungus.

705, 878

***Nigrospora***

Fungus involved in lung, sinus, TB-type infections, and allergies.

302, 350, 764

***Nocardia asteroides* / Nocardiosis**

Transmitted mainly through soil. Symptoms include abscesses in the lungs, fever and cough that can last several months, heart damage, and brain lesions leading to meningitis.

228, 231, 237, 694, 719, 794, 887, 2890

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 354950 (lower limit), 355100 (most effective), and 355350 (higher limit of same organism)

Hertz set: 879.83 (lower limit), 880.20 (most effective), and 880.82 (higher limit of same organism)

Also from Dr. Clark: 17679.39

**Oat Smut**

See "*Ustilago avenae* / Oat Smut" in this section.

***Oospora* / Powdery Mildew**

Often appearing on cultivated and wild grasses. It is unclear whether this mildew is allergenic to humans. However, it harms rice and potato crops.

5346, 9599

***Puccinia graminis* / Wheat Stem Rust / Stem Rust / Black Rust**

Destructive fungus that causes tissue damage in wheat.

643

***Rhizopus nigricans / Rhizopus stolonifer***

Common bread mold/fungus that lives on decaying fruit and in soil, sometimes infects humans and other mammals, and is used in the manufacture of cortisone.

132, 327, 659, 660 + 690 + 727.5, 775

**Ringworm**

See "*Microsporon audouini* / Ringworm" in this section.

***Rhodo torula***

A yeast that causes infections in humans and animals.

598, 778, 833

***Sporobolomyces***

Fungus in humans, mammals, birds, soil and plants, causing allergies, respiratory infections and dermatitis.

700, 753

***Sporotrichum pruinosum***

A common fungus that produces allergies, particularly in those with chemical sensitivity.

584, 598, 687, 715, 755

***Stachybotrys chartarum***

One of the most toxic of all fungi, the *Stachybotrys* mold commonly grows indoors in damp areas, and is known for causing "sick building syndrome." Symptoms include severe irritation, pain and inflammation of the mucous membranes in the nose, mouth and throat; cough; bloody nasal discharge; burning in the eyes; skin rash; impaired immune response; headache and fatigue; hemorrhage; nervous disorders; shock; and even death.

Warmth, dryness, and good ventilation prevent buildings from acquiring this mold. If you see black mold spreading, the walls of the building may need replacement. Hydrogen peroxide, colloidal silver, and oregano essential oil may help control or eliminate this mold. Bleach is often used on buildings, but it creates such an alkaline environment that microbes regrow. Also, bleach is toxic to humans and animals. Ozone is safe and effective, although it must contact the pathogen in order to work.

For treating humans and animals, anti-fungal pharmaceuticals are sometimes used. However, holistic modalities like those mentioned above, plus ozone (for both inhalation through olive oil as well as for air purification), work better and are a lot safer. See **Oxygen Therapies** in Chapter 3 for more information on ozone use.

Experimental only: 540.1, 577.9, 604.4, 747.4, 764.5, 765.6, 844.0, 922.2, 952.4, 969.6

***Stemphylium***

Fungus that lives in soil and decaying plant material and is a well-known allergen.

114, 340, 461

**Thrush**

Ulcerous white patches in the mouth caused by *Candida albicans*, often accompanied by fever and gastrointestinal disturbance. Also see other entries in this section.

414, 464, 465, 660 + 690 + 727.5, 787, 880

***Tinea unguium* / Onychomycosis**

*Tinea unguium* causes Onychomycosis, the most common infection in fingernails and toenails. (Tinea interdigitale may also be present in the toenails.) The infection begins at the free end of the nail, and gradually spreads until the whole nail plate is diseased. The affected nail loses its lustre and becomes brittle and opaque. The frequencies are from Dr. James Bare.

5042 (sweep 9 Hz), 8111, 12800

***Torulopsis glabrata***

A yeast sometimes appearing in vaginal infections. Also see "*Cryptococcus neoformans*" and other fungal forms under **Candida**, **Fungi**, **Molds and Yeasts**.

522, 2121

***Trichodermia viride***

A mold found in tropical countries.

711

***Trichophyton* (unspecified)**

The fungi that attack the skin are often interchangeable and do not confine themselves to any one area. Also see *Microsporon* entries, *Microsporum* entries, other *Trichophyton* entries, and "General Fungus / Molds / Yeasts," all in this section.

First try: 132, 133, 381, 585, 593, 725, 808, 812, 2422, 9493

Also try: 142, 373, 376, 378, 385, 387, 420, 425, 428, 576, 578, 580, 581, 583, 584, 587, 588, 592, 595, 597, 724, 726, 732, 733, 738, 748, 750, 765, 766, 771, 777, 778, 779, 794, 797, 801, 805, 809, 817, 886, 1256, 6887, 7688, 7697, 7885

***Trichophyton mentagrophyte***

Usually attacks the feet, skin and nails, causing itching, inflammation, sometimes burning, and the flaking of skin. The fungi that attack the skin are often interchangeable and do not confine themselves to any one area. Also see *Microsporon*, *Microsporum*, and other *Trichophyton* entries, as well as "General Fungus / Molds / Yeasts," all in this section.

311, 414

***Trichophyton rubrum***

Occurs on the feet, nails and groin, but rarely the scalp, causing itching and scaling. The fungi that attack the skin are often interchangeable and do not confine themselves to any one area. Also see *Microsporon*, *Microsporum*, and other *Trichophyton* entries, as well as "General Fungus / Molds / Yeasts," all in this section.

752, 923

***Trichophyton tonsurans***

Grows on the scalp and body, and sometimes the nails, causing itching and scaling. The fungi that attack the skin are often interchangeable and do not confine themselves to any one area. Also see *Microsporon* entries, *Microsporum* entries, other *Trichophyton* entries, and "General Fungus / Molds / Yeasts," all in this section.

454, 765

**Tropical *Candida***

See "*Candida Tropicalis*" in this section.

***Ustilago avenae* / Oat Smut**

Causes rotting in oat plants.

806

***Ustilago maydis* / Corn Smut**

Causes rotting in corn plants, primarily in sweet corn.

546

***Ustilago nuda* / Barley Smut**

Causes rotting in barley plants.

377

***Ustilago tritici* / Wheat Smut**

Causes rotting in wheat plants and has an odor of dead fish.

156, 375, 10163

**Wheat Smut**

See "*Ustilago tritici* / Wheat Smut" in this section.

**Wheat Stem Rust**

See "*Puccinia graminis* / Wheat Stem Rust / Stem Rust / Black Rust" in this section.

**Yeast, Baker's**

775, 843

**Yeast, Cervical and Vaginal, unspecified**

Also try "*Candida albicans*," "*Epidermophyton floccinum* / Athlete's Foot / Jock Itch," and other entries in this section.

72, 422, 582, 706, 771, 787, 788, 1016, 2222

**Yeast, Other (unspecified)**

254, 72, 422, 582, 1016, 1130 to 1134, 1153 to 1155, 2222

*End of Candida, Fungi, Molds and Yeasts section.*

**CANINE PARVO VIRUSES, ALL TYPES**

See "Parvo Virus" entries under **Viruses**.

**CANKER SORES**

See "Canker Sores / Stomatitis Aphthous" under **Dental**, *Mouth and Gums*.

**CAPILLARIES, CONGESTION AND TO STIMULATE HEALING OF**

See "Capillaries, to Stimulate Healing of" under **Heart, Blood and Circulation**.

**CARBUNCLE**

Inflammation of the skin and surrounding area accompanied by pus, which is dead white blood cells in tissue liquefied by microbes. See "*Staphylococcus pyogenes aureus*" under

**Bacteria**, and "Boil" under **Skin**. Also see "*Candida albicans*" under **Candida**, **Fungi**, **Molds and Yeasts**, as people who experience an overgrowth of *Candida* often suffer from boils and carbuncles.

### CARCINOMA
See under **Cancer**.

### CARDIAC EDEMA
See "Congestive Heart Failure / Cardiac Edema" under **Heart**, **Blood and Circulation**.

### CARPAL TUNNEL SYNDROME
See "Carpal Tunnel Syndrome / Repetitive Stress Injury (RSI)" under **Injuries** or **Muscles**.

### CAT VIRUS, UNSPECIFIED
See under **Viruses**. Also see "*Toxoplasma gondii* / Toxoplasmosis" under **Parasites**, **Protozoa and Worms**.

### CATARACTS, ALL TYPES
See under **Eyes**.

### CATARRH
See under **Respiratory Tract**, *Lungs*; **Gastrointestinal Tract**; **Eyes**; or **Women**, *Uterus and Cervix*, *Ovaries*, *and Fallopian Tubes*.

### CELLULITIS
Inflammation and swelling due to fluids that do not drain, but instead become trapped in the tissues. This inflammation usually leads to infection, deep in the tissue below the outer skin. The infection can develop after the skin has been broken—generally from a cut, burn, surgical wound, injury, or animal or insect bite. Cellulitis can also result from skin lesions, ulcers, fungal skin infections, lymphedema, immune weakness, diabetes, circulation problems, and overweight.

Symptoms include tenderness, pain, swelling, redness at the site of the infection, and sometimes fever and chills. Although cellulitis can occur anywhere, adults often have it on the legs, face and arms.

This condition should not be confused with cellulite, the dimpled fat stored in connective tissue beneath the skin surface. Since cellulitis is usually caused by certain bacteria, see entries for "*Staphylococcus*" and "*Streptococcus*" under **Bacteria**.

### CEREBRAL PALSY
See under **Nervous System and Brain**.

### CEREBROSPINAL CONDITIONS
See under **Nervous System and Brain**.

### CERUMEN
See "Wax, Excessive / Cerumen" under **Ears**.

### CERVICAL INFLAMMATION, CERVICAL ADENOMA, AND CERVICAL POLYP
See the "Cervical Inflammation," "Cervical Adenoma," and "Cervical Polyp" entries under **Women**, *Uterus and Cervix*, *Ovaries*, *and Fallopian Tubes*.

### CHANCRE
See "Syphilis" under **Men**, *Penis* or **Women**, *Vagina and Labia*.

### CHEMICAL POISONING / DETOXIFICATION
The more commonly used phrases for this condition are "Multiple Chemical Sensitivity" (MCS) and "Environmental Illness" (EI). However, these labels are misleading. They imply a deficiency or dysfunction in the person, rather than a bona fide response to being chemically assaulted by an amazing array of synthesized environmental poisons. Discredited for years by many doctors as a paranoid form of mental illness, as of 1995, this condition has been recognized by sixty government agencies as physically-based. Over 80% of chemically sensitive people are women.

Symptoms include respiratory and digestive illnesses, headaches, fatigue, emotional and cognitive disorientation, body aches and pains, swelling and inflammation, and susceptibility to chronic infections. There is virtually always liver and nerve damage; sometimes there is brain damage, too. There is no limit to the number and variety of symptoms because people respond individually to being poisoned. Every system of the body can be involved, and the person's exposure can be chronic or acute. Toxic contaminants include detergents, plastics, solvents, heavy metals, cigarette smoke, gas fumes, pesticides, herbicides, makeup and perfumes, dyes, foods, drugs, and biological agents (such as mold). Once the individual becomes sensitized to a particular agent, subsequent reactions are provoked by infinitesimally small amounts of a wide range of substances. This is because an overwhelmed body (and overworked liver) can no longer break down contaminants into neutral substances and excrete them—and once this happens, everything can become toxic, even beneficial nutrients.

Chemical toxins and heavy metals (especially mercury) damage the mitochondria, which are the energy-burning units of the cells. This damage makes the cells unable to process thyroid hormone, thus causing hypothyroid-like conditions. These symptoms have a much better chance of being corrected if the person follows a detoxification protocol. For more information and additional frequencies, see "Thyroid, Underactive / Hypothyroidism" under **Glands**, *Thyroid*.

Since so many systems in the body are compromised, treatment is extensive. Consult with an experienced holistic health professional who specializes in chemical sensitivities. Although symptoms are complex and interrelated, try to isolate and tackle one or two problems at a time. This way, you can lessen the onslaught of toxic waste and give yourself a chance to regain your strength.

## Underappreciated Amino Acids

People with health issues have one thing in common: Almost all of them have some degree of digestive failure. One result is that there is a lack of free amino acids. Even if people eat steak three times a day, there is protein starvation at the level of the individual free amino acids. Partially digested proteins in the form of clumps of amino acids are absorbed into the blood. Imagine a bricklayer who is hired to build a brick wall. He arrives at the site. The truckload of bricks arrives. He reaches into the truck and pulls out a brick only to find that another five or six bricks are stuck to it with ends sticking out in all directions. He pulls a second brick and discovers another useless clump.

This is what the body faces. It needs to make thousands of metabolic enzymes and other necessary chemicals, but does not have the raw materials. And it cannot get them from food because the digestion is not efficient enough. Even supplementation of stomach acid and enzymes usually does not enable the body to make enough free amino acids. So necessary materials cannot be produced.

One compound that is necessary for health in a polluted world is metallothionein. The body uses metallothionein to carry away mercury and other toxic metals. But the body cannot make this material if there is a shortage of free amino acids. [At least one-quarter teaspoon of Celtic sea salt in water daily is also necessary.] Researchers find deficiency of metallothionein production in cancer and in all or nearly all cases of autism. I suspect it will be found in many other conditions.

The body also needs free amino acids to make neurotransmitters. I am hearing reports from people recovering from depression and anxiety while using amino acids.

The immune system also needs free amino acids.

Fibromyalgia is another condition where there is an amino acid deficiency. Other conditions that involve a lack of free amino acids include skin wrinkling, thinning of hair, AND weak fingernails, along with more serious conditions such as digestive failure, irritable bowel, chronic fatigue, spinal disk degeneration, joint degeneration, osteoporosis, pain and stiffness, infections, and stress to every tissue in the body.

Amino acids are food. They are not medication and they do not "cure" anything. They do not make anything happen. They simply provide raw materials to the body. When combined with vitamins, minerals (especially sulfur) and essential fatty acids, they just help people move toward health. I believe that amino acid supplementation is the fastest and safest method of heavy metal removal.

—Richard Loyd, PhD, 2005
www.royalrife.com/aminos.html

Rife researchers do not provide frequencies specifically for MCS/EI. However, there are many relevant categories to choose from. See "*Candida albicans*" and "*Sporotrichum pruinosum*" under **Candida**, **Fungi**, **Molds and Yeasts**, since *Candida* feeds on heavy metals. Use the applicable frequencies under **Parasites**, **Protozoa and Worms**. And check other listings for affected organs and glands, particularly the liver. If you have silver-mercury fillings and you feel that they are affecting your health, try to have them removed by a knowledgeable holistic dentist. Sometimes the mercury is stable and you are better off keeping the fillings in your mouth. However, if it is deteriorating into vapors that you're constantly absorbing, this will cause great harm.

You will need plenty of rest and nutritional support. Abundant minerals, including trace minerals and especially fulvic acid, help move metals out of the system. Chelation can be useful. Cleansing therapies are a must. The two most important and effective cleansing modalities I know of are ozone and sauna therapies. See Chapter 3 for more information. See frequencies under **Urinary Tract**, *Kidneys*; under **Liver and Gallbladder**, *Liver*; and under **Respiratory Tract**, *Throat and Lymph Nodes*. Also see "*Mycoplasma*, many types" under **Bacteria**, since chemical sensitivity is associated with *Mycoplasma* infection.

#### All-Purpose Detox

Also see "Kidney Function, to Balance and Normalize" under **Urinary Tract**, *Kidneys*; "Liver Function, to Support and Balance" under **Liver and Gallbladder**, *Liver*; and "Lymph System Circulation / Drainage, to Increase" under **Lymphatic System**.

20.5, 6.3 + 148, 9.19, 9.2, 146, 333 + 523 + 768 + 786, 444 + 1865, 428, 522, 555, 660 + 690 + 727.5, 787, 802 + 1550, 880, 3176, 10K

Run, in this order, for 15 minutes each: 528, 15

#### Acrylamide Detox

43644.3

#### Aluminum (in air pollution) Detox

31905.6

#### Anesthesia Detox

0.5, 2.5, 6.3 + 148, 146, 333 + 523 + 768 + 786, 522, 555

#### Antiseptic Effect, to Produce

14, 444 + 1865, 333 + 523 + 768 + 786, 428, 450, 465, 555, 590, 660 + 690 + 727.5, 760, 786, 787, 802 + 1550, 804, 880, 1360 (might be a worm frequency), 1770, 2K, 2720, 3176, 5K, 10K

#### Barium (in air pollution) Detox

39032.6, 43644.3

#### Chemical Overload

65

#### Chemical Sensitivity, to Reduce

Also see "*Mycoplasma*, many types" under **Bacteria**, since chemical sensitivity is associated with *Mycoplasma* infection.

440, 443

#### Chemtrail Detox

People from all over the world report seeing white streaks in the sky created by aircraft, usually unmarked. The streaks somewhat resemble the ordinary white vapor trails (contrails) emitted by a jet. However, these chemtails are thicker and remain in the sky for many hours, beginning as streaks and lines (often in "X" shapes or discernible grids) and spreading out in "feathery" patterns from a midline "seam." Although most chemtrails are white, people sometimes report seeing brown chemical trails and also pale web-like wisps that fall to the ground. Wherever these chemtrails (sometimes confusingly called "contrails") are seen, there is a marked increase of flu-like infections that manifest as severe respiratory blockages, gastrointestinal and neurological disorders. In some cases, near-blindness and deaths have even been reported.

Labs analyzing the wisps on the ground have reported high levels of barium and lead, and trace amounts of arsenic, cadmium and aluminum. Mycoplasma and human red blood cells have also been detected.

Also see "*Brucella*, all types" and "*Mycoplasma*, many types" under **Bacteria**; **Tuberculosis**; and specific listings pertaining to your symptom picture.

344 + 510 + 943, 563.3, 664, 673.9, 679.2, 684.1, 686.6, 690.7 (for 5 minutes), 783.6, 779.9, 800.4, 829.3, 865, 969.9, 1045, 1062, 1067, 1113, 1147, 2842

##### New Chemtrail frequencies, 2005—very high ranges

16,542.416; 33,084.832; 33,878.872; 66,169.665; 132,339.33; 264,678.67; 529,357.35; 1,058,714.7; 2,117,429.5; 4,234,859; 8,469,718; 16,939,436

#### DNA, to help heal

5333.7

#### Fluoride Detox

Fluoride tends to collect in the pineal gland and can suppress the production of melatonin and serotonin. It also suppresses some higher brain functions and can make people apathetic.

76677.5

#### Heavy Metal Detox

The presence of heavy or toxic metals in the system—including mercury, lead, and cadmium—will either directly cause illness, or exacerbate a condition you already have. Alzheimer's, autism and chemical sensitivity are just a few conditions in which heavy metals are implicated as a cause or provocation. Dr. Richard Loyd points out that the presence of free amino acids is vital, both for detoxification and for healing from all disease.

These frequencies are experimental, meaning that they have just started being used for this purpose and do not have a verified track record.

Use these frequencies in precisely the order given for the specified times.

First set: 2154 (5 minutes), 1343 (5 minutes), 1354 (5 minutes), 528 (5 minutes), 1183 (6 minutes), 945 (6 minutes), 1121 (5 minutes), 1211 (5 minutes), 1425 (5 minutes)

Second set (gate all 64 to 75): 63, 146, 148, 152, 250, 304, 306, 440, 444, 465, 522, 625, 635, 676, 727.5, 751, 787, 880, 1036, 1505, 3040, 3176, 10K

#### Lead Detox

4202.30, 38014.3

#### Mercury Detox

Mercury in any form is one of the most dangerous substances on the planet. It corrodes the delicate thread-like tendrils on every dendrite (nerve cell), and strips off the protective myelin coating on each nerve sheath (stem). Once the nervous system is damaged, even with the best chelation therapy the body will be unable to recognize that there is mercury in the system and thus the mercury will tend to remain. Tea made from the tops of oats (also called "milky" oats) taken over the course of one to several months will help restore the nerves.

For the direct removal of mercury, the following substances can be used (usually together): modifilan (brown seaweed extract), ascorbic acid, selenium (from food sources), N-acetylcysteine (1 gram per day), and glutathione (100 mg per day).

38014.3, 56656.4

**Pesticide Detox**
1, 6, 26, 73

**Proteins, Toxic, Detox**
9887

**Respiratory Detox, general**
20.5, 6.3 + 148, 9.19, 9.2, 146, 333 + 523 + 768 + 786, 444 + 1865, 428, 522, 555, 660 + 690 + 727.5, 787, 802 + 1550, 880, 3176, 10K

**Toxins, Other, to Eliminate**
Detoxification of the system also requires saunas, and the replacement of missing electrolytes.
0.5, 2.5, 6.3 + 148, 9.19, 9.2, 20, 146, 333 + 523 + 768 + 786, 428, 444 + 1865, 522, 555, 660 + 690 + 727.5, 787, 802 + 1550, 880, 10K

**Vaccinations, Injections and Inoculations—Reactions to**
Many of the negative personality traits, physical distress and physical disorders in both animals and humans are due to the microbial, chemical and/or metallic residue in vaccines, which after inoculation can remain in the system permanently unless eliminated. Negative reactions to vaccinations and drug injections are typical. Don't overlook vaccinations as a major influence on disease; read Chapter 1 for more information on the dangers of vaccinating at all. Homeopathy can be quite effective, for both people and animals, to counteract the sometimes devastating effects of vaccinations. Also try frequencies for "Glands, Swollen" under **Respiratory Tract**, *Throat and Lymph Nodes*. And try frequencies for other symptom pictures that develop. I have observed that rifing is quite healing for vaccinated animals.
10K

*End of Chemical Poisoning / Detoxification section.*

**CHEMTRAIL DETOX**
See under **Chemical Poisoning / Detoxification**.

**CHICKEN POX**
See "*Herpes* Virus Type 3 / *Herpes zoster* / Chicken Pox / *Varicella* / Shingles" under **Viruses**.

**CHILBLAINS**
See under **Injuries**.

***CHLAMYDIA*, ALL TYPES**
See under **Bacteria**.

**CHOLECYSTITIS**
See under **Liver and Gallbladder**, *Gallbladder*.

**CHOLERA**
See "*Vibrio cholerae* / Cholera" under **Bacteria**.

**CHOLESTEATOMA**
See under **Ears**.

**CHRONIC FATIGUE SYNDROME (CFS)**
See "Epstein-Barr Virus / Infectious Mononucleosis / Chronic Fatigue Syndrome (CFS)" under **Viruses**.

**CIRCULATION, TO BALANCE AND NORMALIZE**
See under **Heart, Blood and Circulation**.

**CIRCULATION, SLUGGISH—TO CLEAN THE BLOOD**
See "Blood, to Clean" under **Heart, Blood and Circulation**.

**CIRCULATION, SLUGGISH—TO STIMULATE BLOOD FLOW**
See under **Heart, Blood and Circulation**.

**CIRRHOSIS OF THE LIVER**
See "Cirrhosis of the Liver / Biliary Cirrhosis" under **Liver and Gallbladder**, *Liver*.

***CLADOSPORIUM FULVUM***
See under **Candida, Fungi, Molds and Yeasts**.

***CLAVICEPS PURPUREA***
See "*Claviceps purpurea* / Ergot" under **Candida, Fungi, Molds and Yeasts**.

***CLONORCHIS SINENSIS***
See "*Clonorchis sinensis* / Oriental Liver Fluke" under **Parasites, Protozoa and Worms**.

***CLOSTRIDIUM DIFFICILE* / PSEUDOMEMBRANOUS COLITIS**
See under **Bacteria** or under **Gastrointestinal Tract**, *Colon / Large Intestine*.

***CLOSTRIDIUM TETANI* / TETANUS / LOCKJAW**
See under **Bacteria**.

**COCKROACHES, TO ELIMINATE (FROM A BUILDING)**
This is experimental only! One researcher set his plasma device to 100 Hz, with a gate of 6. He ran it for 6 minutes with the axis of the tube north-south, and for 6 minutes with the axis of the tube east-west. The next morning, he noticed some dead and dying roaches on the floor, even 35 feet or more from where the unit was operating. He has not seen any live cockroaches in his house since. According to his measurements, the light from the tube did not reach these distant roaches, and the RF field from the plasma device at that distance was negligible.

**CODDIDIOIDES IMMITIS**
See "*Coddidioides immitis* / Valley Fever / Coccidioidomycosis / Coccidiosis" under **Candida, Fungi, Molds and Yeasts**.

**COLD, CHEST AND HEAD**
See under **Respiratory Tract**, *Nose and Sinuses*.

**COLD SORES**
See "*Herpes simplex* 1" in the *Herpes* entries under **Viruses**.

**COLIC**
See under **Gastrointestinal Tract**, *Colon / Large Intestine*.

***COLLECTOTRICHUM***
See under **Candida**, **Fungi**, **Molds and Yeasts**.

**COLON CANCER**
See under **Cancer**.

**COLON CONDITIONS, ALL**
See under **Gastrointestinal Tract**, *Colon / Large Intestine*.

**CONCENTRATION, TO IMPROVE**
See under **Mind and Emotions**.

**CONDYLOMA / WART**
See "Wart, Venereal / Condyloma" under **Men**, *Penis*; or **Women**, *Vagina and Labia*.

**CONGESTION, NASAL**
See "Nasal Congestion and Infection" under **Respiratory Tract**, *Nose and Sinuses*.

**CONGESTIVE HEART FAILURE**
See "Congestive Heart Failure / Cardiac Edema" under **Heart**, **Blood and Circulation**.

**CONJUNCTIVITIS**
See "Conjunctivitis / Pink Eye" under **Eyes**.

**CONNECTIVE TISSUE INFLAMMATION**
See "Bursitis" under **Injuries**.

**CONSTIPATION**
See "Diarrhea and/or Constipation" under **Gastrointestinal Tract**, *Systemic Conditions*.

**CONTUSION**
See "Bruise / Contusion" under **Injuries**.

**CONVULSIONS**
See under **Nervous System and Brain**.

**COORDINATION PROBLEMS**
See "Ataxia" and "Ataxia, Spastic" under **Muscles**.

**CORN SMUT**
See "*Ustilago maydis* / Corn Smut" under **Candida**, **Fungi**, **Molds and Yeasts**.

**CORONAVIRUS**
See "Coronavirus / SARS / Severe Acute Respiratory Syndrome" under **Viruses**.

***CORYNEBACTERIUM DIPHTHERIAE***
See "*Corynebacterium diphtheriae* / Diphtheria" under **Bacteria**.

**COSTALGIA**
See under **Bone and Skeleton**.

**COUGH**
See conditions pertaining to a cough under **Respiratory Tract**.

**COXSACKIE VIRUSES**
See under **Viruses**.

**CRAMPS, LEG**
See "Intermittent Claudication" under **Heart**, **Blood and Circulation**.

**CRAMPS, MANY TYPES**
See **Appendicitis**; entries under **Gastrointestinal Tract**; entries under **Parasites**, **Protozoa and Worms**; and "Menstrual Cramps" under **Women**, *Menstruation and Menopause*.

**CROHN'S DISEASE**
See under **Gastrointestinal Tract**, *Colon / Large Intestine*.

**CROSSED EYES**
See "Diplopia / Crossed Eyes" under **Eyes**.

***CRYPTOCOCCUS NEOFORMANS***
See "*Cryptococcus neoformans* / Meningoencephalitis" under **Candida**, **Fungi**, **Molds and Yeasts**.

**CUSHING'S SYNDROME**
See "Cushing's Syndrome / Cushing's Disease / Hyperadrenocorticism / Hypercortisolism" under **Glands**, *Adrenals*.

**CUTS, TO SPEED HEALING**
See under **Skin**.

**CYSTIC FIBROSIS (CF)**
In this condition, abnormal proteins are created that prevent the easy transport of chloride (a component of salt), which in turn causes unusually high amounts of thick, sticky mucus to accumulate in the lining of the lungs and pancreas. This clogging causes breathing problems, coughing and wheezing, and frequent lung infections including pneumonia. If lung damage is severe, the person may die early. The digestive fluids made by the pancreas are often thickened as well, which slows or prevents them from reaching the small

intestine. Thus the person may also experience digestive problems. New research shows that CF often develops in people who are deficient in selenium.

Many of these infections are caused by the bacterium *Pseudomonas aeruginosa*, which rarely causes problems in healthy people. Also see numerous entries under **Parasites**, **Protozoa and Worms**.

333 + 523 + 768 + 786, 478, 557, 660 + 690 + 727.5, 775, 776, 778, 787, 802 + 1550, 880

***Pseudomonas aeruginosa* cause**

174, 178, 191, 405, 482, 633, 731, 785, 1132, 3965, 5311, 6646

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 331250 (lower limit), 333K (most effective), and 334600 (higher limit of same organism)

Hertz set: 821.09 (lower limit), 825.42 (most effective), and 829.39 (higher limit of same organism)

Also from Dr. Clark: 16579.09

**CYSTITIS**
See under **Urinary Tract**, *Bladder and Urethra*.

**CYSTOPYELONEPHRITIS**
See this and other entries under **Urinary Tract**, *Kidneys*.

**CYSTS, MANY KINDS**
See the various entries for cysts under **Tumors**, **Benign**.

**CYSTS, SEBACEOUS**
See "Cyst, Sebaceous" under **Skin**.

**CYTOMEGALOVIRUS (CMV)**
See "*Herpes* Virus Type 5 (Human *Herpes* Type 5) / Cytomegalovirus (CMV) / Salivary Gland Virus" under **Viruses**.

## –D–

**DEAFNESS**
See under **Ears**.

**DEER FLY FEVER**
See "*Francisella tularensis* / Tularemia / Rabbit Fever / Deer Fly Fever" under **Bacteria**.

***DEMATIUM NIGRUM***
See under **Candida**, **Fungi**, **Molds and Yeasts**.

**DEMENTIA**
See "Alzheimer's Disease" under **Brain and Nervous System**.

**DENGUE VIRUS, TYPES 1, 2 AND 3**
See "Dengue Virus, Types 1, 2 and 3 / Dengue Fever / Breakbone Fever" under **Viruses**.

**DENTAL**
A surprisingly large number of otherwise excellent wellness protocols overlook dental health, on the premise that dental issues are somehow separate from what's happening in the rest of the body. But dental hygiene can be the missing link to being healthy! The mouth is loaded with bacteria. It's also the gateway to the entire body. Meridians corresponding to every organ and system in the body are in the hands, feet, ears, eyes, colon—and teeth. Dental infection can outright cause conditions ranging from chronic fatigue to allergies to heart disease and even cancer, so gum or tooth problems can prevent recovery from any illness. Sometimes, people with "terminal" or otherwise unsolvable illnesses completely recover (sometimes within 48 hours) when a tooth is pulled and the necrotic tissue in the area is removed. Sometimes the meridian of an adjacent tooth is affected as well, due to the seepage of bacteria, so the entire jaw should be thoroughly checked.

Some people try to eliminate tooth infection by having a root canal. During root canal surgery, the living pulpy structures of the tooth are removed while the now-dead tooth is allowed to remain stuck in the jaw. But most dentists don't also remove the capillaries that harbor bacteria—which is why root canal teeth become re-infected. George Meinig's *Root Canal Cover-Up* explains how root canals cause innumerable problems, and how it is better to remove the entire tooth.

Similar chronic low-grade infection develops when teeth are extracted for whatever reason ("wisdom" teeth are commonly removed), and a portion of the periodontal ligament remains in the jaw. This prevents the body from filling in the tooth socket with healthy new bone, and creates an environment where bacteria thrive. Infection can also result if adjacent bone is not scraped and cleaned. This condition is called a cavitation, or cavity within the bone. The most effective and rapid treatment for cavitation is the mechanical removal of all infected areas (surgery). Cavitations are insidious because they develop very slowly and initially, most people are asymptomatic. Or, they might suffer from an assortment of low-level, chronic symptoms for years without being able to identify the cause. It can take decades for the origin of symptoms to become apparent. By then, serious damage to major systems has usually occurred. If you must have teeth extracted for any reason, consult a dentist knowledgeable about cavitations, who knows how to clean out the area properly.

Although dental problems can be controlled with frequencies, a good diet and proper cleaning, infection will

recur unless poisonous nickel alloy dental appliances are replaced with stainless steel, and silver amalgam fillings are replaced with uranium-free porcelain. So-called silver fillings are actually comprised of over 50% mercury—the most toxic metal known—along with some copper, tin, silver and zinc. As Hal Huggins extensively documents, mercury interferes with the oxygen-carrying capability of red blood cells; causes allergies and autoimmune diseases; upsets protein metabolism and the balance of gut flora; and decreases the production of immune cells. It takes only minute amounts of mercury to weaken immunity and destroy nerve tissue (brain cells die within ten minutes). Mercury also causes depression, nervousness, insomnia, impaired kidney function, tremor, convulsions, infertility and birth defects. The biochemical destruction in the brain from mercury is identical to that of Alzheimer's. The American Dental Association explicitly warns dentists against touching the mercury and encourages them to wear masks to avoid breathing in its fumes, yet the mercury goes into people's mouths. If you get your silver-mercury fillings removed and replaced with less toxic porcelain or other material, see a holistic dentist. Proper removal of mercury includes the use of rubber sheeting to prevent metallic vapors from being reabsorbed into the porous mucous membranes of the mouth; breathing oxygen during the procedure; and sometimes chelation during and after to ensure that any stray bits of mercury are escorted out of the body.

Frequencies can help, but eliminating mercury is critical. Sauna therapy eliminates toxins; see Chapter 3 for more details. Substances that chelate (bind to) metals and escort them out of the system are essential. When mercury destroys the delicate nerve cells and strips the protective fatty myelin sheath from the nerve stem, messages cannot be conveyed throughout the body—which also fails to recognize that mercury is present. Drinking several cups a day of tea made from dried oat tops (not stems, one tablespoon per cup, left seeping overnight) may help restore the nerve cells. So before chelating mercury, build up the nervous system with the tea first.

Many suppressed studies show that fluoride does not prevent cavities—that in fact, it hinders brain development and actually can cause erosion of tooth enamel. The lauded sodium fluoride that one finds in most toothpastes is a waste product of the aluminum and fertilizer industries, and was once used as a rat poison. It is also known to suppress some higher brain functions and can make people apathetic.

One inexpensive and surprisingly effective way to restore the teeth and gums is called *oil pulling* or *oil swishing*. Oil pulling, mentioned in old Ayurvedic texts, has been publicized by a contemporary Ukrainian medical doctor, F. Karach, for its ability to cure many systemic diseases including allergies, digestive disturbances, headaches, respiratory disorders, blood sugar problems, skin conditions and even cancer. One tablespoon of sesame oil is swished in the mouth, one to three times a day, for 15 to 20 minutes, until it mixes well with saliva. (Some people report good results with sunflower, virgin coconut, or ozonated olive oils.) Oil pulling must be done on an empty stomach, at least one hour away from eating or drinking. After the oil mixes well with saliva for a long enough period, it becomes thin and white. The oil must not be swallowed because it becomes very toxic from the pathogenic microorganisms it attracts. The swirling is said to activate enzymes in the mouth, which draw toxins out of the blood. Dr. Karach is reported to have stated that this procedure can take from two days to one year to completely cure a condition. My personal experience with this procedure was remarkable. After three days of swishing, several severely pitted teeth appeared about 95% re-mineralized. Receding gums became tighter and dropped into a more normal position. And pain was almost totally eliminated.

Despite my warnings (for obvious reasons) not to use electrodes on the face, I must report that some users (including myself) have used electrode patches for gum and tooth infections. Holding saltwater—which is highly conductive—in the (closed) mouth for the entire session ensures that the current penetrates the tissues. With this delivery system, it's the electrical current, rather than specific frequencies, that disables pathogens. European practitioners suggest using any frequency below 1000 Hz. Six consecutive days of 1-hour sessions is sufficient for many dental problems, but rife for more days if necessary.

### ALL-PURPOSE DENTAL

48, 60, 95, 47, 146, 190, 333 + 523 + 768 + 786, 465, 470.5, 518, 521, 522, 547, 555, 600 + 625 + 650, 622.3, 635, 640, 660 + 690 + 727.5, 646, 666, 680, 685, 750, 760, 768, 775, 776, 787, 800, 802 + 1550, 832, 880, 900, 930, 960, 1036, 1043, 1094, 1500, 1600, 1800, 1980.47, 2489, 2720, 3K, 3040, 5170, 10K

#### *Mouth and Gums*

When the gums move away from the teeth to form pockets—even if the separation is slight—it's easy for food particles to become trapped inside. However, gums that recede can grow again, given the proper nutrients and mouth terrain.

A mouthwash of 3% food grade hydrogen peroxide (see the **Oxygen Therapies** section in Chapter 3) can help raise the oxidation potential of the tissues, which will eliminate infection and prevent it in the future. A mixture of equal parts colloidal silver and hydrogen peroxide will work even better. One popular mouthwash is comprised of water, aloe vera, echinacea, goldenseal, calendula, bloodroot, grapefruit seed extract, and essential oil of cinnamon. Foods high in fiber are said to increase the flow of saliva. Xylitol, a sweet-tasting powder extracted from birch tree bark and other substances, is also being used for mouthwash because its molecules are very slippery and prevent bacteria from adhering to teeth or gums.

# THE TEETH AND THE BODY

## ENERGETIC INTER-RELATIONS

| | RIGHT SIDE | | | | | | | | LEFT SIDE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENDOCRINE GLANDS | Pituitary gland Ant. lobe | | Para-Thyroid | Thyroid | Thymus | Pituitary gland Post. lobe | | Pineal gland | Pineal gland | | Pituitary gland Post. lobe | | Thymus | Thyroid | Para-Thyroid | Pituitary gland Ant. lobe |
| SENSORY ORGANS | Ear | | Tongue | | Nose | | Eye | Nose | Nose | | Eye | Nose | | Tongue | | Ear |
| SINUSES | | | Maxillary sinus | | Ethmoid sinus | | | Sphenoid sinus<br>Frontal sinus | Sphenoid sinus<br>Frontal sinus | | | Ethmoid sinus | | Maxillary sinus | | |
| JOINTS | Shoulder - Elbow<br>Sacro-iliac joint<br>Hand, ulnar side<br>Foot, plantar side<br>Toes | | Jaw<br>Anterior hip<br>Anterior knee<br>Medial ankle joint | | Shoulder<br>Elbow<br>Hand<br>Medial side<br>Foot<br>Big toe | | Posterior knee<br>Hip<br>Posterior ankle joint | Sacro-coccygeal joint | Posterior knee<br>Sacro-coccygeal joint<br>Posterior ankle joint | | Hip | Shoulder<br>Elbow<br>Hand<br>Medial side<br>Foot<br>Big toe | | Jaw<br>Anterior hip<br>Anterior knee<br>Medial ankle joint | | Shoulder - Elbow<br>Sacro-iliac joint<br>Hand, ulnar side<br>Foot, plantar side<br>Toes |
| ORGANS | Heart, right side | | Pancreas | | Lung, right side | | Liver, right side | Kidney right side | Kidney, left side | | Liver, left side | Lung, left side | | Spleen | | Heart, left side |
| | Small intestine, right side | | Esophagus<br>Pylorus<br>Stomach, right side | | Large intestine, right side | | Gall-bladder, right side | Rectum<br>Genito-urinary<br>Prostate | Rectum<br>Genito-urinary<br>Prostate | | Gall-bladder, left side | Large intestine, left side | | Esophagus<br>Pylorus<br>Stomach, left side | | Small intestine, left side |
| OTHER SYSTEMS | Central nervous system | | Mammary gland right side | | | | | | | | | | | Mammary gland left side | | Central nervous system |
| TEETH DIAGRAM | RIGHT | | | | | | | | | | | | | | | LEFT |
| AMERICAN AND EUROPEAN NOMENCLATURES | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | |
| | | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | |
| TEETH DIAGRAM | RIGHT | | | | | | | | | | | | | | | | | LEFT |
| OTHER SYSTEMS | Central nervous system | | | | Mammary gland right side | | | | | | | | Mammary gland left side | | | | Central nervous system | |
| ORGANS | Small intestine, right side<br>Ileo-cecal area | | Large intestine, right side | | Esophagus<br>Pylorus<br>Stomach, right side | | Gall-bladder, right side | Rectum<br>Genito-urinary<br>Prostate | Rectum<br>Genito-urinary<br>Prostate | | Gall-bladder, left side | Esophagus<br>Pylorus<br>Stomach, left side | | Large intestine, left side | | Small intestine, left side | |
| | Heart, right side | | Lung, right side | | Pancreas | | Liver, right side | Kidney, right side | Kidney, left side | | Liver, left side | Spleen | | Lung, left side | | Heart, left side | |
| JOINTS | Shoulder - Elbow<br>Sacro-iliac joint<br>Hand, ulnar side<br>Foot, plantar side<br>Toes | | Shoulder<br>Elbow<br>Hand<br>Medial side<br>Foot<br>Big toe | | Jaw<br>Anterior hip<br>Anterior knee<br>Medial ankle joint | | Posterior knee<br>Hip<br>Ankle joint<br>Lateral | Sacro-coccygeal Joint<br>Posterior | Posterior knee<br>Sacro-coccygeal Joint<br>Ankle joint<br>Posterior | | Hip<br>Lateral | Jaw<br>Anterior hip<br>Anterior knee<br>Medial ankle joint | | Shoulder<br>Elbow<br>Hand<br>Radial side<br>Foot<br>Big toe | | Shoulder - Elbow<br>Sacro-iliac joint<br>Hand, ulnar side<br>Foot, plantar side<br>Toes | |
| PARANASAL SINUSES | | | Ethmoid sinus | | Maxillary sinus | | | Frontal sinus<br>Sphenoid sinus | Frontal sinus<br>Sphenoid sinus | | | Maxillary sinus | | Ethmoid sinus | | | |
| SENSORY ORGANS | Ear | | Nose | | Tongue | | Eye | Nose | Nose | | Eye | Tongue | | Nose | | Ear | |
| ENDOCRINE GLANDS | | | | | | Gonad | | Adrenal gland | Adrenal gland | | Gonad | | | | | | |
| | RIGHT SIDE | | | | | | | | LEFT SIDE | | | | | | | |

Chart developed by Dr. Voll and Dr. Kramer 1953

#### Abscess

Cavity formed by the disintegration of tissue, which creates pus, an accumulation of dead white blood cells.

190, 428, 444 + 1865, 450, 465, 500, 660 + 690 + 727.5, 760, 787, 802 + 1550, 880, 2170, 2720

#### Bad Breath

See "Halitosis / Bad Breath" in this section.

#### Cancrum oris

Rapidly growing oral or nasal ulcer, which can become gangrenous.

20, 660 + 690 + 727.5, 787, 802 + 1550, 880

#### Canker Sores / Stomatitis Aphthous

Ulcers on mucous membranes of mouth. Correct any digestive disturbances. Also see "*Herpes*, all types" under **Viruses**; and applicable entries in **Candida**, **Fungi**, **Molds and Yeasts**.

First try: 904.67 (for 10 minutes, sweep 3 Hz on either side of main signal), 901, 902, 903, 904, 905, 906 and 907 at 5 minutes a piece.

Then try: 234, 278, 465, 478, 487, 498, 568, 672, 677, 702, 787, 788, 955, 982

#### Catarrh, or Mucous Membrane Inflammation

In various places including the respiratory tract, gastrointestinal tract, eyes, and uterine area.

20, 380, 444 + 1865, 660 + 690 + 727.5, 787, 800, 802 + 1550, 880

#### *Dematium nigrum*

Soil fungi found in human lesions.

243, 738

#### Fistula Dentalis

Abnormal tubelike passage in the jaw.

550, 660 + 690 + 727.5, 844, 878, 1122

#### Gingivitis / Gum Inflammation and Infection

Caused by a buildup of plaque or tartar on the teeth, or injury to gums due to brushing that is too rigorous. This condition is called pyorrhea if there is pus (an accumulation of white blood cells). Infection usually consists of severe infection of the gums, often with pus and other discharge, causing the gums to shrink and the teeth to loosen.

20, 146, 522, 444 + 1865, 465, 660 + 690 + 727.5, 726, 776, 787, 802 + 1550, 880, 1556, 1600, 1800, 2008, 2720, 2489

#### Halitosis / Bad Breath

With bad breath, always check for an impacted colon, the presence of *Candida*, a lack of normal intestinal flora, infected gums, or an ileocecal valve that is chronically stuck either open or closed. (The ileocecal valve, positioned where the small intestine meets the large intestine, is designed to prevent the waste material in the large intestine from backing up into the small intestine. A chiropractor can show you how to adjust it so it will open and close properly.)

20, 660 + 690 + 727.5, 787, 802 + 1550, 880

#### *Herpes* Sores in Mouth

Contrary to popular belief, the different types of *Herpes* are interchangeable. Sores can also appear in genitals and on the skin along nerves, where it is known as *Herpes zoster* or shingles. If these frequencies are not effective enough, see "*Herpes*, all types" under **Viruses** for more frequencies.

428, 465, 660 + 690 + 727.5, 787, 802 + 1550, 880, 1500, 1800, 1850, 2489

#### Leukoplakia

White patches in mouth. This condition can precede malignancy!

465, 660 + 690 + 727.5, 2008, 2127.5

#### Oral Lesions

Open wounds or sores, usually infected. Although dental problems can be controlled or completely eliminated with treatment, infection will always recur (often with stress or poor diet) until all mercury inlays (known as "silver fillings") are replaced with uranium-free porcelain and nickel alloy dental appliances are replaced with stainless steel. Mercury, nickel and uranium are toxic (poisonous) metals—and have toxic effects (as do aluminum and palladium). They impair the body's immune function, so susceptibility to infection is high. A 3% solution of food grade hydrogen peroxide, used as a mouthwash will help raise the oxidation potential of the tissues and curb infection. (See **Oxygen Therapies** in Chapter 3 for more information on hydrogen peroxide.) Since the mouth is the gateway to the entire body, an infection in the gums or teeth can prevent the recovery from any illness. Also see "Toothache / Tooth Decay" and "Heavy Metal Detox" under **Dental**, *Teeth*.

146, 333 + 523 + 768 + 786, 444 + 1865, 465, 522, 555, 660 + 690 + 727.5, 760, 776, 787, 802 + 1550, 880, 1600, 1800, 2008, 2489, 2720

#### Pemphigus

Rare autoimmune disorder. Symptoms include blisters in the outer layers of the skin and the mucous membranes of the nose, mouth and throat. Also see **Autoimmune Disorders**, and entries for the affected body part.

665, 694, 893

#### Pyorrhea

See "Gingivitis / Gum Inflammation and Infection" in this section.

#### Stomatitis Aphthous

See "Canker Sores / Stomatitis Aphthous" in this section.

#### Thrush

Ulcerous white patches in the mouth caused by the fungus *Candida albicans*. Often accompanied by fever and gastrointestinal disturbance. Also see other entries under **Candida**, **Fungi**, **Molds and Yeasts**.

414, 464, 465, 660 + 690 + 727.5, 787, 880

#### Trench Mouth

Bacterial infection of tonsils and floor of the mouth. Symptoms include inflammation, ulceration, and painful swelling. Also see listings under **Respiratory Tract**, *Nose and Sinuses*.

20, 465, 600 + 625 + 650, 660 + 690 + 727.5, 726, 776, 787, 802 + 1550, 880, 1556

#### White Patches in Mouth

See "Leukoplakia" in this section.

### *Teeth*

Teeth are living parts of the body. Beneath the outer layer of hard enamel (made of calcium and phosphate), and the dentin (the middle layer and the bulk of the tooth) is an inner core called the pulp, comprised of nerves and blood vessels. A bone-like material called cementum surrounds the root, connecting the teeth to the jaw. Unlike bone, teeth do not produce red blood cells, and are built to absorb much more shock than the skeletal system. The first set of 20 "baby" teeth begin their appearance at six months of age. The second, permanent set form between the ages of six and twelve, the new tooth forming beneath the old one and pushing it out of the jaw. Extra molars erupt in the adult jaw, sometimes requiring extraction if there is not enough room in the mouth.

The most common health problem with teeth is the formation of plaque—a soft white layer that contains bacteria, often *Staphylococcus mutans*. The bacteria produce biofilm, allowing them to adhere to the teeth. If the plaque is not removed after a few days, it hardens to become tartar. More serious problems arise when the bacteria produce lactic acid, which dissolves the enamel in a process called demineralization. Teeth can renew themselves, however, if the pH of the mouth is at least 5.5. Healthy saliva has an alkaline pH of 7.0 or higher. If there is an interval of several hours between one intake of food and the next, the saliva can return the dissolved minerals to the enamel and remineralize the teeth. Cavities ("dental caries" in medical terminology) occur when over a period of time, there is more demineralization than remineralization. Pain in the teeth occurs when the acids in the mouth penetrate the dentin and reach the nerve-rich pulp. Since bacteria thrive on sugars in the mouth, regular cleaning of the teeth is the best preventive care. Flossing and rinsing are effective dental hygiene. Dentists usually recommend holding the toothbrush at a 45-degree angle to remove plaque from the space between the gum and tooth. But studies show that brushing for longer than two minutes, at a pressure higher than the weight of an orange, does not remove additional plaque and in fact may damage the teeth and gums. Acidic foods soften the enamel, which can then be damaged by immediate brushing; so rinse the mouth first and wait a half hour to brush.

A few commercial toothpastes are available that do not contain fluoride, sodium laurel sulfate or its chemical cousins, artificial flavors, or preservatives. You can also make your own from essential oils of clove, eucalyptus, oregano, tea tree, and thyme in a base of almond oil. Or add those essential oils to plain baking soda.

Ozone, used consistently, will also remove biofilm. Administer the gas inside the mouth (but don't inhale it), or swish with ozonated water or ozonated olive oil. See **Oxygen Therapies** in Chapter 3 for more information.

#### Heavy Metal Detox

The presence of heavy or toxic metals in the system—including mercury, lead, and cadmium—will either directly cause illness, or exacerbate a condition you already have. Alzheimer's, autism and chemical sensitivity are just a few conditions in which heavy metals are implicated as a cause or provocation. See the numerous *Candida* entries and *"Sporotrichum pruinosum"* under **Candida**, **Fungi**, **Molds and Yeasts**, since *Candida* feeds on heavy metals.

These frequencies are experimental, meaning that they have just started being used for this purpose and do not have a verified track record. Use them in precisely the order given for the specified times.

First set: 2154 (5 minutes), 1343 (5 minutes), 1354 (5 minutes), 528 (5 minutes), 1183 (6 minutes), 945 (6 minutes), 1121 (5 minutes), 1211 (5 minutes), 1425 (5 minutes)

Second set: (gate all 64 to 75): 63, 146, 148, 152, 250, 304, 306, 440, 444, 465, 522, 625, 635, 676, 727.5, 751, 787, 880, 1036, 1505, 3040, 3176, 10K

#### Tooth Extraction, for afterward

7.83, 47, 95, 3K

#### Tooth Regeneration

In addition to the frequencies, supplement the diet daily with 800 IU of Vitamin E and 1,000 mg of Omega 3 fish oil. One man did this and used the frequencies below and saved a tooth.

First try, for 45 minutes: 2720

Then try, for 10 minutes each, every day: 7, 25, 424, 465, 660 + 690 + 727.5, 784, 787, 880, 1552, 1560, 1577, 10K

#### Toothache / Tooth Decay

20, 47, 470.5, 95, 146, 190, 333 + 523 + 768 + 786, 465, 522, 555, 600 + 625 + 650, 646, 660 + 690 + 727.5, 776, 787, 800, 802 + 1550, 832, 880, 1500, 1600, 1800, 1980.47, 2489, 2720, 3K, 5K, 5170, 10K

*End of Dental section.*

### DEPRESSION
See under **Mind and Emotions**.

### DERMATITIS / ECZEMA
See under **Skin**.

### DETOXIFICATION
See under **Chemical Poisoning / Detoxification**.

### DIABETES
See "Diabetes / High Blood Sugar / Hyperglycemia" under **Blood Sugar Levels**.

### DIARRHEA AND/OR CONSTIPATION
See under **Gastrointestinal Tract**, *Systemic Conditions*.

### *DIENTAMOEBA FRAGILIS*
See under **Parasites, Protozoa and Worms**.

### DIFFUSE TOXIC GOITER
See "Graves' Disease / Basedow's /Diffuse Toxic Goiter" under **Glands**, *Thyroid*.

### DIGESTIVE DISTURBANCES
See entries under **Gastrointestinal Tract**.

### DIPLOPIA
See "Diplopia / Crossed Eyes" under **Eyes**.

### DIPHTHERIA
See "*Corynebacterium diphtheriae*" under **Bacteria**.

### *DIROFILARIA IMMITIS* / HEARTWORM
See "*Dirofilaria immitis* / Dirofilariasis / Heartworm" under **Parasites, Protozoa and Worms**.

### DISC AND SPINE PROBLEMS, ALL
See under **Bone and Skeleton**.

### DISTEMPER
Caused by an infectious virus from the Morbillivirus family (which also includes the virus that causes measles). Distemper is best known for affecting dogs, but it can also spread to cats, seals, and lions. Symptoms in dogs include fever; skin eruptions; malaise; eye discharge, inflammation or dryness; dehydration; uncontrollable muscular contractions; seizures; pitting in the enamel of the teeth; vomiting and diarrhea; coughing; and runny nose. Symptoms in cats include fever, severe depression, vomiting, and dehydration.

The canine distemper virus antigen has been found in the joints of dogs afflicted with rheumatoid arthritis. It is not known whether vaccines or "natural" infections are the cause. (An antigen is a protein, microbe, pollen, or other substance foreign to the body that stimulates the body's immune response so that it produces antibodies. Antibodies are substances that recognize and fight infections and foreign substances.)

242, 253, 254, 255, 312, 442, 551, 573, 624, 660 + 690 + 727.5, 671, 712, 760, 940, 950, 1269, 1950, 8567

### DIVERTICULOSIS / DIVERTICULITIS
See under **Gastrointestinal Tract**, *Colon / Large Intestine*.

### DIZZINESS
See **Vertigo**; and "Ménière's Disease" under **Ears**.

### DNA REPAIR
See under **Regeneration and Healing**.

### DOWN'S SYNDROME
See under **Nervous System and Brain**.

### DROOPY EYELID
See "Eyelid, Droopy" under **Eyes**.

### DROPSY
See "Lymphedema / Edema / Dropsy / Water Retention" under **Lymphatic System**.

### DRUG ADDICTION
See "Addiction to Drugs" under **Mind and Emotions**.

### DUODENAL ULCER
See "Ulcer—General, Duodenal and Stomach" under **Gastrointestinal Tract**, *Stomach and Esophagus*.

**DUODENITIS**
See under **Gastrointestinal Tract**, *Small Intestine*.

**DUPUYTREN'S CONTRACTURE**
See under **Muscles**.

**DYSENTERY, AMOEBIC**
See "Amoebic Dysentery / *Entamoeba histolytica*" under **Gastrointestinal Tract**, *Systemic Conditions*; or "*Entamoeba histolytica* / Amoebic Dysentery" under **Parasites**, **Protozoa and Worms**.

**DYSLEXIA**
There are no known frequencies for dyslexia, so see "Attention Deficit Disorder (ADD) / Attention Deficit Hyperactivity Disorder (ADHD)" under **Mind and Emotions**.

**DYSMENORRHEA**
See "Menstruation, Painful / Dysmenorrhea" under **Women**, *Menstruation and Menopause*.

**DYSPEPSIA**
See "Indigestion / Dyspepsia" under **Gastrointestinal Tract**, *Systemic Conditions*.

**DYSTONIA, VEGETATIVE**
See under **Muscles**.

**DYSTONIA WITH OSTEITIS**
See under **Liver and Gallbladder**, *Gallbladder*.

## –E–

**EARS**
The term "ear" is used for either the outside cartilage portion of the ear (the pinna), or the pinna plus the structures inside the head. The outer ear is comprised of the visible pinna, with its many folds, plus the eardrum. The middle ear includes three tiny bones, some muscle tendons, and nerve bundles. The inner ear is comprised of the tiny coiled cochlea, and the vestibular apparatus responsible for balance—also called the labyrinth, due to its fluid, maze-like passages. The vestibular and visual systems work together to keep objects in focus when the head is moving.

Although the science of acoustics is also the science of frequencies, sound waves are a mechanical phenomenon. First felt as air pressure, the mechanical sound waves gently push on the ear drum, making it vibrate. As the vibrations pass through the other parts, they are converted into electrical impulses, conveyed along nerves, and then translated into sound by the brain.

Ear infections not only can cause the loss of balance, but they can be serious if microbes get into the inner ear and the infection spreads to the brain. Although the conditions in this section are listed as discrete categories, if your symptoms are stubborn try using frequencies from all the entries.

Several natural substances are quite effective for ear infections. A 3% solution of food grade hydrogen peroxide can be dropped into the ear until it stops fizzing; the bubbling means that microbes are being killed. Colloidal silver (see Chapter 3) can be dropped into the ear as often as needed. When mixed together (one or two drops of hydrogen peroxide with a dropperful of colloidal silver), the effectiveness is exponential. Another excellent remedy is ozone. See **Oxygen Therapies** in Chapter 3 for more information on ear insufflation using ozone.

#### General Ear Conditions
This includes discharge, vertigo, ringing tinnitus, and hearing loss.
9.19, 9.2, 20, 158, 201, 340, 410, 440, 535, 542, 645, 652, 660 + 690 + 727.5, 683, 787, 880, 10K

#### Cerumen
See "Wax, Excessive / Cerumen" in this section.

#### Cholesteatoma
Benign inflammatory tumor usually found in middle ear and mastoid bone region. Also see entries under **Cancer** in case the tumor becomes malignant.
453, 618, 793, 5058

#### Deafness from otosclerosis
Fusion and resulting immobility of structures of inner ear, partial to complete.
9.19, 9.2

#### Deafness, partial to complete
One might assume that partial or complete nerve deafness is causing the condition, but the researcher who provided this listing does not specify.
9.19, 9.2, 20, 65, 660 + 690 + 727.5, 760, 787, 802 + 1550, 880, 10K

#### Discharge from Ears
9.19, 9.2, 20, 660 + 690 + 727.5, 787, 880

#### Eustachian Tube / Inner Ear Inflammation
465, 660 + 690 + 727.5, 776, 787, 802 + 1550, 880

#### Fungus in Ear
Also see the many entries under **Candida**, **Fungi**, **Molds and Yeasts**.
854

#### Hearing, Loss of

See "Deafness" in this section.

#### Ménière's Disease

Auditory vertigo often accompanied by deafness and ringing in the ears. According to medical books, this is really a catch-all name for a wide variety of symptoms including various ear conditions and nausea whose underlying causes can include drug poisoning, circulatory disturbances and microbial infections. Also see "Otitis" entries and "Tinnitus" in this section; **Dental**; **Heart**, **Blood and Circulation**; and "Antiseptic Effect, to Produce" under **Chemical Poisoning / Detoxification**.

8.8 to 9, 33, 329 (for at least 7 minutes), 333 + 523 + 768 + 786, 465, 428, 590, 660 + 690 + 727.5, 782 (for at least 26 minutes) 787, 802 + 1550, 880, 1130, 5K (for at least 16 minutes)

#### Mite, Follicle / *Demodex folliculorum*

Mites live in the hair follicles of humans. Although generally harmless, they can cause inflammation in the eyelashes, external ears, and facial skin.

From Hulda Clark: 682K or 1690.51 (for devices unable to accommodate frequencies in the kilohertz range)

#### *Mucor racemosus fresen*

A fungus that grows on decaying vegetation and bread and can cause ear infections and, according to Guenther Enderlein, is implicated in most if not all coronary conditions.

First try: 310, 474, 875

Also try: 473, 686, 713, 729, 731, 751, 760, 778, 871, 873, 876, 878, 887, 1200, 7768, 7976, 8788

#### Otitis Externa

Inflammation of the outer ear. To mechanically rid the ear of excess water, hop on the leg that is on the same side as the clogged ear while leaning your head to the side so that water can more easily leave the ear.

174, 464, 482, 660 + 690 + 727.5, 770, 784, 787, 880, 5311

#### Otitis Media

Middle ear swelling and/or infection, usually accompanied by fever. Also see "*Streptococcus / Strep*" under **Bacteria**.

72, 125, 316, 440 (for at least 5 minutes), 522, 720, 784, 786, 802 + 1550 (for at least 10 minutes), 880

#### Otosclerosis

Fusion and resulting partial immobility of inner ear structures, causing progressive deafness.

9.19, 9.2

#### Ringing in Ear

See "Tinnitus" in this section.

#### Swimmer's Ear

A bacterial or fungal infection of the ear canal that generally occurs after spending a lot of time in the water (hence the name). It is extremely painful and the pain can last for weeks. Although heat helps alleviate the pain, if the infection is fungal in nature heat should not be applied because this will cause the fungus to grow and the condition will persist.

To avoid Swimmer's Ear in the future, try to mechanically rid the ear of excess water by hopping on the leg that is on the same side as the clogged ear while leaning your head to the side so that water can more easily leave the ear.

See frequencies for "Otitis Externa" in this section. Also see the general frequencies listed under **Bacteria**; and "General Fungus / Molds / Yeasts" under **Candida**, **Fungi**, **Molds and Yeasts**.

#### Tinnitus

Ringing in the ears often caused by infections of the inner ear, middle ear and/or auditory nerve, characterized by subjective perceptions of buzzing, whistling, hissing, or roaring sounds in ears. This condition, as with so many others, can be due to heavy metal toxicity or prescription drugs. People with this condition often need more minerals, including magnesium. Also see "Otitis" entries and "Ménière's Disease" in this section; frequencies under **Dental** and **Heart**, **Blood and Circulation**; and "Antiseptic Effect, to Produce" under **Chemical Poisoning / Detoxification**.

9.2, 20, 787, 660 + 690 + 727.5, 784, 880, 2720

#### Wax, Excessive / Cerumen

Earwax (or cerumen) is made by glands inside the ear canal to shield the ear canal from dust and dirt, to protect the ears from infection, and to help maintain the ear canal's natural acid balance. Sometimes an excessive amount of earwax is produced. Unless the buildup is removed, hearing can be affected. Don't put cotton swabs or any other objects deep into the ear; you don't want to puncture the ear drum (although a punctured ear drum can often regenerate). To loosen wax, drop some warmed olive oil into the ear canal. You can also use drops of the herb mullein.

311, 320, 750, 720, 984

*End of Ears section.*

### EATING DISORDERS

In this modern age, the mainstream medical profession rightly considers "eating disorders" a disease entity. Alarmingly high numbers (some estimate 5% or more) of

women and girls—some as young as seven years old—have a poor relationship with food. This manifests in binge-eating, followed by vomiting (purging), fasting, excessive use of laxatives and diuretics, or compulsive exercising as a form of weight control. The binge/purge cycle is called *bulimia* (or *bulimia nervosa*), and self-starvation is called *anorexia*.

Negative body image is heavily reinforced by our culture's superficial association of appearance with self-worth, and a deeply entrenched view of women as objects. Pressure to look like a movie star is so pervasive that now men and boys are developing eating disorders, too. Eating disorders can also be related to sexual abuse, and to chemical poisoning that damages certain areas of the brain. The medical impact of binging and purging is high. Loss of minerals can lead to irregular heartbeat. The acid from frequent vomiting can corrode enamel from the teeth and even burn the esophagus. Dehydration and gastrointestinal problems may also occur.

Aside from the obvious psychological, emotional and social components of this condition, faulty metabolism can be a factor. Disorders of the thyroid (which regulates metabolism) directly cause weight loss or gain. The pituitary gland can be implicated, since it regulates the thyroid. Blood sugar disorders (hypoglycemia and diabetes) also relate to metabolic function.

Microbes, incomplete absorption and assimilation of nutrients, and poor elimination of toxins may also be involved. Poor nutrient assimilation and digestive disturbances are directly related to *Candida*, worms and parasites, which cause perpetual hunger since one's nutrients are being diverted to feed them. Mycotoxins excreted by pathogens can accumulate in the system and cause toxification. Thus the existence of microorganisms may support, accompany, and even cause this imbalance. Don't forget that *Candida* and parasites eat heavy metals, so check for mercury, cadmium, aluminum, lead, etc. Thus, eating disorders must be approached on many levels.

As with any condition involving a toxified system, sluggish metabolism, and/or faulty digestion, complement this program with a detoxification diet and sauna therapy. Psychotherapy can also be helpful. See the listings that relate to your particular condition—there are many possibilities. Some suggested categories are **Blood Sugar Levels**; **Candida**, **Fungi**, **Molds and Yeasts**; **Chemical Poisoning / Detoxification**; **Gastrointestinal Tract**; **Glands**; **Liver and Gallbladder**; **Mind and Emotions**; **Obesity / Overweight**; and **Urinary Tract**.

**EBOLA VIRUS**
See "Ebolavirus / Ebola hemorrhagic fever" under **Viruses**.

**ECHO VIRUS**
See "ECHO Virus / Enteric Cytopathic Human Orphan Virus / Nonpolio Enterovirus Infection" under **Viruses**.

**ECZEMA**
See "Dermatitis / Eczema" under **Skin**.

**EDEMA**
See "Lymphedema / Edema / Dropsy / Water Retention" under **Lymphatic System**.

***EHRLICHIA* / EHRLICHIOSIS, ALL TYPES**
See under **Bacteria**.

**ELBOW PAIN / EPICONDYLALGIA**
See under **Arthritis and Joints** or **Injuries**.

**ELECTRICAL SENSITIVITY, TO REDUCE**
This condition is rare, but people who are sensitive to even weak electromagnetic fields suffer greatly. Therefore, exercise caution when treating for this condition—the emanations from your device might feel unpleasant before the therapeutic effect of the frequency can do its work.
657

**ELECTROLYTE LEVELS, TO IMPROVE**
Electrolytes are the electrically charged minerals that allow nutrients to pass through the cell membranes and assist in metabolic and numerous other functions. It is crucial that the electrolytes be balanced.
8.1, 20, 10K

**ELEPHANTIASIS**
See under **Skin**.

**EMOTIONAL PROBLEMS, MANY TYPES**
See various entries under **Mind and Emotions**.

**EMPHYSEMA**
See under **Respiratory Tract**, *Lungs*.

**ENCEPHALITIS**
See under **Nervous System and Brain**.

**ENDOCARDITIS**
See under **Heart, Blood and Circulation**.

**ENDOCRINE SYSTEM, TO BALANCE AND NORMALIZE**
See "General, to Balance and Normalize System" and "Endocrine System Function, to Normalize" under **Glands**.

**ENDOMETRIOSIS**
See under **Women**, *Uterus and Cervix*, *Ovaries*, *and Fallopian Tubes*.

**ENERGY AND VITALITY, TO IMPROVE**
See under **Regeneration and Healing**.

***ENTAMOEBA HISTOLYTICA***
See "*Entamoeba histolytica* / Amoebic Dysentery" under **Parasites, Protozoa and Worms**.

***ENTEROBIUS VERMICULARIS***
See "*Enterobius vermicularis* / Pinworm / Seatworm" under **Parasites, Protozoa and Worms**.

**ENTEROHEPATITIS**
See under **Liver and Gallbladder**, *Liver*.

**ENURESIS**
See "Bed Wetting / Enuresis" under **Mind and Emotions**.

**ENVIRONMENTAL ILLNESS (EI)**
See the main listing **Chemical Poisoning / Detoxification**.

***EPIDERMOPHYTON FLOCCINUM***
See "*Epidermophyton floccinum* / Athlete's Foot / Jock Itch" under **Candida, Fungi, Molds and Yeasts**.

**EPIDIDYMITIS**
See under **Men**, *Testicles*.

**EPILEPSY**
See under **Nervous System and Brain**.

**EPSTEIN-BARR VIRUS**
See "Epstein-Barr Virus / Infectious Mononucleosis / Chronic Fatigue Syndrome (CFS)" under **Viruses**.

**ERGOT**
See "*Claviceps purpurea* / Ergot" under **Candida, Fungi, Molds and Yeasts**.

**ERYSIPELAS**
See under **Skin**.

**ERYTHEMA**
See under **Heart, Blood and Circulation**.

***ESCHERICHIA COLI***
See "*E. coli / Escherichia coli*" under **Bacteria**.

***EUGLENA***
See under **Parasites, Protozoa and Worms**.

***EURYTREMA PANCREATICUM***
See "*Eurytrema pancreaticum* / Pancreatic Fluke" under **Parasites, Protozoa and Worms**.

**EUSTACHIAN TUBE INFLAMMATION**
See "Eustachian Tube / Inner Ear Inflammation" under **Ears**.

**EYES**
The eye is a complex organ. This sphere of gel-like fluid possesses a transparent film (the cornea) on its surface. In the front center rests the iris, a colored ring of muscle fibers that open and close like the aperture of a camera. The hole is called the pupil. The lens of the eye is behind the iris, held by small muscles that tighten and relax to change the shape of the lens depending on whether the object is close or far. A light-sensitive, curved panel of cells called the retina is at the rear of the eye, receiving the light focused by the lens. Blinking provides a useful, protective function: it lubricates, and spreads antibacterial tear fluid on, the eyes. Although blinking is a reflex, it can also be controlled. When engrossed in a task, many people forget to blink.

Light passes through a number of structures before being converted to an image. The light enters the cornea through the pupil in the iris, and then the light is projected through some more fluid through the lens and onto the retina. There, the light is converted into electrical signals that are transmitted through the optic nerve and visual pathway, through the occipital cortex, to the brain. Vision processing centers for different parts of each eye exist in both sides of the brain.

Good vision depends on proper nutrition, physical balance, adequate sleep and sunlight, and also the ability to handle life's traumas. The muscles that lengthen or shorten the lens of the eye for near and far seeing can become paralyzed and inflexible with fright from unresolved emotional issues. The brain plays a role in seeing as much as the eyes do. This was demonstrated when people blind from birth were given eye operations that doctors expected would make them sighted. Instead, the subjects were visually, mentally and even emotionally disoriented, because they were unable to process and interpret the images they saw. Many wanted to return to their previous state that allowed them to "see" clearly.

Evidence from Paul Scanlan links nearsightedness with abnormal breathing patterns—the lack of pressure in the sinus cavities causing the rear of the eyeball to be misshapen. Many people have helped or completely healed their faulty vision using the Bates program of movement—breathing, taking in sun through closed eyelids, cupping the palms over closed eyelids—and some form of body-mind therapy to help deal with fear and other unresolved emotions. Since the eyes are an extension of the brain, also see the many entries under **Mind and Emotions**; and **Nervous System and Brain**.

#### General Range of Eye Ailments

20, 80, 160, 350, 360, 400, 496, 660 + 690 + 727.5, 787, 802 + 1550, 880, 1335, 1552, 1600, 1830, 2010, 10K

#### Cataracts, all types

Clouding of the lens of the eye. Also see "Diabetes / High Blood Sugar / Hyperglycemia" under **Blood Sugar Levels**; and "All Disturbances" under **Glands**, *Parathyroid*.

This set is reported to have eliminated cataracts and improve vision. 20, 160, 350, 360, 400, 496, 660 + 690 + 727.5, 666, 740, 784, 787, 790, 880, 1335, 1552, 1600, 1654, 1830 to 1860 (sweep for at least 15 minutes), 2010, 2110, 2187, 2195, 2211, 5K, 10K

Also try: 80, 325, 774, 800, 802 + 1550, 1500 to 1700 (sweep, 1 second per frequency), 2790, 2876

#### Catarrh

Mucous membrane inflammation in various places including the respiratory tract, gastrointestinal tract, eyes, and uterus.

380, 802 + 1550, 880, 787, 660 + 690 + 727.5, 380, 444 + 1865, 20, 800

#### Conjunctivitis / Pink Eye

Inflammation of the conjunctiva, or mucous membranes that cover the eye and inner surfaces of the eyelids. Symptoms include redness, discharge, tearing, and the feeling that there is something in the eye. May be triggered by infection (from a virus or bacterium), allergy (to dust, pollen), sensitivity to chemical pollutants (like chlorine), or foreign object in the eye (such as a contact lens).

Sometimes, pink eye is caused by bacteria and viruses responsible for colds and infections of the ears, sinuses and throat, as well as the same bacteria that cause sexually transmitted diseases. The same organism may also be involved in lymphogranuloma venereum (venereal disease characterized by inflammation and ulceration of the lymph glands), urethritis (inflammation of the urethra or urinary tube), and proctitis (inflammation of rectum and anus). Women need to be especially careful; the infection may result in miscarriage and infertility. And if they are harboring the microbe while giving birth, the infection can be passed to infants in the birth canal, causing eye infections and pneumonia. *Chlamydia*-induced pink eye is more common in Africa and the Middle East than in the US. New findings suggest that this organism may play a developmental role in Multiple Sclerosis and cancer, so it is important to get your condition treated. Also see "*Chlamydia pneumoniae*" under **Bacteria**; "Gonorrhea" under **Men**, *Urinary*; "Lymphogranuloma venereum (LGV)" under **Men**, *Penis* or **Women**, *Vagina and Labia*; and "Stye" in this section.

##### Conjunctivitis from *Bacillus subtilis*

432, 722, 822, 1246

##### Conjunctivitis from *Chlamydia trachomatis*

430, 555.7, 620, 624, 840, 866, 2213, 1111.4, 2222.8

##### Conjunctivitis from other sources

20, 80, 489, 660 + 690 + 727.5, 787, 802 + 1550, 880, 1600, 1830, 10K

#### Cornea Inflammation

Caused by the fungus *Fusarium oxysporum*.

102, 705

#### Corneal Ulcer

Caused by a scratch to the cornea. May or may not be infected. The bacterium *Propionibacterium acnes* has been implicated in infected corneal ulcers.

Sweep from 5996.1 to 6078.1 for 20 minutes. Also run 6046.9 separately for 6 minutes.

From Dr. Hulda Clark: 19267.60, 959.28

#### Crossed Eyes

See "Diplopia / Crossed Eyes" in this section.

#### Double Vision

See "Diplopia / Crossed Eyes" in this section.

#### Diplopia / Crossed Eyes

The muscles holding the lens of the eye are weak and the focusing mechanism is faulty, sometimes causing double vision.

First try: 20, 80, 660 + 690 + 727.5, 787, 802 + 1550, 880, 1830, 1600, 10K

Also try: 160, 350, 360, 400, 496, 1335, 1552, 2010

#### Discharge, Watery

436, 595, 775, 952

#### Eyelid, Droopy

Also see "*Ascaris lumbricoides* / Roundworm" and other entries under **Parasites, Protozoa and Worms**.

10K

#### Floaters

Tissue that has detached from the inside of the eye and is floating in the eyeball fluid, resulting in moving spots or specks in one's visual field. Also see other frequencies in this section.

1830, at least 15 minutes per day.

#### *Fusarium*, General

600 + 625 + 650, 746, 768

#### *Fusarium oxysporum*

Fungus causing inflammation of the cornea.

102, 332, 705, 780, 795

#### Glaucoma

Pressure in the eye resulting in atrophy of the optic nerve. According to the March 2001 issue of *Ophthalmology*, researchers found a prevalence of *Helicobacter pylori* infection in people with glaucoma; so see "*Helicobacter pylori* / Peptic (Stomach) Ulcer" (for which this bacterium

is most noted) under **Bacteria**. Also see "Diabetes / High Blood Sugar / Hyperglycemia" under **Blood Sugar Levels**, since glaucoma is often related to abnormally high blood sugar.

660 + 690 + 727.5, 787, 880, 1600, 1830 (5 minutes each)

#### Inflammation

1.2 + 250, 80

#### Macular Degeneration

The deterioration of the central portion of the retina, the inside back layer of the eye that records the images we see and sends them via the optic nerve from the eye to the brain. Can cause blindness. The retina's central portion, known as the macula, is responsible for focusing central vision in the eye, and it controls our ability to read, drive a car, recognize faces or colors, and see.

Sweep from 1828 to 1860.

Individual frequencies: 1828, 1830, 1832, 1834, 1836, 1838, 1840, 1842, 1844, 1846, 1848, 1850, 1852, 1854, 1856, 1858, 1860

#### Mite, Follicle / *Demodex folliculorum*

Mites live in the hair follicles of humans. Although generally harmless, they can cause inflammation in the eyelashes, external ears, and facial skin.

From Hulda Clark: 682K or 1690.51 (for devices unable to accommodate frequencies in the kilohertz range)

#### Photosensitivity

Extreme sensitivity to light, which some people call sun allergy. This condition is a symptom of Chronic Fatigue Syndrome (CFS). It could represent an advanced case of systemic *Candida*. And it almost always indicates depleted or overextended adrenal glands. If you are taking prescription drugs, check to see if a so-called "side effect" makes people ultra-sensitive to the sun.

3 + 230, 330

#### Pink Eye

See "Conjunctivitis / Pink Eye" in this section.

#### Stye

Lump, due to inflammation or infection, formed at the base of an eyelash, or on or inside the eyelid. Also see the "*Staphylococcus*" entries under **Bacteria**; and "Conjunctivitis / Pink Eye" in this section.

20, 350, 360, 453, 660 + 690 + 727.5, 787, 880, 1830, 2600, 10K

#### Trachoma

A debilitating, progressive, and very painful disease of the eyes caused by *Chlamydia trachomatis*. The eyelid becomes infected, inflamed and thick. Then it becomes scarred and inverts, and the razor-sharp eyelashes finally scratch the cornea, causing progressive blindness. Often the eyes become constantly teary, and the sufferer keeps the lids shut because any light that enters the sensitive eyes hurts.

The condition, which afflicts mostly poor people living in highly unsanitary conditions, is spread mainly by flies that swarm around the eyes, and by infected hands and clothing. The World Health Organization estimates that this preventable, treatable disease affects about 70 million people in Africa, Latin America and Asia; and of that number, two million become permanently blind.

A simple, inexpensive operation, if done in time, can help prevent further scarring and blindness. Antibiotics can help eliminate the infection, but they are generally unavailable to poor people. The frequencies below are for both types of *Chlamydia*: *Chlamydia trachomatis* (which gives this eye condition its name, and is more commonly known for causing a sexually transmitted disease) and for *Chlamydia pneumoniae*, in case both are involved.

##### *Chlamydia pneumoniae*

Run each frequency for 5 minutes.

*Program 1:* If your unit can't do decimals, round up or down to the nearest number. 4710.5, 470 to 472, 479, 620, 940.1, 942.9, 1880.1, 1885.9, 3760.3, 3771.7, 7520.5, 7543.4

*Program 2:* 471, 942, 1886, 3772, 7543

##### *Chlamydia trachomatis*

Also see main entry under **Bacteria**.

430, 555.7, 620, 624, 840, 866, 1111.4, 2213, 2222.8

#### Vision, to Sharpen

266, 350, 360, 1830

*End of Eyes section.*

## –F–

### FACIAL PARALYSIS

See "Paralysis in the Face" under **Nervous System and Brain**.

### FACIAL TONING

See under **Skin**.

### FAINTING

20

**FALLOPIAN TUBE INFLAMMATION**
See "Fallopian Tube Inflammation / Adnexitis" under Women, *Uterus and Cervix*, *Ovaries*, *and Fallopian Tubes*.

**FASCIA, TO SOFTEN**
See under **Muscles**.

***FASCIOLA HEPATICA***
See "*Fasciola hepatica* / Liver Fluke / Sheep Liver Fluke" under **Parasites**, **Protozoa and Worms**.

***FASCIOLOPSIS BUSKI***
See "*Fasciolopsis buski* / Intestinal Fluke" under **Parasites**, **Protozoa and Worms**.

**FATIGUE**
Many microbes can cause fatigue. *Candida albicans* is often the culprit, as are parasites and poisoning from chemicals and heavy metals. Besides running the frequencies below, see listings related to your particular infection, condition and/or affected part of the body.
20, 72, 95, 125, 428, 444 + 1865, 465, 660 + 690 + 727.5

**FATIGUE, CHRONIC**
See "Epstein-Barr Virus / Infectious Mononucleosis / Chronic Fatigue Syndrome (CFS)" under **Viruses**.

**FATIGUE, FREQUENCY RELATED—FROM RIFING TOO LONG**
1.55, 7.83

**FATIGUE, GERIATRIC / ADYNAMIA**
Fatigue of age, although adynamia is generally considered to be caused by adrenal gland weakness. Also see other "Fatigue" entries; and "Adrenal Glands, to Balance and Normalize" under **Glands**, *Adrenals*.
27.5 + 220 + 410, 60 + 100

**FEAR**
See this and other entries under **Mind and Emotions**.

**FEBRIS WOLHYNIA**
See "*Bartonella quintana* / Febris wolhynia / Wolhynia Fever / Trench Fever / Quintan Fever / Shin Bone Fever" under **Bacteria**.

**FEET, EXCESSIVE SWEATING**
See "Feet, Excessive Sweating / Sudor Pedis" under **Skin**.

**FELINE (CAT) IMMUNODEFICIENCY VIRUS (FIV)**
See under **Viruses**.

**FELINE (CAT) LEUKEMIA**
See "Leukemia, Feline" under **Cancer**.

**FELON**
Infection of the fingertips consisting of pus, or dead white blood cells.
First try: 657, 659, 738, 751
Also try: 663, 665, 720, 722

**FEVER, GENERAL**
Normal body temperature is 98.6°F (37°C). Ordinarily, with temperatures taken orally, a low-grade fever is considered less than 101°F (38.3°C); a moderate-grade fever is in the 102° to 103°F range (38.8° to 39.4°C), and high grade fevers are over 104°F (40°C). Temperatures over 106°F (41.1°C) can be harmful, particularly if prolonged. Fever is the body's way of producing a high enough temperature to kill invading microbes, and to mobilize various biochemicals and immune cells in the body to help with healing. So unless the fever is abnormally high or the person is very young or frail, it's a good idea to let the fever run its course. Nevertheless, killing microbes with frequencies will help give the body a rest.
20, 422, 800, 832, 880, 787, 660 + 690 + 727.5, 2112

**FEVER, GLANDULAR**
See "Epstein-Barr Virus / Infectious Mononucleosis / Chronic Fatigue Syndrome (CFS)" under **Viruses**. For fever of a specific gland, see listing for that gland under **Glands**.

**FEVER, DUE TO SUNSTROKE**
20, 440, 880

**FIBROADENOMA OF BREAST**
See under **Women**, *Breasts*.

**FIBROID CYST IN BREASTS**
See under **Women**, *Breasts*.

**FIBROMA**
See under **Tumors**, **Benign** or **Women**, *Breasts*.

**FIBROMYALGIA**
Fibromyalgia is a syndrome, or collection of symptoms. The most prominent and major symptom is chronic, widespread pain and tenderness in the muscle fibers and connective tissue covering a large portion of the body. (An official diagnosis states that pain must be felt at over a dozen sites in all four quadrants of the body: right and left sides, above and below the waist.) Other symptoms include numbness, swelling, stiffness, aches and tingling in the tissues, limbs and joints; weakness and chronic fatigue; sleep that does not refresh; depression and anxiety; irritable colon and bladder; tension headaches and eye problems; and painful menstrual periods. In many people, fibromyalgia is triggered or exacerbated by injury (for instance, a car accident), infections (usually viral), hormonal imbalance, radiation and electromagnetic pollution, chemical poisoning (including drugs and smoking), nutrient starvation (as from a poor diet), allergies, or any

other type of stress. About 90% of people with fibromyalgia are women.

Insufficient thyroid hormone can either contribute to, or outright cause, fibromyalgia. Over half the subjects who are hypothyroid suffer from excessive amounts of mucin, a sugar-protein, hydrophilic (water-loving) compound that is normally present in muscles, skin, blood vessels, nerves, and other parts of the body—including the fascia, or membranous envelopes that cover the muscles. In excess amounts, mucin damages connective tissue. Therefore, someone with fibromyalgia may be suffering from an underactive thyroid. See "Thyroid, Underactive / Hypothyroidism" under **Glands**, *Thyroid*.

Immune dysfunction—which can be either the cause or result of infections—is strongly implicated in fibromyalgia (as well as chronic fatigue and other syndromes). People with fibromyalgia have inadequately functioning Natural Killer T Cells (NK Cells), viral damage to calcium channels in the cellular membrane, damaged muscle fibers, and additional malfunction of the nervous and hormonal systems. Intracellular magnesium and serotonin levels are low. Magnesium is needed for muscle function, and serotonin (produced during restful, not fitful sleep), is necessary for immune function.

Thus, people with fibromyalgia have high requirements of many nutrients. Just a few of the supplements that can help with one or more symptoms, including muscle wasting, pain, joint stress, brain fog, digestive disorders and fatigue, are magnesium, malic acid, MSM (methylsulfonylmethane), N-acetyl cysteine, glucosamine sulfate, and the herb *Boswellia serrata*. Enzymes—taken on an empty stomach so they will be used to combat inflammation instead of digest food—are also helpful.

Pay attention to any possible triggering events such as an illness or accident, and treat accordingly. Also see all the "*Mycoplasma*" frequencies under **Bacteria**, since Dr. Garth Nicolson and colleagues found these bacteria, especially *Mycoplasma fermentans*, in the blood of over 60% of people with fibromyalgia. Also see **Autoimmune Disorders**; "Leaky Gut Syndrome" under *Small Intestine* (and other entries) under **Gastrointestinal Tract**; and applicable pathogens. Researchers have found a spirochete in the blood of a significant number of people with fibromyalgia, so also see "*Borreli*, all types / Borreliosis / Lyme Disease" under **Bacteria**.

First try: 328, 2720 (for 20 to 30 minutes), 9K

Then run these at 6 minutes each: 20, 120, 140, 304, 326, 464, 660 + 690 + 727.5, 664, 800, 880, 2128, 2180, 2489, 3176, 5K, 6K, 10K

**FIBROSARCOMA**
See under **Cancer**.

**FIBROSIS**
See under **Respiratory Tract**, *Lungs*.

***FILARIA***
See under **Parasites**, **Protozoa and Worms**.

**FISSURE**
A groove or crack-like sore. Also see under **Skin**.
787, 20, 10K

**FISTULA**
Abnormal tubelike passage from one bodily structure to another. Also see the "*Staphylococcus*" entries under **Bacteria**.
660 + 690 + 727.5, 787, 832, 880

**FISTULA DENTALIS**
See under **Dental**, *Mouth and Gums*.

**FLATULENCE**
See "Flatulence / Intestinal Gas" under *Colon / Large Intestine* or *Small Intestine*, both under **Gastrointestinal Tract**.

**FLOATERS**
See under **Eyes**.

**FLU**
See "Influenza" under **Viruses**.

**FLUID IN JOINTS AND TISSUES, TO REDUCE EXCESS AMOUNTS**
See under **Arthritis and Joints**.

**FLUKES, MANY TYPES**
See under **Parasites**, **Protozoa and Worms**.

**FOLLICULAR MANGE**
See "Mange / Follicular Mange / Scabies" under **Skin**.

**FOLLICULITIS**
See under **Skin**.

**FOOD POISONING**
See "Botulism / *Bacillus botulinus*" under **Gastrointestinal Tract**, *Systemic Conditions*; and all of the "*Salmonella*" entries under **Bacteria**.

**FOOT AND MOUTH DISEASE**
See "Aphthovirus / Foot and Mouth Disease / Hoof and Mouth Disease" under **Viruses**.

**FRACTURES OF BONES**
See "Fracture, Cuts, and Trauma" under **Bone and Skeleton**.

***FRANCISELLA TULARENSIS***
See "*Francisella tularensis* / Tularemia / Rabbit Fever / Deer Fly Fever" under **Bacteria**.

**FREQUENCY DISTRESS**
Not due to detoxification, but from rifing for too long.
1.55, 7.83

**FRIGIDITY / IMPOTENCE, MANY TYPES**
See "Impotence, many types" under **Men**, *Sexual Functioning* or "Frigidity / Impotence, many types" under **Women**, *Sexual Functioning*.

**FROSTBITE**
See under **Injuries**.

**FROZEN SHOULDER**
See "Shoulder, Frozen" under **Injuries**.

**FUNGUS**
See "General Fungus / Molds / Yeasts" under **Candida**, **Fungi**, **Molds and Yeasts**.

**FURUNCULOSIS *HERPES***
See "Furunculosis *Herpes*, including boils" under **Skin**.

***FUSARIUM*, ALL TYPES**
See under **Candida**, **Fungi**, **Molds and Yeasts**.

## –G–

**GANGRENE**
The rotting of soft tissue, due to frostbite, injuries, boils or poor circulation. Also see circulation frequencies under **Heart**, **Blood and Circulation**; and "*E. coli* / *Escherichia coli*" under **Bacteria**.
1.1 + 73, 20, 660 + 690 + 727.5, 787, 880

***GARDNERELLA***
See under **Bacteria**.

**GAS, INTESTINAL**
See "Flatulence / Intestinal Gas" under *Colon / Large Intestine* or *Small Intestine*, both under **Gastrointestinal Tract**.

**GASTRIC CANCER**
See "Stomach Cancer" under **Cancer**.

**GASTRITIS**
See **Gastrointestinal Tract**, *Stomach and Esophagus*.

**GASTRO-ESOPHOGEAL REFLUX DISEASE (GERD)**
See "Acid Reflux / Gastro-Esophogeal Reflux Disease (GERD)" under **Gastrointestinal Tract**, *Stomach and Esophagus*.

**GASTROINTESTINAL TRACT**
The digestive tract is a huge muscular tube extending about thirty feet from the mouth to the anus. Lining the entire tract is soft mucous membrane that protects the tubing from foreign substances. (Food is foreign until the body breaks it down and makes it a part of its own tissue.) The musculature's involuntary, wave-like movement, which pushes the food down the esophagus (food tube) to the stomach, down to the small intestine, and then to the colon (or large intestine), is called peristalsis.

Digestion begins in the mouth, as enzymes in saliva break down starches into simple glucose. The taste and even smell of food stimulate increased production of saliva and signal the other digestive organs to be ready to receive food—so it's important to chew well, leaving food in the mouth as long as possible. Chewing also breaks down the indigestible cellulose coating of fruits and vegetables, thus liberating the nutrients. And chewing creates more surface area on the food so digestive enzymes can break it down further. Once the food travels down the esophagus and through a small sphincter to the stomach, the stomach churns the food and combines it with more digestive enzymes so it becomes a relatively smooth, thick fluid called chyme. The chyme moves through the opening at the lower end of the stomach (pyloric valve) into the first section of the small intestine (duodenum). Carbohydrates enter the small intestine first, then proteins, and then fats. Digestion and assimilation primarily occur in the first two sections of the small intestine. Then the material moves through the ileocecal valve, located at the end of the small intestine, into the colon or large intestine. Whatever undigested material is left leaves the small intestine and enters the large intestine as a very thick paste. The remaining useable liquid is absorbed, after which the waste collects in the rectum at the end of the large intestine, to finally leave the body through an opening called the anus.

The gut—the overall term for the digestive organs—shares an interesting relationship to the central nervous system: they both evolved independently from the same embryonic tissue. The human digestive tract and the spinal cord each contain over one million nerve cells. In fact, the digestive system contains more nerve cells (as the enteric nervous system) than the peripheral nervous system. Major brain neurotransmitters (including serotonin, dopamine, norepinephrine, nitric oxide, and glutamate) are also in the gut when food is present. So are natural opiates, benzodiazepines, and psychoactive chemicals similar to the drugs Valium® and Xanax®. In addition, the brain and the gut are linked by the vagus nerve, the longest of all cranial nerves and a kind of "neural cable." The vagus nerve travels from the brain stem, through the neck and chest organs, to the abdomen. Here, then, is the physiological and biochemical validity to "gut feelings": the abdominal cavity is literally a second brain! Since the gut produces pain-alleviating chemicals similar to those found in drugs—for instance, in cases of severe pain the gut sends benzodiazepine

directly to the brain—people who eat when anxious may be trying to reproduce the effects of the drugs. It is not yet known whether the gut synthesizes benzodiazepine from compounds in foods, from bacterial action on the food, or both. Incidentally, researchers believe that serotonin in the gut catalyzes peristalsis. This is why Prozac® and other drugs that divert serotonin from the intestinal tract to the brain, cause digestive disturbances.

There are about ten thousand different kinds of beneficial intestinal bacteria (friendly flora) that live in a symbiotic relationship with their hosts. These microorganisms produce enzymes, vitamins, and beneficial acids that aid in digestion. The delicate balance of the digestive tract can be unfavorably altered by toxins that include antibiotics, chlorine, fluoride, food additives, preservatives, caffeine, and too many hard-to-digest foods. Many conditions in the digestive tract are either caused by—or contribute to—the overgrowth of some form of yeast and a deficiency of beneficial intestinal flora. Yeasts thrive on sugar, coffee and refined carbohydrates, displacing the beneficial intestinal flora that help us digest our food. Moreover, the refined carbohydrates either stick to the sides of the intestines like glue, or induce a bodily response to create mucous, which adheres to the intestinal wall. This impedes the smooth rhythmical movement of the musculature (called peristalsis) along the entire intestinal tract.

A major contributor to poor digestion is stress—after all, the gut is the second brain. Stress can cause the stomach to shift its position. Even a small shift can decrease its production of digestive enzymes (including hydrochloric acid, necessary to digest protein). In a vicious cycle, poor digestion further creates a favorable terrain for pathogenic microbes. And poor digestion means poor elimination, causing gas and in some cases inflammation and severe infections that lead to irritation of the colon and other disorders. When you are deprived of proper nourishment, the world can indeed seem like a place where your needs are never met and nourishment is lacking on many levels.

See a health care practitioner who can help you plan an individualized restorative diet that you can live with. Never eat when you are upset; eat only when you feel serene. Learn a relaxation technique, such as yoga, meditation, or gentle stretching. Take digestive enzymes with each meal. Just a few enzymes are amylase, to break down starch, protease for proteins, and lipase for fats. Hydrochloric acid also helps digest proteins. And probiotics will help replenish the intestinal flora. Also see **Eating Disorders**.

#### *Systemic Conditions*

If these frequencies are not sufficient, see entries under **Candida**, **Fungi**, **Molds and Yeasts** and under **Parasites**, **Protozoa and Worms**.

3.9, 4.9, 20, 72, 95, 125, 422, 450, 660 + 690 + 727.5, 664, 676, 784, 787, 802 + 1550, 832, 880, 1552, 2008, 2127.5

In chronic disease, the sympathetic (fight-or-flight) nervous system runs all the time and the parasympathetic (eat and sleep) system is effectively shut down. Since the parasympathetic system controls the gut, we stop making enzymes so that even with a great diet, we do not digest our foods. The function of the large intestine is to extract water from the digestive sludge. Since the blood supply of the gut has been diverted to the muscles so you can run or fight more effectively, the ability of the large intestine to extract water is reduced. The lining of the gut becomes covered with greasy sludge like an oil filter. This causes the gut lining to become inflamed, allowing large molecular-weight proteins to be reabsorbed into the blood. These cause allergies and attempts are made to excrete them though the sinuses. This situation is known as *leaky gut syndrome.* Under these conditions, the body invites intestinal parasites and certain yeast *(Candida)* to help because each of them likes to "eat" the tarry sludge that lines the gut.

Returning to health with chronic disease occurs when we reduce the activity of the sympathetic nervous system to normal, which in turn allows the parasympathetic to return to normal. Once this occurs, the microbes will leave what is now a hostile environment.

It is a mistake for rifers to simply think that curing disease means killing everything in sight. Sure you can kill worms and *Candida*, but they will come back until you get the gut working again.

—Jerry Tennant, MD, 2001
inventor, Tennant Biomodulator® and
author, *Healing is Voltage* (2007)

#### ***Actinomyces bovis* / Actinomycosis**

The *Actinomyces bovis* fungus causes Actinomycosis, an infection of the brain, lungs, gastrointestinal tract or jaw.

10K, 465, 787, 660 + 690 + 727.5, 20, 220, 160, 1.1 + 73

#### **Adenovirus Infection**

Causes symptoms in the lungs, stomach, and intestines. Also see "Adenovirus, all types" under **Viruses**.

First try: 333 + 523 + 768 + 786, 666, 959, 962

Also try long set if the above isn't sufficient: 20, 26, 48, 60, 72, 95, 125, 160 (for 5 minutes), 180, 300, 333 + 523 + 768 + 786, 444 + 1865, 522, 555, 660 + 690 + 727.5, 787, 802 + 1550, 880, 942, 952, 959, 962, 959 to 969, 1395 (for 5 to 10 minutes), 1500, 2050, 2720, 4868, 5K, 6989, 7001, 7009, 7702, 7762, 7767, 10K

#### Amoebic Dysentery / *Entamoeba histolytica*

*Entamoeba histolytica* is a dangerous protozoan that causes amoebic dysentery, an infection of the liver and digestive tract. Symptoms include severe diarrhea, ulcerated open wound, fever, and blood in the stool. Also see "*Salmonella*" and "*Shigella*" under **Bacteria**.

From Dr. Hulda Clark: 19168.02, 954.32

Also try: 148, 166, 308, 393, 631, 778

And then try: 333 + 523 + 768 + 786, 465, 660 + 690 + 727.5, 787, 802 + 1550, 832, 880, 1552 for accompanying infections.

#### Botulism / *Bacillus botulinus*

Botulism is a well-known and often fatal form of food poisoning from *Bacillus botulinus*. Symptoms include nausea and vomiting, intense abdominal cramping, fatigue, headache, difficulty swallowing, distorted vision, diarrhea, paralysis, and later shock and unconsciousness which lead to death. This bacterium, which produces a potent neurotoxin, can proliferate from spoiled food that has either been improperly canned or left unrefrigerated in hot weather. Also see the various "*Salmonella*" entries under **Bacteria**; and "Antiseptic Effect, to Produce" under **Chemical Poisoning / Detoxification**.

172, 518, 533, 639, 660 + 690 + 727.5, 683, 691, 802 + 1550, 831, 1372, 1552, 10K

#### *Candida* / Yeast

An infection of fungal and yeast forms has rightly been called the runaway illness of the late 20th century. Most Americans are afflicted by an overgrowth of yeast that ordinarily exists in balance in the digestive tract but which, due to poor diet, stress and antibiotics, proliferates and crowds out beneficial bacteria. Fungal overgrowth causes a vast array of conditions including, but not limited to, poor digestion; mood swings; overweight; craving for sweets, alcohol or carbohydrates; depression; blurry vision; slurred speech; poor motor coordination; and an inability to focus or remember.

Yeast has been implicated in diseases ranging from hypoglycemia to cancer; and, according to many holistic practitioners, is always present in AIDS and chronic fatigue syndrome. To control yeast, follow a diet of mostly fresh vegetables and some animal protein, with an emphasis on raw, living foods with a minimum of carbohydrates (starch and grains). And avoid fermented substances such as soy sauce, vinegar, cheese, alcohol, yeasted breads (which are riddled with fungal spores), and sugars (even those naturally occurring in fruits), because—like most pathogenic microbes—fungal and yeast forms thrive on this. Most people are sensitive to mushrooms as well.

Although most people call their systemic or digestive fungal infection "*Candida*" (short for the Latin *Candida albicans*), there are actually many different kinds of fungal forms, which manifest differently in the body. Since unwanted fungal forms are so prevalent in the body and can mimic so many other conditions, you may want to give yourself fungus and yeast frequencies as part of a general gastrointestinal program. See "*Candida albicans*" and related entries under **Candida**, **Fungi**, **Molds and Yeasts**. Remember that fungi and yeast indicate an advanced stage of fermentation within the body—the organism is literally molding—so you will need to pay careful attention to diet and acid/alkaline balance (pH). When there is fermentation in the body, parasites and worms are generally not far behind; so try the **Parasites, Protozoa and Worms** frequencies along with those for detoxification. For more information, see *The Yeast Connection*, *Candida: A Twentieth Century Disease*, and *The Candida Albicans Yeast-Free Cookbook*.

#### Catarrh

Mucous membrane inflammation in various places including the respiratory tract, gastrointestinal tract, eyes, and uterus.

20, 380, 444 + 1865, 660 + 690 + 727.5, 787, 800, 802 + 1550, 880

#### Constipation

Digestive tract conditions can indicate the presence of *Candida albicans* and other fungal forms. See "Diarrhea and/or Constipation" in this section. Also see the many entries under **Candida**, **Fungi**, **Molds and Yeasts**.

20, 422, 660 + 690 + 727.5, 776, 787, 802 + 1550, 832, 880

#### Cramping

If the cramping is due to food poisoning, digestive disturbances or infection, rifing can help. But cramping from appendicitis is an extremely dangerous condition that requires a doctor's care and prompt surgery! Also see the many entries under **Parasites**, **Protozoa and Worms**; entries under **Women**, *Menstruation and Menopause*; and the other listings in this section.

4.9, 20, 26, 72, 95190, 660 + 690 + 727.5, 787, 832, 880, 10K

#### Diarrhea and/or Constipation

Two sides of the same coin, both diarrhea and constipation result from an imbalance in the digestive tract. The imbalance may be caused by microorganisms; the mycotoxins they excrete; toxins due to food intolerance or allergy; insufficient numbers of friendly bacterial flora (which help digest food); and/or mineral (and thus electrolyte) deficiencies, which prevent the digestive tract from properly digesting and assimilating food and excreting waste. In addition, since signs of an overworked liver include digestion and elimination conditions, such as constipation, diarrhea, nausea and bloating, also see **Liver and Gallbladder**, *Liver*.

#### Adenovirus Cause

Can cause severe respiratory, gastrointestinal, urinary, and eye infections whose symptoms include severe sore throat, swollen lymph nodes, diarrhea, vomiting, headache, fever, abdominal cramps, burning or bloody urine, and very red inflamed eyes. Adenoviruses are extremely infectious in people of all ages, especially in children under the age of two. They can foster abnormal cell growth (leading to malignant tumors) by disabling the normal growth limit function of the cell. Adenoviruses can be fatal to those whose immune function is already weak. Many of the viruses remain in the kidneys and lymph tissue and can be excreted in the stool months after the initial infection. Also see other "Adenovirus" frequencies under **Viruses**.

First try: 333 + 523 + 768 + 786, 660 + 690 + 727.5, 666, 950.6, 958.8, 959, 959.6, 960.4, 962, 967.6, 969.3

If the above isn't sufficient, also try: 20, 26, 48, 60, 72, 95, 125, 160 (for 5 minutes), 180, 300, 444 + 1865, 522, 555, 787, 802 + 1550, 880, 942, 952, 962, 1395 (for 5 to 10 minutes), 1500, 2050, 2720, 4868, 5K, 6989, 7001, 7009, 7702, 7762, 7767, 10K

#### Allergies and Food Intolerance Cause

When allergic, a person is unable to properly assimilate, process, and excrete a substance. Often the offending substance is a protein, in the form of a food, that the body cannot break down into its most useable components. Many symptoms of what we call an allergy are the body's attempts to get rid of the offending substance. Allergies or food intolerance can be caused by cow's milk (i.e., lactose intolerance), soy, eggs, chocolate, shellfish, citrus fruits, and nuts (especially peanuts). Symptoms include diarrhea, hives, runny nose, wheezing, eczema, and anaphylactic shock. Also implicated is Celiac Disease, which is caused by an intolerance to gluten, a protein molecule in grain that gives it an elastic texture. Symptoms include recurrent diarrhea and malabsorption. Gluten is present in large amounts in wheat, rye, barley, oats, and spelt. Try eliminating possible causes from your diet one by one to see if there is any improvement.

#### Amoebic Dysentery / *Entamoeba histolytica* Cause

*Entamoeba histolytica* is a dangerous protozoan that causes amoebic dysentery, an infection of the liver and digestive tract. Symptoms include severe diarrhea, ulcerated open wound, fever, and blood in the stool.

First try the frequencies for *Entamoeba histolytica*: 148, 166, 308, 393, 631, 778.

From Hulda Clark: 19168.02, 954.32

Then try: 333 + 523 + 768 + 786, 465, 660 + 690 + 727.5, 787, 802 + 1550, 832, 880, 1552 for accompanying infections.

#### *Campylobacter* Cause

Causes sudden infectious diarrhea in both newborns and adults.

333 + 523 + 768 + 786, 378, 732/733, 1633, 1834, 2222

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 352K (lower limit), 355K (most effective), and 357200 (higher limit of same organism)

Hertz set: 872.52 (lower limit), 879.96 (most effective), and 885.41 (higher limit of same organism)

#### *Candida albicans* Cause

Many people with fungal problems have an overgrowth of yeast in their digestive tract. Some yeast ordinarily lives in the digestive tract, but due to poor diet, stress and antibiotics, it proliferates and crowds out beneficial bacteria. Fungal overgrowth causes a vast array of conditions, including poor digestion and a susceptibility to diarrhea and/or constipation. See this entry under **Candida**, **Fungi**, **Molds and Yeasts** for more information.

First try these frequencies from Jimmie Holman and Paul Dorneanu: 23485, 45820, 51155, 51156, 53940, 57420, 58914, 58916, 67860. For units that cannot go that high, try: 412, 464.

Then try: 20, 254.2, 381, 386, 414, 450, 464, 465, 660 + 690 + 727.5, 661, 742, 762, 784, 787, 866, 877, 880, 886, 344+ 510 + 943, 1151, 1403, 2644

Then try: 72, 412, 422, 543, 582, 787, 802 + 1550, 1016, 1134, 1153, 2127.5, 2222

And then try: 20, 60 + 100, 95, 125, 152, 225, 240, 427, 442, 600 + 625 + 650, 688, 751, 880, 1146, 8146

From Dr. Hulda Clark: 19217.81, 956.80
Sweep option: 12006.25 to 12137.5

#### *Clostridium difficile* / Pseudomembranous Colitis Cause

A bacterium that actually forms spores in the colon, *Clostridium difficile* produces a toxin that causes

frequent, foul-smelling, watery diarrhea. With more severe symptoms—bloody and mucous-filled diarrhea, abdominal cramps, and even abnormal heart rhythm—the condition is called pseudomembranous colitis. In some instances, this microbe can migrate to the brain and cause autism in children. These conditions usually develop after the ingestion of antibiotics; the beneficial intestinal flora are overpowered by *Clostridium difficile* and other pathogenic bacteria.

387, 635, 673

#### Colitis / Irritable Bowel Syndrome (IBS) Cause

Inflammation and disturbed muscular movement of the colon, possibly accompanied by constipation and/or diarrhea, cramps, heartburn, bloating, back pain, weakness, and faintness. Lactose intolerance, the inability to digest foods that contain lactose (milk sugar), may mimic the symptoms of colitis. So if you're eating dairy products, avoid them for at least three months and see if your condition improves. (Sometimes, people can handle some forms of raw dairy, or fermented raw dairy. See Chapter 3 for more information.) Alternately, there may be a considerable emotional component to this symptom picture. Psychotherapy is advised to help the person express anger and other emotions. Also see "Crohn's Disease" under **Gastrointestinal Tract**, *Colon / Large Intestine*; and "*Blastocystis hominis* / Blastocystosis" under **Parasites**, **Protozoa and Worms**, since this one-celled parasite is often found in people with colitis.

20, 105, 440, 660 + 690 + 727.5, 787, 791, 802 + 1550, 832, 880, 10K

#### *Cryptosporidium parvum* / Cryptosporidiosis Cause

Even in a healthy individual, the protozoan *Cryptosporidium parvum* can cause an infection characterized by acute diarrhea. It mainly affects children, and is responsible for recurrent diarrhea; but it can also cause severe, chronic diarrhea in people with AIDS.

First try: 482, 4122

Also try these frequencies for a common single-celled parasite (unspecified): 660 + 690 + 727.5, 432, 753, 5776

#### *E. coli / Escherichia coli* Cause

Commonly found in the colon, this bacterium will cause diarrhea if ingested in food (food poisoning). If you develop a cold after using these frequencies, see the "Adenovirus" entries under **Viruses**. Also see other forms of "*E. coli*" under **Bacteria**.

282, 289, 327, 332, 358, 413, 539, 548, 642, 798, 799, 800 to 802, 802 (for 10 minutes) + 1550, 804, 832, 834 (for 10 minutes) 957, 1320, 1550 to 1552, 1722, 1729, 7847, 7849

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 392K (lower limit) and 393K (most effective and higher limit of same organism)

Hertz set: 971.67 (lower limit) and 974.15 (most effective and higher limit of same organism)

Also from Hulda Clark: 356K or 882.44 (for devices unable to accommodate frequencies in the kilohertz range)

#### *Giardia lamblia / Giardia intestinalis* / Giardiasis Cause

*Giardia lamblia*, also known as *Giardia intestinalis*, is a common protozoan found in the intestinal tract and the most frequent cause of giardiasis, or non-bacterial diarrhea, in North America. This condition is usually caused by drinking contaminated water or eating produce washed in contaminated water. Diarrhea generally occurs within one week of ingestion. Other symptoms can include intestinal cramping, nausea, gas, and weight loss. Children and those with weak immune systems are most susceptible. The condition normally lasts from one to two weeks, although some chronic infections last months or even years.

334, 407, 812, 829, 1K, 2018, 4334, 5429

These frequencies are from Jeff Sutherland.

430531, adults
231350, larvae
110110, eggs

Dr. Sutherland emphasizes that the frequencies must be used in the following sequence: 430531, 231350, 110110, 231350, 430531, to ensure that the life cycle of the parasite is completely disrupted and all stages are caught and destroyed. A sweep of 200 to 300 Hz is recommended to accommodate the individuality of the terrain.

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 421400 (lower limit), 424K (most effective), and 426300 (higher limit of same organism)

Hertz set: 1044.55 (lower limit), 1050.99 (most effective), and 1056.69 (higher limit of same organism)

Also from Dr. Clark: 21109.72

#### Negative Effects from Medication Cause

One of the disadvantages of modern medicine's overuse of antibiotics is that the antibiotics, while killing off the bacteria that cause an infection, also kill off the good intestinal flora that are required for fully-functional intestinal health. Frequently implicated antibiotics include amoxicillin, erythromycin, and tetracycline. Discontinuing these drugs leads to resolution of diarrhea. Supplementation to replace intestinal flora is also advised to restore the colon to health. Also, consult with your health care provider to determine if any of the allopathic medications you are on list diarrhea and/or constipation as a negative effect.

#### Norwalk Virus Cause

A subset of the calicivirus, the Norwalk virus lives in contaminated water and food, causing abdominal pain and cramping, vomiting, diarrhea and fever. Illness usually lasts several days, and affects both children and adults. Highly contagious.

Try these general anti-viral frequencies: 776, 787, 802 + 1550, 832, 840, 880, 1570, 1998, 2008, 2052, 2127.5, 2489, 2490, 5K

#### Parasites, General Cause

Over 134 parasites can live in the human body. In fact, reviews of autopsies show that parasites may contribute to as much as 75% of all illness, although ordinary diagnostic tests may not detect the presence of worms and parasites. Parasite infestations can cause a dizzying array of symptoms. Some of the most common symptoms include nausea, vomiting, constipation and diarrhea.

Important! Bacteria often live inside worms, and viruses live inside the bacteria inside the worms. So even if the worms are killed, you must still deal with the smaller microbes that play a role in the composite worm/bacteria/virus symptom picture.

Parasites are difficult to eliminate because of their many life cycles. Herbs such as wormwood, black walnut and cloves should be taken along with rifing.

First try: 20, 64, 72, 96, 112, 120, 125, 128, 152, 240, 334, 422, 465, 524, 651, 688, 732, 751, 784, 800, 854, 1864.

Then try: 642, 644, 676, 660 + 690 + 727.5, 712, 802 + 1550, 1552, 1862, 2112, 4412.

And then try: 47, 80, 95, 440, 444 + 1865, 465, 665, 740, 770, 780, 880, 1840, 1998, 3176, 10K

#### Rotavirus Cause

From the *Reoviridae* family, the Rotavirus is the most common cause of viral gastrointestinal problems in North America in very young children (usually occurring between the ages of three months and three years). Diarrhea is often accompanied by fever and vomiting, lasting for a few days up to one week. Dehydration can become a serious problem due to fluid loss, so drink plenty of fluids.

Try these general anti-viral frequencies: 776, 787, 802 + 1550, 832, 840, 880, 1570, 1998, 2008, 2052, 2127.5, 2489, 2490, 5K

#### *Salmonella* / Food Poisoning Cause

There are many different types of *Salmonella* bacteria. Two prominent strains that cause food poisoning (also known as *Salmonella*) are *Salmonella enteritidis* and *Salmonella typhimurium*. Food poisoning is transmitted to humans mostly from animals. Symptoms include dehydration, fever, abdominal pain, constipation, diarrhea, nausea, vomiting, and a rose-colored skin rash. Also see other "*Salmonella*" entries and "*Bacillus botulinus* / Botulism" under **Bacteria**.

First try: 59, 92, 165, 420, 643, 664, 707, 711, 717, 719, 752, 972, 1244, 1522, 6787, 7771

From Dr. Hulda Clark: 19168.02, 19217.81, 954.32, 956.80

Then try: 546, 693, 754, 762, 773, 1634, 8656

#### *Shigella* Cause

This is the name of the microbe as well as the disease it causes. Usually transmitted through contaminated food, it infects the gastrointestinal tract. Symptoms include nausea, vomiting, diarrhea, fever, abdominal pain, headache, dehydration, and blood, pus or mucous in the stool. Also see "Amoebas" under **Parasites**, **Protozoa and Worms**.

26, 621, 762, 769, 770, 802 + 1550, 832

From Hulda Clark: 390089 or 966.93 (for devices unable to accommodate frequencies in the kilohertz range) and 19421.39

#### *Staphylococcus pyogenes aureus* Cause

Staph is a very common bacterium. Found on the skin, in infected cuts and pimples, and in the nose and throat, it causes nausea, vomiting, diarrhea, boils, carbuncles, abscesses, tooth infection, and heart disease.

424, 644, 647, 660 + 690 + 727.5, 738, 744, 745, 943, 1050, 5906.25, 8697

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 376270 (lower limit), 378K (most effective), and 380850 (higher limit of same organism)

Hertz set: 932.68 (lower limit), 936.97 (most effective), and 944.03 (higher limit of same organism)

Also from Dr. Clark: 381K or 944.40 (for devices unable to accommodate frequencies in the kilohertz range)

Also from Dr. Clark: 18819.51, 18968.87

Also try: 333 + 523 + 768 + 786

#### *Strongyloides stercoralis* / Threadworm Cause

This roundworm, 2.5 mm in length, is endemic in southern US and common in the tropics and Asia. Skin becomes red and itchy after penetration by larvae, which usually occurs on feet. Diarrhea, vomiting, and abdominal pain may follow. Migration of larvae through lungs can cause cough and pneumonia.

9.6, 332, 422, 423, 721, 732, 749, 942, 3212, 4412

*Larval stage*

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 398400 (lower limit), 400K (most effective), and 402K (higher limit of same organism)

Hertz set: 987.53 (lower limit), 991.50 (most effective), and 996.46 (higher limit of same organism)

Also from Dr. Clark for the larval stage: 19914.83

Also try: 380, 698, 722, 738, 746, 752, 776, 1113

#### *Trichuris trichiura* / Whipworm Cause

This small worm with a whip-like shape is thought to infect fully a quarter of the world's population, primarily in Asia, but also in South America and Africa. Children can become infected by eating dirt. Symptoms can include diarrhea, particularly at night, and dysentery. Also try the general frequencies listed above under "Parasite, General cause" in this section.

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 388300 (lower limit), 406K (most effective), 408900 (higher limit of same organism)

Hertz set: 962.50 (lower limit), 1006.37 (most effective), and 1013.56 (higher limit of same organism)

Also from Dr. Clark: 20213.55

#### Diarrhea from Dysentery

See "Amoebic Dysentery / *Entamoeba histolytica*" in this section.

#### Food Poisoning

See "Botulism" in this section; and "*Salmonella*" under **Bacteria**.

#### *Giardia duodenalis* / Giardiasis

*Giardia duodenalis*, a one-celled microscopic parasite that lives in the intestines of animals and people all over the world, causes giardiasis, one of the most common waterborne illnesses. There are many strains of the *Giardia* microorganism and no frequencies for *Giardia duodenalis* per se, so use frequencies for *Giardia lamblia* below.

#### *Giardia lamblia / Giardia intestinalis* / Giardiasis

The *Giardia* protozoa found in the intestinal tract are the most frequent cause of non-bacterial diarrhea in North America (called Giardiasis). Condition is usually caused by drinking contaminated water or produce washed in contaminated water. Diarrhea generally occurs within one week of ingestion. Other symptoms can include intestinal cramping, nausea, gas, and weight loss. Children and those with weak immune systems are most susceptible. The condition normally lasts from one to two weeks, although some chronic infections last months or even years.

This microbe survives best in a cool moist environment. Several strains of *Giardia lamblia* have been found, causing symptoms of varying degrees of severity depending on the person's constitution.

334, 407, 812, 829, 1K, 2018, 4334, 5429

These frequencies are from Jeff Sutherland.

430531, adults
231350, larvae
110110, eggs

Dr. Sutherland emphasizes that the frequencies must be used in the following sequence: 430531, 231350, 110110, 231350, 430531, to ensure that the life cycle of the parasite is completely disrupted and all stages are caught and destroyed. A sweep of 200 to 300 Hz is recommended to accommodate the variable bodily terrain.

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 421400 (lower limit), 424K (most effective), and 426300 (higher limit of same organism)

Hertz set: 1044.55 (lower limit), 1050.99 (most effective), and 1056.69 (higher limit of same organism)

Also from Dr. Clark: 21109.72

#### Indigestion / Dyspepsia

Indigestion is often caused by *Candida albicans* and parasites. The *Candida* displaces helpful intestinal bacteria, and the parasites use up nutrients that should go to the host. In addition to trying the frequencies below, make sure to see *"Candida albicans"* under **Candida**, **Fungi**, **Molds and Yeasts**; and relevant entries under **Parasites**, **Protozoa and Worms**.

4.9, 7.83, 20, 72, 95, 125, 444 + 1865, 465, 660 + 690 + 727.5, 787, 802 + 1550, 880, 10K

#### Laxative Effect, mild

802 + 1550

#### Malabsorption Syndrome

Many factors can prevent the proper absorption of nutrients in the digestive tract, such as microbial overgrowth, infections, metabolic and glandular disturbances, nutritional deficiencies, and mechanical obstruction in the bowel. Supplement your diet with friendly intestinal flora. You may want to consider doing colonics and consulting a holistic health practitioner. Also see "General (unspecified)" under **Parasites**, **Protozoa and Worms**; "*Candida albicans*" under **Candida**, **Fungi**, **Molds and Yeasts**; and the many entries in this section.

660 + 690 + 727.5, 787, 800, 802 + 1550, 880, 1552, 3K

#### Nausea

If the nausea is from appendicitis, you may require a doctor's care and surgery immediately! Also see the many entries under **Parasites**, **Protozoa and Worms**; entries under *Menstruation and Menopause* under **Women**; and the other entries in this section.

4.9, 20, 26, 72, 95, 190, 660 + 690 + 727.5, 787, 832, 880, 10K

#### Pain

There can be many causes of pain. Experiment with other entries.

3 + 230, 26, 95, 146, 160, 333 + 523 + 768 + 786, 440, 522, 555, 2008, 2720, 3K, 10K

#### Parasites

See **Parasites**, **Protozoa and Worms**.

#### Protozoa

See **Parasites**, **Protozoa and Worms**.

#### *Salmonella*

See "*Salmonella*" under **Bacteria**.

#### *Streptococcus enterococcinum*

Often present with digestive and urinary tract infections.

409, 686

#### Typhoid Fever

See "*Salmonella typhi* / Typhoid Fever" in this section.

#### Worms

See **Parasites**, **Protozoa and Worms**.

#### *Colon / Large Intestine*

The colon, or large intestine, is the bottommost portion of the digestive tract, five to six feet long with a diameter of about two inches. (It is actually shorter than the small intestine, but it's thicker and wider, so that may be why it's called "large.") The colon is divided by sharp turns into three major parts: the ascending colon (on the right side of the body), the transverse colon (running from right to left across the upper abdomen), and the descending colon (which runs down to the rectum). It is the colon's job to squeeze every bit of salvageable water and electrolytes from the food residue, and excrete all waste—undigested food, dead bacteria, toxins, etc.—through the anus.

The colon, which maintains an alkaline environment, needs special care because it has many pockets and folds that can trap parasitic worms as well as the impacted fecal material on which they feed. If the colon is clogged with old waste material, all kinds of conditions can result, including constiptation, diarrhea, *Candida albicans*, and parasites (see the section on **Colon Cleansing** in Chapter 3 for more information). Many severe colon conditions involve abdominal tenderness and cramping, bloody diarrhea, hemorrhoids and abscesses, flatulence, lethargy and loss of appetite, and sometimes joint pain, skin rashes, eye inflammation, kidney stones, and liver dysfunction. There are many terms for disorders of the colon. Inflammatory Bowel Disease is the catch-all term for colon inflammation, which is then divided into two presumably discrete illnesses called Ulcerative Colitis and Crohn's Disease. The various colon diseases are categorized according to which portion(s) of the colon are affected. Normally, Crohn's Disease is more serious than other colon conditions, since it involves all the layers of the large intestinal (colon) wall, sometimes parts of the small intestine, and even the stomach and esophagus (food tube in the throat).

Ultimately, what matters is not the medical term, but how well food is being digested and assimilated, and the overall health of the digestive tissue. Many doctors recommend eliminating certain foods that can irritate the intestinal tract. This includes spices; dairy; high-caffeine chocolate and coffee; high-gluten grains like wheat, rye, barley and spelt; corn; citrus fruits including oranges;

nightshades such as tomatoes, potatoes, eggplant and peppers; high-fat foods; and of course fake foods, including aspartame. Also see "*Blastocystis hominis* / Blastocystosis" and other entries in this section.

#### Abdominal Inflammation

General frequencies to use if you don't know the actual microbial cause. Also see "Abdominal Pain" and "Colitis / Irritable Bowel Syndrome (IBS)" in this section.

1.2 + 250, 20, 72, 95, 105, 125, 146, 380, 428, 440, 444, 450, 465, 660 + 690 + 727.5, 776, 787, 791, 802, 832, 880, 1550, 1600, 1800, 1865, 2000, 2170, 2489, 2720

#### Abdominal Pain

General frequencies to use if you don't know the actual microbial cause. Also see "Abdominal Inflammation" and "Colitis / Irritable Bowel Syndrome (IBS)" in this section.

3, 95, 2720, 3K, 10K

#### Anus, Itching / Pruritus

Also see "*Candida albicans*" under **Candida**, **Fungi**, **Molds and Yeasts**, since *Candida* tends to overgrow in the digestive tract and can cause anal itching. Also try "*Chlamydia trachomatis*" under **Bacteria**, **Men**, *Urinary* or **Women**, *Vagina and Labia*; and "General (unspecified)" and "*Enterobius vermicularis* / Pinworm / Seatworm" under **Parasites**, **Protozoa and Worms**.

20, 95, 72, 120, 125, 146, 333 + 523 + 768 + 786, 444 + 1865, 465, 522, 555, 660 + 690 + 727.5, 760, 773, 787, 802 + 1550, 826, 827, 835, 880, 2K, 3040, 3176, 4152, 10K

#### Appendicitis

The appendix is a twisted, tiny tube protruding from the right side of the colon. Until recently considered a non-functioning "vestigial" organ, it is now recognized as a critical part of the body's immune response. Specialized lymphoid follicles in the appendix produce antibodies to help keep the bacteria of the colon from infecting other areas of the body (such as the small intestine and bloodstream), particularly in early life. Appendicitis is inflammation of the appendix. Symptoms include acute abdominal pain, nausea, vomiting, fever, and increased pulse. Do not wait; see your doctor or go to the emergency room of a hospital immediately! You may require immediate surgery that will save your life. Do not eat or drink anything. The frequencies are good for after surgery or while you are awaiting it, since an inflamed appendix must be removed.

10, 20, 72, 95, 522, 125, 146, 190, 380, 440, 444 + 1865, 450, 600 + 625 + 650, 660 + 690 + 727.5, 787, 802 + 1550, 804, 807, 880, 1570, 1770

#### *Blastocystis hominis* / Blastocystosis

A one-celled intestinal parasite, *Blastocystis hominis* causes acute diarrhea and abdominal pain, often found in colitis or Irritable Bowel Syndrome. Also see "*Dientamoeba fragilis*" and "Pinworm / Seatworm / *Enterobius vermicularis*" in this section, since all these parasites often appear together.

First try: 595, 13469

Then try: 210, 365, 844, 848, 1201, 1243, 5777, 11425, 11841, 11967, 13145, 13469, 21776

#### Cancer of the Colon

See "Colon Cancer" under **Cancer**.

#### *Clostridium difficile* / Pseudomembranous Colitis

A bacteria that actually forms spores in the colon, *Clostridium difficile* produces a toxin that causes frequent, foul smelling, watery diarrhea. With more severe symptoms—bloody and mucous-filled diarrhea, abdominal cramps, and even abnormal heart rhythm—the condition is called pseudomembranous colitis. In some instances, this microbe can migrate to the brain and cause autism in children. These conditions usually develop after the ingestion of antibiotics; the beneficial intestinal flora are overpowered by *Clostridium difficile* and other pathogenic bacteria.

387, 635, 673

#### Colic

Spasm in any hollow or tubular soft organ, particularly the colon. Since babies are the ones who suffer from colic, it might be inferred from this listing that it is all right to give infants rife sessions. Since an infant's immune function is not fully developed, I advise you to monitor the baby closely, and seek professional help. Also try "*Giardia lamblia*" and "General (unspecified)" under **Parasites**, **Protozoa and Worms**.

10, 20, 422, 465, 660 + 690 + 727.5, 787, 802 + 1550, 832, 6766

#### Colitis / Irritable Bowel Syndrome (IBS)

Inflammation and disturbed muscular movement of the colon, possibly accompanied by constipation and/or diarrhea, cramps, heartburn, bloating, back pain, weakness, and faintness. Lactose intolerance, the inability to digest foods that contain lactose (milk sugar), may mimic the symptoms of IBS. So if you're eating dairy products, avoid them for at least

three months and see if your condition improves. (Whereas pasteurized and homogenized dairy is poison, many, if not most, people can handle raw dairy or fermented raw dairy. See Chapter 3 for more information.) Alternately, there may be a considerable emotional component to this symptom picture. Psychotherapy is advised to help the person express anger and other emotions. Also see "Crohn's Disease" in this section; and "*Blastocystis hominis* / Blastocystosis" under **Parasites**, **Protozoa and Worms**, since this one-celled parasite is often found in people with colitis.

20, 105, 440, 660 + 690 + 727.5, 787, 791, 802 + 1550, 832, 880, 10K

#### Colon Function, to Balance and Normalize

8, 440, 635, 880, 2500

#### Colon Inflammation

See "Colitis / Irritable Bowel Syndrome (IBS)" in this section.

#### Crohn's Disease

Serious inflammation involving the entire colon wall, sometimes parts of the small intestine, stomach and esophagus, causing abdominal tenderness and cramping, bloody diarrhea, hemorrhoids and abscesses, flatulence, lethargy and loss of appetite, and even joint pain, skin rashes, eye inflammation, kidney stones, and liver dysfunction. In one recent study, researchers found *Mycobacterium paratuberculosis* (which causes a chronic inflammatory bowel disease in cattle) present in 100% of Crohn's Disease subjects. At the Royal Free Hospital in London, researchers associated a chronic measles infection with Crohn's disease after finding live virus in ulcerated parts of the colon. They believe that the presence of the virus triggers an immune response that damages the colon's blood vessels. Also see other entries in this section, including "Colitis / Irritable Bowel Syndrome (IBS)"; entries under **Parasites**, **Protozoa and Worms**; and "*Mycoplasma*, many types" under **Bacteria**, since *Mycoplasma* infection is often the beginning of autoimmune conditions.

First try: 14, 20, 333 + 523 + 768 + 786, 440, 660 + 690 + 727.5, 802 + 1550, 810, 832, 880, 2K, 10K

Also try: 95, 60 + 100, 110, 428, 600 + 625 + 650, 680, 776, 787, 3K

#### *Dientamoeba fragilis*

A parasite that lives in the large intestine of humans, possibly related to *Trichomonas*. Many people are asymptomatic. When symptoms do occur, they include diarrhea, nausea, stomach pain and cramps, loss of appetite and weight, and fatigue. Children from five to ten years are most commonly affected.

The infection, common worldwide, presumably remains in the intestine without spreading to other parts of the body. More than one stool sample may be needed to detect the parasite. It is spread through improper sanitation, and contaminated water and food, so wash hands after using the toilet.

Since pinworm eggs can protect *Dientamoeba fragilis*, the two microbes are often found together. So also see "Pinworm / Seatworm / *Enterobius vermicularis*" under **Parasites**, **Protozoa and Worms**.

1001.42, 20113.98

#### Diverticulosis / Diverticulitis

Tiny pockets of intestinal tissue protruding through the muscular wall of the colon.

Run for 5 minutes each: 154, 934. Then sweep from the 400 to 600 range for about 30 minutes.

#### Enterohepatitis

Inflammation of bowel and liver.

552, 932, 953

#### Flatulence / Intestinal Gas

Flatulence is the result of incompletely digested food, which creates gas that can be emitted from either the anus or mouth. Indigestion is often caused by *Candida* and parasites. The *Candida* overgrowth displaces helpful intestinal bacteria, and the parasites use up nutrients that should go to the host. If these frequencies are not sufficient, see *"Candida albicans"* under **Candida**, **Fungi**, **Molds and Yeasts**; and applicable entries **Parasites**, **Protozoa and Worms**.

20, 422, 465, 660 + 690 + 727.5, 676, 760, 787, 802 + 1550, 832, 880

#### Fluke, Intestinal

Worm appearing in the intestines and other places.

651, 676, 844, 848, 854, 2084, 2128, 2150, 6766

Also try: 15, 55, 524, 2K

#### Gas, Intestinal

See "Flatulence / Intestinal Gas" in this section.

#### Hemorrhoid

Bleeding from the rectum. The wall of the colon becomes inflamed and sometimes protrudes into the anus. One effective remedy is homeopathic *Hamamelis virginiana*, dosage 10C, one pellet

taken twice daily. Along with this, drinking aloe vera juice daily will help restore the lining of the digestive tract.

447, 660 + 690 + 727.5, 802 + 1550, 774, 880, 4474, 6117

#### Intestinal Cancer caused by Fasciolopsis buski

See "Intestinal Cancer" under **Cancer**.

#### Intestine Inflammation

See "Colitis / Irritable Bowel Syndrome (IBS)" in this section.

#### Irritable Bowel Syndrome

See "Colitis / Irritable Bowel Syndrome (IBS)" in this section.

#### Peritonitis

Inflammation of the membrane that lines the abdominal cavity, caused by infection or injury (such as perforation of the intestine). Symptoms include abdominal swelling and tenderness, severe pain, weight loss, constipation, vomiting, hiccups, and fever. Also see other entries in this section; and the many entries under **Parasites**, **Protozoa and Worms**.

660 + 690 + 727.5, 787, 880

#### Pinworm / Seatworm / *Enterobius vermicularis*

Infests the intestinal tract. Also see *"Dientamoeba fragilis"* in this section.

422, 423, 732, 733, 827, 835, 4412

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 420950 (lower limit), 423K (most effective), and 425300 (higher limit of same organism)

Hertz set: 1043.43 (lower limit), 1048.51 (most effective), and 1054.21 (higher limit of same organism)

Also from Dr. Clark: 21059.93

#### Proctitis

Inflammation and often infection in the lower portion of the colon. Symptoms can include discharge of mucous, pus or blood; anal and/or rectal pain and itching; the need to suddenly defecate; constipation or diarrhea; rectal bleeding; and fever.

There can be many causes of this condition. See "Crohn's Disease," "Colitis / Irritable Bowel Syndrome (IBS)," and other entries in this section. Also see "*Campylobacter*," "*Chlamydia*" entries, "*Neisseria gonorrhoeae* / *Gonococcus* / Gonorrhea," "*Salmonella*," "*Treponema pallidum* / Syphilis," and "*Shigella*" under **Bacteria**; "*Herpes*" entries under **Viruses**; and "*Entamoeba histolytica* / Amoebic Dysentery" under **Parasites**, **Protozoa and Worms**.

#### *Trichomonas hominis*

A protozoan parasite found in the intestines, causing diarrhea and dysentery. The only *Trichomonas* frequencies available are for those found in the genital tract, which might be the same microorganism.

610 + 692 + 980

#### Tuberculosis

This highly infectious airborne disease is popularly known for affecting the lungs. However, swelling and tumor-like welts of tissue may appear not only in the lungs, but also in the meninges (the membrane around the spinal cord) and the intestines. Other symptoms include fever, cough, and difficulty breathing. The list below is abbreviated. Since there are so many frequencies for both the disease and what are regarded as "secondary infections" springing from the disease, also see **Tuberculosis**, **all types** under **T**.

First try: 369K (for the rod form, used on Royal Rife's #4 machine)

Then try: 21508.01, 2127.5, 1070.82, 660 + 690 + 727.5

Then try: 20, 221, 333 + 523 + 768 + 786, 465, 532, 590, 776, 787, 799, 800, 801, 802 + 1550, 803, 804, 1132, 1500, 1600, 1644, 2008, 2313, 3353, 6516

### *Small Intestine*

The small intestine, coiled into the abdominal cavity, is about one inch in diameter, 25 feet long, and—with its thousands of tiny hairlike projections (villi) embedded in the mucous membrane—has a surface area of about 300 square yards, larger than a tennis court. There are three sections to the small intestine. The first twelve inches is the duodenum (which means "twelve" in Latin); the second portion, about ten feet long, is the jejunum; and the third section, about fifteen feet long, is called the ileum. The environment in the small intestine is alkaline.

Most digestion and assimilation occurs in the first two sections of the small intestine, through small hair-like projections in the mucous membrane called villi. Each villus contains capillaries through which small, broken-down food particles are absorbed and sent into the bloodstream, where they are then sent to all the cells of the body. The duodenum, the first section of the small intestine, secretes a gastric hormone called cholecystokinin (CCK) when it receives fat- or protein-rich

chyme (partially digested food, in the form of a thick liquid paste) from the stomach. CCK stimulates the digestion of fat and protein by causing the release of digestive enzymes from the pancreas, and the release of bile from the gallbladder.

#### Cancer of the Intestine caused by *Fasciolopsis buski*

See "Intestinal Cancer" under **Cancer**.

#### Cholera / *Vibrio cholerae*

*Vibrio cholerae* causes cholera, an extremely contagious infection of the small intestine. Symptoms include copious watery diarrhea—which can quickly lead to severe dehydration if treatment is not received—vomiting, muscle cramps, and weakness. Cholera is spread by contaminated water and food (often raw and improperly cooked seafood), and rarely is transmitted by person-to-person contact. The bacterium is found in salt water and near plankton. Cholera epidemics have appeared in Russia, Iran, Iraq, Bangladesh, India, West Africa, Latin America, Indonesia, and other countries of eastern Asia.

Most people can manage by drinking to replenish their bodily fluids; some become so dehydrated that fluids must be given intravenously. Keeping food clean and washing hands after going to the toilet are paramount.

First try: 330, 556, 591, 660 + 690 + 727.5, 691, 843, 844, 968, 1035

Also try: 450, 802 + 1550, 787, 880

#### Duodenal Ulcer

Open wound on either the skin or mucous membranes in stomach and duodenum, the upper part of the small intestine that connects to the stomach. There is a sizable emotional component to stomach ulcers. Psychotherapy is strongly advised to help the person express anger and other emotions. For a shorter frequency set, see "*Helicobacter pylori* / Peptic (Stomach) Ulcer" under **Gastrointestinal Tract**, *Stomach and Esophagus*.

1.1 + 73, 1.2 + 250, 660 + 690 + 727.5, 664, 676, 750, 776, 784, 787, 802 + 1550, 832, 880, 1600, 1800, 2127.5, 2167, 2170, 2489, 2950, 10K

#### Duodenitis

Inflammation of the duodenum, or part of the small intestine that connects to the stomach and receives secretions from the pancreas and liver to aid in digestion.

223

#### *Enterobius vermicularis* / Pinworm / Seatworm

Infests the intestinal tract.

422, 423, 732, 733, 827, 835, 4412

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 420950 (lower limit), 423K (most effective), and 425300 (higher limit of same organism)

Hertz set: 1043.43 (lower limit), 1048.51 (most effective), and 1054.21 (higher limit of same organism)

Also from Dr. Clark: 21059.93

#### Enterohepatitis

Inflammation of intestine and liver.

552, 932, 953

#### Flatulence / Intestinal Gas

Flatulence is the result of incompletely digested food, which creates gas that is emitted from the anus (rather than the mouth, where it is called a "burp"). Indigestion is often caused by *Candida* and parasites. The *Candida* overgrowth displaces helpful intestinal bacteria, and the parasites use up nutrients that should go to the host. If these frequencies are not sufficient, see *"Candida albicans"* under **Candida**, **Fungi**, **Molds and Yeasts**; and applicable entries under **Parasites**, **Protozoa and Worms**.

20, 422, 465, 660 + 690 + 727.5, 676, 760, 787, 802 + 1550, 832, 880

#### Fluke, Intestinal

Worms appearing in the intestines and other places.

First try: 651, 676, 844, 848, 854, 2084, 2128, 2150, 6766

Also try: 15, 55, 524, 2K

#### Gas

See "Flatulence / Intestinal Gas" in this section.

#### Leaky Gut Syndrome

The hyper-permeability of the intestinal wall. Due to its weakened structure and abnormally large spaces between the cells, partially digested material and toxins—which would normally be broken down and eliminated—leak out into the bloodstream. Symptoms include headaches, bloating, gas, and brain fog. The many contributors to leaky gut syndrome are allopathic drugs (including antibiotics, which destroy the beneficial intestinal flora and help create

fungal infections); parasites; preservatives and other chemicals in food; enzyme deficiencies; improper diet that includes caffeine, soda, alcohol and junk food; and numerous microbial infections that build up mycotoxins. All of these substances irritate and weaken the lining of the digestive tract.

*Candida albicans* is often involved in this condition. As a fungus, it has long, tenacious stalks that puncture the walls of the digestive organs as they grow. Herbs that help the intestinal tract heal itself include aloe vera, comfrey, and slippery elm. Supplementation with beneficial intestinal flora is crucial, as is a low-stress diet. Grains, dairy products, and sweeteners are huge stressors that contribute to leaky gut, so avoid them completely until you are better.

Rife researchers do not list frequencies for this condition, so see "*Candida albicans*" and other entries under **Candida**, **Fungi**, **Molds and Yeasts**; "*Helicobacter pylori* / Peptic (Stomach) Ulcer" and other entries under **Bacteria**; and the many entries under **Parasites**, **Protozoa and Worms**.

#### Peritonitis

Inflammation of the membrane that lines the abdominal cavity, caused by infection or injury (such as perforation of the intestine). Symptoms include abdominal swelling and tenderness, severe pain, weight loss, constipation, vomiting, hiccups, and fever. Also see other entries in this section, and the many entries under **Parasites**, **Protozoa and Worms**.

660 + 690 + 727.5, 787, 880

#### *Trichomonas hominis*

A protozoan parasite found in the intestines, causing diarrhea and dysentery. The only *Trichomonas* frequencies available are for those found in the genital tract, which could be the same microorganism.

610 + 692 + 980

#### Tuberculosis

This highly infectious airborne disease is popularly known for affecting the lungs. However, swelling and tumor-like welts of tissue may appear not only in the lungs, but also in the meninges (the membrane around the spinal cord) and the intestines. Other symptoms include fever, cough, and difficulty breathing. The list below is abbreviated. Since there are so many frequencies for both the disease and what are regarded as "secondary infections" springing from the disease, also see **Tuberculosis** under **T**.

First try: 369K (for the rod form, used on Royal Rife's #4 machine)

Then try: 21508.01, 2127.5, 1070.82, 660 + 690 + 727.5

And then try: 20, 221, 333 + 523 + 768 + 786, 465, 532, 590, 776, 787, 799, 800, 801, 802 + 1550, 803, 804, 1132, 1500, 1600, 1644, 2008, 2313, 3353, 6516

#### Ulcer—General, Duodenal and Stomach

An ulcer is an open wound on either the skin or mucous membranes of the stomach and duodenum (the upper part of the small intestine that connects to the stomach). There is a sizable emotional component to stomach ulcers. Psychotherapy is strongly advised to help the person express anger and other emotions. For a shorter frequency set, see "*Helicobacter pylori* / Peptic (Stomach) Ulcer" under **Gastrointestinal Tract**, *Stomach and Esophagus*.

1.1 + 73, 1.2 + 250, 660 + 690 + 727.5, 664, 676, 750, 776, 784, 787, 802 + 1550, 832, 880, 1600, 1800, 2127.5, 2167, 2170, 2489, 2950, 10K

### *Stomach and Esophagus*

The sac-like stomach, heavily lined with mucous membranes, sits between the esophagus and the first part of the small intestine on the left side of the abdominal cavity. The stomach does not absorb nutrients from digested food (this occurs in the small intestine), but breaks down large food particles into smaller molecules so that they can be absorbed into the blood more easily. When empty, the stomach (contracted and folded over on itself) has a volume of about one-and-three-quarter ounces (50 milliliters). When full, the stomach can expand to about one quart (or liter).

Each of the stomach's five sections contains different cells and functions. Glands in the stomach secrete hydrochloric acid, which creates an acid environment to activate the secretion of pepsin, which digests protein. The stomach lining itself is impervious to corrosion from hydrochloric acid. About two to three quarts (liters) of gastric fluid are secreted daily. The same stomach cells that create hydrochloric acid also produce a protein called the intrinsic factor, necessary for the assimilation of vitamin B12. The lower part of the stomach is highly acidic. Once the food moves into this section, carbohydrate digestion temporarily stops. This is why it is so important to chew food well—especially starchy and sugary foods—because the alkaline saliva in the mouth is well suited for digesting these carbs.

Like the salivary glands in the mouth, the esophagus also secretes alkaline compounds to lubricate the food, allowing for a smoother passage to the stomach.

### Acid Reflux / Gastro-Esophogeal Reflux Disease (GERD)

Inflammation and sometimes bleeding of the esophagus mucous membrane lining from excessively acidic or alkaline fluids, bile, and/or food that enter upwards from the stomach. This condition may be due to a hiatal hernia, improper closure of the esophageal sphincter (which when working properly, prevents the upwards movement of the stomach's contents), or irritating foods. Eating more frequent and smaller meals, walking after eating, and not eating just before lying down may help. If symptoms are caused by a sliding hernia (the stomach out of position), try drinking a full glass of water immediately after rising, and jumping up and down.

Over-the-counter or prescription drug anti-acid preparations can make this problem worse. Lack of sufficient stomach acid impedes digestion of food and absorption of nutrients. The root problem must be addressed.

Sometimes this condition is caused by *Staph* or *Strep* infections in the hiatal sphincter. So see the "*Staphylococcus*" and "*Streptococcus*," as well as "*Helicobacter pylori* / Peptic (Stomach) Ulcer" entries under **Bacteria**. Also see "Hiatal Hernia" in this section.

### Duodenal Ulcer

See "Ulcer—General, Duodenal and Stomach" in this section.

### Duodenitis

Inflammation of the duodenum, or part of the small intestine that connects to the stomach and receives secretions from the pancreas and liver to aid in digestion.

223

### Esophagus constriction: to loosen

660 + 690 + 727.5, 787, 880

### *Fasciolopsis buski* or Fluke

A type of flatworm implicated in stomach ulcers. Dr. Hulda Clark found that a majority of her clients with cancer harbored the *Fasciolopsis buski* parasite. When the parasite was eliminated, the cancer would not progress. If the parasite returned, so would the malignancy.

15, 55, 2K

From Dr. Hulda Clark: 21607.59, 1075.78 (adult and eggs), and 21508.01, 1070.82 (larvae)

### Gastric Cancer

See "Stomach Cancer" under **Cancer**.

### Gastritis

Inflammation of the stomach. Gastritis can be caused by a disease as serious as cancer to something less immediately dangerous, like an excess or (more commonly) a deficiency of hydrochloric acid (a secretion necessary to digest protein). It is important to determine the cause of the inflammation.

20, 422, 465, 660 + 690 + 727.5, 676, 760, 787, 802 + 1550, 832, 880

### Heartburn

Acid from the stomach rising to the esophagus, causing a burning sensation. This can be caused by the stomach being out of place (see "Hiatal Hernia" in this section), or it can be from an insufficient supply of hydrochloric acid in the stomach. The food ferments because it is undigested, and then the burning liquid "repeats" on the person. A chiropractor trained in this technique will be able to reposition the stomach. Nutritional supplements might be helpful.

20, 72, 95, 125, 444 + 1865, 465, 660 + 690 + 727.5, 685, 787, 802 + 1550, 832, 880, 1500, 1600, 1800, 2127.5, 2170, 2720

### *Helicobacter pylori* / Peptic (Stomach) Ulcer

An ulcer is a sore on the mucous membranes anywhere in the body, usually accompanied by pus (decayed white blood cells). The *Helicobacter pylori* bacterium has been conclusively implicated in peptic (stomach) ulcers as well as stomach cancer. It can be transmitted to and from people, dogs, cats, sheep, gerbils, and pigs. Colloidal silver has proven helpful, as has the probiotic *Lactobacillus salivarius*. Also see longer frequency set under "Ulcer—General, Duodenal and Stomach," in this section.

660 + 690 + 727.5, 676 (run for 10 minutes), 880, 2167, 2950

### Hiatal Hernia

The stomach becomes abnormally displaced upward into the diaphragm cavity. An out-of-place stomach can lead to all kinds of digestive complications. Here's a self-manipulation technique to help re-position the stomach, taught by a chiropractor friend of mine: Drink a full glass of water immediately after rising, and then jump up and down.

Sometimes a hiatal hernia is due to *Staph* or *Strep* present in the hiatal sphincter. If this is the case,

see "*Staphylococcus*" and "*Streptococcus*" entries under **Bacteria**, and do sessions every day for at least a week to ensure that the pathogens are completely killed. Also see "*Helicobacter pylori* / Peptic (Stomach) Ulcer" in this section.

9.1, 110, 660 + 690 + 727.5, 787, 10K

#### Hyperacidity of Stomach

This probably mislabeled symptom picture is often due to the stomach's lack of hydrochloric acid (essential for digesting protein), which makes the stomach too alkaline and causes protein food to ferment because it is not being digested. This fermentation then causes burning, which is erroneously associated with an acidic condition. Hydrochloric acid deficiency can be easily corrected with nutritional supplementation.

7.82, 3 + 230, 20, 30

#### Hypoacidity of Stomach

This usually indicates a lack of hydrochloric acid in the stomach, which can be easily corrected with proper supplementation.

20

#### Peritonitis

Inflammation of the membrane that lines the abdominal cavity, caused by infection or injury (such as perforation of the intestine). Symptoms include abdominal swelling and tenderness, severe pain, weight loss, constipation, vomiting, hiccups, and fever. Also see other entries in this section; and the many entries under **Parasites**, **Protozoa and Worms**.

660 + 690 + 727.5, 787, 880

#### *Shigella*

A disease usually transmitted through contaminated food, and also the name of the disease-causing bacterium, which infects the gastrointestinal tract and causes nausea, vomiting, diarrhea, fever, abdominal pain, headache, dehydration, and blood, pus or mucous in the stool. Also see "Amoebic Dysentery / *Entamoeba histolytica*" under **Gastrointestinal Tract**, *Systemic Infections and Conditions*.

26, 621, 762, 769, 770, 802 + 1550, 832

From Hulda Clark: 390089 or 966.93 (for devices unable to accommodate frequencies in the kilohertz range) and 19421.39

#### Stomach Cancer

See under **Cancer**.

#### Ulcer—General, Duodenal and Stomach

Open wound on either the skin or mucous membranes in stomach and duodenum, the upper part of the small intestine that connects to the stomach. There is a sizable emotional component to stomach ulcers. Psychotherapy is strongly advised to help the person express anger and other emotions. For a shorter frequency set, see "*Helicobacter pylori* / Peptic (Stomach) Ulcer" in this section.

1.1 + 73, 1.2 + 250, 660 + 690 + 727.5, 664, 676, 750, 776, 784, 787, 802 + 1550, 832, 880, 1600, 1800, 2127.5, 2167, 2170, 2489, 2950, 10K

*End of Gastrointestinal Tract section.*

### GENETICALLY ENGINEERED SEEDS

According to one source, a rifer in California purchased some bell peppers and found small black seeds in them. Normal bell pepper seeds are white, not black. These particular seeds resulted from the "terminator gene," a feat of genetic engineering that renders the seeds sterile. She accidentally left the seeds about four feet from a plasma tube frequency device. She does not know how many sessions she had done before she noticed that the seeds had become white and puffy. Some had even started to sprout. She has since planted these seeds. I have not heard if they produced peppers. The frequencies she used were run for three minutes each, over the course of an unknown number of sessions.

20, 72, 95, 125, 444, 465, 727.5, 787, 802, 880, 1865

### *GEOTRICHUM CANDIDUM*

See under **Candida**, **Fungi**, **Molds and Yeasts**.

### GERIATRIC ADYNAMIA

Fatigue of age, although adynamia is generally debilitation caused by weakness of adrenal glands.

27.5 + 220 + 410, 60 + 100

### GERMAN MEASLES

See "*Rubella* / German Measles / 3-day Measles" under **Viruses**.

### *GIARDIA INTESTINALIS* / *GIARDIA LAMBLIA*

See "*Giardia lamblia* / *Giardia intestinalis* / Giardiasis" under **Parasites**, **Protozoa and Worms**.

### GINGIVITIS

See under "Gingivitis / Gum Inflammation and Infection" under **Dental**, *Mouth and Gums*.

### GLANDERS

See under **Respiratory Tract**, *Throat and Lymph Nodes*.

### GLANDS

The word "gland" refers to endocrine or ductless glands that secrete hormones—chemical messengers that travel through

the bloodstream to give instructions to distant organs. The endocrine system links the brain to the organs that control metabolism, growth, development, and reproduction. This section deals with the structures in the body that secrete hormones: the adrenals, pancreas, parathyroid, pineal, pituitary, thymus and thyroid. The male sex glands are addressed under **Men**, *Testicles* and the female sex glands are addressed under **Women**, *Uterus and Cervix*, *Ovaries*, *and Fallopian Tubes*.

The endocrine system does not include the exocrine glands, which are salivary and sweat glands, and those in the gastrointestinal tract. The "glands" referred to in the phrase "swollen glands" are actually *lymph nodes*. Listings related to lymph glands and lymphatic tissue can be found under **Lymphatic System**, and under **Respiratory Tract**, *Throat and Lymph Nodes*.

For detailed information about each gland, see the particular entry under its alphabet letter. Note that fever of the adrenal, pineal, pituitary, thymus and thyroid glands, are entirely different from the disease called glandular fever.

#### General, to Balance and Normalize System

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#### *Adrenals*

The small, triangle-shaped adrenals, less commonly known as suprarenal glands, sit in the abdominal cavity on top of the kidneys. Their name indicates this position: ad means "near" or "at," and renal pertains to the kidneys. There are two parts to the adrenals: the medulla at the center, and the cortex surrounding the medulla. The adrenal medulla is the body's main source of the catecholamine hormones epinephrine (adrenaline) and norepinephrine. The adrenal cortex produces various corticoids, including aldosterone and cortisol, as well as a secondary source of androgens such as testosterone. To give an oversimplified summary, adrenaline is released during acute stress and cortisol is released during chronic stress. All adrenocortical hormones are synthesized from cholesterol (a good reason not to be afraid of eating foods high in this substance).

The feedback pathways between the adrenals and the nervous system help explain why these glands are so integrally linked to stress. Faced with either emotional exertion (danger or perceived danger) or physical exertion, both parts of the gland produce and blend the hormones in specific ratios. Effects of epinephrine and norepinephrine include increased heart rate, blood vessel constriction, dilation of the bronchioles in the lungs, muscle tightness, and increased metabolism. We commonly call this pattern the "fight-or-flight" response, based on biologists' observations that when faced with danger, an animal either fights or flees.

The famous stress researcher Hans Selye described the three stages of stress: the alarm reaction (the body detects the external stimuli); adaptation (the body engages defensive countermeasures against the stressor); and finally, exhaustion (the body has depleted its defenses). Difficult, frustrating and scary situations are usually stressful. However, stimulating and interesting challenges can also be stressful if they are too intense, and for too long a time. When one's stress tolerance is surpassed, the adrenals start to malfunction.

The adrenals are intimately connected to the hypothalamus (the part of the brain that sends messages to the nervous system for the fight-or-flight response), and the pituitary (which controls all other glands). If you have a longstanding problem with your adrenals, also see entries for other glands; **Blood Sugar Levels**; and "*Mycoplasma*, many types" under **Bacteria**, as *Mycoplasma* infection has been associated with adrenal dysfunction.

Modalities such as the Emotional Freedom Technique (EFT) can be self-administered, and have a high success rate in reducing stress and lessening—or completely eliminating—negative physical and emotional conditions. Also see "Body-Mind Therapies" in the Resource Appendix.

#### Adrenal Glands, to Balance and Normalize

20, 537, 1335, 2250, 10K

#### Adrenal Gland Fever and Toxicity

In comparison to other frequencies, 24K is relatively untested.

20, 10K, 24K

#### Cushing's Syndrome / Cushing's Disease / Hyperadrenocorticism / Hypercortisolism

A relatively rare disorder of the adrenal glands caused by the production of too much cortisol (corticosteroid), an adrenal hormone. Symptoms in humans can include upper body obesity, thinning arms and legs, fragile thin skin that bruises easily, weakened bones and muscles, severe fatigue, high blood pressure and high blood sugar. Irritability, anxiety and depression are also common. Women may have excess hair growth and men may have decreased fertility. Children tend to be obese with slowed growth rates, but adults age 20 to 50 years are most commonly affected. In dogs, this condition is common. Symptoms include increased thirst, urination and appetite; panting; high blood pressure; hair loss; weakening of the heart and skeletal muscles; and susceptibility to skin infections and diabetes.

This condition is often caused by an abnormality such as a tumor (usually benign and occasionally cancerous), either in the adrenal glands or the pituitary. Normally, the hypothalamus portion of the brain sends a hormone to the pituitary, which in turn secretes a hormone that stimulates the adrenals to produce cortisol. Cortisol performs vital tasks, such

as maintaining cardiovascular function, reducing the body's inflammatory response, and regulating metabolism. However, too much of this hormone can produce opposite effects. If any structure in the cortisol biofeedback production loop does not work properly, the body will produce excess corticosteroids.

This condition can also be caused by drugs such as Prednisone. The possible involvement of the hypothalamus suggests the presence of emotional trauma. Treatments include surgical removal of tumors, and cortisol-lowering drugs.

There are no known frequencies for this condition. The body-mind modality called Emotional Freedom Techniques may be helpful (see Resource Appendix). Try the other entries in this section.

#### Panic Attacks

Sudden intense anxiety, occurring repeatedly and with no discernable cause. This results from years of "fight-or-flight" adrenal response—the release of epinephrine (adrenaline)—which has become automatic and unconscious. Normally, adrenaline is released to prepare the body for physical activity (flight), which is accompanied by increased heart rate, rapid breathing and sweating. However, since no strenuous activity is occurring, the person is left with only the symptoms: breathing difficulties, chest pains and pounding heartbeat, dizziness, flushing, lightheadedness, nausea, sweating and chills, and tingling or numbness in the face. The emotional corollary is terror, fear of losing control, and feelings of dissociation or disconnection from one's body and environment. Some sources estimate that almost 2% of the American population suffers from this disorder, half of them before age 24, and that it affects twice as many women as men.

Panic attacks indicate adrenal exhaustion. There are no frequencies specifically for this condition, but see other entries in this section, and check for other glands or systems that could be involved. Also see "Hypoglycemia / Low Blood Sugar / Hyperinsulinism" under **Blood Sugar Levels**, since this may also cause panic attacks.

### *Pancreas*

The pancreas is a small elongated organ in the abdominal cavity near the stomach. Its head is close to the duodenum, its tail extending toward the spleen. The pancreas is a primary gland involved in blood sugar disorders because it produces insulin. This hormone, which is secreted directly into the bloodstream, precisely regulates the amount of glucose that circulates through the blood at any given time. Less known, however, is that the multifaceted pancreatic juice contains many different substances—the enzyme lipase to digest fats, amylase to digest carbohydrates, and trypsin and chymotrypsin to digest proteins. The pancreas also secretes alkaline sodium bicarbonate (baking soda), which it sends to the small intestine. The sodium bicarbonate neutralizes the acidic chyme (broken down food) sent by the stomach, and protects the fragile enzymes in the small intestine.

Holistic doctors have found that pancreatic enzyme supplementation can dismantle the coating of tumors, which has made it highly successful in the treatment of cancer. Also see **Blood Sugar Levels**.

#### Pancreas, to Balance and Normalize

First try: 654, 1.2 + 250, 660 + 690 + 727.5, 2127.5

Then try: 10, 15, 20, 26, 440, 444 + 1865, 464, 465, 537, 600 + 625 + 650, 624, 648, 776, 787, 802 + 1550, 832, 880, 1500, 1552, 1600, 1800, 2008, 2170, 2489, 2720

#### Pancreatic Cancer

See under **Cancer**.

#### Pancreatic Fluke / *Eurytrema pancreaticum*

Flat worms that dig into the pancreas and destroy tissue.

1850, 2K, 2003, 2008, 2013, 2050, 2080, 6578

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

- Kilohertz set: 420350 (lower limit), 421K (most effective), and 422300 (higher limit of same organism)
- Hertz set: 1041.94 (lower limit), 1043.55 (most effective), and 1046.78 (higher limit of same organism)
- Also from Dr. Clark: 20960.36

### *Parathyroid*

The parathyroid gland usually consists of two pairs of small round tissue (sometimes there are more), attached to the thyroid gland on either side of the throat. Medical researchers believe that the parathyroid has one function only: to regulate the balance of minerals in the blood—namely calcium, phosphorus and magnesium—within a very narrow range so that the nervous and muscular systems work properly. Calcium does much more than build bone; it is used for many metabolic functions. Therefore, when blood calcium levels drop below a certain point, calcium-sensing receptors in the parathyroid gland are activated, a hormone is released that causes the breakdown of bone, and calcium is released back into the blood. The parathyroid balancing mechanism also helps to compensate for excesses or deficiencies of Vitamins D and F.

Parathyroid dysfunction can cause either an excess or a deficiency of calcium. If the parathyroid gland is overactive (more common than underactivity), too much parathyroid hormone is released. This produces too much calcium and too little phosphorus in the blood, causing the removal of calcium from the bones with symptoms that include bone and muscle weakness, and heartbeat abnormalities. If the parathyroid is underactive, insufficient parathyroid hormone is released. This produces too little calcium and too much phosphorus in the blood, leading to a deficiency of useable calcium that causes muscle problems and convulsions.

General symptoms of a mild parathyroid imbalance include weakness, fatigue, aches and depression. Symptoms of a severe condition also include abdominal pain, nausea, vomiting and constipation; loss of appetite; excessive thirst; excessive urination; bone pain; muscle aches; high blood pressure; and confusion, impaired memory, stupor, and delirium. Thinning of bones, which leads to increased risk of fracture, is common.

Allopathic medicine treats this condition by removing the gland. To function properly, the parathyroid needs sufficient Vitamin D, which can be obtained through diet or direct exposure to sunlight.

**All Disturbances**

4.6, 90.5, 9.6

**Calcium Metabolism and Utilization, to Improve**

Parathyroid disturbance can cause either an excess or a deficiency of calcium.

First try: 9.6, 10K

Then try: 326, 328, 4760.5, 673.1, 771

### *Pineal*

The pineal is a pea-sized gland said to be shaped like a pine cone, located near the center of the skull between the two brain hemispheres. Medical textbooks refer to the pineal gland as a "third eye" because in the first several weeks of embryonic life, it appears in the middle of the forehead and quite literally looks like a third eye until it recedes back into the brain in the latter stages of fetal development.

The pineal gland produces the hormone melatonin (derived from the amino acid tryptophan), which is responsible for the circadian rhythms (biological time clock) of the body. Melatonin, which can be produced only in darkness, plays a major role in sexual development and metabolism. The pineal gland is large in children, shrinking at puberty and often calcifying in adults. Also use the frequency 76677.5 for the detoxification of fluoride, since this dangerous compound tends to collect in the pineal gland and can suppress the production of melatonin and serotonin.

**Pineal Gland, to Balance and Normalize**

20, 537, 662

**Pineal Gland Fever**

20, 10K

### *Pituitary*

The pituitary is a pea-sized, but very powerful gland sitting in a small bony cavity at the base of the brain. Hormones released by the hypothalamus in the brain stimulate one part of the pituitary to, in turn, secrete its own hormones which regulate a wide variety of bodily functions: blood pressure, growth, metabolic functions, male and female sex organ function (including some aspects of pregnancy and childbirth), breast milk production, thyroid gland function, water balance in the body, and the stimulation of other endocrine glands. The anterior pituitary secretes many different substances: prolactin, follicle-stimulating hormone, luteinizing hormone, thyroid-stimulating hormone, adrenocorticotropic hormone, and endorphins. Another secretion, the widely-known human growth hormone (HGH), plays an important role not only in growth, but also in aging and the smooth functioning of the rest of the body. Another part of the pituitary does not produce its own hormones, but stores and releases the hormones oxytocin and the antidiuretic hormone ADH (also called vasopressin).

The pituitary used to be called the "master gland" until it was discovered that the hypothalamus actually governs the pituitary. Therefore, with any pituitary problems, check the hypothalamus, which is involved in any stress-related response. Modalities such as the Emotional Freedom Technique (EFT) can be self-administered, and have a high success rate in reducing stress and lessening—or completely eliminating—negative physical and emotional conditions. (For more information, see "Body-Mind Therapies" in the Resource Appendix.)

**Pituitary Gland, to Balance and Normalize**

4, 537, 635

**Pituitary Gland Fever**

20, 10K

**Pituitary Gland, to Stimulate Increased Human Growth Hormone Production**

645, 1342, 1725

### *Thymus*

The thymus is a soft, pinkish-gray, two-lobed gland located in the upper front portion of the chest cavity. This gland is most active during puberty, after which it shrinks in size and activity in most individuals and is replaced with fat. In an adolescent, the thymus weighs about 1¼ ounces

(35 grams); in someone seventy years of age, about ⅕ of an ounce (6 grams).

This gland is part of the lymphatic system. It plays a major role in immune function by producing T-Cells (T for "thymus) that destroy microbes, and hormones that help with immunity. The thymus is highly affected by the emotions. Medical authorities consider it normal that the gland atrophies as we age, but proper nutrition and love will help ensure that the immune function remains vital. Light rhythmic thumping on the chest can stimulate the thymus to work more efficiently. For more information on the lymph system, see the section on **Exercise** in Chapter 3.

**Thymus, to Balance and Normalize**
20, 537

**Thymus Gland Fever**
20, 10K

### *Thyroid*

The thyroid is a butterfly-shaped gland in the throat with most of its mass on either side of the central Adam's apple. The gland produces thyroxin (also known as T4), liothyronine (also known as T3), T2, and T1. T4, the most well known of all the thyroid hormones, and T3, the most active form of thyroid hormone, heat the body and speed metabolism and heart rate. At best, T4 is only about one-quarter as potent as T3; and in any case, most is converted into the more active T3 by the liver, kidneys and other body cells. T2 stimulates metabolism, while one animal study showed that T1 cools the body and slows the heart. Together, all four of these related hormones very likely act synergistically in ways that are not yet fully understood.

The thyroid influences, and is influenced by, other parts of the endocrine system: the adrenals, pituitary, parathyroid and sex glands, as well as the hypothalamus. If one side of the thyroid gland under-functions, the other side may over-function to compensate.

Conventional medicine teaches that thyroid hormone production depends on a complex feedback loop involving other parts of the endocrine system. The process starts in the hypothalamus portion of the brain. The hypothalamus releases TRH (thyrotropin releasing hormone) to stimulate the pituitary gland in the brain's center. The pituitary monitors blood thyroid hormone levels. If there's not enough thyroid hormone in the blood, the pituitary secretes TSH (thyroid stimulating hormone) to induce the thyroid gland to produce more hormone. After the pituitary detects enough thyroid hormone in the bloodstream, it decreases production of TSH so the thyroid produces less hormone.

The problem with this ideal scenario is that even with normal blood levels of thyroid hormone, one can still suffer from symptoms of a malfunctioning thyroid, usually underactivity. See the rest of this section for details.

Proper thyroid performance is essential for the normal functioning of cells, the nervous system and muscles, and heavily impacts proper brain development, oxygen utilization, immunity and metabolism. Metabolism includes growth and development, and the speed and efficiency with which the body takes in nourishment and eliminates waste products.

About one-third of the Earth's population live in iodine-deficient areas as defined by the World Health Organization. The rise in thyroid disorders correlates with these areas. Iodine helps the body synthesize, store and secrete thyroid hormone. It also coats incoming allergenic proteins to make them non-allergenic, helps protect the system against cancer and autoimmune diseases, and is an antiseptic. In the stomach, iodine deactivates all biological—and most chemical—poisons. Many holistic authorities now say that iodine is required daily in milligram, rather than microgram, amounts. Although the mineral in its iodine form is utilized most effectively by the tissues, potassium iodide is particularly needed by the thyroid gland; so if you aren't getting enough of both in your diet (sea food and seaweed are excellent sources), supplement with liquid or tablets.

A number of substances should be avoided, as they severely disrupt thyroid function. Fluoride interferes with the body's ability to utilize iodine. Goitrogenous vegetables—including the brassica family (Brussels sprouts, cabbage, cauliflower and mustard greens), and rutabagas, radishes and turnips—interfere with thyroid hormone production when eaten raw and in large amounts. (Boil the vegetables to destroy the thyroid-inhibiting compounds.) Estrogenic compounds (which also interfere with immune response) are present in hormone-disrupting drugs, plastics, and soy (see Chapter 3 for more information). Animals raised for food that eat even organic soy can cause thyroid problems as well. For any type of thyroid condition, eat protein at every meal, and eat at regular hours, especially if your blood sugar levels tend to drop. Also, make sure you get enough Coenzyme Q10, tyrosine (an amino acid), Vitamins B1, B2, B3 and B5, and the minerals magnesium, iron, zinc, copper, selenium and iodine.

**Goiter**

Goiter—which is enlarged thyroid gland tissue—can grow to be the size of tennis balls or larger. Conventional medicine teaches that goiter results from undesirably high levels of TSH (thyroid stimulating hormone) produced by the pituitary, which in turn prods the thyroid gland into producing excessive amounts of thyroid hormone and thus causes the gland to grow abnormally. However, some people with goiter show normal thyroid hormone and TSH tests. If there's not enough iodine in the diet, the thyroid will be unable to produce

enough hormone. Thus, insufficient dietary iodine can cause the thyroid to grow unnaturally, due to the pituitary's continued high production of TSH in its attempt to raise thyroid hormone levels.

Outside the United States, authorities recognize that goiter is generally due to an iodine deficiency. In fact, goiter is not as prevalent in populations living at or near a seacoast. Until recently, for 200 years goiter was treated successfully with the administration of Lugol's solution (potassium iodide) and desiccated thyroid. Eat plenty of iodine-rich real sea salt and/or sea food. Kelp supplements may also help. However, do not overdose on iodine either, as this can be as damaging as too little.

Goiter may also be caused or exaggerated by microbial infection, so use the frequencies below. A popular frequency for supporting thyroid function is 160. Incidentally, goiter is often the most common manifestation of a larger constellation of conditions, one of which is Graves' or Basedow's disease.

If related to Struma cystica (swelling involving cysts): 361, 531, 756, 5311

If related to Struma parenchyma (swelling involving the kidneys) or to Struma nodosa: 105, 121, 122, 321, 517, 532, 576, 651, 714

If due to other causes: 20, 160, 660 + 690 + 727.5, 787, 880, 16K

#### Graves' Disease / Basedow's / Diffuse Toxic Goiter

Graves' disease—named after the Irish physician who described it in the *London Medical Journal* in 1835—is called "Basedow's disease" in Europe, and "thyrotoxicosis" worldwide. The term "diffuse toxic goiter" describes the condition rather than the discoverer. "Diffuse" refers to the entire gland involved in this condition. "Toxic" describes a condition reminiscent of infection and fever. "Goiter" is an abnormally large thyroid gland.

The most common cause of hyperthyroidism in Canada, Graves' affects about one in every 100 people. This inherited disease is more common in females than in males. In addition to all the symptoms listed above for general hyperthyroidism, symptoms also include muscle weakness, thyroid enlargement (goiter), and eye problems, including sensitivity to light, diminished vision, and double vision. The inflamed eyeball tissue gives the eyes the familiar bulge characteristic of this disorder.

Graves' is an autoimmune-related form of hyperthyroidism (although not everyone who is hyperthyroid has Graves'). In an immune-healthy body, lymphocytes (lymph immune cells) as well as Killer (K) Cells target and destroy pathogens. They also prevent the production of harmful thyroid stimulating (and other abnormal) antibodies. But with immune-impaired Graves', the lymphocytes and K Cells do not function properly. They produce abnormal thyroid-stimulating antibodies, which attack proteins on the surface of thyroid cells. In response, the thyroid cells produce too much hormone, which in turn over-stimulates the thyroid. (The swelling of skin, eyes, or other body parts is caused by antibodies attacking the body's own tissues.) Even if most of the thyroid gland is removed, it can still become overactive again since the abnormal thyroid stimulating antibodies—which caused the hyperactivity in the first place—are still being produced by the lymphocytes. Often, symptoms of Graves' intensify and then disappear.

Allopathic doctors treat an over-stimulated thyroid in three ways: surgery (removal of most of the thyroid gland), drugs (which either suppress thyroid hormone production or block the effects of excess hormone on the heart, blood vessels and nervous system), and destruction of the gland (with radioactive iodine). A thyroidectomy is critical for people in whom the goiter is so large, that it threatens to block the windpipe (trachea) or food passage (esophagus). About 80% of those who receive the radioactive iodine become hypothyroid, and are typically given thyroxin supplementation for the rest of their lives.

Sometimes people manage Graves' with acetyl-L-carnitine, an amino acid compound that makes cells in the body resistant to thyroid hormone and helps correct the immune response. New evidence suggests that minute amounts of (non-radioactive) iodine may also help, since the thyroid gland tends to overwork (and then quits working altogether) when it does not receive sufficient nutritional support. In some cases iodine makes the condition worse, although this is usually a temporary setback. As this is an immune response problem (which happens to manifest in the thyroid gland), see a qualified health practitioner!

There are no frequencies for Graves' per se. See "Hashimoto's Disease / Autoimmune Thyroiditis" and other entries in this **Thyroid** section; **Autoimmune Disorders**; and **Chemical Poisoning / Detoxification**. Also see the myriad pathogens implicated in autoimmune thyroid conditions: "Coxsackie B" under **Viruses**; "*Mycoplasma*, many types" under **Bacteria**; "*E. coli* / *Escherichia coli*" under **Bacteria**; and "*Helicobacter pylori* / Peptic (Stomach) Ulcer" under **Bacteria**. *Yersinia enterocolitica* has also been implicated in autoimmune thyroid disorders, so also see "*Yersinia* infections, other (unspecified)" under **Bacteria**.

#### Hashimoto's Disease / Autoimmune Thyroiditis

Hashimoto's is a chronic autoimmune condition, caused by abnormal antibodies in the bloodstream

that attack and destroy healthy thyroid gland tissue. As a result, the gland does not produce enough hormone. In most cases, symptoms are similar to those of hypothyroidism: fatigue, forgetfulness, dry brittle hair, hoarseness, painful and stiff joints, muscle weakness, face swelling, sensitivity to cold, pale dry skin, weight gain, constipation, muscle cramps, depression, and (with women) possible menstrual disorders.

Sometimes, Hashimoto's develops in response to a lack of iodine, whereby the thyroid swells (a condition known as goiter) in its effort to filter more blood to obtain the iodine it needs. If iodine is then ingested, the now larger thyroid gland increases thyroid hormone production. This sometimes accounts for the occasional swings between thyroid underactivity and thyroid overactivity. Mostly, however, the thyroid gland gradually atrophies, either becoming underactive or ceasing to function altogether.

Allopathic treatment consists of synthetic thyroid hormone. A holistic approach may provide natural glandular support and suggest supplements, including transfer factor and glutathione (to regulate immune function), Vitamin D, and fish oil. If copper is replenished, the body may correctly process iodine.

Avoid glutinous grains! In *Why Do I Still Have Thyroid Symptoms,* Dr. Datis Kharrazian cites research showing that the molecular structures of gluten and the thyroid gland are similar enough so that gluten in the digestive tract will almost inevitably trigger the body to attack the thyroid. (See the **Food** section in Chapter 3 for more information on grains.)

There are no known frequencies for Hashimoto's. See "Graves' Disease / Basedow's / Diffuse Toxic Goiter" and other entries in this **Thyroid** section; **Autoimmune Disorders**; and **Chemical Poisoning / Detoxification**. Also see the myriad pathogens implicated in autoimmune thyroid conditions: "Coxsackie B" under **Viruses**; "*Mycoplasma*, many types" under **Bacteria**; "*E. coli* / *Escherichia coli*" under **Bacteria**; and "*Helicobacter pylori* / Peptic (Stomach) Ulcer" under **Bacteria**. *Yersinia enterocolitica* has also been implicated in autoimmune thyroid disorders, so also see "*Yersinia* infections, other (unspecified)" under **Bacteria**.

#### Thyroid, to Balance and Normalize

First try: 160, 763, 660 + 690 + 727.5
Then try: 20, 537, 1570, 10K, 16K

#### Thyroid Gland Fever

20, 160, 660 + 690 + 727.5, 1570, 10K, 16K

#### Thyroid, Overactive / Hyperthyroidism

Overactivity of the thyroid gland, which causes too much thyroid hormone to be produced. Since the thyroid controls many body functions, increased levels can be serious. Symptoms can include weight loss, profuse perspiration, and sleeplessness (due to increased metabolism); irregular heartbeat, high blood pressure, chest pain, and even heart failure (because the circulatory system is working faster); and even diarrhea (due to increased bowel function). The over-stimulated nervous system causes irritability, nervousness, jitteriness, emotional angst, and mental disorientation. Despite increased appetite, the person usually loses weight because the increased breakdown of body proteins occurs too rapidly to be replenished by food.

Hyperthyroidism can be caused by Graves' disease (a faulty autoimmune response), nodules or goiters on the thyroid, excessive thyroid medication given to people with an underactive thyroid, iodine toxicity (too much iodine or an intolerance to certain forms of iodine), or thyroiditis (inflammation of the thyroid). This is not something to self-treat! See a health care practitioner.

0.5, 3, 20, 160

#### Thyroid, Underactive / Hypothyroidism

"Hypothyroidism" may be regarded as a catch-all term that describes both underactivity of the gland itself, and the inability of the body to utilize thyroid hormone. In either case, the symptoms are the same. Malfunctions in metabolism accompany impaired temperature regulation. This manifests in weight gain or (occasionally) weight loss, along with heat intolerance and excessive coldness—particularly in extremities where there's impaired circulation. (Not only does the person subjectively feel chilly, but the hands and feet feel cold to another person's touch.) The body also has difficulty repairing damaged tissues. This is why so many hypothyroid people suffer from structural weaknesses: brittle nails, brittle or scant hair (including baldness), degenerating bones (osteoporosis), malformed bones (scoliosis), and thinning and loss of eyebrows, notably the outer third. Physical signs of hypothyroidism also include puffy face and lips, dry skin, fatigue and lethargy, and slowed movements and speech.

Since thyroid hormones are intricately related to virtually every bodily function, hypothyroidism can cause or exacerbate an almost unlimited number of conditions that initially might not seem related to each other: autoimmune conditions (such as allergies, lupus and rheumatoid arthritis), blood sugar disorders, cancers, cardiovascular disturbances (including coronary artery disease and congestive heart failure), dental problems (including chronic gum infections and Temporomandibular Joint dysfunction), gastrointestinal disorders,

hoarseness, sleep apnea, immune response malfunction leading to increased infections (such as *Candida albicans*), mental and emotional problems (including confusion, depression and mood swings), neurological impairment (including Multiple Sclerosis, deafness, tinnitus and vertigo), headaches and migraines, pain in joints and muscles (including arthritis, carpal tunnel syndrome and fibromyalgia), reduced perspiration, reproductive disorders (such as birth defects, endometriosis and infertility), respiratory conditions (including asthma, pneumonia and chronic sinus infections), skin disorders, and urinary tract problems (including infections, and kidney failure due to scarred shrunken kidneys).

Hypothyroidism was first reported in London in 1875. According to many reliable sources, including doctors Broda Barnes, David Derry, Jacques Hertoghe and James Howenstine, at least one-third to one-half of the US population suffers from slight to severe hypothyroidism. In *Hypothyroidism Type 2: The Epidemic*, Dr. Mark Starr explains the differences between Types 1 and 2 hypothyroidism. With Type 1, the thyroid does not produce sufficient amounts of hormone to maintain "normal" blood levels of hormones (which in turn maintain normal blood levels of thyroid-stimulating hormone, or TSH, produced by the pituitary). With Type 2, the thyroid gland produces "normal" amounts of hormone, but the cells are unable to utilize the hormone properly. Some experts call this *thyroid hormone resistance*, which may be regarded as similar to insulin resistance.

The body fails to accept or utilize thyroid hormone for many reasons. The mitochondria—microscopic energy-burning units of the cell responsible for about 90% of our energy production that all cells and tissues need for metabolism—are impaired. Mitochondrial defects, which interfere with every aspect of thyroid metabolism, are usually caused by environmental toxins, including petroleum, pesticides, organic solvents and heavy metals, especially mercury. (Fat-soluble toxins lodge in the fat cells, and women's bodies contain more fat than men's; so a greater number of women suffer from hypothyroidism than do men.) Faulty thyroid receptors on the cell membranes can also cause hypothyroidism by making it impossible for enough hormone to enter the nucleus, where genes are activated and protein synthesis occurs. Finally, abnormally high levels of mucin cause disease conditions in over 55% of hypothyroid subjects. Mucin is a sugar-protein compound that readily absorbs water and is normally present in different types of connective tissue everywhere in the body: in the lining of blood vessels, in the nerve sheaths, in the fascia enveloping the muscles, in mucous membrane linings of the respiratory tract (such as the sinuses), and in the gastrointestinal and urinary tracts—not to mention every single cell in the organs and glands. When present in normal amounts, mucin is not a problem; but in excess, it damages the connective tissue wherever it accumulates. This helps explain the diversity of serious hypothyroidism-related conditions, which include Lupus and congestive heart failure.

Inadequate thyroid hormone at the cellular level also negatively impacts other glands. To compensate for the weakness and low metabolism caused by inadequate thyroid hormone, other parts of the body overwork (especially the adrenals, and even including the sympathetic nervous system). This may cause the subject to temporarily experience a rapid heartbeat, and/or feel hyperactive, jittery and restless—until exhaustion sets in from the unnatural attempts to compensate for low thyroid hormone levels. More often, though, the majority of sufferers simply feel fatigued and weak most of the time. This is why it's important to support other organs and glands (especially the adrenals) when treating hypothyroidism.

Hypothyroidism can be catalyzed or exacerbated by constant low temperatures, and a diet heavy in carbohydrates, gluten, dairy, and especially soy. A healthy thyroid gland can also become sluggish due to radiation exposure from nuclear bomb "testing" or X-rays: radiation creates radioactive iodine, which then displaces the non-radioactive iodine that naturally feeds the thyroid gland.

Laboratory tests showing inadequate bloodstream levels of thyroid hormone make it easy to diagnose Type 1 hypothyroidism. However, lab tests fail to detect Type 2 hypothyroidism because despite adequate blood hormone levels, the body cannot accept and utilize the hormone. Therefore, the best hypothyroidism test (developed by Dr. Barnes) is to take the armpit temperature before rising every day, over a week or more. If the temperature averages lower than 97.8°F (about 36.6°C), the person is hypothyroid. One could be hypothyroid with a near-normal basal temperature; but this test is still the most accurate diagnostic tool. Of course, one's symptoms and clinical picture are the definitive test.

Hypothyroidism usually requires medication, and the proper kind! Prolonged administration of synthetic thyroxin (T4) is the least effective, and may shut down the gland entirely. The most effective treatment is whole desiccated thyroid (from pigs) made from the entire gland and its contents:

all forms of thyroid hormone, RNA and DNA, and co-factors (which all work synergistically with each other). An alternative is compounded T3 and T4, in the same ratio as that of a functioning gland. Even if lifelong treatment is required, at least the person will feel better and function well.

The fact that a good portion of the T4 to T3 conversion takes place in the liver also points to the need for a good liver detox protocol. An excellent means of detoxifying is sauna therapy. Sweating reduces the waste removal burden on the kidneys, liver, and eliminative organs. See my book, *The Holistic Handbook of Sauna Therapy*.

Different forms of iodine are essential for optimal functioning. Potassium iodide is absorbed by the thyroid gland, whereas iodine is heavily concentrated in the breasts, reproductive organs and respiratory tract (including sinuses). Some seaweeds, such as dulse, are high in iodine.

To assist in the conversion of T4 to T3, supplement with selenium, zinc, and Vitamins E and B6. Manganese, known to protect the thyroid and liver, is sometimes called the "anti-pear nutrient," so named because it helps eliminate the weight distribution pattern (disproportionately heavy hips and thighs) common with hypothyroid people. Proper thyroid hormone synthesis also requires increased vitamin intake. Read *Solved: The Riddle of Illness*, and see a holistic medical doctor. Often, other glands in a delicate balance with the thyroid are involved, such as the adrenals, sex glands and pituitary.

7.7, 12, 20, 35, 160, 740, 802 + 1550, 16K

#### Thyroiditis

Inflammation of the thyroid gland, generally occurring after a viral infection or pregnancy. Many viruses and bacteria may cause the condition, so see other entries in this section and use frequencies for any infectious illnesses you may have contracted within the last six months to two years. Also see "Rubulavirus / Mumps" under **Viruses**, since that microorganism may cause thyroiditis; and "*Mycoplasma*, many types" under **Bacteria**.

*End of Glands section*.

### GLANDULAR FEVER

See "Epstein-Barr Virus / Infectious Mononucleosis / Chronic Fatigue Syndrome (CFS)" under **Viruses**.

### GLAUCOMA

See under **Eyes**.

### GLIOMA

See "Brain Tumor / Astrocytoma" under **Cancer**.

### GLIOBLASTOMA

See "Brain Tumor / Astrocytoma" under **Cancer**.

### *GLIOCLADIUM*

See "*Gliocladium* / Brain Fungus" under **Candida**, **Fungi**, **Molds and Yeasts**.

### GOITER

See under **Glands**, *Thyroid*.

### GONORRHEA

See under **Men**, *Urinary* or **Women**, *Vagina and Labia*.

### *GORDONA SPUTI*

See under **Bacteria**.

### GOUT

A metabolic disorder of too much uric acid in the system, either because the body makes too much uric acid or not enough leaves through the urine. This causes a buildup of uric acid in blood, resulting in arthritis and inflammation of the joints (often the large joint of the big toe).

Most people find relief from a low purine diet. Meats and seafood highest in purine include anchovies, herring, sardines, scallops, duck, goose, and organ meats (liver, brains, kidney and sweetbreads). Dried peas and legumes are also rich in purine. Therefore, try to eliminate these foods entirely or limit your intake to 3 or 4 ounces per meal. Drink plenty of water to dilute the uric acid in the bodily fluids and flush it out of the system.

9.39, 9.4, 20, 660 + 690 + 727.5, 787, 880, 3K, 10K
and for 10 minutes each: 465, 727.5, 784, 787, 880, 1560

### GRAVEL IN URINE

See under **Urinary Tract**, *Bladder and Urethra*.

### GRAVES' DISEASE

See "Grave's Disease / Basedow's / Diffuse Toxic Goiter" under **Glands**, *Thyroid*.

### GRIPPE

See "Influenza" under **Viruses**.

### GULF WAR SYNDROME / GULF WAR ILLNESS

A communicable, contagious, and potentially lethal constellation of chronic debilitating symptoms reported by troops from the United States, Britain, Denmark, Canada, Saudi Arabia, Egypt, Australia, and other countries who served in the 1991 Persian Gulf Operation Desert Storm. Cell biologist Garth Nicolson's 1996 estimate of 100,000 to 200,000 American veterans who became ill (with more than 15,000 dead) does not include infected family members and friends who became disabled or died. Half of the spouses, all of the children, and even pets of the veterans became sick. Sixty-five percent of the children subsequently born to veterans either died or had crippling birth deformities (one or more limbs missing, one eye, etc.). Symptoms include

disabling fatigue; muscle and joint pain; night sweats; fever; abdominal bloating, diarrhea and vomiting; memory and concentration impairment; Parkinson-like symptoms and paralysis; headache; skin rash; respiratory conditions similar to bronchitis and tuberculosis; vision impairment; cancerous tumors; and irritability, violent behavior, and depression. The symptoms can take six months or even years to develop, and most doctors do not have the training or experience to diagnose this disease.

Major stressors such as chemical exposure, injury, or vaccines (which themselves contain pathogens) can stimulate the onset of illness. Dr. Joseph Mercola believes that the combination of aspartame-ridden soft drinks, vaccines, nerve gas "antidotes," and insecticides—along with biowarfare microorganisms—created this condition.

In the blood of Gulf War veterans, Dr. Nicolson discovered *Mycoplasma fermentans incognitos*, an unusually venomous microbe that is difficult to detect. This pathogen contains a highly unusual retroviral DNA sequence: some HIV-1 genetic code, but only a portion (40%)—specifically, just the envelope gene. This minute amount of genetic material is powerful enough to give the soldiers symptoms of AIDS, and yet allow them to test negative for HIV. (The HIV-1 virus is unable to replicate with only one envelope gene.) Clearly, this microbe is genetically engineered.

Nicolson and his molecular biologist wife, Nancy, have good evidence that *Mycoplasma fermentans incognitos* is only one of about 15 dangerous *Mycoplasma* that may have been exploited in Desert Storm. These pathogens are easily manufactured. Evidence points to their existence for at least 50 years. The countries capable of creating such horrors include the United States, Russia, Iraq, China, Israel, and Libya. Several strains have been identified so far. See "*Mycoplasma*, many types" under **Bacteria**. Also see "Amyotrophic Lateral Sclerosis (ALS)" and other entries under **Nervous System and Brain**; "Epstein-Barr Virus / Infectious Mononucleosis / Chronic Fatigue Syndrome (CFS)" under **Viruses**; the many entries under **Chemical Poisoning / Detoxification**; **Fibromyalgia**; and anything else that fits your symptom picture.

### GUM PROBLEMS
See various entries under **Dental**, *Mouth and Gums*.

## –H–

### H1N1
See "Swine Flue / H1N1" under **Viruses**.

### HAIR LOSS / ALOPECIA
This has many causes. It can relate to malfunctioning of the spleen, or even a *Candida* infection—so also see various entries under **Candida**, **Fungi**, **Molds and Yeasts**.

First try: 3, 28, 95, 330, 660 + 690 + 727.5, 2170, 2720, 4200, 5K, 30K

Also try: 20, 146, 465, 787, 800, 880, 1552, 10K

### HAIRY CELL LEUKEMIA
See "Leukemia, Hairy Cell" under **Cancer**.

### HALITOSIS / BAD BREATH
See under **Dental**, *Mouth and Gums*.

### HALLUCINATIONS
See under **Mind and Emotions**.

### HAND, FOOT AND MOUTH DISEASE
See "Coxsackievirus A16 / Hand, Foot and Mouth Disease" under **Viruses**.

### HANGOVER
See under **Liver and Gallbladder**, *Liver*.

### HANSEN'S DISEASE
See "*Mycobacterium leprae* / Leprosy / Hansen's disease" under **Bacteria**.

### HAY FEVER
See under **Respiratory Tract**, *Nose and Sinuses*.

### HEAD INJURIES
See under **Injuries**.

### HEADACHE
Try 160 along with a scalp massage in a clockwise direction.

Also try: 1.2 + 250, 40, 144, 160, 304, 520

#### Headache, Parasite Involvement
1.1 + 73, 1.2 + 250, 20, 72, 95, 125, 160, 660 + 690 + 727.5, 3K

#### Headache, Toxicity Involvement
1.2 + 250, 4.9, 20, 146, 160, 522, 660 + 690 + 727.5, 787, 880, 3K

#### Headache, Unknown Cause
1.2 + 250, 20.5, 4, 5.8, 6.3 + 148, 6.8, 7.83, 10, 14, 72, 95, 125, 144, 160, 304, 333 + 523 + 768 + 786, 428, 444 + 1865, 555, 600 + 625 + 650, 660 + 690 + 727.5, 1K, 3K

#### Headache, Urogenitally Caused
1.2 + 250, 9.39, 9.4, 160, 333 + 523 + 768 + 786, 555, 3K

#### Headache, Vertebral Misalignment Involvement
Not meant to replace a chiropractic adjustment.

1.2 + 250, 9.6, 160, 3K

#### Migraine

Pain in the side of the head, typically along the 5th cranial nerve, accompanied by disordered vision, nausea, chill, and fatigue. Migraines may be caused by allergies, drugs, chemicals, unsuitable food, a toxic liver, menstrual difficulties, hormonal conditions, worry, or even strenuous exercise.

Often, migraines can be caused by low blood sugar. The brain, small compared to the rest of the body, utilizes 25% of the body's glucose at any given time. A drop in blood sugar levels of as little as 5% can cause great fatigue and adversely affect thinking, mood and motor coordination, among other brain functions. If glucose levels in the blood decrease, the body compensates for this by increasing the blood volume, so that more glucose is brought to the brain. The best way to increase blood volume is to increase blood flow though the expansion of the blood vessels. Over a period of time, the bulging blood vessels repeatedly pressing on nerves can cause pain.

Avoid caffeine and other drugs, fake foods, and overly fatty foods. Rest in a dark room. Alkaline, mineralized water may be helpful. Also see **Headache**; "General (unspecified)" and "*Strongyloides stercoralis* / Threadworm" under **Parasites**, **Protozoa and Worms**; **Blood Sugar Levels**; and applicable frequencies under **Liver and Gallbladder**.

10, 40, 160

*End of Headache section*.

### HEALING AND REGENERATION

See various entries under **Regeneration and Healing**.

### HEARING CONDITIONS

See various entries under **Ears**.

### HEART, BLOOD AND CIRCULATION

**Warning!** People with heart conditions or pacemakers must not use electrode units under any circumstances because running electricity through your body can be harmful or even lead to death! Plasma light units that use radio frequency (RF) are safe for people wearing pacemakers if the pacemakers are shielded. If you are wearing an unshielded pacemaker, light tube units that emit RF are safe if you are out of range of the RF. Ask the manufacturer of your device how far away you need to sit from the device to be out of RF range. (So far, manufacturers have not reported any problems with pacemaker wearers, but it's wise to exercise caution.) Any type of plasma tube unit is safe for people with heart conditions who are *not* wearing pacemakers.

The cardiovascular system consists of the heart, valves, and blood vessels. The heart is a pear-shaped organ situated toward the left side in the chest, between the lungs. Arteries carry blood away from the heart and pick up oxygen from the lungs; then they become the tiny arterial capillaries that carry the oxygen-rich, red blood to every cell in the body. At the point that the arterial capillaries pick up carbon dioxide from the cells, they are called venous capillaries, which then become the larger veins that carry the now bluish-tinted blood back to the heart. The veins deposit the carbon dioxide into the lungs right before the venous blood goes back to the heart to be re-circulated through the body.

This very complex pump contains four chambers, with valves that regulate the blood as it flows in, through and out. Although the heart is classified as an organ, it has also been considered an involuntary (although striated) muscle. But recently, neurocardiologists discovered that almost 65% of the heart cells are nerve cells that are identical to those in the brain, and which operate with the same neurotransmitters. And molecular biologists have found that the heart is also an endocrine gland that releases the hormone ANF (Atriol Neuriatic Factor) in response to our experience of the world. ANF affects the limbic or emotional portion of the brain, which deals with memory, learning, controls other hormone glands. In a feedback loop between the heart, the brain, and the rest of the body, our ideas, emotions, and impulses toward action are mediated by our heartfelt response to the environment. This is why, quite literally, our heart has an innate intelligence—and it may well be a more important "brain" than the stuff inside our skulls. In a true reflection of our emotional states, the heart literally expands and contracts, with love, joy, fear, sadness or anger. Thus, fulfillment in life is as crucial as diet to the heart's health.

Men have a greater risk of heart attack than women, but more women have strokes than do men. Heart attack symptoms for men and women may tend to be different. Men often experience stabbing chest pains, pain that radiates down the left arm, and cold sweat. Women often experience symptoms that could be from other causes: nausea and vomiting, heaviness in the abdomen, shortness of breath, chest pressure, and spasms up the spine to the neck, throat and jaw.

Cholesterol-rich foods are unjustly blamed for heart problems. However, most (if not all) of the unwanted cholesterol that clogs the blood vessels is produced by the body itself in response to chemical and microbial toxins; it lines the blood vessel wall with cholesterol to protect it from becoming scratched or ulcerated. The body actually needs cholesterol, found in various foods including eggs and liver.

The kidneys play an indirect but crucial role in heart function. If there are not enough Omega 3 fats in the diet (the best sources are from fish), the kidneys secrete rennin. This causes the adrenals to secrete angiotensin, which in turn causes the blood vessels to constrict and raise blood pressure. Holistic practitioners have seen the blood pressure normalize once the kidneys are supplied with enough Omega 3.

Omega 3 fats also nourish the heart directly. Evidence suggests that heart attacks result from severe Vitamin C malnutrition as well as a lack of magnesium. People with heart attacks who are taken to a hospital are routinely given

magnesium chloride. This mineral, deficient or totally absent in the diets of half the population of the United States, helps keep heart tissue healthy (among other functions). Another critical nutrient, generally low or missing entirely in people with heart conditions, is Coenzyme Q10, whose levels are lowered even more by statin drugs. (Note: People with congestive heart failure who are taking Coenzyme Q10 should not stop taking it suddenly because sudden withdrawal may temporarily aggravate the symptoms of congestive heart failure.) The risk of heart attack can also be diminished by taking brewer's yeast (rich in B vitamins), and additional B12. B vitamins prevent the buildup of homocysteine in the blood by enhancing its conversion to glutathione or methionine in the body; and it is the buildup of homocysteine that triggers heart attacks, not the level of cholesterol. Finally, the narrowing of arterial walls may be due to the buildup of proteins. Proteins form on the walls to patch leaky blood vessels that are weak and threaten to hemorrhage. But the blood vessel walls are weak due to a Vitamin C deficiency, which is easy to correct.

It's interesting to note that during plasma shortages in World War II, fresh coconut water (the liquid from young coconuts) was injected intravenously into soldiers who had lost blood. The chemistry of coconut water almost perfectly matches that of human blood plasma. Plus, coconut water is sterile, does not destroy red blood cells, and does not unfavorably alter body temperature. These qualities make it readily accepted by the body. Even today, some Caribbean hospitals use coconut water for intravenous drips.

One significant contributing factor in coronary disease is insufficient thyroid hormone. In 1950, Dr. Broda Barnes began a long-term, two-year investigation to see if proper treatment of hypothyroidism would prevent heart attacks. His subjects were matched against those in another, famous survey called the Framingham Study. According to the Framingham statistics, 72 people in Barnes's group should have suffered heart attacks. But only four people were stricken. The single difference between Barnes's subjects and those in the Framingham Study was Barnes's use of thyroid hormones. Over 90% of predicted heart attacks from the Framingham Study were prevented. Dr. Barnes warned that the incidence of heart attacks would continue, unless hypothyroidism was recognized and properly treated. See "Thyroid, Underactive / Hypothyroidism" under **Glands**, *Thyroid*.

Under a microscope, Guenther Enderlein found the fungus *Mucor racemosus fresen* present in the blood of virtually every case of coronary and circulatory conditions. The frequencies are listed in this section. Also see the various "*Chlamydia*" frequencies under **Bacteria**, since researchers are finding that this microorganism is also causing plaque buildup. And see various thyroid frequencies under **Glands**, *Thyroid*, since people with an underactive thyroid are much more likely to suffer from heart attacks. They used to be given whole dessicated thyroid gland to help deal with heart problems before that research got buried.

**Anemia, Sickle Cell**

Stop! See warning at the beginning of this **Heart, Blood and Circulation** section. Healthy red blood cells are round, a shape that allows them to move easily through the bloodstream to carry oxygen to all the tissues. In people with sickle cell anemia, the red blood cells are abnormal. Shaped like stiff, pointy sickles (or crescent moons), they get stuck when traveling through small blood vessels, which causes severe pain. Organ damage can also occur because the cells aren't getting enough oxygen. These rigid and sticky blood cells die prematurely (after 10 to 20 days, compared to about 120 days for a normal red blood cell), which results in a chronic shortage of red blood cells leading to a condition called anemia. Anemia may also occur during infection, when the bone marrow temporarily slows its production of red blood cells.

Symptoms include breathing difficulties, chest pain, coughing, fatigue, fever, headache and dizziness, increased susceptibility to infection, jaundice, and rapid pulse. Often, the spleen will become enlarged (and cause abdominal pain) because it has trapped the abnormal red blood cells. If enough of the crescent cells block blood vessels to the head, the person may have a stroke.

In the United States, this disease affects mostly African-Americans. Other forms of sickle cell sometimes occur in those of Mediterranean, East Indian, or Middle Eastern descent.

According to conventional medicine, this is a genetic disease with no cure. The most common treatments include medications to relieve pain and to prevent the problems associated with anemia, daily doses of antibiotics to prevent infection, regular blood transfusions, and even bone marrow transplants.

Holistic medicine holds more promise for a cure. Some researchers believe that the crescent red blood cell is an irritant that provokes an inflammatory response. This inflammatory response suggests an autoimmune component, thus indicating more ways to treat the condition. Zinc, a mineral that is deficient in a majority of children with sickle cell, has been shown to reduce the severe abdominal pain and vomiting characteristic of sickle cell anemia. Folic acid helps the system produce new red blood cells. And Vitamin E, along with Essential Fatty Acids (EFAs), shows great promise in assisting the bone marrow's production of red blood cells—thus not only alleviating symptoms, but also normalizing cells.

The Crescent Alliance Self Help for Sickle Cell is an organization that has researched the use of certain herbs that not only lessen symptoms, but also normalize cells by causing them to revert to their proper shape. These plant extracts include *Nigritian kief* (a certain species of hemp), *Fagara zanthoxyloides* root (also used for malaria), a boiled extract of edible *Cajanus* cajan beans, and prickly ash bark. Try ozone as well (see Chapter 3). If the cells are oxygenated properly, they have less chance to mutate.

Keep the body well hydrated. This means pure filtered water; no caffeine, alcohol, tea or soda. Avoid emotional stress, cold temperatures, and strenuous exercise. And keep the body well oxygenated. This means avoid high altitudes, cigarette smoke and dirty air. Also see **Autoimmune Disorders**.

.02, .12, 5.16, 62.5, 110.25, 332.41, 517.5, 684.81, 712.23, 992

#### Aneurysm

Stop! See warning at the beginning of this **Heart, Blood and Circulation** section. Dilation of an artery due to pressure of blood on weakened tissues, forming a sac of blood. I have been warned that the artery can rupture if one is not careful.

20, 72, 95, 125, 444 + 1865, 465, 660 + 690 + 727.5, 760, 787, 880

#### Angina Pectoris

Stop! See warning at the beginning of this **Heart, Blood and Circulation** section. Pain in an area of the heart, usually due to injury of coronary artery.

3 + 230, 7.83, 20, 72, 95, 125, 146, 160, 333 + 523 + 768 + 786, 444 + 1865, 465, 522, 555, 660 + 690 + 727.5, 776, 787, 832, 880, 1500, 1600, 1800, 2170, 2720

#### Apoplexy

See "Stroke Paralysis / Apoplexy" in this section.

#### Arterial Spasm causing limping and leg cramps

See "Intermittent Claudication" in this section.

#### Arteriosclerosis

Stop! See warning at the beginning of this **Heart, Blood and Circulation** section. Hardening of the arteries. Note that for this condition, regeneration takes time. Also see "*Herpes* Virus Type 5 (Human *Herpes* Type 5) / Cytomegalovirus (CMV) / Salivary Gland Virus" under **Viruses**.

20, 660 + 690 + 727.5, 776, 787, 802 + 1550, 810, 880, 1500, 1600, 1800, 2170, 2720, 10K

#### Artery, Dilation of

See "Aneurysm" in this section.

#### Banti's Disease

Stop! See warning at the beginning of this **Heart, Blood and Circulation** section. The blood vessels between the intestines and the liver become blocked, leading to anemia, congestion of the veins, an enlarged spleen, bleeding of the stomach and intestines, and ultimately cirrhosis of the liver.

1778

#### Blood Capillaries, to Stimulate Healing of

Stop! See warning at the beginning of this **Heart, Blood and Circulation** section.

15.2

#### Blood Cell Production, Red, to Normalize

Stop! See warning at the beginning of this **Heart, Blood and Circulation** section.

1524

#### Blood Cell Production, White, to Normalize

Stop! See warning at the beginning of this **Heart, Blood and Circulation** section.

1434

#### Blood Circulation, to Normalize

Stop! See warning at the beginning of this **Heart, Blood and Circulation** section.

337

#### Blood, to Clean

Stop! See warning at the beginning of this **Heart, Blood and Circulation** section.

10K, 100K

#### Blood Flow and Circulation, to Increase

Stop! See warning at the beginning of this **Heart, Blood and Circulation** section.

17

#### Blood Hemoglobin Production, to Normalize

Stop! See warning at the beginning of this **Heart, Blood and Circulation** section.

2452

#### Blood Pressure, to Balance and Normalize

Stop! See warning at the beginning of this **Heart, Blood and Circulation** section. Simply put, if the blood vessels are too constricted for the amount of blood that must flow through them—as when, for instance, deposits of plaque are encrusted on the vessel walls—the space for the blood to flow narrows and the heart must pump harder to circulate the blood. The heart should not be overly stressed to do its job.

15

#### Blood Pressure, High / Hypertension

Stop! See warning at the beginning of this **Heart, Blood and Circulation** section.

From Bruce Stenulson: 324, 528, 15 Hz for about 4 minutes each, in this order. These frequencies are also for diabetes.

6, 9.19, 9.2, 20, 65, 72, 95, 304, 660 + 690 + 727.5, 787, 880, 10K

**Blood Pressure, Low / Hypotension**

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. Since low functioning adrenals can also contribute to low blood pressure, see entries under **Glands**, *Adrenals*.

20, 471.5, 660 + 690 + 727.5, 787, 880

**Capillaries, to Stimulate Healing of**

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section.

15.2

**Cardiac Edema**

See "Congestive Heart Failure / Cardiac Edema" in this section.

**Chilblains**

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. A disorder of the blood vessels caused by prolonged exposure to cold, characterized by inflammation, swelling, and skin lesions on the lower legs, feet, hands and face.

20, 232, 622, 822, 2112, 4211, 5K, 10K

**Circulation, to Balance and Normalize**

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section.

337

**Circulation, Sluggish—to Stimulate Blood Flow**

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section.

16, 17, 9.39, 9.4, 40

**Clot**

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. Coagulated, partly solidified blood—what some clinicians call the "Rouleau" effect, French for "stacked coins," because that's what the red blood cells look like.

6, 28, 59, 685

**Congestive Heart Failure / Cardiac Edema**

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. Water retention in the heart area.

9.19, 9.2

**Endocarditis**

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. Inflammation of the endocardium, or membrane lining the inner surface and cavities of the heart. Also see "*Streptococcus*" and "*Propionibacterium acnes*" under **Bacteria**, as these microbes have been implicated in endocarditis.

377, 471, 626, 628, 634, 714, 724, 744, 2162, 333 + 523 + 768 + 786

**Erythema**

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. Skin redness caused by capillary congestion. With this condition, the heart is overworking.

9.4

**Fluke, Blood**

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section.

419, 329, 635, 847, 867, 7391, 5516, 9889

**Heart Function, to Normalize**

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section.

1.2 + 250, 3.9, 20, 73, 80, 95, 125, 160, 465, 660 + 690 + 727.5, 696, 787, 880, 3K

**Hemophilia**

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. A hereditary bleeding disorder in which the blood does not readily clot.

603, 751, 778, 845

**Hemorrhage**

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. Abnormal discharge of blood from any blood vessel, manifesting internally or externally. Go to the emergency room right away.

802 + 1550

**Infections, Post-operative (after valve and shunt implants)**

See "*Propionibacterium acnes*" under **Bacteria**, as this microbe has been implicated in post-surgical infections of heart valves and central nervous system shunts.

**Intermittent Claudication**

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. Arterial spasm causing limping and leg cramps.

45, 48, 10K

**Leukemia, all kinds**

See "Leukemia" entries under **Cancer**.

**Leukosis**

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. Increase of leukocytes (white

blood cells), or of the tissue that forms them; thought in some cases to be a precursor to leukemia. Parasites may be involved; so see "General (unspecified)" under **Parasites**, **Protozoa and Worms**. Also see "Leukemia" entries under **Cancer**.

612, 633, 644, 653, 3722

#### Limping caused by Intermittent Claudication

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. An arterial spasm that causes cramps or lameness of the legs.

45, 48, 10K

#### *Mucor racemosus fresen*

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. A fungus that grows on decaying vegetation and bread and can cause ear infections and, according to Guenther Enderlein, is implicated in most, if not all, coronary conditions.

First try: 310, 474, 875

Also try: 473, 686, 713, 729, 731, 751, 760, 778, 871, 873, 876, 878, 887, 1200, 7768, 7976, 8788

#### Pericarditis

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. Infectious inflammation of the pericardium, the membranous sac enclosing the heart and the major blood vessels.

1.1 + 73, 3.9, 20, 72, 80, 95, 125, 160, 444 + 1865, 465, 600 + 625 + 650, 660 + 690 + 727.5, 760, 787, 802 + 1550, 880, 1600, 2170, 2720

#### Phlebitis

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. Vein inflammation.

776, 1500

#### Plasmacytoma

See "Multiple Myeloma" under **Cancer**.

#### Raynaud's Disease

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. Nervous system disorder leading to disturbance of the circulation in the extremities, which can lead to congestion and swelling, and if severe enough, gangrene.

20, 660 + 690 + 727.5

#### Red Blood Cell Production, to Increase

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section.

1524

#### Rheumatic Fever

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. Fever, sweating, painful and swollen joints; the inflammation frequently spreads to heart.

333 + 523 + 768 + 786, 376, 952

#### Stroke

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. Hemorrhage, or abnormal discharge of blood due to a burst blood vessel, into the brain or spinal cord. This can cause speech disturbances, slow pulse, labored breathing, incontinence, unconsciousness, and even death. See a doctor for treatment and to determine the extent of the injury.

Immediately 3 + 230; then 6.3 + 148, 20, 72, 95, 125, 428, 444 + 1865, 522, 590, 600 + 625 + 650, 660 + 690 + 727.5, 776, 787, 832, 880, 1600, 1800, 2170, 2720, 10K

#### Stroke Paralysis / Apoplexy

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. Sudden lessening or loss of consciousness, with paralysis, resulting from a stroke. To care for someone who has just had a stroke, keep the environment quiet and comfortable, move the person frequently to avoid bedsores, and keep him or her warm if pulse is weak and temperature is low. This situation requires a doctor's care.

3 + 230, 20, 40, 72, 95, 125, 146, 152, 293, 330, 333 + 523 + 768 + 786, 428, 442, 444 + 1865, 522, 555, 600 + 625 + 650, 622, 660 + 690 + 727.5, 751, 787, 797, 800, 880, 1146, 1800, 2720, 8176, 10K

#### Tachycardia

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. Abnormal rapid heart action.

1.2 + 250

#### Thrombocytopenic Purpura / Werlhof's Disease

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. Abnormal discharge of blood from the mucous membranes into the surrounding tissues, causing purplish blotches in the skin and accompanied by reduction of blood platelets (clear blood cells) and enlargement of spleen.

452, 660 + 690 + 727.5

#### Thrombophlebitis / Thrombosis, Infective

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. The formation of a blood clot. These frequencies are for lab animals only. If the clot that causes the vein inflammation is dislodged, it can cause a heart attack (death of an area of the heart

due to an interrupted blood supply), stroke (a temporary reduction of blood and oxygen in the brain due to blood vessel blockage), hemorrhage (abnormal discharge of blood from a blood vessel into surrounding tissue or outside of the body), or embolism (the obstruction of a major blood vessel by a blood clot or clump of other material).

20, 72, 95, 125, 444 + 1865, 660 + 690 + 727.5, 685, 776, 787, 802 + 1550, 880, 1489, 1500, 1800, 2170, 2720, 2489

#### Ulcer, Ventricular

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. Open wound in one of the chambers of the heart.

142, 232, 566, 676, 769, 770, 10K

#### Varicose Veins

Stop! See warning at the beginning of this **Heart**, **Blood and Circulation** section. Distended and swollen veins, sometimes bulging on the surface of the skin.

1.2 + 250, 28

#### Vein Inflammation

See "Phlebitis" in this section.

*End of Heart, Blood and Circulation section.*

### HEARTBURN

See **Gastrointestinal Tract**, *Stomach and Esophagus*.

### HEARTWORM

See under "*Dirofilaria immitis* / Dirofilariasis / Heartworm" under **Parasites**, **Protozoa and Worms**.

### HEEL PAIN

See "Heel Pain / Plantar Fascitis" under **Injuries**.

### HELICOBACTER PYLORI

See "*Helicobacter pylori* / Peptic (Stomach) Ulcer" under **Gastrointestinal Tract**; or **Bacteria**.

### HEMOCHROMATOSIS

Known as "iron overload" or "iron storage disease," due to abnormal iron metabolism that permits absorption of too much iron from an ordinary diet. This condition is usually hereditary but can also be acquired. Symptoms include chronic fatigue (most common); cirrhosis or cancer of the liver; arthritis and joint pain; impotence, sterility or infertility; menstruation problems or irregularities; hair loss; diabetes; cancer (cancer thrives on iron); abdominal pain or swelling; weight loss; frequent infections; immune dysfunction; headaches; hypothyroidism; heart problems; and even death. This range of symptoms is due to the ability of excess iron to injure virtually all body organs and systems.

This condition is *not* considered a blood disorder, although some of its effects appear in the blood. It can be managed by early detection and the adequate mechanical removal of iron, done by a doctor. People can have an iron overload and be asymptomatic, or be anemic and still have this disorder; so get the proper testing.

Rife researcher James Bare reports that abnormal red blood cells formed in people with hemochromatosis respond to 5K, with a "significant drop" if the sessions are at least an hour at a time. The abnormally large spleen that can accompany this condition has even been reported to reduce significantly in size. We do not know if this same effect happens in people with normal red blood cells.

5K

### HEMOPHILIA

See under **Heart**, **Blood and Circulation**.

### HEMORRHAGE

See under **Heart**, **Blood and Circulation**.

### HEMORRHOID

See under **Gastrointestinal Tract**, *Colon / Large Intestine*.

### HEPATITIS, ALL TYPES

See under **Liver and Gallbladder**, *Liver*.

### HERNIA, GENERAL

Part of an organ internally or externally projects from its natural cavity.

9.1, 110, 10K, 787, 660 + 690 + 727.5, 2720, 5K

### HERNIA OF THE STOMACH

See "Hiatal Hernia" under **Gastrointestinal Tract**, *Stomach and Esophagus*.

### *HERPES*, ALL VARIANTS

See under **Viruses**; **Men**; **Women**; or **Skin**, *Shingles*.

### HIATAL HERNIA

See "Hiatal Hernia" under **Gastrointestinal Tract**, *Stomach and Esophagus*.

### HICCUPS

See **under Respiratory Tract**, *Vocal Cords*.

### HIGH BLOOD PRESSURE / HYPERTENSION

See under **Heart**, **Blood and Circulation**.

### HIP PROBLEMS, ALL

See under **Arthritis and Joints** or **Bone and Skeleton**.

### *HISTOPLASMA* / HISTOPLASMOSIS

See under **Candida**, **Fungi**, **Molds and Yeasts**.

### HIV

See "HIV (Human Immunodeficiency Virus) / AIDS (Acquired Immune Deficiency Syndrome)" under **Viruses**.

**HIVES**
See "Hives / Urticaria" under **Skin**.

**HOARSENESS**
See "Laryngitis or Hoarseness" under **Respiratory Tract**, *Vocal Cords*.

**HODGKIN'S DISEASE**
See under **Cancer**.

**HONG KONG FLU**
See "Influenza" under **Viruses**.

**HOOF AND MOUTH DISEASE**
See "Aphthovirus / Foot and Mouth Disease / Hoof and Mouth Disease" under **Viruses**.

**HOOKWORM**
See "Hookworm, probably *Necator americanus*" under **Parasites**, **Protozoa and Worms**.

**HORMODENDRUM**
See under **Candida**, **Fungi**, **Molds and Yeasts**.

**HORMONAL CONDITIONS**
See entries specific to your problem under **Glands**, **Women**, or **Men**.

**HOSPITAL-ACQUIRED INFECTIONS**
See **Iatrogenic Infections** under **I**.

**HOT FLASHES**
See under **Women**, *Menstruation and Menopause*.

**HUMAN *PAPILLOMA* VIRUS (HPV)**
See "*Papilloma* Virus / Human *Papilloma* Virus (HPV)" under **Viruses**.

**HYDROCELE**
See under **Men**, *Testicles*.

**HYPERACIDITY**
See **Acidosis**.

**HYPERACIDITY OF STOMACH**
See **Gastrointestinal Tract**, *Stomach and Esophagus*.

**HYPERADRENOCORTICISM / HYPERCORTISOLISM**
See "Cushing's Syndrome / Cushing's Disease / Hyperadrenocorticism / Hypercortisolism" under **Glands**, *Adrenals*.

**HYPERGLYCEMIA**
See "Diabetes / High Blood Sugar / Hyperglycemia" under **Blood Sugar Levels**.

**HYPERINSULINISM**
See "Hypoglycemia / Low Blood Sugar / Hyperinsulinism" under **Blood Sugar Levels**.

**HYPEROSMIA**
See "Odor Sensitivity, Abnormal / Hyperosmia " under **Respiratory Tract**, *Nose and Sinuses*.

**HYPERTENSION**
See "Blood Pressure, High / Hypertension" under **Heart**, **Blood and Circulation**.

**HYPERTHYROIDISM**
See "Thyroid, Overactive / Hyperthyroidism" under **Glands**, *Thyroid*.

**HYPOACIDITY OF STOMACH**
See **Gastrointestinal Tract**, *Stomach and Esophagus*.

**HYPOGLYCEMIA**
See "Hypoglycemia / Low Blood Sugar / Hyperinsulinism" under **Blood Sugar Levels**.

**HYPOTENSION**
See "Blood Pressure, Low / Hypotension" under **Heart**, **Blood and Circulation**.

**HYPOTHALAMUS, TO BALANCE AND NORMALIZE**
See under **Nervous System and Brain**.

**HYPOTHYROIDISM**
See "Thyroid, Underactive / Hypothyroidism" under **Glands**, *Thyroid*.

**HYPOXEMIA**
Insufficient oxygenation of the blood. This condition can have many causes, from microbial and parasitic infections to poor nutrition. Also see various entries under **Heart**, **Blood and Circulation**; and **Chemical Poisoning / Detoxification**.
20, 660 + 690 + 727.5, 780, 787

## –I–

**IATROGENIC INFECTIONS**
Acquired in hospitals. Symptoms are numerous and can affect any area of the body, including the urinary, respiratory and gastrointestinal tracts; ears; sinuses; and skin. It is difficult to present a comprehensive list, since so many infections can be caught in a hospital. See entries specific to your condition.
146, 333 + 523 + 768 + 786, 424, 428, 434, 444 + 1865, 465, 522, 590, 594, 660 + 690 + 727.5, 776, 787, 802 + 1550, 832, 834, 880, 1500, 1600, 1800, 2170

**ICTERUS, HEMOLYTIC**
See under **Liver and Gallbladder**, *Liver*.

**ILEOCOLITIS**
See "Colitis / Irritable Bowel Syndrome (IBS)" under **Gastrointestinal Tract**, *Colon / Large Intestine*.

**IMMUNE SYSTEM DISORDERS**
See **Autoimmune Disorders**.

**IMMUNE SYSTEM FUNCTION, TO INCREASE AND STIMULATE**
See "Immune System Function, to Stimulate" under **Regeneration and Healing**.

**IMPOTENCE AND FRIGIDITY, MANY TYPES**
See "Impotence, many types" under **Men**, *Sexual Functioning* or "Frigidity / Impotence, many types" under **Women**, *Sexual Functioning*.

**INCLUSION BODY MYOSITIS (IBM)**
Inflammatory muscle disease of progressive muscle weakness and wasting. Although similar to polymyositis, the muscle weakness in IBM occurs gradually (over months or years). Symptoms may begin with falling and tripping, or difficulty using the hands to grip and pinch, making tasks like buttoning clothing difficult. Eventually, the forearm muscles can shrink, though all muscles in the body are equally susceptible to wasting. Difficulty swallowing occurs in about half of those with IBM, which can culminate in choking.

IBM affects men more frequently than it does women, with symptoms usually beginning after age 50. At present, doctors have no treatment, only physical therapy to help maintain mobility.

It is not clear which comes first in this cascade of events: inflammation; the continual, stressful presence of antigens (molecules that stimulate an exaggerated immune response causing muscle fiber damage); or the accumulation of abnormally-folded proteins called ubiquitin. Ubiquitin (which might be unique to IBM, as it's not found in any other muscle illnesses) causes muscle fibers to degenerate. Many researchers theorize that the condition may be caused by a retrovirus.

This suggests approaching IBM as a retroviral infection. See the section on vaccines in Chapter 1. Sauna and ozone therapies could help. Also see **Autoimmune Disorders**; "Retrovirus, variants" under **Viruses**; applicable entries under **Muscles**; the many entries under **Chemical Poisoning / Detoxification**; and "*Mycoplasma*, many types" under **Bacteria**, since *Mycoplasma* infection is often the beginning of autoimmune conditions.

**INCONTINENCE**
See under **Urinary Tract**, *Bladder and Urethra*.

**INDIGESTION / DYSPEPSIA**
See under **Gastrointestinal Tract**, *Systemic Conditions*.

**INFANTILE PARALYSIS**
See "Polio / Poliomyelitis" under **Nervous System and Brain**.

**INFECTIONS, NON-SPECIFIC**
Look up precise symptom picture(s) and/or microorganisms. Microorganisms can be found under **Bacteria**; **Candida**, **Fungi**, **Molds and Yeasts**; **Parasites**, **Protozoa and Worms**; or **Viruses**. Meanwhile, if you don't know what kind of infection you have, you can try the frequencies below for commonly occurring microbes.

First try: 1.2 + 250, 20, 48, 72, 95, 125, 304, 422, 444 + 1865, 465, 660 + 690 + 727.5, 676, 766, 333 + 523 + 768 + 786, 802 + 1550, 880, 5500

Then try: 428, 440, 600 + 625 + 650, 700, 760, 776, 787, 832, 1500, 1600, 2112, 2170, 5K

And then try: 450, 500, 610 + 692 + 980, 732, 751, 1800, 1850, 2008, 2720, 2489, 3040, 4K

**INFECTIOUS MONONUCLEOSIS**
See "Epstein-Barr Virus / Infectious Mononucleosis / Chronic Fatigue Syndrome (CFS)" under **Viruses**.

**INFECTIVE THROMBOSIS**
See "Thrombophlebitis / Thrombosis, Infective" under **Heart, Blood and Circulation**.

**INFERTILITY**
See under **Men**, *Sexual Functioning* or **Women**, *Sexual Functioning*.

**INFLAMMATION**
This is a huge and somewhat amorphous category. Inflammation is the body's way of dealing with irritation, whether the irritation is caused by chemicals, friction, heat, microbes or toxins. The area becomes inflamed due to two factors: 1) the presence of various types of scavenger cells, which travel to the site to ingest dead and damaged tissue and act as a cushion or barrier between the injured tissue and surrounding areas; and 2) the increased presence of blood, to bring nutrients, oxygen and hormones to the repair site. Inflammation is different from infection, although one may arise from the other. Local microbial infection may cause the body to swell to contain the infection and protect the surrounding tissues from being invaded by an influx of microbes beyond the local infection. On the other hand, when non-microbial swelling occurs (as in an injury) and if the body scavenger cells cannot break down and digest the damaged tissue efficiently or quickly enough, then the cells in the area have time to putrefy, which results in an infection due to microbes, endogenous toxins, or both. Unfortunately, the body's inflammatory response usually remains past the point of usefulness, as the swelling causes the circulation in the area to slow down, which prevents healing. This is why usually ice packs, and sometimes heat, are used to eliminate the swelling. Ice causes the tissue to contract, which squeezes

waste out of the affected area. Heat causes the tissue to expand. Alternately using cold and heat causes a pumping motion, which gets the dense lymph tissue moving so it can escort the wastes elsewhere to be processed.

Some very effective anti-inflammatory agents are turmeric (which contains curcumin, a free radical scavenger and anti-oxidant), proteolytic (protein-digesting) enzymes such as protease and bromelain, ginger root, and the herb *Boswellia serrata*. The two inflammation frequencies for all types of inflammation are listed below. (Note that frequency numbers 6.3 and 3.6 are also used for irritability and whining.) For muscle- and tendon-related inflammation, see **Muscles**. For nerve-related inflammation, see **Nervous System and Brain**, and so on. Since white blood cells require enzymes to break down the waste products of inflammation (as well as infection), taking enzyme supplements can help.

1.3, 10.5, 3.6, 6.3 + 148, and 2720 for pain

### INFLUENZA VIRUSES, MANY

See "Influenza" entries under **Viruses**.

### INJECTIONS AND INOCULATIONS, TO DETOXIFY FROM

See "Vaccinations, Injections and Inoculations—Reactions to" under **Chemical Poisoning / Detoxification**.

### INJURIES

For injuries of muscles and soft tissue, pad devices usually produce better results than plasma light units. If you are using a pad device, place electrodes on either side, or at the front and back, of the inflammation site. Various electromedicine devices also help reduce swelling and pain, including the Tri-Light® LED, The Lazr Pulsr® soft laser, the Chi Pen, and the Tennant BioModulator®. See Appendices A and C for more information.

Often, the best care for injuries such as sprains and ligament tears is the old-fashioned application of ice packs. Leave the cold pack on for 15 minutes, remove it for 15 minutes, re-apply it for 15 minutes, then remove it for 15 minutes, etc., until the swelling subsides. Or, alternate cold with heat. Sometimes, people feel better immediately with heat and not cold, so pay attention to what works for you. Homeopathic ointments such as Rescue Remedy® Cream or Traumeel® can also be quite affective; apply them externally to the inflamed area until the pain and swelling subside.

Effective homeopathic remedies such as Rescue Remedy®, *Arnica* and Traumeel® are available in both ointment and drop or pellet form. Preparations containing menthol, camphor, wintergreen, and other similar aromatics can help. However, many homeopaths say that strong aromatics should not be used at the same time as homeopathics as they will antidote (negate the effectiveness of) the homeopathic remedy. Enzymes, which have anti-inflammatory properties, are highly effective. Also see entries under **Muscles**; under **Bone and Skeleton**; under **Nervous System and Brain**, and any other categories that apply.

Always use 2720 and 10K, which are good overall frequencies for pain, along with the frequencies for your specific symptoms.

#### Backache, including Spasms

A spasm is a movement due to a sudden involuntary muscular contraction, and it can be quite painful. Many microbes can be involved, particularly *Staphylococcus*. Please note that these frequencies are not a substitute for a chiropractic adjustment if the skeletal alignment is off or the spinal cord is torqued or twisted. Also see entries under **Urinary Tract**, *Kidneys*, since a pain in the lower back is sometimes a sign of a kidney infection or inflammation.

2720, 10K, 26 (for 15 minutes), 33, 41.2, 120, 146, 160, 212, 240, 305 (for 6 minutes), 326, 333 + 523 + 768 + 786, 424, 464, 465, 466, 522, 528, 555, 660 + 690 + 727.5, 760, 784, 787, 789, 800, 802 + 1550, 880, 1552, 2112, 3K, 5K, 10K

#### Bruise / Contusion

Pain, swelling and discoloration of skin, without any cuts or breaks in the skin.

9.1, 110, 2720, 10K

#### Bursitis

Inflammation of connective tissue, mainly around joints. This condition may be caused by a great many organisms. Also experiment with the arthritis, tendomyopathy, and sprain frequencies. Because white blood cells require enzymes to break down the waste products of inflammation (as well as infection), taking enzyme supplements or eating sprouts might help.

660 + 690 + 727.5, 787, 880, 10K

#### Carpal Tunnel Syndrome / Repetitive Stress Injury (RSI)

Inflammation of the forearm, wrist and fingers, due to repetitive motion that places excessive stress on the tendons, ligaments and musculature. One researcher thinks that 15 Hz is used because it stimulates the cells to receive calcium more efficiently.

6.3 + 148, 15, 20.5, 146, 444 + 1865, 465, 522, 600 + 625 + 650, 660 + 690 + 727.5, 685, 700, 737, 760, 776, 787, 802 + 1550, 832, 880, 1K, 1500, 2008, 10K

#### Chilblains

Inflammation and swelling of the feet, toes, or fingers due to blood vessel injury during prolonged exposure to cold. Symptoms may also include skin lesions. Also see "Frostbite" in this section.

20, 232, 622, 822, 2112, 4211, 5K, 10K

#### Disc, Slipped / Spine, Misaligned

Misaligned vertebra of the spine that pinches a nerve, causing pain and interfering with the posture and function

of the body. Some researchers believe that slipped discs are a result of spasms from microbial toxins. However, you will still probably need a chiropractic adjustment to align the disc once the bone is out of place.

20, 26, 57, 72, 95, 125, 146, 333 + 523 + 768 + 786, 555, 787, 660 + 690 + 727.5, 880

#### Elbow pain / Epicondylalgia

1.2 + 250, 26, 160, 2720, 3K, 10K

#### Fibromyalgia

See under **F**.

#### Frostbite

Freezing, usually of the nose and earlobes, and extremities of the body, such as fingers and toes, that causes injury to the blood vessels characterized by tingling, redness and pain, followed by paleness and numbing. Medical books suggest warming the core of the body first—providing hot drinks is useful here—and gradually warming the affected areas. Even people with blackened limbs (which usually indicates the need for amputation) have been known to recover from this condition. Also see "Chilblains" in this section.

660 + 690 + 727.5, 787, 880

#### Frozen Shoulder

See "Shoulder, Frozen" in this section.

#### Head Injuries

For a head injury, get medical help immediately (like an emergency room visit)! In *The Family Guide to Homeopathy* (the edition by Alain Horvilleur), the author recommends the homeopathic remedy *Natrum sulphuricum* (dosage 30), one pellet taken every hour until there is noticeable improvement; then taken twice daily until the injury totally heals. I have used this myself and have found it to be very helpful.

4.9, 5.8, 9.6, 72, 160, 522, 660 + 690 + 727.5, 787, 880, 3K

#### Headaches caused by Vertebral Misalignment

For other types of headaches, see **Headaches** under **H**. This is not meant to replace an adjustment by a chiropractor.

1.2 + 250, 9.6, 160, 3K

#### Heel Pain / Plantar Fascitis

Inflammation of the fascia, or elastic envelope that encloses muscle tissue, at the bottom of the foot. Stressing the feet through excess jogging or walking, climbing hills, or wearing shoes with worn out arches or shock absorbers can cause this condition. Icing the feet might help. There are no listings for this condition, so try other frequencies in this section. Also see "Spur, Bone" under **Bone and Skeleton**.

#### Knee Pain

See a chiropractor to rule out subluxation or other structural causes.

1.2 + 250, 3 + 230, 7.69, 7.7, 9.39, 9.4, 9.6, 20, 28, 73, 160, 660 + 690 + 727.5, 787, 802 + 1550, 880, 2720, 3K

#### Ligament Sprain

Ligaments are connective tissue made up of long, stringy collagen fibers, which connect the ends of bones together to form a joint. When torn, they cause pain and swelling. I have not seen any listings for either ligaments or sprains, so below are frequencies for pain due to injury, stiff neck, and some arthritis frequencies. Also see "Tendomyopathy" and other entries under **Muscles**.

0.5, 1, 1.1 + 73, 1.2 + 250, 4.9, 5.8, 9.19, 9.2, 9.4, 9.7, 10, 20, 20.5, 35, 40, 80, 125, 320, 2720, 10K

#### Lumbago

Muscular ache across loins due to either too rapid cooling of overheated region, or unnatural twisting.

7.69, 7.7, 9.19, 9.2, 8.25, 72, 95, 125, 300, 444 + 1865, 660 + 690 + 727.5, 787, 800, 802 + 1550, 880, 10K

#### Neck Pain

15, 17, 326

#### Neck, Stiff, including Spasticity

Pain and stiffness along with involuntary sudden movement or convulsive muscular contraction.

4.9, 6, 9.19, 9.2

#### Pain due to Injury

0.5, 1, 1.1 + 73, 1.2 + 250, 10.5, 20.5, 5.8, 10, 20, 35, 40, 80, 125, 160, 320, 240, 2720 (for at least 20 minutes, preferably longer, even up to one hour), 6K, 10K

#### Plantar Fascitis

See "Heel Pain / Plantar Fascitis" in this section.

#### Repetitive Stress Injury (RSI)

See "Carpal Tunnel Syndrome / Repetitive Stress Injury (RSI)" in this section.

#### Shoulder, Frozen

Painful shoulder area, often worse at night, that severely limits mobility and primarily affects the tendons or connective tissue near joints.

660 + 690 + 727.5, 776, 787, 802 + 1550, 880, 10K

#### Slipped Disc

See "Disc, Slipped / Spine, Misaligned" in this section.

#### Sprain

Partial rupture or twisting of a joint, its tendon and ligament attachments, and perhaps the muscle as well. The tissue fibers are torn, causing pain and swelling. I have not seen any listings for sprains, so below are frequencies for pain due to injury, stiff neck, and some arthritis frequencies. Also see "Tendomyopathy" and other entries under **Muscles**.

0.5, 1, 1.1 + 73, 1.2 + 250, 20.5, 4.9, 5.8, 9.19, 9.2, 9.4, 10, 20, 35, 40, 80, 125, 320, 2720, 10K

#### Subluxation / Spine Distortion

Twisting of muscles and spine. Dislocation of bones or organs, which can pinch nerves and cause pain. This is not a substitute for a chiropractic adjustment.

9.1, 9.6, 66, 110

#### Tendomyopathy

Infirm condition of both the muscles and tendons, causing inflammation and pain. Also see "Tendon Tear" in this section.

0.5, 1, 1.1 + 73, 1.2 + 250, 10.5, 20.5, 4.9, 5.8, 9.2, 9.4, 10, 20, 26, 40, 80, 146, 160, 320, 465, 522, 2720, 3K

#### Tendon Tear

Partial rupture or twisting of a joint and its tendon attachments, long connective tissue fibers that attach muscles to bones. Sometimes the ligaments—short bands of fibrous connective tissue that connect bone to bone—are involved as well. The tissue fibers are torn, which causes pain and swelling. I have not seen any listings for sprains, so below are frequencies for pain due to injury, stiff neck, and some arthritis frequencies. Also see "Tendomyopathy" in this section and the many entries under **Muscles**.

0.5, 1, 1.1 + 73, 1.2 + 250, 4.9, 5.8, 9.19, 9.2, 9.4, 10, 20, 20.5, 35, 40, 80, 120, 125, 320, 2720, 10K

#### Tennis Elbow

A non-scientific term for a common injury acquired in tennis players, due to repetitive motion.

8, 734

#### Whiplash

See "Head Injuries" and other entries in this section. Whiplash is serious—see a qualified health practitioner!

20, 2720, 10K

*End of Injuries section.*

### INSECT BITES

Insect bites are not only painful, in some cases they can cause serious damage or even death. To prevent the venom from spreading and stop the pain and itching, some people use microcurrent—generated by a zapper, Beck device, the Tennant Biomodulator® (see Appendix C), or a piezo-electric device that generates a high voltage/low intensity current from the action of mechanical force upon quartz crystals. (Current can neutralize insect toxins.) To draw out the poisons, you can also make a poultice of raw mashed white onion, or clay (green or bentonite), possibly adding colloidal silver and tea tree oil. Papain (papaya enzyme) breaks down the proteins of spider venom. You can also apply iodine or hydrogen peroxide to prevent infection at the site of the bite.

To help with the healing afterwards, use essential oil of lavender. In serious cases, see a doctor!

#### General Insect Bites

660 + 690 + 727.5, 880

#### Black Widow Spider Bite

Causes intense abdominal, back and foot pain, swollen eyelids, cramps, nausea, sweating, tremors, labored breathing and speech, vomiting, and even unconsciousness, convulsions and death if the person does not receive immediate medical attention.

The Black Widow is considered the most venomous spider in North America, although bites are uncommon. The spiders are most likely to bite when guarding their eggs. The severity of reaction depends on the area of the body bitten, the amount of venom injected, and depth of the bite. Sometimes the bite is not even felt, and initially there might be only slight swelling and two faint red spots in the area of the bite. If you have a heart condition and have been bitten, see a doctor.

376, 660 + 690 + 727.5

#### Brown Recluse Spider

Refers to the species *Loxosceles recluse*, found mainly in the US between the central Midwestern states and the Gulf of Mexico. Causes stinging, intense pain, and usually a small white blister that becomes larger and gangrenous, accompanied by fever, chills, nausea, weakness and joint pain within two days. Found mainly in the southern and midwestern portion of the United States, the brown recluse spider burrows into unused clothing, clutter, and corners of furniture, biting only if disturbed. Fatalities are rare, but bites are dangerous to children, the elderly and those with compromised immune function. The venom from the bite can cause scarring, and the ulcerating sore may take up to eight weeks to heal. Some people don't feel the bite, and are aware of being bitten only later, when they see dead tissue and there's an infection.

724, 884, 1830, 3260, 29K to 30,022 (sweep)

From Jeff Sutherland: 30008, 444434, 767766

**Deer Tick**

See "*Ehrlichia chaffeensis* / Ehrlichiosis," "*Rickettsia rickettsii* / Rocky Mountain Spotted Fever," and "*Borrelia*, all types / Borreliosis / Lyme Disease" under **Bacteria**; and "*Babesia* / Babesiosis" under **Parasites, Protozoa and Worms**.

**Yellow Fly**

Causes pain, itching, and sometimes severe allergic reactions. In the southeastern United States (mostly Florida), about a dozen different yellow-bodied biting flies—including deer flies and horse flies—in the family *Tabanidae* are called "yellow flies," although only one species, *Diachlorus ferrugatus*, is considered the actual yellow fly by experts. Yellow flies, which feed on humans and wild and domestic animals, are prevalent from March through November, peaking in numbers from May through June. They are most active during the early morning and late afternoon/early evening, in shady forest areas.
996

*End of Insect Bites section*.

**INSOMNIA**
See under **Mind and Emotions**.

**INTERCOSTAL NEURALGIA**
See "Neuralgia, Intercostal" under **Nervous System and Brain**.

**INTERMITTENT CLAUDICATION**
See "Intermittent Claudication" under **Heart, Blood and Circulation**.

**INTESTINAL CANCER**
See under **Cancer**.

**INTESTINAL FLUKE**
See "Fluke, Intestinal, including *Fasciolopsis buski*" under **Parasites, Protozoa and Worms**.

**INTESTINAL PROBLEMS, ALL**
See *Colon / Large Intestine* and *Small Intestine*, both under **Gastrointestinal Tract**.

**IRRITABLE BOWEL SYNDROME**
See "Colitis / Irritable Bowel Syndrome (IBS)" under **Gastrointestinal Tract**, *Colon / Large Intestine*.

**ITCHING, ANAL / PRURITUS**
See "Anus, Itching / Pruritus" under **Gastrointestinal Tract**, *Colon / Large Intestine*.

## –J–

**JAUNDICE / BILIRUBINEMIA**
See under **Liver and Gallbladder**, *Liver*.

**JOCK ITCH**
See under **Men**, *Penis* or **Women**, *Vagina and Labia*.

**JOINT PAIN**
See various entries under **Arthritis and Joints**.

## –K–

**KALA-AZAR**
See "*Leishmania*, all types" under **Parasites, Protozoa and Worms**.

**KAPOSI'S SARCOMA**
See under "HIV (Human Immunodeficiency Virus) / AIDS (Acquired Immune Deficiency Syndrome)" under **Viruses**.

**KERATOSIS PILARIS**
See under **Skin**.

**KIDNEY PROBLEMS, ALL**
See under **Urinary Tract**, *Kidneys*.

**KIEFEROSTEITIS**
See under **Bone and Skeleton**.

***KLEBSIELLA PNEUMONIAE***
See "*Klebsiella pneumoniae* / Pneumonia" under **Bacteria**.

**KNEE PAIN**
See under **Arthritis** or **Injuries**.

## –L–

**LARGE INTESTINE / COLON DISORDERS, ALL**
See under **Gastrointestinal Tract**, *Colon / Large Intestine*.

**LARYNX CONDITIONS, ALL TYPES, INCLUDING LARYNGITIS**
See under **Respiratory Tract**, *Vocal Cords*.

**LATERAL SCLEROSIS**
See under "Amyotrophic Lateral Sclerosis (ALS)" under **Nervous System and Brain**.

**LAXATIVE EFFECT**
See "Laxative Effect, mild" under **Gastrointestinal Tract**, *Systemic Conditions*.

**LEAKY GUT SYNDROME**
See under **Gastrointestinal Tract**, *Small Intestine*.

**LEG CRAMPS CAUSED BY ARTERIAL SPASM**
See "Intermittent Claudication" under **Heart, Blood and Circulation**.

**LEGIONNAIRE'S DISEASE**
See "*Legionella pneumophila* / Legionellosis / Legionnaire's Disease / Pontiac Fever" under **Bacteria**.

***LEISHMANIA*, ALL TYPES**
See under **Parasites, Protozoa and Worms**.

**LEPROSY**
See "*Mycobacterium leprae* / Leprosy / Hansen's disease" under **Bacteria**.

***LEPTOSPIRA* / LEPTOSPIROSIS**
See under **Bacteria**.

**LESIONS, ORAL**
See "Oral Lesions" under **Dental**, *Mouth and Gums*.

**LEUKEMIA, ALL KINDS**
See specific "Leukemia" entries under **Cancer**.

**LEUKOCYTOSIS**
See "Leukocytosis / Leukosis" under **Cancer**.

**LEUKODERMA**
See "Leukoderma / Vitiligo" under **Skin**.

**LEUKOENCEPHALITIS**
See under **Nervous System and Brain**.

**LEUKOPLAKIA**
See under **Dental**, *Mouth and Gums*.

**LEUKORRHEA**
See "Vaginitis" under **Women**, *Vagina and Labia*.

**LEUKOSIS**
See "Leukocytosis / Leukosis" under **Cancer**.

**LIGAMENT SPRAIN**
See under **Injuries**.

**LIGHT SENSITIVITY**
See "Photosensitivity" under **Eyes**.

**LIPOMA**
See under **Liver and Gallbladder**, *Liver*.

***LISTERIA MONOCYTOGENES* / LISTERIOSIS**
See under **Bacteria**.

**LIVER AND GALLBLADDER**
The liver and gallbladder are complementary in function: they work together to aid digestion. In Chinese medicine, they share the same meridian. Thus it is not surprising to learn that they both grew from the same embryonic tissue that divided. One portion of tissue branched to form the liver, and the other, to form the gallbladder.

***Liver***

The soft, pinkish-brown liver—weighing between 3 and 6½ pounds (1.3 to 3 kilograms)—is the second largest organ (the skin is the first). Located on the right side in the abdominal cavity just below the diaphragm, this remarkable organ has many jobs. It is the waste disposal workhorse, detoxifying poisons and preventing them from re-circulating through the bloodstream. It breaks down, or converts for the body's use, insulin and other hormones. It stores many vitamins and minerals, and activates Vitamin E. It helps with immune protection by producing antibodies (catalysts that help eliminate microbes). And when there is too much glucose in the bloodstream, the versatile liver converts it to glycogen. (If there is too much glucose present at one time, it gets stored as bodily fat.)

The liver helps digest carbohydrates and proteins; but it is better known for producing and excreting bile required for the digestion of fats. The liver can produce only limited amounts of bile at a time; so whatever is not needed immediately in the small intestine during a meal is stored in the gallbladder until required.

The liver is the only organ that routinely regenerates itself. As little as one-quarter of a liver can regenerate into a whole liver again because the majority of its cells can act as stem cells, capable of creating any bodily tissue. Medical terms related to the liver are based on the Greek word *hepar* for liver.

Signs of an overworked liver are digestion and elimination conditions (constipation, diarrhea, nausea, bloating); negative mental states including depression, anger and irritability; blood sugar fluctuations; hormonal imbalances; fatigue and circulatory conditions; joint and muscle discomfort; bad breath and body odor; and dark circles under the eyes. Another sign of liver disturbance is trouble losing or gaining weight. This makes sense when you realize that thyroxin, produced by the thyroid and designed to control metabolism, is converted by the liver into liothyronine, a more potent and active thyroid hormone that actually gets into the cells.

The three most important "nutrients" for the liver are water, rest, and protein. Too many carbohydrates and sugars in relation to protein will inhibit liver function and prevent detoxification from taking place (although the liver will not work well, either, if you eat too much

protein). Avoid noxious chemicals and heavy spices. Drink plenty of water. Fresh vegetable juices, including a small amount of beet, will help detoxification. Finally, eliminate most (if not temporarily all) fats, including dairy. The liver manufactures bile to digest fats. Because it produces bile at a slow rate, any bile not being used is stored in the gallbladder so there is enough for each meal. If the liver is not functioning properly, fatty foods burden it excessively. Supplementation with bile may be helpful to digest fats, particularly if the gallbladder has been removed and there are no internal reserves of bile in the body.

As the kidneys, liver and lymphatic system are all primary channels of detoxification, also see **Chemical Poisoning / Detoxification**.

#### Amoeba Hepar Abscess

Abscess, or cavity in the liver that is filled with pus (an accumulation of dead white blood cells), caused by amoebic infection.

344 + 510 + 943, 605

#### Amoebic Dysentery / *Entamoeba histolytica*

*Entamoeba histolytica* is a dangerous protozoan that causes amoebic dysentery, an infection of the liver and digestive tract. Symptoms include severe diarrhea, ulcerated open wound, fever, and blood in the stool. Also see "*Salmonella typhi* / Typhoid Fever" and "*Shigella*" under **Bacteria**.

First try: 148, 166, 308, 393, 631, 778

From Dr. Hulda Clark: 19168.02, 954.32

Then try: 333 + 523 + 768 + 786, 465, 660 + 690 + 727.5, 787, 802 + 1550, 832, 880, 1552 for accompanying infections.

#### Banti's Disease

The blood vessels between the intestines and the liver become blocked, leading to anemia, congestion of the veins, an enlarged spleen, bleeding of the stomach and intestines, and ultimately cirrhosis of the liver.

1778

#### Biliary Cirrhosis

See "Cirrhosis of the Liver / Biliary Cirrhosis" in this section.

#### Biliary Headache

Headache from toxic and overworked liver. It often occurs after one eats fats that the liver cannot handle.

3.5, 8.5

#### Biliousness

Excess bile in the liver, causing constipation, headache, and vomiting of bile.

21.34, 465, 660 + 690 + 727.5, 787, 802 + 1550, 832, 880, 10K

#### Bilirubinemia

See "Jaundice / Bilirubinemia" in this section.

#### Cancer

See "Liver Cancer" under **Cancer**.

#### Cirrhosis of the Liver / Biliary Cirrhosis

Inflammatory condition of the liver during which bile flow through the liver is obstructed.

381, 514, 677, 2271, 1250, 170, 715, 774, 776

#### Enlarged Liver

465, 660 + 690 + 727.5, 787, 880

#### Enterohepatitis

Inflammation of large intestine and liver.

552, 932, 953

#### Fluke, Liver / Oriental *Clonorchis sinensis*

Transmitted through the eating of raw fish, *Clonorchis sinensis* lodges in the liver bile ducts of humans, dogs, cats, pigs and rodents, causing the duct lining to thicken and the surrounding liver tissue to become inflamed. This nasty parasite grows up to 10 inches long and is estimated to infect about 30 million people in Japan, Korea, China, Taiwan, and Vietnam.

2K

From Dr. Hulda Clark: 21259.08, 1058.43

#### Fluke, Liver / Sheep Liver Fluke / *Fasciola hepatica*

Infecting humans and cattle in addition to sheep, these parasites are transmitted through the eating of contaminated vegetation. They lodge in the liver bile ducts, causing the duct lining to thicken and the surrounding liver tissue to become inflamed. They are found throughout the United States, England, Ireland, Europe, the Middle East, Far East, Africa, and Australia.

14, 275, 826, 830, 834

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

*Adult fluke:*

Kilohertz set: 421350 (lower limit), 425K (most effective), and 427300 (higher limit of same organism)

Hertz set: 1044.42 (lower limit), 1053.47 (most effective), and 1059.17 (higher limit of same organism)

## Liver – Gallbladder Cleanse

### Introduction

The liver contains many tubules that deliver the bile to the larger bile duct. The gallbladder, attached to the common bile duct, stores bile, as the liver cannot make large amounts at one time. Fat or protein triggers the gallbladder to empty bile into the small and large intestines. In adults and even children, the biliary tubules are loaded with gallstones that cannot be seen on X-rays of the gallbladder because the worst stones tend to be in the liver. Also, most stones are not calcified and are too small to be easily seen. The many types of gallstones, most of which contain cholesterol crystals, can be black, red, white, tan, or green (which are coated with bile). Dr. Hulda Clark has observed many stones imbedded with objects that might be the remains of flukes. Other scientists have found clumps of bacteria at the center of each stone—which suggests that the body might form stones to protect it, like an oyster creates a pearl around an irritating grain of sand.

However, the body's management of foreign substances is not a cure. As the stones continue to grow and multiply, Dr. Clark states, the back-pressure on the liver prevents it from producing enough bile, the bile duct becomes more blocked, and the liver cannot detoxify and eliminate toxins like solvents and parasites. Impaired liver function may even raise cholesterol levels. Furthermore, the porous gallstones can pick up bacteria, viruses and parasites that pass through the liver, thus causing further infection.

This cleanse is reported to effectively and painlessly remove most stones, gravel, crystals and other debris from the liver, gallbladder and bile ducts. The elimination of toxins and pollutants from these areas help make the liver more efficient in purifying the blood. Since each liver cleanse "cures" a different set of allergies, the liver appears to be compartmentalized, with different duties allocated to different parts. A liver cleanse also eliminates most of the pain in shoulders, upper arms, and upper back. Do not construe this cleanse as a substitute for a needed gallbladder operation! But as a liver cleanse cannot harm and can only help, an operation might not be necessary after one or more cleanses.

Before you do the liver-gallbladder cleanse, a prior herbal kidney cleanse might be helpful, since it's the job of the urinary tract to remove any substances absorbed from the intestines as the bile is being secreted. Optional: for three days prior to doing the cleanse, drink one quart a day of unfiltered apple juice; the pectin in the apples will help soften and flatten the stones you will be releasing. This semi-fast also empties the intestines and makes the collection of stones less problematic. If you have *Candida albicans* or have blood sugar issues, take powdered pectin supplements instead.

Choose two consecutive days during which you don't have any appointments, and can rest. Do not take any nutritional supplements not specified in this cleanse. Don't take any medications, either, unless your doctor says they are essential. Either could hinder success of the cleanse. If you are on a parasite or kidney cleanse, stop it the day before.

Eat a no-fat fruit breakfast and light fat-free lunch such as cooked cereals with fruit but no butter or milk. This allows the bile to build up and develop pressure in the liver. Higher pressure pushes out more stones. Most people don't have problems pushing out stones with this cleanse because the magnesium in the Epsom salts you will be drinking relaxes the bile duct valves.

Incidentally, a sluggish bowel (where there is insufficient peristalsis, or muscular contractions of the intestines to move food along the digestive tract) is due to inadequate bile secretion. If stones are blocking the bile ducts, there won't be sufficient bile. Thus, a liver cleanse is especially helpful. Dr. Saul Pressman has observed vastly improved digestion in people who do a liver cleanse.

### Ingredients

- 4 tablespoons of Epsom salts, also known as magnesium sulfate. (The container will indicate that it can be used both internally and externally.) The magnesium opens the bile ducts, allowing the stones to pass easily. Do not omit this ingredient; it's critical to the success of the cleanse!
- 3 cups of filtered water.
- 1 tablespoon Vitamin C powder (to nullify the taste of the Epsom salts you'll be drinking). In lieu of Vitamin C powder, you can use a very small amount of citrus juice.
- ⅓ to ½ cup virgin olive oil (light oil, as it's easier to swallow).
- Fresh grapefruit (preferably pink or red) and fresh lemons, enough to make ½ to ⅔ cups of juice. Do not use concentrate or store-bought juice; otherwise, this won't blend well with the oil you'll be drinking. You can also use grapefruit only or lemons only.

- *Optional*: Ornithine (an amino acid), to help you sleep: 4 capsules if you don't have problems sleeping, and 8 capsules if you do. For 2 weeks before flush, take 600 mg of malic acid 3 times a day for every 100 lbs. of body weight.

### Equipment

- One 1-quart jar with a plastic (non-metal) lid for the Epsom salts mixture.
- One pint jar for the citrus juice-olive oil mixture.
- A juicer. This is mandatory, since you will need fresh squeezed citrus juice.

### Procedure – Day 1

What you eat in the morning and early afternoon depends on your metabolism and ability to fast on liquids. If you are drinking liquids only, drink the fresh squeezed juice of 12 grapefruit until 12:30 p.m., and the fresh squeezed juice of 12 apples until 5:30 p.m. If you are eating solid food, finish eating by noon, and choose only light starches with no fat, such as cooked oatmeal (no milk or butter) or baked potato (no butter or sour cream). If carbohydrate intolerant, take rice protein powder in water. Avoiding fat allows the fat-digesting bile to build up in the liver and gallbladder. Don't eat animal protein; you want foods that digest relatively quickly so your stomach can empty by evening.

**2:00 PM**: Stop eating; otherwise, you may feel very uncomfortable later. Mix 4 Tablespoons of Epsom salts and 1 Tablespoon of Vitamin C powder in 3 cups of cold water in the 1-quart jar, and refrigerate it. Refrigeration will make it easier to drink the Epsom salts. If you don't have Vitamin C powder, add a very small amount of citrus juice to the Epsom salts just before drinking it.

**3:00 PM**: Give yourself a warm water enema (optional).

**6:00 PM**: Drink ¾ cup of the cold Epsom salts.

**8:00 PM**: Drink ¾ cup of the cold Epsom salts.

The timing of the actual cleanse is relatively critical in achieving success. Try not to be more than 10 minutes early or late for anything that follows next. Be ready to go to bed and *stay* in bed after the 10 p.m. drink.

**9:45 PM**: Pour ½ (or ⅓) cup olive oil into the second jar. Add ½ (or ⅓) cup grapefruit and/or lemon juice to the olive oil. Close the jar lid and shake it hard.

**10:00 PM**: Stand up and drink olive oil / citrus juice. Take the optional Ornithine with the first sips. Drink it all immediately; but if you are weak or elderly, drink over a period of five minutes. *Lie down*. The sooner you lie down, the more stones you'll eliminate. Put your knees up to your chest in a fetal position and lie on your right side for at least half an hour. The oil you drank—much more than the body normally processes at one time—will cause the liver and gallbladder to spasm and dump all available bile, along with stones, gravel and crystals. One half hour later, lie on your back and sleep. If you can't sleep, remain on your back for at least 20 minutes.

Dr. Clark, in the tradition of Chinese medicine, reminds us that the liver is sensitive to feelings of resentment, vindictiveness and hate. (The expression "venting bile" refers to someone who is very angry.) So send loving thoughts to your liver. Some people feel the stones traveling along the bile ducts.

### Procedure – Day 2

**Next morning (early).** When you wake, take your third dose of prepared Epsom salt solution. If you have indigestion or nausea (highly unlikely), wait until this is gone before drinking the Epsom salts. Do not take this potion before 6:00 a.m. It would be best if you don't get up and have someone else give you this potion. This drink will act as a mild laxative and provoke several later loose bowel movements.

**2 hours later.** Take your fourth (and last) dose of Epsom salts. Drink ¾ cup. You may go back to bed if you want.

**After 2 more hours.** You may get up and eat something. Fresh-made fruit juice is best. Half an hour later, eat some fruit. One hour later, you may eat regular food but keep it light. By dinnertime, you should feel fully recovered and can resume normal eating. Expect to have diarrhea this second day. This is normal; the Epsom salts flush out the bowel.

### Safety and Effectiveness of This Cleanse

There has been some debate as to whether the residue from these cleanses is in fact gallstones or food. Dr. Clark points out that food residue sinks, while gallstones and liver stones float due to their cholesterol content. (The greenish coating on the stones is bile.) The concentric circles and crystals of the eliminated cholesterol exactly match textbook pictures of gallstones. Some of what is eliminated are soft, waxy, floating cholesterol crystals that did not form into round stones but *would* eventually harden if they were allowed to sit inside the liver and bile duct.

Many people who have done this cleanse report passing fewer and fewer green-covered stones with each successive cleanse. In Dr. Clark's experience, one may have to pass up to 2000 stones, in several sessions, over a period of a year, before the liver is clean enough to eliminate allergies and bodily pain. Interestingly, symptoms may diminish or disappear but then reappear, as stones from the rear of the liver travel forward.

The conventional medical profession believes that the incidence of gallstones is rare; that the stones cause gallbladder attacks and are not linked to allergies, digestive disturbances or impaired liver function; and that once the gallbladder has been removed, you remove the source of the stones. These beliefs are not based on the way the body works. Hulda Clark points out that even those who have had their gallbladder surgically removed eliminate green, bile-coated stones with this cleanse.

In general, this cleanse is very safe and effective. If, however, you feel pain reaching up to your throat, there might be a gallstone stuck in a bile duct. (According to Dr. Clark, the appearance of clay-colored stool also indicates bile duct blockage.) To relax the spasms of the bile duct, take a heaping tablespoon of Epsom salts in ¾ cup of water on an *empty* stomach (or you may feel nauseated). The bile duct should relax within 20 minutes. *If it does not relax and you still feel symptoms, consult a medical professional who is versed in liver cleanses.* Spasms may also indicate the presence of parasites.

Some people do this cleanse each week or every other week. Others do it once a month or once every two months. You will know you are finished when no more stones are passed. If you are ill, weak, pregnant, nursing, or elderly, do this cleanse with medical supervision.

—adapted from Hulda Clark, Saul Pressman, and other sources

*Larval stage:*
Kilohertz set: 423800 (lower limit), 427K (most effective), and 430600 (higher limit of same organism)
Hertz set: 1050.50 (lower limit), 1058.43 (most effective), and 1067.35 (higher limit of same organism)
*Fluke eggs:*
Kilohertz set: 422K (lower limit), 425K (most effective), and 427600 (higher limit of same organism)
Hertz set: 1046.03 (lower limit), 1053.47 (most effective), and 1059.91 (higher limit of same organism)

Also from Dr. Hulda Clark: 21159.50 (eggs) and 21259.08 (larvae)

#### Fluke, Liver (unspecified)

Worms appearing in the liver and other places.

First try: 143, 238, 275, 676, 763, 6641, 6672

Also try: 15, 55, 524, 854, 2K

#### Hangover

Acute toxicity in the blood and lymph, resulting from the ingestion of alcohol. Symptoms include head and body aches, gastrointestinal disturbances, blunted motor responses, and malaise. Also see "Alcoholism" under **Mind and Emotions**.

146, 522, 10K

#### Hepatitis, all types

Highly contagious viral disease causing inflammation of the liver, accompanied by nausea, disturbed appetite, vomiting, joint pain, fever and jaundice, or a yellowing of the skin and eyes due to the abnormal release of bile pigment into the blood. This condition is often caused or exacerbated by poisoning from drugs or other chemicals. The virus is carried in bodily fluids, not only the blood and saliva but also semen—which is why it is sometimes considered a sexually transmitted disease (STD).

#### Hepatitis, General

28, 224, 317, 329, 470.6, 477, 483.3, 660 + 690 + 727.5, 802 + 1550, 880, 922, 941.4, 966.6, 1351, 1882.7, 1933.2

Also try frequencies for "*Schistosoma mansoni*," a parasite that can cause symptoms similar to hepatitis: 329, 9889

#### Hepatitis A

321, 333 + 523 + 768 + 786, 346, 414, 423, 487, 558, 578, 693, 717, 878, 3220

#### Hepatitis B

334, 433, 477, 574, 752, 767, 779, 869, 876

#### Hepatitis C

*Set 1:* 20, 28, 72, 95, 125, 146, 166, 250, 444, 600, 650, 665, 802, 880, 1500, 1550, 1600, 1865, 2489, 3176, 3220, 5K, 10K

*Set 2:* 166, 224, 317, 329, 482.6, 528, 633, 929, 930, 931, 932, 933, 965.1, 1371, 1930.3, 2189

#### Hepatitis, More

If the above frequencies do not work: 1.2 + 250, 20, 95, 125, 146, 160 to 166, 284, 321, 433, 444 + 1865, 447, 458, 534, 600 + 625 + 650, 768, 777, 788, 1041, 1600, 2189, 2489, 3176, 3220, 9670

#### Icterus, Hemolytic

Chronic jaundice. The liver malfunctions and its bile pigment is distributed into the blood and turns the skin yellow. Often accompanied by anemia, a deficiency of red blood cells. This complex condition can have many causes, from organ disturbances to poor nutrition. See a health care practitioner—if your liver malfunctions, your system can be poisoned very quickly.

243, 768

#### Jaundice / Bilirubinemia

A condition in which the bilirubin, or orange-yellow bile pigment resulting from the normal breakdown of red blood cells, is not properly eliminated by the liver and instead is distributed back into the blood, turning the skin yellow. Also see entries under *Gallbladder* under **Liver and Gallbladder**; "*Leptospira* / Leptospirosis" under **Bacteria**; and several "Fluke" entries under **Parasites**, **Protozoa**, **and Worms**.

First try: 1.2 + 250, 649, 717, 726, 731, 734, 863, 9305

Also try: 10, 20, 72, 95, 125, 146, 444 + 1865, 600 + 625 + 650, 802 + 1550, 880, 1500, 1600

#### Lipoma

Fatty tumor, usually benign and in clusters, often just under the skin. Since improper fat metabolism and liver dysfunction may be involved in lipoma formation, eliminate fatty foods, including dairy. Massage the soft tissue surrounding the lipoma with almond or another mild vegetable oil that has been infused with rosemary essential oil.

Also see "Liver Cancer" under **Cancer** in case the tumors become malignant, as well as other entries in this section.

First try: Sweep of 7 to 10 Hz for 1 hour.

Then try: 47 (for 5 minutes), 440, 606 (for 5 minutes), 709 (for 5 minutes), 2K to 2200 (sweep, or in increments of 5 Hz with 30 seconds to 1 minute for each increment)

#### Liver Function, to Support and Balance

33.13, 537, 751, 802 + 1550, 1552

#### Lymphoma in Liver

See "Lymphoma, Non-Hodgkin's" under **Cancer**.

#### Necrosis of Liver

Death of some areas of tissue, surrounded by healthy parts. Also see "*Listeria monocytogenes* / Listeriosis" under **Bacteria**; and the various "*Schistosoma*" entries under **Parasites**, **Protozoa and Worms**.

33, 33.13, 802 + 1550, 1552

#### Stones in Liver

Hardened mineral material that can cause pain and inflammation.

21

### *Gallbladder*

Not all mammals have a gallbladder. In humans, this organ is pear-shaped, about 2¾ to just under 4 inches in length (7 to 10 centimeters), and dark green due to its contents (bile). The gallbladder concentrates and stores less than ¼ cup (50 milliliters) of bile. The bile, made by the liver to digest fats, is released into the duodenum portion of the small intestine by the gallbladder when food enters.

Sometimes the bile becomes attached to mineral salts and is solidified into stones, which obstruct the bile ducts and cause pain. When the gallbladder becomes clogged with stones, most people have it removed. But since the liver cannot produce enough bile for each fatty meal, the gallbladder's function of storing bile is really very important. Therefore, it might be wiser to do a liver-gallbladder flush and correct the reason for the solidification of the mineral salts. Also see the liver entries under *Liver* in this larger **Liver and Gallbladder** section.

#### Cholecystitis

Excruciatingly painful gallstone attack from the clogging of the bile ducts. Also see "Gallstones" in this section.

481, 743, 865, 928

#### Cholecystitis, chronic

Long-term inflammation of the gallbladder.

432, 801, 1551

#### Dystonia with Osteitis

Impaired tonicity of gallbladder, with inflammation of bone.

2.65, 20, 724, 736, 743, 770, 787, 660 + 690 + 727.5, 880, 3K

#### Gallstones

Gallstones are formed by an accretion of cholesterol, bile salts, and/or lecithin in the gallbladder or bile ducts. The stones—which can number from one to several thousand—can be as small as a grain of sand or as large as a golf ball. According to some sources, up to 25% of all people have gallstones. Researchers believe that the formation of gallstones is based on body chemistry, weight, how often and how well the gallbladder contracts, how completely and frequently the gallbladder empties, and diet. Symptoms include abdominal pain (as the gallbladder contracts and stones pass through the bile duct), pain radiating up the back, digestive upsets such as burping, and burning in the chest. Try herbal and homeopathic remedies for gallstones, drink fresh vegetable juices, and avoid excessive starches and fats. However, surgery may be necessary to save your life.

2.65, 30.5, 20, 444 + 1865, 660 + 690 + 727.5, 787, 800, 880, 1552, 3K, 6K, 10K

#### Pain in Gallbladder

800, 802 + 1550

*End of Liver and Gallbladder section.*

### LOCKJAW

See "*Clostridium tetani* / Tetanus / Lockjaw" under **Bacteria**.

### LOCOMOTOR DYSFUNCTION / MOVEMENT DIFFICULTY

See "Ataxia" and "Ataxia, Spastic" under **Muscles**.

### LOU GEHRIG'S DISEASE

See "Amyotrophic Lateral Sclerosis (ALS)" under **Nervous System and Brain**.

### LUMBAGO

See under **Muscles**.

### LUPUS ERYTHEMATOSUS

Autoimmune disease similar to rheumatoid arthritis. Symptoms include severe joint swelling, muscle pain, fatigue, lesions on skin and mucous membranes, destruction of facial cartilage, nausea and vomiting, fever, edema, scaly rashes that won't heal, sun sensitivity, oral or nasal ulcers, inflammation of the lining of the lungs or heart, excess protein in the urine, certain types of seizures, abnormal changes in the blood, and often kidney failure. Environmental triggers include ultraviolet light, infections, medications, diet, and stress.

Nine out of ten people with Lupus are women. This is one of the most difficult conditions for mainstream medicine to treat; it can be fatal. Consult an experienced holistic health practitioner. See numerous entries under **Parasites**, **Protozoa and Worms**; and try the general set for **Cancer**. Also see "*Mycoplasma*, many types" under **Bacteria**, since *Mycoplasma* infection is often the beginning of autoimmune conditions.

First try: 243, 244, 352, 386, 442, 633 (for 5 minutes), 660 + 690 + 727.5, 702, 776, 787, 802 (for 8 minutes) + 1550, 880, 921, 942 (for 3 minutes), 993, 1333, 1464, 1850, 2008 (for 8 minutes), 2125 (for 4 minutes), 2489, 3612 (for 4 minutes)

Also try: 205, 771, 842, 847, 921, 7865

Then try: 304, 481, 664, 678, 784, 1552, 2180, 2128

### LYME

See "*Borrelia*, all types / Borreliosis / Lyme Disease" under **Bacteria**.

### LYMPH CONDITIONS, MANY

See under **Lymphatic System**.

### LYMPHATIC LEUKEMIA

See "Leukemia, Lymphatic" under **Cancer**.

### LYMPHATIC SYSTEM

The lymphatic system consists of a long series of channels called lymph vessels that run parallel to the blood vessels; lymph nodes (confusingly called lymph "glands"); and lymphocytes, which are a type of white blood cell responsible for immune support. The tonsils, adenoids, and spleen are also part of the lymphatic system. The tonsils consist of lymph tissue and are located in the throat. The adenoids (sometimes called the pharyngeal tonsils) consist of lymph tissue as well. They are located at the very back of the nose. The spleen—a fist-sized organ above the stomach, under the ribs on the left side—does not contain lymph tissue. However, it plays a vital role in reducing infection by purifying the blood. Foreign substances are filtered out from red blood cells. Then the rejuventated red blood cells are stored in the spleen until the body requires extra blood.

Lymphatic fluid (or simply, "lymph") begins as blood plasma (blood without red blood cells). The lymph fluid seeps out from the blood vessels into the spaces surrounding each cell. After absorbing waste products from cell metabolism, the fluid diffuses into the tiny porous lymph capillaries, where the lymphocytes inside the lymph capillaries clean and filter it, neutralizing toxins and destroying bacteria and viruses. Then the lymph fluid returns to the circulatory system.

Lymph fluid is clear but very dense. The lymphatic system circulates lymph fluid throughout the body similar to the way the cardiovascular system circulates blood. However, since the lymphatic system does not have the equivalent of

a heart to pump the fluid, exercise or massage are required to move the viscous lymph through the lymphatic vessels. Jumping on a rebounder (miniature trampoline) is a low-impact, very effective way to enhance lymphatic circulation (see the section on **Exercise** in Chapter 3).

The 500 to 600 lymph nodes—clustered in the underarms, groin, neck, chest, and abdomen—are constructed from connective tissue in a honeycomb shape. The ones in the neck that swell during illness are often called "swollen glands." When the body is fighting an infection, the lymphocytes multiply rapidly, therefore making the lymph nodes swell. The two types of lymphocytes (which have different jobs) are T-cells (so called because they mature in the thymus) and B-cells (so called because they mature in the bone marrow).

Electromedicine and frequency devices that are made for contact with the body may move lymph better than freestanding plasma light units, since the dense tissue needs mechanical stimulation to promote flow. Also see more frequencies under **Respiratory Tract**, *Throat and Lymph Nodes*.

#### Adenoids, Swollen

Swollen lymphatic tissue located primarily in the throat, but sometimes in other places, too.

14, 20, 333 + 523 + 768 + 786, 428, 444 + 1865, 590, 660 + 690 + 727.5, 776, 780, 787, 802 + 1550, 807, 810, 880, 1570, 2K, 2170, 2720

#### Fluke, Lymph

Worm appearing in the lymph vessels.

157, 10050

#### Glanders

Caused by the bacillus *Pseudomonas mallei*, Glanders primarily involves the mucous membranes of the mouth and respiratory system, and occasionally the lymph nodes (where it is called Farcy). Mostly horses, mules and donkeys are affected, but occasionally the microbe is transmitted to humans, goats, sheep, cats, and dogs. Glanders is not common in the United States or Europe, but it still appears in Asia, Africa and South America.

First try: 501, 660 + 690 + 727.5, 687, 743, 774, 857, 875, 1273

Also try: 20, 787, 880

#### Lymph Plaque

Buildup of solidified material in the lymph channels.

346, 596

#### Lymph System Circulation / Drainage, to Increase

Since lymph tissue is so dense, contact devices may work better for this symptom picture than freestanding plasma light devices. Also see applicable frequencies under **Chemical Poisoning / Detoxification**. Sauna therapy also helps eliminate waste from the system. Make sure to replace missing electrolytes.

1.5, 3.6, 6.3 + 148, 146, 8, 10, 10.36, 15, 15.05, 15.33, 20, 20.5, 66, 146, 324, 428, 440, 444 + 1865, 465, 522, 528, 660 + 690 + 727.5, 676, 743, 787, 880, 1K, 2112, 3176, 5K, 10K

#### Short Set, Lymphatic Drainage

522, 146

#### Lymphangitis

Inflammation of lymph vessels in humans and horses, most commonly involving *Strep* but also including other bacteria as well as fungi.

Also see the many entries under **Cancer**; and under **Candida**, **Fungi**, **Molds and Yeasts**.

574, 778, 1120, 1078, 3176

#### Lymphatic Leukemia

See "Leukemia, Lymphatic" under **Cancer**.

#### Lymphedema / Edema / Dropsy / Water Retention

Abnormal fluid retention in the arms, legs, face, neck or trunk, caused by a sluggish or malfunctioning lymph system. Symptoms include warmth and redness of skin, decreased limb strength, restricted movement, and swelling in tissues (clothing, shoes, and jewelry may be tight). The lymphedema may have no obvious cause, or it may develop after surgery or other trauma. If untreated, this condition may lead to cellulitis.

Cells in the body that are deprived of oxygen or nutrients, or exposed to poison or physical trauma, lose potassium, absorb sodium and chloride, and expand from excess water. This excess water in the tissues causes the body to bloat and swell. Water retention is associated with many factors, including mineral (and thus electrolyte) imbalance, the acidification of bodily tissues, and inadequate protein intake. If you can, determine the cause of the water retention.

This edema is from a different cause than cardiac edema, and needs different frequencies. People who are wearing pacemakers, and those without pacemakers but who still have heart conditions, must see the warning under **Heart**, **Blood and Circulation** before using this technology. Also see other frequencies in this section, including "Lymph System Circulation / Drainage, to Increase"; various kidney frequencies under **Urinary Tract**, *Kidneys*; and "*Candida albicans*" under **Candida**, **Fungi**, **Molds and Yeast**.

From Jimmie Holman: 25308, 26196, 27084, 27972, 28860, 29748, 30636, 31524, 32412, 33300, 34188, 35076, 36852, 37740, 38106, 38628, 40404, 41292, 43068, 43956, 44844, 45732, 47508, 48396, 49284, 50172, 51060, 51948, 52836, 53724, 55000, 55500, 58164

Also try: 6.3 + 148, 20, 24.3, 146, 440, 444 + 1865, 465, 522, 660 + 690 + 727.5, 787, 880, 3K, 5K, 10K

#### Lymphocytes, to Stimulate Production of

2791, 2855, 2867, 2929, 3347, 3448, 4014, 5611

#### Lymphogranuloma, Malignant

See "Hodgkin's Disease / Lymphogranuloma, Malignant" under **Cancer**.

#### Spleen, Enlarged, and other Conditions

The spleen, a bean-shaped organ positioned beneath the left breast at an angle, contains the largest mass of lymph tissue in the body, covered by connective and smooth muscle tissue. It is connected to the rest of the lymphatic system by lymph vessels. Unlike the lymph vessels, the spleen does not carry lymphatic fluid; and unlike the lymph nodes, the spleen does not filter or clean lymph. Instead, it produces what eventually turn into antibody-producing blood plasma cells. Antibodies, a basic aspect of the body's immune function, are the biochemical agents against specific microbial or foreign antagonists in the body. The spleen also breaks down bacteria and worn-out or damaged blood cells, and creates new blood cells.

20, 27.44, 35, 465, 660 + 690 + 727.5, 787, 802 + 1550, 880, 1800, 2170, 2720, 3176, 10K

#### Thymus Conditions

The thymus gland, which contains lymphatic tissue, is part of the lymphatic system. It plays a major role in immune function by producing hormones that help with immunity and by also producing T-Cells (T for "thymus) that destroy microbes. The thymus is highly affected by the emotions. Medical authorities consider it normal that the gland atrophies as we age, but proper nutrition and love will help ensure that the immune function remains vital. Light rhythmic thumping on the chest can stimulate the thymus to work more efficiently. For more information on the lymph system, see the section on **Exercise** in Chapter 3.

##### Thymus, to Balance and Normalize

20, 537

##### Thymus Gland Fever

20, 10K

*End of Lymphatic System section.*

### LYMPHOGRANULOMA, MALIGNANT

See "Hodgkin's Disease / Lymphogranuloma, Malignant" under **Cancer**.

### LYMPHOGRANULOMA VENEREUM (LGV)

See under **Men**, *Penis* or **Women**, *Vagina and Labia*.

### LYMPHOMA, ALL TYPES

See under **Cancer**.

### LYSINE, TO STIMULATE PRODUCTION OF

Lysine is an amino acid, one of the building blocks of protein. It helps the body eliminate yeast and parasite infestations.

391, 782, 1564.1, 1950.5, 3128.2, 6256.4

## –M–

### MACULAR DEGENERATION

See under **Eyes**.

### MALABSORPTION SYNDROME

See under **Gastrointestinal Tract**.

### MALARIA

A tropical disease transmitted through a mosquito harboring the *Plasmodium falciparum* parasite. The parasite circulates throughout the system, infecting the liver and red blood cells, causing fever, anemia, spleen enlargement and usually death. When a parasite gets stuck in a capillary in the brain and blocks circulation, the person suffers a seizure and dies within three days of the initial appearance of symptoms. About 2.7 million people per year in tropical countries die from malaria.

For over a millennium, the Chinese have successfully administered wormwood (*Artemisia absinthium*). The herb is soaked in water overnight, and the water is drunk the following morning. Wormwood, activated by the presence of iron, releases free radicals that destroy the parasite's cell membranes. (The red blood cells inhabited by the parasite are rich in iron.) The drug Artemisinin® is derived from *Artemisia annua*, or sweet wormwood.

New research finds a 34% decrease in malaria in children who receive Vitamin A and zinc supplementation. Malaria can also be treated homeopathically. Try all frequencies below for at least 6 minutes each.

20, 222, 455, 550, 555, 713, 743, 930, 1002, 1019, 1032, 1348, 1433, 1473, 1518

### *MALASSEZIA FURFUR*

See "*Malassezia furfur* / *Microsporon furfur* / Tinea Versicolor" under **Candida**, **Fungi**, **Molds and Yeasts**.

### MANGE / FOLLICULAR MANGE / SCABIES

See under **Skin**.

### MANIC DEPRESSION

See "Bipolar Disorder / Manic Depression" under **Mind and Emotions**.

### MASTITIS

See "Breast Inflammation / Mastitis" under **Women**, *Breasts*.

**MASTOIDITIS**
See under **Bone and Skeleton**.

**MEASLES**
See "*Rubeola* / Measles" under **Viruses**.

**MEASLES, GERMAN**
See "*Rubella* / German Measles / 3-Day Measles" under **Viruses**.

**MELANOMA METASTASIS**
See under **Cancer**.

**MEMORY, TO IMPROVE**
See under **Mind and Emotions**.

**MEN**

Since male and female genitals evolve from the same embryological tissue, they are homologues—that is, they correspond in structure, character, and usually function. The following body parts are homologues: the male penile glans and female clitoral glans; the male corpora cavernosa and female clitoris; the male corpus spongiosum and female vestibular bulbs beneath the labia minora; the male scrotum and female labia minora and labia majora; and the male foreskin and female clitoral hood.

Even though male and female plumbing are different, and men often do not experience symptoms while women do, both sexes are susceptible to the same sexually related diseases. The asymptomatic man can carry the infection and pass it to his female partner. Therefore, it's very important (and courteous) to get a thorough checkup if you think you have been infected.

***Penis***

The human penis is made up of three columns of erectile tissue, the end of which forms a cone-shaped head or glans. The foreskin, on the head, consists of a loose fold of skin. The human penis differs from those of some other mammals. It has no erectile bone, but instead relies entirely on engorgement with blood to reach its erect state. Erection in the male can occur in both sexual and non-sexual situations. The arteries supplying blood to the penis dilate, allowing more blood to fill the three spongy erectile tissue chambers in the penis, which then lengthens and stiffens. The average human penis is 5 inches (12.7 cm) in length when fully engorged with blood during arousal. Generally, size does not correspond strongly to reproductive ability.

Some cultures practice circumcision, a process where the foreskin on the penis is surgically removed. Although this procedure is rationalized as proper for either religious or health reasons, there is strong evidence that circumcision is not only unnecessary, but it actively interferes with sexual pleasure—and in some cases, causes permanent harm. Although men may not consciously remember the procedure, the cellular imprint of pain and fear remains in the body unless it is released. If you are not circumcised and have concerns related to sanitation, see "Smegma" in this section.

***Herpes*, all types**

Sores in genitals, mouth, or on the skin along nerves, where it is known as *Herpes zoster* or shingles. Try the frequencies at the beginning first, and especially do the sweeps. Contrary to popular belief, the different types of *Herpes* are interchangeable.

20, 26, 120, 125, 200, 322, 343, 395, 420 to 480, 428, 444 + 1865, 465, 476, 533, 554 to 556, 660 + 690 + 727.5, 660 to 665, 701, 745, 776, 787, 802 + 1550, 804 to 808, 822, 832, 843, 880, 1K, 1043, 1488 (for 15 minutes), 1489, 1500, 1552 to 1557, 1600, 1614, 1800, 1850, 1864, 2K, 2062, 2127.5, 2170, 2450, 2489, 2720, 3K, 5K, 8031

**Jock Itch**

Peeling skin, irritation and itching are caused by *Epidermophyton floccinum*, a fungus that attacks skin, nails, and also the feet (where it is called athlete's foot). The fungi that attack the skin are often interchangeable and do not confine themselves to any one area. Also see the various *Trichophyton*, *Microsporon* and *Microsporum* entries, "General Fungus / Molds / Yeasts," and "*Candida albicans*," all under **Candida**, **Fungi**, **Molds and Yeasts**.

20, 345, 465, 644, 660 + 690 + 727.5, 766, 784, 802 + 1550, 880

**Lymphogranuloma venereum (LGV)**

A venereal disease caused by *Chlamydia trachomatis*. Symptoms include inflammation, and enlargement and ulceration of the lymph glands in the groin area.

First try: 552, 1522, and 430, 555.7, 620, 624, 840, 866, 2213, 1111.4, 2222.8 (for *Chlamydia trachomatis*).

If that doesn't work, try: 4710.5, 479, 620, 940.1, 942.9, 1880.1, 1885.9, 3760.3, 3771.7, 7520.5, 7543.4 (for *Chlamydia pneumoniae*)

**Seminal Vesiculitis**

Inflammation, blockage and often infection of the seminal vesicles, the sacs that temporarily store semen before it is emitted through the penis, caused by the bacterium *Micrococcus tetragenus*.

393, 433, 2712

**Sex Gland Fever**

20, 10K

**Smegma**

An unhealthy, smelly buildup of the fatty secretion from the skin between the glans penis and the foreskin in the male, or around the clitoris and labia minora in the female. Keep the area clean, using very mild and simple soaps, or if necessary, a 3% solution of food grade hydrogen peroxide.

153, 180, 638

**Syphilis**

Highly infectious disease that can cause lesions in the sexual organs, fever, headache, swollen glands, rash on the hands and feet, and ultimately blindness, heart disease and insanity if not treated. Syphilis is insidious because the microbe enters the bloodstream during sex and can go anywhere in the body. Within 10 to 90 days after infection, a sore may appear on or around the sex organs, rectum or mouth. Syphilis can exist on a sub-clinical level. If untreated in pregnant women, it can cause birth defects and even death to the baby. Women with chronic vaginal discharge, or men and women with so-called sexual dysfunctions, might want to try syphilis frequencies if other numbers aren't working. Also see other related categories.

From Royal Rife, used on his #4 machine: 789K

Also try: 20, 120, 177, 600 + 625 + 650, 658, 660 + 690 + 727.5, 700, 902

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 346850 (lower limit), 347K (most effective), and 347400 (higher limit of same organism)

Hertz set: 859.76 (lower limit), 860.13 (most effective), and 861.12 (higher limit of same organism)

Also from Dr. Clark: 17276.11

***Trichomonas vaginalis***

An aerobic protozoan parasite usually found in the vagina, causing itching, burning, and foul-smelling discharge. Although a woman is generally more symptomatic than a man from a *Trichomonas* infection, the man should be treated since the parasite does lodge itself in his genital-urinary tract and can be passed back and forth between sexual partners.

610 + 692 + 980

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 378K (lower limit), 381K (most effective), and 383600 (higher limit of same organism)

Hertz set: 936.97 (lower limit), 944.40 (most effective), and 950.85 (higher limit of same organism)

Also from Dr. Clark: 18968.87

**Wart, Venereal / Condyloma**

Benign but very painful, sometimes bleeding tumors with a branch or stalk and sometimes white patches, caused by the *Papilloma* virus. Men do not feel the negative effects of venereal warts as strongly as women do. In women, if this condition is not eliminated, it can lead to cervical cancer.

First try: 45, 110, 265, 404, 446, 466, 489, 660 + 690 + 727.5, 767, 874, 907, 1011, 1051, 2127.5, 5657, 9258, 9609

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz sets:

402850 (lower limit), 407K (most effective), and 410700 (higher limit of same organism)

404050 (lower limit), 404300 (most effective), and 404600 (higher limit of same organism)

Hertz sets:

998.57 (lower limit), 1008.85 (most effective), and 1018.02 (higher limit of organism)

1001.54 (lower limit), 1002.16 (most effective), and 1002.90 (higher limit of same organism)

If the above frequencies don't help, try these additional wart frequencies: 173, 466, 495, 644, 767, 787, 797, 877, 907, 915 (for 30 minutes), 918 (for 30 minutes), 953, 1500, 1600, 1800, 2008, 2170, 2720, 2489

***Prostate***

The male prostate is a muscular gland that surrounds a portion of the bladder and urethra (the tube for urinating that leads from the bladder to the outside of the body). The prostate is partly responsible for the secretion of semen, the carrier fluid of sperm. If the prostate enlarges too much—a common occurrence during middle age (one estimate is about half the male population over 60 years of age)—it can crowd the urethra and impede the flow of urine. If urine flow is entirely stopped, it can seriously affect the kidneys. In addition to using frequencies, consider asking someone you trust to gently knead your prostate, administered by a finger inserted into the rectum with the person wearing latex. (Do not lubricate a latex glove—or condom, for that matter—with petroleum jelly. Since petroleum jelly can eat through latex, the latex

will not provide any birth control protection. Also, since this product is made from crude oil, it prevents respiration in any tissue it touches.)

#### Prostate Conditions, General

1.1 + 73, 9, 9.19, 9.39, 9.4, 13.73, 20, 72, 95, 125, 408, 465, 660 + 690 + 727.5, 664, 802 + 1550, 787, 880, 2008, 2050, 2127.5, 2250, 2720

#### Prostate Cancer

See under **Cancer**.

#### Prostate Hyperplasia

Rapidly growing, abnormal increase of cells without the formation of a tumor, but with an increase in size of an organ or body part.

920

#### Prostate Tumor, Benign / Prostatitis

Since benign tumors can become malignant, you are strongly advised to also see "Prostate Cancer" under **Cancer**.

20, 60 + 100, 72, 95, 125, 146, 410, 442, 444 + 1865, 465, 522, 660 + 690 + 727.5, 688, 748, 766, 776, 787, 802 + 1550, 1875, 2008, 2050, 2127.5, 2170, 2250, 2489, 2720

### *Sexual Functioning*

Sexual functioning does not solely consist of whether a man can "get it up" or a woman can climax. It is also related to the ability to show love and respect for others, and to receive love.

#### Impotence, many types

The word "impotence," like the word "frigidity," has negative connotations. Socially and psychologically stigmatizing, it does not address the human aspect of sexual dysfunction: feelings of devitalization, powerlessness, and emotional distance—from oneself, others, and Source. To be impotent is to be robbed of one's life force.

Impotence is usually considered more of a problem for men than women, undoubtedly because in Western culture the masculine identity is associated with performance and aggression (if not outright coercion). However, when a woman is unable to climax and enjoy herself sexually, this is as serious a problem as when a man has difficulty. In a sexual union, each partner is meant to enjoy him- or herself, and feel connected to him- or herself and to each other.

Often, there is a physical component to sexual dysfunction. For instance, the woman may have an infection. This is important to the man, because virtually all pathogens can be passed from one partner to the other even if one partner is asymptomatic. The same or similar microorganisms in both men and women can cause symptoms that lead to sexual dysfunction. Have a thorough checkup. Psychological counseling may be advised, particularly in cases of sexual abuse, rape and assault. Also see "Gonorrhea" and other entries under **Men**, *Urinary*.

1.1 + 73, 9.39, 9.4, 20, 72, 95, 124, 125, 335, 465, 536, 600 + 625 + 650, 622, 660 + 690 + 727.5, 712, 787, 802 + 1550, 880, 2008, 2127.5, 10K

#### Infertility

Pollutants and environmental toxins (plastics, herbicides, pesticides, etc.) have radically decreased the sperm count in males of all species (and caused birth defects in the young). Less research has been done on the effects of toxins on women, although the drug DES is now banned because of the deforming effects on the developing embryo. Infertility has also been linked to estrogens that are routinely added to the feed of commercially-raised (non-organic) cattle and poultry. Note that this is a shortened set for "Impotence, many types" in this section.

9.39, 9.4, 335, 465, 536, 600 + 625 + 650, 622, 660 + 690 + 727.5, 712, 802 + 1550, 787, 880, 2127.5, 2008

### *Testicles*

The testicles (or testes) are the male sex glands. There are two, one resting in each scrotum (sac) hanging below the penis. The testicles secrete hormones including testosterone and androstenedione, which are responsible for the formation of secondary sex characteristics (among them deepening voice and facial and pubic hair), the production of sperm cells, and metabolic functions unrelated to reproduction. The testicles operate via a complex feedback loop with the other endocrine glands.

Sperm cells are most efficiently produced in temperatures slightly less than the core body temperature (98.6°F or 37°C). When the temperature for sperm production is too cool, the muscle holding the testicles contracts the testicles closer to the body to provide the necessary warmth. When the temperature for sperm production is too warm, the muscle holding the testicles relaxes, lowering the testicles away from the warm body.

#### Epididymitis

Inflammation of the epididymis, a part of the testicle that stores the sperm that the testes produce. This condition also includes the epididymal ducts. You are strongly advised to use additional frequencies to prevent the infection from spreading to the testicles. Also see "Orchitis" in this section.

20, 660 + 690 + 727.5, 787, 880, 1500

#### Hormonal Imbalance, Male

50.5, 537

#### Hydrocele

Excess fluid in a testicle or testicles.

660 + 690 + 727.5, 787, 880

#### Orchitis

Testicle inflammation due to tuberculosis, mumps, gonorrhea, cancer, or other trauma. Also see causative condition if known.

9, 14, 20, 72, 95, 125, 600 + 625 + 650, 660 + 690 + 727.5, 776, 787, 802 + 1550, 832, 880, 1500, 1600, 1800, 2008, 2127.5, 2170, 2720, 2489, 10K

#### Seminal Vesiculitis

Inflammation, blockage and often infection of the seminal vesicles, usually caused by the bacterium *Micrococcus tetragenus*. The seminal vesicles are sacs that temporarily store semen before it is emitted through the penis.

393, 433, 2712

### *Urinary*

The urethra, part of the urinary tract closest to the tip of the penis, is a passage for both urine and semen. Symptoms of sexually related diseases will often appear in the urethra where the man would otherwise be asymptomatic. For this reason, some conditions are included in this section; but for a more complete listing, see the many frequencies under **Urinary Tract**.

#### Bladder Infection / Inflammation with possible Urethra involvement

Pain on urination, sometimes with pus in the urine. The urethra—the tube leading from the bladder to the outside of the body—is often infected along with the bladder. Also see "*Candida albicans*" under **Candida**, **Fungus**, **Molds and Yeasts**.

1.1 + 73, 1.2 + 250, 9.39, 9.4, 10, 20, 40, 72, 95, 125, 246, 360, 444 + 1865, 465, 498, 530, 600 + 625 + 650, 630, 642, 660 + 690 + 727.5, 724, 726, 771, 776, 787, 802 + 1550, 832, 880, 1500, 1600, 1800, 2045, 2050 (or 2045 to 2050 for 20 minutes), 2127.5, 2170, 2250, 2720, 10K

#### *Chlamydia pneumoniae*

A form of *Chlamydia*—see below. Recent research implicates this microbe in Multiple Sclerosis. Run each frequency for 5 minutes.

*Program 1:* If your unit can't do decimals, round up or down to the nearest number. 4710.5, 470 to 472, 479, 620, 940.1, 942.9, 1880.1, 1885.9, 3760.3, 3771.7, 7520.5, 7543.4

*Program 2:* 471, 942, 1886, 3772, 7543

#### *Chlamydia trachomatis*

A bacterium involved in a sexually transmitted infection that can cause conjunctivitis, urethritis, and proctitis and may be a causal factor in Multiple Sclerosis and cancer. This microorganism is involved in many conditions, including conjunctivitis (inflammation of the mucous membranes of the eyes), lymphogranuloma venereum (venereal disease characterized by inflammation and ulceration of the lymph glands), urethritis (inflammation of the urethra or urinary tube), and proctitis (inflammation of rectum and anus). If not treated, the infection may result in miscarriage and infertility in women. It can also be passed to infants in the birth canal, causing eye infections and pneumonia. New findings suggest that this organism may play a developmental role in Multiple Sclerosis, so it is important to get your condition treated. Also see "*Chlamydia pneumoniae*" (above) and "Lymphogranuloma venereum (LGV)" under **Men**, *Penis*.

430, 555.7, 620, 624, 840, 866, 2213, 1111.4, 2222.8

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 379700 (lower limit), 381K (most effective), and 383950 (higher limit of same organism)

Hertz set: 941.18 (lower limit), 944.40 (most effective), and 951.72 (higher limit of same organism)

Also from Dr. Clark: 18968.87

#### Gonorrhea

Caused by the bacterium *Neisseria gonorrhoeae*. Symptoms include inflammation of the genital mucous membrane with painful urination. There can also be inflammation in the joints, and in the mucosa of the eyes, mouth and rectum. An infection can exist on a sub-clinical level. Although men usually experience burning during urination with possibly a drip or discharge from the penis, many women do not even feel symptoms. If untreated, the microbe can migrate to many areas of the body and produce complications that we know of as other diseases, such as arthritis, prostatitis, epididymitis, orchitis, cystitis, Pelvic Inflammatory Disease (PID), and endocarditis. Also see other frequencies under **Women** or **Men**.

From Royal Rife, used on his #4 machine: 233K

600 + 625 + 650, 660 + 690 + 727.5, 712

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 333850 (lower limit), 334K (most effective), and 336500 (higher limit of same organism)

Hertz set: 827.53 (lower limit), 827.90 (most effective), and 834.10 (higher limit of same organism)

Also from Dr. Clark: 16628.88, 927.90

#### Urethritis

Inflammation/infection in the urethra, the tube leading from the bladder to the outside of the body, characterized by burning on urination with possible discharge from the penis. Also see "*Candida albicans*" under **Candida**, **Fungus**, **Molds and Yeasts**.

1.2 + 250, 72, 95, 125, 444 + 1865, 465, 600 + 625 + 650, 660 + 690 + 727.5, 776, 787, 802 + 1550, 832, 880, 1500, 1600, 1800, 2127, 2170, 2720

*End of Men section.*

### MÉNIÈRE'S DISEASE

See under **Ears**.

### MENINGIOMA

See under **Tumors**, **Benign**

### MENINGITIS, FROM VARIOUS SOURCES

See under **Nervous System and Brain**.

### *MENINGOCOCCUS* VIRUS

See "*Meningococcus* Virus / Meningitis" under **Viruses**.

### MENINGOENCEPHALITIS

See under **Nervous System and Brain**.

### MENOPAUSE, ALL

See under **Women**, *Menstruation and Menopause*.

### MENSTRUATION, ALL

See entries under **Women**, *Menstruation and Menopause*.

### *MICROSPORON*, ALL TYPES

See under **Candida**, **Fungi**, **Molds and Yeasts**.

### *MICROSPORON FURFUR*

See "*Malassezia furfur* / *Microsporon furfur* / Tinea Versicolor" under **Candida**, **Fungi**, **Molds and Yeasts**.

### *MICROSPORUM*, ALL TYPES

See under **Candida**, **Fungi**, **Molds and Yeasts**.

### MIGRAINE

Pain in the side of the head, typically along the 5th cranial nerve, accompanied by disordered vision, nausea, chill, and fatigue. Migraines may be caused by allergies, drugs, chemicals, unsuitable food, a toxic liver, menstrual difficulties, hormonal conditions, worry, or even strenuous exercise.

Often, migraines can be caused by low blood sugar. The brain, small compared to the rest of the body, utilizes 25% of the body's glucose at any given time. A drop in blood sugar levels of as little as 5% can cause great fatigue and adversely affect thinking, mood and motor coordination, among other brain functions. If glucose levels in the blood decrease, the body compensates for this by increasing the blood volume, so that more glucose is brought to the brain. The best way to increase blood volume is to increase blood flow though the expansion of the blood vessels. Over a period of time, the bulging blood vessels repeatedly pressing on nerves can cause pain.

Avoid caffeine and other drugs, fake foods, overly fatty foods, and grains. Rest in a dark room. Alkaline, mineralized water may be helpful. Also see **Headache**; "General (unspecified)" and "*Strongyloides stercoralis* / Threadworm" under **Parasites**, **Protozoa and Worms**; and **Blood Sugar Levels**.

10, 40, 160

### MIND AND EMOTIONS

Mental health is defined and partially enforced by the political institutions of mainstream psychiatry and psychology. These institutions follow conformist values; any deviations from, and disagreements with, their standards, are classified as illness. Nevertheless, this category still has value. Emotional distress is an observable fact, certainly to the sufferer. And antisocial behaviors generally reflect emotional turmoil.

However, not all causes have emotional or mental roots. Mental illness may be intricately related to microbes and microbial waste in the system. Frank Strick, of The Research Institute for Infectious Mental Illness, points out that the medical profession already recognizes that many infections induce psychiatric symptoms. Just a few examples are malaria, Legionnaire's disease, syphilis, typhoid, diphtheria, *Candida*, HIV, rheumatic fever, and *Herpes*. The toxins released by pathogenic microbes cannot be underestimated. Microbes are almost certain to be present in mental disturbances for three reasons. One, stress hormones create an acidic environment, which breeds pathogens. Two, the upset person may be overeating sugars, starches or alcohol, which create an acidic environment. Three, an electrolyte imbalance (which in itself can cause depression) generally creates an acidic environment.

Often, mental disorders can be related to food. Some sources estimate that about 50% of people who are depressed show high levels of antigliadin enzymes. Gliadin is a highly allergenic protein in wheat and other grains, which destroys the lining of the gut and creates almost unlimited disorders, ranging from joint pain to schizophrenia. Casein, a milk protein, has similar effects.

Eliminate heavy metals, which are very toxic and can settle in the brain. The liver and kidneys should also be strengthened to deal with the toxins. Although microbes and toxins are usually implicated in this symptom picture, structured psychological support is additionally suggested. Frequencies are not a replacement for Reichian therapy, Neuro-Linguistic Programming (NLP), hypnosis, Kathara Healing, or some other type of emotional healing work. The Emotional Freedom Technique (EFT) can be self-administered; it has a high success rate in reducing stress and lessening (or completely eliminating) negative physical and emotional conditions. For more information, see "Body-Mind Therapies" in the Resource Appendix.

Many physicians like to prescribe the drug lithium for people suffering from mental disorders. It is worth noting that the trace element lithium is present in natural sea salt and vital to the body's functioning—but it's very different from the synthesized drug, as discussed in Chapter 1. Some naturopaths successfully treat emotional conditions with either minute quantities of organic lithium or homeopathic doses of lithium. This suggests that a person with emotional imbalances might simply be deficient in one or more trace minerals.

For all types of mental and emotional imbalances, many health practitioners are recommending that their clients take 1 teaspoon of L-glutamine powder, with ¼ teaspoon of L-tyrosine powder, under the tongue, several times a day. These two amino acids must be taken together, and in powder form, in order for the brain to benefit. L-glutamine has a naturally sweet taste (and also helps to curb carbohydrate cravings), so it is easy to eat. Deficiencies in amino acids (the building blocks of protein) play a huge role in mental and emotional disorders because neurotransmitters are comprised of amino acids and the brain won't function properly without them. (L-glutamine also plays a key role in balancing blood sugar levels, whose disruption negatively impacts mental health.)

Some of the following categories are admittedly arbitrary. For instance, diabetes is a physiological condition characterized by too much glucose in the blood, but it also commonly causes depression. Experiment with many frequencies in this section until you find ones that work for you. Also see "Heavy Metal Detox" and other entries under **Chemical Poisoning / Detoxification**; and entries under **Nervous System and Brain**.

#### General Aid

Especially if toxins are the cause.

4.9, 20, 72, 95, 125, 146, 428, 522, 802 + 1550, 10K

#### Addiction to Drugs

Also see "Alcoholism," "Calming, to Produce," and "Depression" in this section.

20

#### Akathisia / Agitation

Nervousness and restlessness commonly associated with the inability to remain seated. The so-called "side effects" of certain drugs such as Prozac® can create jitteriness, anxiety and tension that appear similar to the characteristics of Attention Deficit Disorder. These frequencies are also used for insomnia.

3 + 230, 7.83

#### Alcoholism

The over-consumption of ethanol alcohol—beer, wine, hard liquor—that among other symptoms causes edema of the brain, tissue degeneration, abnormal respiration, impaired judgment, incoherent speech, lack of muscular coordination and depression. Alcoholism causes nutritional deficiencies. Conversely, nutritional deficiencies can cause alcohol addiction. The person may metabolize sugar poorly (which may indicate either hypoglycemia or diabetes), and thus crave alcohol in a misguided attempt to instantly restore the blood sugar balance. Therefore, alcoholism can be regarded as the addiction to rapidly metabolized sugars and carbohydrates in the form of alcohol. The root Kudzu has been used to eliminate cravings; consult a macrobiotics practitioner.

People with this condition are likely to harbor fungi and parasites that are clamoring to be fed their favorite food (easily assimilable sugars)—causing the human host to develop an addiction to alcohol (or sugar) in order to feed them. The "high" one feels when drinking is from the death of brain cells by alcohol due to oxygen deprivation. Alcohol consumption often leads to antisocial behavior, ranging from drunk driving to interpersonal violence. Alcohol addiction also has a strong emotional component. Although rife sessions are designed to kill harmful organisms, the addiction to alcohol will return unless the person makes dietary, lifestyle and attitudinal changes, and faces any fears and traumas that provoked the drinking in the first place. Nevertheless, removing the harmful microbes from the system is an important step to control the problem.

Symptoms of alcohol poisoning appear interchangeable with symptoms of an overgrowth of *Candida albicans* or other *Candida* strains. The fungi excrete acetaldehyde (a potent toxin chemically related to formaldehyde), which interferes with the body's neurotransmitter pathways, metabolism, immune response, and nervous and endocrine systems. A craving for alcohol may indicate a *Candida* infection, and vice-versa; so make sure to see all of the *Candida* frequencies under **Candida**, **Fungi**, **Molds and Yeasts**.

Since alcoholism is a complex condition, all of its roots must be addressed. Some form of detoxification protocol such as sauna therapy could be helpful. See **Blood Sugar Levels** and follow the protocol for your particular condition. Also see "Meningitis" under **Nervous System and Brain** (to manage the swelling in the brain that occurs in advanced alcoholism); "Lymph System Circulation / Drainage, to Increase" under **Lymphatic System**; "Kidney Function, to Balance and Normalize" under **Urinary Tract**, *Kidneys*; and the "Hepatitis" entries and "Liver Function, to Support and Balance" under **Liver and Gallbladder**, *Liver*.

#### Hangover

Acute toxicity in the blood and lymph, resulting from the ingestion of alcohol. Symptoms include head and body aches, gastrointestinal disturbances, blunted motor responses, and malaise.

146, 522, 10K

#### Alzheimer's Disease

Abnormally high levels of the toxic metals aluminum—and now, mercury—are being discovered in the brains of people with Alzheimer's. These and other heavy metals can amplify, if not outright cause, this disorder. Never cook with aluminum cookware. Consider chelation therapy, the injection or ingestion of natural substances that bind with toxic metals so the body can then excrete them.

Also see "Heavy Metal Detox" under **Chemical Poisoning / Detoxification**. Dr. Lida Mattman has found the Lyme spirochete in every single person with Alzheimer's that she has ever treated, so also see "*Borrelia*, all types / Borreliosis / Lyme Disease," under **Bacteria**. Other microbes are also implicated. Also see "*Mycoplasma*, many types" under **Bacteria**; and under **Viruses**, "*Herpes simplex* 1," "*Herpes* Virus Type 5 (Human *Herpes* Type 5) / Cytomegalovirus (CMV) / Salivary Gland Virus," and "*Herpes* Virus Type 6 / Human *Herpes* Type 6."

430, 620, 624, 840, 866, 2213, 5148, 19180.5

#### Anger

When mycotoxins (waste materials from microbes) get into the brain, all kinds of emotional and physiological reactions can result. These frequencies are also useful for hostile dogs and cats. Also see other entries in this section.

3.6, 3.9, 6.3

#### Asthma / Bronchial Asthma

Spasm or swelling of the bronchial tubes in lungs. There is often an emotional component to this symptom picture—many people suffering from asthma harbor unresolved feelings, mostly grief and sadness. Avoid eating dairy, sugars, grains, citrus, excess red meat, and any other mucous-producing foods. Also try not to breathe in mold, mildew, and other pollutants.

0.5, 20, 72, 95, 125, 146, 444 + 1865, 522, 660 + 690 + 727.5, 787, 810, 880, 1233/1234, 1283, 1500, 1600, 1800, 2170, 2720

#### Attention Deficit Disorder (ADD) / Attention Deficit Hyperactivity Disorder (ADHD)

This diagnosis has become a heated political issue. If children are restless because they are bored in school, officials then have an excuse to label them with an unfavorable mental health diagnosis, and then drug them with toxic medication.

If the child is genuinely hyperkinetic and unfocused, and you are sure that there is no sexual abuse or other trauma, eliminate food additives including the artificial sweetener aspartame (see Chapter 1), and allergenic substances such as wheat, processed dairy, soy, and other common food irritants from the diet. Newer research shows abnormally low levels of iron in ADD children, indicating poor absorption—perhaps with low levels of B12, folic acid, and digestive enzymes as well (all of which help with iron absorption). It has also been found that when the atlas (the highest bone in the spine, just below the occiput or back of the head) is displaced, the resulting pinched nerves cut off enough energy flow to help produce the varied and often bizarre symptoms that the medical field characterizes as ADD.

It is well known that Prozac® and some other drugs given to hyperactive children often cause the very symptoms they are supposed to alleviate. So there is no excuse for drugging children. As holistic practitioners often remark, no one ever became ill from a Prozac® deficiency. Aromatherapists find that essential oils containing large amounts of sequiterpenes—sandalwood, rosewood and chamomile—provide tremendous benefits when rubbed on the skin. The frequencies below are also used for insomnia. Also see "*Shigella*" and the "*Chlamydia*" entries under **Bacteria**; and "Antiseptic Effect, to Produce" under **Chemical Poisoning / Detoxification**.

3 + 230

#### Autism

A broad spectrum of behavioral, mental and emotional dysfunctions beginning in childhood. Symptoms can include poor communications skills (using gestures or pointing instead of words); inappropriate verbal response (either lack of speaking, or repeating words or phrases in place of normal, responsive language); poor motor dexterity; sudden laughing or crying; social and emotional aloofness; tantrums; aversion to being touched; poor or no eye contact; inability to understand or fear danger; overactivity (spinning and twirling, of self and objects) or underactivity; an obsessive preoccupation with

inanimate objects; and resistance to change. One in 150 children is autistic.

More boys than girls become autistic. There are a number of contributing or causal factors to autism: prenatal (elevated levels of neuropeptides appear in neonatal blood samples of children who subsequently are diagnosed as autistic); digestive (when children are put on a casein- and gluten-free diet, they improve); and poisoning (a high number of children become autistic after being vaccinated, particularly with multiple-microbe vaccines, and with vaccines that contain the mercury preservative thimerosal). There is also possible microbial involvement: blood, cerebrospinal fluid, and gastrointestinal biopsy samples have yielded positive cultures of stealth viruses in a majority of autistic children tested by some researchers. This suggests that autism could be caused by a stealth viral prenatal infection of the brain, could occur in genetically predisposed infants, and could be triggered or exacerbated by vaccines and opiate-creating grain and dairy. Other contributing factors can include nutritional deficiencies, and emotional trauma (such as sexual abuse).

Autism can also be caused or exacerbated by preservatives and dyes in food, or the foods themselves. Often, the casein in dairy and the gluten in grain are simply allergic attacks to the brain. An allergy can have several components: the body lacks enzymes to break down food, and incompletely digested particles circulate in the bloodstream and irritate the tissues. Or, there are other proteins present in the substance to which the body reacts in a negative fashion. In either case, in autistic children the unmetabolized chemicals reach the parts of the brain involved with learning and speech, and react with the opiate receptors.

Another possible causal factor in autism is antibiotics. They disrupt the beneficial intestinal flora, which allows pathogenic bacteria in the gut to proliferate and sometimes migrate to the brain. This causes "brain poisoning" that manifests as the various symptoms of autism. Supplementation with beneficial intestinal bacteria usually produces profoundly positive changes.

I cannot emphasize strongly enough the dangers of vaccines. An alarmingly high number of normal children become autistic after receiving vaccinations. The mercury-based preservative thimerosal in the vaccines gravitates directly to nerve and brain tissue. Toxic mercury, microbes, and chemicals were never meant to be injected into anyone's veins. There is often a delayed response in a child to being inoculated: reactions can be noted in as little as 24 hours, or after several months. Mercury is much more difficult to expel when injected than eaten. By the age of 15 months, most children have been injected with over 200 times the EPA-approved "safe" level of mercury. In many cases, parents are forced to vaccinate. They don't have recourse to suing the drug companies or doctors if the child becomes ill, and sometimes they themselves are unjustly blamed and prosecuted for their own child's death.

Remove foods such as wheat, adulterated (and even raw) dairy, soy, food colorings, preservatives, and other allergens and poisons from the diet. If there is obvious psychological distress and trauma, get the child into psychotherapy. If it is not clear whether the causes are biochemical or emotional, begin therapy from a biochemical standpoint and then you will be able to see what is left to treat. An experienced holistic practitioner, such as a naturopath or homeopath, may make the difference between suffering and wellness for your child. Last but not least, try sauna therapy. As simple as it may sound, sweating is amazingly effective in eliminating heavy metals and other toxins. It is also painless, and often fun for a child. See my book, *The Holistic Handbook of Sauna Therapy*, for more information.

See "*Clostridium difficile*" under **Bacteria**, as this microbe emits toxins that can manifest as schizophrenia. Also see "*Shigella*" and the "*Chlamydia*" entries under **Bacteria**; the many entries under **Chemical Poisoning / Detoxification**; "*Borrelia*, all types / Borreliosis / Lyme Disease" under **Bacteria**; and "Attention Deficit Disorder (ADD) / Attention Deficit Hyperactivity Disorder (ADHD)" in this section.

#### Bed Wetting / Enuresis

A surprisingly high number of children wet their beds due to diet. Allergens such as citrus, soy, corn, adulterated milk products (homogenized and pasteurized), and tomato are chief offenders. So are spices, food colorings, and caffeine (found not only in coffee but also chocolate, a child's favorite), because they are all irritants. Children may also wet their beds if they feel frightened or neglected. Toilet training at too early an age or sexual abuse are also common causes—either of which, the emotional component aside, can provide a fertile breeding ground for microbes. With adult incontinence, the same microbes are implicated. Since bed wetting can also be caused by a parasite infestation, see "*Enterobius vermicularis* / Pinworm / Seatworm" under **Parasites, Protozoa and Worms**; or under **Gastrointestinal Tract**, *Small Intestine*.

Run for 10 minutes each: 465, 660 + 690 + 727.5, 787, 802 + 1550, 880, 2050, 2128, 2250, 10K

#### Bipolar Disorder / Manic Depression

Bipolar disorder is also called "manic depression" because a person's mood can alternate between the high mania pole and the low depressive pole. These mood swings can last hours, days, or longer. Symptoms indicate extreme changes in mood, cognition, energy and behavior. On the high, manic end, they can include increased physical and mental activity; feelings of exaggerated optimism and self-confidence; decreased need for sleep; inflated

sense of grandiosity; aggressiveness and irritability; racing speech, thought and movement; impulsive and reckless behavior; poor judgment; and distractibility, delusions and hallucinations. On the low, depressive end, symptoms can include prolonged sadness and depression; crying spells; agitation and anxiety; anger and worry; pessimism and indifference; marked changes in sleeping and eating; fatigue and lethargy; difficulty concentrating; social withdrawal; feelings of guilt and worthlessness; aches and pains; and recurring thoughts of suicide and death. People on manic episodes are known to spend money they don't have, become involved in high-energy projects, talk fast, and engage in high-risk, dangerous behavior. This disorder is different from "regular" depression because there is always a manic episode. Some people have more manic episodes than others.

Bipolar disorder is believed to affect over two million adult Americans, to begin in late adolescence (often appearing as depression during teen years), to affect equal numbers of men and women, and to be found among all ages, races, ethnic groups and social classes. Since the condition tends to run in families, it appears to have a genetic link.

The reality of this condition cannot be denied, even though the diagnosis is made by various medical organizations eager to use drugs as treatment. However, the fact that nutritional and herbal supplements are used with success, suggests that the biochemical imbalances in the brain may be nutrient-based. (As holistic practitioners are fond of saying, no one is born with a Prozac® deficiency. But one might be lacking vital nutrients that feed the brain.) Omega 3 fatty acids (which include eicosapentaenoic acid or EPA, and docosahexaenoic acid or DHA), improve heart health, immune function, and in many cases, depression and cognitive abilities. They are found in shellfish, sardines, albacore tuna, salmon, flaxseed, walnuts, and wheat germ. Two herbal supplements generally used for depression are St. John's wort (*Hypericum perforatum*) and S-Adenosyl-L-Methionine (SAM-e). St. John's wort probably prevents nerve cells in the brain from reabsorbing the brain chemical serotonin, and thus relieves depression. SAM-e, which is concentrated in the liver and brain, plays an important part in regulating serotonin and dopamine, two chemicals which influence mood. Both substances have been widely used in Europe to treat arthritis and depression.

The parasite *Toxoplasma gondii* has also been strongly linked to schizophrenia and bipolar disorder. In the latter part of the 1800's, when house cat ownership became popular, these disorders, which had been almost non-existent, became fairly common. This parasite is carried by house cats and expelled through their feces. The house cats then jump from the contaminated litter box and walk over furniture and food preparation surfaces. In humans, this parasite causes brain lesions, changes in personality, and symptoms of psychosis, including auditory hallucinations and delusions.

See "*Toxoplasma gondii* / Toxoplasmosis" under **Parasites, Protozoa and Worms**. Also see "*Borrelia*, all types / Borreliosis / Lyme Disease" and the "*Strep*" entries under **Bacteria**; and "Borna Virus / Borna Disease Virus (BDV)," "*Herpes* Virus Type 5 (Human *Herpes* Type 5) / Cytomegalovirus (CMV) / Salivary Gland Virus," and "Retrovirus, variants" under **Viruses**, as recent studies show that these microbes have a strong link to mental illness. In children in particular, abrupt onset of Obsessive-Compulsive Disorder (OCD) has been linked to *Strep* infection.

For 5 minutes each: 802, 263.1, 304, 6K, 6130. Effects are expected to last about 3 days following an exposure.

#### Calming, to Produce

2.5, 10, 7.83, 80, 304, 6K

#### Colitis

Inflammation of the colon. There is a considerable emotional component to this symptom picture. Psychotherapy is strongly advised to help the person express anger and other emotions. Lactose intolerance, the inability to digest foods that contain lactose (milk sugar), may mimic the symptoms of IBS. So if you're eating dairy products, avoid them for at least three months and see if your condition improves. (Whereas pasteurized and homogenized dairy is poison, many people can handle raw dairy or fermented raw dairy. See Chapter 3 for more information.)

20, 440, 660 + 690 + 727.5, 787, 802 + 1550, 832, 880, 10K

#### Concentration, to Improve

Also try the herb *Ginkgo biloba*, and homeopathic remedies. It is a good idea to obtain a diagnosis, since waste products from microorganisms can pass the blood brain barrier and cause many mental and emotional symptoms.

5.8, 7.83, 20, 35, 10K

#### Dementia

See "Alzheimer's Disease" in this section.

#### Depression

Can be caused by the toxic waste products excreted by many different types of microbes. Recent research indicates that people with infectious mononucleosis or Chronic Fatigue (caused by the Epstein-Barr virus) have four times the risk of developing clinical depression. See "Epstein-Barr Virus / Infectious Mononucleosis / Chronic Fatigue Syndrome (CFS)" under **Viruses**; **Blood Sugar Levels**; **Glands**, *Thyroid*; and other entries under **Mind and Emotions**. See "Tapeworm" under **Parasites, Protozoa and Worms**, as depression and

psychotic symptoms can appear when a tapeworm invades the brain, leaving cysts (larval sacs) and causing lesions, cerebral swelling and encephalitis. Finally, the potent toxins released by various strains of *Candida* negatively affect the brain and nervous system, so see all of the *Candida* frequencies under **Candida**, **Fungi**, **Molds and Yeasts**.

#### General

5K, 9999, 10K, 40K

#### Anxiety, Trembling and Weakness

30.5, 800

#### Drug or Toxin related

1.1 + 73, 30.5

#### Exogenous Circumstances related

External circumstances not related to biochemistry or metabolism.

35, 787

#### *Shigella flexneri* related

Accounts for just under one-third of the cases of *Shigella* infection in the US, and is linked to depression. Can also lead to a chronic condition called reactive arthritis, symptoms of which include joint pain, painful urination, and irritation in eyes.

From Hulda Clark: 394K or 976.63 (for devices unable to accommodate frequencies in the kilohertz range) and 19616.10

### Down's Syndrome

A condition of stunted growth and mental retardation caused by a chromosomal abnormality, characterized by a broad nose, slanted eyes and flat skull. Nutritionally-oriented biochemists have discovered that Down's babies have metabolic imbalances that lead to excessive levels of some nutrients, deficiencies in others, malabsorption of Essential Fatty Acids (EFAs) and other nutrients, dangerously high levels of some toxic metals, and digestive disturbances. See a holistic doctor who's skilled in nutrition. This condition has been known to reverse in some cases if it is addressed early enough. Also consider entries under **Candida**, **Fungi**, **Molds and Yeasts**; and under **Gastrointestinal Tract**.

20, 5K

### Dyslexia

There are no known frequencies for dyslexia, so see "Attention Deficit Disorder (ADD) / Attention Deficit Hyperactivity Disorder (ADHD)" in this section.

### Eating Disorders

Most mainstream medical professionals, and many laypeople, perceive this as a discrete disease entity. An increasing number of people, particularly women and girls (some as young as seven years old), suffer from this condition. Although overeating, binge-eating and purging, and anorexia (self-starvation) are related to our culture's focus on superficiality and its notion (still) of women as objects, wherever there is an eating "disorder" one will also find microorganisms that support, accompany, and may even be in a causal relationship to this imbalance. In addition to having emotional and social components, eating disorders are actually a complex of various difficulties relating to metabolism, absorption and assimilation of nutrients, and the elimination of toxins. Disorders of the thyroid gland, which regulates metabolism, can directly affect the gaining or losing of weight. Digestive disturbances often appear in the presence of *Candida*, worms, and parasites. The parasites and worms (which do not belong in the body) and the *Candida* spores (whose numbers are minimal and kept in check in a healthy person) cause the ill person to feel perpetually hungry because the nutrients s/he is ingesting are mostly going to feed the parasitic microbes. Hypoglycemia, diabetes, and alcoholism—all conditions of metabolic dysfunction—heavily overlap with the *Candida*, parasite and worm frequencies. Any condition involving sluggish metabolism or digestion signifies a toxic system; so complement this program with a detoxification diet and sauna therapy. There are too many possibilities to include them in this section, so see **Eating Disorders** under **E**.

### Emotional States: to Stabilize, and to Eliminate Rigidity

15, 644, 764

### Energy and Vitality, to Improve

5K, 9999, 10K, 40K

### Enuresis

See "Bed Wetting / Enuresis" in this section.

### Fear

Mycotoxins can get into the brain, inducing all kinds of emotional and physiological reactions. Also see various entries under **Candida**, **Fungi**, **Molds and Yeasts**; and **Parasites**, **Protozoa and Worms**.

1.1 + 73, 5.8

### Hallucinations

20, 660 + 690 + 727.5, 787, 880, 10K

### Hangover

See under "Alcoholism" in this section.

#### Headache

See various entries under **Headache** under **H**. Also see "Migraine" in this section.

#### Hives / Urticaria

See under **Skin**.

#### Hypoglycemia

See "Hypoglycemia / Low Blood Sugar / Hyperinsulinism" under **Blood Sugar Levels**.

#### Impotence and Frigidity, many types

See "Impotence, many types" under **Men**, *Sexual Functioning* or "Frigidity / Impotence, many types" under **Women**, *Sexual Functioning*.

#### Insomnia

Many things can cause insomnia: eating late at night too close to bedtime, parasites, and heavy metals (which also irritate the nervous system). Childhood sexual abuse (which often occurs at night), or other trauma can contribute to sleeplessness, as will the mother's sleep cycle during her pregnancy; if she stays up late, the child's cycle is likewise conditioned. Just before bedtime, try taking magnesium; chamomile, valerian and hops; and/or the natural hormone melatonin. Or drink a little chicken soup, which contains the natural amino acid L-tryptophan. Eating a high-carbohydrate rather than a high-protein dinner will help make you sleepy as well. Also see various entries under **Chemical Poisoning / Detoxification**; **Mind and Emotions**; and **Parasites**, **Protozoa and Worms**.

3 + 230, 3.9, 3.59, 3.6, 7.83, 10, 304, 800, 802 + 1550, 880, 1500, 6K

#### Intelligence and Clarity of Thought, to Improve

Any microbe in the system, which constantly spews waste material into the tissues and bloodstream, can contribute to "brain fog." Perhaps the frequencies below are noted for balancing and stimulating the mind. Check for food allergies, particularly to adulterated dairy, wheat, soy, and corn. Eliminate artificial chemicals, dyes and preservatives from the diet. Also see "*Candida albicans*" under **Candida**, **Fungi**, **Molds and Yeasts**; and the many entries under **Parasites**, **Protozoa and Worms**

5.8, 20, 35, 10K

#### Irritability and Whining

Two of these frequencies are also used for inflammation. It is said that someone's emotions are inflamed when they are in a bad mood.

3.6, 3.9, 6.3

#### Irritable Bowel Syndrome

See "Colitis" in this section.

#### Memory, to Improve

One rifer reported that the frequencies below helped him remember repressed events from early childhood. Beta waves, which range from 12 to 30 Hz and span both hemispheres of the brain, promote concentration and active (or anxious) thought. These frequencies are experimental.

14.6, 14.7

#### Migraine

Pain in the side of the head, typically along the 5th cranial nerve, accompanied by disordered vision, nausea, chill, and fatigue. Migraines may be caused by allergies, drugs, chemicals, unsuitable food, a toxic liver, menstrual difficulties, hormonal conditions, worry, or even strenuous exercise.

Often, migraines can be caused by low blood sugar. The brain, small compared to the rest of the body, utilizes 25% of the body's glucose at any given time. A drop in blood sugar levels of as little as 5% can cause great fatigue and adversely affect thinking, mood and motor coordination, among other brain functions. If glucose levels in the blood decrease, the body compensates for this by increasing the blood volume, so that more glucose is brought to the brain. The best way to increase blood volume is to increase blood flow though the expansion of the blood vessels. Over a period of time, the bulging blood vessels repeatedly pressing on nerves can cause pain.

Avoid caffeine and other drugs, fake foods, and overly fatty foods. Rest in a dark room. Alkaline, mineralized water may be helpful. Also see **Headache**; "General (unspecified)" and "*Strongyloides stercoralis* / Threadworm" under **Parasites**, **Protozoa and Worms**; and **Blood Sugar Levels**.

#### Nervousness and agitation, the inability to remain seated

See "Akathisia / Agitation" in this section.

#### Neurosis

From my background as a psychotherapist, and as a human being, I have never liked the pseudo-scientific term "neurosis." As with most psychological labels, "neurosis" is demeaning and may reflect the biases of the person who is diagnosing even more than the person being diagnosed. An art or science—including the field of psychology—cannot be separated from the culture in which it is practiced. That said, the existence of neurosis is probable when mycotoxins from microorganisms and waste products of the body get into the brain. Also try other frequencies for particular physical conditions. It is amazing how emotions, thinking, and behavior can clear up once the body is clear.

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#### Obesity

See "Obesity / Overweight" under **O**.

#### Obsessive-Compulsive Disorder (OCD)

See "Schizophrenia" or "Bipolar Disorder / Manic Depression" in this section.

#### Panic Attacks

See under **Glands**, *Adrenals*.

#### Psychosomatic Pain

The word "psychosomatic" simply means the interaction of psyche and soma, of mind and of body; but many people think "mind-induced" and therefore invalid, or "not real." This conclusion particularly prevails when nothing obviously physical is discernible as the cause of a physical ailment. But most, if not all, medical conditions are psychosomatic—they contain physical and mental/emotional components. Psychosomatic pain can be due to energetic meridian blocks, nutritional deficiencies, microbial infection or other toxicity.

26, 6.3 + 148, 60 + 100, 146, 160, 330, 333 + 523 + 768 + 786, 555, 660 + 690 + 727.5, 2720

#### Relaxation, to Produce

See "Calming, to Produce" in this section.

#### Sexual Problems

A great many people seem to have difficulty functioning sexually in ways that satisfy them. Although there is often a psychological component to sexual problems, these frequencies are still worth trying, because if a genital infection is present it will interfere with sexual function and pleasure. Note that some of these frequencies are also used for syphilis. Also see the many entries under **Men** and **Women**.

1.1 + 73, 9.39, 9.4, 20, 72, 95, 125, 465, 600 + 625 + 650, 660 + 690 + 727.5, 787, 802 + 1550, 880, 2008, 2127.5

#### Schizophrenia

Frank Strick's research shows that the children of pregnant women with *Herpes* are more likely to be diagnosed later with schizophrenia and other psychological conditions than children of non-afflicted mothers.

The parasite *Toxoplasma gondii* has also been strongly linked to schizophrenia and bipolar disorder. In the latter part of the 1800's, when house cat ownership became popular, these disorders, which had been almost non-existent, became fairly common. This parasite is carried by house cats and expelled through their feces. The house cats then jump from the contaminated litter box and walk over furniture and food preparation surfaces. In humans, this parasite causes brain lesions, changes in personality, and symptoms of psychosis, including auditory hallucinations and delusions.

See "*Toxoplasma gondii* / Toxoplasmosis" under **Parasites**, **Protozoa and Worms**. Also see "*Borrelia*, all types / Borreliosis / Lyme Disease" and the "*Strep*" entries under **Bacteria**; and "Borna Virus / Borna Disease Virus (BDV)," "*Herpes* Virus Type 5 (Human *Herpes* Type 5) / Cytomegalovirus (CMV) / Salivary Gland Virus," other "*Herpes*" entries and "Retrovirus, variants" under **Viruses**, as recent studies show that these microbes have a strong link to mental illness. In children in particular, abrupt onset of Obsessive-Compulsive Disorder (OCD) has been linked to *Strep* infection. Also supplement with N-acetylcysteine. Doses of 600 mg to 1,200 mg or even 2,400 mg per day have proven successful in normalizing certain neurotransmitter receptor sites.

#### Stammering

7.83, 20, 6K, 10K

#### Thyroid Gland Conditions

The thyroid is an extremely important gland. Not only does it regulate the nervous system, growth, and development, it also regulates metabolism. An underactive or overactive thyroid can cause depression. See **Glands**, *Thyroid*.

#### Trauma

Physical, emotional, or mental origin.

3.9, 15, 96, 95, 190, 192, 300, 465, 660 + 690 + 727.5, 760, 787, 880, 1565, 3K

#### Ulcer

Open lesion on either the skin or mucous membranes, often in the stomach. This entry has been included here because of the emotional component to stomach ulcers. Psychotherapy is advised to help the person express anger and other emotions.

1.1 + 73, 1.2 + 250, 660 + 690 + 727.5, 776, 787, 802 + 1550, 832, 880, 1600, 1800, 2127.5, 2170, 2489

#### Whining and Irritability

Two of these frequencies are also used for inflammation. It is said that someone's emotions are inflamed when they are in a bad mood.

3.6, 3.9, 6.3

*End of Mind and Emotions section.*

### MITE, BIRD / *ORNITHONYSSUS*

Attacks domestic birds, fowl, and sometimes humans. After birds have abandoned their rooftop nests, mites will enter homes.

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range.

Kilohertz: Use both 877K and 878K
Hertz: Use both 2173.87 and 2176.34

**MITE, DUST / *DERMATOPHAGOIDES***
Mites—which live in furniture, drapery, pillows and carpet—feed on the dead skin cells of humans. Allergies are generally not to the mites themselves but to the large amounts of feces they generate and expel into the air. It is unclear whether these frequencies kill dust mites or whether they reduce sensitivity to dust mite fecal matter.

From Hulda Clark: 707K or 1752.48 (for devices unable to accommodate frequencies in the kilohertz range)

**MITE, FOLLICLE / *DEMODEX FOLLICULORUM***
Mites live in the hair follicles of humans. Although generally harmless, they can cause inflammation in the eyelashes, external ears, and facial skin. Also see "Mange / Follicular Mange / Scabies" under **Skin**.

From Hulda Clark: 682K or 1690.51 (for devices unable to accommodate frequencies in the kilohertz range)

**MITES / SCABIES**
See "Mange / Follicular Mange / Scabies" under **Skin**.

**MOLD**
See entries under **Candida**, **Fungi**, **Molds and Yeasts**.

**MOLE**
See under **Skin**.

**MONGOLOIDISM**
See "Down's Syndrome" under **Mind and Emotions**.

***MONILIA***
See "*Candida albicans*" under **Candida**, **Fungi**, **Molds and Yeasts**.

**MONONUCLEOSIS, INFECTIOUS**
See "Epstein-Barr Virus / Infectious Mononucleosis / Chronic Fatigue Syndrome (CFS)" under **Viruses**.

**MONONUCLEOSIS, OTHER**
See "*Herpes* Virus Type 5 (Human *Herpes* Type 5) / Cytomegalovirus (CMV) / Salivary Gland Virus" under **Viruses**.

***MORAXELLA CATARRHALIS***
See "*Branhamella catarrhalis* / *Moraxella catarrhalis*" under **Bacteria**.

**MORGELLONS DISEASE**
It's unclear when this condition first appeared. British physician Dr. C.E. Kellott may have identified Morgellons in 1935, though one source dates Morgellons to 2002. Kellott described Morgellons as a parasite infection from what appeared to be a filarial nematode, which acted like a silkworm, leaving behind a trail of bizarre fibers. Several years later, researchers Clifford E. Carnicom and Gwen Scott reported also seeing bacteria that look like *Chlamydia pneumoniae* throughout the entire body.

Morgellons features unusual tangled black, blue, green, white or red fibers sprouting from open sores on the skin or residing just under the skin. Some fibers are thicker than a hair, often containing other fibers inside them. Sometimes, sand-grain-sized granules, black specks, and fuzzballs size 1 mm to 3 mm appear in or on the skin. These fibrous structures cause excruciating pain, crusty lesions that don't heal, abnormal skin coloring and texture, burning, and itching, making the person feel as though small bugs were crawling under their skin, stinging and biting them. Other symptoms include enormous fatigue, impaired cognitive abilities including short term memory loss, and behavioral difficulties diagnostically ranging from attention deficit to bipolar to obsessive-compulsive disorders. There is generally extensive central and peripheral nervous system damage, sometimes with eye and gastrointestinal tract involvement. The majority of children with Morgellons are reported by their parents to have mood disorders or autism.

Cotton (genetically engineered with silkworm larvae) may be the source of the parasites that later live in the blood and spinal fluid of the host. After a period of up to three years, the worms emerge and produce fibers. In such subjects, the rashes sometimes bleed instantly when scratched, last a few days or several weeks before disappearing, and reappear later, often in different body areas. An analysis of Morgellons fibers, reported by Dr. Hildegarde Staninger in October 2006, showed that their outer casing is comprised of high density polyethylene fiber (HDPE), a material often used in fiber optics. The fibers burn at 1700°F, do not melt, and fluoresce under ultraviolet light. Tissue biopsies from Morgellons subjects have also revealed silica glass tubules and carbon nanotubes (the worm-like objects); the black dots are carbon nanospheres. (The itching and biting sensations are the electricity emanating from the nanotechnology.)

Morgellons subjects who were studied had no history in the fiber optic industry, and no reason to contact the material. However, HDPE is used in the nanotechnology field to encapsulate viral protein envelopes—including the kind now being sprayed on crops. The viral envelope, which contains DNA, RNA and mutated RNA, is 1/150th times smaller than the original virus. In order for HDPE molecules to be made small enough (through the nanotechnology process) to coat a viral envelope, the very nature of the miniaturized material is altered. An analysis of the fibers by Vitaly Citovsky, Biochemistry and Cell Biology professor at Stony Brook University in New York, showed the presence of *Agrobacterium,* a genus of Gram-negative bacteria capable of genetically transforming plant and human DNA.

Morgellons is the result of genetic engineering and exposure to noxious agents. As of 2006, the states with the highest number of cases were Texas, California and Florida. These are all states with booming agribusinesses, known for growing genetically engineered and heavily sprayed crops. Many people with Morgellons live in areas of heavy chemtrail spraying. Also, the appearance of Morgellons coincides with a viral "food additive" that has been used for several years and was formally approved in August 2006 by the FDA. The virus, called a bacteriophage—which by nature "eats" bacteria and normally is harmless to humans—was ostensibly introduced into the food supply to eliminate the pathogen *Listeria* (which causes foodborne illness similar to *E. coli*).

Authorities differ as to whether the living and non-living forms characterizing Morgellons are contagious. Clearly, though, the weak, vulnerable and infirm are more susceptible to this condition: according to one source, over half of Morgellons sufferers have also been diagnosed with Lyme. Informal surveys reveal nearly 5,000 families in the United States with one or more members afflicted by Morgellons.

Many allopathic doctors mistakenly believe that people with Morgellons have "delusional parasitosis." However, the holistic community has several approaches to treatment. Some methods bring itching and pain as the particles and parasites exit. Colloidal silver (see Chapter 3) is taken internally and used as an external poultice, kept wet. It seems more effective when used with DMSO (10 parts CS to 1 part DMSO). We also know that sea salt with Vitamin C, usually self-administered for Lyme (see Chapter 4), causes quite a discharge of detritus and brings relief. Sea salt, Vitamin C, and liquid iodine taken at the same time appear to kill the parasites even more thoroughly and bring more relief. Ozone and hydrogen peroxide can also be tried. Dr. Susan Kolb has developed a rigorous protocol of nutritional supplements, along with anti-parasite and anti-fungal agents (many sufferers have *Candida*). She also suggests a bath of 2 cups of Epsom salts, ¼ cup of Borax, ¼ cup of sea salt, and 10 opened alfalfa capsules. Also see *"Candida albicans"* under **Candida, Fungi, Molds and Yeasts**.

Experimental frequencies from Mike Tigchelaar: 8, 20, 30, 120, 160, 304, 330, 432, 464, 500, 625, 665, 727.5, 740, 787, 800, 835, 880, 920, 1234, 1488, 1550, 1600, 1862, 2016, 2114, 2180, 2489, 2720, 2791, 2855, 2867, 2929, 3176, 3347, 3448, 4014, 4264, 4271.25, 5K, 5611, 5856.375, 5858.25, 7344, 10K

### MOTION SICKNESS

Ginger is very effective against nausea, so chewing on crystallized ginger or drinking ginger root tea can be helpful. Also see "Nausea" under *Systemic Conditions* under **Gastrointestinal Tract**.

4.9, 20, 72, 95, 125, 146, 190, 440, 444 + 1865, 465, 522, 600 + 625 + 650, 648, 10K

### MOTOR NEURON DISEASE

See "Amyotrophic Lateral Sclerosis (ALS)" under **Nervous System and Brain**.

### MOUTH ERUPTIONS

See "Oral Lesions" and other various entries under **Dental**, *Mouth and Gums*.

### MOVEMENT DIFFICULTY / LOCOMOTOR DYSFUNCTION, SPASTIC AND NON-SPASTIC

See "Ataxia" and "Ataxia, Spastic" under **Muscles**.

### *MUCOR*, ALL TYPES

See under **Candida**, **Fungi**, **Molds and Yeasts**.

### MUCORMYCOSIS / ZYGOMYCOSIS

See under **Candida**, **Fungi**, **Molds and Yeasts**.

### MULTIPLE CHEMICAL SENSITIVITY (MCS) / ENVIRONMENTAL ILLNESS (EI)

See various entries under **Chemical Poisoning / Detoxification**.

### MULTIPLE MYELOMA

See under **Cancer**.

### MULTIPLE SCLEROSIS (MS)

See under **Nervous System and Brain**.

### MUMPS

See "Rubulavirus / Mumps" under **Viruses**.

### MUSCLES

There are different types of muscles. Voluntary muscles (which move due to our conscious intent) are comprised of striated fibers, their cells long and cylindrical with many nucleuses. These are what we normally think of when we say "muscles." However, we have involuntary muscles too (they move without our conscious intent). These are comprised of smooth fibers, their cells elongated with only one nucleus. The stomach and diaphragm are examples of smooth muscles. The heart is unique, comprised of striated muscle, but it is not under voluntary control. The conditions in this section are meant to cover primarily difficulties of voluntary muscles, although many of the frequencies are used for conditions involving smooth muscles.

Sometimes, what are thought to be muscular conditions are actually problems with the fascia, or membranous envelopes of connective tissue that encase the muscles. Sometimes the fascia are stuck together, which prevents the muscles from moving properly. This adhesion could be due to excess mucin, a hydrophilic (water-loving), sugar-protein compound naturally present in connective tissue. Over half of those suffering from hypothyroidism have excess mucin in their bodies, which causes health problems in the connective tissue of skin, blood vessels, nerves, and of course muscles. See

"Thyroid, Underactive / Hypothyroidism" under **Glands**, *Thyroid*.

Also see **Inflammation** and **Injuries**. And see the sections in Chapter 3 on **Exercise** and **Bodywork** (specifically, massage). If you are using an electrode device, place electrodes on either side of the inflammation site, and include the frequency 13.5, which covers healing, as part of your program.

#### Ataxia

Movement difficulty, lack of muscle coordination. Results might be slow if nerve damage exists, but even brain cells can regenerate, so keep trying. Also see entries under **Nervous System and Brain**.

20, 72, 95, 125, 444 + 1865, 600 + 625 + 650, 660 + 690 + 727.5, 776, 787, 807, 813, 880, 1500, 1600, 1800, 2170, 2720, 10K

#### Ataxia, Spastic

Movement difficulty, lack of muscle coordination accompanied by spastic or convulsive movements. Results might be slow if nerve damage exists, but even brain cells can regenerate, so keep trying. Also see various entries under **Nervous System and Brain**.

7.69, 7.7, 7.83, 8.25, 9.19, 9.2

#### Carpal Tunnel Syndrome / Repetitive Stress Injury (RSI)

Inflammation of the forearm, wrist and fingers, due to repetitive motion that places excessive stress on the tendons, ligaments and musculature. For injuries of muscles and soft tissue, electrode devices may produce better results than plasma light units. One researcher thinks that 15 Hz is used because it stimulates the cells to receive calcium more efficiently.

20.5, 6.3 + 148, 15, 146, 444 + 1865, 465, 522, 600 + 625 + 650, 660 + 690 + 727.5, 685, 700, 760, 776, 787, 802 + 1550, 832, 880, 1K, 1500, 2008, 10K

#### Contraction

Twisting of muscles and spine.

9.1, 110

#### Convulsions

Sudden, involuntary movements of the musculature. Also see "Epilepsy" under **Nervous System and Brain**. Please seek medical advice with this condition.

660 + 690 + 727.5, 787, 880, 10K

With spasticity: 7.69, 8.25, 9.19, 9.2

#### Coordination Difficulties / Locomotor Dysfunction

Results might be slow if nerve damage exists, but even brain cells can regenerate, so keep trying. Also see various entries under **Nervous System and Brain**.

7.83, 20, 72, 95, 125, 444 + 1865, 600 + 625 + 650, 660 + 690 + 727.5, 787, 776, 807, 813, 880, 1500, 1600, 1800, 2170, 2720, 10K

#### Cramps, Leg / Intermittent Claudication

Caused by arterial spasm or narrowing due to arteriosclerosis. Another cause of cramps is deficiencies of the following minerals, or imbalanced ratios of the calcium/magnesium or sodium/potassium pairs.

45, 48, 10K

#### Dupuytren's Contracture

Contraction of the fascia (the membrane envelope around muscles) in the hand, causing the ring and little fingers to bend into the palm so they can't be straightened.

1.2 + 250

#### Dystonia, Vegetative

Dysfunction of the involuntary muscles.

20, 40, 120, 240

#### Fascia, to Soften

Fascia is the connective tissue envelope that holds muscles in place. When the fascial envelope is tight or rigid due to emotional stress or adhesions, the muscles lose their flexibility and become stiff. Consider Rolfing, a type of massage that increases muscle flexibility through the kneading and stroking of the fascia. Also see **Fibromyalgia**; and the "Cyst" entries under **Tumors, Benign**.

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#### Fibromyalgia

See under **F**.

#### Finger Immobility, 4th and 5th fingers

See "Dupuytren's Contracture" in this section.

#### Frozen Shoulder

See "Shoulder, Frozen" in this section.

#### Inclusion Body Myositis (IBM)

See under **I**. Also see **Autoimmune Disorders**.

#### Intercostal Neuralgia

Pain in rib musculature.

20, 125, 444 + 1865, 660 + 690 + 727.5, 776, 787, 802 + 1550, 880, 2720, 3K

#### Involuntary Muscles, Dysfunction of

See "Dystonia, Vegetative" in this section.

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#### Lumbago

Muscular ache across loins due to either too rapid cooling of overheated region, or unnatural twisting.

7.69, 7.7, 9.19, 9.2, 8.25, 72, 95, 125, 300, 444 + 1865, 660 + 690 + 727.5, 787, 800, 802 + 1550, 880, 10K

#### Movement Difficulty, with or without Spasms

See the "Ataxia" entries in this section.

#### Muscle Healing, to Stimulate

13.5

#### Muscle Spasm

Rapid painful contractions of muscles, which can be due to overexertion, nutritional deficiency or pH imbalance. Massage is often helpful. Also see other entries in this section.

6.8, 760

#### Muscular Dystrophy

Disorder characterized by weakness and progressive wasting of skeletal muscles despite no concurrent wasting of nerve tissue. The ingestion or inhalation of the artificial sweetener aspartame (or similar poisons), mercury, benzene, lead, and toluene can cause the same symptoms. Also see "General (unspecified)" and "Fluke" entries under **Parasites**, **Protozoa and Worms**.

First try: 1.2 + 250, 3 + 230, 7.69, 7.7, 9.39, 9.4, 9.6, 20, 28, 153, 660 + 690 + 727.5, 787, 880, 2900

Then try: 146, 333 + 523 + 768 + 786, 465, 522, 555, 600 + 625 + 650, 776, 802 + 1550, 1850, 10K

#### Muscular Dystrophy, Duchenne / Duchenne Muscular Dystrophy (DMD) / Pseudohypertrophic Muscular Dystrophy

Caused by an absence of dystrophin, a protein that helps keep muscle cells intact. Symptoms most often appear in early childhood, from age two to six years. Symptoms include weak and wasted muscles, generally of the hips, pelvic area, thighs and shoulders. Calves are often enlarged. Eventually, DMD affects all voluntary muscles, in addition to the heart and breathing muscles. People seldom survive beyond 30 years. Women can be carriers of DMD but usually exhibit no symptoms.

Also try frequencies for non-Duchenne muscular dystrophy, above.

153, 5000, 522, 146, 880, 787, 727.5

#### Myoma

A tumor comprised of muscle tissue. The frequency 127 is also included in case the tumor is malignant. You are strongly advised to also see the many entries under **Cancer**.

127, 253, 420, 453, 689, 832

In addition, sweep from 420 to 482 for at least 30 minutes.

#### Myositis

Progressive weakness and inflammation of muscle tissue, due to physical injury, diabetes, or parasites. Also see "Diabetes / High Blood Sugar / Hyperglycemia" under **Blood Sugar Levels**; numerous entries under **Injuries**; and "General (unspecified)" and other entries under **Parasites**, **Protozoa and Worms**.

120, 122, 125, 129, 762, 1124, 1169

#### Neck, Stiff, including Spasticity

Involuntary sudden movement or convulsive muscular contraction.

4.9, 6, 9.19, 9.2

#### Non-Spastic Paralysis

Convulsive, muscular rigidity accompanying partial paralysis. In some cases, progress might be slow.

8.25, 9.19, 9.2, 20, 72, 95, 125, 444 + 1865, 600 + 625 + 650, 660 + 690 + 727.5, 776, 787, 880, 10K

#### Pain due to Injury

0.5, 1, 1.1 + 73, 1.2 + 250, 10.5, 20.5, 5.8, 10, 20, 35, 40, 80, 125, 160, 320, 240, 2720, 6K, 10K

#### Reflex Sympathetic Dystrophy (RSD)

Involves not only the muscles and nerves, but also skin, blood vessels and bones, and is characterized by severe chronic pain, inflammation, muscle or blood vessel spasms, and insomnia, depression and anxiety.

This condition often follows a fall or sprain, a break in a bone, an injury such as a knife wound, heart conditions, infections, surgery, spinal disorders or other major trauma. The person may experience symptoms away from the site of the original trauma. Women in their 30s and 40s most commonly experience this condition. Even light clothing or a breeze can increase the pain; and subjects are often sensitive to loud noises or vibrations. Other symptoms can include inability to balance, short-term memory conditions, visual disturbances, jerky movements, muscle atrophy and falling.

Make sure that the pH and electrolytes are balanced in the system, check for adrenal exhaustion, and seek the guidance of a holistic health care provider. This condition is too new for Rife researchers to have computed frequencies for it. So try other entries in this **Muscles** section; and see **Nervous System and Brain** and **Chemical Poisoning / Detoxification**.

#### Repetitive Stress Injury (RSI)

See "Carpal Tunnel Syndrome / Repetitive Stress Injury (RSI)" in this section.

#### Shoulder, Frozen

Painful shoulder area, often worse at night, that severely limits mobility and primarily affects the tendons or connective tissue near joints.

660 + 690 + 727.5, 776, 787, 802 + 1550, 880, 10K

#### Spasms, Muscular

Rapid painful contractions of muscles, which can be due to overexertion, nutritional deficiency or pH imbalance. A good electrolyte (liquid minerals) formula could really help, plus extra magnesium. Massage is usually helpful.

6.8, 760

#### Spastic Ataxia

See "Ataxia, Spastic" in this section.

#### Spastic Paralysis

Convulsive, muscular rigidity accompanying partial paralysis. In some cases, progress might be slow.

7.69, 7.7, 20, 72, 95, 125, 444 + 1865, 600 + 625 + 650, 660 + 690 + 727.5, 776, 787, 880, 10K

#### Sprain

Partial rupture or twisting of a joint and its tendon and ligament attachments—perhaps with muscle involvement as well—where the tissue fibers are torn, thus causing pain and swelling.

I have not seen any listings for sprains, so below are frequencies for pain due to injury, stiff neck, and some arthritis frequencies. Also see "Tendomyopathy" in this section.

0.5, 1, 1.1 + 73, 1.2 + 250, 20.5, 4.9, 5.8, 9.19, 9.2, 9.4, 10, 20, 35, 40, 80, 125, 320, 2720, 10K

#### Stiffness, General

0.5, 1, 1.2 + 250, 10.5, 20.5, 5.8, 10, 20, 40, 80, 125, 160, 240, 300, 304, 320, 328, 660 + 690 + 727.5, 776, 787, 802 + 1550, 880, 1800, 6K

#### Tendomyopathy

Infirm condition of both the muscles and tendons, causing inflammation and pain.

0.5, 1, 1.1 + 73, 1.2 + 250, 10.5, 20.5, 4.9, 5.8, 9.2, 9.4, 10, 20, 26, 40, 80, 146, 160, 320, 465, 522, 2720, 3K

#### Tension—to Relax

6.8, 7.83, 20, 120, 240, 304, 760, 965, 6K

#### Tetanus / Lockjaw

The bacillus *Clostridium tetani* causes tetanus, an infectious and painful disease more commonly known as lockjaw. The person suffers persistent, continual contraction of some involuntary muscles. The spasms are focused in the jaw, throat, and face. Tetanus is often contracted by being punctured with a rusty nail. The homeopathic remedy *Ledum* is commonly used to treat this condition.

From Royal Rife, used on his #4 machine: 234K

120, 244, 352, 363, 458, 465, 554, 600 + 625 + 650, 628, 660 + 690 + 727.5, 787, 880, 1142

*End of Muscles section.*

### MUSCULAR DYSTROPHY, ALL TYPES

See under **Muscles**.

### MYALGIC ENCEPHALOMYELITIS

See "Epstein-Barr Virus / Infectious Mononucleosis / Chronic Fatigue Syndrome (CFS)" under **Viruses**.

### MYASTHENIA GRAVIS

There are no known frequencies for this condition. See **Autoimmune Disorders** for more information.

### MYCELIOID LEUKEMIA

See "Leukemia, Myeloid" under **Cancer**.

### *MYCOBACTERIUM AVIUM*

See under **Bacteria**.

### *MYCOBACTERIUM LEPRAE*

See "*Mycobacterium leprae* / Leprosy / Hansen's disease" under **Bacteria**.

### *MYCOPLASMA*, ALL TYPES

See specific entry under **Bacteria**.

### *MYCOPLASMA* VIRUS P-1

See under **Viruses**.

### MYCOSIS FUNGOIDES

See under **Cancer**.

### MYOMA

See "Uterine Tumor / Myoma" under **Tumors**, **Benign**; or under **Women**, *Uterus and Cervix*, *Ovaries*, *and Fallopian Tubes*.

### MYOSITIS

See **Inclusion Body Myositis (IBM)**.

## –N–

### *NAEGLERIA FOWLERI*

See "*Naegleria fowleri* / Brain Parasite" under **Parasites**, **Protozoa and Worms**.

### NASAL CONDITIONS
See various entries under **Respiratory Tract**, *Nose and Sinuses*.

### NAUSEA, WITH OR WITHOUT CRAMPING
See **Appendicitis**; **Motion Sickness**; the many entries under **Gastrointestinal Tract**; the many entries under **Parasites, Protozoa and Worms**; and "Menstrual Cramps" under **Women**, *Menstruation and Menopause*.

### NECK, STIFF, ALL TYPES
See "Neck, Stiff, including Spasticity" under **Injuries**.

### NECROSIS OF LIVER
See under **Liver and Gallbladder**, *Liver*.

### NEMATODES
See "*Ascaris lumbricoides* / Roundworm" under **Parasites, Protozoa and Worms**.

### NEOPLASM
A neoplasm is a disorganized growth in an organ or in tissue, also known as a tumor. See various entries under **Cancer**; and under **Tumors, Benign**.

### NEPHRITIS AND NEPHROSIS
See separate listings under **Urinary Tract**, *Kidneys*.

### NERVE PAIN, ANY TYPE
See "Neuralgia, Brachial" under **Nervous System and Brain**.

### NERVOUS SYSTEM AND BRAIN
In humans, the easily visible cerebrum—with its many folds and wrinkles—is the largest section of the brain, the structure that most people think of as "the brain." Other structures include the cerebellum, limbic system (also known as the reptilian brain), and the brain stem. The brain contains meninges, three layers of connective tissue membranes that separate the skull from the soft brain tissue. Cerebrospinal fluid circulates between two layers of the meninges and cavities in the brain, functioning as a shock absorber. The blood vessels (also between two layers of the meninges) contain very tightly packed cells that form the blood-brain barrier to protects the brain from toxins that may be in the blood. However, there are thousands of synthetic chemicals and drugs that can pass this barrier. The human brain weighs about 35 to 53 ounces (1 to 1.5 kilograms). It is so dense, it would collapse under its own weight if it did not float in the cerebrospinal fluid.

The brain regulates intelligence, cognition, emotions, memory, motor skills, and sensory input. It also controls involuntary bodily functions including heart rate, blood pressure, fluid balance, and body temperature. The spinal cord is only responsible for simple reflexes and certain types of movement.

Neurons (nerve cells) consist of a head with long, delicate hair-like tendrils and a stem encased in myelin. The myelin sheath that surrounds the neurons provides structure and insulation, and helps eliminate waste. Neurons generate minute but potent electrical currents that convey information to other cells. One neuron typically connects to at least a thousand other neurons in an intricate biological electrical circuit. Electrical messages travel from the brain through the spinal cord to the rest of the nerves in the body. There are different types of nerves for different kinds of activity: sensory input, temperature, touch and movement, as well as visual, auditory and olefactory neural pathways.

The ability to comprehend is moderated by numerous factors inlcuding hunger, fatigue, belief systems, or perceived threat. Negative stress or danger is processed through several different centers in the body. First, input goes to the cerebral cortex. If it is processed as stress or danger, it goes to the limbic system in the hypothalamus, which activates the autonomic (automatic, involuntary) nervous system—and the fight-or-flight reaction begins. The interactions between the hypothalamus, pituitary gland, and adrenal glands are intricately involved in one's reactions to stress.

The nervous system is classified into voluntary and involuntary (or autonomic) systems. The voluntary nerves control functions such as muscle movement. The involuntary nerves are themselves further divided into two sections: sympathetic and parasympathetic. The two systems have opposite physiological, emotional, and psychological effects.

Over 80% of the brain and nerve cells are comprised of fat. A fatty sheath covers the nerves to provide insulation, similar in function and structure to rubber covering copper wires in an electrical circuit. This is one reason why healthy fats are so critical in the diet. The best foods for the nerves are fish oils, fats from grass-fed beef, raw dairy, and soaked nuts. Fresh ground flax is sometimes recommended, but not many people can convert its fat into the type that the body can use.

Be aware of a possible connection between nerve conditions and excess mucin in the body. Mucin is a hydrophilic (water-loving), sugar-protein compound naturally present in connective tissue, which surrounds nerve cells and binds them together. When mucin is present in abnormal amounts, excess water accumulates and health problems result. Over half of the people who suffer from hypothyroidism have excess mucin in their bodies, so also see "Thyroid, Underactive / Hypothyroidism" under **Glands**, *Thyroid*.

Research indicates that brain lesions, epileptic seizures, and symptoms similar to Multiple Sclerosis, Parkinson's disease, and other nervous system conditions can be caused by the ingestion or inhalation of the toxic metals mercury and lead; the petrochemicals benzene and toluene; the artificial sweetener aspartame (contained in diet soda and other foods and drinks); and over-the-counter and prescription drugs. Brain and nervous system disorders can also be exacerbated, or outright caused, by deficiencies of Essential Fatty Acids (EFAs). See Chapter 1 for more information on aspartame,

additives, chemicals, drugs, and other poisons. For the underlying causes of neurological distress also look into possible food allergies. See "*Borrelia*, all types / Borreliosis / Lyme Disease" under **Bacteria**, since the Lyme spirochete is often present in neurological disorders.

#### General Nerve Conditions

10K, 2720, 2489, 2170, 1800, 1600, 660 + 690 + 727.5, 650 + 625, + 600, 880, 787, 802 + 1550, 125, 95, 72, 20, 440

#### Actinomycosis

Infection of the brain, lungs, gastrointestinal tract or jaw caused by the fungus *Actinomyces bovis*.

1.1 + 73, 20, 160, 220, 465, 660 + 690 + 727.5, 787, 10K

#### Akathisia / Agitation

Nervousness and restlessness commonly associated with the inability to remain seated. The so-called "side effects" of certain drugs such as Prozac® can create jitteriness, anxiety and tension that appear similar to the characteristics of Attention Deficit Disorder. These frequencies are also used for insomnia.

3 + 230, 7.83

#### Alzheimer's Disease

Abnormally high levels of the toxic metals aluminum—and now, mercury—are being discovered in the brains of people with Alzheimer's. These and other heavy metals can amplify, if not outright cause, this disorder. Never cook with aluminum cookware. Consider chelation therapy, the injection or ingestion of natural substances that bind with toxic metals so the body can then excrete them.

Also see "Heavy Metal Detox" under **Chemical Poisoning / Detoxification**. Dr. Lida Mattman has found the Lyme spirochete in every single person with Alzheimer's that she has ever treated, so also see "*Borrelia*, all types / Borreliosis / Lyme Disease," under **Bacteria**. Other microbes are also implicated. Also see "*Mycoplasma*, many types" under **Bacteria**; and under **Viruses**, "*Herpes simplex* 1," "*Herpes* Virus Type 5 (Human *Herpes* Type 5) / Cytomegalovirus (CMV) / Salivary Gland Virus," and "*Herpes* Virus Type 6 / Human *Herpes* Type 6."

430, 620, 624, 840, 866, 2213, 5148, 19180.5

#### Amyotrophic Lateral Sclerosis (ALS)

Sometimes also called Motor Neuron disease or Lou Gehrig's disease (after the ball player who was afflicted with the condition). Degeneration of spinal cord in the form of hardening, thickening, and inflammation. Eventually it atrophies, and may lead to spastic paraplegia. One doctor states that every person he has ever treated for ALS has tested positive for the microorganism *Mycoplasma fermentans*. See "Multiple Sclerosis" and other entries in this section; "*Borrelia*, all types / Borreliosis / Lyme Disease" under **Bacteria**; and "*Mycoplasma*, many types" under **Bacteria**. Also see "ECHO Virus / Enteric Cytopathic Human Orphan Virus / Nonpolio Enterovirus Infection" under **Viruses**, since French researchers recently implicated this microorganism in a majority of ALS cases.

254, 484, 610 + 692 + 980, 644, 660 + 690 + 727.5, 790, 864, 986, 2900 (for 20 minutes)

#### Apoplexy

See "Stroke Paralysis / Apoplexy" in this section.

#### Arm Pain

See "Neuralgia, Brachial" in this section.

#### Astrocytoma

See "Brain Tumor / Astrocytoma" under **Cancer**.

#### Ataxia

Lack of muscle coordination. Results might be slow if nerve damage exists, but even brain cells can regenerate, so keep trying.

20, 72, 95, 125, 444 + 1865, 600 + 625 + 650, 660 + 690 + 727.5, 776, 787, 807, 813, 880, 1500, 1600, 1800, 2170, 2720

#### Ataxia, Spastic

See "Spastic Ataxia" in this section.

#### Back Pain, to Reduce

Sweep from 326 to 328

#### Bell's Palsy

Partial or complete paralysis of the face, often caused by an inflammation or infection in the seventh cranial nerve. This causes droopy mouth, an eyelid that might not close, numbness, and muscle spasms and heaviness. Many microbes could be involved. The condition often goes away by itself, but if caused by dangerous pathogens—such as those involved in Lyme and similar diseases—it could be permanent. Each frequency below is for 3 minutes minimum; try them every day for several weeks. Also see "*Herpes* Virus Type 3 / *Herpes zoster* / Chicken Pox / *Varicella* / Shingles" under **Viruses**; and "*Borrelia*, all types / Borreliosis / Lyme Disease" under **Bacteria**.

2.4, 3, 3.9, 7.83, 20, 27.5 + 220 + 410, 33, 35, 40, 470.5, 570.5, 72, 90.88, 110, 125, 194, 222, 304, 3930.5, 464, 5650.5, 600 + 625 + 650, 660 + 690 + 727.5, 776, 787, 833, 880, 1250, 9320.5

#### Brachial Neuralgia

See "Neuralgia, Brachial" in this section.

| Sympathetic Nervous System.<br>Psychological components: anxiety, lack of pleasure<br>Physiological component: contraction | Parasympathetic Nervous System.<br>Psychological components: contentment, pleasure<br>Physiological component: expansion |
|---|---|
| Inactivity of salivary glands, producing a dry mouth—the mouth is "dry with fright." | Activity of salivary glands, producing a moist mouth—a "mouth watering" situation. |
| The smooth muscle of the iris in the eye contracts, allowing the pupil to dilate and more light to enter the eye (so the person is literally blinded by fear). | The smooth muscle of the iris in the eye relaxes, allowing the pupil to constrict and less light to enter the eye (so the person literally sees more clearly). |
| Inhibition of the lachrymal or tear glands, producing "dry eyes": associated with depression. | Stimulation of the lachrymal or tear glands, producing moist and lubricated, glowing eyes: associated with joy. |
| Stimulation of the sweat glands in face and body so that the skin is moist: person feels "clammy and cold with fear." | Reduction of activity of sweat glands in face and body so that skin is dry: person feels "cool, calm and collected." |
| Reduction of digestive movements and secretion of digestive fluids: too anxiety-ridden to assimilate food well. | Activity of digestive movements and increased secretion of digestive fluids: being at ease fosters assimilation of nourishment. |
| Contraction of the arteries: blood flows away from surface of skin, producing a pallor and psychologically and physiologically indicating a coolness or coldness. | Dilation of the arteries: blood flows to surface of skin, producing a healthy glow and psychologically and physiologically indicating warmth. |
| Increased output of adrenal hormones: typical fight-or-flight response, indicating fear and anxiety. | Decreased secretion of adrenal hormones: indicating feelings of security and peace. |
| Scalp muscles are excited, so hair literally "stands on end." | Scalp muscles are relaxed. |
| Calcium ion mineral group predominates. | Potassium ion mineral group predominates. |
| Increased secretion of acid fluids, which dehydrate the system and can lead to illness. | Increased secretion of alkaline fluids, which hydrate the system and stimulate good health. |
| Decreased susceptibility to electrical stimulation. | Increased susceptibility to electrical stimulation. |
| Increased oxygen consumption. | Decreased oxygen consumption. |
| Increased blood pressure. | Decreased blood pressure. |
| Tightening of smooth musculature in male scrotum and female vagina, inhibition of glandular secretions, decrease of blood supply, reduction of sexual feeling. | Relaxation of smooth musculature in male scrotum and female vagina, stimulation of glandular secretions, increased blood supply, increase of sexual feeling. |

Adapted from Wilhelm Reich's *The Function of the Orgasm* (1973), and from *Zeitschrift für Politische Psychologie und Sexualökonomie,* Vol. 1, 1934

**Brain Fungus**

See "*Gliocladium* / Brain Fungus" in this section.

**Cerebral Palsy**

Impaired movement and sensation due to paralysis of portions of the brain.

146, 522, 660 + 690 + 727.5, 787, 880, 1K

**Cerebrospinal Conditions**

10K

**Convulsions**

Sudden, involuntary movements of the musculature. Also see "Epilepsy" in this section. Seek medical advice.

660 + 690 + 727.5, 787, 880, 10K

With spasticity: 7.69, 8.25, 9.19, 9.2

**Down's Syndrome**

A condition of stunted growth and mental retardation caused by a chromosomal abnormality, characterized by a broad nose, slanted eyes and flat skull. Nutritionally-oriented biochemists have discovered that Down's babies have metabolic imbalances that lead to excessive levels of some nutrients, deficiencies in others, malabsorption of Essential Fatty Acids and other nutrients, and dangerously high levels of some toxic metals. See a holistic doctor/nutritionist. This condition has been known to correct itself in some cases if it is addressed early enough. Also see various entries under **Candida**, **Fungi**, **Molds and Yeasts**; and under **Gastrointestinal Tract**.

20, 5K

**Encephalitis**

Inflammation of the tissues in the brain and spinal cord. Check to see what is causing the inflammation. Also see "Leukoencephalitis" in this section.

841

**Epilepsy**

Disorder of the brain characterized by convulsions and loss of consciousness. The neurons of the brain emit more electricity than they should. Research indicates that brain lesions, epileptic seizures, and symptoms similar to Multiple Sclerosis, Parkinson's, and other nervous system conditions can be caused not only by microbes, but also by the ingestion or inhalation of toxic metals, petrochemicals, artificial sweeteners, and some pharmaceuticals.

A high fat (ketogenic) diet, originally developed at Johns Hopkins and the Mayo Clinic in the 1920s, has been shown to stop seizures, although researchers say they don't know why. However, since healthy neurons are insulated by fatty sheaths—and without insulation, electrical messages can (and do) go haywire—it makes sense that if a diet high in fats eliminates symptoms, then a shortage of healthy fats is one of the primary causes of epilepsy. Also see "Heavy Metal Detox" under **Chemical Poisoning / Detoxification**; and "Seizure" and other entries in this section.

20, 21, 125, 210, 600 + 625 + 650, 633, 700, 660 + 690 + 727.5, 787, 880, 802 + 1550, 10K

**Fibrosis**

Scarring in the connective tissue.

27.5 + 220 + 410

***Gliocladium* / Brain Fungus**

469, 633, 855

***Herpes zoster***

See "Shingles" in this section or see "*Herpes* Virus Type 3 / *Herpes zoster* / Chicken Pox / *Varicella* / Shingles" under **Viruses**.

**Hypothalamus, to Balance and Normalize**

15.42, 537

**Infections, Post-operative (after shunt implants)**

See "*Propionibacterium acnes*" under **Bacteria**, as this microbe has been implicated in post-surgical infections of heart valves and central nervous system shunts.

**Intercostal Neuralgia**

See "Neuralgia, Intercostal" in this section.

**Languorous (Non-Spastic) Paralysis**

In some cases, progress might be slow.

8.25, 9.19, 9.2, 20, 72, 95, 125, 444 + 1865, 600 + 625 + 650, 660 + 690 + 727.5, 776, 787, 880, 10K

**Leukoencephalitis**

Progressive inflammation of brain's white matter, usually in infants and children. Also see "Encephalitis" in this section.

324, 338, 572, 712, 713, 715, 776, 783, 932, 934, 1035, 1079, 1111, 1160, 1244, 1333, 1630

**Listeriosis**

See "*Listeria monocytogenes* / Listeriosis" under **Bacteria**.

**Meningioma**

Benign, slow-growing tumor of the meninges, the membranes that envelop the brain and spinal cord. Also see "Meningitis" in this section.

446, 535, 537

**Meningitis**

Inflammation of the membranes of spinal cord or brain, unspecified cause.

Also try: 130, 322, 423, 465, 507, 517, 660 + 690 + 727.5, 676, 677, 733, 764, 822, 832, 1044, 1422

And then try: 20, 72, 95, 125, 428, 444 + 1865, 787, 802 + 1550, 880

#### *Coddidioides immitis* cause

See "*Coddidioides immitis* / Valley Fever / Coccidioidomycosis / Coccidiosis" under **Candida**, **Fungi**, **Molds and Yeasts**.

#### ECHO virus cause

461, 514, 600 + 625 + 650, 620, 722, 765, 788, 922

#### *Meningococcus* virus cause

720

### Meningoencephalitis

Caused by *Cryptococcus neoformans*, a yeast that infects the respiratory tract but can then enter the brain and cause infection. Symptoms include headache, nausea, staggering gait, irritability, confusion and blurred vision.

367, 428, 444 + 1865, 476, 478, 522, 579, 594, 597, 613, 624, 785, 792, 872, 2121, 5880, 5884

### Motor Neuron Disease

See "Amyotrophic Lateral Sclerosis (ALS)" in this section.

### Multiple Sclerosis (MS)

Lesions on the spinal cord and the brain that slowly disintegrate the fatty covering from the nerve cells, resulting in various degenerative symptoms such as loss of motor function, weakness, impaired vision, bladder dysfunction, and perceptual difficulties. Some people with this gradually debilitating condition experience partial remission, while others may eventually need a wheel chair.

Although doctors believe that MS is genetically based, a trigger is needed to set it off. Research indicates that brain lesions, epileptic seizures, and symptoms similar to Multiple Sclerosis, Parkinson's, and other nervous system conditions can be caused by the ingestion or inhalation of the toxic metals mercury and lead, and the petrochemicals benzene and toluene. These heavy metals and toxic chemicals appear in solvents, cleaners, paints, cosmetics, and vaccine preparations. The artificial sweetener aspartame, prevalent in diet soda and other foods and drinks, is also a prime culprit in many cases of MS. One common denominator of all these poisonous substances is their ability to cross the blood brain barrier and directly affect the nervous system.

The Lyme spirochete has been discovered by Dr. Lida Matmann and others in many people who are mistakenly diagnosed with MS. Recent medical research has found evidence of *Chlamydia pneumoniae* infection in the spinal fluid of 90% of people with MS who were tested. Other pathogens found in the majority of people with MS are *Brucella* and *Mycoplasma*.

Recovery is possible, and hope of recovery will help with healing. Gate the frequencies 2 and 4 times per second; and sweep them 4 Hz on either side of the main signal. Also see "*Brucella*, all types," "*Chlamydia pneumoniae*," "*Chlamydia trachomatis*" and various "*Mycoplasma*" entries under **Bacteria**; "Fluke" entries under **Parasites, Protozoa and Worms**; *Herpes* entries under **Viruses**; and "Heavy Metal Detox" under **Chemical Poisoning / Detoxification**.

20, 80.9, 143, 166, 218, 224, 235, 241.68, 253, 275, 304.6, 317, 421, 430, 464, 470, 524, 620, 624, 660 + 690 + 727.5, 784, 787, 802 + 1550, 840, 854, 880, 1331, 1875, 1883, 2088.59, 2189, 2213, 2252.8, 2466.9, 2720, 3056.9, 3767, 4992, 5K (for 30 minutes), 23570.5

One woman who completely cured herself of MS set her rife unit to gate 4, and sweep 4 on either side of the main signal, for each of the following frequencies: 20, 80.9, 241.68, 304.6, 660 + 690 + 727.5, 787, 880, 2088.59, 2252.8, 2357.5, 2466.9, 3056.9, 5K

#### Twitch

First try: 470

Also try: 143, 275, 430, 464, 524, 620, 624, 784, 840, 854, 2213

### Nerve Pain

968 (for 15 to 20 minutes, twice a day), 2720

### Nerves, to Stimulate Healing of

2

### Nervous System, to Balance, Strengthen and Support

764

### Nervousness

See "Akathisia / Agitation" in this section.

### Neuralgia, Brachial

Nerve pain in the arm.

0.5, 3.9, 2720

### Neuralgia, General

Severe pain along a nerve. This is considered a "shortened treatment."

3.9, 802 + 1550, 833, 2720, 10K

### Neuralgia, Intercostal

Pain in rib musculature.

20, 125, 444 + 1865, 660 + 690 + 727.5, 776, 787, 802 + 1550, 880, 2720, 3K

#### Neuralgia, Trigeminal

Inflammation of the trigeminus (5th cranial nerve), which regulates chewing and sensation in the face.

3.9, 70.5, 7.83, 27.5 + 220 + 410, 146, 428, 600 + 625 + 650, 660 + 690 + 727.5, 760, 776, 787, 802 + 1550, 832, 880, 1600, 1800, 2170, 2489, 2720

#### Nocardiosis / *Nocardia asteroids*

Transmitted mainly through soil. Symptoms include abscesses in the lungs, fever and cough that can last several months, possibly heart damage, and possibly lesions in the brain leading to meningitis.

228, 231, 237, 694, 710, 887, 2890

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 354950 (lower limit), 355100 (most effective), and 355350 (higher limit of same organism)

Hertz set: 879.83 (lower limit), 880.20 (most effective), and 880.82 (higher limit of same organism)

Also from Dr. Clark: 17679.39

#### Numbness

Lack of sensation in various parts of the body. Also see "Paresthesia" in this section; and various circulatory conditions under **Heart**, **Blood and Circulation**.

440, 600 + 625 + 650, 660 + 690 + 727.5, 787, 802 + 1550, 880, 1600, 1800, 2170, 2489, 2720, 10K

#### Paralysis in the Face

660 + 690 + 727.5, 787, 880, 10K

#### Paralysis, Non-Spastic / Languorous Paralysis

Muscular rigidity accompanying partial paralysis. In some cases, progress might be slow.

8.25, 9.19, 9.2, 20, 72, 95, 125, 444 + 1865, 600 + 625 + 650, 660 + 690 + 727.5, 776, 787, 880, 10K

#### Paralysis from Stroke

See "Stroke Paralysis / Apoplexy" in this section.

#### Paresthesia

Numbness and tingling from pinched nerve. Also see "Subluxation / Spine Distortion" under **Bone and Skeleton** or **Injuries**. This is not a substitute for a chiropractic adjustment.

5.5

#### Parkinson's Disease

Chronic nerve deterioration. Symptoms include increasing tremor, muscular weakness and rigidity, and slowed speech. Research indicates that brain lesions, epileptic seizures, and symptoms similar to Multiple Sclerosis, Parkinson's, and other nervous system conditions can be caused not only by microbes, but also by the ingestion or inhalation of toxic metals, petrochemicals, artificial sweeteners, and some pharmaceuticals. There's usually a deterioration of nerve cells that release dopamine, the neurotransmitter that sends signals responsible for smooth and controlled movements in the muscles. A deficiency of proper dietary fats can contribute to this deterioration.

The *Actinomycetes* bacterium produces epoxomicin, a proteasome inhibitor that prevents the body from breaking down proteins—thus quickly causing symptoms that resemble Parkinson's. This bacterium lives in soil and well water; and more people in rural than urban areas develop Parkinson's. At this time, no frequencies are known for this pathogen.

See other frequencies in this section. Also see "*Chlamydia pneumoniae*" and "*Nocardia asteroids* / Nocardiosis" under **Bacteria**; and "Heavy Metal Detox" under **Chemical Poisoning / Detoxification**. Also see "*Helicobacter pylori* / Peptic (Stomach) Ulcer" under **Bacteria**, since new research shows that many people with Parkinson's are harboring this pathogen and improve when it is eliminated.

From Michael Tigchelaar (3 minutes each): First try 1440, then 6000, 3176, 4334, 1422, 871, 840, 827, 813, 744, 742, 733, 658, 611, 577, 569, 531, 524, 442, 314, 310, 172, 134

Alternate program: 1.1 + 73, 33 (for 30 minutes), 693, 813, 1131 (for at least 3 minutes)

For tremor (run for 10 minutes each): 5K, 6K

For temporary relief: 130, 169 and (for 10 minutes) 6K

For deterioration : 813 and (for 10 minutes) 6K

#### Polio / Poliomyelitis

Inflammation of the grey matter of the spinal cord, often beginning with gastrointestinal disturbances and fever, leading to atrophy of the muscles and occasionally paralysis. Although this condition is sometimes called "Infantile Paralysis," it also affects adults. Some recent studies indicate that the Epstein-Barr Virus, which is implicated in chronic fatigue and mononucleosis, is one of 72 that mutated from the polio virus we received in vaccines. Also see "Meningitis" and other entries in this section; and numerous entries under **Viruses**.

Main frequency: 1500

Also important: 135, 283, 428, 660 + 690 + 727.5, 742, 776, 787, 802 + 1550, 807, 880, 1850, 2632, 10K

#### Raynaud's Disease

Nervous system disorder leading to disturbance of the circulation in the extremities, which can lead to congestion and swelling, and if severe enough, gangrene.

20, 660 + 690 + 727.5

#### Reflex Sympathetic Dystrophy (RSD)

Involves not only the muscles and nerves, but also skin, blood vessels and bones, and is characterized by severe chronic pain, inflammation, muscle or blood vessel spasms, and insomnia, depression and anxiety.

This condition often follows a fall or sprain, a break in a bone, an injury such as a knife wound, heart conditions, infections, surgery, spinal disorders or other major trauma. The person may experience symptoms away from the site of the original trauma. Women in their 30s and 40s most commonly experience this condition. Even light clothing or a breeze can increase the pain; and subjects are often sensitive to loud noises or vibrations. Other symptoms can include inability to balance, short-term memory conditions, visual disturbances, jerky movements, muscle atrophy and falling.

Make sure that the pH and electrolytes are balanced in the system, check for adrenal exhaustion, and seek the guidance of a holistic health care provider. This condition is too new for Rife researchers to have computed frequencies for it. So see entries under **Muscles** and **Nervous System and Brain**; and under **Chemical Poisoning / Detoxification**.

#### Sciatica

Inflammation of the sciatic nerve, felt at the back of thigh running down the inside of the leg. Researchers at the Royal Orthopedic Hospital in Birmingham, England, have found infectious microorganisms in the area of the sciatic nerve. The doctors believe that microscopic tears in the discs of the spine allow pathogens to enter.

10, 660 + 690 + 727.5, 787, 802 + 1550, 880

#### Sclerosis, Lateral

See "Amyotrophic Lateral Sclerosis (ALS)" in this section.

#### Seizure

Sudden attack of painful, convulsive palpitations, with a decrease or complete loss of consciousness. Also see "Epilepsy" in this section.

226, 329, 953

#### Shingles

Caused by the *Herpes* virus, this condition is known as shingles when inflaming the skin along the nerves. If these frequencies are not effective enough, see additional "*Herpes*" entries under **Viruses**.

20, 26, 120, 304, 444 + 1865, 464, 574, 660 + 690 + 727.5, 664, 787, 800, 802 + 1550, 816.4 (for five minutes), 880, 914, 1500, 1552, 1557, 1600, 1633, 1800, 1864, 2127.5, 2170, 2720, 3K, 3176, 3343, 5K

#### Spastic Ataxia

Movement difficulty, lack of muscle coordination accompanied by spastic or convulsive movements. Results might be slow if nerve damage exists, but even brain cells can regenerate, so keep trying. Also see other entries in this section.

7.69, 7.7, 8.25, 9.19, 9.2, 20, 72, 95, 125, 444 + 1865, 600 + 625 + 650, 660 + 690 + 727.5, 776, 787, 880, 1500, 1600, 1800, 2170, 2720,

#### Spastic Paralysis

Convulsive, muscular rigidity accompanying partial paralysis. In some cases, progress might be slow.

7.69, 7.7, 20, 72, 95, 125, 444 + 1865, 600 + 625 + 650, 660 + 690 + 727.5, 776, 787, 880, 10K

#### Spastic Paresis

Partial, convulsive paralysis.

9.4, 30.87, 48, 600 + 625 + 650

#### Stroke

A hemorrhage, or abnormal discharge of blood due to a burst blood vessel, into the brain or spinal cord, possibly causing speech disturbances, slow pulse, labored breathing, incontinence, unconsciousness or even death. See a doctor for treatment and to determine the extent of the injury!

Immediately 3 + 230; then 6.3 + 148, 20, 72, 95, 125, 428, 444 + 1865, 522, 590, 600 + 625 + 650, 660 + 690 + 727.5, 776, 787, 832, 880, 1600, 1800, 2170, 2720, 10K

#### Stroke Paralysis / Apoplexy

3 + 230, 20, 40, 72, 95, 125, 146, 152, 293, 330, 333 + 523 + 768 + 786, 428, 442, 444 + 1865, 522, 555, 600 + 625 + 650, 622, 660 + 690 + 727.5, 751, 787, 797, 800, 880, 1146, 1800, 2720, 8176, 10K

#### Subluxation / Spine Distortion

See under **Bone and Skeleton** or **Injuries**.

#### Thalamus, to Stimulate

The thalamus consists of two bulb-shaped regions, each slightly more than one centimeter (about four-tenths of an inch), in the center of the brain beneath the cerebral hemisphere. These structures receive sensory, auditory, visual and other nerve impulses, they modulate sensory signals to and from the cerebral cortex, and help to regulate arousal, one's level of awareness, and activity.

20

#### Trigeminal Neuralgia

See "Neuralgia, Trigeminal" in this section.

#### Tuberculosis

This highly infectious airborne disease is popularly known for affecting the lungs. However, swelling and tumor-like welts of tissue may appear not only in the lungs, but also

in the meninges (the membrane around the spinal cord) and the intestines. Other symptoms include fever, cough, and difficulty breathing. The list below is abbreviated. Since there are so many frequencies for both the disease, and its resulting so-called secondary infections, also see **Tuberculosis** under **T**.

First try: 369K (for the rod form, used on Royal Rife's #4 machine)

Then try: 21508.01, 2127.5, 1070.82, 660 + 690 + 727.5

And then try: 20, 221, 333 + 523 + 768 + 786, 465, 532, 590, 776, 787, 799, 800, 801, 802 + 1550, 803, 804, 1132, 1500, 1600, 1644, 2008, 2313, 3353, 6516

*End of Nervous System and Brain section*.

### *NEUROSPORA SITOPHILA*
See under **Candida**, **Fungi**, **Molds and Yeasts**.

### *NIGROSPORA*
See under **Candida**, **Fungi**, **Molds and Yeasts**.

### *NOCARDIA ASTEROIDES* / NOCARDIOSIS
See under **Bacteria**.

### NON-HODGKIN'S LYMPHOMA
See "Lymphoma, Non-Hodgkin's" under **Cancer**.

### NON-SPASTIC PARALYSIS / LANGUOROUS PARALYSIS
See "Paralysis, Non-Spastic / Languorous Paralysis" under **Nervous System and Brain**.

### NOSE CONDITIONS
See *Nose and Sinuses* under **Respiratory Tract**.

### NUMBNESS
See under **Nervous System and Brain**.

## –O–

### OAT SMUT
See "*Ustilago avenae* / Oat Smut" under **Candida**, **Fungi**, **Molds and Yeasts**.

### OBESITY / OVERWEIGHT
An overabundance of fatty tissue in relation to lean muscle mass. People are considered overweight if, according to the Body Mass Index (BMI), they have 25% fat; obese if they have 30% fat; and severely or morbidly obese if they have 40% or more fat. Figures for the United States suggest that about 127 million adults age 20 years and older are overweight; about 60 million are obese; and about 9 million are morbidly obese.

The popular notion that people who are fat simply lack will power to stop eating is simplistic. The overweight are starving because they're malnourished. A lack of vital nutrients leads to a cascade of problems, including depression, heart disease, joint pain, sleep apnea, and increased susceptibility to infections such as cellulitis. The person will crave empty calorie foods to increase energy, but this can lead to hypoglycemia or diabetes.

Overweight can also be caused by, as well as cause, inefficient metabolism. The problem of low thyroid output, estimated to affect at least half the American population, plays a huge part in obesity. Too often, doctors rely on narrow, ineffective lab tests to determine hypothyroidism when they should be listening to their clients and basing treatment on symptoms, including body temperature.

Hypothalamus malfunction also plays a key role in obesity, as this portion of the brain regulates all glands, sympathetic/parasympathetic nervous system balance, and the hormones that signal satiety and instruct the body to store fat or release it for fuel. Homeopathic Human Chorionic Gonadotrophin (HCG) therapy can help reset the body's fat regulation mechanism, along with protocols to correct insulin, leptin and thyroid hormone resistance.

When a high carbohydrate diet is eaten, *Candida* and parasites can proliferate. These pathogens thrive by stealing vital nutrients from the host, who overeats to compensate for this lack of nutrition—thus compounding the overweight. What we call food cravings may be "Feed me!" messages from the microbes. This is why we take a microbe-killing approach to overeating.

Another reason to use a frequency device is the discovery of what the medical profession terms the "obesity virus." Chickens and mice injected with the human Adenovirus-36 (AD-36) gained excessive amounts of fat. Apparently, when fat cells are exposed to AD-36, they begin to multiply, in some cases by 300%. Unlike other adenoviruses (which can cause colds, diarrhea and eye infections), AD-36 is unique in that it alone appears to cause weight gain.

In our high-carb culture, nourishing and inexpensive meals consisting of mostly vegetables with a little meat are difficult to obtain. Proper diet, exercise, rest, amino acid supplement therapy, and dealing with emotional issues are all important. See Julia Ross's *The Diet Cure.* Also see **Blood Sugar Levels**; **Candida**, **Fungi**, **Molds and Yeasts**; **Mind and Emotions**; **Parasites**, **Protozoa and Worms**; **Eating Disorders**; thyroid frequencies under **Glands**, *Thyroid*; and "Hypothalamus Function, to Normalize" and "Endocrine System Function, to Normalize," both under **Regeneration and Healing**.

General: 333 + 523 + 768 + 786, 666, 950.6, 958.8, 959, 959.6, 960.4, 962, 967.6, 969.3

Also: Sweep 124 to 126 for 30 minutes.

#### Adenovirus-36 (AD-36)
There is solid evidence to implicate one particular strain of Adenovirus, Adenovirus-36, in obesity. Recently, researchers discovered that monkeys, mice and chickens injected with the virus gain more weight

than do uninfected animals. The virus causes the number of fat cells to increase, and also to triple in size (thus storing more fat). Studies also show that 20% to 30% of overweight humans are infected with the AD-36, compared to 11% of the nonobese population.

Run for 10 minutes each, with a wide sweep of 15 on either side of the main signal): 5218.75, 5796.87, 5859.37, 6140.25, 8875. These frequencies are from Michael Tigchelaar.

Run 6028.99 once or twice a week. Run for 40 minutes, gating between 64 and 75. This frequency is from Jeff Sutherland, who calls it the "fat buster." (See Chapter 4 for an explanation of gating.)

Also try: 20, 26, 48, 60, 72, 95, 125, 160, 180, 300, 333, 444, 1865, 522, 523, 555, 660, 690, 727.5, 768, 787, 802, 880, 942, 951, 952, 959, 960, 962, 968, 969, 1009, 1034, 1060, 1062, 1395, 1500, 1550, 2050, 2720, 4868, 5K, 6989, 7001, 7702, 7009, 7762, 7767, 10K

**OBSESSIVE-COMPULSIVE DISORDER (OCD)**
See "Schizophrenia" or "Bipolar Disorder / Manic Depression" under **Mind and Emotions**.

**ODOR SENSITIVITY, ABNORMAL / HYPEROSMIA**
See under **Respiratory Tract**, *Nose and Sinuses*.

***OOSPORA***
See "*Oospora* / Powdery Mildew" under **Candida**, **Fungi**, **Molds and Yeasts**.

**ORAL LESIONS**
See under **Dental**, *Mouth and Gums*.

**ORCHITIS**
See under **Men**, *Testicles*.

**OSTEITIS**
See under **Bone and Skeleton**.

**OSTEOARTHRITIS**
See under **Arthritis and Joints**.

**OSTEOMYELITIS**
See under **Bone and Skeleton**.

**OSTEOPOROSIS**
See under **Bone and Skeleton**.

**OTITIS, EXTERNA AND MEDIA**
See "Otitis, Externa" and "Otitis, Media" under **Ears**.

**OTOSCLEROSIS**
See under **Ears**.

**OVARIAN CANCER**
See main cancer frequencies under **Cancer**.

**OVARIAN CONDITIONS, ALL**
See under **Women**, *Uterus and Cervix*, *Ovaries*, *and Fallopian Tubes*.

**OZAENA**
See under **Respiratory Tract**, *Nose and Sinuses*.

## –P–

**PAIN**
If you have a heart condition or are wearing a pacemaker, see the warning at the beginning of the **Heart**, **Blood and Circulation** section before continuing.

Pain is the body's way of telling us that something needs attention. Infection and injury are typically accompanied by some kind of pain, so see your particular symptom picture as well as the frequencies below. Sometimes pain results from allergy and inflammation; but drinking water eliminates the condition (see the section on **Water** in Chapter 3). The frequency 10K is used for all types of inflammation. Also see **Inflammation** and **Injuries**. Medical doctor Mark Starr, author of *Hypothyroidism Type 2: The Epidemic*, has found that chronic pain is often related to low thyroid function, so also see "Thyroid, Underactive / Hypothyroidism" under **Glands**, *Thyroid*. Also, of course, see entries for your particular condition.

*General*, *Program 1:* 40 (reported to have an analgesic effect), 95, 304, 660 + 690 + 727.5, 2008, 2127, 2720, 3K, 3040, 10K.

Shortened version 95, 2720, 3040, 10K

*General*, *Program 2:* These are some popular frequencies for arthritis, fibromyalgia, and others. Run for 3 to 6 minutes each: 5, 47, 72, 80, 95, 104, 120, 125, 140, 304, 432, 440, 444, 464, 465, 660 + 690 + 727.5, 665, 787, 770, 776, 800, 880, 1552, 1840, 186, 1998, 2489, 2720, 3176, 5K, 6K, 9K, 10K

Acute pain: 95, 660 + 690 + 727.5, 787, 880, 802 + 1550, 3K, 10K

Injury-related: 0.5, 1, 1.1 + 73, 1.2 + 250, 10.5, 20.5, 5.8, 10, 20, 35, 40, 80, 125, 160, 240, 320, 324, 500, 528, 2720, 3K, 5K, 6K, 10K

**PANIC ATTACKS**
See under **Glands**, *Adrenals*.

***PAPILLOMA* VIRUS / HUMAN *PAPILLOMA* VIRUS (HPV)**
See under **Viruses**.

**PARALYSIS, INFANTILE**
See "Polio / Poliomyelitis" under **Nervous System and Brain**.

**PARALYSIS, LANGUOROUS (NON-SPASTIC)**
See "Paralysis, Non-Spastic / Languorous Paralysis" under **Nervous System and Brain**.

***PARAMECIUM CAUDATUM***
See under **Parasites, Protozoa and Worms**.

**PARAMYXOVIRUS**
See under **Viruses**.

**PARASITES, PROTOZOA AND WORMS**
The common dictionary definition of "parasite" is an organism that lives within or upon another organism at the expense of that organism. Many different microbes, including bacteria and viruses, can be parasitic (feeding off a host); but in most cases, when people talk about "parasites" they are referring to protozoa and worms.

Protozoa are classified as one-celled animals contained within a membrane. They can propel themselves through fluid either by their tails (also called flagella); by first extending some of their cellular material outward (creating what is called a pseudopod, or literally "false foot"), and then dragging the rest of their body to meet this "leg"; or sometimes they are simply moved through the medium in which they land. Amoebas and paramecia are familiar protozoa. Basically, protozoa reproduce through fission—by splitting into two or more identical parts.

Parasitic worms are much more complex and generally large enough to be seen without a microscope. Although worms do not have skeletal structures, they do possess excretory, nervous, and reproductive systems. They can grow inside the human body to lengths of 11 feet or more. Because of their sophistication and potential for becoming so huge, worms can cause severe damage. Parasitic worms are divided into three major groups: roundworms (also called nematodes), tapeworms (also called cestodes), and flukes (also called trematodes). There are many sub-groups within these three major groups, and the worms have varied physical features.

Over 134 parasites can live in the human body. In fact, reviews of autopsies show that parasites may contribute to as much as 75% of all illness, although ordinary diagnostic tests may not detect the presence of worms and parasites due to a sampling error. Many people think of parasites as solely inhabiting the human gut. This is indeed a favorite place, but many of them also live in, among other places, the pancreas, liver, kidneys, brain, and blood. Tests for parasites are less than satisfactory. For instance, ordinary diagnostic tests that utilize fecal smears to detect intestinal parasites are often unable to find them because once the worms attach to the mucous membranes, they become deeply lodged in the crevices and pockets of the large intestine wall, and can avoid being expelled or seen if the layers of waste are tightly impacted. As for other types of parasite tests, according to many lab technicians even mucosal swabs and UV (ultra-violet) stains are limited because they cannot detect the worms in all of their forms (eggs, immature larvae and adults).

Parasite infestations can cause a dizzying array of symptoms. Some of the most common symptoms are nausea, vomiting, constipation, diarrhea, weight loss or gain, blood in the feces, malnutrition, burning urination, vaginal discharge, skin rash, coughing, fevers, itching, night/day sweats, chills, joint and muscle pain, respiratory congestion, central nervous system impairment, headaches, blurry vision and even blindness. It is wise to routinely treat for *Candida* while treating for parasites, for there is a tremendous overlap between the two symptom pictures—and where there is *Candida*, you will often find protozoa and worms, and vice-versa. In addition to the frequencies, consider taking herbal remedies—to kill the parasites, and also to repair the damage done to the body by the parasites.

*Important!* Bacteria often live inside worms, and viruses live inside the bacteria inside the worms. So even if the worms are killed, you must still deal with the smaller microbes that play a role in the composite worm/bacteria/virus symptom picture. If you do not know the classification of a particular microbe, look up its name in this Directory according to its first letter; all conditions are alphabetized. Also see **Chemical Poisoning / Detoxification**, as parasites of all kinds (including protozoa and worms) are common causes of toxins in the system; and where there are parasites, heavy metals and other pollutants are often present.

Parasites are difficult to eliminate because of their many life cycles. The herbs wormwood, black walnut and cloves should be taken along with rifing.

Dinshah Spectro-Chrome color therapy is a deceptively simple, but very effective and inexpensive, way to eliminate parasites. See the section on **Light and Color** in Chapter 3 for a description of the therapy, and the Resource Appendix for information on where to obtain the materials necessary for this method.

In the entries below, wherever possible I give the Latin names for the parasites as well as their common names.

First try: 20, 64, 72, 96, 112, 120, 125, 128, 152, 240, 334, 422, 465, 524, 651, 688, 732, 751, 784, 800, 854, 1864

Then try: 642, 644, 676, 660 + 690 + 727.5, 712, 802 + 1550, 1552, 1862, 2112, 4412

And then try: 47, 80, 95, 440, 444 + 1865, 465, 665, 740, 770, 780, 880, 1840, 1998, 3176, 10K

**General (unspecified)**

3 + 230, 9.6, 20, 35, 47, 60, 64, 72, 80, 95, 96, 102, 120, 125, 128, 440, 444 + 1865, 465, 524, 590, 624, 660 + 690 + 727.5, 665, 740, 770, 780, 784, 787, 800, 854, 880, 1840, 1864, 1885, 1998, 2322, 3176, 4125, 5K, 10K

**Common Single-Celled Parasite (unspecified)**

432, 660 + 690 + 727.5, 753

## Parasite Pests

Over the past decade, I've eliminated thousands of parasite infections from clients. Everyone has many of them. Most go unnoticed. To eliminate parasites requires the precise frequency for each stage of the parasite life cycle (at least four, often seven or more). . . .

Frequencies that are not within a few hertz of the exact frequency and zappers usually annoy parasites rather than kill them, often stimulating them to move around and proliferate. . . . Also, killing one parasite, or one strain of a parasite, allows other strains to proliferate. And killing a parasite infected with another parasite, virus, bacteria, etc., releases those pathogens into your system. Taking the random frequency or shotgun approach to parasites can generate a Herxheimer reaction.

So usually, I figure out what the parasites are infected with and try to kill that first. Then I eliminate the parasite in all its stages, then watch for what starts to proliferate and kill that.

In addition, while herbal protocols will clean out your digestive tract, the parasites will often move to other parts of your body, particularly the brain and sometimes the cardiovascular system. This can cause high blood pressure, high pulse rates, or erratic heartbeats. So you really want to use frequency devices that provide a whole body effect. The right herbs are a good adjuvant therapy to keep the parasite body loading down while you eliminate the stragglers with frequency devices.

Finally, a parasite may hole up in a very specific organ or portion of an organ system, and nothing will eliminate it without plate [contact mode] zapping. So you need to have a means of detecting where in the body a specific parasite is hiding, figuring out what it is infected with, and determining the stages of its life cycle and the specific frequencies for those stages—along with slightly different frequencies for different strains of the same parasite.

It's a daunting task. As a result, most people do not get consistent results with Rife frequencies for parasites. With exactly the right frequency set, however, frequencies will eliminate a specific parasite strain quickly and consistently.

—Jeff Sutherland, PhD
email communication, December 9, 2006

**Amoebas**

310, 333 + 523 + 768 + 786, 532, 732, 827, 1522

***Ancylostoma caninum***

This worm has very nasty hooks that can grow to five inches in length. It causes anemia, heart conditions, severe infections in the respiratory, genital and urinary tracts, and hypoproteinemia. This worm is common in tropical and subtropical regions—such as northern Africa, northern India, northern parts of the Far East and the Andean region of South America—that have inadequate sewage disposal.

600 + 625 + 650

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 383100 (lower limit), 386K, 393K and 400K (most effective), 402900 (higher limit of same organism. Use all these frequencies.

Hertz set: 949.61 (lower limit), 956.80, 974.15 and 991.50 (most effective), and 998.69 (higher limit of same organism). Use all these frequencies.

Also from Dr. Clark: 19914.83, 19566.32, 19217.81

***Ascaris lumbricoides* / Roundworm**

See "Hookworm, probably *Necator americanus*" in this section. Also see "*Candida albicans*" under **Candida**, **Fungi**, **Molds and Yeasts**, as often *Ascaris* and *Candida* co-exist.

First try: 240, 422, 600 + 625 + 650, 688, 771,1500

Then try: 20, 104, 112, 120, 128, 240, 332, 543, 721, 732, 772, 827, 835, 942, 3212, 4412, 4152, 5897, 7159

***Ascaris,* Other Types (unspecified)**

152, 442, 707, 751, 1146, 8146

***Ascaris,* unspecified, larvae in lungs**

From Dr. Hulda Clark: 20313.12, 1011.33

***Babesia* / Babesiosis**

Babesiosis is an infection caused by any of three *Babesia* protozoa that are transmitted by bites from deer ticks (and probably other insects). Symptoms include fever, chills, pain in bones and muscles, nausea, vomiting, and kidney and heart malfunction. This disease infects humans, dogs, cattle, and rodents. The following frequencies do not distinguish between the symptoms caused by *Babesia microti*, *Babesia gibsoni*, and *Babesia divergens*, so use for all outbreaks of *Babesia*.

Since Babesiosis often occurs with other similar illnesses that are carried by the same insects, also see "*Ehrlichia chaffeensis* / Ehrlichiosis," "*Rickettsia rickettsii* / Rocky Mountain Spotted Fever" and "*Borrelia*, all types / Borreliosis / Lyme Disease," all under **Bacteria**.

76, 570, 1583, 1584

***Blastocystis hominis* / Blastocystosis**

The one-celled intestinal parasite *Blastocystis hominis*, often found in colitis or Irritable Bowel Syndrome, causes

Blastocystosis, featuring acute diarrhea and abdominal pain.

210, 365, 595, 844, 848, 1201, 1243, 5777, 11425, 11841, 11967, 13145, 13469, 21776

### *Blepharisma japonicum* and *Blepharisma undulans*

Protozoa that usually eat bacteria found in decomposing vegetation.

3120

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 405650 (lower limit), 406500 (most effective), and 407450 (higher limit of same organism)

Hertz set: 1005.51 (lower limit), 1007.61 (most effective), and 1009.97 (higher limit of organism)

### Brain Parasite

See "*Naegleria fowleri* / Brain Parasite" in this section.

### *Clonorchis sinensis* / Oriental Liver Fluke

Transmitted through the eating of raw fish, it lodges in the liver bile ducts of humans, dogs, cats, pigs and rodents, causing the duct lining to thicken and the surrounding liver tissue to become inflamed. This nasty parasite grows up to 10 inches long and is estimated to infect about 30 million people in Japan, Korea, China, Taiwan, and Vietnam.

2K

From Dr. Hulda Clark: 21259.08, 1058.43

### *Cryptosporidium parvum* / Cryptosporidiosis

Cryptosporidiosis is an infection caused by the protozoan *Cryptosporidium parvum*. In a healthy individual, it can cause acute diarrhea. It mainly affects children and can be the cause of recurrent diarrhea, but can also cause severe, chronic diarrhea in people with AIDS.

First try: 482, 4122

Also try these frequencies for a common single-celled parasite (unspecified): 660 + 690 + 727.5, 432, 753, 5776

### *Dientamoeba fragilis*

A parasite that lives in the large intestine of humans, possibly related to *Trichomonas*. Many people are asymptomatic. When symptoms do occur, they include diarrhea, nausea, stomach pain and cramps, loss of appetite and weight, and fatigue. Children from five to ten years are most commonly affected.

The infection, common worldwide, presumably remains in the intestine without spreading to other parts of the body. More than one stool sample may be needed to detect the parasite. It is spread through improper sanitation, and contaminated water and food, so wash hands after using the toilet.

Since pinworm eggs can protect *Dientamoeba fragilis*, the two microbes are often found together. So also see "*Enterobius vermicularis* / Pinworm / Seatworm" in this section.

1001.42, 20113.98

### *Dirofilaria immitis* / Dirofilariasis / Heartworm

*Dirofilaria immitis*, a parasite carried by several types of mosquitoes, causes Dirofilariasis, better known as the disease Heartworm that affects dogs. The parasite enters the bloodstream and eventually lodges in the heart and nearby arteries, causing coughing, enormous fatigue, weakness, fainting, fever, chills, muscle aches, difficulty breathing, heart pain, irregular heartbeat, heart failure and eventually death. Once a carrier mosquito bites a dog, the immature larvae (microfilaria) remain in the tissue surrounding the bite for about two months and then enter the bloodstream as worms. Then, it takes three to four months to reach the heart and nearby arteries, where they grow and literally strangle the heart muscle (they can grow as long as 11 inches).

The most popular test for heartworm—which involves searching a blood sample for microfilaria—is inconclusive because as many as 38% of infected dogs do not have any microfilaria circulating in the bloodstream at the time the test is performed. The newer tests, which look for chemical substances produced by adult Heartworms, are less commonly used. Heartworm drugs contain highly toxic arsenic compounds that cause headaches, weakness, joint pains, nausea, vomiting, and even death. According to the American Veterinary Medical Association, 65% of the adverse drug reactions, and almost half of all drug-related deaths in dogs, are caused by Heartworm prevention medication. The best non-drug prevention you can give your dog is a diet of raw meat and vegetables, with brewer's yeast and a tiny bit of fresh garlic. Essential oils like eucalyptus make good natural insecticides; synthetic chemicals are poisonous. For more information, read classics in the holistic pet care field by C.J. Puotinen, Wendy Volhard and especially Juliette de Bairacli Levy.

200, 535, 543, 685, 799, 1077, 2322

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 408150 (lower limit), 409K (most effective), and 411150 (higher limit of same organism)

Hertz set: 1011.70 (lower limit), 1013.81 (most effective), and 1019.14 (higher limit of same organism)

Also from Dr. Clark: 20362.91, 1013.81

### *Entamoeba histolytica* / Amoebic Dysentery

*Entamoeba histolytica* is a dangerous protozoan that causes amoebic dysentery, an infection of the liver and digestive tract. Symptoms include severe diarrhea, ulcerated open wound, fever, and blood in the stool. Since several common microbes can cause similar symptoms, also see "*Salmonella typhi* / Typhoid Fever" and "*Shigella*" under **Bacteria**.

First try: 148, 166, 308, 393, 631, 778.

From Dr. Hulda Clark: 19168.02, 954.32

Then try: 333 + 523 + 768 + 786, 465, 660 + 690 + 727.5, 787, 802 + 1550, 832, 880, 1552 for accompanying infections.

### *Enterobius vermicularis* / Pinworm / Seatworm

Infests the intestinal tract. Also see *"Dientamoeba fragilis"* in this section.

20, 112, 120, 422, 423, 732, 773, 826, 827, 835, 4152, 4412

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 420950 (lower limit), 423K (most effective), and 425300 (higher limit of same organism)

Hertz set: 1043.43 (lower limit), 1048.51 (most effective), and 1054.21 (higher limit of same organism)

Also from Dr. Clark: 21059.93

### *Euglena*

A protozoan somewhat related to algae.

432, 3215, 3225, 3325, 6448

### *Eurytrema pancreaticum* / Pancreatic Fluke

A flat worm that lives in the pancreatic ducts of pigs, cattle, camels, monkeys and humans, which has a strong causative relationship to diabetes due to the extensive tissue damage it creates when it burrows into the pancreas. Naturopath Hulda Clark avers that this worm will not settle or reproduce in the pancreas unless wood alcohol (also known as methanol)—which the parasite feeds on—is present in the body. Methanol is found in commercially packaged and artificial foods, and bottled water. Also see **Blood Sugar Levels**.

1850, 2K, 2003, 2008, 2013, 2050, 2080, 6578

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 420350 (lower limit), 421K (most effective), and 422300 (higher limit of same organism)

Hertz set: 1041.94 (lower limit), 1043.55 (most effective), and 1046.78 (higher limit of same organism)

Also from Dr. Clark: 20960.36

### *Fasciola hepatica* / Liver Fluke / Sheep Liver Fluke

Infecting humans and cattle in addition to sheep, these parasites are transmitted through the eating of contaminated vegetation. They lodge in the liver bile ducts, causing the duct lining to thicken and the surrounding liver tissue to become inflamed. They are found throughout the United States, England, Ireland, Europe, the Middle East, Far East, Africa, and Australia. Also see "Fluke, Liver (unspecified)" in this section.

14, 275, 826, 830, 834

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

*Adult fluke:*

Kilohertz set: 421350 (lower limit), 425K (most effective), and 427300 (higher limit of same organism)

Hertz set: 1044.42 (lower limit), 1053.47 (most effective), and 1059.17 (higher limit of same organism)

*Larval stage:*

Kilohertz set: 423800 (lower limit), 427K (most effective), and 430600 (higher limit of same organism)

Hertz set: 1050.50 (lower limit), 1058.43 (most effective), and 1067.35 (higher limit of same organism)

*Fluke eggs:*

Kilohertz set: 422K (lower limit), 425K (most effective), and 427600 (higher limit of same organism)

Hertz set: 1046.03 (lower limit), 1053.47 (most effective), and 1059.91 (higher limit of same organism)

Also from Dr. Hulda Clark: 21159.50 (eggs) and 21259.08 (larvae)

### *Fasciolopsis buski* / Intestinal Fluke

A type of flat worm implicated in intestinal cancer and ulcers. Also see "Fluke, Intestinal, including *Fasciolopsis buski*" in this section; "Intestinal Cancer" under **Cancer**; and **Ulcers**.

55, 2K

From Dr. Hulda Clark: 21607.59, 1075.78 (adult and eggs), and 21508.01, 1070.82 (larvae)

*Fasciolopsis buski* eggs: 15

***Filaria***

A sub-group of nematodes, found in the blood and organs of mammals and transmitted from biting insects.

112, 120, 332, 753

**Fluke, Blood**

See "*Schistosoma mansoni*" and "*Schistosoma haematobium*" in this section.

**Fluke, General**

Flat worm appearing in the liver, intestines and other places.

First try: 15, 55, 143, 275, 435, 524, 651, 664, 676, 763, 854, 945, 2K, 6766, 15244

Also try: 15, 55, 524, 854, 2K

**Fluke, Intestinal, including *Fasciolopsis buski***

Appearing in the liver and other places, and implicated in intestinal cancer and ulcers. Also see "Intestinal Cancer" under **Cancer**; and **Ulcers**.

15, 55, 143, 524, 651, 676, 844, 848, 854, 2K, 2084, 2128, 2150, 6766

From Dr. Hulda Clark: 21607.59, 1075.78 (adult and eggs), and 21508.01, 1070.82 (larvae)

**Fluke, Liver, Oriental**

See "*Clonorchis sinensis* / Oriental Liver Fluke" in this section.

**Fluke, Liver (unspecified)**

Also see "*Fasciola hepatica* / Liver Fluke / Sheep Liver Fluke" and "*Clonorchis sinensis* / Oriental Liver Fluke" in this section.

143, 238, 275, 676, 763, 6641, 6672

**Fluke, Lymph**

157, 10050

**Fluke, Pancreatic**

See "*Eurytrema pancreaticum* / Pancreatic Fluke" in this section.

**Fluke, Sheep Liver**

See "*Fasciola hepatica* / Liver Fluke / Sheep Liver Fluke" in this section.

***Giardia duodenalis* / Giardiasis**

The one-celled microscopic parasite *Giardia duodenalis*, which lives in the intestines of animals and people all over the world, is one of the most common causes of waterborne illness. There are many strains of the *Giardia* microorganism and no frequencies for *Giardia duodenalis* per se, so use frequencies for *Giardia lamblia* below.

***Giardia lamblia* / *Giardia intestinalis* / Giardiasis**

This protozoan found in the intestinal tract is the most frequent cause of non-bacterial diarrhea in North America. Condition is usually caused by drinking contaminated water or eating produce washed in contaminated water. Diarrhea generally occurs within one week of ingestion. Other symptoms can include intestinal cramping, nausea, gas, and weight loss. Children and those with weak immune systems are most susceptible. The condition normally lasts from one to two weeks, although some chronic infections last months or even years.

This microbe survives best in a cool moist environment. Several strains of *Giardia lamblia* have been found, causing symptoms of varying degrees of severity depending on the person's constitution.

334, 407, 812, 829, 1K, 2018, 4334, 5429

These frequencies are from Jeff Sutherland.

430531, adults

231350, larvae

110110, eggs

Dr. Sutherland emphasizes that the frequencies must be used in the following sequence: 430531, 231350, 110110, 231350, 430531, to ensure that the life cycle of the parasite is completely disrupted and all stages are caught and destroyed. A sweep of 200 to 300 Hz is recommended to accommodate the individuality of the terrain.

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 421400 (lower limit), 424K (most effective), and 426300 (higher limit of same organism)

Hertz set: 1044.55 (lower limit), 1050.99 (most effective), and 1056.69 (higher limit of same organism)

Also from Dr. Clark: 21109.72

**Heartworm**

See "*Dirofilaria immitis* / Dirofilariasis / Heartworm" in this section.

**Hookworm, probably *Necator americanus***

Also see "*Ascaris lumbricoides* / Roundworm" in this section.

6.8, 440, 2008, 5868, 6436

***Leishmania*, all types**

Transmitted by sandflies, *Leishmania* (protozoa with tails) cause Kala-azar and similar diseases that infect the lymph nodes, liver and spleen. Symptoms include fever, enlarged spleen, anemia, emaciation, and sometimes skin ulcers, and boils in the nasal cavities and throat. Interestingly,

*Tabor's Cyclopedic Medical Dictionary* (copyright 1940) recommends whole blood transfusions and ultraviolet radiation as a treatment. In the more progressive clinics outside the United States, the blood is slowly taken outside the body in increments, treated with ultraviolet light to kill the microbes, and then returned to the body.

Although the disease originated in the tropics, it is now worldwide. Depending on the geographical variations in which the protozoa develop, they are all slightly different and cause slight variations in symptoms. You might want to try all the frequencies.

#### *Leishmania braziliensis*

787

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 400050 (lower limit), 403K (most effective), and 405100 (higher limit of same organism)

Hertz set: 991.62 (lower limit), 998.94 (most effective), and 1004.14 (higher limit of same organism)

Also from Dr. Clark: 20064.19

#### *Leishmania donovani*

525, 781

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 398K (lower limit), 400K (most effective), and 402650 (higher limit of same organism)

Hertz set: 986.54 (lower limit), 991.50 (most effective), and 998.07 (higher limit of same organism)

Also from Dr. Clark: 19914.83

#### *Leishmania mexicana*

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 400200 (lower limit), 402K (most effective), and 403800 (higher limit of same organism)

Hertz set: 992 (lower limit), 996.46 (most effective), and 1000.92 (higher limit of same organism)

Also from Dr. Clark: 20014.40

#### *Leishmania tropica*

791

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 402100 (lower limit), 405K (most effective), and 407400 (higher limit of same organism)

Hertz set: 996.71 (lower limit), 1003.89 (most effective), and 1009.84 (higher limit of same organism)

Also from Dr. Clark: 20163.76

#### *Leishmania* Virus

Although this entry is for a virus rather than a parasite, it is included here because there is evidence that the *Leishmania* virus inhabits the *Leishmania* protozoan and is part of the pathogenic effects of the protozoan.

#### "New World" *Leishmania* Virus

428.3, 856.6, 1713.1

#### "Old World" *Leishmania* Virus

431.8, 863.6, 1727.2

#### *Naegleria fowleri* / Brain Parasite

An amoeba found in soil, water and air that enters through the nasal passages and gets into the brain, causing encephalitis and death in one week if not treated. Infections from this amoeba are very rare, fewer than 100 reported cases in 25 years in the United States. People contract this amoeba when swimming in contaminated water; but infection is more common in wearers of contact lenses who use faulty equipment to make saline solutions to clean the lenses and end up with contaminated solution.

600 + 625 + 650

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 356900 (lower limit), 362K (most effective), and 364350 (higher limit of same organism)

Hertz set: 884.67 (lower limit), 897.31 (most effective), and 903.13 (higher limit of same organism)

Also from Dr. Clark: 18022.92

#### Nematodes

See "*Ascaris lumbricoides* / Roundworm" in this section.

***Paramecium caudatum***

Paramecium with a tail.

1150, 2298, 4500

**Pinworm**

See "*Enterobius vermicularis* / Pinworm / Seatworm" in this section.

***Pneumocystis carinii***

In people with weakened immune function, this tiny protozoan can cause fever, fatigue, and weight loss—and then, weeks later, life-threatening pneumonia, in which the infected and inflamed lungs fill with copious amounts of fluid and mucous. Symptoms of the pneumonia include dry cough, chills, high fever, chest tightness, and difficulty breathing. As with so many microbes, this protozoan lives in the body but does not cause conditions until the terrain is favorable to its proliferation. Many people who take drugs or test positive for HIV develop pneumonia from this parasite. If the condition is not addressed, the infection can seriously impair the lungs' ability to transport oxygen into the blood, which can then lead to death.

This parasite can also infect the eyes, ears, skin, liver and other organs. Also see "*Klebsiella pneumoniae* / Pneumonia" and "*Mycoplasma pneumoniae* / Pneumonia" under **Bacteria**; and "Pneumonia / Bronchial Pneumonia" under **Respiratory Tract**, *Lungs*.

First try: 204, 340, 600 + 625 + 650, 660 + 690 + 727.5, 709.2, 742, 2838.5

Then try: 20, 412, 450, 452, 550, 578, 688, 683, 766, 776, 787, 802 + 1550, 880, 975, 1238, 1474, 1862, 2688

**Protozoa, general**

432, 753, 5776

**Rotifer**

Parasites that mostly live in both fresh and salt water.

4500

From Hulda Clark: 1151K or 2853.04 (for devices unable to accommodate frequencies in the kilohertz range)

**Roundworm**

See "*Ascaris lumbricoides* / Roundworm" in this section.

***Schistosoma* / Schistosomiasis / Snail Fever**

A blood fluke, originally found in snails, contracted by drinking contaminated water, eating seafood caught from contaminated water, washing vegetables in contaminated water, or even bathing in the water. Even 10 seconds of contact with such infected water can cause serious illness and even death. The parasites travel through the bloodstream and eventually attack the liver, pancreas and stomach. Symptoms include nausea, chills, sweats, joint and muscular aches, enormous fatigue fever, distended abdomen, and a painful enlarged liver. Sometimes, the illness can take eight years or longer to progress

The three main species of these trematode parasites infect over 200 million people in about 75 tropical and subtropical countries. Thousands of people die from this parasite in China and Japan, where sushi (raw fish) is often eaten. However, this is also a poor person's disease and a chronic problem of the poor, as many people must use contaminated lakes and rivers for all of their water needs. Certain Chinese herbs have been used very successfully to kill the flukes; so consider consulting an experienced Chinese herbalist.

***Schistosoma haematobium***

Typically causes chronic inflammation of the urinary-genital tract and is implicated in cancers of the bladder and cervix.

589, 635, 847, 867

From Hulda Clark: 473K or 1172.45 (for devices unable to accommodate frequencies in the kilohertz range) and 23549.28

***Schistosoma japonicum***

Causes conditions similar to those created by *Schistosoma mansoni*.

1015.99, 1076.83, 1093.47, 1236.71, 1272.84, 1286.85, 1378.98, 1428.54, 1577.76, 1759.05, 1778.38, 1863.21

***Schistosoma mansoni***

Typically causes symptoms similar to Hepatitis C, and is also implicated in cancers of the liver, colon and lymph system.

329, 9889, 1035.49, 1087.17, 1089.26, 1238.74, 1257.39, 1261.50, 1272.84, 1350.21, 1431.24, 1564.68, 1734.81, 1799.57, 1910.34

From Hulda Clark: 353K or 875 (for devices unable to accommodate frequencies in the kilohertz range)

***Schistosoma mekongi***

1013.26, 1076.83, 1087.17, 1228.66, 1277.15, 1288.04, 1331.18, 1373.96, 1423.15, 1564.68, 1622.97, 1742.81, 1782.58

**Seatworm**

See "*Enterobius vermicularis* / Pinworm / Seatworm" in this section.

**Sheep Liver Fluke**

See "*Fasciola hepatica* / Liver Fluke / Sheep Liver Fluke" in this section.

**Snail Fever**

See "*Schistosoma* / Schistosomiasis / Snail Fever" in this section.

***Strongyloides stercoralis* / Threadworm**

This roundworm, 2.5 mm in length, is endemic in southern US and common in the tropics and Asia. Skin becomes red and pruritic after penetration by larvae, which usually occurs on feet. Diarrhea, vomiting, and abdominal pain may follow. Migration of larvae through lungs can cause cough and pneumonia.

First try: 9.6, 332, 422, 423, 721, 732, 749, 942, 3212, 4412

*Larval stage*

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 398400 (lower limit), 400K (most effective), and 402K (higher limit of same organism)

Hertz set: 987.53 (lower limit), 991.50 (most effective), and 996.46 (higher limit of same organism)

Also from Dr. Clark for the larval stage: 19914.83

Also try: 380, 698, 722, 738, 746, 752, 776, 1113

**Tapeworm**

Found primarily in dogs, but also cats, wolves, sheep, cattle, goats, horses, pigs, rodents and humans. It can create tumors the size of golf balls and even larger, usually in the liver but sometimes in the lungs and brain.

Tapeworms grow in pieces or segments. Most of the time, tapeworms that are cut can re-grow the portions that are missing. If the middle segment is killed first—instead of the bottom segment first, and then each sequential segment on up—the separated tapeworm segments can re-grow into completely new tapeworms. Also, once a live tapeworm is destroyed by the frequencies, its segments will release any eggs inside. (Although the eggs are expelled with the worm segments by the digestive tract, they can travel elsewhere in the body and hatch.) This makes tapeworms difficult to kill. Therefore, in addition to frequency sessions, use a good anti-parasitic supplement program for tapeworms.

A recent study confirms a connection between tapeworms and cancer. The small sac containing the tapeworm larvae, called a cyst, appears to cause a chronic inflammatory reaction in the organ that it invades, which then leads to the cyst being surrounded by fibrosarcomas.

Since there are so many kinds of tapeworms and people usually don't know which kind they have, all the tapeworm frequencies are grouped together.

***Echinococcus granulosus***

First try: 187, 522, 562, 843, 1223, 1360, 3032, 5522

Then try: 142, 164, 453, 333 + 523 + 768 + 786, 542, 624, 662, 663, 803, 854, 5122

***Echinococcus granulosus*, larval stage**

410

**Eggs of Worms, unspecified**

164, 793, 969, 5243

***Taenia pisiformis***

A hooked worm that infests the intestine of dogs, rabbits and other animals as well as humans. Humans who live with dogs should be careful not to touch their stool.

187, 444 + 1865

**Threadworm**

See "*Strongyloides stercoralis* / Threadworm" in this section.

***Toxoplasma gondii* / Toxoplasmosis**

*Toxoplasma gondii*, a single-cell protozoan that lives in the small intestine of a cat, infects humans, mammals, birds and reptiles, causing Toxoplasmosis. Symptoms include fever, abdominal pain, headache, sore throat, and sometimes lesions, hepatitis, pneumonia, blindness, and severe neurological disorders that can mimic schizophrenia in later years. This protozoan is most commonly contracted by handling contaminated cat litter. It can rather easily be transmitted by a pregnant woman to the fetus, causing spontaneous abortion, death at birth, or mental and physical retardation. This is why pregnant women should minimize contact with cats and avoid emptying their cat's litter box.

First try: 434, 852

From Hulda Clark: 395K or 979.11 (for devices unable to accommodate frequencies in the kilohertz range) and 19665.89

For secondary infections, try: 660 + 690 + 727.5

***Trichinella spiralis* / Trichinosis**

The infection Trichinosis is well known to cooks: the parasite *Trichinella spiralis* is found in improperly cooked pork, rabbit, bear meat, and even beef. Symptoms, which can be serious, include diarrhea, fever, conjunctivitis, degeneration and pain in the muscles, and sometimes degeneration and nodules in the central nervous system.

101, 230, 541, 822, 1054, 1372

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 403850 (lower limit), 404500 (most effective), and 405570 (higher limit of same organism)

Hertz set: 1001.04 (lower limit), 1002.66 (most effective), and 1005.31 (higher limit of same organism)

Also from Dr. Clark: 20138.87

***Trichomonas hominis***

A protozoan parasite found in the intestines, causing diarrhea and dysentery. The only *Trichomonas frequencies* available are for those found in the genital tract, which might be the same microorganism.

610 + 692 + 980

***Trichomonas vaginalis***

An aerobic protozoan parasite usually found in the vagina, causing itching, burning, and foul-smelling discharge.

610 + 692 + 980

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 378K (lower limit), 381K (most effective), and 383600 (higher limit of same organism)

Hertz set: 936.97 (lower limit), 944.40 (most effective), and 950.85 (higher limit of same organism)

Also from Dr. Clark: 18968.87

## Tapeworm Frequencies from Dr. Hulda Clark

Dr. Clark advises to use gated square wave (not the sine wave) when rifing for tapeworms. Sweep from the lower range to the upper range. The tapeworm must be zapped from the lowest segment (and lowest frequency) to the head (or scolex) and highest frequency to prevent the middle segments from regenerating. Include all egg and larva frequencies, too.

Use the hertz range for devices unable to accommodate frequencies in the kilohertz range.

| Tapeworm | Kilohertz Range | | Hertz Range | |
|---|---|---|---|---|
| *Taenia* family, unspecified, larvae | 436400 | 440050 | 1081.73 | 1090.77 |
| *Diphyllobothrium erinacei,* head | 467250 | 487550 | 1158.20 | 1208.52 |
| *Diphyllobothrium latum*, head | 452900 | 472300 | 1122.63 | 1170.71 |
| *Dipylidium caninum*, male/female sex organs | 439550 | 444300 | 1089.54 | 1101.31 |
| *Dipylidium caninum*, head | 451950 | 472150 | 1120.27 | 1170.34 |
| *Echinococcus granulosus*, larvae | 441150 | 446500 | 1093.50 | 1106.76 |
| *Echinococcus granulosus* | 451600 | 461500 | 1119.40 | 1143.94 |
| *Echinococcus multilocularis* | 455850 | 458350 | 1129.94 | 1136.14 |
| *Hymenolepis nana*, larvae | 478000 | 481750 | 1184.84 | 1194.14 |
| *Hymenolepis diminuta* | 445000 | 481150 | 1103.04 | 1192.65 |
| *Moniezia* | 430350 | 465200 | 1066.73 | 1153.12 |
| *Taenia serialis* | 453600 | 457800 | 1124.36 | 1134.77 |
| *Taenia pisiformus*, eggs | 465200 | 469700 | 1153.12 | 1164.27 |
| *Taenia pisiformus*, larvae | 475200 | 482100 | 1177.90 | 1195.01 |
| *Taenia saginata*, larvae | 476500 | 481050 | 1181.13 | 1192.40 |
| *Taenia solium*, larvae* | 475000 | 475000 | 1177.41 | 1177.41 |
| *Taenia solium*, head* | 444000 | 448900 | 1100.57 | 1112.71 |

*Since Dr. Clark states that the head of the tapeworm has the highest frequencies, the numbers for the *Taenia solium* larvae and head may have been inadvertently transposed in Clark's original work.

***Trichuris trichiura* / Whipworm**

This small worm with a whip-like shape is thought to infect fully a quarter of the world's population, primarily in Asia, but also in South America and Africa. Children can become infected by eating dirt. Symptoms can include diarrhea, particularly at night, and dysentery.

Also try the frequencies listed above under "General (unspecified)" in this section.

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 388300 (lower limit), 406K (most effective), 408900 (higher limit of same organism)

Hertz set: 962.50 (lower limit), 1006.37 (most effective), and 1013.56 (higher limit of same organism)

Also from Dr. Clark: 20213.55

***Trypanosoma brucei gambiense* / African trypanosomiasis / Sleeping Sickness**

*Trypanosoma brucei gambiense*, a genus of flagellate protozoan found in the blood and often transmitted by tsetse flies, causes African trypanosomiasis or Sleeping Sickness. Symptoms include fever, headache, inability to concentrate, lethargy, drowsiness, droopy eyelids, muscular weakness, and eventually tremors, seizures, coma and death. Parasitologists used to think that there were two separate species of *Trypanosoma*: *Trypanosoma brucei* and *Trypanosoma gambiense*. However, it appears that there are only small variations in the different types of *Trypanosoma*, and the name above is correct. This tropical disease can have an incubation time of up to two years. It is always fatal if untreated, due to the extensive damage to the central nervous system. See a doctor at the first signs of possible symptoms.

20, 120, 255, 316, 403, 656, 780, 700, 724, 988

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz sets:

423200 (lower limit), 429K (most effective), and 431400 (higher limit of same organism)

393750 (lower limit), 396K (most effective), and 398700 (higher limit of same organism)

423500 (lower limit), 426K (most effective), and 428550 (higher limit of same organism)

Hertz sets:

1049.01 (lower limit), 1063.38 (most effective), and 1069.33 (higher limit of same organism)

976.01 (lower limit), 981.59 (most effective), and 988.28 (higher limit of same organism)

1049.75 (lower limit), 1055.95 (most effective), and 1062.27 (higher limit of same organism)

Also from Dr. Clark: 21358.65, 19715.68

**Whipworm**

See "*Trichuris trichiura* / Whipworm" in this section.

*End of Parasites, Protozoa and Worms section.*

**PARATHYROID GLAND, ALL CONDITIONS**

See under **Glands**, *Parathyroid*.

**PARESTHESIA**

See under **Nervous System and Brain**.

**PARKINSON'S DISEASE**

See under **Nervous System and Brain**.

**PARROT FEVER / ORNITHOSIS / PSITTACOSIS**

An infectious pneumonia transmitted by certain birds.

233, 331, 332, 583, 859, 1217

**PARVO**

See "Parvo Virus" entries under **Viruses**.

**PASTEURELLA**

See "*Yersinia (Pasteurella) pestis* / Pasteurella / Bubonic Plague / Black Death" under **Bacteria**.

**PELVIC INFLAMMATORY DISEASE (PID)**

See under **Women**, *Uterus and Cervix*, *Ovaries*, *and Fallopian Tubes*.

**PEMPHIGUS**

See under **Skin**; **Dental**, *Mouth and Gums*; **Respiratory Tract**, *Nose and Sinuses*; or **Respiratory Tract**, *Throat and Lymph Nodes*.

**PERICARDITIS**

See under **Heart**, **Blood and Circulation**.

**PERIODONTAL DISEASE**

See "Gingivitis / Gum Inflammation and Infection" under **Dental**, *Mouth and Gums*.

**PERITONITIS**

See under **Gastrointestinal Tract**, *Colon / Large Intestine*.

**PERNIOSIS**

See "Chilblains" under **Injuries**.

**PERTUSSIS**

See "*Bordetella pertussis* or *Bordetella parapertussis* / Whooping Cough" under **Bacteria**.

**PESTICIDE DETOX**

See under **Chemical Poisoning / Detoxification**.

**PHARYNGITIS**

See the many entries under **Respiratory Tract**, *Throat and Lymph Nodes*.

**PHLEBITIS**
See under **Heart, Blood and Circulation**.

**PHOTOSENSITIVITY**
See under **Eyes**.

**PIGMENTATION DEFICIENCY**
See "Leukoderma / Vitiligo" under **Skin**.

**PIMPLES**
See "Acne" under **Skin**.

**PINEAL GLAND PROBLEMS, ALL**
See under **Glands**, *Pineal*.

**PINK EYE**
See "Conjunctivitis / Pink Eye" under **Eyes**.

**PINWORM**
See "*Enterobius vermicularis* / Pinworm / Seatworm" under **Parasites, Protozoa and Worms**; or under **Gastrointestinal Tract**, *Small Intestine*.

**PITUITARY GLAND CONDITIONS, ALL**
See under **Glands**, *Pituitary*.

**PLANTAR FASCITIS**
See "Heel Pain / Plantar Fascitis" under **Injuries**.

**PLASMACYTOMA**
See "Multiple Myeloma" under **Cancer**.

**PLEURISY**
See under **Respiratory Tract**, *Lungs*.

**PNEUMOCOCCUS**
See "*Streptococcus pneumoniae*" under **Bacteria**.

***PNEUMOCYSTIS CARINII***
See under **Parasites, Protozoa and Worms**.

**PNEUMONIA / BRONCHIAL PNEUMONIA, ALL TYPES**
See under **Respiratory Tract**, *Lungs*.

**PNEUMONIA / *KLEBSIELLA PNEUMONIAE***
See "*Klebsiella pneumoniae* / Pneumonia" under **Bacteria**.

**POLIO / POLIOMYELITIS**
See under **Nervous System and Brain**.

**POLYARTHRITIS**
See under **Arthritis and Joints**.

**POLYP**
See "Polyp, General" under **Tumors, Benign**.

**PONTIAC FEVER**
See "*Legionella pneumophila* / Legionellosis / Legionnaire's Disease / Pontiac Fever" under **Bacteria**.

**PORPHYRIA**
Several rare disorders due to the inability to create heme, a component of hemoglobin. This causes skin and nerve symptoms including abnormal sensitivity to light, skin lesions and scarring, delirium, seizure, coma, and abdominal pain. The neurological aspects of this condition are typically precipitated by drugs such as barbiturates. Since the liver, bone marrow, cellular metabolism, and other basic parts of the body are involved, also try other symptom pictures.
698, 780

**PRIONS**
A prion is a particle that contains only protein, with no nucleic acid. Some medical professionals believe that prions infect and propagate by folding into abnormal shapes, and then by causing normal molecules to abnormally structure themselves as well. Although prions are associated with fatal brain diseases—including Bovine Spongiform Encephalopathy (BSE or Mad Cow disease), sheep scrapie and Creutzfeldt-Jakob disease (CJD) in humans—they may be the *result* of deranged tissue, rather than the *cause*. The late Mark Purdy showed that Mad Cow and other forms of BSE simply do not exist in populations of healthy elk and deer, and in cattle that are raised organically without exposure to pesticides. In cases of brain infection, spirochetes have been seen.

There are no frequencies for prions per se. However, according to Dr. Richard Loyd, prions can be removed by either an extract of olive leaf, hydrangea, dandelion and cat's claw, or an extract of elecampane and echinacea.

**PROCTITIS**
See under **Gastrointestinal Tract**, *Colon / Large Intestine*.

**PROSTATE CANCER**
See under **Cancer**.

**PROSTATE CONDITIONS, ALL**
See under **Men**, *Prostate*.

**PROTEIN SENSITIZATION**
See **Serum Sickness / Anaphylaxis / Protein Sensitization**.

***PROTEUS VULGARIS***
See under **Bacteria**.

**PROTOZOA, ALL TYPES**
See **Parasites, Protozoa and Worms**.

**PRURITUS**
See "Anus, Itching / Pruritus" under **Gastrointestinal Tract**, *Colon / Large Intestine*.

***PSEUDOMONAS AERUGINOSA, MALLEI* AND *PYOCYANEA***
See "*Pseudomonas aeruginosa*," "*Pseudomonas mallei* / Glanders / Farcy," and "*Pseudomonas pyocyanea*" under **Bacteria**.

**PSORIASIS**
See under **Skin**.

**PSYCHOSOMATIC PAIN**
See under **Mind and Emotions**.

**PUS INFECTION**
See "*Pseudomonas aeruginosa*" under **Bacteria**.

**PYODERMA (OR PYODERMIA) GANGRENOSUM**
See under **Skin**.

**PYORRHEA**
See "Gingivitis / Gum Inflammation and Infection" under **Dental**, *Mouth and Gums*.

## –Q–

**Q FEVER**
See "*Rickettsia* / Q Fever" under **Bacteria**.

**QUINTAN FEVER**
See "*Bartonella quintana* / Febris wolhynia / Wolhynia Fever / Trench Fever / Quintan Fever / Shin Bone Fever" under **Bacteria**.

## –R–

**RABBIT FEVER**
See "*Francisella tularensis* / Tularemia / Rabbit Fever / Deer Fly Fever" under **Bacteria**.

**RABIES**
See "Lyssavirus / Rabies" under **Viruses**.

**RADIATION BLOCKER**
This was found by a very experienced and reliable rifer to nullify radiation emissions from a nearby electrical power plant. The machine you use must have a plasma tube, and needs to be kept on for the period during which you require protection. The frequency must be exact.
889.5

**RADIATION BURNS, INCLUDING MOST OTHER TYPES OF BURNS**
190, 200, 465, 660 + 690 + 727.5, 787, 880, 10K

**RAGWEED ALLERGY**
473

**RAYNAUD'S DISEASE**
See under **Heart, Blood and Circulation**.

**RECTUM, BLEEDING**
See "Hemorrhoid" under **Gastrointestinal Tract**, *Colon / Large Intestine*.

**REFLEX SYMPATHETIC DYSTROPHY (RSD)**
See under **Muscles**; or **Nervous System and Brain**.

**REFLUX ESOPHAGITIS**
See "Acid Reflux / Gastro-Esophogeal Reflux Disease (GERD)" under **Gastrointestinal Tract**, *Stomach and Esophagus*.

**REGENERATION AND HEALING**
Although Royal Rife publicly stated that frequencies destroy microbes, many experimenters today use frequency devices explicitly to heal and regenerate tissue. This is not surprising, since all living things generate an electromagnetic field, the electrical aspects of that field, the magnetic aspects of that field, and other types of energies including scalar waves. Electromedicine researchers have discovered that applying the appropriate electromagnetic field, electrical current or magnetism to the body helps cells repair. Once nutrients enter and wastes leave the cells, tissues can begin to function optimally.

Rife researcher Bruce Stenulson reports that the most dramatic results for tissue regeneration are achieved with the EM+ systems. He likes devices with a hand-held plasma tube (which directly contacts the affected area), and with a stainless steel grounding plate that can be placed opposite the area. However, the BCX Ultra with two hand-held plasma tubes works well too, as do the PERL from Resonant Light, unites from Pulsed Technologies, LEDs from Good Energy Products, and other contact and non-contact devices. You can also use an electrode (pads) unit, placing the electrodes where they are needed. Front/back, side/side, or top/bottom positions are common. Patch electrodes—sticky, area-specific patches that adhere to the skin—are handy for this application.

Make sure your nutrition is solid. This includes assimilable minerals. See entry that pertains to your specific condition or body part. Most of these frequencies are from Bruce Stenulson.

#### General

Basic short set 47, 2720 (this is used for pain; set for at least 30 minutes)

**General Organ / Gland Support**

From Jimmie Holman.

Primary: 23958, 24354, 28251, 29766, 32121, 32670, 36735, 38280, 44505, 44583, 45549, 45738, 54531, 56133, 56376, 57519, 58806, 63336, 67977, 71874, 84942, 86394, 87000, 89298

Secondary: 20088, 22386, 27144, 44505, 45927, 46683, 48642, 49329, 56889, 57591, 57599, 60501, 60507, 67512, 67518, 68904, 87846, 90885, 91260, 91719

**Adrenal Function, to Normalize**

1335

**Back Pain, to Reduce**

Sweep from 326 to 328

**Blood Capillaries, to Stimulate Healing of**

Stop! First see warnings on device use at the beginning of the **Heart, Blood and Circulation** section.

15.2

**Blood Cell Production, Red, to Normalize**

Stop! First see warnings on device use at the beginning of the **Heart, Blood and Circulation** section.

1524

**Blood Cell Production, White, to Normalize**

Stop! First see warnings on device use at the beginning of the **Heart, Blood and Circulation** section.

1434

**Blood Circulation, to Stimulate and Normalize**

Stop! First see warnings on device use at the beginning of the **Heart, Blood and Circulation** section.

337

**Blood, to Clean**

Stop! First see warnings on device use at the beginning of the **Heart, Blood and Circulation** section.

10K, 100K

**Blood Flow and Circulation, to Increase**

Stop! First see warnings on device use at the beginning of the **Heart, Blood and Circulation** section.

17

**Blood Hemoglobin Production, to Normalize**

Stop! First see warnings on device use at the beginning of the **Heart, Blood and Circulation** section.

2452

**Blood Pressure, to Normalize**

Stop! First see warnings on device use at the beginning of the **Heart, Blood and Circulation** section.

15

**Bones, to Stimulate Healing of Fractures**

First try: for 45 minutes 2720

Then try: for 10 minutes each, every day 25 and then 7

Then try: 50, 424, 465, 660 + 690 + 727.5, 784, 787, 880, 1552, 1560, 1577, 10K

**Calcium Metabolism and Utilization, to Improve**

Parathyroid disturbance can cause either an excess or a deficiency of calcium.

First try: 9.6, 10K

Then try: 326, 328, 4760.5, 673.1, 771

**Chemical Sensitivity, to Reduce**

440, 443

**Colon Function, to Balance and Normalize**

8, 440, 635, 880, 2500

**DNA Repair**

528, 731/732

**Electrical Sensitivity, to Reduce**

657

**Emotional Trauma / Energy Block Clearing and Stabilization**

15

**Endocrine System Function, to Normalize**

1537

**Energy and Vitality, to Improve**

Also see "DNA Repair" in this section.

Run for 3 to 5 minutes each: 1056, 2008, 9999

Run in this order: 528, 15

**Estrogen Production Levels, to Normalize (for both Males and Females)**

1351

**Heart Function, to Normalize**

696

**Hypothalamus Function, to Normalize**

1534, 1413, 1351

**Immune System Function, to Normalize / Support**

There is a difference between *stimulating* immune function and *regulating* it. *Stimulating* increases the number of immune cells and intensifies their activity. *Regulating* supports immune cells so they behave as they should: if the immune response is hyperactive or hypervigilant, the treatment will soothe it (slow it down), and if the immune response is hypoactive or sluggish,

that same treatment will make it work harder (speed it up). This distinction is important because someone with an autoimmune disorder—whose immune function is already in overdrive—will become worse if the immune cells are stimulated. In such a case, it's desirable to *normalize* (rather than stimulate) the system. Normalizing calms hyperactivity and boosts hypoactivity. This is why it's so important to distinguish between the two forms of therapy. Unfortunately, people sometimes use the term "boost" regarding immune function when what they really mean is "regulate." (Incidentally, there are only a handful of herbs that regulate—calm hyperactivity and boost hypoactivity. They are known as *adaptogenic* herbs.)

Although the available literature does not distinguish which frequencies regulate immune function versus which frequencies stimulate it, there are decades of reports from rifers. It appears that the following frequencies do *not* disrupt (disregulate) immune function. Most of the frequencies disable microbes, and some of them help to normalize tissue by adding needed voltage to the cells. As with all treatments, if you have an ongoing negative reaction to a frequency, discontinue using it. Also see **Autoimmune Disorders**.

If there are no known infections, first try 10K and 835 (these are normalizing frequencies).

Then try: 1.2 + 250, 3 + 230, 7.69, 7.7, 9.39, 9.4, 9.6, 20, 28, 146, 465, 522, 600 + 625 + 650, 660 + 690 + 727.5, 776, 787, 802 + 1550, 880, 1850

Also try: 8, 432, 1862, 2008, 2128, 2180, 2791, 2855, 2867, 2929, 3347, 3448, 4014, 5611

Also sweep between 1850 and 2400

**Inocine Production, to Stimulate and Normalize**

Inocine is a nucleic acid that allows organisms to correctly transfer genetic information from one generation to the next. This is for stroke recovery and other conditions.

2642

**Kidney Function, to Normalize**

625

**Ligaments, to Stimulate Healing**

9.7, 50, 120

**Liver Function, to Support and Balance**

33.13, 537, 751, 802 + 1550, 1552

**Lymph System Circulation / Drainage, to Increase**

6.3 + 148, 10, 10.36, 15, 15.05, 20.5, 66, 146, 428, 440, 444 + 1865, 465, 522, 660 + 690 + 727.5, 676, 787, 880, 3176, 10K

**Mental Function, to Normalize**

35

**Muscles, to Stimulate Healing of**

13.5

**Nerves, to Stimulate Healing of**

2.0, 657, 10K, 5K

**Nervous System Function, to Normalize**

764

**Pancreas Function, to Normalize**

654

**Pineal Function, to Normalize**

480

**Pituitary Function, to Normalize**

635

**Pituitary, Human Growth Hormone (HGH) Production, to Stimulate and Normalize**

1725 , 645, 1342

**Progesterone Levels, to Normalize**

Do these in sequence: 763, 1446, 1443, 763 (again)

**RNA Integrity, to Strengthen**

637

**Tendons, to Repair**

120

**Testosterone Production Levels, to Normalize—for Females**

1445

**Testosterone Production Levels, to Normalize—for Males**

1444

**Thyroid Function, to Normalize**

763

**Tissue Healing and Regeneration**

47, 266, 1360, 2128, 2720, 5K

**Wound Healing and Regeneration**

Vitamins C and E are helpful, along with extra bioflavonoids and selenium. You can also try using an LED or soft laser instrument.

20, 40, 190, 220, 660 + 690 + 727.5, 787, 880, 2720

*End of Regeneration and Healing section.*

### RELAXATION, TO PRODUCE

See "Calming, to Produce" under **Mind and Emotions**.

### RENAL DISORDERS

See under **Urinary Tract**, *Kidneys*.

### REPETITIVE STRESS INJURY (RSI)

See "Carpal Tunnel Syndrome / Repetitive Stress Injury (RSI)" under **Injuries** or **Muscles**.

### REPRODUCTIVE DISORDERS

See under **Men** or **Women**.

### RESPIRATORY TRACT

The respiratory tract consists of the nose, sinuses, throat, and lungs. Sometimes an infection is localized; other times, it can spread. Respiratory conditions can be caused or aggravated by multiple allergies to food and pollen, a weak intestinal tract, and airborne environmental pollutants such as molds and chemicals.

Eat a healthy diet of fresh vegetables and living foods. It can help to eliminate mucous-producing foods such as sugar, glutenous grains, citrus fruits, commercially processed (and even raw) dairy, and excessive amounts of red meat.

People report great relief from inhaling essential oils such as eucalyptus, tea tree, lavender and lemon (this makes a nice combination), with or without colloidal silver (see Chapter 3). The oils can be misted through an aromatherapy device, ultrasonic humidifier (remove the filter so the silver particles can become airborne), or a medical nebulizer (a fancy electronic gadget that imparts a fine mist directly into the nose and lungs through a tube feeding a nose mask). Mold contamination causing "sick building syndrome" is a serious and widespread problem, so also see the many entries under **Candida**, **Fungi**, **Molds and Yeasts**, even if you haven't detected any mold.

#### *Lungs*

The lungs are a pair of very large, spongy organs in the chest cavity on either side of the heart, responsible for respiration (breathing). The lungs protect the heart and are protected by the rib cage. The left lung is smaller than the right one, to provide room for the heart, though as the person matures, each lung grows larger.

Air is inhaled through the nose, into the trachea (windpipe) which branches left and right into the two bronchi, and then into the even smaller bronchioles, and finally the tiny thin-walled air sacs called alveoli. A network of fine capillaries transport blood over the alveolar surface. The alveoli absorb atmospheric oxygen, pass it to the hemoglobin in red blood cells (to be carried through the bloodstream), and excrete carbon dioxide received from the bloodstream back into the atmosphere. The honeycombed alveoli have a larger surface area than the outside of the lung to optimize the gas exchange.

The respiratory diaphragm is a large sheet of muscle at the base of the chest cavity. The expansion and contraction of the diaphragm (along with the intercostal muscles) increases and decreases air pressure, which expands and contracts the lungs. The moist environment of the lung makes it susceptible to microbial infections.

#### Lungs, General Conditions

20, 72, 95, 125, 444 + 1865, 450, 590, 660 + 690 + 727.5, 776, 787, 802 + 1550, 880, 1800

#### Abscess from *Nocardia asteroides*

Nocardiosis is transmitted mainly through soil by the bacterium *Nocardia asteroides*, causing abscesses in the lungs, as well as fever and cough that can last several months. There is also the possibility of heart damage, and lesions in the brain leading to meningitis.

228, 231, 237, 694, 710, 887, 2890

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 354950 (lower limit), 355100 (most effective), and 355350 (higher limit of same organism)

Hertz set: 879.83 (lower limit), 880.20 (most effective), and 880.82 (higher limit of same organism)

Also from Dr. Clark: 17679.39

#### Actinomycosis

Infection of the brain, lungs, gastrointestinal tract or jaw caused by the fungus *Actinomyces bovis*.

1.1 + 73, 20, 160, 220, 465, 660 + 690 + 727.5, 787, 10K

#### Adenovirus Infection

Causes symptoms in the lungs, stomach, and intestines. Also see "Adenovirus, all types" under **Viruses**.

First try: 333 + 523 + 768 + 786, 666, 660 + 690 + 727.5, 950.6, 958.8, 959, 959.6, 960.4, 962, 967.6, 969.3

Also try long set if the above isn't sufficient: 20, 26, 48, 60, 72, 95, 125, 160 (for 5 minutes), 180, 300, 333 + 523 + 768 + 786, 444 + 1865, 522, 555, 787, 802 + 1550, 880, 942, 952, 959, 962, 959 to 969, 1395 (for 5 to 10 minutes), 1500, 2050, 2720, 4868, 5K, 6989, 7001, 7009, 7702, 7762, 7767, 10K

#### *Alternaria tenuis*

A fungus associated with lung ailments.

304, 853

#### Asthma / Bronchial Asthma

Spasm or swelling of the bronchial tubes in lungs. There is often an emotional component to this symptom picture—many people suffering from asthma harbor unresolved feelings, mostly grief and sadness. Avoid eating dairy, sugars, grains, citrus, excess red meat, and any other mucous-producing foods. Also try not to breathe in mold, mildew, and other pollutants.

0.5, 20, 72, 95, 125, 146, 444 + 1865, 522, 660 + 690 + 727.5, 787, 810, 880, 1233/1234, 1283, 1500, 1600, 1800, 2170, 2720

#### Bronchial Cancer

See "Lung Cancer" under **Cancer**.

#### Bronchial Pneumonia

See "Pneumonia / Bronchial Pneumonia" in this section.

#### Bronchiectasis

Chronic dilation of the bronchi or passages in the lungs, accompanied by coughing and huge amounts of pus (accumulation of dead white blood cells), often linked to chronic bronchitis, tuberculosis and whooping cough. Also see "Bronchitis," "Tuberculosis," and "Whooping Cough" in this section.

342, 344 + 510 + 943, 778

#### Bronchitis

Inflammation of the upper portion of the mucous membranes of the lungs.

9.35, 9.39, 9.4, 20, 72, 333 + 523 + 768 + 786, 344 + 510 + 943, 452, 464, 514, 660 + 690 + 727.5, 683, 743, 880, 1234, 3672

#### Bronchopneumonia borinum

See "Pneumonia / Bronchial Pneumonia" in this section.

#### Catarrh

Mucous membrane inflammation in various places including the respiratory tract. It will also go into the gastrointestinal tract, eyes, and uterus

20, 380, 444 + 1865, 660 + 690 + 727.5, 787, 800, 802 + 1550, 880

#### Cold, Chest and Head

Daily ingestion of either echinacea or transfer factor will help build immune function. (Make sure the echinacea tingles in the mouth; otherwise it's not potent.) These microbes constantly mutate to new strains, so also try other frequencies.

1.1 + 73, 20, 72 (for 5 minutes), 120, 125, 146, 333 + 523 + 768 + 786, 344 + 510 + 943, 400, 440, 444 + 1865, 452, 465, 522, 542, 552, 652, 660 + 690 + 727.5, 683, 720, 725, 746, 751, 766, 768, 776, 787, 800 (for 10 minutes), 802 + 1550, 880 (for 10 minutes), 1K (for 5 minutes), 1110, 1500, 2008, 2489, 3176, 4400, 4412, 5K, 5500, 7760 (for 15 minutes), 8210 (for 5 minutes), 8700, 10K

#### *Cryptococcus neoformans*

A yeast that infects the respiratory tract but can turn into a brain infection called meningoencephalitis, symptoms of which include headache, nausea, staggering gait, irritability, confusion and blurred vision.

367, 428, 444 + 1865, 476, 478, 522, 579, 594, 597, 613, 624, 785, 792, 872, 2121, 5880, 5884

#### Emphysema

Distention from gas or air in the gaps between tissues of the lungs. Also see "*Ascaris lumbricoides* / Roundworm" and other entries under **Parasites, Protozoa and Worms**.

20, 80, 120, 660 + 690 + 727.5, 787, 880, 1234, 3672, 7344

#### Fibrosis

Scarring in the connective tissue of the lung.

27.5 + 220 + 410

#### Lung Infection caused by *Gordona sputi*

A bacterium.

381.2, 400.6, 429.1, 435.4,762.3, 801.2, 858.2, 870.7, 3432.8, 1524.7, 1602.3, 1716.4, 17410.5, 3049, 3204.6, 3483

#### *Nigrospora*

Fungus involved in lung, sinus, TB-type infections, and allergies.

302, 350, 764

#### Pleurisy

Inflammation of the membrane enfolding the lungs.

20, 72, 95, 125, 444 + 1865, 450, 590, 660 + 690 + 727.5, 776, 787, 802 + 1550, 880, 2170

#### Pneumonia / Bronchial Pneumonia

Severe infection and inflammation of the lungs, which fill with copious amounts of fluid and mucous. Symptoms include high fever, chills, cough, and sometimes blood in the mucous lining the lungs.

First try the following frequencies (some of which are for the microbes listed below). If they

aren't enough, try the rest of the frequencies for the specific microbes.

20, 412, 450, 452, 550, 578, 600 + 625 + 650, 660 + 690 + 727.5, 688, 683, 709.2, 766, 776, 787, 802 + 1550, 880, 975, 1238, 1474, 1862, 2688, 2838.5

#### *Klebsiella pneumoniae* / Pneumonia

Causes severe pneumonia, an infection and inflammation of the lungs, which fill with copious amounts of fluid and mucous. Symptoms include high fever, chills, and cough. Also see "*Mycoplasma pneumoniae* / Pneumonia" and "*Pneumocystis carinii*" in this section; and "Pneumonia / Bronchial Pneumonia" under **Respiratory Tract**, *Lungs*.

First try: 412, 413, 660 + 690 + 727.5, 709.2, 746, 765, 766, 779, 783, 818, 840, 2838.5

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz sets:

393450 (lower limit), 401K (most effective), and 404660 (higher limit of same organism)

416900 (lower limit), 419K (most effective), and 421900 (higher limit of same organism)

Hertz sets:

975.27 (lower limit), 993.98 (most effective), and 1003.05 (higher limit of same organism)

1033.39 (lower limit), 1038.60 (most effective), and 1045.79 (higher limit of same organism)

Also from Dr. Clark: 19964.61, 20860.78

Then try: 20, 450, 452, 550, 578, 600 + 625 + 650, 688, 683, 776, 787, 802 + 1550, 880, 975, 1238, 1474, 1862, 2688,

#### *Mycoplasma pneumoniae* / Pneumonia

Mycoplasma pneumonia causes severe pneumonia, an infection and inflammation of the lungs, usually caught and spread by children and young adults. Symptoms include copious amounts of fluid and mucous in the lungs, high fever, chills, cough, nasal congestion, sore throat, tracheobronchitis, pharyngitis, and sometimes blood in the mucous of the lungs. This condition is also associated with joint, central nervous system, liver, pancreas, and cardiovascular and blood conditions. Also see "*Klebsiella pneumoniae* / Pneumonia" and "*Pneumocystis carinii*" in this section; and "Pneumonia / Bronchial Pneumonia" under **Respiratory Tract**, *Lungs*.

First try: 660 + 690 + 727.5, 688, 709.2, 777, 975, 2688, 2838.5

Then try: 20, 412, 450, 452, 550, 578, 600 + 625 + 650, 683, 766, 776, 787, 802 + 1550, 880, 975, 1238, 1474, 1862

#### *Pneumocystis carinii*

Symptoms first include fever, fatigue, and weight loss—and then, weeks later, life-threatening pneumonia, in which the infected and inflamed lungs fill with copious amounts of fluid and mucous. Pneumonia symptoms include dry cough, chills, high fever, chest tightness, and difficulty breathing. Many people who take drugs or test positive for HIV develop pneumonia from this parasite. If the condition is not addressed, the infection can seriously impair the lungs' ability to transport oxygen into the blood, which can then lead to death. This parasite can also infect the eyes, ears, skin and liver.

First try: 204, 340, 600 + 625 + 650, 660 + 690 + 727.5, 709.2, 742, 2838.5

Then try: 20, 412, 450, 452, 550, 578, 688, 683, 766, 776, 787, 802 + 1550, 880, 975, 1238, 1474, 1862, 2688

#### Respiratory Syncytial Virus (RSV)

The most common cause of pneumonia among infants and very young children, characterized by fever, runny nose, cough, and sometimes wheezing. RSV can also cause infections throughout life, especially among the elderly or those with compromised cardiac, respiratory or immune function.

First try: 1647, 2528, 2542, 3448, 4763

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 378950 (lower limit), 380K (most effective), and 383150 (higher limit of same organism)

Hertz set: 939.32 (lower limit), 941.93 (most effective), and 949.73 (higher limit of same organism)

Also from Dr. Clark: 18919.09

Also try: 278, 336, 712

#### SARS / Severe Acute Respiratory Syndrome / Coronavirus

SARS, or Severe Acute Respiratory Syndrome, is believed to be caused by SARS-CoV, one of four or

five coronavirus strains. Coronaviruses—so named because of the crown, or bulbous corona, at the top of its structure—are believed to cause a significant percentage of all colds in humans, mostly in the winter and early spring.

SARS affects humans, dogs, cats, pigs, cattle, birds and rodents, commonly infecting the respiratory and gastrointestinal tracts. The epidemic is presumed to have originated in China in November 2002, and then spread to other countries including the United States, Canada, Singapore, and The Philippines. Initial symptoms may include cough, sore throat, pneumonia, muscle pain, diarrhea, and anal warts. Humans have a fever of at least 100.4°F (38°C), and a history of contact with an infected individual. Symptoms generally appear two to 13 days following exposure, although in most cases they occur within two to three days.

Antibiotics, antivirals, steroids, and other drugs have been found to be ineffective. Supplemental oxygen and mechanical breathing support are often used.

145.9, 165.7, 291.7, 331.4, 437.6, 497.1, 583.5, 662.7, 1167, 1312.8, 1325.5, 1491.2, 2333.9, 2651, 4667.8, 5301.9, 9335.6

### Tuberculosis

This highly infectious airborne disease is popularly known for affecting the lungs. However, swelling and tumor-like welts of tissue may appear not only in the lungs, but also in the meninges (the membrane around the spinal cord) and the intestines. Other symptoms include fever, cough, and difficulty breathing. The list below is abbreviated. Since there are so many frequencies for both the disease and what are regarded as "secondary infections" springing from the disease, also see **Tuberculosis** under **T**.

First try: 369K (for the rod form, used on Royal Rife's #4 machine)

Then try: 21508.01, 2127.5, 1070.82, 660 + 690 + 727.5

And then try: 20, 221, 333 + 523 + 768 + 786, 465, 532, 590, 776, 787, 799, 800, 801, 802 + 1550, 803, 804, 1132, 1500, 1600, 1644, 2008, 2313, 3353, 6516

#### *Nigrospora*

Fungus involved in TB-type infections.

302, 350, 764

### Whooping Cough

The *Bordetella pertussis* or *Bordetella parapertussis* bacterium causes whooping cough, a serious disease that can permanently disable infants or even cause death. Symptoms include runny nose, diarrhea, fever, and a persistent cough that (mostly in people over 6 months of age, before adulthood) ends with a "whoop" noise when the person breathes. The coughing spells can lead to vomiting and choking.

First try: 46, 284, 526, 660 + 690 + 727.5, 697, 765, 906, 9101

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 329850 (lower limit), 331K (most effective), and 332250 (higher limit of same organism)

Hertz set: 817.62 (lower limit), 820.47 (most effective), and 823.57 (higher limit of same organism)

Also from Dr. Clark: 16479.52

Also try: 776, 787, 802 + 1550, 832, 880, 1234, 7344

#### *Nose and Sinuses*

The nose is lined with mucous and thousands of tiny hairlike projections called cilia. The cilia trap airborne particles and dirt so they don't get into the lungs.

A sinus is a pouch or cavity in any tissue; but when people say "sinuses," they generally mean the four pairs of air-filled spaces in the skull bones at the face. These spaces are under the eyes, in the upper jawbone; over the eyes, in the bone of the forehead; between the nose and the eyes, backwards into the skull; and in the center of the skull base. Medical researchers hypothesize that the purpose of the sinuses is to: help warm and humidify inhaled air before it reaches the lungs; increase resonance in the voice; provide a buffer against blows to the face; increase the surface area for smelling; and even to modulate vision (since breathing alters the shape of the sinuses, and thus the pressure on the inside of the eyeball changes).

It is relatively easy for the moist nose and sinuses to become blocked and swollen from allergic inflammation or microbial infection. Dr. Murray Grossan has invented an electric sinus irrigator that pulses water up through the nose and into the sinuses. Once the dead cells, microbial waste, excess mucous, etc. are mechanically drained, the area is less susceptible to becoming re-infected—and better equipped to remove future debris.

You can make a simple but effective nasal wash of eight ounces of pure warm water or colloidal silver (see Chapter 3), adding ¼ to ½ teaspoon of Celtic sea salt, one or two drops of a germicidal essential oil, and a teaspoon of xylitol. Colloidal silver kills all one-celled microorganisms that it touches. The salt shrinks the tissues, fights infection, and prevents the solution from burning the nasal passages. Eucalyptus, oregano, tea tree, and thyme essential oils are all anti-bacterial, anti-fungal,

and anti-viral. Xylitol, a natural sugar from various plants (commonly birch bark and blueberries), is so slippery it prevents microbes from attaching to mucous lining or a cell membrane. Sinuses require iodine (an effective germicide) as a nutrient. Add liquid iodine to the solution too. If you can't flush out your sinuses, inhale some or all of these ingredients through steam. You can also inhale colloidal silver and essential oils through a medical nebulizer. Finally, a few drops of 3% food grade hydrogen peroxide in the ears can help.

If your nose and sinus problems are chronic, check for a deviated septum, an abnormally crooked condition of the inside cartilage in the nose that makes it difficult to breathe. Other contributing factors are airborne pollutants, allergies, and dental infections.

If you want to use many numbers that are close together, program your machine for a sweep so you can save time. For instance, one sweep could be 400 to 472, another sweep could be 600 to 690, and so on. Also see "Influenza" and "Adenovirus" under **Viruses**; and the many entries under **Candida**, **Fungi**, **Molds and Yeasts** and under **Parasites**, **Protozoa and Worms**.

#### General, Nose and Sinuses

3 + 230, 20, 30, 33, 72, 95, 120, 125, 146, 330, 444 + 1865, 522, 555, 660 + 690 + 727.5, 740, 787, 880, 1234, 1550, 4412, 7344, 10K

#### After General Set, If No Relief

254, 303, 430, 470, 484, 610, 620, 624, 644, 646, 742.4, 790, 864, 866, 986, 1918, 2213, 2600, 2650, 2900, 2950, 5K, 5148, 6K

#### Allergies, general

When allergic, a person is unable to properly assimilate, process, and excrete a substance. Often the offending substance is a protein, in the form of a food, that the body cannot break down into its most useable components. Many symptoms of what we call an allergy are the body's attempts to get rid of the offending substance. Symptoms include runny nose; red, itchy, watering eyes; dark circles under the eyes; sneezing; skin rashes, including hives; headaches; digestive distress.

Also see **Candida**, **Fungi**, **Yeasts and Molds**; **Parasites**, **Protozoa and Worms**; and various entries under **Respiratory Tract**. Since allergies can also relate to a sluggish liver, try frequencies under **Liver and Gallbladder** and try a cleanse.

#### Allergy to Dust Mites

Mites live in furniture, drapery, pillows and carpet, and feed on the dead skin cells of humans. Allergies are generally not to the mites themselves but to the large amounts of feces they generate and expel into the air. It is unclear whether these frequencies kill dust mites or whether they reduce sensitivity to dust mite fecal matter.

From Hulda Clark: 707K or 1752.48 (for devices unable to accommodate frequencies in the kilohertz range)

#### Allergy to Ragweed

473

#### Anosmia

See "Smell, Loss of / Anosmia" in this section.

#### Cold, Chest and Head

Daily ingestion of either echinacea or transfer factor will help build immune function. (Make sure the echinacea tingles in the mouth; otherwise it's not potent.) These microbes constantly mutate to new strains, so also try other frequencies.

1.1 + 73, 20, 72 (for 5 minutes), 120, 125, 146, 333 + 523 + 768 + 786, 344 + 510 + 943, 400, 440, 444 + 1865, 452, 465, 522, 542, 552, 652, 660 + 690 + 727.5, 683, 720, 725, 746, 751, 766, 768, 776, 787, 800 (for 10 minutes), 802 + 1550, 880 (for 10 minutes), 1K (for 5 minutes), 1110, 1500, 2008, 2489, 3176, 4400, 4412, 5K, 5500, 7760 (for 15 minutes), 8210 (for 5 minutes), 8700, 10K

#### Hay Fever

An allergic condition of inflamed mucous passages in nose and upper respiratory tract induced by external irritants such as pollen, with symptoms including watery discharge from the eyes, headache, sneezing, coughing, and sinus congestion. Some homeopathic remedies prove effective for this condition. Eliminate mold and mildew from environment, and chemicals from environment and food. These frequencies work only on some types of hay fever. Also see other allergy frequencies in this section; and various entries under **Candida**, **Fungi**, **Molds and Yeasts**.

20, 660 + 690 + 727.5, 787, 880

#### Nasal Congestion and Infection

20, 440, 444 + 1865, 465, 660 + 690 + 727.5, 776, 787, 802 + 1550, 880

#### *Nigrospora*

Fungus involved in allergies, and in many sinus, lung, and TB-type infections.

302, 350, 764

#### Odor Sensitivity, Abnormal / Hyperosmia

This can indicate a weakened adrenal system, as well as a toxified system. Also see various entries under

**Glands**, *Adrenals* and **Chemical Poisoning / Detoxification**.
20, 146, 522, 812, 10K

#### Ozaena

A disorder of the nose in which its mucous membranes become atrophied, accompanied by discharge and crusts.
184, 222, 439

#### Pemphigus

Rare autoimmune disorder. Symptoms include blisters in the outer layers of the skin and the mucous membranes of the nose, mouth and throat. Also see **Autoimmune Disorders**; and listings for the affected area of the body.
665, 694, 893

#### Rhinitis

Runny nose.
1.2 + 250, 3 + 230, 7.69, 7.7, 20, 28, 146, 465, 522, 660 + 690 + 727.5, 787, 802 + 1550

#### Sinusitis

Infection in sinus cavities. Symptoms include stuffy or completely clogged nasal passages, pain in sinus cavities in face, headache, discharge of thick green or yellow mucous, feeling of facial "fullness" that gets worse on bending over, and sometimes fever.

Acute sinusitis is most often caused by bacteria such as *Streptococci* and *Staphylococci*, and occasionally the Influenza virus. However, a two-year Mayo Clinic study revealed that more than 90% of 210 people with chronic sinusitis had fungal (rather than bacterial or viral) infections.

Also see "*Nigrospora*" in this section; "Influenza" and "Adenovirus" under **Viruses**; and the many entries under **Candida**, **Fungi**, **Molds and Yeasts** and under **Parasites**, **Protozoa and Worms**.

If you want to use many numbers that are close together, program your machine for a sweep so you can save time. For instance, one sweep could be 400 to 472, another sweep could be 600 to 690, and so on.

20, 60, 95, 72, 107 (for 5 minutes), 120, 125, 128, 146, 160 (for 5 minutes), 225, 244, 304, 320, 367, 400, 414, 427, 432, 440, 456, 472, 522, 524, 528, 548, 597, 610 + 692 + 980, 614, 615, 618, 660 + 690 + 727.5, 664, 682, 712, 732, 741, 784, 787, 802 + 1550, 820, 880, 942, 952, 1150, 1234, 1311, 1395 (for 5 minutes), 1466, 1500, 1520, 1600, 1862 (for 5 minutes), 1865, 2K, 2600, 5500, 3672, 4392, 4400, 4412, 7344. Also try a sweep in the 700 range.

#### Smell, Loss of / Anosmia

This can be due to various microbial infections. Also see other entries in this section.
20, 10K (5 minutes each)

#### Sneezing

Forceful expelling of air through the nose and mouth by spasmodic contraction of the respiratory muscles, in an effort to rid the system of allergens, pollutants, and microbes that are irritating the nose and respiratory tract.
146, 465, 660 + 690 + 727.5, 787, 880

### *Throat and Lymph Nodes*

The throat can be sore for many reasons: microbial infections, food allergies, even pollution. Often, when the throat is sore, the lymphatic tissue at the neck is swollen as well; and it is said that the person has "swollen glands." This is somewhat misleading, because the "glands" in this case are really lymph nodes, part of the lymphatic system. (See the **Lymphatic System** section for frequencies not covered here.)

The 500 to 600 lymph nodes—clustered in the underarms, groin, neck, chest, and abdomen—are constructed from connective tissue in a honeycomb shape. When the body is fighting an infection, the lymphocytes multiply rapidly, therefore making the lymph nodes swell. The two types of lymphocytes (which have different jobs) are T-cells (so called because they mature in the thymus) and B-cells (so called because they mature in the bone marrow).

The spleen and tonsils are also part of the lymphatic system—although the spleen fights infections in the blood, filtering blood rather than lymph.

Electromedicine and frequency devices that are made for contact with the body may move lymph better than freestanding plasma light units, since the dense tissue needs mechanical stimulation to promote flow.

There's one little known, but major component of lymphatic conditions: excessive mucin. Mucin is a hydrophilic (water-loving), sugar-protein compound naturally present in the connective tissue located in or around lymph, as well as skin, blood vessels, muscles, nerves, and other parts of the body. Excess mucin levels occur in over half of the people who suffer from low thyroid function. Therefore, also see "Thyroid, Underactive / Hypothyroidism" under **Glands**, *Thyroid*.

The symptoms of a sore throat might result from *Candida albicans*, so see that entry under **Candida**, **Fungi**, **Molds and Yeasts**. See "*Streptococcus pyogenes* / *Strep* Throat" and "*Actinomyces israelii* / Actinomycosis" under **Bacteria**. You will have better results if you know the specific microbe involved. As the kidneys, liver and lymphatic system are all primary channels of detoxification, also see **Chemical Poisoning / Detoxification**.

#### General (short set)

20, 146, 380, 440, 522, 660 + 690 + 727.5, 760, 776, 784, 802 + 1550, 880, 1600

#### Adenoids, Swollen

Swollen lymphatic tissue located primarily in the throat, but sometimes in other places too.

14, 20, 333 + 523 + 768 + 786, 428, 444 + 1865, 590, 660 + 690 + 727.5, 776, 780, 787, 802 + 1550, 807, 810, 880, 1570, 2K, 2170, 2720

#### Angina Quinsy

Inflammation of a lymph gland in the throat. This is not angina pectoris, which is pain in an area of the heart (in which case you should see that entry under **Heart**, **Blood and Circulation**). Since inflammation may or may not include infection, it has its separate category with fewer frequencies. Also see "Glands, Swollen" in this section.

428, 465, 660 + 690 + 727.5, 776, 787

#### Cold, Chest and Head

Daily ingestion of either echinacea or transfer factor will help build immune function. (Make sure the echinacea tingles in the mouth; otherwise it's not potent.) These microbes constantly mutate to new strains, so also try other frequencies.

1.1 + 73, 20, 72 (for 5 minutes), 120, 125, 146, 333 + 523 + 768 + 786, 344 + 510 + 943, 400, 440, 444 + 1865, 452, 465, 522, 542, 552, 652, 660 + 690 + 727.5, 683, 720, 725, 746, 751, 766, 768, 776, 787, 800 (for 10 minutes), 802 + 1550, 880 (for 10 minutes), 1K (for 5 minutes), 1110, 1500, 2008, 2489, 3176, 4400, 4412, 5K, 5500, 7760 (for 15 minutes), 8210 (for 5 minutes), 8700, 10K

#### Flu

See "Influenza" under **Viruses**.

#### Fluke, Lymph

Worms appearing in the lymph vessels.

157, 10050

#### Glanders

From the bacillus *Pseudomonas mallei*, this condition primarily involves the mucous membranes of the mouth and respiratory system, and occasionally the lymph nodes (where it is called Farcy). Mostly horses, mules and donkeys are affected, but occasionally the microbe is transmitted to humans, goats, sheep, cats, and dogs. Glanders is not common in the United States or Europe, but it still appears in Asia, Africa and South America.

First try: 501, 660 + 690 + 727.5, 687, 743, 774, 857, 875, 1273

Also try: 20, 787, 880

#### Glands, Swollen

This may include the tonsils, part of the vast network of lymphatic channels throughout the body. Lymph glands (actually nodes) are prominent in the neck, underarms, and groin. One major job of lymph is to house white blood cells that gobble up pathogenic microbes. Since the lymph vessels are designed to protect the body during infection, it makes sense that when the body is sick from a major disease, the tonsils and glands in the neck are usually swollen.

It is not a good idea to routinely remove the tonsils simply because you are sick. The tonsils exist for a reason: they are on the front line of immune defense. However, it is also true that if the tonsils swell excessively, the tongue may be forced forward in the mouth too much and interfere with the position of the teeth; and very swollen tonsils may cause mouth breathing, which provides 25% less air than does nose breathing—and with less oxygen in the blood, the heart has to work harder. So many factors must be weighed if you are considering removing your tonsils, or the tonsils of a child.

It can be difficult to distinguish between swelling due to microbial infection and swelling due to simple clogging, in which there is no microbial involvement. However, unless the lymphatic vessels are moved and stimulated to relieve the clogging (usually accomplished with exercise and massage), infection may develop. A severe condition will obviously require a more aggressive approach, and with more frequencies, than will simple congestion.

Administer frequencies for specific microorganisms if you know which ones are involved. Also see "Lymph System Circulation / Drainage, to Increase" in this section.

1.1 + 73, 1.2 + 250, 20, 146, 380, 428, 440, 444 + 1865, 452, 465, 428 to 482, 522, 590, 600 + 625 + 650, 660 + 690 + 727.5, 776, 784, 787, 802 + 1550, 1500, 810, 832, 880, 1500, 1600, 1800, 2489, 2720

#### Lymph Plaque

Buildup of solidified material in the lymph channels.

346, 596

#### Lymph System Circulation / Drainage, to Increase

Since lymph tissue is so dense, rife contact devices and other kinds of contact instruments may work better for this symptom picture than plasma light

devices. Also see applicable frequencies under **Chemical Poisoning / Detoxification**. Eliminate waste from the system also requires saunas, and the replacement of missing electrolytes.

6.3 + 148, 10, 10.36, 15, 15.05, 20.5, 66, 146, 428, 440, 444 + 1865, 465, 522, 660 + 690 + 727.5, 676, 787, 880, 3176, 10K

#### Short Set, Lymphatic Drainage

522, 146

#### Lymphangitis

Inflammation of lymph vessels in humans and horses, most commonly involving *Strep* but also including other bacteria as well as fungi.

Also see the many entries under **Candida**, **Fungi**, **Molds and Yeasts**.

574, 778, 1120, 1078, 3176

#### Lymphatic Leukemia

See "Leukemia, Lymphatic" under **Cancer**.

#### Lymphocytes, to Stimulate Production of

2791, 2855, 2867, 2929, 3347, 3448, 4014, 5611

#### Lymphogranuloma, Malignant

See "Hodgkin's Disease / Lymphogranuloma, Malignant" under **Cancer**.

#### Pemphigus

Rare autoimmune disorder. Symptoms include blisters in the outer layers of the skin and the mucous membranes of the nose, mouth and throat. Also see **Autoimmune Disorders**; and more frequencies for the affected area of the body.

665, 694, 893

#### Scarlet Fever

From the Group A bacterium *Streptococcus pyogenes*. An airborne infection usually contracted by children. Symptoms of scarlet fever include rash, sore throat, flushed face, chills, abdominal pain, head and muscle aches, and a thick white coating on the tongue that peels after several days, giving a strawberry-like appearance. The child may not feel ill, but sometimes untreated scarlet fever can cause heart or kidney damage.

First try: 437, 660 + 690 + 727.5, 784, 875 to 885, 2K, 10K

Then try: 20, 465, 787, 880

#### Spleen, Enlarged, and other Conditions

The spleen, a bean-shaped organ positioned beneath the left breast at an angle, contains the largest mass of lymph tissue in the body, covered by connective and smooth muscle tissue. It is connected to the rest of the lymphatic system by lymph vessels. Unlike the lymph vessels, the spleen does not carry lymphatic fluid; and unlike the lymph nodes, the spleen does not filter or clean lymph. Instead, it produces what eventually turn into antibody-producing blood plasma cells. Antibodies, a basic aspect of the body's immune function, are the biochemical agents against specific microbial or foreign antagonists in the body. The spleen also breaks down bacteria and worn-out or damaged blood cells, and creates new blood cells.

20, 27.44, 35, 465, 660 + 690 + 727.5, 787, 802 + 1550, 880, 1800, 2170, 2720, 3176, 10K

#### *Strep* Throat

Infection from the bacterium *Streptococcus pyogenes* and other microbes. Symptoms include skin inflammation, sore throat, and sores filled with pus (dead white blood cells).

20, 465, 660 + 690 + 727.5, 784, 787, 875 to 885, 880, 2K, 10K.

Also try this frequency that's sometimes found with cancer: 11,780,000

#### Tickle, Chronic

120, 660 + 690 + 727.5, 766, 776, 787, 800, 880, 1560, 1840, 1998

#### Tonsillitis

See "Glands, Swollen" in this section.

#### Trench Mouth

Bacterial infection of tonsils and floor of the mouth. Symptoms include inflammation, ulceration, and painful swelling. Also see more frequencies in this **Respiratory Tract** section; and under **Dental**, *Mouth and Gums*.

20, 465, 600 + 625 + 650, 660 + 690 + 727.5, 726, 776, 787, 802 + 1550, 880, 1556

### *Vocal Cords*

The vocal cords are sometimes called the vocal folds, larynx, or voice box. They consist of mucous membrane tissue in the throat, attached to ligaments, cartilage and muscle. When the muscles attached to the cords expand and contract, this changes the shape of the air passage; and when air is directed against the vocal cords, this produces a vibration and thus sound. The ways in which the folds meet determine the pitch of the sound produced. The thinner and shorter the folds, the higher the pitch; the thicker and longer the folds, the lower the pitch. When the folds of whatever size are pulled taut by the muscles, the more they vibrate and the higher the pitch.

When the voice box is inflamed and/or infected, it is covered with an extra thick mucous coating in an attempt to protect the delicate tissues and expel the microbes. This mucous causes irregular gaps in the airway, which produces hoarseness—rather like a guitar string that has become frayed. Although many people find that the pitch of their voice is lower when they have a sore throat, if possible speak in your normal vocal range (the sound is supposed to resonate in the throat and in the sinus cavities of the face), while providing plenty of abdominal breath support. This will help prevent the vocal chords from becoming more stressed. Smoking, allergies, and improper use of the voice will irritate the voice box. Also see "Glands, Swollen" under **Respiratory Tract**, *Throat and Lymph Nodes*.

#### Hiccups

Spasm of the vocal cords and diaphragm, producing a sharp intake of breath and coughing noise. May also be a symptom of other conditions.

20, 10K

#### Laryngitis or Hoarseness

660 + 690 + 727.5, 760, 880

#### Larynx Cancer

See under **Cancer**.

#### Larynx Infection and Pain

1.2 + 250, 3 + 230, 7.69, 7.7, 9.39, 9.4, 9.6, 10, 28, 440, 444 + 1865, 465, 660 + 690 + 727.5, 787, 802 + 1550, 880, 2720

#### Larynx Polyp

Benign tumor. Sometimes tumors or nodules develop in the larynx when the voice is not used properly. Make sure you have proper breath support when you speak or sing. You are speaking in your proper range if your nasal cavities and face vibrate when you speak.

202, 765

#### Trench Mouth

Bacterial infection of tonsils and floor of the mouth characterized by inflammation, ulceration and painful swelling. Also see **Dental**, *Mouth and Gums*.

20, 465, 600 + 625 + 650, 660 + 690 + 727.5, 726, 776, 787, 802 + 1550, 880, 1556

*End of Respiratory Tract section*.

### RESTLESSNESS

See "Akathisia / Agitation" under **Nervous System and Brain**; and this and other entries under **Mind and Emotions**.

### RETROVIRUSES

See "Retrovirus, variants" under **Viruses**.

### RHABDOMYOSARCOMA, GENERAL AND EMBRYONAL

See "Rhabdomyosarcoma" and "Rhabdomyosarcoma, Embryonal" under **Cancer**.

### RHEUMATIC FEVER

See under **Heart, Blood and Circulation**.

### RHEUMATISM

See under **Arthritis and Joints**.

### RHEUMATOID ARTHRITIS

See under **Arthritis and Joints**.

### RHINITIS

See under **Respiratory Tract**, *Nose and Sinuses*.

### RHINOVIRUS

See under **Viruses**.

### *RHIZOPUS NIGRICANS OR RHIZOPUS STOLONIFER*

See "*Rhizopus nigricans / Rhizopus stolonifer*" under **Candida, Fungi, Molds and Yeasts**.

### *RHODO TORULA*

See under **Candida, Fungi, Molds and Yeasts**.

### *RHODOCOCCUS EQUI*

See under **Bacteria**.

### RIB PAIN, ALL KINDS

See under **Injuries**.

### RIB PAIN IN MUSCULATURE

See "Neuralgia, Intercostal" under **Nervous System and Brain**.

### *RICKETTSIA RICKETTSII*

See "*Rickettsia rickettsii* / Rocky Mountain Spotted Fever" under **Bacteria**.

### RINGING IN EARS

See "Tinnitus" under **Ears**.

### RINGWORM

See under **Skin**.

### RNA, TO STRENGTHEN INTEGRITY OF

See "RNA Integrity, to Strengthen" under **Regeneration and Healing**.

### ROCKY MOUNTAIN SPOTTED FEVER

See "*Rickettsia rickettsii* / Rocky Mountain Spotted Fever" under **Bacteria**.

**ROSACEA**
See under **Skin**.

**ROTIFER**
See under **Parasites**, **Protozoa and Worms**.

**ROUNDWORM**
See "*Ascaris lumbricoides* / Roundworm" under **Parasites**, **Protozoa and Worms**.

**ROYAL RIFE'S FREQUENCIES, USED ON HIS #4 MACHINE**
Rife's #4 machine had a variable carrier wave, which produced harmonics. Modern equipment may produce different results. Contemporary names of pathogens are listed first, followed by Rife's terminology. "Filter passing" means a particle small enough to pass through a filter of diatomaceous earth or porcelain—which is characteristic of viruses, but not larger bacteria.

***Actinomyces bovis* / Actinomycosis / *Streptothrix***
192K

***Bacillus anthracis* / Anthrax**
139,200

***BX* or *Bacillus X Virus* (filter passing)**
1,604K

***Clostridium tetani* / *Bacillus tetani* / Tetanus**
234K

***E. coli* / *B. coli* (filter passing)**
770K

***E. coli* / *B. coli* (rod form)**
417K

***Mycobacterium tuberculosis* / *Bacillus tuberculosis* (rod form)**
369K

***Neisseria gonorrhoeae* / *Gonococcus***
233K

***Salmonella typhi* / Typhoid (filter passing)**
1,445K

***Salmonella typhi* / Typhoid (rod form)**
760K

***Staphylococcus albus***
478K

***Streptococcus pneumoniae* / *Diplococcus pneumoniae***
427K

***Streptococcus pyogenes***
720K

***Treponema pallidum* / Syphilis**
789K

**RSD**
See "Reflex Sympathetic Dystrophy (RSD)" under **Muscles**, or **Nervous System and Brain**.

***RUBELLA***
See "*Rubella* / German Measles / 3-day Measles" under **Viruses**.

***RUBEOLA***
See "*Rubeola* / Measles" under **Viruses**.

**RUBULAVIRUS**
See "Rubulavirus / Mumps" under **Viruses**.

## –S–

**SALIVARY GLAND VIRUS**
See "*Herpes* Virus Type 5 (Human *Herpes* Type 5) / Cytomegalovirus (CMV) / Salivary Gland Virus" under **Viruses**.

***SALMONELLA*, ALL TYPES**
See under **Bacteria**.

**SARCOMA**
See under **Cancer**.

**SARS / SEVERE ACUTE RESPIRATORY SYNDROME**
See "Coronavirus / SARS / Severe Acute Respiratory Syndrome" under **Viruses**.

**SCABIES**
See "Mange / Follicular Mange / Scabies" under **Skin**.

**SCARLET FEVER**
See "*Streptococcus pyogenes* / Scarlet Fever" under **Bacteria**.

**SCARRING**
Both internal and external scars and adhesions can interfere with the flow of energy in the meridians and with the flow of blood and oxygen to different parts of the body. Also see "Adhesion" under **Skin**.

19.2, 465, 600 + 625 + 650, 660 + 690 + 727.5, 685, 700, 760, 776, 787, 802 + 1550, 832, 880, 1K, 1500

**_SCHISTOSOMA_, ALL TYPES**
See "*Schistosoma* / Schistosomiasis / Snail Fever" under **Parasites**, **Protozoa and Worms**.

**SCIATICA**
See under **Nervous System and Brain**.

**SCLERODERMA**
See under **Skin**.

**SCLEROSIS**
See "Amyotrophic Lateral Sclerosis (ALS)" and "Multiple Sclerosis (MS)" under **Nervous System and Brain**.

**SEATWORM**
See "*Enterobius vermicularis* / Pinworm / Seatworm" under **Parasites**, **Protozoa and Worms**; or under **Gastrointestinal Tract**, *Small Intestine*.

**SEIZURE**
See under **Nervous System and Brain**.

**SEMINAL VESICULITIS**
See under **Men**, *Testicles*.

**SENSITIVITY TO ELECTRICITY, TO REDUCE**
Ironically, the emanations from the unit you are using might prevail before the frequencies can take effect. Exercise caution with this.
657

**SERUM SICKNESS / ANAPHYLAXIS / PROTEIN SENSITIZATION**
A hypersensitive state of the body to a foreign protein or a drug, severe enough to produce shock. Also see **Chemical Poisoning / Detoxification**.
10K

**SEX GLAND FEVER**
See under **Men**, *Penis* or **Women**, *Uterus and Cervix*, *Ovaries*, *and Fallopian Tubes*.

***SHIGELLA***
See under **Bacteria**.

**SHIN BONE FEVER**
See "*Bartonella quintana* / Febris wolhynia / Wolhynia Fever / Trench Fever / Quintan Fever / Shin Bone Fever" under **Bacteria**.

**SHINGLES**
See "*Herpes* Virus Type 3 / *Herpes zoster* / Chicken Pox / *Varicella* / Shingles" under **Viruses**; or "Shingles" under **Nervous System and Brain**, or **Skin**.

**SHOULDER, FROZEN**
See under **Injuries**.

**SICKLE CELL ANEMIA**
See "Anemia, Sickle Cell" under **Heart**, **Blood and Circulation**.

**SIMIAN VIRUS 40 (SV40)**
See under **Viruses**.

**SINUSITIS**
See under **Respiratory Tract**, *Nose and Sinuses*.

**SKELETAL PROBLEMS**
See **Bone and Skeleton**.

**SKIN**
An organ, by definition, is able to perform multiple tasks based on messages sent to, and received from, other parts of the body. Therefore, the skin—with its pain, temperature, and other receptors to and from the brain—is the largest organ in the body. Unlike internal organs (heart, liver, etc.) whose tissue bulges in clusters, the skin's tightly packed cells are spread out like a thin blanket. The skin weighs about six pounds and averages about 20 square feet in area. Since the nervous system and skin evolved from the same embryonic tissue, the skin is also rightly regarded as a huge nervous system on the outside of the body. The skin contains nerve endings, blood vessels, pigments, hair follicles, keratin-containing cells that waterproof the body and prevent bacteria from entering, and oil and sweat glands. Normal skin is supple, clear, smooth, and able to withstand a fair amount of mechanical stress. Since the skin is the interface between the body and its environment, it is the body's front line of protection.

Some of the skin care products on the market cause the very problems they are supposed to prevent, because of their poor quality ingredients. Sodium laurel sulfate (and similar compounds); the glycols (such as propylene glycol); artificial dyes, perfumes and preservatives; and even solvents and alcohols are typically used. These substances are not only irritating to the skin, but many of them are carcinogenic. The simplest and purest ingredients are also the most effective. You can mix your own blends from some or all of the following: shea butter, and oils of almond, avocado, coconut, grapeseed, jojoba, and sesame. Essential oils can be added to create fine body care products. The skin is porous, so anything that has small enough molecules can get into the bloodstream. It is as if you had eaten it. Therefore, anything you put onto your skin or scalp should be food grade.

Although it is important to take care of any skin problem, be aware that when the skin manifests pimples, rashes, boils or other debris, this may indicate a more deep-rooted condition. Sometimes there is so much waste material inside the body that the kidneys, colon, lungs and liver cannot handle it all and a disproportionate amount of toxins are excreted through the skin. Normally, the skin eliminates 10% of the body's water and waste. However, through

sweating (either from exercise or a sauna), up to 30% of all waste can be eliminated. For this reason, the skin is also sometimes called "the third kidney." Sweating is a wonderful way to detoxify; I cannot recommend it highly enough. See the section on **Sauna Therapy** in Chapter 3; and for much more information, my book *The Holistic Handbook of Sauna Therapy*.

#### General

311, 345, 414, 454, 465, 644, 752, 765, 766, 784, 923

#### Acne

Skin eruptions due to pores becoming clogged with sebum (oil), bacteria, and possibly pus, accumulated dead white blood cells.

428, 444 + 1865, 450, 465, 564 (run for 6 minutes), 660 + 690 + 727.5, 741, 760, 778, 787, 880, 802 + 1550, 1500, 1552, 1600, 1800, 2170, 2720

Sweep from 5996.1 to 6078.1 for 20 minutes. Also run 6046.9 separately for 6 minutes.

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 383750 (lower limit), 387K (most effective), and 389K (higher limit of same organism)

Hertz set: 951.22 (lower limit), 959.28 (most effective), and 964.23 (higher limit of same organism)

Also from Dr. Clark: 19267.60, 959.28

#### Acupuncture Energy Field Disturbance (as a result of scars)

Damaged tissue fibers can result from surgery, injury, overuse of muscles or chronic tension, which creates lumps. Internal and external scars can interfere with the flow of energy in the meridians and with blood and oxygen flow elsewhere. Also, since scar tissue is irregularly patterned, it can pull on adjacent tissue and cause pain. It is wise to get rid of scars if possible. Neural therapy can reestablish the energy channels blocked by scarring. Also see "Adhesion" in this section.

5.9, 18, 19.2

#### Adhesion

Body parts that should not be attached, stuck to each other through scarring. Internal and external scars can interfere with the flow of energy in the meridians and with blood and oxygen flow elsewhere. For external scars, massage regularly with natural oils to break up the tissue. Edgar Cayce formulated a mix with castor bean and peanut oils.

190, 660 + 690 + 727.5, 760, 776, 787, 880, 802 + 1550, 2170, 2720

#### Anthrax

Often fatal disease characterized by sores on skin filled with pus, an accumulation of dead white blood cells. See "*Bacillus anthracis* / Anthrax" under **Bacteria**.

#### Athlete's Foot

From the fungi *Epidermophyton floccinum* and *Trichophyton mentagrophyte*, which attack the feet, skin, nails, and sometimes the groin (where it is called jock itch). It causes itching, inflammation, sometimes burning, and the flaking of skin. The fungi that attack the skin are often interchangeable and do not confine themselves to any one area. Also see the various *Trichophyton*, *Microsporon* and *Microsporum* entries, as well as "General Fungus / Molds / Yeasts," under **Candida**, **Fungi**, **Molds and Yeasts**.

20, 311, 345, 414, 465, 644, 660 + 690 + 727.5, 766, 784, 802 + 1550, 880

#### Bedsores

Ulceration and decay in the skin due to constant pressure and lack of circulation and air, usually from staying in bed in a fixed position over a period of time.

1.1 + 73, 1.2 + 250, 20, 465, 660 + 690 + 727.5, 787, 802 + 1550, 880, 1550, 802, 787, 784, 465, 20, 1.2, 73

#### Blackhead

In a pore, a plug made from a combination of sebum (oil) and bacteria that is partially exposed and dark in color.

778

#### Blister

Fluid beneath the skin encased in a sac, due to a burn or friction.

465, 660 + 690 + 727.5, 787, 880, 10K

#### Boil

Inflammation at the skin due to severe local infection. According to one naturopath, boils are often caused by one or more of the *Staphylococci* bacteria, whose frequencies are included among the others below. Also see "Furunculosis *Herpes*" in this section.

6.8, 48, 60 + 100, 333 + 523 + 768 + 786, 465, 590, 660 + 690 + 727.5, 802 + 1550, 787, 880

#### Bruise / Contusion

Pain, swelling, and discoloration of unbroken skin. A popular remedy in both cream and homeopathic forms is *Arnica*. Another popular homeopathic remedy is *Causticum*.

9.1, 110, 2720, 10K

#### Burns, Most Types, including from Radiation

190, 200, 465, 660 + 690 + 727.5, 787, 880, 10K

**Capillary Congestion**

See "Capillaries, to Stimulate Healing of " under **Heart, Blood and Circulation**.

**Carbuncle**

Inflammation of the skin and surrounding area accompanied by pus, which is dead white blood cells in tissue liquefied by microbes. See "Boil" in this section and "*Staphylococcus pyogenes aureus*" under **Bacteria**. Also see "*Candida albicans*" under **Candida**, **Fungi**, **Molds and Yeasts**, as people who experience an overgrowth of *Candida* often suffer from boils and carbuncles.

**Contusion**

See "Bruise / Contusion" in this section.

**Cuts, to Speed Healing**

If you are working with a pads unit, do not use electrodes directly on cuts. The fluid contained in an open wound, and even the seemingly negligible amount in a scab, will conduct enough electric current to cause discomfort or pain.

20, 60, 72, 95, 125, 660 + 690 + 727.5, 740, 787, 790, 880, 5K, 10K

**Cyst, Sebaceous**

A closed sac just under the skin, containing cheesy-looking skin secretions, usually caused by swollen hair follicles. Usually appearing on the face, neck and trunk, a sebaceous cyst is generally slow-growing, painless, and easily moved beneath the skin. Occasionally it will become inflamed and tender.

75, 76, 543

***Dematium nigrum***

Soil fungus found in wounds, often appearing as an infected patch of skin.

243, 738

**Dermatitis / Eczema**

Skin inflammation with itching and burning. According to some souces, if conditions such as eczema are suppressed with steroid creams—instead of being properly eliminated by natural means—the eczema can gravitate to the lungs and manifest later as asthma.

9.19, 9.2, 9.39, 9.4, 20, 120, 415, 660 + 690 + 727.5, 664, 707, 770, 787, 802 + 1550, 2180, 916, 2127.5, 2720, 5K, 10K

**Elephantiasis**

Abnormal skin cells due to obstruction in lymph and blood circulation, brought on by an Infestation of a certain type of Filaria worm. Also see "*Ascaris lumbricoides* / Roundworm" under **Parasites, Protozoa and Worms**.

112, 120, 623, 710, 824, 865

**Erysipelas**

Skin inflammation caused by *Streptococcus pyogenes*, among other microbes.

20, 465, 616, 660 + 690 + 727.5, 735, 776, 787, 845, 880, 2K, 10K

**Erythema**

See under **Heart, Blood and Circulation**.

**Facial Toning**

This is supposed to tighten the skin and, one would hope, remove or lessen wrinkles. Using an electrodes or hand-held bulb unit, would probably be more effective than a freestanding plasma light machine.

1.2 + 250

**Feet, Excessive Sweating / Sudor Pedis**

148

**Fibrosarcoma**

See under **Cancer**.

**Fissure**

Grooved or furrowed sore, like a slit, either on the skin or mucous membranes.

20, 787, 10K

**Folliculitis**

Tiny pimples.

174, 482, 5311

**Furunculosis *Herpes,* including boils**

Also see "*Herpes*, all types" under **Viruses**.

20, 116, 200, 465, 660 + 690 + 727.5, 770, 802 + 1550, 787, 1K, 2K

**Hives / Urticaria**

Skin eruptions, usually due to allergies to foods and sometimes extreme changes in temperature. Pay attention to your diet and exposure to chemicals. There is also an emotional component to this condition; pay attention to unexpressed emotions and try to release them.

4.9, 6.3 + 148, 95, 125, 146, 444 + 1865, 522, 660 + 690 + 727.5, 787, 880, 1800

**Jock Itch**

Peeling skin, irritation and itching caused by *Epidermophyton floccinum*, a fungus that attacks skin, nails, and also the feet (where it is called athlete's foot). The

fungi that attack the skin are often interchangeable and do not confine themselves to any one area. Also see the various *Trichophyton*, *Microsporon* and *Microsporum* entries, as well as "General Fungus / Molds / Yeasts," under **Candida**, **Fungi**, **Molds and Yeasts**.

20, 345, 465, 644, 660 + 690 + 727.5, 766, 784, 802 + 1550, 880

#### Keratosis Pilaris

Disorder in which the openings of the hair follicles become clogged with excess keratin, the tough, insoluble protein of which hair, nails, horns and hooves are made. The horny plugs of keratin are small, numerous and pointed, causing red itchy skin. In some cases, pus forms around the sweat glands. This condition occurs when skin cells—which normally flake off as a fine dust from the skin—do not shed and renew themselves, but remain stuck in the follicular orifices. The keratin plug cannot be ejected with pressure. Sometimes hair is found coiled up within the keratin.

Appearance can range from small bumps (the size of "goosebumps") with the consistency of sandpaper, to more serious lesions that look like acne. Lesions are generally numerous, similar to each other, and evenly spaced apart. The keratinization may appear on the upper arms, buttocks, thighs and occasionally face. Occasionally, the pores become infected due to scratching or abrasive tight-fitting clothes. The condition is said to worsen during cold dry weather and improve during warm humid weather. The majority of people who get this condition are females around puberty.

Doctors surmise that this abnormal skin function may be due to hormonal activity, but they aren't sure. An inflammatory response may be involved. Allopathic treatment often involves moistening lotions and topical steroid creams, but these do not address the root cause and are often ineffective at providing even temporary relief. One sufferer suggests boiling the chopped rinds of two to three grapefruit or other citrus fruit in water, for 5 to 10 minutes or until the rind appears translucent. Strain, discard the rind, and refrigerate the now yellowish liquid in an airtight jar. Apply with cotton and do not rinse.

See frequencies for other entries in this **Skin** section. Also see entries under **Candida**, **Fungi**, **Molds and Yeasts** if there is a fungal component to this condition. Finally, if this pertains, also see **Autoimmune Disorders**.

#### Leukoderma / Vitiligo

Deficiency of pigmentation of the skin. White blotches appear, usually covering small areas of the skin but slowly become larger over time. There is some evidence that this is an autoimmune condition in which the body destroys its own pigment cells, or melanocytes (so called because they are comprised of melanin). Causes can include impeded circulation, and physical and emotional stresses (with resulting hormonal imbalances). There might be other autoimmune diseases in the family, including but not limited to diabetes, hair loss and hypothyroidism, and possibly even cancer.

Internally, take B-complex vitamins (including PABA, part of the B-complex), and use PABA cream externally. See "*E. coli* / *Escherichia coli*" under **Bacteria**; "General (unspecified)" under **Parasites**, **Protozoa and Worms**; applicable frequencies under **Liver and Gallbladder**, *Liver*; various entries under **Candida**, **Fungi**, **Molds and Yeasts**; and **Autoimmune Disorders**. Also see "*Mycoplasma*, many types" under **Bacteria**, since *Mycoplasma* infection is often the beginning of autoimmune conditions.

20, 440, 444 + 1865, 600 + 625 + 650, 660 + 690 + 727.5, 787, 880, 2112

#### Lipoma

Fatty tumor, usually benign and in clusters, often just under the skin. It is not known exactly what causes lipomas, but improper fat metabolism and liver dysfunction are thought to be involved. Also see "Liver Cancer" and other entries under **Cancer** in case the tumors become malignant; as well as various entries under **Liver and Gallbladder**, *Liver*.

47 (for 5 minutes), 606 (for 5 minutes), 709 (for 5 minutes), 2K to 2200 (sweep, or in increments of 5 Hz with 30 seconds to 1 minute for each increment)

#### Mange / Follicular Mange / Scabies

A contagious dermatitis found in many animals that is caused by mites and in which the main activity is at the hair follicles.

90 to 110, 253, 693 (for 10 minutes), 701, 774, 920, 1436, 2871, 5742

From Hulda Clark: 735K or 1821.88 (for devices unable to accommodate frequencies in the kilohertz range)

#### Melanoma metastasis

See under **Cancer**.

#### Mole

Raised benign tissue on skin, usually dark. A mole can grow due to a systemic overgrowth of *Candida albicans*, so also see this and the many other entries under **Candida**, **Fungi**, **Molds and Yeasts**.

20, 120, 177, 464, 600 + 625 + 650, 626, 659, 660 + 690 + 727.5, 784, 880

#### Mycosis Fungoides

See under **Cancer**.

#### Pemphigus

Rare autoimmune disorder. Symptoms include blisters in the outer layers of the skin and the mucous membranes

of the nose, mouth and throat. Also see **Autoimmune Disorders**, and more frequencies for the affected area of the body.

665, 694, 893

#### Pigmentation Deficiency

See "Leukoderma / Vitiligo" in this section.

#### Pimples

See "Acne" in this section.

#### Psoriasis

Chronic inflammation characterized by scaly red patches covered with white scales. This condition requires long-term treatment. Since the skin is the largest eliminative organ of the body, this condition may indicate deep-seated systemic disturbances. Also see **Gastrointestinal Tract**; and "*Epidermophyton floccinum* / Athlete's Foot / Jock Itch" and the various *Candida* and *Microsporum* entries under **Candida**, **Fungi**, **Molds and Yeasts**.

1.2 + 250, 7.69, 7.7, 10, 28, 35, 64, 95, 96, 60 + 100, 104, 110, 112, 304, 428, 600 + 625 + 650, 660 + 690 + 727.5, 664, 680, 776, 786, 787, 800, 802 + 1550, 880, 1500, 1552, 2K, 2008, 2127.5, 2170, 2180, 2489, 2720, 3K

#### Pyoderma (or Pyodermia) Gangrenosum

Ulcerous pus-filled lesions on the skin, usually the feet or hands, sometimes caused by various trauma or injury to the skin and often occurring with other diseases such as ulcerative colitis, rheumatoid arthritis, diabetes and hepatitis. This symptom picture condition usually erupts suddenly. Check out the condition of the heart, eyes, liver, central nervous system, bones, lymph nodes, gastrointestinal tract, spleen and bones. Recurrences may sometimes occur, and residual scarring is common.

123, 132, 663, 967, 974, 1489, 1556

#### Ringworm

Roundish red rings and flaking on the skin and sometimes the scalp, accompanied by itching, pain and soreness, caused by various microorganisms, especially fungus. The fungi that attack the skin are often interchangeable and do not confine themselves to any one area. Also see "Tinea Versicolor" in this section—as well as the various *Trichophyton*, *Microsporon*, *Microsporum*, and "General Fungus / Molds / Yeasts" entries—under **Candida**, **Fungi**, **Molds and Yeasts**.

##### *Microsporon audouini* fungus cause

285, 422, 831, 1222

##### *Microsporum canis* fungus cause

Prevalent in dogs and cats as well as children.

347, 402, 600 + 625 + 650, 970, 1644

#### Rosacea

A chronic disease affecting the skin, mostly the face, and occasionally the eyes. Early stage symptoms include frequent redness or flushing in the forehead, nose, cheeks and chin; burning; swelling and inflammation; pimples; and dilated blood vessels that show through the skin. Advanced stage symptoms include thickened skin. With eye involvement, symptoms include inflammation, redness, dryness, itching, burning, tearing, sensitivity to light, and the sensation of having sand in the eye. In men, the nose may swell. It appears most frequently in people with fair skin and in adults between the ages of 30 and 60. It's more common in women, particularly during menopause. About 14 million people in the United States have rosacea.

Aggravating factors include high heat, hot baths, extreme cold, strenuous exercise, sunlight, wind, hot or spicy foods and drinks, alcohol, emotional stress, and long-term use of topical steroids on the face. The skin is the largest eliminative organ of the body, so try a parasite cleanse, liver-gallbladder flush, colonics, or other detox to help ease the skin's waste disposal burden. Take enzymes on an empty stomach. Apply essential oils of lavender, chamomile, sandalwood and rosehip, as well as green tea extract.

Electromedical practitioner Jerry Tennant, MD, has found the *Herpes* simplex virus in every case of rosacea that he has treated, so also see *"Herpes simplex 1"* and *"Herpes simplex 2"* under **Viruses**. Also, some report success using frequencies for *"Helicobacter pylori* / Peptic (Stomach) Ulcer" under **Bacteria**.

02, .52, .73, .83, 2.5, 217.5, 545.28, 697.5, 775.75, 875.28

#### Scarring

Both internal and external scars and adhesions can interfere with the flow of energy in the meridians and with the flow of blood and oxygen to different parts of the body. Also see "Adhesion" in this section.

19.2, 802 + 1550, 1500, 1K, 880, 832, 787, 760, 660 + 690 + 727.5, 600 + 625 + 650, 465, 685, 700, 776

#### Scleroderma

Connective tissue disorder involving hardening of the skin, blood vessels and muscles. Currently no frequencies are known; but avoiding nightshades may prevent calcification of the tissue. See **Food** section in Chapter 3 for more information.

#### Shingles

Inflamed skin along the nerves from the *Herpes zoster* Virus 3. Also see "*Herpes*, all types" under **Viruses**.

20, 26, 120, 304, 444 + 1865, 574, 660 + 690 + 727.5, 664, 787, 800, 802 + 1550, 816.4 (for five minutes), 880, 914, 1500, 1552, 1557, 1600, 1633, 1800, 1864, 2127.5, 2170, 2720, 3K, 3176, 3343, 5K

#### Skin Cancer

See "Skin Cancer / Squamous Cell Carcinoma / Basal Cell Carcinoma" under **Cancer**.

#### Skin Tags

Skin tags (sometimes also called acrochordon) are bits of swollen, loose skin that grow out from normal skin. They can be either flesh colored or pigmented, and smooth or irregular. Some hang from a stalk. They usually appear on the eyelids, face, neck, underarms, upper chest and groin. They are more common in older adults, and a bit more prevalent in women than men. Treatment consists of removal with a sharp blade, freezing or burning them off at the stalk, or strangling them with a knotted thread.

Generally, skin tags do not become malignant and do not indicate cancer. Although doctors are not sure of the cause, the fact that some people have eliminated skin tags by taking 250 mcg (micrograms, not milligrams) of chromium picolinate twice a day, indicates a connection to blood sugar disorders. One inventive woman reasoned that since cinnamon lowers blood sugar levels, perhaps essential oil of cinnamon would eliminate her skin tags. Soon after several days of applying the cinnamon oil, the skin tag shriveled up and disappeared. Another enterprising person, knowing that hydrogen peroxide stronger than a 3% solution is caustic (make sure the $H_2O_2$ is food grade), repeatedly applied it to the area with a cotton swab. After regular applications, the tag fell off. Some people have also had success using colloidal silver (see Chapter 3). Liquid iodine treatments may also help.

There are no frequencies for skin tags. However, since they have a stalk, they could be related to warts, which are virally caused. See "Wart" entries in this section.

#### Tinea Versicolor

A skin condition, usually on the front of the chest, caused by the fungi *Microsporon furfur* or *Malassezia furfur*. Symptoms include scaling, reddish or gray itchy patches, and dry brittle hair. Also see "Ringworm" in this section.

222, 225, 491, 616, 700

#### Urticaria

See "Hives / Urticaria" in this section.

#### Vitiligo

See "Leukoderma / Vitiligo" in this section.

#### Wart, most types

A rough, abnormal bump appearing on the skin and sometimes the genitalia, caused by a virus.

173, 466, 495, 644, 660 + 690 + 727.5, 767, 787, 797, 877, 907, 915 (for 30 minutes), 918 (for 30 minutes), 953, 1500, 1600, 1800, 2008, 2127.5,2170, 2720, 2489

#### Wart, Plantar

Caused by the Human *Papilloma* Virus (HPV), a plantar wart grows on the bottom of the foot.

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 404700 (lower limit), 405K (most effective), and 406750 (higher limit of same organism)

Hertz set: 1003.15 (lower limit), 1003.89 (most effective), and 1008.23 (higher limit of same organism)

Also from Dr. Clark: 20163.76

#### Wart, Venereal / Condyloma

See entry under **Men**, *Penis* or **Women**, *Vagina and Labia*.

*End of Skin section.*

### SLEEP APNEA

People who have sleep apnea stop breathing for 10 to 30 seconds at a time during sleep, up to 400 times every night, causing the person to awaken briefly each time. This continuous sleep deprivation (and resulting inability to dream) can lead to cardiovascular problems, memory loss, depression, weight gain, and headaches. This condition is usually caused by the collapsing and closing of the soft tissue in the rear of the throat, which blocks the air passages. (Occasionally, the windpipe remains open and the sleep apnea results from a failure of the brain to signal the muscles to breathe). People susceptible to sleep apnea are often overweight. Electrical and mechanical devices are available that elevate the tongue and thus keep the air passage clear.

.2, .5, 1.5, 15, 2.5, 5.8, 7.83, 10, 20, 35, 40, 80, 125, 150, 160, 240, 250, 320, 528, 635, 662, 763, 2720, 6K

### SLEEPING SICKNESS

See "*Trypanosoma brucei gambiense* / African trypanosomiasis / Sleeping Sickness" under **Parasites**, **Protozoa and Worms**.

### SLIPPED DISC

See "Disc, Slipped / Spine, Misaligned" under **Injuries**.

### SMALLPOX

See "*Variola* / Smallpox" under **Viruses**.

### SMEGMA

See under **Men**, *Penis* or **Women**, *Vagina and Labia*.

### SMELL, LOSS OF

See "Smell, Loss of / Anosmia" under **Respiratory Tract**, *Nose and Sinuses*.

**SNAIL FEVER**
See "*Schistosoma* / Schistosomiasis / Snail Fever" under **Parasites, Protozoa and Worms**.

**SNEEZING**
See under **Respiratory Tract**, *Nose and Sinuses*.

**SOFT TISSUE CONDITIONS**
See specific body part and problem under **Injuries** or **Muscles**.

**SORE THROAT**
See various entries under **Respiratory Tract**, *Throat and Lymph Nodes* and **Respiratory Tract**, *Nose and Sinuses*.

**SPASMS, BACK**
See "Backache, including Spasms" under **Injuries**.

**SPASMS, MUSCULAR**
See under **Muscles**.

**SPASTIC ATAXIA**
See under **Nervous System and Brain**.

**SPASTIC PARALYSIS**
See under **Nervous System and Brain**.

**SPASTIC PARESIS**
See under **Nervous System and Brain**.

**SPIDER BITES, ALL**
See various Spider entries under **Insect Bites**.

**SPINE PROBLEMS, ALL**
See "Subluxation / Spine Distortion" under **Bone and Skeleton** or **Injuries**.

**SPLEEN, ENLARGED, AND OTHER CONDITIONS**
The spleen, a bean-shaped organ positioned beneath the left breast at an angle, contains the largest mass of lymph tissue in the body, covered by connective and smooth muscle tissue. It is connected to the rest of the lymphatic system by some vessels. Unlike the lymph vessels, the spleen does not carry lymphatic fluid; and unlike the lymph nodes, the spleen does not filter or clean lymph. Instead, it produces what eventually turn into antibody-producing blood plasma cells. Antibodies, a basic aspect of the body's immune function, are the biochemical agents against specific microbial or foreign antagonists in the body. The spleen also breaks down bacteria and worn-out or damaged blood cells, and creates new blood cells.

Also see lymph frequencies under **Respiratory Tract**, *Throat and Lymph Nodes*.

20, 27.44, 35, 465, 660 + 690 + 727.5, 787, 802 + 1550, 880, 1800, 2170, 2720, 3176, 10K

**SPONDYLITIS, ALL TYPES**
See "Ankylosing Spondylitis / Bechterew's Disease" under **Bone and Skeleton**.

***SPOROTRICHUM PRUINOSUM***
See under **Candida**, **Fungi**, **Molds and Yeasts**.

**SPRAIN**
See under **Injuries**.

**SPUR, BONE**
See under **Bone and Skeleton**.

**SQUAMOUS CELL CARCINOMA**
See "Skin Cancer / Squamous Cell Carcinoma / Basal Cell Carcinoma" under **Cancer**.

***STACHYBOTRYS CHARTARUM***
See under **Candida**, **Fungi**, **Molds and Yeasts**.

**STAMMERING**
See under **Mind and Emotions**.

***STAPHYLOCOCCUS* / *STAPH*, ALL KINDS**
See under **Bacteria**.

***STEMPHYLIUM***
See under **Candida**, **Fungi**, **Molds and Yeasts**.

**STOMACH CONDITIONS, MANY**
See **Gastrointestinal Tract**, *Stomach and Esophagus*.

**STOMATITIS**
See "Canker Sores / Stomatitis Aphthous" under **Dental**, *Mouth and Gums*.

**STONES, KIDNEY**
See "Kidney Stones" under **Urinary Tract**, *Kidneys*.

***STREP* THROAT**
See "*Streptococcus pyogenes* / *Strep* Throat" under **Bacteria**; or "*Strep* Throat" under **Respiratory Tract**, *Throat and Lymph Nodes*.

***STREPTOCOCCUS*, ALL TYPES**
See under **Bacteria**.

***STREPTOTHRIX***
See "*Actinomyces bovis* / Actinomycosis" under **Bacteria**.

**STROKE AND STROKE PARALYSIS / APOPLEXY**
See "Stroke" and "Stroke Paralysis / Apoplexy" under **Heart, Blood and Circulation**.

***STRONGYLOIDES***
See "*Strongyloides stercoralis* / Threadworm" under **Parasites, Protozoa and Worms**.

**STRUMA, ALL TYPES**
See "Goiter" under **Glands**, *Thyroid*.

**STYE**
See under **Eyes**.

**SUBLUXATION**
See "Subluxation / Spine Distortion" under **Bone and Skeleton** or **Injuries**.

**SUN, ALLERGY TO**
See "Photosensitivity" under **Eyes**.

**SUNSTROKE AND SUNSTROKE FEVER**
20, 95, 146, 190, 428, 440, 444 + 1865, 522, 880, 3K, 10K

**SWELLING, DUE TO WATER RETENTION**
See "Lymphedema / Edema / Dropsy / Water Retention" under **Lymphatic System**.

**SWIMMER'S EAR**
See under **Ears**.

**SWINE FLU**
See "Swine Flu / H1N1" under **Viruses**.

**SWOLLEN GLANDS**
See "Glands, Swollen" under **Respiratory Tract**, *Throat and Lymph Nodes*.

**SYPHILIS**
See under **Men**, *Penis*; or **Women**, *Vagina and Labia*.

## –T–

**TACHYCARDIA**
See under **Heart**, **Blood and Circulation**.

***TAENIA PISIFORMIS***
See under **Parasites**, **Protozoa and Worms**.

**TAPEWORM**
See under **Parasites**, **Protozoa and Worms**.

**TB**
See **Tuberculosis**, **all types**.

**T-CELL LEUKEMIA**
See "Leukemia, T-Cell" under **Cancer**.

**TENDOMYOPATHY**
See under **Muscles**.

**TENDON TEAR**
See under **Injuries**.

**TENDONS, RHEUMATOID ARTHRITIS**
See "Rheumatoid Arthritis" under **Arthritis and Joints**.

**TENNIS ELBOW**
See under **Injuries**.

**TESTICLE CONDITIONS, ALL**
See under **Men**, *Testicles*.

**TETANUS**
See "*Clostridium tetani* / Tetanus / Lockjaw" under **Bacteria**.

**THALAMUS CONDITIONS**
See under **Nervous System and Brain**.

**THREADWORM**
See "*Strongyloides stercoralis* / Threadworm" under **Parasites**, **Protozoa and Worms**.

**THROAT CONDITIONS**
See under **Respiratory Tract**, *Throat and Lymph Nodes*.

**THROMBOCYTOPENIC PURPURA**
See "Thrombocytopenic Purpura / Werlhof's Disease" under **Heart**, **Blood and Circulation**.

**THROMBOPHLEBITIS**
See "Thrombophlebitis / Thrombosis, Infective" under **Heart**, **Blood and Circulation**.

**THROMBOSIS, ALL KINDS**
See "Thrombophlebitis / Thrombosis, Infective" under **Heart**, **Blood and Circulation**.

**THRUSH**
See under **Dental**, *Mouth and Gums*.

**THYMUS GLAND CONDITIONS**
See under **Glands**, *Thymus*.

**THYROID GLAND CONDITIONS**
See under **Glands**, *Thyroid*.

**TINEA CRURIS**
See "Jock Itch" under **Men**, *Penis* or **Women**, *Vagina and Labia*.

**TINEA PEDIS**
See "Athlete's Foot" under **Skin**.

**TINEA VERSICOLOR**
See under **Skin**; or *Malassezia furfur* / *Microsporon furfur* / Tinea Versicolor" under **Candida**, **Fungi**, **Molds and Yeasts**.

**TINNITUS**
See under **Ears**.

**TONSILLITIS**
See "Glands, Swollen" under **Respiratory Tract**, *Throat and Lymph Nodes*.

**TOOTH CONDITIONS**
See under **Dental**, *Teeth*.

**TOXINS, ALL TYPES—TO ELIMINATE**
See **Chemical Poisoning / Detoxification**.

***TOXOPLASMA GONDII* / TOXOPLASMOSIS**
See under **Parasites**, **Protozoa and Worms**.

**TRACHOMA**
See under **Eyes**. Also see "*Chlamydia trachomatis*" under **Bacteria**, **Men**, *Urinary* or **Women**, *Vagina and Labia*.

**TRAUMA, GENERAL**
See under **Mind and Emotions**. Also see listing pertaining to body part and condition.

**TRENCH FEVER**
See "*Bartonella quintana* / Febris wolhynia / Wolhynia Fever / Trench Fever / Quintan Fever / Shin Bone Fever" under **Bacteria**.

**TRENCH MOUTH**
See under **Dental**, *Mouth and Gums*.

***TREPONEMA PALLIDUM***
See "*Treponema pallidum* / Syphilis" under **Bacteria**.

***TRICHINELLA SPIRALIS***
See "*Trichinella spiralis* / Trichinosis" under **Parasites**, **Protozoa and Worms**.

**TRICHINOSIS**
See "*Trichinella spiralis* / Trichinosis" under **Parasites**, **Protozoa and Worms**.

***TRICHODERMIA VIRIDE***
See under **Candida**, **Fungi**, **Molds and Yeasts**.

***TRICHOMONAS*, ALL TYPES**
See under **Parasites**, **Protozoa and Worms**.

***TRICHOPHYTON*, ALL TYPES**
See under **Candida**, **Fungi**, **Molds and Yeasts**.

**TRIGEMINAL NEURALGIA**
See under "Neuralgia, Trigeminal" under **Nervous System and Brain**.

***TRYPANOSOMA BRUCEI GAMBIENSE***
See "*Trypanosoma brucei gambiense* / African trypanosomiasis / Sleeping Sickness" under **Parasites**, **Protozoa and Worms**.

**TUBERCULOSIS, ALL TYPES**
This highly infectious airborne disease is popularly known for affecting the lungs. However, swelling and tumor-like welts of tissue may appear not only in the lungs, but also in the meninges (the membrane around the spinal cord) and the intestines. Other symptoms include fever, cough, and difficulty breathing.

Tuberculosis can be caused by bacteria, viruses, or fungi. The many frequencies so close in range to each other points to the mutation capacity of these microbes. Rife researchers recommend experimenting with all the frequencies, to deal with both the disease and the so-called secondary infections springing from the disease.

**Tuberculosis, General**

First try: 21508.01, 2127.5, 1070.82, 660 + 690 + 727.5

Then try: 20, 221, 333 + 523 + 768 + 786, 465, 532, 590, 776, 787, 799, 800, 801, 802 + 1550, 803, 804, 1132, 1500, 1600, 1644, 2008, 2313, 3353, 6516

**Tuberculosis, General, Short**

First try: 21508.01, 2127.5, 1070.82, 660 + 690 + 727.5

Then try: 20, 216, 720, 740, 784, 802 + 1550, 1500, 1552, 1600, 1840

***Mycobacterium avium* / Bird Tuberculosis**

Causes tuberculosis in birds and sometimes cattle and other animals; the symptoms of cough, fatigue, fever, weight loss and night sweats can also be caught by humans, particularly those with compromised immune function. Most of the frequencies below are experimental.

First try: 529.3, 590, 608.4, 615.7, 617.8, 619.7, 625.9, 632.2, 642.2, 674.3, 680.4, 680.8, 694.1, 700.9, 769.6, 770.6, 773.3, 786.7, 803.4, 818.5, 824.5, 825.7, 830, 857.6, 858.2, 860.2, 896.9, 937.4, 953.6, 1001.2, 1037.3, 1058.6, 1148.3, 1180, 1235.7, 2075, 2117.1, 2471.3

Also try: 802 + 1550

***Mycobacterium tuberculosis*, rod form**

From Royal Rife, used on his #4 machine: 369K

Also try, for co-infections: 151, 799, 802 + 1550, 803, 804, 1513, 1550, 3803

## The Bird Flu Scare

With such intensely negative publicity about the presumably dangerous bird flu, how much is help and how much is hype? An editorial in an October 2005 issue of *British Medical Journal* stated in part:

> The extensive media coverage of avian influenza (bird flu) over recent weeks has caused confusion and increasing concern that bird flu will imminently cause a human pandemic. This has been fueled by the report of a parrot infected by the H5N1 strain of avian influenza in the United Kingdom this week. Is such a pandemic a flight of fantasy? . . .
>
> Avian influenza viruses do not usually infect humans, hence the grave concern when 18 human cases of influenza caused by bird-to-human transmission of AH5N1 avian influenza occurred in Hong Kong in May 1997 with six deaths. Given the large number of infected chickens then in the Hong Kong markets, bird-to-human clinical infection was clearly rare. . . . The lack of sustained human-to-human transmission suggests that this AH5N1 avian virus does not currently have the capacity to cause a human pandemic. . . . A pandemic may occur some time in the future, but not necessarily linked to bird flu.[3]

Interestingly, write some scientists, both the vaccination of poultry and the use of Tamiflu®—a popular pharmaceutical used to combat flu symptoms—may actually cause the H5N1 virus to *mutate* into much more potent and harmful forms. In Japan, the Tamiflu® vaccine has been connected to neurological problems in children, such as blackouts, delirium and seizures. In addition, 12 children died after being vaccinated. Some died because they suddenly jumped out of buildings.

The bird flu scare, besides being based on questionable science, appears to be politically motivated. "At $100 per dose," Dr. Joseph Mercola writes, "the US used taxpayer's dollars to purchase some 20 million doses of the highly questionable Tamiflu®, lining the pockets of then Defense Secretary Donald Rumsfeld who was president of Gilead Sciences when they created the drug."[4]

So far, history has indeed proven that the bird flu scare was just that—a scare, without any grounding in fact. In 2006, the number of human cases of avian flu was reported as 115. In 2007, the number of cases had dropped to 86. These are hardly compelling statistics, considering previous warnings that predicted a pandemic that could kill 150 million people.

Incidentally, a major ingredient of Tamiflu® is shikimic acid. This phytochemical is found in the seeds of star anise. A brown, bark-like, star-shaped spice about the size of a quarter that's grown in China, star anise is commonly used in cooking. It is also ground into a powder and made into teas and tinctures to kill microbes (including parasites and bacteria), to relax muscles, sweeten the breath, improve digestion, eliminate excess water, and expel mucous from the respiratory tract.

**_Nigrospora_-related Tuberculosis**

This fungus is found in the lungs and sinuses, causing TB-type infections and allergies.

302, 350, 764

**Tuberculosis, Aviare**

Causes tuberculosis in birds and sometimes cattle and other animals; the symptoms of cough, fatigue, fever, weight loss and night sweats can also be caught by humans, particularly those with compromised immune function.

First try: 303, 332, 342, 438, 440, 532, 697, 698, 720, 731, 741, 748, 770, 3113, 6515

Then try (most of the frequencies below are experimental but promising): 529.3, 590, 608.4, 615.7, 617.8, 619.7, 625.9, 632.2, 642.2, 674.3, 680.4, 680.8, 694.1, 700.9, 769.6, 770.6, 773.3, 786.7, 803.4, 818.5, 824.5, 825.7, 830, 857.6, 858.2, 860.2, 896.9, 937.4, 953.6, 1001.2, 1037.3, 1058.6, 1148.3, 1180, 1235.7, 2075, 2117.1, 2471.3

Also try: 802 + 1550

**Tuberculosis, Bovine**

229, 523, 600 + 625 + 650, 635, 748, 757, 838, 877, 3353

**Tuberculosis, from _Klebsiella_ bacterium**

217, 220, 221, 686, 729, 748, 1132, 1644, 2313, 6516

**Tuberculosis, Secondary complications**

776, 465, 2008, 2127.5

**Tuberculosis Virus**

1552, 2565

*End of Tuberculosis section.*

## TULAREMIA

See "*Francisella tularensis* / Tularemia / Rabbit Fever / Deer Fly Fever" under **Bacteria**.

## TUMORS, BENIGN

A tumor is an enlargement of various kinds of tissue in the body. It is abnormal because it is not caused by swelling. Tumors can be composed of different kinds of tissue: connective, fatty, fibrous, glandular, lymphatic, mucous, muscular, nerve, bone, or blood vessels. They come in all sizes and shapes as well, though they are typically round. The size of a tumor can range from one millimeter to 50 mm or larger. Sometimes, tumors that are benign (not cancerous) become malignant (cancerous). So it is good to watch them.

The body's tendency to form tumors is a deviation from its optimal DNA. Diet can play a part in the formation of tumors; in fact, tumors of the breast have sometimes been found to be related to diet. Eliminating chocolate and coffee can make a big difference in shrinking the tumor or eliminating it entirely.

According to Dr. Richard Loyd, all tumors contain mercury, so see **Chemical Poisoning / Detoxification**. And, since benign tumors can become cancerous, also see the many entries under **Cancer**.

### Adenoma, Cervical / Cervical Adenoma

Although a tumor in the cervix may be benign, it can become malignant. You are strongly advised to see "Uterine Cancer or Tumor" and other entries under **Cancer**. Also see "Cervical Polyp" in this section.

443

### Cervical Polyp

If these frequencies do not help, see various entries under **Cancer**, since benign tumors can grow and become malignant. Also see "Cervical Adenoma" under **Women**, *Uterus and Cervix*, *Ovaries*, *and Fallopian Tubes*.

277, 288, 687, 689, 744, 867

### *Cladosporium fulvum*

A fungus that causes raised, irregular nodules of soft tissue that can be slow to heal.

233, 344 + 510 + 943,438, 776

### Cholesteatoma

Benign inflammatory tumor usually found in middle ear and mastoid bone region.

Also see **Cancer** in case the tumor becomes malignant.

453, 618, 793, 5058

### Cyst, Other (unspecified)

75, 76, 543

### Cyst, Sebaceous

A closed sac just under the skin, containing cheesy-looking skin secretions, usually caused by swollen hair follicles. Usually appearing on the face, neck and trunk, a sebaceous cyst is generally slow-growing, painless, and easily moved beneath the skin. Occasionally it will become inflamed and tender.

75, 76, 543

### Fibroadenoma of Breast

Non-cancerous fibrous nodules.

1384

### Fibroid Cysts in Breast

Benign fibrous tumor filled with liquid.

267, 660 + 690 + 727.5, 776, 787, 802 + 1550, 880, 1384

### Fibroma

Composed of fibrous connective tissue. Even though a fibroma is benign, you may want to try cancer frequencies to make sure it does not turn malignant.

First try: 272, 273, 660 + 690 + 727.5, 2127.5

Also try: 465, 802 + 1550, 2008

### Larynx Polyp

Sometimes tumors or nodules develop in the larynx when the voice is not used properly. Make sure you have proper breath support when you speak or sing. You are speaking in your proper range if your nasal cavities and face vibrate when you speak.

202, 765

### Lipoma

Fatty tumor, usually benign and in clusters, often just under the skin. It is not known exactly what causes lipomas, but improper fat metabolism and liver dysfunction are thought to be involved. Also see "Liver Cancer" and other entries under **Cancer** in case the tumors become malignant, as well as various entries under **Liver and Gallbladder**, *Liver*.

47 (for 5 minutes), 606 (for 5 minutes), 709 (for 5 minutes), 2K to 2200 (sweep, or in increments of 5 Hz with 30 seconds to 1 minute for each increment)

### Meningioma

A benign, slow-growing tumor of the meninges, the membranes that surround the brain and spinal cord. Also see "Meningitis" under **Nervous System and Brain**.

446, 535, 537

### Myoma

See "Uterine Tumor / Myoma" in this section.

#### Nasal Polyp

Benign growth or tumor inside nasal passage.
542, 1436

#### Ovarian Cyst

Sac containing a liquid in the ovary.
567, 711, 982

#### *Papilloma* Virus Cyst

Certain type of tumor containing skin cells.
6.3 + 148, 110, 264, 634, 760, 762, 767, 848, 874, 907, 917, 1102

#### Polyp, General

20, 146, 444 + 1865, 465, 522, 600 + 625 + 650, 660 + 690 + 727.5, 1600, 1800, 2008, 2127.5, 2170, 2489, 2720

#### Prostate Tumor

Causes prostatitis. Since benign tumors can become malignant, you are strongly advised to also see "Prostate Cancer" under **Cancer**.
20, 60 + 100, 72, 95, 125, 146, 410, 442, 444 + 1865, 465, 522, 660 + 690 + 727.5, 688, 748, 766, 776, 787, 802 + 1550, 1875, 2008, 2050, 2127.5, 2170, 2250, 2489, 2720

#### Uterine Tumor / Myoma

Comprised of muscle tissue. The frequency 127 is also included in case the tumor is malignant. You are strongly advised to also see the many entries under **Cancer**.
127, 253, 420, 453, 689, 832
Also sweep from 420 to 482 for at least 30 minutes

*End of Tumors, Benign section.*

### TYPHOID FEVER

See "*Salmonella typhi* / Typhoid Fever" under **Bacteria**.

### TYPHOID VIRUS

See under **Viruses**.

## –U–

### ULCERS

Open wound on either the skin, or mucous membranes in stomach and duodenum. The duodenum is the upper part of the small intestine that connects to the stomach. There is a sizable emotional component to stomach ulcers. Psychotherapy is strongly advised to help with the release of anger and other emotions.

#### Ulcer, General

1.1 + 73, 1.2 + 250, 660 + 690 + 727.5, 664, 676, 750, 776, 784, 787, 802 + 1550, 832, 880, 1600, 1800, 2127.5, 2170, 2489, 10K

#### Cancrum oris

Rapidly growing oral or nasal ulcer that may become gangrenous.
20, 660 + 690 + 727.5, 787, 802 + 1550, 880

#### Fistula

Abnormal tubelike passage from one bodily structure to another. Also see the "*Staphylococcus*" entries under **Bacteria**.
660 + 690 + 727.5, 787, 832, 880

#### Ulcer, Duodenum

See "Ulcer, General" in this section.

#### Ulcer from *Fasciolopsis buski*

An intestinal fluke or flatworm that is also implicated in ulcers.
15, 55, 2K
From Dr. Hulda Clark: 21607.59, 1075.78 (adult and eggs), and 21508.01, 1070.82 (larvae)

#### Ulcer, Stomach

See "Ulcer, General" in this section.

#### Ulcer, Ventricular

See under **Heart, Blood and Circulation**.

*End of Ulcers section.*

### UNDULANT FEVER

See the various *Brucella* entries under **Bacteria**.

### *UREAPLASMA UREALYTICUM*

See the various "*Mycoplasma*" entries under **Bacteria**.

### UREMIA / UREMIC POISONING

See under **Urinary Tract**, *Kidneys*.

### URETHRA CONDITIONS

See under **Urinary Tract**, *Bladder and Urethra*.

### URINARY TRACT

The urinary tract consists of a pair of kidneys (at the waist on either side of the body), the muscular urinary bladder (near the pubic bone), two ureters (tubes that connect the kidneys to the bladder), and the urethra, which runs from the bladder through the genitals to the outside of the body. Normal urine is generally pale yellow, although its color and odor vary, depending on diet, concentration of solutes to water, and the amount of bile and other bodily secretions it contains.

However, urine should be clear. If it is cloudy, or contains particulate matter, this usually indicates infection.

Proportionately for their size, women cannot hold as much urine as men; thus women need to urinate more frequently. When urine is held inside the body for too long, the entire urinary tract is prone to more infections. The fewer toilets generally available to women than to men in public places, as well as the structure of the female body, explains why more females than males experience bladder infections.

For all kinds of urinary tract conditions, herbalists sometimes suggest taking garlic or the herb *uva ursi*. Mainstream doctors are now joining holistic practitioners in recommending unsweetened cranberry juice as an aid for curbing infections. Foods containing peppers and other hot spices, fats and fried foods, and excessive protein are very irritating and create more work for the kidneys, so consider omitting these from your diet until the condition clears. Also do an herbal parasite cleanse.

Infections in one part of the urinary tract can spread, so try all the frequencies if you are not getting results quickly enough. Try 2050 with all programs. Also see the two microbes that most commonly appear in cases of infection: "*Candida albicans*" under **Candida**, **Fungi**, **Molds and Yeasts**; and "*Trichomonas vaginalis*" and other parasites under **Parasites**, **Protozoa and Worms**.

### *Bladder and Urethra*

The urinary bladder—or "bladder," as it is generally called—is a hollow muscular organ located behind the pubic bone. It is connected to the urethra, a narrow tube leading to the outside the body via the genitals. The shape of the bladder depends on how much urine it contains at a given time. The bladder receives urine from the kidneys and holds it until the urine is expelled.

#### Bladder Cancer

See under **Cancer**.

#### Bladder Infection / Inflammation with possible Urethra involvement

Pain on urination, sometimes with pus in the urine. The urethra is often infected along with the bladder. All of the urinary tract structures are in such close proximity to the vagina that it is easy for a vaginal infection to turn into a urinary tract infection, too. Women should be especially careful when they wipe themselves while on the toilet. Wiping from the front of the vagina toward the anus (instead of in the other direction, which many women tend to do) will help reduce the chances of infection. For a shorter program, see "Cystitis" in this section.

1.1 + 73, 1.2 + 250, 9.39, 9.4, 10, 20, 40, 72, 95, 125, 246, 360, 444 + 1865, 465, 498, 530, 600 + 625 + 650, 630, 642, 660 + 690 + 727.5, 724, 726, 771, 776, 787, 802 + 1550, 832, 880, 1500, 1600, 1800, 2045, 2050 (or 2045 to 2050 for 20 minutes), 2127.5, 2170, 2250, 2720, 10K

#### Cystitis

Inflammation of bladder. Symptoms include pain and burning on urination, occasionally with pus and blood in the urine. Cystitis can be due to chemicals or other irritants, or bacteria—although the non-bacterial inflammation can always develop into an infection. Stay away from irritating foods like coffee, chocolate and colas (because of the caffeine), spices and alcohol. For a longer program, see "Bladder Infection / Inflammation with possible Urethra involvement" in this section.

9.39, 9.4, 20, 465, 498, 530, 630, 660 + 690 + 727.5, 787, 802 + 1550, 880, 2045, 2050 (or 2045 to 2050 for 20 minutes)

#### Cystopyelonephritis

Inflammation encompassing kidney and bladder. Also see other entries in this section.

1385

#### Gravel in Urine

Gravel consists of minerals and acids—phosphates, calcium, oxalate and uric acid particles—that have not been completely broken down by the body. There might be a metabolic problem here, so consult with your health care provider. Make sure to drink pure water in which all the minerals are completely dissolved.

2.65, 20, 660 + 690 + 727.5, 787, 880, 3K

#### Incontinence

Inability to contain urine. Incontinence in both children and adults involves the same microbes, although with children there are often emotional factors involved as well as possible food allergies. Eliminating irritants such as spices, chemicals and caffeine from the diet may help. Since bed wetting can also be due to a parasite infestation, see "*Enterobius vermicularis* / Pinworm / Seatworm" under **Parasites**, **Protozoa and Worms**; or select the appropriate entry under **Gastrointestinal Tract**.

465, 660 + 690 + 727.5, 787, 802 + 1550, 880, 10K

#### *Streptococcus enterococcinum*

Often present with digestive and urinary tract infections.

409, 686

#### Urethritis

Inflammation, with or without infection of the urethra. Symptoms include burning on urination, perhaps with discharge. The discharge is more easily

observed in the penis than in the vagina. In women, a bladder/urethra infection often affects the genital area as well, so also see "Vaginitis" under **Women**, *Vagina and Labia*.

1.2 + 250, 72, 95, 125, 444 + 1865, 465, 600 + 625 + 650, 660 + 690 + 727.5, 776, 787, 802 + 1550, 832, 880, 1500, 1600, 1800, 2127, 2170, 2720

#### Urethritis from *Chlamydia trachomatis*

The *Chlamydia trachomatis* bacterium is sexually transmitted. It can cause a variety of infections, including urethritis (inflammation of the urethra or urinary tube), lymphogranuloma venereum (venereal disease characterized by inflammation and ulceration of the lymph glands), proctitis (inflammation of rectum and anus), and even conjunctivitis, inflammation of the mucous membranes of the eyes. Women need to be especially careful, as the infection may result in miscarriage and infertility. If a woman is harboring the microbe while giving birth, the infection can be passed to the infant in the birth canal, causing eye infections and pneumonia. New findings suggest that this organism may play a developmental role in Multiple Sclerosis and cancer, so it is important to get your condition treated. Also see "*Chlamydia pneumoniae*" under **Bacteria**; and "Lymphogranuloma venereum (LGV)" under **Men**, *Penis* or **Women**, *Vagina and Labia*.

430, 555.7, 620, 624, 840, 866, 2213, 1111.4, 2222.8

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 379700 (lower limit), 381K (most effective), and 383950 (higher limit of same organism)

Hertz set: 941.18 (lower limit), 944.40 (most effective), and 951.72 (higher limit of same organism)

Also from Dr. Clark: 18968.87

### *Kidneys*

The kidneys are a pair of reddish organs four to five inches in length—shaped just like kidney beans, which take their name from the organ—positioned below the ribs in the back of the body on either side of the spine. These rather delicate organs filter the entire volume of the blood about 20 to 25 times each day, through about one million tiny sieve-like nephrons. The kidneys are responsible for keeping the volume of water in the body constant, for maintaining the proper ratio of minerals to water in the system, for removing wastes from the body, for keeping the acid/base concentration of the blood constant, and even for helping to regulate blood pressure. The kidneys contain special cells that sense what to pass to the bladder as waste that will be expelled in the urine (wastes include metabolic by-products urea and ammonia, as well as drugs and other toxins), and what to reabsorb and recycle back into the blood (such as minerals that the body needs).

Inflammation or infection in the kidneys can be very serious because both of these conditions can indicate—and then further cause—a buildup of wastes and toxins. Once these organs become overloaded, they cannot filter properly; and then contaminated material gets dumped right back into the bloodstream and circulates to all the cells of the body.

Since the body chemistry is so dependent on efficient kidney function, take extra good care of these versatile organs. For all kinds of kidney problems, herbalists sometimes suggest taking garlic or the herb *uva ursi*. Unsweetened cranberry juice is excellent for curbing infections. Fried foods, peppers and other hot spices, and caffeine are very irritating and create more work for the kidneys; so avoid these until the condition clears. If urine is held inside the body for too long, the entire urinary tract is more prone to infection. Women, with their proportionately smaller bladders than men and fewer public toilets, need to pay extra care to these important organs.

The kidneys play an indirect but crucial role in heart function. If there are not enough Omega 3 fats in the diet (the best sources are from fish), the kidneys secrete rennin. This causes the adrenals to secrete angiotensin, which in turn causes the blood vessels to constrict and raise blood pressure. Holistic practitioners have seen the blood pressure normalize once the kidneys are supplied with enough Omega 3.

See the entries under **Urinary Tract**, Bladder and Urethra. As the kidneys, liver and lymphatic system are all primary channels of detoxification, also see **Chemical Poisoning / Detoxification**.

#### Bright's Disease

Generic term for acute and chronic disease of the kidneys, which can involve many types of dysfunction. See other entries in this section.

#### Cystopyelonephritis

Inflammation encompassing the kidneys, bladder, and surrounding areas. Also see other entries in this *Kidneys* section, and under the larger **Urinary Tract** heading.

1385

#### Infection

First try: 1.1 + 73, 1.2 + 250, 6.3 + 148, 9.19, 9.2, 10, 20, 40, 440, 444 + 1865, 465, 594, 660 + 690 + 727.5, 776, 787, 802 + 1550, 880, 1500, 1600, 2008, 10K

Then try: 72, 95, 125, 146, 333 + 523 + 768 + 786, 424, 434, 522, 555, 600 + 625 + 650, 834, 2045, 2050 (or 2045 to 2050 for 20 minutes)

#### Kidney Function, to Balance and Normalize

1.1 + 73, 1.2 + 250, 6.3 + 148, 8, 10, 20, 40, 72, 95, 125, 146, 248, 333 + 523 + 768 + 786, 440, 444 + 1865, 465, 522, 555, 600 + 625 + 650, 800, 802 + 1550, 880, 1500, 1600, 3K, 5K, 10K

#### Kidney Meridian, to Balance

For this application, electrode or hand-held light tube units are preferable, since the subject can hold the equipment directly on the points.

9.2

#### Kidney Stones

Small, hard masses caused by crystallized minerals (usually calcium) and other substances in the urine that form in the kidney. Once a stone starts moving (out of the kidney, through the ureter into the bladder, and out of the body through the urethra), it can cause extreme pain and other symptoms including nausea, vomiting, fever and chills, pain in the back or side, and/or a burning feeling while urinating. Diet and lack of fluids contribute to the formation of kidney stones. Phytotherapist Kerry Bone suggests a dietary increase of magnesium and a dietary decrease of oxalates (present in coffee, tea, chocolates, and some fruits including tomatoes and oranges) to help avoid the formation of stones. The herbs cascara and yellow dock may help bind calcium in the urine and make it less likely to solidify.

30.5, 787, 444 + 1865, 660 + 690 + 727.5, 880, 1552, 3K, 6K, 10K

#### Nephritis

Inflammation of the kidneys. Also see other entries in this section, because when the sensitive kidneys are inflamed, it's easy for them to develop an infection.

1.1 + 73, 10, 20, 40, 264, 274, 423, 636, 465, 660 + 690 + 727.5, 787, 688, 880, 1500, 2045, 2050 (or 2045 to 2050 for 20 minutes), 3K, 10K

#### Nephrosis

Degenerative changes in the kidney without the inflammation.

1.1 + 73, 40, 465, 660 + 690 + 727.5, 787, 880, 1500, 10K

#### Pyelitis

See "Infection" in this section.

#### *Streptococcus enterococcinum*

Often present with digestive and urinary tract infections.

409, 686

#### Tumor, benign, caused by the *Papilloma* Virus

Also see various entries under **Cancer** if the tumor persists.

6.3 + 148, 110, 264, 634, 760, 762, 767, 848, 874, 907, 917, 1102

#### Uremia / Uremic Poisoning

Often occurs during kidney failure, when excessive amounts of nitrogen-rich waste products accumulate in the blood. Also see "Lymph System Circulation / Drainage, to Increase" under **Lymphatic System**.

911

*End of Urinary Tract section.*

### URTICARIA

See "Hives / Urticaria" under **Skin**.

### UTERINE CANCER OR TUMOR

See under **Cancer**.

### UTERINE TUMOR, BENIGN / MYOMA

See "Uterine Tumor / Myoma" under **Tumors, Benign**.

### UTERUS, DROPPED OR TIPPED

See "Uterus, Prolapsed / Dropped or Tipped" under **Women**, *Uterus and Cervix*, *Ovaries*, *and Fallopian Tubes*.

## –V–

### VACCINATIONS, INJECTIONS AND INOCULATIONS—REACTIONS TO

See under **Chemical Poisoning / Detoxification**.

### VAGINITIS

See under **Women**, *Vagina and Labia*.

### VALLEY FEVER

See "*Coddidioides immitis* / Valley Fever / Coccidioidomycosis / Coccidiosis" under **Candida, Fungi, Molds and Yeasts**.

### *VARICELLA*

See "*Herpes* Virus Type 3 / *Herpes zoster* / Chicken Pox / *Varicella* / Shingles" under **Viruses**.

**VARICOSE VEINS**
See under **Heart, Blood and Circulation**.

***VARIOLA* / SMALLPOX**
See under **Viruses**.

**VEGETATIVE DYSTONIA**
See "Dystonia, Vegetative" under **Muscles**.

**VEIN INFLAMMATION**
See under **Heart, Blood and Circulation**.

**VENEREAL DISEASES, ALL**
See under **Men**, *Penis* and **Men**, *Urinary*, or under **Women**, *Vagina and Labia* and **Women**, *Uterus and Cervix*, *Ovaries, and Fallopian Tubes*.

**VENEREAL WARTS / CONDYLOMA**
See "Wart, Venereal / Condyloma" under **Men**, *Penis*; or **Women**, *Vagina and Labia*.

**VERTIGO**
Dizziness, from many causes. Vertigo can be caused by microbial infections, neurological impairment, a head injury, adrenal exhaustion, or a heart condition such as low blood pressure. Persistent vertigo can also signify a tumor on the cerebellum portion of the brain. If the problem persists, see a doctor. Also see entries under **Ear**, since the inner ear is responsible for maintaining our sense of balance; and "Brain Tumor" under **Cancer**, since dizziness is a noted symptom.
4, 5.8, 9.19, 9.2, 20, 60 + 100, 660 + 690 + 727.5, 787, 880

**VIRUSES**
Viruses are pathogenic microorganisms that are much smaller than bacteria, and hence much more difficult to view under most microscopes in their live state. They are classified either as living organisms or as complex proteins. Viruses assume different shapes and structures. They differ in how they enter the host cell, seize, alter and use that cell's biological material, mature, and spread through the host. However, viruses generally need the host cell to replicate and sustain their function. Once inside the cell, viruses cause physiological changes that favor their replication. This damages the efficiency and performance of the cell, and causes the organism to function abnormally. It is now recognized that different strains of viruses can combine and form into different organisms.

Ever since researchers from different fields discovered that microorganisms are pleomorphic, it has become even more apparent in recent years that the division between animal and vegetable microbe—between bacterium, virus and fungus—is less distinct than was previously thought. Nevertheless, I have acceded to conventional labeling systems and created separate categories for **Bacteria**; **Candida, Fungi, Molds and Yeasts**; **Parasites, Protozoa and Worms**; and **Viruses**. If you do not know the classification of a particular microbe, look up the name according to its first letter, as all conditions are alphabetized.

**General**
776, 787, 802 + 1550, 832, 840, 880, 1570, 1998, 2008, 2052, 2127.5, 2489, 2490, 5K

**Adenovirus, all types**
Can cause severe respiratory, gastrointestinal, urinary, and eye infections whose symptoms include severe sore throat, swollen lymph nodes, diarrhea, vomiting, headache, fever, abdominal cramps, burning or bloody urine, and very red inflamed eyes. Adenoviruses are extremely infectious in people of all ages. They can foster abnormal cell growth (leading to malignant tumors) by disabling the normal growth limit function of the cell. Adenoviruses can be fatal to those whose immune function is already weak. Many of the viruses remain in the kidneys and lymph tissue and can be excreted in the stool months after the initial infection.

First try: 333 + 523 + 768 + 786, 666, 950.6, 958.8, 959, 959.6, 960.4, 962, 967.6, 969.3

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 371,450 (lower limit), 375K (most effective), 386,900 (higher limit of same organism)

Hertz set: 920.73 (lower limit), 929.53 (most effective), and 959.03 (higher limit of same organism).

Also from Dr. Clark: 334K or 827.90, 371K or 919.62, 393K or 974.15, 568K or 1407.93, 28729.05, 19566.32, 18670.15, 18471, 16628.88

If the above isn't sufficient, also try: 20, 26, 48, 60, 72, 95, 125, 160 (for 5 minutes), 180, 300, 444 + 1865, 522, 555, 660 + 690 + 727.5, 787, 802 + 1550, 880, 942, 952, 962, 1395 (for 5 to 10 minutes), 1500, 2050, 2720, 4868, 5K, 6989, 7001, 7009, 7702, 7762, 7767, 10K

Type 2 – 1008.7
Type 5 – 1008.8
Type 12 – 1062.3
Type 17 – 1032.8
Type 40 – 1059.5

**Adenovirus-36 (AD-36)**
There is solid evidence to implicate one particular strain of Adenovirus, AD-36, in obesity. Recently, researchers discovered that monkeys, mice and chickens injected with the virus gain more weight than do uninfected animals. The virus causes the number of fat cells to increase, as well as triple in size (thus storing more fat). Studies also show that 20% to 30% of overweight humans are infected

with the AD-36, compared to 11% of the nonobese population.

These frequencies are from Michael Tigchelaar. Run for 10 minutes each, with a wide sweep of 15 on either side of the main signal): 260, 265, 270, 525, 530, 2013, 2123, 5218.75, 5796.87, 5859.37, 6140.25, 8875

This frequency is from Jeff Sutherland, who calls it the "fat buster." Try 6028.99 once or twice a week. Run for 40 minutes, gating between 64 and 75. (See Chapter 4 for an explanation of gating.)

#### Adeno-Associated Virus

A pathogenic virus dependent on the Adenovirus for its existence and its ability to replicate, it lodges inside its host. If possible, set your frequency device to do a sweep from 950 to 970 for at least 30 minutes. If you are overweight and Adenoviruses are implicated in your condition, also try 6,028.99 (from Jeff Sutherland) for 40 minutes at least once a week, for weight control.

950.6, 958.8, 959.6, 960.4, 967.6, 969.3

#### AIDS

See "HIV (Human Immunodeficiency Virus) / AIDS (Acquired Immune Deficiency Syndrome)" in this **Viruses** section.

#### Aphthovirus / Foot and Mouth Disease / Hoof and Mouth Disease

Foot and Mouth disease is more accurately called Hoof and Mouth disease, because only animals with cloven hooves are affected: cows, pigs, sheep, goats, buffalo, yaks, and deer. Symptoms include fever, shivering, smacking the lips and grinding the teeth, drooling, lameness, and permanent reduction of milk. Classic blister-like lesions can appear on the tongue, lips, snout, muzzle, teats, in the soft tissue between the horny parts of the hooves, and in the mouth and nostrils. Although this condition is usually not fatal, young animals die easily due to a high incidence of myocarditis. This highly contagious disease infects animals all over the world.

This disease is not easy to treat because at least seven viruses and 60 sub-sets of viruses are involved. This is why the Latin names of the microbes are not easily available. This condition is not the same as Hand, Foot and Mouth Disease, which infects children. For Hand, Foot and Mouth Disease, see "Coxsackievirus A16 / Hand, Foot and Mouth Disease" in this section.

232, 237, 558.38, 585.92, 1171.84, 1214, 1243, 1244, 1271, 5411, 1116.76

#### Borna Virus / Borna Disease Virus (BDV)

From the virus family *Bornaviridae*. Borna virus causes horses to stop eating, walk in circles and even kill themselves. It is now known to have a strong link to depression in humans and to other mental illness, including bipolar disorder and schizophrenia. BDV also affects cats. There are currently no known frequencies for Borna Virus, so try these general anti-viral frequencies:

776, 787, 802 + 1550, 832, 840, 880, 1570, 1998, 2008, 2052, 2127.5, 2489, 2490, 5K

#### *BX* Virus

See under **Cancer**.

#### *BY* Virus

See under **Cancer**.

#### Cat Virus, unspecified

Also see "*Toxoplasma gondii* / Toxoplasmosis" under **Parasites**, **Protozoa and Worms**.

364, 379, 645, 654, 333 + 523 + 768 + 786, 840 to 849, 857, 967, 6878

#### Cold Sores

See "*Herpes simplex* 1" in this section.

#### Coronavirus / SARS / Severe Acute Respiratory Syndrome

Named because of the crown, or bulbous corona, at the top of its structure. There are four to five currently known strains of coronaviruses. Coronaviruses are believed to cause a significant percentage of all colds in humans, mostly in the winter and early spring. However,the most publicized is the strain SARS-CoV, which causes SARS, or Severe Acute Respiratory Syndrome.

SARS affects humans, dogs, cats, pigs, cattle, birds and rodents, commonly infecting the respiratory and gastrointestinal tracts. The epidemic is presumed to have originated in China in November 2002, and then spread to other countries including the United States, Canada, Singapore, and The Philippines. Initial symptoms may include cough, sore throat, pneumonia, muscle pain, diarrhea, and anal warts. Humans have a fever of at least 100.4°F (38°C), and a history of contact with an infected individual. Symptoms generally appear two to 13 days following exposure, although in most cases they occur within two to three days.

Antibiotics, antivirals, steroids, and other drugs have been found to be ineffective. Supplemental oxygen and mechanical breathing support are often used.

145.9, 165.7, 291.7, 331.4, 437.6, 497.1, 583.5, 662.7, 1167, 1312.8, 1325.5, 1491.2, 2333.9, 2651, 4667.8, 5301.9, 9335.6

#### Coxsackie Viruses

So named for their presumed site of origin, the village of Coxsackie on the banks of the Hudson River in New York, this group has been known to produce a wide variety of symptoms (as follows).

**Coxsackie A**

According to Harrison's Principles of Internal Medicine, common symptoms of the Coxsackie "A" group of viruses are respiratory disturbances, fever, liver disease, skin eruptions, neurological disorders, *Herpes* sores in the throat, and unexpected infant deaths. No frequencies are available at this time. Try "Coxsackie B" 1 through 6, as well as particular symptom pictures.

**Coxsackievirus A16 / Hand, Foot and Mouth Disease**

The Coxsackievirus A16 is most known for causing the highly infectious Hand, Foot and Mouth disease, often found in young children, less often in adolescents, and occasionally in adults. Symptoms include fever, sore throat, decreased appetite for solid foods, mouth sores, and a rash on the palms, soles and buttocks that may grow into blisters. Not all symptoms may be present. Virus is spread through feces, mucous, saliva, and fluid from the blisters. Untreated, this condition will leave in a week to 10 days. The biggest danger is dehydration. The acidity in fruit juices can burn the ulcers in the mouth, but milk will not. Rinsing the mouth with salt water (½ teaspoon of salt to one glass of warm water) may help.

This disease is caused by pathogens in the Enterovirus family—usually the Coxsackievirus A16, but not always. Sometimes the culprit is Enterovirus 71, which can cause viral meningitis, a poliomyelitis-like paralysis, and occasionally encephalitis (EV71 encephalitis may be fatal). The Enterovirus group includes Polioviruses, Coxsackieviruses, Echoviruses, and others. Do not mistake the symptoms from this virus for *Shigella* or *Strep* (both bacteria).

**Coxsackie B**

The Coxsackie "B" group of viruses can cause symptoms including but not limited to *Herpes* sores in the throat, diarrhea, pneumonia, inflammation of the testicles, mumps, central nervous system, fever, rash, inflammation of the heart muscle, and infection in the brain, liver and adrenal glands.

**Coxsackie B 1**

353, 384, 587, 723, 834

From Dr. Hulda Clark: 902.27, 18122.49

**Coxsackie B 2**

534, 705, 867

**Coxsackie B 3**

487, 653, 654, 868

**Coxsackie B 4**

421, 353, 540, 8632

From Dr. Hulda Clark: 898.55, 18047.81

**Coxsackie B 5**

462, 569, 647, 708, 774, 1043, 1083

**Coxsackie B 6**

343, 488, 551, 657, 668, 669, 736, 814

**Coxsackie (unspecified)**

Also see "Rubulavirus / Mumps" under **Viruses**.

136, 144, 232, 380, 422, 424, 435, 595, 676, 769, 921, 923, 1189

**Cytomegalovirus (CMV) / Salivary Gland Virus**

See "*Herpes* Virus Type 5 (Human *Herpes* Type 5) / Cytomegalovirus (CMV) / Salivary Gland Virus" in this section.

**Dengue Virus, Types 1, 2 and 3 / Dengue Fever / Breakbone Fever**

The sudden classic fever lasts six to seven days. Other symptoms include severe headache, weak rapid pulse, cold clammy skin, and gastrointestinal distress (abdominal pain, diarrhea, nausea and/or vomiting). A bright red skin rash of tiny red-purplish spots—resulting from broken blood vessels—usually appears on lower limbs and chest, but it can cover the entire body. Muscle and joint pain can be so severe that Dengue is sometimes called "breakbone fever" or "bone-crusher disease." Blood platelets (which help with clotting) usually number below normal until the fever subsides; so the person may bruise and bleed easily, including from the gums and other mucous membranes. In very severe cases, blood vessels may burst in the brain, which is sensitive to bleeding and damage, and death can result. Children and weaker adults are especially susceptible to dying from this.

This virus is transmitted by mosquitoes, which feed during the day. Highly infectious either through blood, or while the subject is still feverish, the virus can be contained by better sanitation and waste management, and by eliminating open areas of stagnant water, where mosquitoes breed.

Cases of Dengue have been reported for over 300 years in Asia, Africa, and North America, among other places. Today, this condition is most common in Africa, the Middle East, Southeast Asia, Brazil, and other tropical locales.

Treatment includes increased fluid intake to prevent dehydration. Sometimes fluids are given intravenously. In severe cases, platelet transfusions are given if the platelet count drops too low or if there is significant bleeding. Avoid aspirin or anti-inflammatory drugs, which can thin the blood and aggravate the tendency to bleed. Also avoid

Vitamin E supplements, which thin the blood as well. Vitamin K helps the blood clot.

148, 149, 206, 211, 216, 423, 846, 1194, 1195, 1196, 1692, 3383, 3389

#### Ebolavirus / Ebola hemorrhagic fever

Ebola is the common term for a group of viruses belonging to the *Filoviridae* family, as well as for the Ebola hemorrhagic fever caused by the virus. The virus is named after the Ebola River Valley in the Democratic Republic of the Congo in central Africa, near the site of the first recorded outbreaks in 1976. Symptoms include a high fever, exhaustion, headache, muscle and joint pain, abdominal pain, nausea, vomiting, dizziness, and trouble breathing. Advanced-stage symptoms, which occur in the minority of subjects, include bleeding from the nose, mouth and anus, as well as deeper internal bleeding.

Early symptoms of Ebola are sometimes mistaken for malaria, typhoid fever, dysentery and influenza. The internal bleeding, the inability of the blood to clot, and the blood platelet destruction caused by Ebola is in many ways similar to Dengue Fever. The incubation period is usually between 5 and 10 days. Death rates from Ebola range from 50% to 90%, with sufferers characterized as dull and lethargic. The cause of death is usually due to organ failure, or to the decrease in blood plasma volume from the loss of bodily fluids.

In its later stages, Ebola hemorrhagic fever is highly contagious, transmissible via body fluids, and sometimes via skin and mucous membrane contact. Outbreaks tend to occur in remote areas. This disease affects chimpanzees, gorillas, forest antelopes, and monkeys as well as humans. It's believed that the animal carrier is the fruit bat. The spread of this virus can be contained, or avoided completely, through better hygiene and sanitation. This includes making sure to sterilize needles and surgical instruments.

Since Ebola is so dangerous, and since medical science has no treatment for this condition, Ebola is classified as a "bioterrorism agent" by the United States Centers for Disease Control (CDC).

169, 234, 239, 244, 479, 957, 1195, 1914, 3828

#### ECHO Virus / Enteric Cytopathic Human Orphan Virus / Nonpolio Enterovirus Infection

ECHO viruses are a group of enteroviruses whose symptoms include respiratory problems, rashes, nonspecific fevers, gastrointestinal problems, inflammation of the sac around the heart, and a type of meningitis or inflammation of the brain. Also see "Meningitis" and other entries under **Nervous System and Brain**.

461, 514, 600 + 625 + 650, 620, 722, 765, 788, 922

#### Epstein-Barr Virus / Infectious Mononucleosis / Chronic Fatigue Syndrome (CFS)

In this modern age, Epstein-Barr Virus, infectious mononucleosis, and Chronic Fatigue Syndrome (CFS) are used interchangeably to designate this highly debilitating condition that causes great fatigue. Other symptoms include fever, headache, sinus congestion, aching muscles, enlargement of lymph nodes in neck, digestive disturbances, weakness, impaired memory and difficulty in thinking, sleeping disturbances, irritability, anxiety and depression, sensitivity to heat and light, and recurrent respiratory infections. Children and young adults tend to become infected more easily than do adults and older people. Vigilant use of the frequencies is indicated, as well as a thorough detoxification of the liver and a building of immune function; it can take a long time to overcome this condition.

There is evidence that this syndrome is the result of viruses administered in one of the polio vaccines. However, since this condition is called a "syndrome," it could have any number of causes. For 35 years, CFS was known as myalgic encephalomyelitis before the Centers for Disease Control renamed it in 1988. And several years ago, Dr. Lawrence Klapow found adults and larvae of a new roundworm species, provisionally named *Cryptostrongylus pulmoni*, in the sputum of almost half of chronic fatigue sufferers, compared to a finding of zero in a control group. The parasite apparently reproduces in the lungs, the larvae burrowing into the intestinal tract and migrating back to the lungs, where they reach adulthood and continue the cycle.

See various entries under **Candida**, **Fungi**, **Molds and Yeasts**; and under **Parasites**, **Protozoa and Worms**. See "*Mycoplasma*" entries under **Bacteria**; "Leukemia" under **Cancer**; and "Thyroid, Underactive / Hypothyroidism" under **Glands**, *Thyroid*. Check for anemia, and for mercury poisoning from silver-mercury fillings. See **Blood Sugar Levels**, and "Brucellosis / Brucelliasis / Undulant Fever" under **Bacteria**. See "Breast Cancer" under **Cancer** and "*Herpes* Type 6" in this section since recent medical research indicates that "Epstein-Barr Virus / Infectious Mononucleosis / Chronic Fatigue Syndrome (CFS)" and "*Herpes* Type 6" are prevalent in aggressive breast cancer. Also see "Hodgkin's Disease / Lymphogranuloma, Malignant" under **Cancer** since recent research shows the Epstein-Barr virus in large numbers of people with Hodgkin's Disease.

First try: 1.1 + 73, 4.9, 6.3 + 148, 20, 35, 27.5 + 220 + 410, 35, 72, 105, 120, 172, 253, 274, 424, 428, 465, 660 + 690 + 727.5, 663, 664, 667, 669, 738, 744, 776, 778, 787, 825, 880, 1013, 1032, 1920, 2127.5, 6618, 8768

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 372500 (lower limit), 375K and 380K (most effective), 382350 (higher limit of same organism). Use *all* these frequencies.

Hertz set: 923.34 (lower limit), 929.53 and 941.93 (most effective), and 947.75 (higher limit of same organism). Use *all* these frequencies.

Also from Dr. Clark: 18919.09, 18670.15

Also try: 95, 125, 330, 444 + 1865, 788, 802 + 1550, 1800, 2720, 10K

**Feline (Cat) Immunodeficiency Virus (FIV)**

Causes an HIV-type illness in domestic cats, affecting up to 3% of cats in the US. FIV attacks and weakens the cat's immune function. Also see "Leukemia, Feline" under **Cancer** as co-infection may be present.

262, 323, 372, 404, 567, 712, 742, 760, 773, 916, 1103, 1132, 3701

***Flaviviridae* / Yellow Fever Virus / Yellow Fever / Yellow Jack / Black Vomit**

The World Health Organization has classified three kinds of Yellow Fever, caused by an arbovirus of the family *Flaviviridae* (one of the smallest RNA viruses isolated so far). Jungle (sylvatic) Yellow Fever affects monkeys, but it can spread to humans who work in tropical rain forests and are bitten by mosquitoes infected by monkeys. Intermediate

## Cats Give Themselves Rife Sessions

Why do cats purr? . . . [They] purr when they are . . . content. However they also purr when frightened, severely injured, giving birth and even while dying.

For the purr to exist in different cat species over time, geographical isolation, etc., there would likely have to be something very important (survival mechanism) about the purr. There also would have to be a very good reason for energy expenditure (in this case creation of the purr) when one is physically stressed or ill. The vibration of the cat's diaphragm, which with the larynx, creates the purr, requires energy. If an animal is injured they would not use this energy unless it was beneficial to their survival. . . .

Most people have heard of a cat's "nine lives." There is also an old veterinary adage still repeated in veterinary schools which states, "If you put a cat and a bunch of broken bones in the same room, the bones will heal." Any veterinary orthopedic surgeon will tell you how relatively easy it is to mend broken cat bones compared with dog bones, which take much more effort to fix, and take longer to heal. There is excellent documentation of the cats' quick recovery from . . . [falling from] high-rise [buildings]. . . . [Researchers] documented 132 cases of cats plummeting many stories from high rise apartments (*average* 5.5 stories), some suffering severe injuries. Interestingly, 90% of these cats survived. . . . There is another clue found in a study performed by Dr. T.F. Cook (1973), [called] "The Relief of Dyspnoea in Cats by Purring," in the *New Zealand Veterinary Journal*. [Dyspnea is shortness of breath, the feeling of not getting enough air.] A dying cat who could not breathe (they were considering euthanasia) was found to breathe normally once it began purring. The purring opened up the cat's airway, and improvement was "remarkable and the next day [the cat] commenced to eat. . . ." Three species of cats have a strong harmonic at exactly 100 Hz, the vibrational frequency found to relieve dyspnea; one species [is] within 2 Hz and one species within 7 Hz of 100 Hz. It could be that the cat's purr decreases the breathlessness by vibratory stimulation.

Fauna Communications has recorded many cats' purrs at a non-profit facility and the Cincinnati Zoo, including the cheetah, puma, serval, ocelot and the domestic house cat. After analysis of the data, we discovered that:

- The dominant and fundamental frequency for three species of cats' purrs is exactly 25 Hz, or 50 Hz the best frequencies for bone growth and fracture healing. All of the cats' purrs all fall well within the 20–50 Hz anabolic range, and extend up to 140 Hz. All the cats except the cheetah have a dominant or strong harmonic at 50 Hz.
- The harmonics of three cat species fall exactly on or within 2 points of 120 Hz which has been found to repair tendons. One species [is] within 3 Hz and one within 7 Hz.
- Eighteen to thirty-five Hz is used in therapeutic biomechanical stimulation for joint mobility. Considering the small size of many of these cats, especially the domestic cats, it is interesting to note that all of the individual cats have dominant frequencies within this range. In fact, some of the cats have 2–3 harmonics in this range.
- The frequencies for therapeutic pain relief are from 50–150 Hz. All of the individual cats have al least 5 sets of strong harmonics in this range.
- Therapeutic frequencies for the generation of muscle strength lie between 2–100 Hz. All of the individual cats have al least 4 sets of strong harmonics in this range.
- Therapy for COPD [Chronic Obstructive Pulmonary Disease] uses 100 Hz; all of the individual cats have a dominant frequency of exactly 100 Hz.

Is it possible that evolution has provided the felines of this world with a natural healing mechanism for bones and other organs? Researchers at Fauna Communications believe so.

Being able to produce frequencies that have been proven to improve healing time, strength and mobility could explain the purr's natural selection. In the wild when food is plentiful, the felids are relatively sedentary. They will spend a large portion of the day and night lounging in trees or on the ground. Consistent exercise is one of the greatest contributors to bone, muscle, tendon and ligament strength. If a cat's exercise is sporadic, it would be advantageous for them to stimulate bone growth while at rest. As well, following injury, immediate exercise can re-break bone and re-tear . . . muscle and tendon [that are healing]. Inactivity decreases the strength of muscles. Therefore, having an internal vibrational therapeutic system to stimulate healing would be advantageous, and would also reduce edema and provide a measure of pain relief during the healing process.

In summary: vibrations between 20 Hz and 40 Hz are therapeutic for bone growth/fracture healing, pain relief/swelling reduction, wound healing, muscle growth and repair, tendon repair, mobility of joints and the relief of dyspnea. . . . Cats do not have near the prevalence of orthopedic disease or ligament and muscle traumas as dogs do. . . . [Also, the] non-union of fractures in cats is rare. Osteo [bone] diseases . . . are rarely found in cats but can be found in all breeds and sexes of dogs. . . .

It is suggested that purring be stimulated as much as possible when cats are ill or under duress. If purring is a healing mechanism, it may just help them to recover faster, and perhaps could even save their [lives].

—Elizabeth von Muggenthaler
excerpted from "The Felid Purr: A bio-mechanical healing mechanism," 2001 and 2006

Yellow Fever occurs simultaneously in many humid or semi-humid savannah villages of Africa, but fewer people die from infection. And urban Yellow Fever, which affects only humans, is spread by mosquitoes that have been infected by other people. Symptoms include high fever, chills, headache, muscle and back aches, vomiting (sometimes bloody), abdominal cramping, and mental confusion. More serious cases involve kidney and heart failure, seizures, and coma. The liver malfunction characteristic of this condition causes jaundice—the yellowing of the skin and whites of the eyes—giving Yellow Fever its name. About 5% of people who contract this illness die, usually within a week of the appearance of symptoms.

This disease can lie dormant and then suddenly become an epidemic. Yellow Fever, common in parts of South America and Africa, has increased since the 1980s. The only treatment medical science suggests is to rest and drink plenty of fluids for a long time—and as a supposed prevention, vaccination. However, several homeopathic remedies are used as well. Andrew Lockie advises, during an acute attack, to take *Aconitum napellus* 30C if the person is feverish, vomiting, jaundiced and restless; *Bryonia* 10C if there is pain in abdomen, vomiting and where symptoms are made worse by the slightest movement; and *Arsenicum album* 6C if the subject is exhausted, restless, chilly, and thirsty for sips of water. Nevertheless, for emergencies and serious illnesses, consult an experienced homeopath rather than try to self-treat.

0.67, 20, 60, 72, 95, 142, 178, 232, 432, 660 + 690 + 727.5, 733, 734, 779, 880, 1187, 10K

**H1N1**

See "Swine Flu / H1N1" in this section.

***Herpes*, all types**

This is both the name of the virus and also the various conditions it causes. Symptoms are many: sores and inflammation in the genitals, mouth, along the skin, or in the nerves deep inside the body. There are several different kinds of *Herpes* viruses. *Herpes zoster* causes chicken pox and shingles. Cytomegalovirus affects primarily very young infants and children with what is sometimes called Cytomegalic Inclusion Disease (CID). And the *Herpes simplex* virus (sometimes called *Herpes* virus *hominis*) is also known as Human *Herpes* Virus 1; although there is apparently more than one type of *Herpes simplex*. These viruses are becoming so numerous, and are manifesting so many different kinds of symptoms, that their various classifications are very confusing. One strain of this virus often has several names.

Contrary to popular belief, the different kinds of *Herpes* viruses do not necessarily stay in "their own" location—they can and will migrate to other parts of the body, even though the sores may not be as recognizable once they are outside their customary location. Therefore, if for example you have sores on your mouth, do not engage in oral-genital contact in the mistaken belief that your oral *Herpes* will not affect someone else's genital region—because you are mistaken, and you might infect your partner! If one set of frequencies doesn't work, try other sets.

Diet is important in controlling *Herpes*. During active outbreaks, avoid grains of any kind, legumes (peas and beans), corn, chocolate, coffee, nuts and seeds. These contain high amounts of the amino acid arginine, which allows the virus to replicate. Supplementation of lysine (an amino acid) can be helpful, since it retards viral growth. Also avoid fruits and sugars, on which the virus feeds.

Also see the following entries under **Cancer**: "Breast Cancer," as recent medical research indicates that *Herpes* Type 6 is prevalent in aggressive breast cancer; "Cervical Cancer," as *Herpes simplex* 1 and *Herpes simplex* 2 have been found in many cases of cervical cancer; and "Hodgkin's Disease," as a large percentage (25% or higher) of people with Hodgkin's Disease are also afflicted with *Herpes* Virus Type 3.

No matter which type of *Herpes* you have, try the general frequencies as well, and especially do the sweeps. If you see the frequency 1550, try a sweep from 1549 through 1553.

#### General

360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 373, 528, 532, 540, 556, 665, 685, 716, 717, 718, 731, 732, 733, 776, 808, 832, 846, 848, 880, 888, 1402, 1488 (for 15 minutes),1489 (for 30 minutes), 8778

#### General, Short Set

304, 464, 465, 802 + 1550, 1488 (for 15 minutes), 1489, 1577, 1900, 2950 (for 15 minutes)

#### General, Single Frequency Set

One experimenter set this single frequency for one hour (after which Vitamin E was applied), and later reported a complete clearing within a couple of days.
37K

#### General, for Stubborn Cases

20, 26, 120, 125, 200, 322, 343, 395, 420 to 480, 428, 444 + 1865, 476, 533, 554 to 556, 660 to 665, 660 + 690 + 727.5, 701, 745, 776, 787, 804 to 808, 822, 832, 843, 880, 1K, 1043, 1488 (for 15 minutes), 1500, 1552 to 1557, 1600, 1614, 1800, 1850, 1864, 2K, 2062, 2127.5, 2170, 2450, 2489, 2720, 3K, 5K, 8031

#### Cytomegalovirus (CMV) or Salivary Gland Virus

See "*Herpes* Virus Type 5 (Human *Herpes* Type 5) / Cytomegalovirus (CMV) / Salivary Gland Virus" in this section.

#### *Herpes simplex* 1

Primarily for cold sores in the mouth, but also linked to cancer of the cervix. Remember that *Herpes simplex* 1 isn't necessarily restricted to the mouth. It may gravitate to the genitals as well. Pay attention to the numbers that are close together; you can set your machine to do a sweep, particularly from 647 to 664. Except for 2950 (which is run for 20 minutes), run each of the following frequencies for at least 6 minutes.

First try: 2950 (for at least 20 minutes)

Then try, for 6 minutes each: 322, 339, 343, 467.8, 476, 480, 589, 591, 647, 648, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 664, 699, 700, 734, 778, 782, 785, 822, 843, 847, 895, 9350.5, 944, 1043, 1488 (for 15 minutes), 1614, 1871, 2062, 3742, 5641, 7484, 8650

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz sets:

291250 (lower limit), 292K (most effective), and 293050 (higher limit of same organism)

345350 (lower limit), 345500 (most effective), and 345760 (higher limit of organism)

Hertz sets:

721.94 (lower limit), 723.80 (most effective), and 726.40 (higher limit of organism)

856.04 (lower limit), 856.41 (most effective), and 857.05 (higher limit of organism)

Also from Dr. Clark: 14537.82, 17201.43

#### *Herpes simplex* 2

Primarily for sores in the genitals, and also linked to cancer of the cervix. Remember that *Herpes simplex* 2 isn't necessarily restricted to the genitals. It may gravitate to the mouth as well. Be aware that this virus has also been found in many cases of cervical cancer. Set your machine to sweep between 804 and 824 for at least 25 minutes, since every one of those numbers has been used for this type of *Herpes*.

532, 556, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 832, 848

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 353900 (lower limit), 355K and 360K (most effective), 362900 (higher limit of same organism). Use *all* these frequencies.

Hertz set: 877.23 (lower limit), 879.96 and 892.35 (most effective), and 899.54 (higher limit of same organism). Use *all* these frequencies.

Also from Dr. Clark: 17923.34, 17674.41

#### *Herpes simplex* 2, More

360, 373, 528, 685, 540, 665, 716, 717, 718, 731, 732, 733, 776, 846, 880, 888, 1402, 8778

#### *Herpes* Virus Type 3 / *Herpes zoster* / Chicken Pox / *Varicella* / Shingles

The general public used to know this as chicken pox or *Varicella* (also the name of the microbe), a

highly contagious viral disease caught mainly by children, with symptoms of spots, blisters, and scabs on the skin. However, more recently this virus has received publicity as the cause of shingles, a very painful condition of inflamed nerves along the skin, and has also been linked to Hodgkin's Disease, as a large percentage (25% or higher) of people with Hodgkin's Disease are also afflicted with *Herpes* Virus Type 3.

See "*Variola* / Smallpox" in this **Viruses** section, since sometimes the two diseases can mimic each other.

20, 26, 120, 304, 444 + 1865, 464, 574, 660 + 690 + 727.5, 664, 787, 800, 802 + 1550, 816.4 (for 5 minutes), 880, 914, 1500, 1552, 1557, 1600, 1633, 1800, 1864, 1865, 2127.5, 2170, 2720, 3K, 3176, 3343, 5K

#### *Herpes* Virus 4 (Human *Herpes* Virus 4) / Epstein-Barr Virus / Infectious Mononucleosis / Chronic Fatigue Syndrome (CFS)

Causes a debilitating disease known by several different names: infectious mononucleosis, Epstein-Barr Virus (EBV), and Chronic Fatigue Syndrome (CFS). Symptoms include great fatigue and debilitation, fever, headache, sinus congestion, aching muscles, and enlargement of lymph nodes in neck. Other symptoms include digestive disturbances, weakness, impaired memory and difficulty in thinking, sleeping disturbances, irritability, anxiety and depression, sensitivity to heat and light, and recurrent respiratory infections. Children and young adults tend to become infected more easily than do adults and older people.

Vigilant use of the frequencies is indicated, as well as a thorough detoxification of the liver and a building of immune function. It can take a long time to overcome this condition. Also see **Candida**, **Fungi**, **Molds and Yeasts**; **Dental**; "Hypoglycemia / Low Blood Sugar / Hyperinsulinism" under **Blood Sugar Levels**; and "Thyroid, Underactive / Hypothyroidism" under **Glands**, *Thyroid*. Check for anemia, and for mercury poisoning from silver-mercury fillings.

First try: 1.1 + 73, 4.9, 6.3 + 148, 20, 27.5 + 220 + 410, 35, 72, 105, 172, 253, 274, 428, 465, 660 + 690 + 727.5, 663, 667, 669, 738, 744, 776, 778, 787, 825, 880, 1013, 1032, 1920, 2127.5, 6618, 8768

Also try: 95, 125, 330, 444 + 1865, 788, 802 + 1550, 1800, 2720, 10K

#### *Herpes* Virus Type 5 (Human *Herpes* Type 5) / Cytomegalovirus (CMV) / Salivary Gland Virus

This affects primarily very young infants and children with what is sometimes called Cytomegalic Inclusion Disease (CID). The virus is sometimes associated with stillborn, premature, or low-birth-weight infants, as well as infections of the kidney, liver, lung, pancreas, gastrointestinal tract, adrenal, thyroid and salivary glands, and the central nervous system. The virus can remain latent in the body for a long time, eventually manifesting not only anemia but severe cancers such as leukemia and lymphoma. It is also thought that this virus is related to forms of mononucleosis not caused by *Herpes* Virus Type 4.

126, 597, 629, 682, 1045, 2145, 8848, 8856

From Dr. Hulda Clark: 20362.91, 1013.81

From Dr. John Garvey: 12537, 41514, 47425, 47524, 48576, 48586, 48587, 48765

#### *Herpes* Virus Type 6 / Human *Herpes* Type 6

It is unclear how Type 6 manifests—new viruses are being discovered all the time—although new research indicates that women with breast cancer may have harbored this virus for a while before manifesting tumors. See "Breast Cancer" under **Cancer** and "Epstein-Barr Virus / Infectious Mononucleosis / Chronic Fatigue Syndrome (CFS)" in this section, since recent medical research indicates that "Epstein-Barr Virus / Infectious Mononucleosis / Chronic Fatigue Syndrome (CFS)" and "*Herpes* Type 6" are prevalent in aggressive breast cancer.

228, 1820, 3640.1, 7281

#### *Herpes* Type C

It is unclear how Type C manifests—new viruses are being discovered all the time—although new research indicates that people with cancer may have harbored this virus for a while before manifesting tumors.

395, 424, 460, 533, 554, 701, 745, 2450

#### HIV (Human Immunodeficiency Virus) / AIDS (Acquired Immune Deficiency Syndrome)

The immune cell CD4+ T-lymphocyte is destroyed by the HIV virus, which allows so-called opportunistic infections to occur. These include Kaposi's sarcoma, lymphoma, shingles and pneumonia, which if constant and severe enough can lead to death.

The origin, transmission, and even definition of AIDS is highly controversial. As far as classification is concerned, the United States government groups AIDS into four different stages, depending on the person's lowest existing T-cell count and the opportunistic diseases they contract. But the epidemic's statistics constantly change, according to whether or not the government includes certain illnesses under AIDS-related diseases. For instance, when cervical cancer was added to the list of opportunistic infections, the number of people afflicted with AIDS became higher.

In 1983, Robert B. Strecker (a pathologist with a PhD in pharmacology), and his attorney brother, Ted, unearthed thousands of documents showing that the AIDS virus is a synthetic microbe genetically engineered in the laboratory. In February 1999, attorney Boyd E. Graves (who has a distinguished military, academic, and law career) uncovered scores of government documents—including a 1971 Special Virus AIDS Flow Chart—that contain a time line of how, when, where, by whom, and to whom the virus was developed and administered.

The HIV virus is a highly dangerous retrovirus due to its unique capabilities (see "Retrovirus, variants" under **Viruses** for more information). Although everyone who has AIDS is HIV positive, not everyone whose bloodstream contains the HIV antibodies has AIDS. In fact, some doctors consider it a good sign that someone has produced high numbers of antibodies to a virus; it's a sign that the immune function is working properly. Poor diet, so-called recreational drugs, benzene, and fluoride make the system susceptible to many of the infections under the AIDS umbrella. And look for frequencies pertaining to the system or organs that are affected. See "*Herpes* Virus Type 5 (Human *Herpes* Type 5) / Cytomegalovirus (CMV) / Salivary Gland Virus" in this section; and **Cancer**. Also see "*Mycoplasma*, many types" under **Bacteria**, since *Mycoplasma* infection is often the beginning of autoimmune conditions. Finally, see the various liver fluke listings under **Parasites**, **Protozoa and Worms**, as Dr. Hulda Clark has reported liver flukes clogging the thymus (where T-cells are made) in autopsies of people who died of HIV-related illnesses. Always use 2489 and 465—included with all of the other frequency sets.

1.2 + 250, 1.44, 20, 72, 95, 125, 249, 333 + 523 + 768 + 786, 418, 428, 440, 444 + 1865, 448, 450, 465, 522, 590, 600 + 625 + 650, 660 + 690 + 727.5, 683, 685, 700, 714, 760, 776, 780, 787, 802 + 1550, 804 to 813, 832, 880, 1K, 1113 (for 12 minutes), 1500, 1600, 1800, 2008, 2127.5 (for 16 minutes), 2170, 2489/2490, 2720, 1570, 1770, 2K, 3K, 3040, 3140, 3175, 3275, 3375, 3475, 3554, 31K, 3100, 6121 (for 21 minutes), 31750, 34750

From Hulda Clark for HIV: 365K or 904.74 (for devices unable to accommodate frequencies in the kilohertz range) and 18172.28

These HIV frequency sets are from John Garvey, LAc.

HIV Set 1: 243, 646, 725, 732, 844, 2432, 6353
HIV Set 2: 245, 314, 725, 965, 1230
HIV Set 3: 111, 392, 633, 714, 776, 837, 1220, 1675, 2664, 3806, 6230, 8225
HIV Set 4: 444, 2323
HIV Set 5: 83, 235, 645, 2323, 3432, 4093, 5532
HIV Set 6: 183, 702, 747, 2245

#### AIDS

200, 238, 450, 683, 714, 776, 802 + 1550, 830, 1489, 2625, 2420, 3554, 5K

#### HIV

1.2 + 250, 1.44, 20, 72, 95, 125, 249, 333 + 523 + 768 + 786, 418, 428, 440, 444 + 1865, 448, 450, 465, 522, 590, 600 + 625 + 650, 660 + 690 + 727.5, 685, 700, 760, 776, 780, 787, 802 + 1550, 804 to 813, 832, 880, 1K, 1113 (for 12 minutes), 1500, 1600, 1800, 2008, 2127.5 (for 16 minutes), 2170, 2489/2490, 2720, 1570, 1770, 2K, 3K, 3040, 3140, 3175, 3275, 3375, 3475, 31K, 3100, 6121 (for 21 minutes), 31750, 34750

#### Kaposi's Sarcoma

Blotchy skin lesions that often appear with full-blown AIDS.

249, 418, 647

#### Influenza

Influenza—popularly known as the flu, and sometimes the grippe—causes very unpleasant respiratory and gastrointestinal infections. Symptoms include coughing, muscle and head aches, fatigue, fever, chills, sore throat, nasal discharge, and sometimes abdominal cramping and diarrhea. Some of these viruses (such as Influenza A) are found in many different animals (including ducks, chickens, pigs, whales, horses and seals), while others (such as Influenza B) are found only in humans.

Classifications for the hundreds of influenza viruses are somewhat arbitrary. They are based on the proteins on the viral surface; notated according to year, location or prominent symptom; and sometimes they are simply given a letter. These viruses constantly mutate, usually each year. So it's not possible to predict frequencies for future influenza outbreaks, and it can even be problematic to manage a current flare-up. Therefore, if individual frequencies don't work for you, target a specific body area and/or use the sweep function on your rife machine to encompass a range of numbers.

You can treat influenza effectively with ozone therapy and colloidal silver (see Chapter 3), and by taking immune-boosting herbs and supplements, including echinacea, transfer factor and Vitamin D3. A study performed in Japan between December 2008 and March 2009, and reported in the *American Journal of Clinical Nutrition,* showed that children taking Vitamin D3 were 58% less likely to contract the flu. The vitamin also lessened the number of asthma attacks in children with a history of asthma.

First try: .08, .25, .57, 7.5, 10.53, 12.5, 40, 170, 320, 615

Then try: 20, 203 to 392, 304 (for at least 5 minutes), 300 to 387, 343, 344 + 510 + 943, 407 to 496, 500 to 597, 660 + 690 + 727.5, 683, 702 to 798, 776, 787, 800, 801 to 885, 802 + 1550, 932, 1K, 1192, 1234, 1500, 1550, 2008, 2050, 2720, 3012, 3423, 3672, 5K (for at least 5 minutes), 6984 to 7016 (sweep), 7766 (for at least 10 minutes) 8K, 8250, 10223

### *Leishmania* Virus

There is evidence that the *Leishmania* Virus inhabits the *Leishmania* protozoan and is part of the pathogenic effects of the protozoan.

#### "New World" *Leishmania* Virus

428.3, 856.6, 1713.1

#### "Old World" *Leishmania* Virus

431.8, 863.6, 1727.2

### Lyssavirus / Rabies

Also called hydrophobia (fear of water), rabies attacks the nervous system. Symptoms in humans include fever, irrational behavior, and violent spasms of the throat made worse by the sight of water. Usually transmitted through a bite or scratch by an infected animal, the virus may now also be airborne. Animals exhibit odd or aggressive behavior, continual growling or other vocalizations, and/or frothing around the mouth.

The incubation period (time between exposure to the virus and the onset of symptoms) can be as short as nine days or as long as seven years. However, onset of symptoms usually occur between three and eight weeks. The incubation period depends on the severity of the wound, the location of the bite, and the person's immunity (and hence, susceptibility to infection).

Many holistic practitioners report cases of people who are untreated and remain healthy: homeopath Andrew Lockie writes that only one in ten people bitten by a rabid animal actually develops rabies. Some practitioners treat rabies solely with homeopathy, either with complicated regimens of certain remedies, to with a dose of rabies nosode (which is like a safe homeopathic version of a vaccine). According to allopaths, rabies can be fatal if not treated and people bitten by a rabid animal should go to the emergency room immediately for rabies shots. I am unable to vouch for the efficacy of managing rabies with either homeopathy or rifing, or advise for how long frequencies must be administered.

20, 120, 547, 660 + 690 + 727.5, 787, 793, 808, 880

### *Meningococcus* Virus / Meningitis

720

### *Mycoplasma* Virus P-1

388.6, 543.6, 777.2, 1087.2, 1554.5, 2174.3, 3109, 4348.6, 6217.9

### Norwalk Virus

A subset of the calicivirus, the Norwalk virus lives in contaminated water and food, causing abdominal pain and cramping, vomiting, diarrhea and fever. Illness usually lasts several days, and affects both children and adults. Highly contagious.

Try these general anti-viral frequencies: 776, 787, 802 + 1550, 832, 840, 880, 1570, 1998, 2008, 2052, 2127.5, 2489, 2490, 5K

### *Papilloma* Virus / Human *Papilloma* Virus (HPV)

Causes warts and benign skin tumors with branches or stalks, and sometimes white patches. Makers of vaccines push the theory that HPV is a major cause of cervical cancer, when, in fact, no direct causal relationship has been proven. More likely, when cancer cells are present and dividing wildly, the cells are more prone to be infected by HPV.

45, 110, 265, 404, 466, 489, 767, 874, 907, 1011, 1051, 5667, 9258, 9609

From Dr. Hulda Clark: 20128.91, 1002.16

### Paramyxovirus

This large group of viruses encompasses smaller subgroups of pathogens that cause the measles, mumps, bronchitis, pneumonia, croup, and the flu in humans. Paramyxoviruses also cause a range of diseases in animals: canine distemper, phocine (seal) distemper, cetacean (dolphin and porpoise) morbillivirus, Newcastle disease virus (in birds), and rinderpest virus (in cattle).

From Michael Tigchelaar: 126.4, 139.4, 278.8, 505.6, 557.5, 1011.2, 1115.1, 2022.3, 2230.1, 4044.7, 4460.2, 8089.4, 8089.5, 8920.5

### Parvo Virus, Canine and Human

Affects humans as well as dogs. Symptoms include diarrhea, inflammation of the gastrointestinal tract, malabsorption, and lethargy.

185, 323, 514, 535, 562, 613, 622, 755, 1K, 4027

### Parvo Virus, Canine only

Primarily affects dogs. Symptoms include diarrhea, inflammation of the gastrointestinal tract, malabsorption, and lethargy.

First try: 185, 188, 323, 428, 433, 514, 535, 562, 613, 622, 637, 755, 1K, 4027

Also try: 488, 2257

### Parvo Virus, Canine, Type B

Affects only dogs.

First try: 323, 514, 535, 613, 755, 761, 764, 766, 768 (try sweeping between 755 and 768)

Also try: 488, 2257

### Respiratory Syncytial Virus (RSV)

The most common cause of pneumonia among infants and very young children, characterized by fever, runny nose, cough, and sometimes wheezing. RSV can also

cause infections throughout life, especially among the elderly or those with compromised cardiac, respiratory or immune function.

First try: 1647, 2528, 2542, 3448, 4763

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 378950 (lower limit), 380K (most effective), and 383150 (higher limit of same organism)

Hertz set: 939.32 (lower limit), 941.93 (most effective), and 949.73 (higher limit of same organism)

Also from Dr. Clark: 18919.09

Also try: 278, 336, 712

#### Retrovirus, variants

Able to insert its genetic code directly into the chromosomes of the host cell, it causes the host cell to make copies of the virus whenever the host cell replicates.

465, 448, 660 + 690 + 727.5, 787, 800, 880, 2489, 10K

#### Rhinovirus

704, 774.9, 813.3, 8240.5, 1041.1, 1168.0, 1190.7, 1193.2, 1256.6, 1267.1, 1270.5, 1272.1, 1385.9, 1387, 1390, 13950.5, 1400.1, 1402.7, 2217.7

#### Rotavirus

From the *Reoviridae* family, the Rotavirus is the most common cause of viral gastrointestinal problems in North America in very young children (usually occurring between the ages of three months and three years). Diarrhea is often accompanied by fever and vomiting, lasting for a few days up to one week. Dehydration can become a serious problem due to fluid loss, so drink plenty of fluids.

Try these general anti-viral frequencies: 776, 787, 802 + 1550, 832, 840, 880, 1570, 1998, 2008, 2052, 2127.5, 2489, 2490, 5K

#### *Rubella* / German Measles / 3-day Measles

Caused by *Rubella*, a virus in the *Togaviridae* family. Contagious but much milder than regular measles, it usually erupts in children. Symptoms include a skin rash, headache, sore throat, and perhaps fever. Its name, unrelated to the country Germany, probably comes from the Latin *germanus* which means "similar." This refers to the similarity between measles, German measles, and the mumps (even though each is caused by a different virus). Pregnant women should avoid exposure, as *Rubella* infection can cause birth defects or miscarriage during the first trimester.

20, 342, 344 + 510 + 943, 368, 420 to 465, 431, 459, 517, 520, 660 + 690 + 727.5, 734, 772, 784 to 787, 796, 880, 967, 1489

#### *Rubeola* / Measles

Caused by *Rubeola*, a microbe in the Paramyxovirus family (related to the mumps virus). Highly contagious and usually erupting in children, symptoms include fever, runny nose, cough, fatigue, and skin rash with lesions.

333 + 523 + 768 + 786. 342, 442, 443, 467, 520, 521, 529, 552, 660 + 690 + 727.5, 712, 745, 757, 763, 784, 787, 880, 962, 1489

#### Rubulavirus / Mumps

Usually a childhood disease, caused by the contagious Rubulavirus microbe in the Paramyxovirus family. Familiar symptoms are swelling of the salivary glands, in the neck between the jaw and ear. Other symptoms include head, ear and muscle aches; fever; dry mouth; fatigue; loss of appetite; sensitivity to light; and hearing difficulties.

Once you contract the mumps, the body builds up immunity to it. Adult males who develop mumps may have fertility problems. Adult females may miscarry. Rarely, an inflammation of the brain or spinal cord may develop, so see "Meningitis" and "Encephalitis" under **Nervous System and Brain**.

14, 20, 152, 190, 242, 253, 428, 516, 642, 660 + 690 + 727.5, 674, 787, 880, 922, 1243, 1660, 2008, 2127.5, 2489, 2630, 2720, 3142, 10K

#### Simian Virus 40 (SV40)

Between 1954 and 1963, 98 million Americans received polio vaccines contaminated with a carcinogenic monkey virus, known as Simian Virus 40 or SV40. In 1960, the medical community acknowledged that SV40 causes cancerous tumors in laboratory animals. According to the National Cancer Institute, SV40 plays a role in an aggressive human lung cancer called mesothelioma. Researchers worldwide have found SV40 in brain cancers (astrocytomas, ependymomas, glioblastomas, medulloblastomas, and *papillomas* of the choroid plexus). Simian Virus 40 also appears in adult human lung, bone and lymphatic cancers, and has been found in the cancers of some children too young to have received the contaminated Salk vaccine. Simian Virus 40 comes from rhesus monkey cells, which despite their danger have been permitted to be used in the manufacture of the poliovirus and Adenovirus vaccines.

From Jeff Sutherland (run for at least 6 minutes each): 1344.45, 1344.43, 1413.46, 1876.13, 2642.24, 2962.14, 5543.65, 5631.24, 6346.71, 6653.86, 7635.45

Run these frequencies on higher range devices: 79333.9, 83173.3, 95443, 93806.5, 132112, 134443, 138591.3, 140781, 141346, 148107, 335175, 355436, 385643

#### *Strep* Virus

563, 611, 660 + 690 + 727.5, 848

#### Swine Flu / H1N1

In early 2009, the World Health Organization (WHO) in the US warned the public to prepare for the so-called "level-six pandemic," a bird-pig-human hybrid influenza virus called H1N1. Although total swine flu deaths for 2009 were lower than the number of deaths from regular seasonal flu, this "preparation" meant hysteria and inoculations. Negative reactions from the vaccine (often within hours of injection) were reported in France, Japan, Sweden, China, the US and other countries. Injuries included the paralyzing Guillain-Barre Syndrome, which had resulted in 1976 from a similar vaccine and which the UK's Medicines and Healthcare products Regulatory Agency publicly linked to the swine flu vaccine. Other dangers included thrombocytopenia (a pathological scarcity of blood platelets) and Bell's Palsy (facial paralysis). In China, more than 1,200 vaccinated people reported rashes, headaches, anal soreness, suddenly plummeting blood pressure, and anaphylactic shock. The CDC (Centers for Disease Control) Advisory Committee on Children's Vaccines reported an increase of over 700% of miscarriages among vaccinated pregnant women, but never admitted the cause. Yet even though fetal deaths in vaccinated women increased by 2,440% in 2009 compared to previous years, the CDC urged inoculation for pregnant women. Most people who died from swine flu—or endured severe, often permanent damage—had been previously injected with the H1N1 vaccine.

No scientific studies had been published showing that H1N1 vaccines worked, but vaccine manufacturers were legally protected from being sued for damages. In April 2010, the director of the national Center for Infectious Disease Research and Policy publicly admitted that flu shots don't work in the elderly—despite the fact that two months earlier, a branch of the CDC had recommended that children as young as 6 months of age be vaccinated, and that elders over 65 years receive four times the normal dose.

Besides the usual manipulated pieces of viruses, the vaccines contained thimerosal, which can cause brain damage, systemic inflammation and autoimmune disorders. (Thimerosal, legally defined as hazardous waste, is prohibited from being thrown out with regular garbage but is allowed to be injected.) The vaccines also contained squalene, an oil that's beneficial if ingested or put onto the skin, but (like many substances) is harmful when injected. Some people were concerned about the vaccines being "contaminated" with other debris such as rotavirus material, but this is an oxymoron, as vaccines are by definition "contaminated."

Non-mainstream media questioned the wisdom and need for vaccines, and finally, corporate media—including ABC News, CNN, *The Washington Post, Time Magazine* and Fox News—publicized the truth about this non-emergency. A June 2010 report in the *British Medical Journal* revealed that five WHO advisors had called the H1N1 flu a "level-six pandemic" so a fearful public would buy vaccines they didn't need—thus lining the pockets of not only the drug companies, but also the WHO advisors who were secretly receiving kickbacks from the companies. In the last three months of 2009, GlaxoSmithKline shipped $1.4 billion worth of vaccines, paid for by citizens' taxes. Despite relentless publicity about this presumably dangerous disease, less than one-third of Americans chose inoculation.

The scam, wrote health activist Mike Adams, "worked like gangbusters. WHO advisors walked away with loads of cash, the drug companies stockpiled huge profits, and the taxpayers of nations around the world were left saddled with useless vaccines rotting on the shelves that will soon have to be destroyed (at additional taxpayer cost, no doubt) or dumped down the drain (where they will contaminate the waterways)."[5]

Ironically, the H1N1—or any other flu—could have been arrested with Vitamin D3, colloidal silver, Vitamin C, ozone, and echinacea and other herbs.

From Brian McInturff.

.02, .45, .65, 2.21, 6.15, 10.23, 15.91, 30.28, 77.5, 327.11

From Michael Tigchelaar.

Higher octaves: 254K, 127500, 168K, 213K, 239K, 530K

Lower octaves (separated by semicolons): 1867.1875; 1984.375; 1992.1875; 2070.3125; 2625

Other: 413, 432, 663, 839, 995

#### Typhoid Virus

1862

From Royal Rife, used on his #4 machine: 760K (rod form), 1,445K (filter passing form)

#### *Varicella*

See "*Herpes* Virus Type 3 / *Herpes zoster* / Chicken Pox / *Varicella* / Shingles" in this section.

#### *Variola* / Smallpox

The *Variola* virus causes a severe infection known as smallpox. Symptoms include fever, headache, muscular and abdominal pain, vomiting, and skin lesions that are painful and blotchy. The skin eruptions can leave scars, so continuously apply Vitamin E.

Secondary infections are often from bacteria that invade the virally-caused lesions. Also see "*Herpes* Virus Type 3 / *Herpes zoster* / Chicken Pox / *Varicella* / Shingles" in the *Herpes* entries in this **Viruses** section, since sometimes the two diseases can mimic each other.

First try: 20, 141, 142, 143, 476, 475, 477, 511, 510, 512, 875, 876, 877, 1643, 1644, 1645, 2131, 2132, 2133, 2144, 2145, 2543, 2544

Then try: 660 + 690 + 727.5, 787, 802 + 1550, 880, 1644

Then try: 334, 360, 471, 506, 542, 569, 647, 711, 832, 3222

#### West Nile Virus

A Flavivirus, member of the family *Flaviviridae*, that causes myriad infections mostly spread by mosquitoes. Other Flaviviruses cause Yellow Fever, Dengue Fever, St. Louis Encephalitis, Japanese Encephalitis, and Hepatitis C. West Nile was first identified in 1937 in the West Nile district of Uganda. Since then, the most notable outbreaks in humans (which ordinarily are rare) occurred in Israel and South Africa; although the mid-1990s saw an increase of outbreaks in humans and horses in Romania, Morocco, Tunisia, Italy, Russia, the United States, Israel and France. The highest incidence occurred in Russia, with 942 cases. Only one in five infected people developed mild illness, and only one in 150 infected people developed brain inflammation (meningitis or encephalitis).

The milder flu-like symptoms, usually lasting for three to six days, include abdominal pain, nausea, vomiting and diarrhea; fever; headache; muscle aches; loss of appetite; and sore throat. More severe forms of the disease, which can be life-threatening, are sometimes called West Nile encephalitis or West Nile meningitis. Symptoms include muscle weakness, stiff neck, mental confusion, and loss of consciousness.

Researchers believe that West Nile is spread when a mosquito bites an infected bird and then bites a person. However, solid evidence indicates that the disease proliferates in areas that spray pesticides and chemtrails into the air. The following frequencies are experimental.

410.4, 412.4, 439.4, 820.7, 824.8, 878.8, 1641.5, 1649.6, 1757.5, 3283, 3299, 3515

#### Yellow Fever Virus

See "*Flaviviridae* / Yellow Fever Virus / Yellow Fever / Yellow Jack / Black Vomit" in this section.

*End of Viruses section.*

**VISION, TO SHARPEN**
See under **Eyes**.

**VITILIGO**
See "Leukoderma / Vitiligo" under **Skin**.

## –W–

**WART, SKIN OR VENEREAL**
See "Wart, most types" and "Wart, Plantar" under **Skin**; and "Wart, Venereal / Condyloma" under **Men**, *Penis*; or **Women**, *Vagina and Labia*.

**WATER RETENTION**
See "Lymphedema / Edema / Dropsy / Water Retention" under **Lymphatic System**.

**WAX IN EAR, EXCESSIVE**
See "Wax, Excessive / Cerumen" under **Ears**.

**WEIGHT, EXCESSIVE**
See **Obesity / Overweight**.

**WERLHOF'S DISEASE**
See "Thrombocytopenic Purpura / Werlhof's Disease" under **Heart, Blood and Circulation**.

**WEST NILE VIRUS**
See under **Viruses**.

**WHEAT SMUT**
See "*Ustilago tritici* / Wheat Smut" under **Candida**, **Fungi**, **Molds and Yeasts**.

**WHINING AND IRRITABILITY**
See under **Mind and Emotions**.

**WHIPLASH**
See under **Injuries**.

**WHOOPING COUGH**
See "Whooping Cough" under **Respiratory Tract**, *Lungs* or "*Bordetella pertussis* or *Bordetella parapertussis* / Whooping Cough" under **Bacteria**.

**WOLHYNIA FEVER**
See "*Bartonella quintana* / Febris wolhynia / Wolhynia Fever / Trench Fever / Quintan Fever / Shin Bone Fever" under **Bacteria**.

**WOMEN**
Since male and female genitals evolve from the same embryological tissue, they are homologues—that is, they correspond in structure, character, and usually function. The following body parts are homologues: the male penile glans and female clitoral glans; the male corpora cavernosa and female clitoris; the male corpus spongiosum and female vestibular bulbs beneath the labia minora; the male scrotum and female labia minora and labia majora; and the male foreskin and female clitoral hood. Women's reproductive systems are more complex than men's, however, since they are built to carry children and give birth.

Not all women want to bear children, however. Birth control pills, still popular with many women in technologically advanced societies, are harmful because they radically alter body functions. Normally, a woman ovulates when FSH (follicle stimulating hormone) from the pituitary gland stimulates the development of an egg in the ovary; the egg follicle (sack surrounding the egg) secretes estrogen; and the estrogen stimulates the uterine lining to prepare itself

for a fertilized egg. As the estrogens increase, FSH output decreases, and the pituitary then secretes LH (luteinizing hormone), which stimulates the ejection of the egg from the ovary in a process called ovulation. Most birth control pills contain two synthesized hormones, progestin (progesterone) and estrogen. These hormones deceive the body into thinking it is pregnant by flooding the system with false hormonal messages. The high level of progesterone inhibits secretions of both pituitary hormones, so that no new egg follicles develop and no ovulation occurs. Progestin also decreases the amount of endometrial tissue in the uterus so that an egg cannot implant. It is much safer, and less confusing to the body, if mechanical forms of birth control are used, such as condoms, a cervical cap, or a diaphragm.

Some excellent resources on women's health are *The New Our Bodies, Ourselves*; *Witches Heal, Third Edition*; and any publication by Sherrill Sellman. Since so many of women's health problems are caused or exacerbated by fungi, also see "*Candida albicans*" under **Candida**, **Fungi**, **Molds and Yeasts**.

### *Breasts*

Breasts are comprised of mostly fatty tissue, some connective tissue, and ligaments. Although the human female breast has been an object of (mostly male) adoration and obsession throughout history, it deserves the real credit for providing the perfect food for an infant. Each breast contains mammary glands that—in response to being stimulated by the hormone prolactin—produce milk, which flows through the nipple. Human breast milk has the ideal ratio of fats, proteins and carbohydrates for the nursing young. For a few days prior to the actual milk, the breast produces colostrum, a rich fluid of transfer factors that support and encourage the immune response of the baby. This is why it's so important for babies to nurse.

The breast contains many lymph nodes that drain into the armpit. It's important to keep this tissue moving, so that waste materials don't accumulate and cause problems later (such as cancer). Although the breasts sag as the woman ages (due to the elongation of the ligaments that hold them up), the health benefits of wearing a brassiere are dubious.

The breasts of men and women—having evolved embryologically from the same tissue—are identical in structure and function. Male breasts are simply smaller, and the mammary glands less developed. Both sexes have a large concentration of blood vessels and nerves in their nipples. Also see various entries under **Lymphatic System**.

#### Breast Cancer

Important! Many tumors of the breast are related to diet. Eliminating caffeine, present in the common foods chocolate and coffee, can make a big difference in shrinking the tumor or eliminating it entirely. It has also been found that people who get breast cancer tend to be deficient in iodine. Sometimes, simply replenishing the system with mg (not mcg) amounts of iodine is enough to eliminate the cancer. See under **Cancer**.

#### Breast Inflammation / Mastitis

A bacterial infection is usually involved. Also see other entries in this section; **Tumors, Benign**; and "Breast Cancer" under **Cancer**, as sometimes benign conditions can become malignant.

654, 698

#### Fibroadenoma of Breast

Non-cancerous fibrous nodules in the breasts. Important! Eliminating caffeine, present in the common foods chocolate and coffee, can make a big difference in shrinking the tumor or eliminating it entirely. Also see "Breast Cancer" under **Cancer**, since you don't want this benign tumor to become malignant.

1384

#### Fibroid Cysts in Breast

Fibrous tumor filled with liquid.

267, 660 + 690 + 727.5, 776, 787, 802 + 1550, 880, 1384

#### Fibroma

Composed of fibrous connective tissue. Even though a fibroma is benign, you may want to try cancer frequencies to make sure it does not turn malignant.

465, 660 + 690 + 727.5, 802 + 1550, 2008, 2127.5

### *Menstruation and Menopause*

When a female reaches sexual maturity, her body releases one or more eggs during a process called ovulation. If the egg has not been fertilized with a male sperm by the time it reaches the uterus, it does not implant itself in the uterine lining. Instead, the rich blood supply—prepared for the possibility of pregnancy—begins to shed, and is eliminated through the vagina in a process called menstruation (typically called a "period"). Usually, when a woman misses her period, she is pregnant. However, sometimes she does not menstruate if she is stressed or very underweight with a low percentage of body fat; both can disrupt normal hormonal function.

During the mid 20th century, females reached sexual maturity around age 13, 14 or 15. However, within the last two decades, an alarmingly high percentage of girls began to experience the abnormal onset of puberty as early as age 7 or 8. This is due mainly to estrogen disruptors present in modern-day plastics, and in meats from animals raised on synthetic hormones.

Menopause—also called the climacteric, "change of life," or simply "the change"—is the stage of the human female reproductive cycle at which the ovaries stop producing estrogen. This leads to scanty and then a complete cessation of menstrual periods, at which point the woman can no longer bear children. Sometimes, as the body adapts to the changing levels of hormones, the woman experiences heart palpitations, as well as variations in body temperature along with day and night sweating, known as "hot flashes." Emotionally, she may experience depression, anxiety, irritability, and lack of concentration. Vaginal dryness and increased need to urinate may also manifest. This process, which occurs between the ages of 45 and 55, can last from six months to more than five years. Menopause can be hastened by serious illness, poisonous chemicals, autoimmune disorders, thyroid problems, and diabetes.

To manage the symptoms of menopause, some women take estrogen replacement hormones. Studies have shown, however, that this is not the best course of action; natural progesterone works much better. Caucasian women, particularly of European descent, are said to have an increased risk of osteoporosis. However, this can be successfully managed with an increased intake of magnesium and Essential Fatty Acids. Dark leafy greens and fish oils can be particularly helpful at this time, along with exercise and frequency sessions.

#### Hormonal Imbalance

50.5, 537

#### Hot Flashes

According to conventional medicine, caused by a hormone imbalance during menopause. Dr. Jeff Sutherland has found a microorganism in the 70 KHz range that proliferates with hormonal change and causes hot flashes. Men, whose hormonal levels similarly change as they age, can likewise be infected with this pathogen. However, their reactions are not as strong as women's. If a woman with hot flashes has any sexual partners, they should also be treated so she doesn't get reinfected.

Nutrient needs are high at this time.

537, 660 + 690 + 727.5, 787, 880, 10K

#### Menstrual Cramps

Try taking amaranth seed tea (an old Native American remedy), and make sure you are not depleted in magnesium.

26

#### Menstruation, Absence of / Amenorrhea

Also check for nutritional deficiencies and hormonal imbalances.

20, 72, 95, 125, 146, 160, 333 + 523 + 768 + 786, 444 + 1865, 465, 522, 537, 555, 660 + 690 + 727.5, 760, 787, 802 + 1550, 880, 3K, 10K

#### Menstruation, General Conditions

Also check for nutritional deficiencies and hormonal imbalances.

465, 537, 660 + 690 + 727.5, 787, 802 + 1550, 880

#### Menstruation, Painful / Dysmenorrhea

Also check for nutritional deficiencies and hormonal imbalances.

4.9, 26, 465, 537, 660 + 690 + 727.5, 787, 802 + 1550, 880

### *Sexual Functioning*

Sexual functioning does not solely consist of whether a man can "get it up" or a woman can climax. It is also related to the ability to show love and respect for others, and to receive love.

#### Frigidity / Impotence, many types

The word "impotence," like the word "frigidity," has negative connotations. Socially and psychologically stigmatizing, it does not address the human aspect of sexual dysfunction: feelings of devitalization, powerlessness, and emotional distance—from oneself, others, and Source. To be impotent is to be robbed of one's life force.

Impotence is usually considered more of a problem for men than women, undoubtedly because in Western culture the masculine identity is associated with performance and aggression (if not outright coercion). However, when a woman is unable to climax and enjoy herself sexually, this is as serious a problem as when a man has difficulty. In a sexual union, both partners are meant to enjoy themselves, and feel connected to themselves and to each other.

Often, there is a physical component to sexual dysfunction. For instance, the woman may have an infection. This is important to the man, because virtually all pathogens can be passed from one partner to the other even if one partner is asymptomatic. The same or similar microorganisms in both men and women can cause symptoms that lead to sexual dysfunction.

Have a thorough checkup. Psychological counseling may be advised, particularly in cases of sexual abuse, rape and assault. Also see other entries under **Women**, and "Gonorrhea" under **Women**, *Vagina and Labia*.

1.1 + 73, 9.39, 9.4, 95, 20, 72, 124, 125, 335, 465, 536, 600 + 625 + 650, 622, 660 + 690 + 727.5, 712, 787, 802 + 1550, 880, 2008, 2127.5, 10K

#### Infertility

Pollutants and environmental toxins (plastics, herbicides, pesticides, etc.) have radically decreased the sperm count in males of all species (and caused birth defects in the young). Less research has been done on the effects of toxins on women, although the drug DES is now banned because of the deforming effects on the developing embryo. Infertility has also been linked to estrogens that are routinely added to the feed of commercially-raised (non-organic) cattle and poultry. Note that this is a shortened set for "Frigidity / Impotence, many types," above.

9.39, 9.4, 335, 465, 536, 600 + 625 + 650, 622, 660 + 690 + 727.5, 712, 802 + 1550, 787, 880, 2127.5, 2008

### *Uterus and Cervix, Ovaries, and Fallopian Tubes*

The uterus or womb is the major female reproductive organ located in the pelvis, held in place by eight ligaments. The cervix at the bottom opens into the vagina, while the top end of the uterus is connected on both sides to the Fallopian tubes. Comprised mostly of powerful muscle fiber, the uterus is flexible enough to inflate to one thousand times its original size during pregnancy. The cervix is the lower, narrow portion of the uterus where it protrudes through the upper vaginal wall. It is sometimes called the "neck" of the uterus.

The ovaries are small oval glands in the female pelvis, perched on top of the Fallopian tubes that lead to the uterus. The ovaries have two functions: the secretion of hormones, and the production of eggs. Operating via a complex feedback loop with the other endocrine glands, among them the hypothalamus and pituitary, the ovaries help maintain the menstrual cycle. Some of the hormones secreted by the ovaries are estrogen, progesterone, androstenedione, and dehydroepiandrosterone. Among other functions, these hormones regulate the appearance of secondary sex characteristics (such as breast enlargement and pubic hair growth), the production of eggs, conditions during pregnancy, and preparation for the mammary glands to produce milk. Estrogen specifically helps maintain subcutaneous fat, bone strength, and some aspects of brain function. It is not well known that the ovaries are also important for a number of functions unrelated to reproduction including digestion, muscular strength, regulation of body temperature, and bone metabolism.

The Fallopian tubes (sometimes also called oviducts or uterine tubes) are two slender tubes leading from the ovaries to the uterus, from 7 to 14 centimeters long (2¾ to 5½ inches). They are named after an anatomist who discovered them in the 16th century. When an egg is released from an ovary, it enters the Fallopian tube and, pushed along by tiny hair-like projectiles called cilia, it travels to the uterus to be implanted or discarded, depending on whether or not it has been fertilized along the way. This trip can take hours or even days.

#### Adenoma, Cervical

See "Cervical Adenoma" in this section.

#### Adnexitis

See "Fallopian Tube Inflammation / Adnexitis" in this section.

#### Catarrh

Mucous membrane Inflammation, in various places including the respiratory tract, gastrointestinal tract, eyes, and uterine area.

20, 380, 444 + 1865, 660 + 690 + 727.5, 787, 800, 802 + 1550, 880

#### Cervical Adenoma

Tumor of the cervix or womb, benign. Although a tumor in the cervix may be benign, it can become malignant. You are strongly advised to see "Uterine Cancer or Tumor" and other entries under **Cancer**. Also see "Cervical Polyp" in this section.

443

#### Cervical Inflammation

20, 60, 72, 95, 125, 660 + 690 + 727.5, 740, 787, 790, 880, 5K

#### Cervical Polyp

If these frequencies do not help, see various entries under **Cancer**, since benign tumors can grow and become malignant. Also see "Cervical Adenoma" in this section.

277, 288, 867, 687, 744

#### Cervical Wart

See "Wart, Venereal / Condyloma" under **Men**, *Penis*; or **Women**, *Vagina and Labia*.

#### Cyst, Ovarian

See "Ovarian Cyst" in this section.

#### Endometriosis

Inflammation of the mucosal lining of the uterus, ovaries, or Fallopian tubes. Most commonly, when the endometrium, or tissue lining the uterus, migrates outside of the uterus. Normally, if no pregnancy occurs and the egg does not attach to the uterine wall, the endometrium is shed or reabsorbed. (This is responsible for menstrual bleeding, called a woman's "period.") But endometrial tissue outside the uterus can cause severe pain (mostly

in the pelvis and lower back), disabling menstrual cramps, spotting between periods, painful bowel movements or urination, nausea and vomiting, and even Fallopian tube obstruction and infertility if the condition is chronic. Endometriosis can also result from fibrous adhesions that form due to injury and surgery as well as infection and inflammation. Eliminating the adhesions with deep tissue massage may improve or entirely eliminate this condition.

Also see "*Herpes*, all types" under **Viruses**; "*Eurytrema pancreaticum* / Pancreatic Fluke," "Fluke, Liver (unspecified)," and "General (unspecified)" under **Parasites**, **Protozoa and Worms**; "Uterine Cancer or Tumor" under **Cancer**; and the many entries under **Women**, *Vagina and Labia*.

246, 800, 802 + 1550, 1552

#### Fallopian Tube Inflammation / Adnexitis

The inflammation sometimes involves the ovaries as well as the Fallopian tubes.

440, 441, 522, 552, 572, 3343, 3833, 5312

#### Fibroma

A benign tumor composed of fibrous connective tissue. Even though a fibroma is benign, you may want to try cancer frequencies to make sure it does not turn malignant.

465, 660 + 690 + 727.5, 802 + 1550, 2008, 2127.5

#### Ovarian Cancer

There are no known frequencies for Ovarian Cancer. See main cancer frequencies under **Cancer**.

#### Ovarian Conditions, General

20, 26, 444 + 1865, 465, 600 + 625 + 650, 660 + 690 + 727.5, 776, 787, 802 + 1550, 832, 880, 1500, 1600, 1800, 2008, 2127.5, 2170, 2489, 2720

#### Ovarian Cyst

An ovarian cyst is a sac containing a liquid in the ovary. Since benign tumors can become cancerous, also see the many entries under **Cancer**.

567, 711, 982

#### Ovaries, Inflammation

See "Fallopian Tube Inflammation / Adnexitis" in this section.

#### Pelvic Inflammatory Disease (PID)

A general term for an infection including one or all of the following areas: the Fallopian tubes, ovaries, and uterus. PID is a sexually transmitted disease. Symptoms may include pain in the bladder, vagina, urethra or lower back; irregular menses; vaginal discharge; sudden fevers and chills, and other symptoms of general infection. Scientists have recently discovered that *Neisseria gonorrhoeae*—the same bacterium that causes gonorrhea—is often involved. When the infection spreads to the upper genital tract, it may be more difficult to eliminate. PID renders 10% of all women infertile. Also see "Vaginitis" and "Gonorrhea" under **Women**, *Vagina and Labia*; "Fallopian Tube Inflammation / Adnexitis" under **Women**, *Uterus and Cervix*, *Ovaries, and Fallopian Tubes*; and "Uterine Cancer or Tumor" under **Cancer**, as PID caused by *Chlamydia trachomatis* may also be associated with increased incidence of ovarian cancer. In addition, cervical cancer is associated with the presence of *Chlamydia trachomatis*, though the presence of *Chlamydia* does not in and of itself indicate that the tissue is cancerous.

14, 72, 95, 428, 444 + 1865, 450, 465, 522, 590, 600 + 625 + 650, 660 + 690 + 727.5, 776, 787, 802 + 1550, 1600, 1770, 1800, 2008, 2127.5, 2170, 2720, 2489

#### Sex Gland Fever

10K, 20

#### Uterine Tumor / Myoma

Comprised of muscle tissue, this tumor is often, though not always, on the uterus. The frequency 127 is also included in case the tumor is malignant. You are strongly advised to also use the many entries under **Cancer**.

127, 253, 420, 453, 689, 832

In addition, sweep from 420 to 482 for at least 30 minutes

#### Uterus, Prolapsed / Dropped or Tipped

This symptom is subject to the cultural bias of men thinking that women's bodies must be a certain way, but there is some validity to this diagnosis. Sometimes a woman's uterus is not properly supported by the surrounding muscles, and the resultant sagging or "dropping" causes pain, discomfort, irregular menses, and urinary or fecal incontinence.

9.1, 110

### *Vagina and Labia*

The vagina is a muscular, membranous tube that forms a passageway between the uterus and external orifice. The outer labia or lips, which contain many sweat glands, are covered with hair. The inner labia surround the clitoris and are comprised of delicate mucousal membrane. The

urethra, a tube leading to the bladder, has a separate opening through the inner labia. With such a complex structure, it's not surprising that when a woman has either inflammation or infection, both the inside and outside can be affected. Vaginitis affects large numbers of women at some point in their lives. Infections are usually accompanied by discharge, itching, irritation, burning on urination, and pain during genital activity. Many microorganisms can cause this condition.

Sometimes, a vaginal infection can be reduced or eliminated enitrely if an antiseptic agent is introduced. Many women douche with one quart of filtered or distilled water into which hydrogen peroxide, colloidal silver, and/or a clean herbal mixture (such as goldenseal) has been added. One popular douching formula consists of distilled white vinegar diluted in water. The vagina is naturally acidic. Many infections arise because the vagina has become alkaline, so introducing vinegar will help restore the terrain. In some cases, though, douching aggravates the problem if the vaginal tissues are very sensitive and inflamed. Rinsing the vagina could wash away the secretions that help keep the delicate mucous membrane moist. So listen to your body.

Often genital infections gravitate to the urinary tract, so also see "Bladder Infection / Inflammation with possible Urethra involvement" under **Urinary Tract**, *Bladder and Urethra*.

#### General

1.2 + 250, 9.39, 9.4, 20, 72, 95, 125, 414, 444 + 1865, 464, 465, 542, 600 + 625 + 650, 642, 652, 660 + 690 + 727.5, 776, 784, 787, 800, 802 + 1550, 832, 845, 866, 880, 942, 1500, 1600, 1800, 2127.5, 2170, 2720

#### *Candida*

This inflammation causes vaginal discharge that is white and cheesy, and often irritating to the point of burning. It is common in women who have taken antibiotics, since the drugs destroy the beneficial bacillus in the vaginal tract that ordinarily keep the *Candida* population low. Sometimes, reintroducing beneficial flora (the kind that inhabit the gut) in a douche can help, along with taking the same flora orally.

*Candida* can be passed between sexual partners, and without proper care can be difficult to eliminate. The woman's partner must be treated, too. See "*Candida albicans*" and other entries under **Candida**, **Fungi**, **Molds and Yeasts**.

#### *Chlamydia pneumoniae*

A form of *Chlamydia*; see below. Run each frequency for 5 minutes.

*Program 1:* If your unit can't do decimals, round up or down to the nearest number. 4710.5, 470 to 472, 479, 620, 940.1, 942.9, 1880.1, 1885.9, 3760.3, 3771.7, 7520.5, 7543.4

*Program 2:* 471, 942, 1886, 3772, 7543

#### *Chlamydia trachomatis*

A sexually transmitted bacterium that can cause conjunctivitis (inflammation of the mucous membranes of the eyes), lymphogranuloma venereum (venereal disease characterized by inflammation and ulceration of the lymph glands), urethritis (inflammation of the urethra or urinary tube), and proctitis (inflammation of rectum and anus). If not treated, the infection may result in miscarriage and infertility in women. It can also be passed to infants in the birth canal, causing eye infections and pneumonia. New findings suggest that this organism may play a developmental role in Multiple Sclerosis and cancer, so it is important to get your condition treated. Also see "*Chlamydia pneumoniae*" and "Lymphogranuloma venereum (LGV)" in this section.

430, 555.7, 620, 624, 840, 866, 2213, 1111.4, 2222.8

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 379700 (lower limit), 381K (most effective), and 383950 (higher limit of same organism)

Hertz set: 941.18 (lower limit), 944.40 (most effective), and 951.72 (higher limit of same organism)

Also from Dr. Clark: 18968.87

#### *Gardnerella*

Bacteria that often infect and inflame the vaginal mucosa.

320, 329, 485, 695, 782, 995

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 333K (lower limit), 340K (most effective), and 342550 (higher limit of same organism)

Hertz set: 825.42 (lower limit), 842.78 (most effective), and 849.10 (higher limit of same organism)

Also from Dr. Clark: 16927.60

#### Gonorrhea

Caused by *Neisseria gonorrhoeae*. Symptoms include inflammation of the genital mucous membrane with painful urination. There can also be inflammation in the joints, and in the mucosa of the eyes, mouth and rectum. An infection can exist on a sub-clinical level. Although men usually experience burning during urination with possibly a drip or discharge from the penis, many women do not even feel symptoms. If untreated, the microbe can migrate to many areas of the body and produce complications that we know of as other diseases, such as arthritis, prostatitis, epididymitis, orchitis, cystitis, Pelvic Inflammatory Disease (PID), and endocarditis. Also see other frequencies under **Women** or **Men**.

From Royal Rife, used on his #4 machine: 233K

600 + 625 + 650, 660 + 690 + 727.5, 712

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 333850 (lower limit), 334K (most effective), and 336500 (higher limit of same organism)

Hertz set: 827.53 (lower limit), 827.90 (most effective), and 834.10 (higher limit of same organism)

Also from Dr. Clark: 16628.88, 927.90

#### *Herpes*, all types

See the many entries for "*Herpes*" under **Viruses**.

#### Jock Itch

Peeling skin, irritation and itching caused by *Epidermophyton floccinum*, a fungus that attacks skin, nails, and also the feet (where it is called athlete's foot). The fungi that attack the skin are often interchangeable and do not confine themselves to any one area. Also see the various *Trichophyton*, *Microsporon* and *Microsporum* entries, as well as "General Fungus / Molds / Yeasts," under **Candida**, **Fungi**, **Molds and Yeasts**.

20, 345, 465, 644, 660 + 690 + 727.5, 766, 784, 802 + 1550, 880

#### Leukorrhea

See "Vaginitis" in this section.

#### Lymphogranuloma venereum (LGV)

A venereal disease caused by *Chlamydia trachomatis*. Symptoms include inflammation, and enlargement and ulceration of the lymph glands in the groin area.

First try: 552, 1522, and 430, 555.7, 620, 624, 840, 866, 2213, 1111.4, 2222.8 (for *Chlamydia trachomatis*)

If that doesn't work, try: 4710.5, 479, 620, 940.1, 942.9, 1880.1, 1885.9, 3760.3, 3771.7, 7520.5, 7543.4 (for *Chlamydia pneumoniae*)

#### *Papilloma* Virus / Human *Papilloma* Virus (HPV)

Causes warts and benign skin tumors with branches or stalks, and sometimes white patches. Also see "Wart, Plantar" under **Skin**.

45, 110, 265, 404, 466, 489, 767, 874, 907, 1011, 1051, 5667, 9258, 9609

From Dr. Hulda Clark: 20128.91, 1002.16

#### Smegma

An unhealthy, smelly buildup of the fatty secretion from the skin between the glans penis and the foreskin in the male, or around the clitoris and labia minora in the female. Keep the area clean, using very mild and simple soaps, or if necessary, a 3% solution (or less) of food grade hydrogen peroxide.

153, 180, 638

#### Syphilis

Highly infectious disease that can cause lesions in the sexual organs, fever, headache, swollen glands, rash on the hands and feet, and ultimately blindness, heart disease and insanity if not treated. Syphilis is insidious because the microbe enters the bloodstream during sex and can go anywhere in the body. Within 10 to 90 days after infection, a sore may appear on or around the sex organs, rectum or mouth. Syphilis can exist on a sub-clinical level. If untreated in pregnant women, it can cause birth defects and even death to the baby. Women with chronic vaginal discharge, or men and women with so-called sexual dysfunctions, might want to try syphilis frequencies if other numbers aren't working. Also see other related categories.

From Royal Rife, used on his #4 machine: 789K

Also try: 20, 120, 177, 600 + 625 + 650, 658, 660 + 690 + 727.5, 700, 902

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 346850 (lower limit), 347K (most effective), and 347400 (higher limit of same organism)

Hertz set: 859.76 (lower limit), 860.13 (most effective), and 861.12 (higher limit of same organism)

Also from Dr. Clark: 17276.11

#### *Torulopsis glabrata*

A yeast sometimes appearing in vaginal infections. Also see "*Cryptococcus neoformans*" and other fungal forms under **Candida**, **Fungi**, **Molds and Yeasts**.

522, 2121

#### *Trichomonas vaginalis*

An aerobic protozoan parasite usually found in the vagina, causing itching, burning, and foul-smelling discharge. Although a woman is generally more symptomatic than a man from a *Trichomonas* infection, the man should be treated since the parasite does lodge itself in his genital-urinary tract and can be passed back and forth between sexual partners.

610 + 692 + 980

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz set: 378K (lower limit), 381K (most effective), and 383600 (higher limit of same organism)

Hertz set: 936.97 (lower limit), 944.40 (most effective), and 950.85 (higher limit of same organism)

Also from Dr. Clark: 18968.87

#### Vaginitis

Inflammation of the inside of the vagina and sometimes the vulva, often accompanied by discharge, itching, irritation, burning on urination, and pain during sexual contact. Below are general frequencies for unspecified vaginitis. If you know the specific microbe involved, see that particular entry. In the majority of vaginitis sufferers, fungus is present, so also see "*Candida albicans*" under **Candida**, **Fungi**, **Molds and Yeasts**.

1.2 + 250, 9.39, 9.4, 20, 72, 95, 125, 414, 444 + 1865, 465, 542, 600 + 625 + 650, 642, 652, 660 + 690 + 727.5, 776, 784, 787, 800, 802 + 1550, 832, 845, 866, 880, 942, 1500, 1600, 1800, 2127.5, 2170, 2720

#### Wart, Venereal / Condyloma

Benign but very painful, sometimes bleeding tumors with a branch or stalk and sometimes white patches, caused by the *Papilloma* virus. Men do not feel the negative effects of venereal warts as strongly as women do. In women, if this condition is not eliminated it can lead to cervical cancer.

First try: 45, 110, 265, 404, 446, 466, 489, 660 + 690 + 727.5, 767, 874, 907, 1011, 1051, 5657, 9258, 9609

From Hulda Clark. Use the hertz set for devices unable to accommodate frequencies in the kilohertz range. Since Dr. Clark notes such a wide range in her frequencies, you may want to do a sweep.

Kilohertz sets:

402850 (lower limit), 407K (most effective), and 410700 (higher limit of same organism)

404050 (lower limit), 404300 (most effective), and 404600 (higher limit of same organism)

Hertz sets:

998.57 (lower limit), 1008.85 (most effective), and 1018.02 (higher limit of same organism)

1001.54 (lower limit), 1002.16 (most effective), and 1002.90 (higher limit of same organism)

If the above frequencies don't help, try these additional wart frequencies: 173, 466, 495, 644, 767, 787, 797, 877, 907, 915 (for 30 minutes), 918 (for 30 minutes), 953, 1500, 1600, 1800, 2008, 2127.5,2170, 2720, 2489

#### Yeast Infection

This inflammation causes vaginal discharge that is white and cheesy, and is often irritating to the point of burning. It is common in women who have taken antibiotics, can be passed between sexual partners, and without proper care can be difficult to eliminate. Also see "*Candida albicans*" under **Candida**, **Fungi**, **Molds and Yeasts**.

72, 422, 582, 706, 771, 787, 788, 1016, 2222

*End of Women section.*

### WORMS

See various entries under **Parasites**, **Protozoa and Worms**.

### WOUNDS, TO SPEED HEALING FROM

See "Wound Healing and Regeneration" under **Regeneration and Healing**.

## –Y–

### YEAST, ALL KINDS

See many entries under **Candida**, **Fungi**, **Molds and Yeasts**.

### YELLOW FEVER

See "*Flaviviridae* / Yellow Fever Virus / Yellow Fever / Yellow Jack / Black Vomit" under **Viruses**.

### YELLOW FLY BITE

See "Yellow Fly" under **Insect Bites**.

### *YERSINIA (PASTEURELLA) PESTIS / PASTEURELLA*

See "*Yersinia (Pasteurella) pestis* / *Pasteurella* / Bubonic Plague / Black Death" under **Bacteria**.

## –Z–

### ZYGOMYCOSIS

See various "*Mucor*" entries and "Mucormycosis / Zygomycosis" under **Candida**, **Fungi**, **Molds and Yeasts**.

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*Slowly an apprehension of the intimate, usable power of God is growing among us, and a growing recognition of the only worthwhile application of that power—in the improvement of the world.*

—Charlotte Perkins Gilman,
American writer, poet, lecturer, social critic and activist (1860–1935)

## *Chapter 6 Outline*
## *Creating a Better World, Inside and Out*


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# Chapter 6

# Creating a Better World, Inside and Out

## INTRODUCTION

Rife technology is about life and overcoming illness. But a discussion of healing must also address the subject of death. After all the clinical trials are published, data is analyzed, anecdotal reports are offered and advice is given, some deaths are inevitable. Despite your or my best efforts, within our circle of family, friends, lovers, acquaintances and colleagues, someone will not wake up to see the sun rise tomorrow.

Most people view death as the cessation of life in the physical body. But death can express itself in different ways, even among the living. Take emotional numbness. The living can also experience a sort of death: the death of emotional expression. Sometimes, to protect ourselves from feeling too much pain, we barricade ourselves against any and all emotions, pleasurable or not. Yet hiding diminishes us. When we hide who we truly are, we cannot connect with ourselves or with others. Perhaps this is the worst kind of death.

Feelings of connection are essential to our health and sense of well-being. They usually begin with family, and extend to community and country. Being connected helps us feel secure. In fact, a sense of belonging is fundamental to our very identity. It's threaded through our bodies, from the cytoplasmic matrix that joins all the cells to the tiny particles that flash, in an elaborate orchestrated dance, within our atoms.

The interconnecting functions in all living systems point to the need for holistic therapies. Holistic therapies heal by helping to reestablish the functional relationships between all the aspects of a system. Thus, healing at its deepest level may be described as the awakening, affirming, and energizing of connections that have been overshadowed or lost. In many ways, the process of healing is the process of becoming more aware.

Awareness can manifest in many ways: physical, emotional, mental, energetic. It also happens in stages. Usually, we're more aware of the overtly physical changes that occur in us than the emotional, or the even more subtle energetic changes.

One of the most recent waves of awakening, healthwise, came with the birth of the self-help movement in the 1960s. People were not simply interested in getting an education, a good job, and having a home and family. They wanted to explore their deeper desires and dreams. Sometimes this knowledge of self came at a price. It meant separating from people whose paths were different from one's own. But still, more and more people were willing to depart from what was expected of them, finding new meaning in the discovery of their inner lives.

Revelations in the personal sphere led to an understanding of the bigger picture. There was a slogan in the early 1970s from the second wave of the women's liberation movement, "The personal is political." What feminists were referring to was the broad-based social and political forces that invisibly shape our lives. The less visible or obvious these social and political forces were, the harder it was to see that our problems were not unique to us as individuals, or solely personal. Thanks to this political

awakening, people became aware of how laws and social customs too often dictated how they related to themselves and to others. What previously had seemed like personal failures and shortcomings were now understood to be constraints imposed by globally orchestrated forces to keep world citizens ignorant, powerless, and alienated.

Instead of succumbing to despair and lethargy, many people realized that they could gain strength from being kind to and connecting with others, even those who were radically different from themselves. The understanding and soul-searching that had been catalyzed by the self-help movement was now being expanded to include a larger sphere outside of the self, as people all over the world united to dismantle the global plague of greed and fear, and replace it with compassion and trust.

Despite some beneficial changes that this global political consciousness brought, people were still hungry for a sense of oneness with something larger than themselves. When I was working as a singer-songwriter and later as a body-mind psychotherapist, in my conversations with others the theme that kept repeating was a longing for this bond. The connection that my audiences, clients, and friends told me they wanted seemed to be of cosmic proportions. People were starting to recognize what some ancient traditions had maintained for centuries: *that the divine without is the same as the divine within*. Another name for this all-encompassing connectedness is *spirituality*.

> A patient grants you the gift of trusting you with their lives, and there is no room for mistakes.
>
> —Alberto Quinoñes-Hinojosa, MD, neurosurgeon, quoted in *The New York Times* May 13, 2008

Spirituality is not always the same as religion, although the two can overlap. Religion is formalized instruction. It promotes codes of behavior based on written rules, overseen by an institution or its representative. Religion is also structured so that its adherents rely on an intermediary from the governing body to complete—or in some cases, impart—a sense of connection to something beyond themselves. Spirituality, on the other hand, is not mediated by another person or institution. Its expression does not necessarily depend on formal teachings: one can find inspiration from many sources (including religious principles). The codes of behavior for dealing with others tend to spring from one's own conscience and sense of values, rather than from prescribed doctrine. When a deep connection is felt in either system, great healing can occur.

This chapter was written to explore the possibilities of multi-dimensional healing under circumstances ranging from the corporeal to the extraordinary. You might view the three chapter sections—**The Personal**, **The Political**, and **The Transcendent** (sometimes known as *transpersonal*)—as the evolution of one human being (me). However, this is also a progression that I have often seen occur with other individuals, and even large groups.

**The Personal** is designed to help those who are dying to manage their fear of death, and the survivors to face their fear of being left alone and gracefully maneuver through the grieving process. **The Political** addresses the issues that continue to affect us on a global level after we have moved through the rawest, most painful stages of our mourning and dried our tears. And **The Transcendent** discusses the quantum nature of consciousness that in some ways is even more "real" than the personal and political realms. Once we open to the boundless energetic universe in which we live, two changes can occur. We more easily navigate the difficult social and political forces that impact our lives. And we heal in profoundly transformative ways.

## THE PERSONAL

### *The Trauma of Illness and Death*

When I talk about rife technology to seriously ill people, they always want to know: "Does the frequency therapy *really* work? What's the success rate for the terminally ill?" What these people are really asking is, "What are *my* chances? Can you guarantee that *I* will be cured?" My heart goes out to them. I can only reply, "I honestly don't know what your chances are. There are no guarantees of anything." The refreshing success rate for electromedicine in general and rife therapy in particular—compared to a less than 3% success rate for chemo and radiation—does not guarantee that *their* life will be saved. Besides, all the data in the world does not address our emotional needs. To most people, death is an unknown quantity. And the unknown can be very scary.

The relatives and friends of the seriously ill are afraid, too. They ask me the same questions, demand the same guarantees. They want to bypass their grief (or guilt) if a loved one dies. They're reminded of their own mortality as they grapple with the inevitability of their loved one leaving them. And they want to be spared the trauma of grief if, after allowing themselves to hope that rifing will work, their loved one dies and they end up having to face loss anyway. It can feel like a bigger loss to have their hopes kindled and then extinguished, than if they had not even

dared to hope at all. Not surprisingly, the people who try to protect themselves from disappointment are sometimes the most vocal critics of rife technology. Afraid of being deceived and disillusioned, they end up dismissing it while at the same time refusing to investigate its potential.

Most of us, especially in technologically advanced cultures, are taught that death is separate from life, something to be despised and feared. There are few role models for how to tell others about a loved one's imminent or recent passing. And most of us don't learn how to fully give in to the grieving process during this most intimate time. We feel pressured to be upbeat and smiling, even though grieving can take years. People mourning a fresh loss usually don't have the energy to engage with the outside world, yet too often they try to push themselves into activity before they are ready. In fact, they go out of their way to hide their pain and sadness because they're afraid of being impolite or a burden to others. The best thing mourners can do is be gentle with themselves, and not force themselves to feel or behave in any particular way. (See Sidebar, "How People Die.")

"Shattering Eight Myths About Grief" from the Hospice Foundation of America may give you some solace when it's your turn to mourn.

Myth 1: We only grieve deaths.
Reality: We grieve all losses.

Myth 2: Only family members grieve.
Reality: All who are attached grieve.

Myth 3: Grief is an emotional reaction.
Reality: Grief is manifested in many ways.

Myth 4: Individuals should leave grieving at home.
Reality: We cannot control where we grieve.

Myth 5: We slowly and predictably recover from grief.
Reality: Grief is an uneven process, a roller coaster with no timeline.

Myth 6: Grieving means letting go of the person who has died.
Reality: We never fully detach.

Myth 7: Grief finally ends.
Reality: Over time most people learn to live with loss.

Myth 8: Grievers are best left alone.
Reality: Grievers need opportunities to share their memories and grief, and to receive support.[1]

Some bereavement counselors teach that the ideal goal is to eventually detach enough not to grieve. Although this approach appears to have merit, it's important not to confuse detachment with stifling or denying the pain. The previous guidelines are still useful to help us express our grief, so we can more quickly process our pain and be at peace with loss.

As for those who could offer support and comfort: often they don't know how to reach out, even if they want to. They might try to distract the mourner from strong emotions—either because they think this is the best way to handle death, or they are uncomfortable with emotional intensity and don't want to get triggered themselves. At these times, proverbs such as "Time heals all wounds," "You'll get over it," and "At least the deceased had a good life"—although they might be true—are usually not what the mourner needs. Often, all that the mourner needs is compassionate listening, what some mental health therapists call "holding space." Or, the grieving person may want the simple presence of a caring other, when no words are exchanged.

There are many ways to help. Some people benefit from practical, tangible assistance, such as having some home-cooked meals or assistance in sorting through the deceased's personal items. Other people require emotional understanding. Ask the person what his or her needs are.

### How People Die

One of the appalling features of allopathic medicine, in addition to its treatment modalities, is the alienating manner in which people die. In the article "Death by Medicine," the authors write that senior citizens "have accepted the overriding assumption from allopathic medicine that aging and dying in America must be accompanied by drugs in nursing homes and eventual hospitalization with tubes coming out of every orifice."[2] But according to a nationwide poll, almost 90% of Americans would prefer to be cared for and die in their homes if faced with a terminal illness. Within the past 25 years, the hospice movement has spread to take care of this vital need.

The focus of hospice care is on pain and symptom management. Many hospice situations are set up in the subject's home, with nurses and other personnel assisting family members in the physical care of the dying person. But although hospice can be a physical place, it started as a concept of caring for the dying in ways that maintain their dignity and help them focus on quality of life. This involves providing emotional and physical support to the dying, without trying to artificially prolong life or hasten its end. Bereavement support for the person's family before and after death is also provided.

Even if s/he doesn't know, s/he will feel better knowing that you cared enough to ask.

Grief takes an enormous toll on the body. This emotion occurs simultaneously with the many hormones that are released through a chain reaction of triggers and responses. The hypothalamus secretes a hormone that stimulates the pituitary to release ACTH (short for *adrenocorticotropic hormone*). ACTH circulates through the bloodstream to the adrenal glands, which in turn circulate several hormones that include the stress-related *glucocorticoids. Glucocorticoid hormones suppress immune function.* If secreted in large amounts over a long period of time, they can cause the thymus gland to shrink. At the same time, the person may feel exhausted, and even experience muscle wasting—a breakdown of bodily proteins that is a literal demonstration of how someone can be "eaten alive" by sorrow. These conditions set the stage for all kinds of autoimmune conditions. This is why it's common for spouses to die within a year or two of each other. As one author writes, "If we want to be fully present, to honor what we have lost and to give grief its due, we need the physical stamina . . . [and] to be supported physically if we are to successfully complete our healing journey. . . . Glucocorticoids are the physiological messengers sent by a broken heart."[3]

## *The Five Stages of Dying*

In many Western cultures, the shortage of meaningful rituals that acknowledge the dying person's life, their approaching or concluded death, and the effects that the death will have on the living, contribute to people's feeling unresolved and incomplete after a funeral. In 1969, Swiss psychiatrist Elisabeth Kübler-Ross revolutionized care for the dying, and help for the people they leave behind, with the now classic book *On Death and Dying.* Her remarkable work describes the five stages of dying, which she learned to recognize from interactions with thousands of terminally ill clients. Although these stages are listed as a progression, as though one were peeling an onion, people may not always experience them neatly in sequential order. In fact, they may vacillate many times among any of the stages. But understanding, in whatever order, the emotions that people undergo when faced with death, is healing for all of us. It helps the dying become more self-aware. It allows their friends and relatives to better assist them, as well as to more easily manage their own feelings. And it gives those who remain behind a glimpse of what they might expect for themselves. (Of course, these stages pertain to those who are ill, rather than those whose deaths are unexpected, such as from a sudden accident or natural disaster.) Kübler-Ross's five-stage model can apply to many difficult situations.

### Denial and Isolation

The first response is usually, "No, this cannot be happening to me; it must be a mistake! Those tests must belong to someone else." This denial exists to help the person handle the shock and adjust to the idea of imminent sorrow and loss. The person might attempt to isolate self from family, friends and physicians, whose presence or comments are only a reminder that s/he is not well—and that much more grief will follow. Don't try to force dying people to accept more truth than they are ready to handle; a more realistic attitude will come later.

### Anger

Anger is typically expressed as "Why me? I have so much to live for. Why couldn't it have been *him*?" The anger, or its related emotions of rage and resentment, may also be accompanied by envy. The anger is usually misplaced onto friends, relatives and health care providers. Even though the person may be very disagreeable, people in close contact with the sick person must remember to avoid taking this anger personally. The dying person is trying to maintain an elusive sense of dignity. Don't engage with any abusive behavior. Instead, respond with firmness and kindness.

### Bargaining

The inability to accept one's impending death creates a wish or fantasy of being able to postpone the inevitable. The (often unconscious) reasoning goes: "Maybe if I am a better person, work harder, atone for my past sins, or devote my life to unselfish service, I will be rewarded with more time, less pain or a complete remission." Bargaining comes from a desperate, lonely, and often guilt-ridden place. This stage is usually passed through more quickly than the other stages. Its resolution may take place on a completely internal level, with little or no discussion with others.

### Depression

There are two types of depression in those who are dying. The first is based on fear that remaining unfinished business (material or emotional) might burden the living—as in, "How will my family cope when I am gone?" For this, the person needs practical reassurance and reminding that life can, and will, hold beautiful moments for the survivors, and that they will cope. The second type of depression is based on the anticipation of impending losses—of no longer being with loved ones, of missing things in life that one has enjoyed. The dying need to be allowed to grieve. Give them your quiet sympathy and physical support without attempting to cheer them with platitudes.

**Acceptance**

In preparation for death, one withdraws energy away from the environment into oneself. Physical symptoms include weakness and fatigue. The psychological counterpart is a lack of interest in one's surroundings or even one's pain. During this time the dying develop emotional detachment, which enables them to let go of the need or will to live. At this stage, the grieving who are left behind need even more help than the dying. The one advantage of this stage is the opportunity for the dying person to review his or her life.

### *The Need to Let Go*

Despite the inevitability of death, one restorative emotion that all of these stages share is hope. Besides keeping us alive, hope brings out the best in us. Sometimes, miracles happen and a life is in fact prolonged. Other times, even though death occurs, it's a peaceful one. Parents who have lost children sometimes remark that the child's serenity about dying has helped them overcome their own fear, grief and pain.

Some of the most positive personality changes can be catalyzed by an impending death. Counselors for the dying often say that when someone who's dying realizes how little time is left, grudges are dissolved, friends are forgiven, and love is restored. Counselors also emphasize how the resolution of issues determines how one dies. Someone on her deathbed who yearns to express what to her are unmentionable thoughts and feelings—but who still withholds for fear of upsetting others or appearing bad and unlikable—dies lonely and restless. Someone else who has made peace with herself, her life and the people in it, passes smoothly, is more relaxed physically, and is observably serene—sometimes even ecstatic. Each person has his or her own way of responding to death. For some people, it's easier than for others.

Yet for both the dying and the still-living, the one theme that seems to remain constant is that of *letting go*. This means letting go of the need to know what will happen, of the need to control the outcome, even of ideas about how other people should feel and act. Giving up the need to control others is the key not only to dying, but also to living. It helps us focus on the present, and stay in tune with our passions. It also helps us remain accountable for our own actions and avoid the practice of finger-pointing and blaming others. I will say more about this later.

The health professionals whose daily work involves life and death face letting go in another way. While compassion for others is of course essential, they must remember not to be attached to a specific outcome. When I first became involved with rife technology, I often lamented to myself: "Why won't she listen? I could have given her worthwhile information, but she refused to listen to other possibilities and instead, insisted on seeing that narrow-minded, know-nothing doctor." There was an important lesson for me here. *People have the right to make their own choices, regardless of whether or not we agree with those choices.* It's not up to me to decide what another's path should be. I can only present options and give the person the freedom to choose. It's *her* life. This is one of the hardest lessons for caregivers in the healing arts, or for anyone who has ever watched a loved one deteriorate and die. Yet by not respecting another's freedom to choose—even if we believe that those choices are counterproductive and unwise—we erode the relationship. We are subtly (or not so subtly) telling the person: "I don't respect your choices. I don't trust that you know what's best for you. And I don't love you enough to allow you to make your own mistakes." Letting go isn't easy.

Several years ago, I was asked as an educator to share information about rifing. But what I was really needed for was my counseling ability, to help someone let go of her wish to postpone death. My mission of service began when I received a call from a woman in her late thirties I'll call Shelly. Shelly had heard me talk about rife frequency healing at a conference, and kept my phone number. Her father had cancer, and she was exploring holistic options for him other than the radiation and chemicals he was receiving. As I

**Obituary: Marty Geltman, 65, Who Held His Funeral in Time to Enjoy It**

Marty Geltman, an ordinary man, . . . faced death in an extraordinary way . . . [by celebrating his life, two years before his actual death] with a living funeral in June. [It was] attended by 200 family members and friends after learning his cancer was terminal. . . . On June 23, Mr. Geltman, in a wheelchair, wearing a tuxedo and tennis shoes, and his wife staged what they called a celebration of life in the . . . meeting room [of the Morristown Unitarian Fellowship]. . . .

For two mostly boisterous hours, Mr. Geltman's life was celebrated in song, satire and clear and teary-eyed testimonial. . . . [He] explained in an interview how he confronted death so openly, and offered an assurance to others. "I wanted to teach people how to die," he said. "I think I can handle it because I'm committed. It's okay; it's really okay."

[Mr. Geltman] died at home. . . . A more conventional memorial service was held [at the time of his death] at the Menorah Chapels in Millburn, N.J.

—Steve Strunsky, *The New York Times*, August 18, 2001

It is now widely accepted that doctors who are compassionate make better healers. Deepak Chopra writes how his native East Indian background helped him transform from a medical instrument into the healer he had always wanted to be. He realized that loving the people he treats is the key to helping them. Loving others means respecting their essential humanity. "If there is any fear of disease, any rejection of the patient, or any clinging to authority," he asserts, "then conventional medicine cannot be transcended. What should be an art remains a common trade." [4]

launched into a discussion of various devices, her continual, almost frantic demand for proof that they worked suggested to me that something was wrong. I began to suspect that what Shelly wanted for her father was very different from what he wanted for himself.

"How does he feel about all this strange-sounding technology?" I asked her.

"He's a little resistant to the idea," she replied, "but I want to do as much research as possible so I have something solid to present to him, something he can't refute."

Was her father open to holistic health in general? I asked her. Not really. Was he willing to change his diet? No. Did she think he would drink water, to flush out the toxins liberated by the technology? She wasn't sure.

So I said to her, very gently, "Shelly, maybe it's his time to leave. Maybe he's trying to stay because you won't let go of him. But maybe that's not what *he* needs to do. Do you think you can let go of him if he needs to die?"

Shelly burst into tears. In the next hour, we addressed her attachment to her father and any unresolved issues between them. After a very candid heart-to-heart talk, and some imagery work that I facilitated, Shelly decided not to pursue rifing or any other modality. She did decide to visit her father in the hospital and tell him that no matter what he wanted to do, she would unconditionally support him.

About nine months later, she sent me a lovely gift with a note. "Thank you so much for helping me let go of my father," the note said. "Right after we spoke I went to say goodbye to him. It was his last lucid week. I told him that I would miss him terribly, but had forgiven him for wanting to leave. I am at peace now." I was happy to hear of Shelly's positive experience with her father's death. They both got what they needed—and what they needed was not rife therapy. It was the ability to let go. Shelley's father was able to let go of his wasted body. And Shelley was able to let go of her need to keep him alive at any cost. Paradoxically (but not surprisingly), when Shelley let go, she and her father were able to share some of the closeness that she (and undoubtedly he) had craved. They both also experienced a sense of resolution and completeness. This closure allowed her father to have one form of rest, and gave Shelley another.

Sometimes, the letting go that people experience is not a relinquishing of the body, but a release of old habits and unproductive ways of thinking. When we let go of what we don't need, healed emotions and a different way of life can enter to fill the void. I've had the privilege of witnessing such unexpected (and delightful) changes. Extraordinary, determined people, with so-called incurable illnesses such as Stage IV cancer, refuse to accept a medical pronouncement of "less than one month to live"—and miraculously begin to reverse their condition within days of starting rife therapy. And I cannot count how many times people have said to me, "My doctor told me that if she hadn't seen my 'before' X-rays, she wouldn't have believed I ever had cancer." There are many such cases, and I find them inspiring and moving. The biggest triumph is knowing that you can approach life on your own terms.

Death may come soon, or it may come later. We may not have control over when we leave. But we can make the most of whatever time we have left. Being honest about who we are can energize us in ways we might not have imagined.

### *Doctor Support, or Lack of It*

Support from health professionals is always important. But for those who have life-threatening illnesses, a lack of support can feel devastating. I have heard many horror stories about medical doctors who are not supportive to those entrusted to their care.

- "My doctor was very upset that I didn't follow his regimen, even though I got better and eventually became cancer-free. Why did he get so upset? He should have just been happy that I'm still alive."
- "My doctor said I was terminally ill and had mere weeks to live. But then he got mad at me for refusing surgery and a blood transfusion! How come? If according to him I was going to die soon anyway, why should I put myself through the torture and cost of an operation—which in the end wouldn't even matter? The doctor ended up kicking me out of his office and told me not to come back. He told all his colleagues not to see me either. Well, it's four years later and I'm still here. The other day when I saw him walking toward me, he crossed the street so he didn't have to say hello. He doesn't want to have anything to do with me."

- "I don't understand why my doctor turned on me. Oh well, when you've been like a god for so long, it's hard when your worshippers find a new religion."
- "As a chiropractor, I've heard many stories from people with so-called terminal diseases about how their doctors were aggressive and verbally abusive because they got better and didn't die."

Sometimes, practitioners publicly denounce the very treatments they secretly adopt. There's no way of knowing how often this occurs, but it does happen.

- "I know an orthodox medical doctor who doesn't follow his own advice. Once I asked his opinion of chelation therapy [the oral or intravenous administration of substances that bind with toxic metals so they can be eliminated by the body]. He told me that chelation is a fraud. But guess what? Soon after, when I started taking chelation treatments at a holistic facility, I discovered that very doctor taking chelation therapy at the facility—but in a special 'VIP room' with its own entryway. What a hypocrite!"

Some doctors, immersed in what they have been taught, refuse to believe that people with cancer can heal themselves.

- "A few years ago I developed a tumor on one of my lungs. My doctor ordered regular X-rays to 'monitor' the tumor for growth, but other than that, there really wasn't anything he could do for me. So I bought a frequency device and used it faithfully. During my last visit, I was asked to have another X-ray—two X-rays during the same visit! My doctor told me, 'You do not have a tumor on your lung.' I said, 'What about the previous five X-rays?' The doc said, 'They must have been mistakes.' He did not even want to know what I had done for myself!"

The more optimistic tales are variations of the following:

- "When I went in for my weekly office visit, my doctor told me he couldn't believe the progress on my blood tests and X-rays, so he asked me what I was doing. I was afraid to tell him everything, so I mumbled something about herbs and vitamins. 'Well,' he said, smiling, 'keep it up.' But he didn't ask me what I was doing."

Why *didn't* that doctor inquire what the person was doing? Why *wouldn't* those doctors want to know what was helping their clients? One would think that they'd jump at the chance to help more people by adding more therapies to their repertoire. But alas, it usually doesn't work that way, especially if a client's journey is outside the doctor's sphere of knowledge.

### Communicate with Your Doctor

I think it important to tell your physician about anything that you have done or used to improve health. There are some good reasons for this. First, your doctor begins to understand that there are other ways to heal than what s/he was taught in school. Second, the doctor needs to know what you are doing so that possible interactions with any medications or treatments can be avoided. Third, as your doctor learns from you and others, s/he won't be making statements based on prejudices and misinformation acquired in school.

If the medical world won't build a bridge to us, we must build one to them. In doing so, everyone wins.

—James Bare, DC
chiropractor and inventor of the Bare-Rife device
October 21, 2004

It appears that medical professionals feel threatened—embarrassed to be unmasked for not being all-powerful and not knowing how to fix the client. Western-trained physicians who are "supposed" to know their trade frequently resent being disgraced by a non-mainstream therapy that succeeds where allopathic medicine fails. After all the time, money and effort spent on education and career development, to have a client beat the dismal odds—with *self*-treatment, no less—can feel like a huge blow to one's ego.

Obviously, this attitude has nothing to do with healing, or serving the people one has pledged to help. It has more to do with commitment to an illusory image, rather than being committed to service stemming from a place of love.

That said, I do not wish to unfairly charge all physicians with being self-serving. Medical training is carefully structured to prevent one from even *thinking* of deviating from the curriculum. Medical students are not routinely taught the basics of nutrition—let alone holistic therapies that are even more removed from their sphere of training and knowledge. As one depleted, sleep-deprived young intern once said to me: "I'm on call 24 hours a day, exhausted, and I'm still expected to be in top form at all times. All I did in medical school was memorize what my teachers wanted me to learn. How am I supposed to get into anything new when I'm simply trying to survive medical school?" By the time such med students become doctors, they focus primarily on earning enough money to pay their rent and their educational loans. Who has time for anything else?

As a result, it's easier for doctors-in-training to take the path of least resistance: upholding allegiance to the status quo. Should young doctors oppose the system that molded them, everything they have become—or believe they are—might be invalidated. They would have to substantially revamp their lives if they started criticizing a system in which they have so much invested. How many people have the fortitude to question everything upon which their livelihood—and self-concept—depends?

The doctor in chelation therapy cited earlier may have wanted his clients' fees more than he wanted to see them healthy. It's hard to know his motives unless we ask him. But not all allopathically trained physicians adhere to the status quo. I know of medical doctors (more than you might think) who passionately believe in holistic therapies, but cannot recommend them to their clients because they justifiably fear losing their license. Sometimes, medical doctors practice time-honored natural therapies anyway—and get into trouble. Many successful and visible practitioners have been censured, fined, threatened with revocation of their license, and even on occasion threatened with the loss of their life. (Similarly, a number of supplement manufacturers have told me that doctors in well-known hospitals conduct tests on their products, but insist on remaining anonymous because they fear incurring the wrath of government agencies and the ridicule of their colleagues.)

Every year, it seems, a prominent doctor is legally harassed for helping to save people's lives with holistic therapies. No matter how reputable the science is behind the therapies, no matter how many grateful clients testify in court on behalf of the practitioner (when allowed to do so), and despite the fact that no harm has ever been done to a single subject—legal authorities do everything possible to prevent non-mainstream professionals from ever practicing again. Just a few practitioners who have been unjustly harassed include Stanislaus Burzynski, MD, PhD; Tedd Koren, DC; and William J. Rea, MD.

Clients who seek the services of innovative practitioners are often at risk, too: attempts are made to legally intimidate them. On more than one occasion, a child has been removed from a loving home because his or her parents (often at the child's request) sought a holistic treatment for the child's serious illness.

Legal issues aside, considering the fear of reprisal among members of the medical community, is it any wonder that people are not told about holistic modalities by their doctors?

Nevertheless, a health care provider still has the moral responsibility to uphold the truth. If he identifies more

When I was diagnosed with fibromyalgia and Chronic Fatigue Syndrome, I was told repeatedly that it was incurable. The doctors told me, the arthritis society told me. Even the people at the fibromyalgia "support" group told me it was not curable. They told me to just accept my lot in life, that I would be like this forever and that I was in denial to think that *I* could cure myself when so many before me hadn't. This one comment was the single most depressing thing I had heard, worse than the diagnosis itself. To think I would have to accept that I could never be healthy and be in charge of my body again—that some invisible thing had taken over my body and my life and I was stuck like this! I cried for hours. Then I got up and went to the gym. If I was going to hurt, it was going to be because I *did* something.

That was 15 years ago. Today I am cured. I have not had a symptom in 8 years. I do not "manage" it, I do not "live with" it. I do not *have* it. If I had believed the lie of the people who were too weak or too beaten or too dependant on their illnesses, I would still have it. But I was not willing to settle for that life sentence.

The people who most often tell me I must not have really had fibromyalgia and Chronic Fatigue Syndrome are other people with fibromyalgia and Chronic Fatigue Syndrome. It shatters their little world of suffering and their "poor me" mentality to think that someone else has cured the thing they are embracing so tightly. I have run into this time and again. If they don't say it outright, they give me a knowing nod with a little smile, and make some comment about how I must not have had it *that* bad then. Or I must have been misdiagnosed. Or (this one is my favorite) they have it worse than anyone, and what worked for me would not work for them. And here is another favorite, told to me recently as a reason for not coming to my house for *free* ozone sauna sessions: "I am the leader of a support group for people with fibromyalgia. I have to have it in order for them to trust me. Once they trust me, and I get the group more established, I will come for sauna sessions and *then* they will be open to that type of healing." What's going on?

It saddens me that people are so willing to give up on their lives—and that instead of taking responsibility for fixing their problems, they believe someone else. I say, stop worrying about what anyone else says or has gone through. Do your research. And then do what you think is right for *you*. If that doesn't work, try something else and keep going until you find the result you want.

Why settle for less?

—Sherri-Lee Pressman, April 2008, email communication.
Ill and undiagnosed for over a decade, she is now the energetic mother of two very healthy children.

with what he has memorized than with his ability to be caring—or if she derives her security solely from how well she executes what she was taught, rather than the questions she thinks to ask—the role of doctor becomes that of a *technician* or *mechanic* rather than a *healer*. Some health professionals rightly become upset when they learn enough to question their training. But a true healer can change and grow. A true healer has the open-mindedness to say, "I give myself rife sessions because they help me, even if I don't totally understand how they work." Is anyone certain how most allopathic drugs work? No—but it doesn't stop doctors from dispensing the drugs.

Health professionals don't have to remain enslaved to the government-sanctioned licensing boards that allow them to practice. If *people* created licensing boards, *people* have the ability to dismantle or change them. Recently, five dentists and seven dental clients filed a lawsuit against California state regulators for a law that prevents dentists from disclosing the dangers of silver-mercury (amalgam) fillings to their clients. The lawsuit maintained that these regulators used their control of dental licenses to threaten and punish dentists who oppose amalgam fillings. Whether it's even necessary to license health care professionals, and who should have the power to license, is another topic entirely. The point here is that a health care provider's competence includes his or her ability to offer an informed opinion. If health professionals want to do their best—and if they want their clients to be able to choose from a variety of options—they'll have to fight the intimidation and corruption that are rampant within their own ranks. Sometimes, this means working with other practitioners. A group of physicians can often accomplish what a lone physician cannot.

People who are ill are also responsible for being well-informed. How many times have you heard someone exclaim, "But what will my doctor say?" "How can I convince my family?" Or, "But I can't possibly use *rife equipment*! My doctor has a certain way of doing things." To hear these people speak, you would never know it's *their* lives that they're talking about. To achieve the health we say we want, we must learn to rely on our own intuition and knowledge instead of constantly yielding to our doctors.

The dominant paradigm exerts enormous power and influence. And people can be resistant to change, even if those changes are positive. But if everyone was willing to ask just a few questions, the momentum might thrust us into an entirely new way of doing medicine.

It takes great courage to follow one's own path, regardless of what others might say or think. Before we can create a new paradigm, however, it's useful to understand the many ways in which the mainstream paradigm manifests. This will be the subject of the next section.

## THE POLITICAL

### *A Privileged Few Control the World's Wealth*

When I ask people what the word "government" means to them, depending on their age and ideology they usually respond in one of two ways. The first definition describes some bureaucrat who takes their money and imposes unfair laws, while spouting, via the mainstream media, how imposing such laws is necessary. The second definition describes a system that encompasses all aspects of human living—not only economics and property rights, but also psychology and religion. Unfortunately, implicit in both scenarios is the acceptance that government is culturally entrenched, and that by nature it prevents people from choosing how they will live their lives.

I always thought that a government is supposed to serve its people, and not vice-versa. In just one century, the United States government has increasingly created legislation that has eroded the rights of ordinary folk. By "eroded rights," I mean being denied the right to determine what kind of food to eat and knowing what's in it. Or about being prevented from easy access to the health care of your choice, and in some instances (along with your health care provider) being prosecuted as a criminal for choosing (or offering) non-mainstream therapies. The list is long; I'm sure you can think of other examples.

These conditions are not unique to the US. Globally, a very few, very wealthy families have access to the world's resources, and they exercise control of those resources at the expense of those who do not have access. According to a report published in 2000:

- The richest 1% of adults owned 40% of the world's assets.
- The richest 2% of adults owned 51% of the world's assets.
- The richest 5% of adults owned 71% of the world's assets.
- The richest 10% of adults owned 85% of the world's assets.
- The poorer half of the world's adults owned barely 1% of the world's assets.

Of the wealthy groups, almost all of the richest people lived in North America, Europe, and wealthy Asia-Pacific countries. The bottom third of the poor lived in India, Africa, and low-income Asian countries.[5]

A different look at slightly earlier statistics is just as sobering. According to a 1996 United Nations Human

Development Program report, 358 *individuals* (all of them billionaires) owned the same amount of the world's wealth as about half the population of the *entire planet*—about *6.1 billion people*. And a related statistic showed that the three top executives of Microsoft control more wealth than all the people in the world's poorest 50 countries. In the US alone, state two economists, "the top 0.01% . . . now control 5.46% of all income, their highest share on record. (The data go back to 1913.)"[6] These are not abstract figures. They represent real people. Perhaps you are one of the many who are excluded from the top 0.01%. For this, you can thank what social scientist and attorney Riane Eisler calls the *dominator paradigm*.

The dominator paradigm (also known as the *dominant paradigm*) is aptly named. It does not consider these conditions criminal. These conditions are promoted as normal because they're so commonplace. In a dominator culture, once a questionable situation is accepted as normal by those who didn't make the rules, it is seen as either: 1) ethical and right; 2) unfair, but that's simply the way the world works, and we're powerless to change "the way things are"; or 3) unfair, and we're going to do something about them.

According to mainstream media, the majority of the population believes either that the dominant paradigm is ethical, or that the dominant paradigm is not ethical but cannot be changed. But the mainstream media rarely interviews the presumed minority that believes that the dominant paradigm is *un*ethical and *should* be changed. Chances are if you're reading this book, you aren't satisfied with the dominator paradigm. Holistically-inclined people not only tend to do research and challenge their doctors, they're more likely to reject attempts to regulate their lives. And they're likely to value the freedom to make their own mistakes and learn from them, rather than have someone else dictate their choices. The dominator mentality does not support health, either financial or physical.

> Freedom is not simply about winning some perceived battle against tyrants who desire to control our lives. Nor is it solely about creating the financial means to do what you want, when you want. Freedom is really about creating the life that wants to spring forth from the depths of your spirit.
>
> —Jeffrey Howard, founder *Solutions International,* freedom and privacy advocate organization, 2001

### *When Corporations Become Government*

Right now, as you are reading these very words, seditious acts are taking place on a global scale—acts that affect almost everyone regardless of gender, race and class. Whether you're a laissez-faire capitalist, staunch conservative, flaming liberal or the most apolitical person around—unless you're part of the privileged, wealthy, power elite that I've been discussing, your access to the health care you want and deserve is being threatened until it's legislated out of existence. Wealthy corporations (including the pharmaceutical industry), with the assistance of the government elite, have begun to dominate countries all over the world. (When I say "corporation," I'm talking about *mega*-corporations like Monsanto, Eli Lilly and Microsoft.) This domination is euphemistically called *globalization* and *free trade*. The good news is that there are solutions. But I'm going to start with the bad news first.

#### Legal Theft

Under the auspices of several international organizations—including the World Bank, the International Monetary Fund (IMF), and the World Trade Organization (WTO)—the dominators are overriding laws of individual countries, and substituting so-called international "agreements." These "agreements" include the North American Free Trade Agreement (NAFTA), which is designed to benefit corporations exclusively. The wealthiest industrialized nations of the world are able to implement these globalization rules without the smaller, less industrialized nations having much or any veto power, for two reasons. First, these smaller countries don't have much military strength. They acquiesce to the mightier powers like the child who surrenders to the biggest bully on the block. Second, these smaller countries don't have much money. In fact, most of them are far poorer than even modestly wealthy corporations. Unless these nations comply with the demands of the larger ones, any money flowing into them from foreign investments and industry will be withdrawn.

Here's a brief summary of the changes that these globalization laws are designed to produce:

- Corporations, not individual nations, decide how, when and where to erect offices, factories, dams and pipelines, and under what conditions they want to conduct business in the countries of their choice. If the government of the country objects and wants to exercise its right as a *sovereign nation*—that is, determine its own destiny—the corporation, backed by

international law, can sue the country for preventing (the unlimited expansion of) commerce.

- A need that throughout humankind's history has been considered a basic right—food—is now being treated as a consumer item, which the corporations call "intellectual property." For instance, Monsanto takes crop seeds, alters them in its genetics laboratories, and then receives patents on these seeds. When genetically engineered seeds appear on the lands of farmers—even if these farmers did not voluntarily plant the seeds and don't want them—Monsanto sues for breach of patent. As of this writing, there are over 40 such cases worldwide. (See Sidebar, "The Prosecution of Percy Schmeiser.") Related to this, countries who do not want to accept imported GE foods can be fined or sued for impeding commerce under globalization policies.
- People of poorer nations are starving because their land—which is managed by foreign corporations instead of the people who live on it—is being used to grow coffee, chocolate and sugar cane. Few cocoa bean pickers have tasted chocolate because they can't afford it. If these lands were used to plant food crops that the people could actually eat, they wouldn't be starving.
- Another basic human necessity that throughout humankind's history has been considered a right—water—is also being treated as a consumer item. In poorer nations, corporations are trying to set up expensive equipment to dam up, redirect, repackage, and otherwise distribute water, after which they charge the peasants for using what was once simply collected or even bought (but for a nominal fee). This happened several years ago in Bolivia, one of the poorest countries in South America. In exchange for a multi-million dollar loan, Bolivia's corrupt government allowed a water privatization company to take over the country's water by setting up water concession "services." However, this private water company charged the Bolivian people 35% to 300% more than what they had been paying, so water cost more than food. For some people, water bills comprised half their monthly earnings. When a movement of farmers, workers, peasants and others responded with a general strike, the government—after declaring martial law and killing civilians—revoked its water privatization legislation. However, the water privatization company then sued the Bolivian government for $40 million for breach of contract, claiming that investors' rights take precedence over the rights of the people who live in that country.

### They Thought They Were Free

What no one seemed to notice was the ever widening gap between the government and the people. . . . [The government that] did not want us to think anyway gave us some dreadful, fundamental things to think about . . . and kept us so busy with continuous changes and "crises," and so fascinated . . . by the machinations of the "national enemies," without and within, that we had no time to think about these dreadful things that were growing, little by little, all around us.

Each step was so small, so inconsequential, so well explained or, on occasion, "regretted," that unless one understood what the whole thing was in principle, what all these "little measures" . . . must some day lead to, one no more saw it developing from day to day than a farmer in his field sees the corn growing. . . . Each act is worse than the last, but only a little worse. You wait for the next and the next.

You wait for one great shocking occasion, thinking that others, when such a shock comes, will join you in resisting somehow. You don't want to act, or even talk, alone, . . . you don't want to "go out of your way to make trouble." But the one great shocking occasion, when tens or hundreds or thousands will join with you, never comes.

That's the difficulty. The forms are all there, all untouched, all reassuring, the houses, the shops, the jobs, the mealtimes, the visits, the concerts, the cinema, the holidays. But the spirit, which you never noticed because you made the lifelong mistake of identifying it with the forms, is changed. Now you live in a world of hate and fear, and the people who hate and fear do not even know it themselves, when everyone is transformed. . . .

You have accepted things you would not have accepted five years ago, a year ago, things your [parents] . . . could never have imagined.

—Milton Mayer
*They Thought They Were Free: The Germans, 1938–45* (1955)

Today in America, water shortages are starting to occur, so the same thing could happen here. It already happened in Canada. The province of British Columbia has a law forbidding exports of its water. A California-based company called Sun Belt, claiming that this lack of access would force it to lose a $10 million profit, sued the government of Canada, citing a violation of its NAFTA-based investor rights. The status of the case is unclear, since NAFTA proceedings are not open to journalists or to the public.

- Similar to the situation with water, laws established by nations to protect the environment can be overturned by corporations, on the premise that these environmental laws are an impediment to free trade.
- Also similar to the situation with water, laws created by nations to protect the labor force (to ensure realistic wages and fair treatment of the workers) can also be challenged by corporations, on the premise that these laws are an impediment to free trade.
- Under these new international laws, any country's effort to protect its people, food and natural resources is an "impediment to free trade" and therefore considered a crime. "No one should be above the law," writes David Morris in the article, "Corporate Might vs. Citizens' Rights." "Yet one entity is granted a *de facto* exemption from [this principle] . . . the corporation. It is an odd exception. After all, corporations can wield power and wreak damage a million times greater than can an individual."[7]

## The Prosecution of Percy Schmeiser

Veteran Canadian farmer Percy Schmeiser comes from three generations of organic farmers who save their own seeds and replant the following season. In 1998, detectives from the mega-corporation Monsanto trespassed onto Schmeiser's land, took some canola (rapeseed) plants without his permission, and reported that Monsanto's genetically engineered, herbicide-tolerant Roundup-Ready® canola had spread across almost 1,000 acres of Schmeiser's canola fields. After the 70-year-old farmer was informed by Monsanto that his crops contained their exclusive patented seed technology, he was sued for violating their patent—all for plants that the farmer did not want in the first place! It was first assumed that Mr. Schmeiser's crops had become contaminated when genetically engineered canola pollen from neighboring farms blew onto his land. It is now reported that a farmer who worked for Monsanto purposely grew Roundup-Ready® canola on one of Mr. Schmeiser's fields that later were found to contain the GE canola.

The wisdom of growing even non-GE canola aside (see Chapter 3 on the dangers of canola oil), Monsanto's tactics were deceitful and brazen. Fortunately, Percy Schmeiser's experience in local politics—plus his anger at being deceived—gave him the eloquence, experience and fortitude to fight. In a countersuit, he charged Monsanto with contaminating his non-GE canola seed that had taken him over 40 years to develop.

The first Canadian federal judge supported Monsanto's patent infringement case. The rationale was that it didn't matter *how* the seed had migrated onto Schmeiser's land, whether the farmer wanted the GE crops, or even whether he intended to benefit from them. Percy was ordered to pay Monsanto his 1998 profits and court costs. Then in 2003, the Canadian Supreme Court agreed to hear the case in Ottawa. Despite the fact that it could not be proven at the trial that Schmeiser had stolen the seed, and evidence was produced showing that Schmeiser had not taken advantage of the technology (as he did not even spray his fields with Round-up®), the farmer was found guilty of simply having the Monsanto plants on his land, and of not advising the corporation to come and take the plants. Percy Schmeiser was ordered by the Canadian court to pay Monsanto $10,000 for the use of the patented seed, plus up to $75,000 from the profits of his crop. At this point, Percy and his wife Louise had already spent $200,000 fighting this case—so the economic hardship was great, even though they had received financial contributions from admiring fans all over the world. Also, years of trudging through the court system had caused high levels of worry and stress in both Percy and Louise.

Nevertheless, Schmeiser continued to appeal. Finally, on March 19, 2008, an out of court settlement concluded the lawsuit. Monsanto agreed to pay all the clean-up costs of the Roundup-Ready® canola that had contaminated the Schmeiser fields. As part of the agreement, Mr. Schmeiser was not prohibited from discussing the case, and could sue Monsanto again if further contamination occurred.

Since 2000, Mr. Schmeiser has been a featured speaker at conferences on seeds and genetic engineering in India, Pakistan, Bangladesh, New Zealand, the United States and other countries, in addition to meeting with various government representatives. In October 2000, he received the Mahatma Gandhi Award in India, in recognition of his non-violent work for the betterment of humankind. And in December 2007, Percy and Louise were the recipients of the Right Livelihood Award from a Swedish charitable foundation.

The Schmeisers' experience with Monsanto is not an isolated case. Monsanto has instituted similar lawsuits against farmers all over the world. Even though the Schmeiser victory may have provided a legal precedent to help other farmers, Monsanto subsidiaries are now the largest seed supply companies in the world. This would strongly suggest that a few mega-corporations are seeking to own, control and manipulate what is every person's birthright: our precious food supply. Farmers whose livelihood depends on saving seeds may no longer be allowed to do what humans have done for centuries: grow our own food. To contribute to the Schmeisers' legal expenses and their continuing efforts to educate the public, go to www.percyschmeiser.com.

**Criminal Commerce**

When the United States was born, the founding fathers were very careful to curb the powers of corporations. How, then, did all this change? Morris explains:

> In the nineteenth century, the vehicle for curbing the amoral power of corporations was the state charter. In return for awarding the corporation the privilege of limited liability, states inserted in their corporate charters certain safeguards. These limited the number of business endeavors in which a given corporation could engage. Restrictions on size were common. As late as 1903, almost half of the states limited the duration of corporate charters to between 20 and 50 years. If corporations did not live up to their responsibilities, legislatures revoked their charters.
>
> But . . . a combination of judicial and legislative mischief eliminated virtually any curbs on corporate power. . . . Without discussion or debate, the Supreme Court . . . [gave corporations] the same constitutional protections as natural persons. At the state level, charters were changed to allow corporations not only limited liability, but unlimited life and size and reach.
>
> The Supreme Court decision gives corporations similar rights to natural persons, but *in practice this doesn't mean giving them similar responsibilities*. A natural person who breaks the law often goes to jail. . . . *But corporations cannot go to jail, and very, very rarely do those directing the corporation spend even a day in lockup*. And in the 20th century, no corporation was ever given capital punishment, no matter how many people died as a result of its actions. [emphasis added][8]

Corporations are now the governing bodies worldwide. The policy of globalization, which was created by corporations, does not address the real needs of over 80% of the world's people.

Instead of globalization, we need its opposite, *global consciousness*. Global consciousness has inspired the phrase, "Think globally and act locally." This means that local self-governance is the right and duty of each community, which knows best what works for the people who live there. Even as people regulate their own lives, they are mindful that what they do locally can impact other locations around the globe.

### The Politics of Food

Food becomes us. We are what we eat. . . . Eating is the ultimate ethical act. It is the ultimate political act. It is the act where we decide whether we're going to be part of raping the planet, killing the farmers, killing diverse species, and destroying our health in the process, too; or we will be part of the protection of species, the protection of the atmosphere, the protection of the . . . givers of food. . . . The idea that you have to introduce more chemicals and you have to introduce miracle seeds to increase productivity and to make rural incomes grow is not just not true, it is a blatant lie. . . . Our ignoring this lie is what is leading to the genocide of farmers.

Genetic engineering revolution is being driven by global corporations. . . . With changes in US law, there has been this assumption that you can now treat life as an invention. Seeds, therefore, can be treated as the patented property of corporations. And if they are the patented property of corporations, you basically treat the farmer as someone who has borrowed your technology and has to pay a license fee and royalty for it, when all that the farmer has done is continued to do what is their duty, which is to grow seed out from the last crop.

The farmers are getting squeezed. . . . One hundred forty thousand farmers have committed suicide. Ninety percent of them committed suicide by drinking the same poisons that had got them into debt—pesticides. . . . We are talking about a genocide that has no stoppage unless we change our food paradigm.

—Vandana Shiva, physicist, social change activist and director, The Research Foundation for Science, Technology, and Ecology in New Delhi, India. Excerpted from "The Politics of Food: Protesting the Anti-Green Revolution," speech given at Emory University in Atlanta, Georgia, US October 17, 2006

### *Waking Up*

People have begun taking action against corporate takeovers. One heavily attended grassroots protest took place in 1999 in Seattle, Washington, when members of the world elite met in closed sessions to decide the fate of those who were not present. People who weren't part of this wealthy elite group objected to decisions being made about their lives without their input, as evidenced by signs that read, "Resist the WTO: Globalize Liberation, Not Corporate Power," "WTO: World Takeover Organization," and "This Planet is Not for Sale."

A common goal now united organizations and individuals of very different lifestyles, beliefs and political affiliations. Although the groups generally were peaceable and did not loot, the police responded—even to those who were clearly non-violent—by beating and hurling tear gas at the demonstrators. Some demonstrators were thrown into isolation cells, or jailed bleeding and blinded, deprived of medical treatment, food and access to lawyers. (It is now against the law for civilians to purchase, carry, or wear gas masks in Seattle.)

The demonstrators were highly organized, having planned and rehearsed for decentralized action months in advance. People worked together in groups formed by consensus rather than hierarchy. Striving for a mutual goal, they weren't interested in individual self-aggrandizement or in giving away their power. Everyone was a leader, and no one was a leader. Even if several links of the chain were dismantled, the entire chain remained intact due to the intention and commitment of all the participants. Based on the inspiring accounts of those who took part, it appears that vandalism was reported to have occurred much more than it actually did. In fact, as later reports revealed, the majority of those who engaged in vandalism and violence—if not all—were government plants rather than serious demonstrators.

You probably didn't read about this much (if at all) in the American mainstream press, or see it reported on television, because the same corporations that were meeting in these closed sessions own the TV networks, newspapers and magazines. A few independent periodicals and Internet sites carried moving accounts of what really happened. The collectively run, independent magazine *New Internationalist* from Great Britain, succinctly analyzed the situation in its May 2001 issue:

> In reality the World Trade Organization has contributed to the concentration of wealth in the hands of the rich few; increasing poverty for the majority of the world's peoples, especially in Third World countries; and unsustainable patterns of production and consumption. . . . We believe it is essential to change course and develop an alternative, humane, democratically accountable and sustainable system of commerce that benefits all. This process entails rolling back the power and authority of the WTO.[9]

### *Dominator (Dominant) Paradigm Tactics*

*The New Internationalist* also featured a guide to commonly used words and phrases. Made to sound beneficial for everyone, they actually mean something entirely different (see Sidebar). [10]

Twisting the meanings of words, also known as *propaganda*, is a common practice. Propaganda inhibits unrest by instilling mental confusion. Being in a state of continual confusion and uncertainty helps keep people anesthetized and complacent. The mass media reinforces this state by airing slanted "news" reports, which try to convince people that a situation is better than what their own senses, and day-to-day experiences, keep telling them.

| *The word or phrase* | *What we hear* | *What it really means* |
|---|---|---|
| Liberalization | The progressive elimination of trade barriers. | The relentless imposition of a single ideology. |
| Open | No barriers to foreign trade. | Closed to democratic control. |
| Protectionism | Raising trade barriers against foreign competition. | Obstructing corporate interests. |
| Intellectual property | Ideas for making money. | Ideas used to extort payment. |
| Round [table discussions] | Concessions negotiated in exchange for benefits. | An offer you can't refuse. |
| Free | Without government interference. | Rule by transnational corporations. |

## Characteristics of Good Propaganda

When you hire a contractor or an attorney, they work for you because you are the one who pays for their services. The PR [public relations] experts who work behind the scenes and the visible experts who appear on the public stage to "educate" you about various issues are not working for you. They answer to a client whose interests and values may even run contrary to your own. Experts don't appear out of nowhere. They work for someone, and if they are trying to influence the outcome of issues that affect you, then you deserve to know who is paying their bills.

—Sheldon Rampton and John Stauber
*Trust Us, We're Experts: How Industry Manipulates Science and Gambles With Your Future,* 2001



When Public Relations firms attack legitimate environmental groups and alternative medicine people, they use special words which will carry an emotional punch: "hysteria," "alarmist," "phobia," "hoax," "scaremongering." As the science of mass control evolved, Public Relations firms developed further guidelines for effective copy. Here are some of the [ploys]:

- Dehumanize the attacked party by labeling and name calling.
- Speak in glittering generalities using emotionally positive words.
- When covering something up, don't use plain English; stall for time; distract.
- Get endorsements from celebrities, churches, sports figures, street people—anyone who has no expertise in the subject at hand.
- [Use] the "plain folks" ruse: us billionaires are just like you.
- When minimizing outrage, don't say anything memorable, point out the benefits of what just happened, and avoid moral issues.

Quietly financed by the industries whose products were being evaluated, these "independent" research agencies would churn out "scientific" studies and press materials that could create any image their handlers wanted. Such front groups are given high-sounding names like:

- The Advancement of Sound Science Coalition
- Air Hygiene Foundation
- Alliance for Better Foods
- American Council on Science and Health
- Cato Institute
- Center for Produce Quality
- Consumer Alert
- Industrial Health Federation
- International Food Information Council
- Manhattan Institute
- Global Climate Coalition
- Temperature Research Foundation

—Tim O'Shea, DC, 2008
excerpted from "The Doors Of Perception: Why Americans Will Believe Almost Anything," 2006
www.thedoctorwithin.com/index_fr.php?page=articles/doors_of_perception.php

### Your Cheapest Items are Made in Sweat Shops

It's much harder for watchdog agencies to monitor business practices overseas than in their own countries, but we can still acquire reliable data about how our goods are made. Even accounting for the differences in currency, overseas workers are paid far less than a living wage. For instance, as reported in the article, "Sweatshop Myth-busters," the Megatex factory located in Port-au-Prince, Haiti (which makes several lines of clothing for Disney), paid its workers $2.15 per *day*. The average daily expenses of the workers were $6.12. In many countries, laborers are given few or no breaks (or bathroom time), and no lunch hour. They are forced to work six- or seven-day weeks. Children as young as eight years old work in factories. Often, workers are locked up at night in company compounds to prevent them from escaping.

*Power* is a concept whose true meaning has been twisted into its opposite. In the West, power is usually regarded not as *self-empowerment*, but as *dominance over others*. In an interview, Riane Eisler stated:

> Children learn early on that it's very dangerous to challenge authority no matter how brutal or unjust. . . . [To] move to what I call a partnership system, . . . we have to think outside the conventional categories of ancient versus modern, or religious versus secular, or right versus left, or industrial versus pre or post industrial. . . . [We must create] relations that are not based on these top down rankings that are ultimately backed up by force, but . . . relations of mutual respect, mutual benefit, [and] mutual accountability.[11]

Through their behavior, attitudes and laws, dominator (dominant) paradigm people exhibit an utter disdain for the dignity, safety, and humanity of others. Understandably, dominators suppress challenges to their way of life.

One would think that people would begin to question or challenge the power elite if their air, water, and food were contaminated; if their access to affordable, effective health care were denied; if they had limited access to resources, including information; and if they had to struggle every day for basic living necessities. However, dominator societies are carefully structured to ensure that the average citizen does not object too much and accepts what s/he is given. People are repeatedly given the message that not only do they not have control over their own lives, but they *shouldn't* have control over their own lives—and if they *do* have control, they should relinquish it. Once people become saturated with these ideas, they become emotionally more vulnerable and so-called authorities can start taking over their lives. These authorities include teachers, lawyers, biotech scientists, religious leaders and television announcers—and of course, doctors.

Passing restrictive laws that treat people like children—that is, restrict their access to real resources that could help them grow and evolve—is a good way to ensure that they remain psychologically and materially dependent. These laws are made under the guise of protecting folks from what's dangerous. However, what's dangerous is allowed free access (for instance, aspartame), and what's healthful is prohibited (raw milk). A review of what people are legally allowed to access reveals the intentions of the lawmakers.

To prevent people from rebelling against those who try to dominate them, the power elite uses another classic propaganda tool: convince everyone that the real "enemy" is not the dominators, but someone else. These others include: people who have a different skin color; people of the opposite sex, particularly women and *especially* non-white women; people who are aging or physically challenged; people whose spirituality seems strange and different; people whose appearance is different; people who love others of the same sex; people whose gender assignment is not clearly male or female; people who don't have enough to eat or a decent place to live; people who live in far away places with very different customs, often living in poverty. There can be limitless ways to separate oneself from others.

People whose choices are heavily restricted often fight each other for the crumbs that are left, rather than realize where the trouble actually started. This tactic is known as *divide and conquer*. Throughout history, divide and conquer has proven to be an effective way to further the goal of the dominator paradigm. "If they don't have enough to live comfortably," the reasoning goes, "convince them that their neighbors are responsible for their struggles. Make them so mistrustful and fearful of each other that they'll be too busy fighting amongst themselves to come after us. If they do have enough to live comfortably, convince them that they're worthless unless they have more. Then they'll be too busy seeking status and even more possessions to bother with us."

People from all over the world accept the dominator paradigm labels assigned to them and to others. It's not uncommon for one group of people to feel indifference, mistrust, and even outright hatred toward other groups.

Now, it's understandable if people who struggle daily are envious of, or even hate, those whom they perceive don't struggle. But negative emotions poison those who indulge in them. People are so busy pointing accusing fingers at their neighbors that they forget their capacity to be caring, loving beings. Thus, hatred, fear and envy prevent us from healing on many levels.

In many ways, the elite's access to material resources and status does help make their personal lives easier. But domination over the environment, animals, and other people damages the health and integrity of dominator-paradigm individuals as well as those whom they try to control. In other words, the dominator paradigm is also destructive to those who have played a role in creating it. (See Insert, "The Dominator Mentality.") However, dominators usually don't have sufficient incentive or vision to stop the domination game. Therefore, it's up to those who have more vision (and compassion) to stop it.

What all inspired political and environmental movements have in common is love for this planet and its inhabitants. Many approaches have been tried in an attempt to defuse the dominator paradigm. One way is through blatant, aggressive confrontation. This can cause physical injury or incarceration to those confronting the dominators and their representatives. Less aggressive methods include political lobbying and letter writing. Another approach is education. Education, if it offers an alternate point of view to what's considered reality, can have political ramifications as well. Some peace-oriented grassroots organizations that do a wonderful job of educating the public are listed in the Resource Appendix.

Outright political activism isn't for everyone. Some people don't like the cumbersome, overwhelming structure that has come to characterize the political arena. Others, financially stressed, spend far too many hours working and don't have time to devote to such activities. Still others are burdened with serious illness and simply don't have the energy or mindset to become involved.

There are even more ways to affect our environment. By changing ourselves, we have the potential to transform outer reality in some pretty amazing ways. I am not talking about wishing hard, or so-called positive thinking that ignores the less pleasant realities of existence. I'm referring to the profound changes that occur on subtle energetic levels, whose effects spread to faraway corners.

Many ancient spiritual traditions teach that the most intense and lasting changes begin with the individual. As I will show, this principle is founded on solid science. So, while transformation is occurring on social and political levels, we can do powerful inner work without ever leaving our beds. The transpersonal or spiritual level of change is the topic of the next section.

> We must fight the battle that is before us: human beings versus monstrous corporations and their body-snatched government puppets. . . .
>
> You know, there are two kinds of politics in the world: the politics of love and the politics of fear. Love is about cooperation, sharing and inclusion. It is about the elevation of each individual to a life neither suppressed nor exploited, but instead nourished to rise to its full potential—a life for its own sake and so that we may all benefit by the gift of that life. Fear and the politics of fear is about narrow ideologies that separate us, militarize us, imprison us, exploit us, control us, overcharge us, demean us, bury us alive in debt and anxiety and then bury us dead in cancers and wars. The politics of love and the politics of fear are now pitted against each other in a naked struggle that will define not only the 21st century but centuries to come. We are the Sons and Daughters of Liberty in that struggle, indeed we are. Let us not shirk from the mission that fate has bestowed upon us, for it has done so as a blessing.
>
> —Doris "Granny D" Haddock. Born in 1910, she walked across the United States in 1998 to protest the corporate takeover of the world. Excerpts from speech given August 16, 2003, in Hood River, Oregon, US.

## THE TRANSCENDENT

### *Beyond the Dominator (Dominant) Paradigm*

The dominant paradigm in America—indeed, most of the Western world—perpetuates a mechanistic view of life. This view negates the complex interrelationships of all living systems, and instead (dis)regards humans as merely a bunch of parts that should perform like a well-maintained machine. If something doesn't work, we repair or replace the damaged part, rather than try to find the underlying cause of the malfunction.

Such a paradigm not only makes us mechanics, but it gives us inferior science, which some researchers rightly call *junk science*. Wilhelm Reich, a great 20th century psychiatrist and natural scientist, remarked that with an inferior scientific approach,

> living objects are killed in order to study life in the dead organism, a procedure that is bound to result in a mechanical view of life. . . . The individual living object, or even a detail of this object, should not be studied as an isolated phenomenon. The basic dynamic principle of life governs all life; i.e., the organism as a whole and every individual part of the organism. If scientific research is to be truly productive, it should be

## The Dominator Mentality

To those accustomed to treating others with kindness, one of the most difficult concepts to grasp is how some people can live their lives without compassion—and even display outright cruelty—toward others. It's as though one were suddenly ferried from a generous and kindly planet onto a foreign world of strange beings, far from home. It can be especially difficult to deal with indifference and callousness when these traits feel so alien to one's own nature. For those trying to navigate through dominant territory, it's important to understand how the dominator mentality operates.

Dominator paradigm people feel beautiful or talented, important or special or worthy, not because they feel intrinsically good and alive within their own skin. They gain their feelings of self-worth because they own more possessions, and have greater wealth, prestige and social status, than others. They have forsaken connectedness for appearance. And they've traded self-control for the thrill of having control over other people's lives. This means, on a deep level, that they have substituted qualities generated from the inside for qualities dependent on the outside. Because they depend on others to make them feel whole, dominator people must constantly replenish their supply of people (land, animals, plants, minerals, etc.) over whom they can exercise power. Being dependent on the external environment for one's sense of meaning and value creates a never-ending black hole of "not enough." This, in part, is why it can be a lengthy and difficult process to change the dominant paradigm.

No one who feels connected to self, to the greater community, and to his or her own divinity, would dream of harming another. People who mistreat others are separated from their own mind, body and spirit. In treating others like expendable commodities, dominators turn themselves into commodities as well. Therefore, mistreating others is, quite literally, mistreating oneself. The tragedy is that those with a dominator mentality do not see or understand this.

Once the dominator mentality becomes entrenched in the psyche, something else happens. The dominators start to condemn, in others, the traits that they are unable to accept in themselves. They're usually not even conscious that they harbor these traits. Psychologists call this habit of disowning one's "shadow" side and assigning it onto others *projection*.

Judging and blaming others generates a false sense of self-esteem. It also poisons relationships of all kinds, even with other dominators. Someone who condemns others is actually very lonely, for by nature, condemnation separates us from others.

To help reinforce this paradigm of domination and separation, the world becomes polarized into:

Me / You
Male / Female
Superior / Inferior
Observer / Observed
Conqueror / Conquered
Objective / Subjective
Powerful / Powerless
Scientific / Creative
Active / Passive
Strong / Weak
Us / Them

The hierarchical mindset of "Us versus Them," "Superior / Inferior," etc., does more than keep the world polarized and its inhabitants separated from each other (and from themselves). It also encourages the mistreatment of anyone who we believe is not like us! *Someone who's different isn't worth very much*, the rationalization goes, *so it doesn't matter how badly we treat them*. The antagonistic behavior toward others that's encouraged by this alienated state eventually escalates into aggressively destructive and murderous acts.

Everyone living in a dominator paradigm system pays a steep price for this separation consciousness. The Win/Lose way of viewing the world becomes the norm. Our relationships, work, play, politics, child rearing, social climate, science, religion, art, and healing modalities all reflect—and perpetuate further—this alienation. There is no area of life that separation consciousness does not touch.

The dominator mindset may be the most visible paradigm to some, but it's not the *only* one. There's another paradigm called "Win/Win." In this paradigm, everyone gets what they truly need because they are connected to who they really are—at the deepest level of their being.

> continuously motivated and guided by the need to view the whole without losing sight of the detail. Mechanical concepts of life must of necessity be methodologically defective.[12]

When using a mechanistic approach, the very data we work with is flawed because so much has been omitted. Thus, we miss a great deal and draw inaccurate conclusions. The inability to perceive holism in our universe reminds me of an analogy once related by quantum physicist Fritjof Capra. You're driving a car when suddenly the oil light indicator on the dashboard goes on. You stop the car. But rather than checking the oil, you rip out the oil light, get back into the car and resume driving. The point of this vignette is: if you don't like what you're being told, eliminate the messenger. The problem is, this won't fix the problem. In fact, failing to address the problem will create even more headaches later.

The tendency to filter out certain aspects of the truth is common. "We speak of becoming conscious," writes Walene James. "To become conscious we must become aware of our viewing lenses and the assumptions that have shaped and colored them. We can't really become aware of our assumptions until we expose ourselves to realities based on different assumptions."[13]

If it were only a matter of "exposing" ourselves to different assumptions, we would have replaced the dominant paradigm long ago with a holistic one. But think of all the obstacles that we allow to hold us back: fear of the unknown, fear of not knowing what to do or whom to trust. Fear of being wrong, ridiculed, abandoned, alone, unloved. It's important to acknowledge our fears. But what do we do once they're acknowledged?

Fear can help or inhibit. If I consider walking across a crowded intersection against the traffic light, the justified fear of being hit by a car helps me reconsider my course. But if I'm afraid to leave my house because of the unlikely chance that a car might jump the curb and injure me, this fear is no longer helpful and becomes crippling. Who will I put in charge of guiding me? Irrational emotions? Or a lucid, reasoning mind?

So far, I have discussed ways in which people forget to use their mental faculties and are driven by their fears. Now I will address transmuting those fears. In order to do this,

### Leaving the Hierarchy: When the "Patient" Becomes a "Client"

The word *patient* is commonly used to designate someone who consults a licensed health practitioner, whether it's a physician, psychiatrist, naturopath or chiropractor. "Patient" belongs to the allopathic medical model that denotes anyone seeking healing as secondary or subordinate to the know-it-all expert who is doing the "curing." When a "patient" calls the practitioner "Dr." and the "doctor" calls the client by the first name, this can be demeaning—especially if the practitioner is considerably younger than the person seeking help. Furthermore, this custom reinforces the mindset of the practitioner as more advanced, and the seeker of health as second-rate. The hierarchy usually also causes the seeker to so intimidated, s/he is discouraged from being active in her or his own healing process.

The word *client* simply indicates someone who is a customer. When a practitioner uses the word "client," it indicates respect as an equal towards those who are seeking help.

Unfortunately, many holistic practitioners have adopted the allopathic, hierarchical way of conducting business. Of course it's their prerogative to use that model, along with the accompanying hierarchical terms. (Might they be adopting this paradigm in their desire to be accepted and professionally validated by the dominant allopathic medical paradigm?) But by embracing this paradigm and using this divisive terminology, they incorporate some of the allopathic mindset. This conflicts with what holistic and natural healing are all about.

I believe that if we truly want to establish a genuine holistic model of healing, the use of non-hierarchical terms is an important step in that direction. I strongly recommend that all providers of the physical, mental, emotional and spiritual healing arts, regardless of their specialty, use the word "client" instead of "patient."

That said, there will also be times when only "patient" will work—not because of the practitioner, but because of the client. Sometimes, people really want to be "patients." Such people lack confidence in their own ability to learn and make intelligent choices, and in their power to heal themselves. They feel more secure with the hierarchical roles. They believe that if *they* cannot fix what's wrong, then as long as they call themselves patients, *the doctor* will be able to heal them—since these roles, by definition, make the practitioner more knowledgeable and powerful than they are. For such seekers, the wellness provider should try to present as "doctorly" a manner as possible, since this is exactly what the "patient" needs.

Of course, sometimes people simply need to be shown their potential and guided to actualize it. It's amazing what inner resources of self-healing can develop when the health care provider, in the role of authoritative "doctor," offers some encouragement and gentle prodding—and the "patient" becomes a "client."

> We have the possibility, in our time of tragedy, to create a genuine global community which is different from a self-congratulatory globalism that masks economic inequality. This new way of being is sensitive to human suffering and oppression everywhere. It is committed to a politics of healing. We have the chance now to move toward an authentic common human identity that respects and protects cultural richness and diversity. In this transformation of consciousness we have a unique opportunity to find the peace for which . . . so many . . . have longed since the beginning of civilization.
>
> —John E. Mack, MD
> founder, Center for Psychology & Social Change
> (in *Centerpiece*, Autumn 2001)

it really helps to be able to envision the world as different. Let's take a look at some truly remarkable discoveries.

## *Research Outside the Box*

The last century has produced some extraordinary scientific research showing how intimately connected we are to each other. This understanding is not new. What is new is the use of sophisticated scientific experiments to confirm these relationships. The studies that follow can help us improve our ability to heal ourselves and others in some unique and very deep ways.

### The Interconnection of Quantum Particles

The oneness of the universe—which is the central component of all mystical experiences—has been taught in many ancient cultures, from the Indians and the Chinese to the Native Americans. The interconnection of all life is also one of the most important revelations of modern physics.

This revelation, from a modern physics standpoint, was illustrated by an experiment conducted in 1935 by physicists Albert Einstein, Nathan Rosen and Boris Podolsky. They mathematically computed that if you examined two quantum particles, a change in the spin of the first particle would simultaneously affect the other, even if they were separated. It didn't matter where these particles were: they could be placed next to each other, or millions of miles apart. But there was one detail that the scientists could not resolve. If particle #2 could sense particle #1 and make an instantaneous change based on what the first one was doing, this meant that the signal between them would have to travel faster than the speed of light. But nothing in the universe travels faster than the speed of light! Or so they thought.

Einstein felt that he simply hadn't discovered the mysterious ingredient that allows this instantaneous communication to take place. Even if he had, in his view this experiment had very little to do with the so-called real world. As it turns out, even the great Einstein could be wrong.

The energy instantaneously connecting two or more particles remained a mystery until the late John S. Bell devised a very complex mathematical proof in 1964 that became known as Bell's Theorem. In quantum physics, if a premise can be mathematically proven, it means that the answer is more than simply a hypothesis or speculation. It *is* the truth because the mathematics represent reality. Thus, scientists who understood the importance of the math were very excited about this new knowledge. Bell's theorem essentially proved that despite the inability of quantum theory to predict instant connections between particles, the connections are still there, and they are *non-local*.

"Nonlocality," explains Lynne McTaggert in her wonderful book *The Field*,

> refers to the ability of a quantum entity such as an individual electron to influence another quantum particle instantaneously over any distance despite there being no exchange of force or energy. . . . Quantum particles once in contact retain a connection even when separated, so that the actions of one will always influence the other, no matter how far they get separated.[14]

Bell's Theorem was further confirmed in a 1972 experiment by Berkeley professor John Clauser and his associate Stuart Freedman (and in later experiments by other researchers), using an elaborate system involving photons, calcite crystals and photo multiplier tubes. Without a doubt, one particle "knew" what the other particle was doing. However, the medium of transmission was not light. The late David Bohm (who had been an associate of Einstein and was one of the most respected theoretical physicists at Birbeck College, University of London) stated that since it's impossible, according to the theory of special relativity, for anything to travel faster than the speed of light, what connected two particles could not be energy on the electromagnetic spectrum. Rather, the bond between the particles appeared to be some kind of *information* that transcended space and time as we know it. This information could also be transmitted via *thought*. Although Bohm hadn't yet been able to identify that energy, these experiments revealed a new way of viewing the universe. In her review of discoveries in the quantum field, McTaggert writes:

> Matter could no longer be considered separate. Actions did not have to have an observable cause over an observable space. . . . Subatomic particles had no meaning in isolation but could only be understood in their relationships. The world, at

> its most basic, existed as a complex web of interdependent relationships, forever indivisible.[15]

### The Human as Hologram

Bohm gifted us with another important insight. All information in the entire universe, he said, is contained in each of its parts, like a hologram. A *hologram* is a three-dimensional photograph that's so complete, any piece we cut from it, and illuminate with coherent light, provides an image of the *entire* hologram. It might be a different view, but all the information is present. Thus, said Bohm, the entire universe had to be understood as a single, undivided, interconnected whole. Furthermore, human beings, as part of that hologram, innately possess the ability of holographic perception.

In the paragraphs below, McTaggert discusses how individuals actually *create* their hologram, or a holographic experience. Note her reference to scalar waves, and to the so-called Zero Point Field from which matter is seen to emerge. (As the ancient Greek Plato taught, energy precedes matter.)

> "Scalar" waves . . . are not electromagnetic and . . . don't have direction or spin. These waves can travel far faster than the speed of light. . . . It is scalar waves that encode the information of space and time into a timeless, spaceless quantum shorthand of interference patterns. This bottom-rung level of the Zero Point Field—the mother of all fields—provides the ultimate holographic blueprint of the world for all time, past and future. It is this that we tap into when we see into the past or future. . . .[16]

Quantum physicists also point out that *space and time are constructs that can vary*, depending on who is doing the perceiving.

> Pure energy as it exists at the quantum level does not have time or space, but exists as a vast continuum of fluctuating charge. *We, in a sense, are time and space.* When we bring energy to conscious awareness through the act of perception, we create separate objects that exist in space through a measured continuum. *By creating time and space, we create our own separateness.*
>
> This suggests a model not unlike the implicate order of British physicist David Bohm. . . . [His] model viewed time as part of a larger reality, which could project many sequences or moments into consciousness, not necessarily in a linear order. He argued that as . . . space and time are relative and in effect a single entity (space-time), and if quantum theory stipulates that elements that are separated in space are connected and projections of a higher-dimensional reality, it follows that moments separated in time are also projections of this larger reality. [emphasis added][17]

The ramifications of tapping into this vast holographic sea—over which time and space have no dominion—with thoughts that are faster than the speed of light, are mind-boggling. The ramifications of actually *existing* in this holographic universe are equally astounding. Anything and everything that anyone has ever thought is transmitted, and may even potentially manifest as matter, "someplace."

Furthermore, within this holographic model, what constitutes healing—and the potential to impart this healing—assume entirely new meanings. Here are some unorthodox ways to heal.

### The Power of Prayer

One powerful way of transmitting healing beyond time and space is *prayer*. I regard prayer as heartfelt, focused intention of well-being, so this bypasses any specific religious beliefs. Medical doctor Larry Dossey has written extensively about scientific studies that show the curative power of prayer. I find these studies fascinating because they prove what can be achieved by intention—which, like everything else in the universe, is comprised of palpable energy.

Dossey cites studies in which groups of volunteers were given the names of people who were ill and lived long distances away. Then the volunteers were instructed to pray for their healing. A control group consisted of people who were ill, but were not sent any prayers. Those to whom prayers were sent, recovered much more rapidly than those to whom prayers were not sent.

This study, called the MANTRA study—short for "Monitor and Actualization of Noetic TRAinings"—was conducted at Duke University, headed by cardiologist Dr. Mitchell Krucoff and nurse practitioner Susan Craven. Heart condition clients who agreed to be part of the study did not know whether or not they received prayer. Their first names were divided randomly into two groups, and were then emailed to Buddhists in Nepal, Jews in Israel, Hindus in India, Catholic nuns, Protestants in North Carolina in the US, and to the spiritual organization Unity Village in Missouri, also in the US. At the end of the test, subjects receiving prayer had *50% to 100% fewer unwanted ("side") effects* from medications than subjects who did not receive prayer. Interestingly, Dossey discovered that when prayer groups are told what kind of illness the person has, the prayers are not as effective as those sent

by a prayer group that does not know the person's illness. Perhaps the human mind is currently so limited, that any outcome we try to predict or control is limited, too.

### The Power of Long Distance Healing

According to the recently deceased psychiatrist Elizabeth Targ (who had directed the Complementary Medicine Research Institute, affiliated with the University of California School of Medicine), in the last 40 years over two-thirds of more than 150 formal, controlled studies showed statistically significant positive effects from distance healing. Along with three colleagues, Targ reported the results of two experiments in a 1998 article. Experienced healers from various traditions sent energy to 10 people diagnosed with AIDS (in the first experiment) and 20 people diagnosed with AIDS (in the second experiment) over a 10 week period for one hour a day, six days a week. The average age of the healers was 47. The religious backgrounds of the healers included Buddhism, Christianity and Judaism. Among the professionals were medical doctors, nurses, psychologists, a Baptist minister, a qigong master, and a Native American shaman. "A majority of healers," Targ wrote, "reported working with chakra imagery for healings; other frequently reported modalities included prayer, visualization, and work with crystals." For every person who was treated, there was an untreated control person diagnosed with AIDS in a similar physical condition as the treated person.

> We must cure the current system, which is so seriously ill that a few dozen aggressive and competitive men have the power to destroy all life on Earth.
>
> —Tadatoshi Akiba, mayor of Hiroshima, Japan
> at a peace demonstration in New York City's Central Park
> May 1, 2005

> The healers worked on a rotating schedule so that each week, each patient was treated by a new healer. Thus, by the end of the study, each patient had received "healing effort" from a total of ten different healers. Each week, a head and shoulders photograph of one of the treatment patients was sent via overnight mail to a healer who was then instructed to "hold the intention for the health and well-being of the patient" for one hour a day during the time the patient was assigned to them. The healers were given the first name of the patient, the patient's [blood] CD4 count, and two or three sentences describing active elements of their illness. Healing techniques were quite varied.[18]

Targ also described the researchers' efforts to ensure that each subject's expectation, guess, or belief that s/he was among those being healed played no part in the outcome. At the end of six months, the data collectors saw clearly that the participants who had received treatment

> had acquired significantly fewer new AIDS-defining diseases than people in the control group, their overall illness severity scores were significantly lower, they had had significantly fewer hospitalizations, and those hospitalizations were significantly shorter. In addition, treatment patients showed significant improvement on psychological status, including decreased depression, decreased anxiety, decreased anger, and increased vigor, compared to controls.[19]

### The Power of Group Intention

If just a few individuals can affect others over distances, imagine the power of a *group*. In Chapter 3, I cited experiments showing that when practiced regularly, the Transcendental Meditation® technique has pronounced positive effects on the body, such as decreased blood pressure, decreased lactase levels in the blood, and overall better health. I also mentioned increased coherence in brain waves. What I'll describe now are studies showing how other people's behavior changed when enough meditators were living in the specific area that was being examined. Although I'm focusing on one form of group intention (meditation), and on only one form of meditation, the power of focused group intention can manifest in many forms and arenas. The Transcendental Meditation® technique is convenient and fun to cite because it has been so heavily investigated.

The researchers and professors who conducted the following studies have advanced degrees in biophysics, sociology, government administration, and physics. They published the results in respected scientific, legal, and medical journals. The following are summaries of only a handful of the many investigations:

- From a 1981 article in the *Journal of Crime and Justice*:
  One percent of the population of 24 United States cities had been instructed in the Transcendental Meditation® technique by 1972. From 1973 to 1977, crime rates significantly decreased, compared to the time period between 1967 and 1972.
  The decrease in the crime rate in these cities was also compared to control cities matched for population,

crime rate, geographic region and other factors, during the same time periods, and found to be statistically significant.

- From a 1987 article in the *Journal of Mind and Behavior*: In the state of Rhode Island, people were practicing both the Transcendental Meditation® and the TM-Sidhi® (advanced, master level) programs. A very sophisticated analysis was performed assessing the quality of life in Rhode Island compared to a demographically matched control state. During the period studied, crime, auto accidents, auto accident deaths, other types of deaths, unemployment, alcohol and cigarette consumption, and pollution decreased by a statistically significant factor.
- From a 1990 article in *Social Indicators Research*: From 1982 to 1985 in the United States and from 1983 to 1985 in Canada, weekly fatalities due to motor vehicle accidents, homicides, and suicides significantly decreased when the size of the groups practicing the Transcendental Meditation® and TM-Sidhi® programs at Maharishi International University in Fairfield, Iowa, reached a certain number. The methodology used in this study ruled out effects of random variation, seasonal cycles, and long-term trends in the two countries.

> The Unified Field is built upon dimensionalized sets of scalar standing-wave points, wave strata formed of units of consciousness [whose] . . . energetic relationship . . . form the basis . . . through which the Hologram of Manifestation can be perceived.
>
> —A'shayana Deane
> *The Kathara Bio-Spiritual Healing System™*, 1999

In June and July of 1993, a really interesting experiment—The National Demonstration Project to Reduce Violent Crime and Improve Governmental Effectiveness—was conducted in Washington, DC in the US, an area known for its high rate of violent crime. The research team, headed by physicist and Nobel Prize nominee John Hagelin, arranged for about 4,000 advanced practitioners of the Transcendental Meditation® and TM-Sidhi® programs to temporarily inhabit the nation's capital. To ensure scientific accuracy, an independent 27-member Project Review Board—consisting of police department and government personnel, leading university sociologists and criminologists, and civic leaders—first approved the research protocol, and then monitored the study. At the end of the study, with all the variables statistically accounted for, results were conclusive. Violent crimes, which included rape, robbery, homicide and aggravated assault, decreased by 24%. Statistically, the chances that this could occur were less than two in one billion.

The authors of the study write:

> Maharishi [the yogi who brought the TM technique® from India to the West] maintains that a society is characterized by the quality of its *collective consciousness*, which arises from the consciousness of all its members taken together, and reciprocally influences individual behavior. Rising stress in the lives of individuals increases stress in collective consciousness, which is reflected in violence, crime, and other social problems. Conversely, increasing the level of coherence and harmony in collective consciousness positively influences individual behavior, and thus is a practical means to improve the quality of life in society and solve recalcitrant social problems.
>
> During the Transcendental Meditation® technique, the mind is said to systematically and effortlessly settle down to its own simplest form of awareness, a restfully alert state of inner wakefulness known as *pure consciousness*, which is not only an inner subjective experience, but held to be an intersubjective field universal to individuals. Maharishi describes pure consciousness as the most basic field of nature's intelligence, which is the source of all the order and intelligence displayed throughout the universe. [John] Hagelin has proposed that this same underlying field of intelligence is identical to the unified [Zero Point] field posited by quantum field theorists.
>
> On this basis it is predicted that the experience of pure consciousness can generate extended field effects, similar to those achieved in physical systems, that can propagate throughout a social system. Specifically, it is proposed that collective stress can be alleviated, and social coherence increased, through field effects of human consciousness projected from this universal level of natural law.[20]

The above phenomenon has many practical applications. A population consisting of just 1% of highly focused people whose brainwave cycles are stable and serene, can calm the attitudes and behavior of those around them whose brainwaves are chaotic. This is like

### Plants Recognize Their Siblings

Researchers at McMaster University in Hamilton, Canada, have found that plants get fiercely competitive when they're forced to share their pot with strangers of the same species, but they're accommodating when potted with their siblings.

"The ability to [recognize] and favour kin is common in animals, but this is the first time it has been shown in plants," said Susan Dudley, associate professor of biology at McMaster University. "When plants share their pots, they get competitive and start growing more roots, which allows them to grab water and mineral nutrients before their neighbours get them. It appears, though, that they only do this when sharing a pot with unrelated plants. When they share a pot with family, they don't increase their root growth. . . . Plants from the same mother may be more compatible with each other than with plants of the same species that had different mothers."

—*Nexus*, September–October 2007

placing a vibrating tuning fork beside another, non-vibrating tuning fork, causing that second tuning fork to reverberate in a manner similar to the first. In physics, this phenomenon is called *entrainment*. In spiritual circles, this is known as being in resonance or in harmony with what is around you.

#### Healing with the Heart

A different type of explanation as to how and why prayer, long distance healing and group meditation work, has been offered after two decades of experiments by Glen Rein, Rollin McCraty, Mike Atkinson and other investigators. Using sensitive electronic medical and laboratory equipment such as an ultraviolet absorption spectrophotometer, an electrocardiograph (ECG) to measure heart rhythms, and an electroencephalograph (EEG) to measure brain waves, the researchers studied what effects (if any) one's intentions and emotions have on others.

First, the signature of various emotional states had to be established. "Since the heart produces the strongest electromagnetic field in the body, the basis of CNI [cardioneuroimmunology] is that the heart is the master oscillator," McCraty et al. wrote.[21] The word "master" to describe the heart is an appropriate term. The heart's electromagnetic signals—which scientists classify basically as either coherent or incoherent, according to how these signals register on the ECG—are generated throughout the entire body. Hence, the entire heart field is perceived by every cell. Twenty subjects, who were pre-tested and pre-selected for their skill (or ineptness) in accessing and controlling their emotions, were connected to brain and heart wave machines. The machines simultaneously monitored the top of the head, forehead, heart, and base of the spine on the subjects. The researchers found that

> when the heart is radiating coherent frequencies, the rest of the body's subsystems and cells, including the brain, operate within that coherent electromagnetic field. . . . Feelings of anger, frustration and worry created higher percentages of *incoherence*, while feelings of love, care or appreciation created higher percentages of *coherence*. . . . Changes in the EEG, as well as the ECG, are also seen over time as a person practices mental and emotional self-management to transform negative emotions into positive ones.[22]

The above findings make sense. After all, as McTaggert remarks, "Consciousness, at its most basic, [is] coherent light."[23]

Before I discuss further experiments by Rein and McCraty, I want to explore the nature of water, and the research of one man whose findings are being celebrated worldwide.

#### Changing the Structure of Water

Japanese photographer Masaru Emoto has inspired people all over the world with his book, *The Message from Water*. In Chapter 3, I mentioned that Mr. Emoto's photographs show water assuming either organized crystalline shapes, or disorganized chaotic shapes, depending on whether it comes from a clear mountain spring or a contaminated industrial pipeline. What I did not mention were his even more unusual experiments on how water crystals formed, depending on the *attitudes* or *emotional states* that were absorbed by the water. Emoto writes:

> When we grow plants by saying sweet things to them such as "please grow up healthy" or alternately by saying mean things such as "go on and get withered," . . . the plants show a clear difference in [how well they do]. . . .
>
> People can become joyous and encouraged when they listen to music, all because the water contained in their bodies goes through a change. The vibrations of music and words transmitted through the air affects water more than any other element. The vibrations of music and words affect the water that is contained in plants and food. . . . Good music and kind words must exert a positive effect on water.
>
> Is there any way to demonstrate this theory? Pictures of crystals are wonderfully effective as a method to view the effect that music and words exert on water.[24]

Emoto and his colleagues photographed the water crystals using rigorous scientific procedure. "We selected distilled water as the base water to do our experiments on because it has a simple crystal structure," Emoto relates. First, photos were taken of the plain water crystals. Then the water was melted and subjected to music. Finally it was re-frozen, and photos were again taken. "As a result of trial and error," Emoto explains, the researchers decided to place the distilled water between two speakers and play an entire piece of music at normal volume. Interestingly, a very important part of the experiment involved tapping the bottom of the water bottle before letting it sit overnight. The bottle was tapped again the next day before the water was frozen to make crystals. Through the tapping, "information seemed to be transmitted through the water causing the crystals to activate."[25] (Homeopathic remedies are made by tapping and shaking.)

The music that was played ranged from European classical to a movie soundtrack (*Seven Years in Tibet*) to rock and roll. What excited Emoto was how the crystal patterns seemed to visually reflect the musical themes. The works of Beethoven, Mozart and Bach formed complete and gorgeous crystals (although some "Bach water" crystals seemed endless, one sprouting from another—much like the composer's complex, repeating and interwoven musical themes). Chopin's "Farewell Song" showed tiny crystals that were distinctly separated. The water crystal embodying a Korean folk song about two lovers who became separated crossing a mountain pass displayed an otherwise perfect hexagon with a chaotic center and a split in one side. A Kawachi folk dance produced a flower-like crystal, apparently confirming Emoto's comment that "for hundreds of years, this music has been cherished and sung by many people and because of this, it may have some healing power."[26] Recordings of the new age performing artist Enya, as well as Hado (Japanese healing music), likewise produced crystals that were pleasing to the eye.

As one might guess, radically different music produced very different shapes. A hit song by a popular Japanese group produced squares, not the usual six-sided structure into which water crystals usually form. "Hit music does not always contribute to the production of well-formed crystals," Emoto observes. He then describes his personal reaction to the water shapes produced by a composition in the heavy metal music style. Heavy metal recordings, which are more like random noise, have disharmonious waveforms compared to most types of music, which have harmonious waveforms. (See Appendix C, "Healing with Electromedicine and Sound Therapies," for more details from a physics perspective.) Not surprisingly, the water crystals from heavy metal music were artistically less beautiful. Emoto explains why.

> This music is filled with anger and seems to be denouncing the world. Subsequently, this crystal's basic well-formed hexagonal structure has broken into perfect pieces. The water seems to have reacted negatively to this music. We are not saying that heavy metal music is bad, only that there must have been a problem with the lyrics.[27]

These results are consistent with other experiments in which cows exposed to classical music appeared tranquil and produced more milk, while cows exposed to a heavy metal style of synthesized music clearly became agitated and produced less milk.

The last of Emoto's experiments that I will describe involve words alone, without music. Words have impact because there is *thought* and *intent* behind the words. "What kind of reaction does water show to words or to the sounds that words make?" Emoto asks. Even the tone of voice can make a difference. "For instance, there is a great difference between angrily yelling 'You fool!' and saying 'You are a fool' in a gentle way."[28] Emoto and his colleagues taped, onto bottles of distilled water, pieces of paper containing various words and phrases. To maintain consistency, the messages were typed by a word processor rather than handwritten. The studies were done more than once, and the results were consistent each time. You probably can guess what happened. "Thank you," "I love you," "Love/Appreciation," "Soul," "Angel," and "Beautiful" all produced lovely crystals that were pleasing to the eye. "You fool" (said angrily), "You make me sick; I will kill you," "Demon," "Devil," and "Dirty" produced chaotic, truly ugly shapes. Significantly, "Do it" produced a hollow round interior with irregular edges, while "Let's do it"—suggesting cooperation and connection rather than domination and hierarchy—produced a crystalline shape.

Parenthetically, Emoto notes the differences between the structures depicting "Thank you" in English and Japanese. He points out that the Japanese "Thank you" crystal is eerily similar to that produced by Bach's Goldberg Variations. "Goldberg Variations was composed by German-born Bach to express his gratitude," Emoto reflects. "The word 'Thank you' in Japanese exists to help us express gratitude. . . . English must have derived differently."[29]

The theme is crystal clear. *What we think affects us and others profoundly.* Mr. Emoto's experiments have enormous implications for human (and animal) healing, as our bodies consist of about two-thirds water.

### Changing Our DNA

Glen Rein and Rollin McCraty were used to conducting novel experiments. But what they discovered surprised even them. Human volunteers were asked to direct

> What many people don't realize is how dynamic the structure of DNA is. The base pairs are always moving and vibrating, electrons are migrating, holes are opening up and closing through the center of the DNA. Nothing stays still for more than a femtosecond here or a millisecond there.
>
> —Jacqueline K. Barton, professor of chemistry, California Institute of Technology quoted in *The New York Times*, March 2, 2004

specific feelings and thoughts toward living DNA samples taken from a human placenta. The DNA—whose two strands are normally interwoven—had been exposed to heat to make the strands unwind. "Individuals trained in generating focused feelings of deep love showed high coherence ratios in their ECG frequency spectra, and all were able to intentionally cause a change in the conformation of the DNA," wrote Rein and McCraty in "Modulation of DNA by Coherent Heart Frequencies." That "change" in the DNA's form consisted of nothing less than *the DNA rewinding back into its intact helical structure*! (DNA emits photons, or light. The winding and unwinding of the DNA is measured by how much ultraviolet light, at the wavelength of exactly 260 nanometers, it absorbs.) As might be expected, the subjects with the most coherent emissions had the strongest effect on the DNA, while those individuals "who showed low coherence ratios, although in a calm state of mind, were unable to change the conformation of the DNA."[30]

In another paper, "Local and Non-Local Effects of Coherent Heart Frequencies on Conformational Changes of DNA," Rein and McCraty wrote about subjects who were located as much as one-half mile from the DNA, but were still able to rewind the two strands.

> The results of this study indicate that the heart's energy field can directly modulate these basic cell functions [such as the creation of proteins and enzymes], via a direct action on DNA. . . . This energy transfer is distinctly different from the known electrical and chemical communication from the heart to the brain. . . . The unusual ability of heart energy to carry three different frequency patterns associated with different intentions suggest a non-electromagnetic information carrier [scalar waves]. . . . *Human intentionality produces effects which defy conventional laws of electromagnetism with respect to their independence of space and time. The long distance effects observed here support these observations and indicate that coherent heart energy may be a carrier for such non local effects.* The implications of this research suggest a novel mechanism for interpersonal, heart-felt communication between individuals which involves coherent heart energy. [emphasis added][31]

Here is scientific proof that positive emotions produce coherent heart energy; that coherent heart energy produces coherent brain waves and oscillations in the cells, which beneficially affect the entire system; and that individuals who emit coherent heart frequencies can literally heal on the cellular level.

In another paper, "Effect of Conscious Intention on Human DNA," Rein explores in greater detail the effects of *specific* intentions. A healer named Leonard Laskow consecutively assumed five different states of consciousness, during which he focused on three Petri dishes containing DNA of tumor cells. "The growth of tumor cells in culture was chosen because it could be monitored quantitatively using state of the art biochemical techniques," reports Rein, and because it was "highly relevant clinically." Laskow described being in a state of "transpersonal unconditional love" in all five experiments, which "allowed him to be in resonance with the tumor cells." The five different mental intentions that were "studied for their biological activity" are as follows:

- Returning to the natural order and harmony of the cell's normal rate of growth, i.e. before they were transformed into tumor cells.
- Circulating the microcosmic orbit [presumably, this means that Laskow was merged with the cells at their atomic level].
- Letting God's will flow through his hands, i.e. a transpersonal intention.
- Unconditional love, i.e. no specific direction to the energy was given.
- Dematerialization into the light and/or dematerialization into the void.[32]

Together, Rein and Laskow discovered that *a combination of heart-centered energy (love) and mind-centered energy (focused mental attention) produced the greatest results*. For instance, allowing God's will to flow through his hands had only half the effectiveness as intending the cells to return to their natural order, the normal rate of growth. Generalized, unconditional love did not stop the growth of the tumor cells. Interestingly, when Laskow was in the "microcosmic orbit" state of consciousness, he could will the cells to either decrease or increase their rate of cancerous growth, by about the same percentage. Even more instructive, Rein points out, intention "produced the same 20% inhibitory effect as did imagery alone." However,

> when the image of few cells in the Petri dish was combined with the intention for the cells to return to their natural order, the inhibitory effect on cell growth was doubled to 40%. *These results therefore suggest that imagery and intent each contributed equally to inhibiting the growth of tumor cells in culture, and that their effect is additive when combined together.* [emphasis added] [33]

The data from Rein and his colleagues topple many of the concepts we've inherited from the Western medical model. Take the assumption that we're doomed to repeat the illnesses of our ancestors. Physicians reinforce this mindset, since for diagnostic purposes they partly rely on health history questionnaires that reveal patterns in a family tree. So if, for example, your parents or grandparents had diabetes or heart problems, it's assumed that your chances of developing those conditions increase. But we know that people can alter their presumably fixed genetic expressions with dietary changes, exercise, herbs—and focused intention. "It is well established in the molecular biology community, but unknown [to] most people," comments Rein, "that the primary structure of DNA does actually change. We are therefore not [necessarily] stuck with the genetic blueprint passed down to us from our parents." [34]

Cellular biologist Bruce Lipton agrees. His books explaining how DNA is controlled by signals from outside the cell (including positive and negative thoughts) have been translated into several languages and are popular with readers all over the world. Lipton's research, and the recognition that old beliefs can sabotage us and conflict with our desire for positive change, inspired Rob Williams to develop a therapeutic modality called Psych-K®. Through the use of certain body positions, statements, and muscle testing, Psych-K® helps both hemispheres of the brain communicate with each other. This allows the subject to access and harmonize both the conscious and subconscious minds (left and right brain), which when working together help us achieve goals pertaining to relationship, career, prosperity and healing.

Some types of holistic healing do not even use herbs. For these modalities, we use ourselves as the vehicles for healing, along with our own focused, earnest intent.

### *Love Is a Resonance*

As with all thought and feeling, love itself is a resonance. Like a tuning fork that entrains another tuning fork, the frequencies of love oscillate, creating positive effects in people, animals, plants and minerals. And, like a particle in one portion of the galaxy that "knows" what another particle is "doing," the frequencies of love oscillate through space and time.

Love is, of course, a vital component of healing, regardless of whether the facilitator is a nurse, naturopath, osteopath, allopath, homeopath, psychotherapist, chiropractor, energy worker—or yourself. A'shayana Deane, who teaches advanced courses on physics and spirituality, writes:

> In terms of universal physics, love is an energy reality, a state of vibrational harmonization, or co-resonance of frequency that allows an energetic bridge to build between individuals. It is through this energetic bridge of frequency that one can assist in running healing energies that will facilitate the healing process of others. Without the *sentiment and frequency of genuine love*, one cannot energetically facilitate the healing of another. *Love is the essential ingredient in healing*, . . . for it allows the opening of facilitator and client's bio-energetic fields to the universal frequencies of the interdimensional [scalar wave] spectrum. Cultivating the ability to embrace and hold the frequencies of Universal or Omni-Love is the responsibility of any true healing facilitator. The emotionally experienced reality of the *frequency of love* takes many forms. In healing facilitation it is important to assess the most appropriate form of love to engage with each individual client. [35]

In discussing the most "appropriate" form of love, Deane is referring to *soft love*, *tough love*, and *omni-love*. Soft love is

> the kind, gentle, nurturing, soothing love often displayed by mothers comforting their infants. Soft Love works well with clients who possess some degree of spiritual maturity and who have cultivated the ability to hold some degree of a love frequency within themselves. . . . [and who can] accept personal responsibility for . . . their actions and their emotional reaction patterns, and who do not attempt to manipulate, drain energies from or place blame on others. . . .
>
> Soft Love is a vulnerable love . . . [requiring] one to show the self as it is, honestly expressing personal feelings tempered with kindness. Soft Love is not *approval seeking* . . . [but] genuine, honest and *self-generated*. . . . It is understood that personal value is implied by the fact of existence and is not determined by the approval or validation of others outside of the self and the personal relationship to the Divine. [36]

Tough love is very different from soft love.

> Certain clients who come to a facilitator for healing assistance bring with them a great need for . . . spiritual maturity. They may demonstrate demanding, arrogant or pushy attitudes and refuse to accept responsibility for their personal actions and resulting consequences. . . . Because they are *wounded within*, they have not yet developed the self-control or maturity necessary to treat themselves or others with kindness, respect or love.
>
> Individuals who display unreasonable behaviors or attitudes pose quite a challenge to the love-based healing facilitator. [Facilitators who use] Soft Love . . . will often find themselves as a scapegoat for the individual's personal problems, may have their energies and time excessively *drained* by such clients, and might possibly be subjected to outright verbal or physical *abuse*. Clients exhibiting such personality traits are struggling within themselves to *gain control* over the various *conflicting portions* of their personal energies, and they tend to objectify this internal conflict . . . in the form of *power struggle* with others.
>
> Personalities trapped within cycles of subconscious self or other-abusive attitude patterns need *love* more than anyone, but most often their behaviors push others away. . . . Often such personality traits effectively keep the individual from seeing themselves and the inner pain and conflict from which they attempt to hide. To facilitate healing in such individuals without succumbing to their manipulation, aggression or abuse requires that the facilitator adopt a posture of Tough Love. In Tough Love the facilitator clearly establishes *personal boundaries* . . . as to what treatment they will and will not accept. If the client crosses those boundaries, the facilitator *assertively addresses the issue* with the client, requests that the offensive behavior cease, and provides *clear consequences* as to what will occur if the offense continues. . . . The facilitator recognizes that they are only assisting the client to continue with the self-destructive patterns by condoning or allowing offensive behavior, and chooses to *love the client enough to confront the pattern* so that it may begin to release. In *lovingly, calmly, but firmly confronting* poor behavior, and *setting clear boundaries and consequences*, the facilitator assists such clients to temporarily find a new pattern of action because the old one does not work. . . . The Tough Love approach frequently requires facilitators to demonstrate that they hold their own power, even in the face of client disapproval.[37]

What Deane calls omni-love is

> a state of full frequency resonance with *everything existing* in the many universes. . . . It is a *transcendent love* that is attached to no thing but is *at one with all things*. . . . The self is known as an *extension of God*, or the *Divine Source*. . . . All things and beings are known as *simultaneous expressions* of the *one-self* that is God-Source. From this state of transcendence in love, all activity is understood to exist within the reality of *love*, and all conflict and strife are viewed as the *One-Self progressively expanding the ability of its expressions to carry the frequencies of energy that constitute One-Love*, a state of *total vibrational frequency co-resonance with the cosmos*. . . .
>
> Omni-Love is soft, tough, and enduring, honoring Self, Other, and the Divine simultaneously. . . . Strive to bring Omni-Love into your life, and [into your] personal and client healing facilitation. . . . Omni-Love is the *natural structure* of reality. Awareness of Omni-Love is cultivated through *intention* and appropriate use of *personal free will choice* in congruence with the *natural laws* of the *Unified Field Physics of Consciousness and Creation*.[38]

As the electronic equipment utilized in experiments by Rein, McCraty and others showed, rigidity, intolerance, fear, hatred and judgment are counterproductive to the healing process. The experiments also showed that, as Deane states:

> Judgment and love cannot transmit through the human body at the same time. Judgment creates an *energy reality* of separation or *non-resonant frequencies* of energy, whereas love creates the *co-resonance of frequencies* needed for open flow of universal energies for healing facilitation. If one can realize that *love is the only constant* and that all conditions of judgment change, it is easier to cultivate the innate ability to fully hold the frequency of love. Though assessment of conditions, actions or attitudes is useful and necessary, such assessment can be rendered through "separating the person from the action." You can judge the effectiveness or value of the *action or idea* without assigning a value judgment to the *person* to which it is attached.[39]

The principles outlined by Deane are taught (or should be taught) to mental health professionals in training. Psychotherapists who receive proper training learn to observe and evaluate, rather than judge, their clients. It's unfortunate that genuine tolerance and regard for others is taught to a small group of professionals as a method of treatment, rather than to the general population as the best way to get along with each other (and as the right thing to do). War is simply an extension of individual conflict on a grand, gruesome scale. These principles can apply to any situation.

(Be aware, however, that avoiding prejudices and negative assumptions doesn't mean we should let people push us around either. This is the purpose of having firm boundaries. We all have the right to determine the course of our own lives, as long as they don't interfere with the rights and freedoms of others.)

*Love is a frequency.* We can train ourselves to be more loving, appreciative, and respectful of all life. As we become more coherent, we will learn to *be* our own rife machines. Instead of plugging an external device into an electrical socket, we will tap into our innate abilities to heal and be healed.

Self-healing always benefits others. In striving to be the very best of who we are, we will help the world in positive ways.

### *Self-Empowerment Is Spiritual Maturity*

Holism is more than just another, or merely different, system of healing. It's the deepest level of healing. It requires a radical change in one's world view, with a whole-hearted commitment to treating our fellow human beings, the animals and plants with whom we share this planet, and the planet itself, with esteem and appreciation. A holistic approach also means understanding that healing takes place on many different levels: physical, mental, emotional, and spiritual.

Around the time that Royal Rife was seeing living microorganisms through his Universal Microscope, Wilhelm Reich was telling whoever would listen that our natural state as self-regulating organisms is love rather than fear. Love equals expansion, and fear equals contraction. Expansion means actualizing our divine needs for love and community. Contraction means feeding hatred and greed. If we lived our lives in resonance with what was truly important—love—would theft, torture or murder exist? Would genetically engineered organisms or toxic pesticides exist? Would we allow our natural resources to be depleted? Would governments be permitted to bury solar powered and "free energy" inventions until the final hour? Would people who believe differently from those in power be thrown in jail? Would governments wage war and use biological and nuclear weapons? And would people be taught to hate and fear what they don't understand?

> If the healing facilitator can feel love, reverence, respect and honor for the *Divinity Within Themselves*, they will also transmit these qualities of *excellence in Love* to the client. The quality of Love brought into the healing facilitation experience will directly affect the success of healing assistance given. *Love the Self* and know that all beings possess an *unalienable worth and value* as a living part of the *Divine*. Begin to cultivate this awareness within your personal life and you will greatly increase your effectiveness as a healing facilitator. Love, honor and respect yourself, your feelings, your dreams and your desires, so you may better love those you wish to serve.
>
> —A'shayana Deane
> *The Kathara Bio-Spiritual Healing System™*, 1999

Sometimes, in the rush to improve themselves, people grab onto the latest technique or product like just any other consumer item. If we treat holistic healing in this manner, it will become just like mechanized allopathic medicine—dressed in a gentler package perhaps, but still contaminated by an approach to consumption that is its opposite. Is it not greed, a lack of connection, and a deprivation mentality that made us sick in the first place?

We can't afford to keep doing what we've been doing. People are becoming more ill, rather than better. Can we clear any and all emotions that don't resonate with the frequency of love? And are we willing to take the intellectual, emotional, and spiritual risks—each in our own way, of course—to help us return to a healed state? Royal Rife took gargantuan risks. Can we each take one? Think of the quality of life we could have by sustaining a culture that supports health instead of illness, expansion instead of contraction, and life instead of death. Right now, the old paradigm mainstream culture is focused on death. A. Van Beveren writes:

> The language we use always shapes our concepts, especially of disease. . . . In this patriarchal, hierarchical era we view the body as a battle field in which an (in)efficient bungling soldier slugs it out with a battalion of powerful, invisible "beasties" and, with the help of our trusty hypodermic, manages to survive all odds. So thick is the arena with military metaphors that we have fostered an attitude that every person is a victim unable to trust Mother Nature, or their own mind-body system and thus their own healing power (spirit). Never

> mind that the pathogenic role of bacteria, fungi and viruses has been grossly exaggerated by the medical profession. Never mind that these organisms fulfill an important biological duty and we would be unable to complete our biological cycles without their continuous presence. But because we allowed the soil, the terrain to become contaminated with man-made toxins, and opted for a (Feel Better Faster) antibiotic lifestyle, we think we need "immunity." What we really need is immunity from coercion, immunity from interference and immunity from governmental "education."[40]

For the average person, education consists of what is hidden as much as what is actually taught. It amazes me sometimes how many people erroneously believe that "energy medicine" is some kind of fictitious voodoo. How ironic that people malign it—but then, our educational system does not teach us about the energetic nature of the universe, unless one studies at advanced universities specializing in quantum physics. All life on this planet grew and developed through exposure to certain wavelengths. Doesn't it make sense that if we're out of balance, these life-giving frequencies of radiation can help us heal?

Rife technology is intimately connected to the many different types of frequency therapy that we are just beginning to understand: homeopathy, color healing using visible spectrum light, far infrared (FIR) radiation and ultraviolet (UV) radiation treatments, sound, magnetic fields, and more. At this stage in our collective development (or lack thereof), it's folly to deny the abundant fields and energy bodies that comprise who we are.

To truly embrace electromedicine requires a fundamental understanding of the energetic nature of life. Once we grasp that we are not simply a collection of atoms that lose energy and eventually drift off into nothingness, all sorts of possibilities open before us. What may have been a belief that we are small and insignificant, becomes a deeply-felt recognition that we are more magnificent than we ever dreamed. Instead of feeling helpless, we can become empowered.

I see humanity precariously wavering between two paths. One path is that of the dominator paradigm. It promotes a soulless, mechanized view of the universe, which encourages hatred, mistrust, fear and repression. Its health care model is allopathic medicine, which is disrespectful and rigid. Allopathic medicine sees people as a bunch of fragmented parts, and uses drugs and surgery to mask symptoms and numb and unbalance the body.

The other path is that of the connection paradigm. It promotes a spiritual view of the universe, which encourages love, creativity, joy and expression. Its health care model is holism, which is respectful and flexible. Holistic healing recognizes that people are comprised of complex, interlinked energies and systems, and uses substances and energy patterns that support, nourish and awaken. Holistic methods also emphasize frequency therapies that employ not only external devices, but also the healing that we generate from within our own bodies, minds and hearts.

Whichever frequency therapy we choose—whether it's ancient, new, or has yet to be discovered—by selecting a modality that resonates with who we really are, our structural integrity will remain intact rather than becoming dis-integrated. We are not integrated when the methods we use are invasive and unloving. The modality with the greatest potential for true healing seems obvious. We *can* choose it!

Throughout my life, I have tried my best to make wise choices. When I make mistakes, I forgive myself and learn from those mistakes so that I can make better decisions in the future. My purpose for writing this book is to help you make better choices, too. What we think and feel, and how we act, can make the difference between illness and wellness, fear and love, showing the worst of ourselves or living life with divine freedom and grace.

We are intricately connected to each other, in deeper ways than perhaps many of us ever dreamed. The choices that we make as individuals affect us all. May we all choose wisely. For everyone's sake.



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# Appendix A

# Resources

*Most people live, whether physically, intellectually or morally, in a very restricted circle of their potential being. They make use of a very small portion of their possible consciousness, and of their soul's resources in general, much like a man who, out of his whole bodily organism, should get into a habit of using and moving only his little finger. Great emergencies and crises show us how much greater our vital resources are than we had supposed.*

—William James, American philosopher, psychologist and writer (1842–1910)

Unless otherwise specified, all addresses are in the United States.
Inclusion of the following products and services should not be construed as unconditional endorsement.

## AIR PURIFICATION

**Plant Air Purifier®**
**138 Maple Hill Drive**
**Kingston, New York 12401**
*contact:* Jim Schaeffer
*phone:* 855-247-9900
*website:* www.plantairpurifier.com

Based on research of NASA scientist Dr. B.C. Wolverton, the Plant Air Purifier® uses a common houseplant to purify indoor air. System includes activated carbon (to attract particles from the air) and washed ceramic media to hold the plant. While microorganisms naturally living on plant roots consume harmful toxins and convert them into nutrients for the plant, a small built-in electric fan circulates air through the roots and into the room. System cleans up to 100 times more air than a regular plant, and requires only water and occasional plant food.

**Royal Air LLC**
**PO Box 40**
**Chippewa Lake, Ohio 44215**
*contact:* Steve Trikilis
*phone:* 330-775-3014
*website:* www.royalairpurifiers.com

The company's high-energy, low-heat plasma field generators produce super-oxygen without creating dangerous nitrogen compounds. All generators emit Aran™—a patented, super-charged form of ozone that emits many more singlet oxygen atoms than ordinary ozone. Aran™ kills bacteria and fungi; removes dust, pollen and mold; produces beneficial negative ions without creating harmful electromagnetic radiation; and removes organic and some inorganic chemicals. Generators come in all sizes and powers for home and industrial needs. Home units cost about five cents to run for 24 continuous hours.

## BODY-MIND THERAPIES

**Emotional Freedom Techniques (EFT)**
**Energy Psychology Press**
**PO Box 442**
**Fulton, California 95439**
*website:* www.eftuniverse.com

EFT restores integrity of meridians that were short-circuited from physical and emotional trauma in children, adults and even animals without drugs or equipment. It's clinically effective over 80% of the time for abuse, addictive cravings, anxiety, depression, fears, grief and phobias, as well as physical pain, breathing difficulties, headaches and overweight. The modality is self-applied and is easily learned. The EFT manual is free, downloaded from website.

**Public Orgonomic Research Exchange (PORE)**
*website:* www.orgone.org
*website master:* Jaime Ogg

Since 1978, dedicated to Wilhelm Reich's life and work in psychology, biology, chemistry and the natural sciences. Articles, book excerpts, worldwide practitioner referrals, orgone accumulator building plans, "cloudbusting" (weather control) info.

## CANCER TREATMENTS

These groups provide information, via printed and other media, on alternatives to surgery, chemo and radiation for all types of cancer. They may also refer speakers, hold events, offer recommendations to doctors and clinics, and/or provide customized cancer protocols.

**Cancer Control Society**
**2043 North Berendo Street**
**Los Angeles, California 90027**
*contact:* Lorraine Rosenthal
*phone:* 323-663-7801
*fax:* 323-663-7757
*website:* www.cancercontrolsociety.com

**The Cancer Cure Foundation**
**PO Box 3782**
**Thousand Oaks, California 91359**
*phone:* 800-282-2873 (toll-free),
805-498-0185 (local, international)
*website:* www.cancure.org

**Cancer Decisions®**
**PO Box 1076**
**Lemont, Pennsylvania 16851**
*phone:* 800-980-1234 (toll free) or
814-238-3367 (outside the US)
*fax:* 814-238-5865
*website:* www.ralphmoss.com

**Cancer Information and Support Society**
**6/56 Chandos Street**
**St. Leonards, New South Wales, 2065**
**Australia**
*website:* www.ciss.org.au

**New Approaches to Cancer**
**PO Box 194**
**Chertsey, Surrey, KT16 0WJ**
**United Kingdom**
*phone:* 0800 389 2662
*website:* www.anac.org.uk

## COLLOIDAL SILVER GENERATORS

See Chapter 3 for detailed information on colloidal silver.

**Coyote Zenterprizes**
**PO Box 13**
**Moncure, North Carolina 27559**
*contact:* Kenneth Steckenrider
*phone:* 919-776-6396
*website:* www.silverpuppy.com

**Pulsed Technologies**
**3003 Brookshire Drive**
**Plano, Texas 75075**
*contact:* Jimmie Holman or Paul Dorneanu
*phone:* 214-453-0095 or 214-453-0066
*website:* www.pulsedtech.com

Silver generator is run by any of the company's PFG2 series frequency devices. After making ionic silver solution, the device imprints, into the fluid, frequencies you choose for pathogen destruction or tissue regeneration.

**SilverGen**
**170 Embody Road**
**Port Ludlow, Washington 98365**
*contact:* Trem Williams
*phone:* 877-745-8374
*fax:* 360-732-5071
*website:* www.silvergen.com

**Sota Instruments Inc.**
**PO Box 20019**
**Penticton, British Columbia V2A 8K3**
**Canada**
*phone:* 800-224-0242 (toll-free)
or 250-770-2023 (local and international)
*fax:* 250-770-1999
*website:* www.sotainstruments.com

**Colloidal Silver Internet Discussion Group**
*website:* www.silverlist.org

## COLOR THERAPY

**Spectro-Chrome Color Therapy**
**Dinshah Health Society**
**PO Box 707**
**Malaga, New Jersey 08328**
*contact:* Darius Dinshah, president
*phone:* 856-692-4686
*website:* www.dinshahhealth.org

Utilizes specific frequencies of visible light to heal, with clear plastic color filters placed in front of an incandescent or natural light source and shone directly onto bare skin. For less than $100, you can self-treat for life. Treatment manual, videotape, instructions, and newsletters are included in membership price. See Chapter 3 for more information.

## ELECTROMEDICINE MODALITIES AND DEVICES *(not specifically rife)*

See Appendix C, "Healing with Electromedicine and Sound Therapies," for detailed information on all modalities except the etascan®.

### *etascan® (hadoscan® in the US)*

**ifbio GmbH**
**Getreidemarkt 14/15**
**A-1010 Vienna**
**Austria**
*contact:* Hans Schindler
*phone:* +43 664 4298938
*website:* www.ifbio.eu

The etascan® visualizes and analyzes energetic imbalances in the mind and body, focusing more on repairing the bioenergetic structures of tissue than on the debilitation of pathogens. Using an electromagnetic headset and a medical "soft" laser for diagnosis, the etascan® detects malfunction or degeneration in most organs, glands, cells and tissues—often before they physically manifest. Malfunction can be identified on a general level (for instance, heart), or more specifically (for instance, lining of left ventricle in heart). Referencing the frequencies of sick and healthy tissues that are digitally stored in its database, the device then reestablishes the distinctive (optimal) vibratory signature of the targeted tissue. Screen images include over 250 different pictures with over one million energetic points.

### *Frequency Specific Microcurrent*

**Integrated Pain Solutions**
**6956 SW Hampton Street**
**Tigard, Oregon 97223**
*contact:* Carolyn McMakin, DC
*phone:* 503-443-6100
*website:* www.frequencyspecific.com

### *Lasers*

**LazrPulsr™**
**LED Healing Light LLC**
**1276 S. Chambers Road**
**Aurora, Colorado 80017**
*contact:* Gerry Graham, DC
*phone:* 303-696-6532
*website:* www.lazrpulsr.com

### *LEDs*

**Light Energy Company**
**1425 Broadway, PMB 526**
**Seattle, Washington 98122**
*contact:* Pam Baker or David Olszewski, EE, IE (owners)
*phone:* 800-544-4826 (local and international)
*fax:* 808-329-3341
*website:* www.lightenergycompany.com

### *LEDs and Infrared*

**Good Energy Products**
**2725 Agua Fria Street**
**Santa Fe, New Mexico 87507**
*contact:* Dr. Bill Wolfe
*phone:* 800-698-2563 (toll-free) or
505-299-6950 (local and international)
*fax:* 505-299-6924
*website:* www.drwolfe.com

### *Oscillating Magnetic Fields*

**Henry Lai, PhD**
**Department of Bioengineering, University of Washington**
*email:* hlai@u.washington.edu.

### *Pulsed Electromagnetic Fields*

**Ondamed™ Inc.**
**80 Waterview Terrace**
**New Windsor, New York 12553**
*contact:* Silvia Binder
*phone:* 845-496-6673
*website:* www.ondamed.net

### *Tennant Biomodulator*

**Senergy Medical Group**
**9901 Valley Ranch Parkway East, Suite 1009**
**Irving, Texas 75063**
*contact:* Karla Bass or Scott Tennant
*phone:* 866-514-8221 (toll-free) or
972-580-0545 (local and international)
*website:* www.senergymedicalgroup.us

### *Sound Therapy*

**VoiceBio™©**
**Dr. Kae Thompson-Liu**
**Virginia Beach, Virginia**
*contact:* Kae Thompson-Liu, naturopath
*phone:* 540-297-6485
*website:* www.voicebio.com

## ENERGETIC TECHNOLOGY AND THERAPY ORGANIZATIONS

**Borderland Sciences**
**PO Box 6250**
**Eureka, California 95502**
*phone:* 707-445-2247
*fax:* 707-445-1401
*website:* www.borderlands.com

Sells videos, books and other materials on science, medicine and futuristic technology, including the contributions of Nikola Tesla and Royal Raymond Rife.

**International Society for the Study of Subtle Energies and Energy Medicine (ISSSEEM)**
**11005 Ralston Road, Suite 210**
**Arvada, Colorado 80004**
*phone:* 303-425-4625

International, non-profit interdisciplinary organization dedicated to exploring and applying subtle energies as they relate to the experience of consciousness, healing, and human potential. Bridges many disciplines including quantum physics and psychology. Sponsors conferences, seminars, and workshops. Publishes *Bridges*, a quarterly magazine, and *Subtle Energies & Energy Medicine*, a peer-reviewed, scientific journal.

## FOOD SAFETY AND NATURAL DIETS

**Mission Possible International**
*websites:* www.dorway.com; www.dorway.org

Monitors the Monsanto corporation, which is responsible for manufacturing uncountable poisonous drugs, pesticides, herbicides, and genetically engineered seeds. Extensive data on chemicals, detoxification, the FDA, and chemicals (including the artificial sweetener aspartame).

**Organic Consumers Association**
**6771 South Silver Hill Drive**
**Finland, Minnesota 55603**
*phone:* 218-226-4164
*fax:* 218-353-7652
*website:* www.organicconsumers.org

Public interest, grassroots organization promotes worldwide food safety, organic farming and sustainable agriculture. Addresses genetic engineering, irradiation, mad cow disease, animal feed, rBGH, cloning, patenting, food labeling, USDA food standards and more, through education, activism, boycotts, lobbying, media relations and litigation.

**Price-Pottenger Nutrition Foundation**
**7890 Broadway**
**Lemon Grove, California 91945**
*phone:* 800-366-3748 (toll-free) or 619-462-7600
*website:* www.ppnf.org/catalog/ppnf

Information about healthy lifestyles, ecology, nutrition, alternative medicine, farming, and organic gardening. Based on the work of Weston Price and Frances Pottenger.

**Truth in Labeling Campaign**
**850 DeWitt Place, Suite 20B**
**Chicago, Illinois 60611**
*phone:* 858-481-9333
*website:* www.truthinlabeling.org

Information on MSG, artificial sweeteners, food coloring, and related issues.

**The Weston A. Price Foundation**
**PMB 106-380**
**4200 Wisconsin Avenue, NW**
**Washington, DC 20016**
*contact:* Sally Fallon, MA
*phone:* 202-363-4394
*fax:* 202-363-4396
*website:* www.westonaprice.org

Disseminates the work of Weston A. Price, who documented native diets that prevent tooth decay and maintain health. Distributes books, a quarterly newsletter, and other literature on food and healing.

## HOLISTIC / COMPLEMENTARY HEALTH, MEDICINE AND DENTISTRY: PRACTITIONER DATABASES AND EDUCATION

**Alternative Medicine Foundation, Inc.**
*website:* www.amfoundation.org

Internet-based resource guide to holistic practitioners, modalities, various databases, and more.

**American Association of Naturopathic Physicians**
*website:* www.naturopathic.org

Society represents licensed or licensable naturopathic physicians who are graduates of four-year, residential graduate programs. Publications, conventions, and extensive database for finding a licensed naturopathic practitioner in the United States.

**American Board of Integrative Holistic Medicine (ABIHM)**
**614 Daniel Drive NE**
**East Wenachee, Washington 98802-4036**
*contact:* Robert Anderson, MD, Executive Director
*phone:* 509-886-3046
*website:* www.holisticboard.org

Establishes the role of unconditional love as the basis of healing and support by certifying MD and DO applicants in Integrative Holistic Medicine. Also provides an annual comprehensive review course with appropriate support materials, and maintains a database of certified physicians in the US.

**American Chiropractic Association**
**1701 Clarendon Boulevard**
**Arlington, Virginia 22209**
*phone:* 703-276-8800
*fax:* 703-243-2593
*website:* www.amerchiro.org

The largest professional association in the world representing chiropractors, the ACA provides lobbying, public relations, professional and educational opportunities, and funds health research. Has website database for those seeking a chiropractor.

**American College for Advancement in Medicine (ACAM)**
**24411 Ridge Route, Suite 115**
**Laguna Hills, California 92653**
*phone:* 949-309-3520
*fax:* 949-309-3538
*website:* www.acam.org

Educates health care providers on the latest findings and procedures in preventive, nutritional and alternative medicine. Offers a list of physicians who support research on complementary modalities. Newsletters, conferences, continuing education.

**American Holistic Dental Association**
**PO Box 151444**
**San Diego, California 92175**
*phone:* 619-923-3120
*website:* www.holisticdental.org

Offers educational materials in all media, and online database to find a holistic dentist.

**American Holistic Health Association**
**PO Box 17400**
**Anaheim, California 92817**
*phone:* 714-779-6152
*website:* www.ahha.org

Articles on wellness and treatments, products, services, seminars, and list of holistic practitioners of all kinds in the US.

**American Holistic Medical Association**
**One Eagle Valley Court, Suite 201**
**Broadview Heights, Ohio 44147**
*phone:* 440-838-1010
*fax:* 440-838-3677
*website:* www.holisticmedicine.org

Holds conferences and other events. Articles, online database for those seeking a practitioner versed in integrative, complementary and allopathic methods.

**American Naturopathic Medical Association**
**PO Box 96273**
**Las Vegas, Nevada 89193**
*phone:* 702-897-7053
*fax:* 702-897-7140
*website:* www.anma.com

Monitors legislation that might prevent holistic professionals from practicing. Seminars for all kinds of practitioners, including those with ND, NMD, MD, DO, DDS, OMD, HMD, and DC degrees.

**Dr. Joseph Mercola**
*website:* www.mercola.com

Comprehensive and popular holistic health site.

**Dr. Mathias Rath**
*website:* www.dr-rath-foundation.org

Dedicated to protecting the right to choose one's health care. Articles on natural health in 17 languages.

**International Academy of Biological Dentistry and Medicine (IABDM)**
**17222 Red Oak Drive, Suite 101**
**Houston, Texas 77090**
*phone:* 281-651-1745
*fax:* 281-440-1258
*website:* www.iabdm.org

Education about holistic and biological dentistry, online database to find practitioners worldwide.

**National Foundation for Alternative Medicine**
*website:* www.nfam.org

Publications on the scientific basis of energy medicine. Conducts scientific investigations of alternative cancer clinics worldwide, and supplies information on findings free to the public.

**National Health Federation**
*website:* www.thenhf.com

A grassroots organization working to guarantee your right to use the doctor, nutrition, or therapy of your choice.

**World Research Foundation (Europe)**
**Kriegerstrasse 17**
**D-70191 Stuttgart**
**Germany**
*phone:* (0)711-290813
*fax:* (0)711-291180

**World Research Foundation (US)**
**41 Bell Rock Plaza**
**Sedona, Arizona 86351**
*phone:* 928-284-3300
*website:* www.wrf.org

Disseminates information on health and the environment from hospitals, medical clinics, non-mainstream health professionals, and research centers all over the world.

## HOSPICE

**Hospice Foundation of America**
**1621 Connecticut Avenue NW, Suite 300**
**Washington, DC 20009**
*phone:* 1-800-854-3402
*fax:* 202-638-5312
*website:* www.hospicefoundation.org

**National Hospice and Palliative Care Organization (NHPCO)**
**1700 Diagonal Road, Suite 625**
**Alexandria, Virginia 22314**
*phone:* 703-837-1500;
help line (recording) 800-658-8898
*fax:* 703-837-1233
*website:* www.nhpco.org

## MICROSCOPES

**Grayfield Optical Inc. (Europe / World)**
**Kohlenstrasse 23**
**50825 Cologne**
**Germany**
*phone:* UK +44 20 8133 4321
Europe +49 221 20046970
*website:* www.grayfieldoptical.com

**Grayfield Optical Inc. (US)**
**PO Box 27740**
**Las Vegas, Nevada 89126**
*phone / fax:* 702-425-7775
*website:* www.grayfieldoptical.com

Ergonom microscopes have a higher resolution ability and greater depth of field than Rife's best microscope (while being much easier to use). All Grayfield instruments feature variable depth of field—independent of magnification—as well as extended working distance and full contrast in true color, without any need for staining or oil-immersion. These features allow for the observation of living organisms in real time.

## NUTRITIONAL SUPPLEMENT PRODUCTS

### *Salt*

**Consolidated Midland Corporation (CMC)**
**20 Main Street**
**Brewster, New York 10509**
*phone:* 845-279-6108

The 1-gram sodium chloride USP tablets should be ordered through your local pharmacy. Although not a prescription drug, salt tablets are not usually stocked, and must be special ordered. The NDC number of the CMC salt pills is 0223-1760-01.

**Grain and Salt Society**
**PO Box 19359**
**Asheville, North Carolina 28815**
*phone:* 800-867-7258 (toll-free, US);
888-725-8386 (toll-free, Canada);
828-299-9005 (local and international)
*website:* www.celticseasalt.com

Sells several grades of high-quality sea salt with all its minerals intact, gathered off the French coast on government protected lands.

**SodiumTablets Online:**
*website:* www.americarx.com/Products/19522.html

### *Transfer Factor*

**Equilibrise**
*contact:* Edna Massi, MS, NCC, LMHC
*phone:* 914-584-5454
*website:* www.equilibrise.net

Concentrated extract of natural colostrum educates different types of immune cells for highly effective, optimal immune response support. Hyperactive immune response is calmed, while lethargic immune response is boosted. Over two quarts of colostrum equals one ounce of transfer factor. Milk proteins have been removed for the dairy-sensitive. Additional targeted transfer factor products support balanced blood sugar levels, brain function, and more. These products are available worldwide.

## NUTRITIONAL SUPPLEMENT ACCESS

**Alliance for Natural Health (Europe)**
*website:* www.anh-europe.org

**Alliance for Natural Health (US)**
*website:* www.anh-usa.org

International organization provides education on the dangers of pharmaceuticals, EMF and environmental pollution, genetically modified organisms, fluoride, etc. Initiates legal action against governmental agencies, corporations and individuals to protect the right of natural health providers to practice, to allow consumers to choose their own health care, and to protect our access to nutritional supplements.

## OZONE

**Plasmafire International**
**7186 205th Street**
**Langley, British Columbia**
**Canada V2Y 1T1**
*contact:* Dr. Saul Pressman, DCh, LTOH
*phone:* 604-532-9596
*website:* www.plasmafire.com

Since the mid 1990s, manufacturing medical ozone generators based on Nikola Tesla's electrostatic cold plasma generator design. The generator uses voltage (not current) to produce clean ozone from oxygen. Since the unit is impervious to burnout, the company can offer a lifetime (transferable) warranty. Company also manufactures steam saunas. Ask for Dr. Pressman's free ebook about oxygen therapies.

## PERSONAL CARE AND HOUSEHOLD CLEANING PRODUCTS

### *Cleaning for Household and Personal Use*

**KD Gold**
**2587 SW 30th Avenue**
**Fort Lauderdale, Florida 33312**
*contact:* Kaylin D'Aire
*phone:* 888-759-7256 (toll-free, US and Canada) or 954-581-7050 (local and international)
*fax:* 954-581-7040
*website:* www.kdgold.com

This colloidal micelle soap—specially formulated for the chemically sensitive and immune-compromised—is non-toxic, biodegradable, hypoallergenic, non-fuming, non-reactive, and fragrance free. It's comprised solely of fatty acids, vegetable- and plant-based enzymes and minerals, organic alcohol, coconut oil, folic acid, vanilla, and purified water. There is no risk of chemical reaction with other ingredients, as it works mechanically due to its molecular shape and electrical charge. This product can clean any washable material: metal, plastic, fabric, wood, tile, glass, concrete and faux finish, as well as foods, humans and animals. Sold in concentrate form, its strength varies depending on how much water is used to dilute it. It disables bacteria, viruses and fungi. Farmers and gardeners are now using it to repel harmful insect pests (it does not harm beneficial ones such as ladybugs). Private labeling is offered.

### *Dental and Skin Care Line*

**Good Energy Products**
**2725 Agua Fria Street**
**Santa Fe, New Mexico 87507**
*contact:* Dr. Bill Wolfe
*phone:* 800-698-2563 (toll-free) or 505-988-9868 (local and international)
*fax:* 505-299-6924
*website:* www.drwolfe.com

Rife technology meets personal care, in these formulations from a dentist-naturopath. Products include several different types of toothpaste and mouthwash; combination homeopathic preparations (used for headaches, sinus infections, tissue trauma and before dental surgery); a unique body cream line for injuries and pain; and a skin care line. Some of the natural ingredients used are aloe, chlorophyll, grapefruit seed extract, white willow bark, ginseng and chamomile. Products are energized with homeopathic remedies as well as programmed with frequency formulas to stimulate chi (meridian) flow to organs, glands and other tissues. The creams, liquids and pastes are actually carriers for the healthful frequencies. It's like having a frequency device you don't have to plug in—or an acupuncture treatment in a tube. Highly recommended.

## POLITICAL ACTION / SOCIAL CHANGE, MISC.

**Citizens Commission on Human Rights (CCHR) International**
**6616 Sunset Boulevard**
**Los Angeles, California 90028**
*phone:* 800-869-2247 (toll-free) or 323-467-4242 (local and international)
*fax:* 323-467-3720
*website:* www.cchr.org

Investigates the criminal abuse of psychiatric facility inmates and educates people about the effects of psychiatric drugs and electric shock. Literature and DVDs, public hearings on the psychiatric diagnosing and drugging of children.

**The International Forum on Globalization and**
**The Thoreau Center for Sustainability**
**1009 General Kennedy Avenue, #2**
**San Francisco, California 94129**
*phone:* 415-561-7650
*fax:* 415-561-7651
*website:* www.ifg.org

Worldwide alliance of activists, scholars, economists, researchers and writers to counter corporate and political efforts to restructure global economics that benefit the wealthy at the expense of human welfare, local economies and the natural environment. Sponsors educational seminars and scientific study groups to encourage long-term ecological stability.

## RIFE-RELATED

There are dozens of websites devoted to Royal Rife and modern-day devices inspired by his original Beam Ray. Below are just a few sites. If they are part of the Rife Web Ring, once you access them they will link you to other Rife Web Ring sites.

### *Books and DVDs*

**KE Enterprise**
*phone:* 866-757-9375 (toll free, North America)
*website:* www.rifevideos.com

"The Royal Rife Story" is an in-depth look at the life and inventions of Rife, including old footage of Rife's 1936 lab and accounts of bacteriological discoveries in Rife's own voice. "Royal Rife—In His Own Words" was made from an hour-long audio recording by Rife in the 1950's, in response to requests by colleagues to explain his work in bacteriology and how he found the cancer virus.

**BioMed Publishing Group**
**PO Box 550531**
**South Lake Tahoe, California 96155**
*phone:* 530-573-0190
*website:* www.lymebook.com

Bryan Rosner's two books, *Lyme Disease and Rife Machines* and *The Top 10 Lyme Disease Treatments*, are valuable resources for both wellness seekers and practitioners. Other health related books are also available.

**Rife Research Group of Canada**
**3 Baldoon Road**
**Toronto, Ontario M1B 1V6**
**Canada**

Extensive research on Rife history, machines, and medicine. Jason Ringas works with other researchers and provides source materials.

**Zero Zero Two Productions**
**Canada**
*contact:* Shawn Montgomery
*phone:* 647-709-3044
*website:* www.zerozerotwo.org

Their DVD, "The Rise and Fall of a Scientific Genius: The Forgotten Story of Royal Raymond Rife," narrated by Jeff Rense, has an extra disk featuring extended interviews with pathologist Dr. John Hubbard, Dr. Robert Stafford, microscopist Michael Coyle, radio engineer Bob Haining, and researcher Mike Tewksbury.

### *Frequency Devices*

#### BCX Ultra

**Whitman Technology**
*contact:* Roger Whitman
*phone:* 530-623-1935
*website:* www.advanced-bcx-ultra.org

Device transmits frequencies via two hand-held noble gas-filled tubes with 45 KHz RF carrier wave, hand-held metal electrodes and foot plates (with several different carrier waves), a coiled freestanding plasma tube, LEDs, and footbath. Functions include customizable gate, duty cycle, and different waveforms. In addition to the 1236 pre-programmed channels, up to 255 frequencies can be manually programmed (frequency range up to 100,000 Hz). All functions can be seen in digital readout. Warrantee and 30–60 day buy-back guarantee. Excellent customer service.

#### The BioWave/ResIWave 21 LCD and the BioWave/ResIWave 77

**Medi Gen Technology Ltd. & Co KG (sells the BioWave outside of the US)**
**Leiten 3**
**D-83556 Griesstätt, Germany**
*contact:* Peter Franke
*phone:* + 49-8039-90 75 01
*website:* www.medi-gen.com

**MediVerse (sells the ResIWave for the US market)**
**Am Schlangenwald 15**
**57080 Seigen**
**Germany**
*phone:* 816-256-2469 (North America);
+49-2712-22 92 23 (Germany)
*website:* www.resiwave.com

These devices, certified in Europe for medical use, have a frequency range of 1 Hz to 1 MHz. The low-cost BioWave/ResIWave 21 LCD for home use can run pre-programmed chip cards for a variety of conditions, as well as master chip cards that have been programmed on the BioWave/ResIWave 77. The BioWave/ResIWave 77, the professional unit for therapists, can be programmed with up to 30 frequencies—either manually, or from database chip cards containing frequencies advanced by Royal Rife, Hulda Clark, PhD, and Alan Baklayan, ND. Master chip cards can also store individual programs that can then be used on the BioWave/ResIWave 21 LCD.

#### EM+ Resonant Radiant Plasma Systems

**Bruce K. Stenulson**
**PO Box 69**
**Fairplay, Colorado 80440**
*phone:* 719-836-2489
*website:* www.stenulson.net/althealth

Plasma systems for radiant or direct contact mode, with selectable power output levels, can run multiple plasma tubes. Most EM+ systems have both an internal frequency generator and the ability to interface with a wide variety of frequency generating software or external frequency synthesizers. Also sells: colloidal silver making accessories, pulsed magnetic research equipment, and a two-chamber footbath system utilizing nontoxic carbon electrodes and resonant frequencies.

#### F-Scan

**TB-Electronics GmbH (Europe / World)**
**Bahnhofstrasse 3**
**CH-9443 Widnau**
**Switzerland**
*contact:* info@fscan.com
*phone:* +41 71 7225255
*website:* www.fscan.com

**Health Balances (North America / South America)**
**10814 206th Street E**
**Graham, Washington 98338**
*contact:* Richard Loyd, PhD
*phone:* 206-883-1900
*website:* www.royalrife.com

There are two sizes: the F-Scan 2 (which is quite portable) and the Compact (small enough to fit into a pocket). The F-Scan 2 can be controlled by a computer using the included software, or it can be used stand-alone. In the DIRP mode, it can scan the body for the frequencies of pathogens, and then apply them in any range from 1 Hz to 15 MHz. There are two Compact models, one that can do DIRP and one that can't. The one with DIRP capabilities scans frequencies from 80,000 Hz to 560,000 Hz. Both Compacts can produce and apply frequencies of up to 5 million Hz. The F-Scan and both Compact units produce sine, square, and pulsed DC waves (similar to those of a zapper). All models can transmit frequencies via electrodes, or they can be the frequency source for radiant plasma devices.

#### GB-4000

**AAA Production Inc.**
**PO Box 277**
**Moroni, Utah 84646**
*phone:* 888-486-4420 (toll free, North America) or 435-436-5235
*website:* www.gbgenerators.com

GB-4000 reaches up to 20 MHz, has 2.4 MHz carrier frequency, and can output up to eight frequencies simultaneously to 40,000 Hz. Does regular sweeps, converge sweeps, and gating (with a variable pulse rate from 5 Hz to 2200 Hz, and variable pulse duty cycle of 10% to 90%). Runs sine and square waves; square wave duty cycle ranges from 10% to 90%. Has 2000 programmable channels, each with up to 48 frequencies. One year parts and labor warranty. The manufacturers regard the GB-4000 as test equipment, and make no medical claims for the device. Devoted customer service.

#### PERL and PERL-XL

**Resonant Light Technology, Inc.**
**4875 North Island Highway**
**Courtenay, British Columbia V9N 5Y9**
**Canada**
*contact:* Eddie (Edna) Tunney
*phone:* 250-338-4949
*fax:* 250-338-1399
*website:* www.resonantlight.com

Plasma light unit is equipped with leaded silica, argon-filled glass tube lit with a 27.125 Mhz RF carrier wave. The PERL's multi-signaling feature can utilize up to three ProGen II frequency generators simultaneously, which allows the user to reduce the time required to run a particular protocol or frequency set. Effective emissions range up to 30 feet. Frequency selection from .001 to 999,999 Hz, with square, sine or sawtooth waveforms. Comes with pre-programmed protocols and computer software for creating and downloading frequencies. Optional accessories include contact electrodes and LEDs. The new PERL-XL contains two differently shaped tubes, each filled with a different gas and equipped with its own tansmitter, amplifer and frequency generator so the unit can emit a slightly out-of-phase field for intensified effects. Excellent customer service.

**PFG2 (Precision Function Generator) and P3 (Precision Pulsed Plasma) Devices**

**Pulsed Technologies**
**3003 Brookshire Drive**
**Plano, Texas 75075**
*contact:* Jimmie Holman or Paul Dorneanu
*phone, Dallas, Texas, US:*
214-453-0095 / 800-801-4798 (general)
214-453-0066 / 800-857-8146 (technical)
*phone, Bucharest, Romania:*
+40-314-057-986 (phone/fax)
+40-722-643-640 (mobile cell)
*phone, London, UK:* +44-208-002-9048 (general)
*phone, Luxembourg:* +352-20203757 (general)
*website:* www.pulsedtech.com

PFG Series 2 devices are a portable 6" x 1" x 3½", emitting complex, precision waveforms via company supplied software and a user supplied personal computer. The PFG2 units operate with either electrodes or plasma tubes. The P3 tube units are controlled by the PFG series generators. The P3+ and P3 Pro (special order) machines include built-in PFG frequency generators. Optional custom systems and accessories, such as an immersible electrode and colloidal silver attachment, are available. Software for all the equipment has many functions, and can import frequencies from other sources. Excellent customer service.

### *Frequency Databases*

**CAFL**
*website:* www.electroherbalism.com/Bioelectronics/FrequenciesandAnecdotes/CAFL.htm

Free Internet-based Consolidated Annotated Frequency List (CAFL) from United States rifer Brian McInturff.

**FREX**
*website:* www.heal-me.com.au

Free interactive database that you can download from the Internet into your computer, available from Australian massage therapist Ken Uzzell.

### *Frequency Finding and Custom Program Services*

**Jeff Sutherland, PhD**
**The Frequency Foundation**
*phone:* 617-606-3652
*website:* www.frequencyfoundation.com

**Char Boehm**
**cpsBioResearch LLC**
*website:* www.dnafrequencies.com

### *Internet Support Groups*

www.rifeforum.com
www.groups.yahoo.com/group/electroherbalism
www.groups.yahoo.com/group/fscan
www.groups.yahoo.com/group/Rife
www.groups.yahoo.com/group/rifers
www.groups.yahoo.com/group/rife-list

### *Miscellaneous*

**David Jeffers**
**OSP Technologies**
**PO Box 7382**
**Bend, Oregon 97708**
*phone:* 815-425-8871
*fax:* 815-425-8871
*website:* www.osptechnologies.com

Sound cards, to convert sound card output into a good square wave.

**Dave Felt**
**Southern California**
*phone:* 626-355-8315
*email*: dave@dfe.net

Dave is an independent Rife researcher and electronics engineer working in plasma research for a university in Southern California. The owner of a computer and electronics repair business, he is available for the repair of many types of frequency devices.

### *Websites*

**Rife Research, Europe**
*website:* www.rife.de
*webmaster:* Peter Walker

Huge website of historical documents, photos, and its own discussion forum on the latest Rife studies from researchers and organizations, many based in Europe. Research includes a scientific placebo study on the use of a Rife pad device to treat arthritis.

**www.dfe.net**
*webmaster:* Dave Felt

Research on Rife history (including extensive documentation on Milbank Johnson) and Bare-Rife unit. Information on complementary health and nutrition, cancer treatments, where to find parts to build your own unit.

**www.rife.org**
*webmaster:* Stanley Truman, Jr.

The most complete collection of Rife historical records: scientific papers; letters to and from Rife; newspaper, magazine and journal articles; Rife's lab notes; photos of Rife, his wife, colleagues and lab equipment; slides of specimens seen through the Universal Microscope.

## SAUNAS

Before, during and after rifing, you need help to eliminate the microbial die-off, heavy metals, toxic chemicals and other debris. For more information, see *The Holistic Handbook of Sauna Therapy* by Nenah Sylver, PhD.

**US Health Equipment Company**
**138 Maple Hill Drive**
**Kingston, New York 12401**
*contact:* Jim Schaeffer, BSME, sales manager
*phone:* 877-772-8639 (toll-free, U.S. only)
or 845-658-9200 (international)
*fax:* 845-658-7224
*website:* www.saunex.com

Portable (on wheels), the Saunex™ is designed to fit through standard doorways. Has slim, patented FIR heaters that line all sides of cabinet and reduce dangerous electromagnetic radiation to almost zero amounts. Heater covers contain grooves that prevent skin burn. Made of ABS plastic treated to eliminate outgassing. Ergonomically designed seat. Plastic can safely accommodate ozone equipment. Temperature control has timer that shuts off after one hour. Worldwide shipping. Outstanding customer service.

## VACCINATION RESOURCE ORGANIZATIONS

These organizations offer various educational and legal materials on child immunization reactions, high-risk individual identification, natural holistic immunity methods, and vaccine legislation. Parents who do not want their children vaccinated may also find medical and/or religious exemption forms. Some groups also produce conferences. The first site offers resources for Australia, Canada, France, and the US Military as well as for the US.

**Vaccination Liberation**
*website:* www.vaclib.org/legal/stateresource.htm

**Global Vaccine Awareness League**
**PO Box 846**
**Lake Forest, California 92630**
*phone:* 949-929-1191
*website:* www.gval.com

**National Vaccine Information Center**
**204 Mill Street, Suite B1**
**Vienna, Virginia 22180**
*phone:* 703-938-0342
*fax:* 703-938-5768
*website:* www.909shot.com

**Think Twice Global Vaccine Institute**
**PO Box 9638**
**Santa Fe, New Mexico 87504**
*website:* www.thinktwice.com

# Appendix B

# Legal Implications of Rife Sessions

*It is no measure of health to be well adjusted*
*to a profoundly sick society.*

—J. Krishnamurti, philosopher and scientist (1895–1986)

Of all the questions that I have been asked about rife technology, one that involves the most explaining is why it is illegal, under many circumstances, for health care practitioners to provide rife sessions for their clients. Throughout this book, I have presented information that by now should have made the answer painfully clear. Unfortunately, what is legal isn't always honorable and fair, and vice-versa.

Nevertheless, we must operate within the law. This Appendix has been written for people who want to share rifing with others. Understand, however, that I am not a lawyer and have no qualifications for giving legal advice! Before writing this portion, I consulted with an experienced attorney in order to provide you with some *general concepts*. Since legal matters can be very complex, and laws differ from place to place, I recommend that you do some research on your own and/or consult an attorney about the laws of the state in which you live. For those readers outside the United States, obviously this information may not apply to you; so please consult a legal expert in your own country or municipality.

For the past several years in the holistic health community, lots of information has circulated about how to conduct oneself doing business as an "alternative" healer. For instance, according to one source, if people who give rife sessions for a living make the disclaimer that they are not medical doctors and are not diagnosing, treating or prescribing for a disease, then it is legal to charge for these services. It is also thought that if clients sign a disclaimer, this absolves the provider from liability.

Unfortunately, this information is just plain wrong. It's true that the language one uses is crucial to staying within the limits of the law. However, regardless of the language one uses, *it's against the law to provide rife sessions for other people for payment*. This is true whether you are a licensed physician, chiropractor or other health care provider, an unlicensed professional, or a layperson. Note that I'm referring to fee-based sessions.

If you are a layperson, you may offer sessions to other people for no charge. If you are a health practitioner, depending on the laws of your state, you might not even be allowed to offer sessions to other people *even if you don't charge a fee*.

A brief summary of America's legal system is pertinent here, so you can become more familiar with some very general concepts of how and why our legal system works the way it does.

America, which was colonized by the British, obtained its legal system from British law. British law sprang from what was called the "divine rights" of kings, who exercised absolute dominion over everyone else. Therefore, the legal system of the United States is derived from the decrees of royalty, and in some ways these principles have never really disappeared.

In Britain, there were two kinds of courts: the King's courts, which were referred to as courts of law, and the Church's courts, which were referred to as courts of

equity and had under their jurisdiction whatever the King decided he did not want under his own court's domain. There was a distinct difference between the two types of courts. The King's word was the stronger of the two. Every type of behavior was legal except for what the law (the King) explicitly stated was illegal. Therefore, if the King proclaimed "you must not do this," whatever he proclaimed one must not do, was, by definition, a crime. What the King called crimes were any acts that directly affected him, such as not paying taxes to the Crown.

The courts of the Church, on the other hand, governed all those acts that were not expressly forbidden by the King—and thus were not considered crimes, even though they might negatively affect people. For instance, if two men had a fistfight, this was between the parties involved; it did not involve the King. Thus their behavior came under the jurisdiction of the Church, and that is why it was called equity law instead of criminal law.

In the United States, formed after the British stole the land from the Natives who lived here, what had been the King's courts in England now became the criminal courts. When charges are brought against someone in a criminal court, the documents always read "The state versus so-and-so [a person]." What had been the Church's equity courts in England became the civil courts here. When charges are brought against someone in a civil court, the documents always read "so-and-so [a person, corporation, organization, government, etc.] versus so-and-so [a person, corporation, organization, government, etc.]."

There are other differences between criminal and civil law. Under criminal law, if someone commits a crime, s/he is innocent until tried by a jury of peers and proven guilty. Under civil law, one may be ordered by a judge to refrain from certain behavior until the trial. For example, if a midwife has been accused of practicing medicine without a license, a judge has the right to forbid her from

## How Medical Licensing Started

In the so-called civilized world, laws restricting or regulating health care treatment arose with the existence of "special interest" groups that wanted ownership or dominion over particular areas of treatment. In pre-industrial Europe, for instance, the health care practitioners were mostly women who functioned as herbalists, midwives and counselors. Then in the twelfth century, the allopathic medical profession as we know it today was established with the help of universities. The peasant healers were seen as competitors to the male doctors, even though these rural practitioners were often the only health care providers for poor people who couldn't afford the fees charged by those in the growing allopathic medical business.

As the medieval Church rose to power, its money and psychological clout, combined with the money and military power of the royalty, helped create the witch hunts that lasted for centuries. The witches were accused "not only of murdering and poisoning, sex crimes and conspiracy," write Barbara Ehrenreich and Deirdre English in *Witches, Midwives, and Nurses: A History of Women Healers*, "but"—in an eerie forecast of what would occur hundreds of years later—"of *helping and healing*." They quote a leading British witch hunter of the time:

> For this must always be remembered . . . that by witches we understand not only those which kill and torment, but all Diviners, Charmers, Jugglers, all Wizards, commonly called wise hurt but good, which do not spoil and destroy, but save and deliver. . . . It were a thousand times better for the land if all Witches, but especially the blessing Witch, might suffer death.[1]

The ruling powers of that era didn't just persecute the healers from the lower, peasant classes. In 1322, a literate and trained woman named Jacoba Felicie was brought to trial by the Faculty of Medicine at the University of Paris for "illegal practice." Despite the appearance at her trial of six clients who swore that she had cured them after the state-sanctioned doctors had all failed, Felicie was charged with a crime. There were many similar trials of other healers, most of them women.

The parallel today is striking. "Alternative" doctors treat thousands of people for so-called terminal illnesses using methods not approved by the licensing boards, and then despite (or rather because of) their excellent track record they are prosecuted for the crime of helping people get well. In the middle ages, the rationale for witch hunts was based on religious dogma. In modern times, the rationale is presumably based on science. But in reality it is all based on hysteria, which is very unscientific. This is how our health care system has come to be based on hierarchy and domination. In the 21st century, there is still a strongly entrenched ruling class that tries to prevent people from making their own decisions about what kind of health care to use.

further helping women give birth until she has her trial and receives a verdict.

When the United States was formed, each individual state was really like a separate country within the larger umbrella of the federal government. The federal government was initially formed for three purposes only: to provide for the common defense, regulate interstate commerce, and oversee the minting of money, much as France, Germany, Italy and other European nations are separate countries united under the larger system of the newly formed Euro currency. Even though the federal government has become much more powerful than the founding fathers originally intended, the remnant of individual statehood can still be seen today in the lack of consistency in different states' laws on the same issues, from divorce to local voting to medical licensing.

All of the recognized health care professions such as medicine, chiropractic, massage therapy, surgery, etc., are regulated by professional boards that are given power by their particular state to monitor and control their respective professions. This has similarities to how the King delegated legal authority to the Church, but is not an exact parallel: the state boards operate legally in an area somewhere between criminal law and civil law.

The rules of one state board will differ somewhat from the rules of another state board, depending on the states in which they operate. However, all state boards operate in a similar manner: the boards regulate the content of professional education. The boards set the rules under which the professionals may practice their specific health care role. The boards issue licenses that allow the health care provider to practice in that particular state. And the boards have the power to *revoke* those licenses if they think that the health care professionals are behaving in a manner that the licenses don't permit.

As long as a health care provider upholds for all patients a certain *standard of care* that has been determined by the state board, s/he is allowed to keep the license. When that standard of care is no longer upheld, the license is revoked. The rationale for this cancellation is that by deviating from the licensing requirements, the health care provider is changing what comprises the "standard of care" for all *other* health care providers and is thus *endangering the profession as a whole*.

State boards wield considerable power; they are allowed to revoke someone's professional license without a jury trial. The notion "innocent until proven guilty" does not exist where the state board is concerned. It simply has the power to take someone's license if it wants. Once someone's license is revoked, the health care professional can no longer work in that field.

What, exactly, constitutes standard of care? Health care licensing regulations vary, depending on the state in which the profession is practiced. For instance, in the United States, only licensed medical doctors are permitted to diagnose, treat, and prescribe for illness considered microbe-based, such as malaria or scarlet fever. However, within each individual state, the laws can vary a great deal. In some states, nurse practitioners can diagnose, treat and prescribe for certain illnesses. And in some states, chiropractors are legally permitted to diagnose and treat skeletal and muscular disorders because these disorders are considered within the professional scope of the chiropractor, despite the limitations of their professional capacities in other states. Similarly, licensed massage therapists are forbidden to promote massage as improving "range of motion" (even though it often accomplishes this) because legally, only physical therapists are allowed to use this phrase (in certain states in the US). From a holistic viewpoint, these staunchly independent categories prevent, rather than ensure, quality. Of course one would not want a physical therapist performing surgery—that's what surgeons are trained to do—but conceivably much more healing could take place if practitioners of all types could become more interdisciplinary. However, the laws circumscribe practitioners into their own tight niches. The professionals who have the most leeway to practice in many areas, with no or minimal training, are medical doctors. This was highlighted by the case of a doctor in the state of Arizona who was, by law, allowed to perform cosmetic surgery on clients without training. Unfortunately, his lack of special training in performing surgery on the face cost several people their lives.

On the other hand, in most states, medical doctors are highly regulated as to what procedures they are allowed to offer for cancer. In the US, laws concerning cancer care are quite restrictive. Doctors can lose their licenses for treating cancer with anything other than chemo, radiation and surgery. This leads us directly to a discussion about rife technology.

Generally speaking, in the United States no health care professional is allowed by a state board to use rife therapy for treating disease because the technology is not approved by the Food and Drug Administration. Should a doctor, for instance, use rife technology, s/he is performing a service that other doctors don't perform, and is therefore altering what the state medical board has determined is the standard of care. According to the state board, the doctor is now endangering the practice of other doctors. Because the doctor has violated the agreement with the state board that issued the license, the doctor has no protection in civil court if he or she is sued: the law has been broken, end of discussion. Thus the state board has the power to revoke the doctor's license. And this is why the board *does* revoke the license, even if no legal action has been taken against

a doctor by a client and even if the person in fact wants, likes, has benefited from, or needs the treatment.

Remember the "hypocritical" doctor described in Chapter 6? Fear of having his license revoked may be why he received chelation therapy himself while telling his client that it was no good. This may explain why many doctors are quite secretive about their sympathy with (and participation in) non-approved modalities. As long as state licensing boards so tightly control what health care providers can and can't do, and also what they can and cannot *say*, health professionals will be limited in their ability to help their clients.

Now you know why doctors, chiropractors, massage therapists, etc., do not administer rife frequency therapy. They may want to. They may in fact use it in their own homes for themselves, their families and their

## After the 1800s: AMA Influence

The American Medical Association (AMA) was founded in 1847 around two propositions: one, all doctors should have a "suitable education" and two, a "uniform elevated standard of requirements for the degree of MD should be adopted by all medical schools in the US." In the days of its founding, AMA was much more open—at its conferences and in its publications—about its real goal: building a government-enforced monopoly for the purpose of dramatically increasing physician incomes. It eventually succeeded, becoming the most formidable labor union on the face of the Earth.

AMA's initial drive to increase physician incomes was motivated by increasing competition from homeopaths (AMA allopaths use treatments—usually synthetic—that produce effects different from the diseases being treated while homeopaths use treatments—usually natural—that produce effects similar to those of the disease being treated). This competition did serious damage to the incomes of AMA allopaths. In the year before AMA's founding, the New York Journal of Medicine stated that competition with homeopathy caused "a large pecuniary loss" to allopaths. In the same issue, the dean of the school of medicine at the University of Michigan railed against competition because it made treating sickness "arduous and un-remunerative." Apart from reversing rapidly declining incomes, allopaths also wanted to rescue their public reputations, which quite reasonably suffered given their proficiency in killing patients through such crude practices as bloodletting ("exsanguination") or mercury injections (poisoning). . . . The Massachusetts Medical Society opined in 1848 that physicians should be "looked upon by the mass of mankind with a veneration almost superstitious."

"The curse of medical education is the excessive number of schools" [was said by] Abraham Flexner [in] 1910. To accomplish the twin goals of artificially elevated incomes and worship by patients, AMA formulated a two-pronged strategy for the labor market for physicians. First, use the coercive power of the state to limit the practices of physician competitors such as homeopaths, pharmacists, midwives, nurses, and later, chiropractors. Second, significantly restrict entrance to the profession by restricting the number of approved medical schools in operation and thus the number of students admitted to those approved schools yearly.

AMA created its Council on Medical Education in 1904 with the goal of shutting down more than half of all medical schools in existence. . . . In six years the Council managed to close down 35 schools and its secretary N.P. Colwell engineered what came to be known as the Flexner Report of 1910. The Report was supposedly written by Abraham Flexner, the former owner of a bankrupt prep school who was neither a doctor nor a recognized authority on medical education. Years later Flexner admitted that he knew little about medicine or how to differentiate between different qualities of medical education. Regardless, state medical boards used the Report as a basis for closing 25 medical schools in three years and reducing the number of students by 50% at remaining schools.

Since AMA's creation of the Council a century ago, the US population (75 million in 1900, 288 million in 2002) has increased in size by 284%, yet the number of medical schools has declined by 26% to 123. In terms of admissions limits, the peak year for applicants at US schools was 1996 at 47,000 applications with a limit of 16,500 accepted. This works out to roughly 64% of applications rejected. . . . AMA would likely argue that there's nothing necessarily wrong with very high rejection rates. This is correct, except for the fact that these rates are being applied to pools of candidates who are cream-of-the-crop in quality and have put themselves through a very costly admissions process. . . .

AMA has built an impressive edifice, one that has completely insulated physicians from recessionary ("cyclical") and until recently, technological ("structural") unemployment. While decade in, decade out, recessions, depressions, consolidations, and (recently) outsourcing have dislocated millions of blue-collar, engineering, computer programming, and middle management employees from jobs and forced permanent career changes, physicians as a class have been almost completely immune. Unlike workers in most other industries, a competent, licensed physician with a clean record who remains unemployed despite months and months of search for work is unheard of in the US.

—Dale Steinreich, "100 Years of Medical Robbery"
*Townsend Letter*, October 2004

pets. However, they dare not mention it to their paying clients—or even clients who aren't paying.

What about legal ramifications for the layperson? If, *for a fee*, a layperson performs a material service for someone else that makes them *feel better*—whether it's giving advice to take a relaxing hot bath to calm their nerves, selling them supplements, or even offering a glass of water—*this constitutes practicing medicine without a license*. Practicing medicine without a license is against the law, and is therefore a crime. (Admittedly, "feeling better" has wide implications. However, this is the law as it now exists.) Even if the layperson uses words like "support" and "restore balance," these can still be *interpreted to mean healing of some sort*, which is, again, practicing medicine without a license.

Thus, various forms of "energy" work, which can include (but are not limited to) chakra and aura balancing or rife frequency therapy—*any modality that is not approved for medical purposes*—is legally forbidden. (I'll discuss the exceptions in a moment.) Keep in mind that a suggested donation of any monetary amount, or even a non-cash donation such as a chicken or pair of free movie vouchers, is considered a fee.

The laws that restrict the offering of services are not limited to payment. For instance, in the state of Georgia, even if you do not accept payment, having a room in your home or office where people visit to receive medical services might get you into trouble. Each state has different laws.

Of course, not all laws are enforced all the time, and some laws are not enforced even most of the time. To my knowledge (using the above example), not many people have been arrested for accepting chickens in exchange for giving rife sessions. However, if the legal authorities wanted to, they *could* make arrests. As one attorney told me, the reality is, if all the laws that were on the books were enforced, over half the population would be in jail.

Often, laws are unreasonable and/or impractical to enforce. For instance, in some states, laws are on the books that forbid certain types of sexual contact even between husband and wife. No one knows whether or not these laws are being broken unless a malevolent spy is in the bedroom or one of the two parties tells—and even then, it is doubtful that law enforcement personnel would want or feel a need to prosecute. In the case of some laws that don't hurt other people, when enough people routinely disobey a law, it eventually gets changed to reflect reality. This has happened in some states with the posted speed limit. When enough people drove 10 miles above the speed limit, the signs were changed to reflect the reality.

However, many people are upset enough by what they perceive as "practicing medicine without a license" that they are willing to report someone to the authorities. It is unlikely that the authorities would consider as a threat, say, someone who earns a living doing chakra energy balancing. This is because a chakra energy balancer is unlikely to earn enough money—or become famous enough—to threaten the livelihood of a medical doctor. However, if a chakra energy balancer was highly successful in making people with "terminal" illnesses well again, and was taking substantial business away from doctors, the authorities might be more inclined to arrest that person. (Also, doctors or even disgruntled clients, might be more inclined to report such a person.)

Under a few conditions (which vary from state to state), innovative learning or healing modalities are sometimes considered legal. For instance, a religious organization might be created whose tenets (to use one example) involve the use of vibrational healing. Or, an educational foundation (that involves courses, educational materials, and so on) might be created to teach the theory and practice of vibrational healing. *But such organizations must operate within the confines of the law.* There can be different criteria as to what constitutes *bona fide* educational organizations, and especially religious or spiritual organizations. It is beyond the scope of this book to advise how that is done; and besides, the laws vary within individual states. Please consult with a qualified attorney.

So far, I have focused on the illegal aspects of offering rife technology to others. Now I want to address the legal aspects. It is *not* against the law for you to use rife equipment to experiment on yourself, on laboratory animals, and on microorganisms. There is also nothing illegal about a layperson sharing rife equipment with others *as long as s/he does not accept payment for it*. (If a licensed health care professional shares rife equipment with others—even if it's *not* for a fee—and the licensing board discovers this, the board can always say that the professional has violated his/her professional licensing credentials. After all, it's not as though the health care professional can remove the license as one removes a coat: s/he remains licensed at all times, regardless of whether or not s/he is formally conducting business.)

It's also *not* against the law to give talks about the history of Rife's inventions, such as the Universal Microscope and Beam Ray; about how Rife discovered the Mortal Oscillatory Rate of microbes; about the experiments with animals and clinical trials with human beings conducted by Rife and his colleagues; about the legal and medical persecution endured by Rife, etc. And it is *not* against the law to *write* about this technology. (The dissemination of information is protected by the First Amendment, which guarantees freedom of speech.)

Given the limits of the law, what are the chances that rife technology will be legally approved for medical use in the United States? In order for this to occur, two major changes

### Your Husband's Dead—Too Bad!

The Supreme Court gave business [a big win on February 20, 2008] by shielding companies from lawsuits. . . .

The court said makers of medical devices, such as heart valves and pacemakers, cannot be sued by injured patients if the Food and Drug Administration had approved the devices for sale. . . . The court threw out a lawsuit against Medtronic Inc. over a balloon catheter that burst in the chest of a New York man. He underwent emergency surgery and died some time later. His wife sued Medtronic, saying the catheter was defective.

But in an 8-1 decision in Riegel vs. Medtronic, the court rejected her suit, saying juries may not second-guess the FDA on whether such devices were safe. In [the decision], the court . . . protect[ed] companies from juries and state regulators.

Justice Ruth Bader Ginsburg, the lone dissenter in the Medtronic case, said [that] . . . Congress did not intend to shield makers of medical devices from being sued when it adopted [the law]. . . . She called the ruling "a radical curtailment" of the right to "seek compensation for injuries caused by defectively designed . . . medical devices."

—David G. Savage
"Supreme Court gives business 2 wins"
*Los Angeles Times*, February 21, 2008

would have to take place. The FDA or other appropriate government agency would have to approve it. And the health care licensing boards would have to permit health care providers to include rifing as part of their standard care. In the meantime, if people want access to the technology, they can either receive treatment in countries where rife frequency healing is legal, they can borrow a machine belonging to a friend, or they can purchase their own unit.

People who are financially secure can easily buy a rife machine. But the average consumer—given the lack of government approval, media blackout, and the muzzling of sympathetic doctors by state licensing boards—is unlikely to know enough to even consider the technology. Here is the crux of the challenge. How can people feel comfortable with the technology unless they hear about it often, and in a positive way? And how can they gain repeated favorable exposure to the technology if a government agency or government-sponsored agency does not approve of it? In our culture, FDA approval is equated with effectiveness and safety—even though, as discussed in Chapter 1, legal sanction and effectiveness often have nothing to do with each other.

Advertising consists of bombarding people with a message about a product so often, that once the message becomes entrenched in everyday awareness, the product is accepted as worthwhile, or at least innocuous. Repetition works on the nervous system of human beings like a horse-drawn carriage traveling along a dirt road. The wheels create ruts in the road. When other carriages subsequently come along, their wheels follow the same grooves because it's the path of least resistance. Continually receiving the same input re-stimulates and reinforces the original nerve pathways—and along with them, the original message. Then, what was once only an idea among many becomes the norm, something that's accepted without question.

When a healing modality is legalized, it becomes *safe by default*. Once it is legalized, it becomes familiar. As a familiar modality, it then becomes the *only* modality—and thus is considered the only *safe* one, regardless of its merit. Rife technology has not received much press compared to, say, drug intervention or surgery. Therefore, its lack of publicity automatically makes people doubt its safety. This, in turn, makes it harder to legalize. And the fact that providing rife sessions for a fee is not legal also adds to the doubts about its safety. This, in turn, generates unfavorable publicity, or suppresses mention of the technology altogether in mainstream outlets. Thus the cycle continues.

There have been small victories, however. The California Health Freedom bill, which has been in effect since January 1, 2003, made it legal to practice any unlicensed non-invasive therapy (including homeopathy) in California, as long as certain guidelines are followed. Among these guidelines is the requirement that the practitioner inform the client of his or her background, and obtain the client's permission as to what form of therapy will be given.

One way to help electromedical healing modalities gain medical, social, and political acceptance—and thus become legal—is to publicize them within the limits of the law. This *Rife Handbook* is my attempt to help in that wave of awareness.



**ENDNOTES**

1 Barbara Ehrenreich and Deirdre English, *Witches, Midwives, and Nurses: A History of Women Healers* (Old Westbury, N.Y.: The Feminist Press, 1973), 10–11.

# Appendix C

# Healing with Electromedicine and Sound Therapies

*The universe is wider than our views of it.*

—Henry David Thoreau, American Naturalist and Author (1817–1862)

## INTRODUCTION

In the 1960s, counterculture hippies were urging us to give peace a chance (great advice). To expedite that process, it was helpful to have "good vibrations"—considered so important that the Beach Boys wrote a catchy song with this title. It was easy to tell who had good vibes and who didn't. An optimistic, considerate person was considered "high frequency," while a pessimistic, disagreeable individual was "low frequency." Not surprisingly, everyone wanted to be around the folks who had good vibes.

Colloquialism aside, saying that someone is "high frequency" is based on legitimate science. Every molecule, cell, living body, and object is comprised of energy that manifests as physical matter. Some of that energy is detectible as frequencies that belong to one or more radiation bands in the electromagnetic spectrum. And these frequencies correspond to biochemical and biological processes in the body.

In the healing arts, there are different ways to affect matter. With conventional medical care, the chemical, functional, and/or structural change in organs, glands, and other tissues are created either through biochemical manipulation (drugs) or physical manipulation (such as surgery). With electromedicine therapies, healing is achieved by working with the electromagnetic radiation (emissions) and related energy fields that form, and are emitted by, physical matter. Broadly speaking, electromedical devices produce and focus specific frequencies that can be in the form of electromagnetic fields, electrical current, magnetism, visible light, heat, or other energy.

Although electromedicine is widely used in Europe, it is less known in the United States. Few people in developed countries would question the use of the ubiquitous transcutaneous electrical nerve stimulation (TENS) unit, which emits small amounts of electrical current to manage pain. And magnets embedded in the insoles of shoes, also for pain management, are now a regular item in consumer catalogues. But electricity and magnetism are primarily used diagnostically in hospitals—such as with the standard electrocardiogram (EKG or ECG) to assess the health of the heart, and with magnetic resonance imaging (MRI) to show the inside of the body. Most medical professionals (and the lay public) are not inclined to take advantage of less popular electromedical devices because they do not understand how they work. And those who do use the equipment might talk about "frequencies" or "energy" without a full grasp of what these actually are or the science behind the technology.

Fortunately, receptivity to electromedicine is increasing. Health professionals are expanding their practice (and their success rate) with safe, holistic technologies. The general public is beginning to recognize and request electromedicine as an effective and valid treatment modality. In this

discourse, I will explain what "frequency" and other terms mean as they are applied to the electromagnetic spectrum. Electromagnetic energy in living systems will be reviewed. I will explore several types of electromedical modalities. And I'll discuss the related modality of sound therapy.

## ELECTROMEDICINE THROUGHOUT HISTORY

Healing with electromedicine is not new. From electricity (lightning) and static electricity (friction) to magnetism (lodestone), from the sun (for its far infrared and ultraviolet radiation) to visible light (for its different colored wavelengths), humans have used electromedicine for healing since ancient times. The therapies were first based on natural phenomenon, but about the early 1800s, electrical current began to be harnessed—first for providing light and then for more sophisticated needs, such as for telegraphing messages over long distances and running machines in factories. By the 1900s, electrical power was common in the home as well as the workplace.

Given the healing properties of many forms of energy, it did not take long before numerous electronic devices invented for medical treatments were considered mainstream. In *Electrotherapy and Light Therapy with Essentials of Hydrotherapy and Mechanotherapy*, published in 1949, Richard Kovács describes an impressive array of electronic equipment, most of which had already been in use for half a century. This equipment utilized alternating current, direct current, low frequencies, high frequencies, static electricity, diathermy, infrared rays, ultraviolet rays, and ultrasonics. Modern electromedicine practitioners will recognize some of these devices as forerunners of those used today—if not *the* machines still being used, since some devices have not changed much in 100 years. Some of this equipment included Georges Lakhovsky's multiwave oscillator, the Violet Ray (which utilized Nikola Tesla's coil), Edgar Cayce's Wet Cell, and Dr. John Harvey Kellogg's Electric Light Cabinet. The conditions treated were virtually unlimited: muscular aches and pains, skin conditions, gynecological problems, some heart conditions, respiratory ailments, gastrointestinal disorders, acute and chronic infections, and degenerative diseases.

Given the wide applications of such equipment over half a century ago, what seems remarkable is not the abundance and range of devices, but rather the resistance to electromedicine today. Of course, the invalidation of electromedical therapies by the medical mainstream—and laws passed to suppress the use of such devices—drove these modalities out of the public's immediate consciousness. Electromedicine as a valid treatment modality has met with derision and skepticism from practitioners and laypeople alike. But electromagnetic fields are successfully used for diagnostic purposes, with the understanding that living organisms are energy-based. If all sorts of electrical, thermal, and magnetic devices (as well as the acoustic-based ultrasound) are used for testing, why can't they just as easily be used for healing?

As might be expected, the pharmaceutical industry has taken advantage of people's ignorance and resistance to any modality that seems new and strange, for if the benefits and track record of electromedical devices were widely publicized, drug companies would lose billions of dollars each year. There is little effort by mainstream media to educate consumers, since it depends on considerable revenues from the advertising of drugs.

Unlike drugs, each of which can be used only one time by one person and for just one or two conditions, the many electromedicine modalities that have emerged in the last century

- Are non-invasive.
- Support the body's innate ability to heal, instead of substituting for its natural functions.
- Are fairly easy to use, by laypeople as well as professionals.
- Can be utilized over the course of a lifetime (since they address many conditions).
- Can be used with more than one person.
- Are relatively inexpensive, considering their range and scope.

How and why do electromedical devices work? Whether one is a health care provider or a seeker of health services, understanding the science behind electromedicine can make the difference between discerning good vibrations from bad. The best place to start is with a discussion of the EM spectrum and its related component, sound.

## THE ELECTROMAGNETIC SPECTRUM AND SOUND

### *EM Spectrum Defined by Its Particles and Their Effects*

The electromagnetic spectrum (or EM spectrum, sometimes also called EM waves) is the term used for many different energy oscillations that comprise our known universe. As shown on the chart of the EM spectrum (Figure 1), these different oscillations with

different characteristics range from the slower-moving, lower-energy electrons of electrical current to the faster-moving, higher-energy photons of visible light and other waves.

It's common to think of the various EM energy bands as unrelated phenomena that are separate from each other, since we perceive them differently with our senses (when we can perceive them at all). We see visible light as color, we feel far infrared radiation as heat, and so on. But all these energies are sequentially connected to each other as a *continuum of waves* in the EM spectrum. The nature of the particles depends on how fast they are moving and the qualities that they exhibit.

Humans perceive most of the EM frequencies *indirectly* through their *effects*, rather than directly perceiving the frequencies themselves. We label and differentiate EM waves from each other, according to how they manifest physically. By harnessing the waves with various

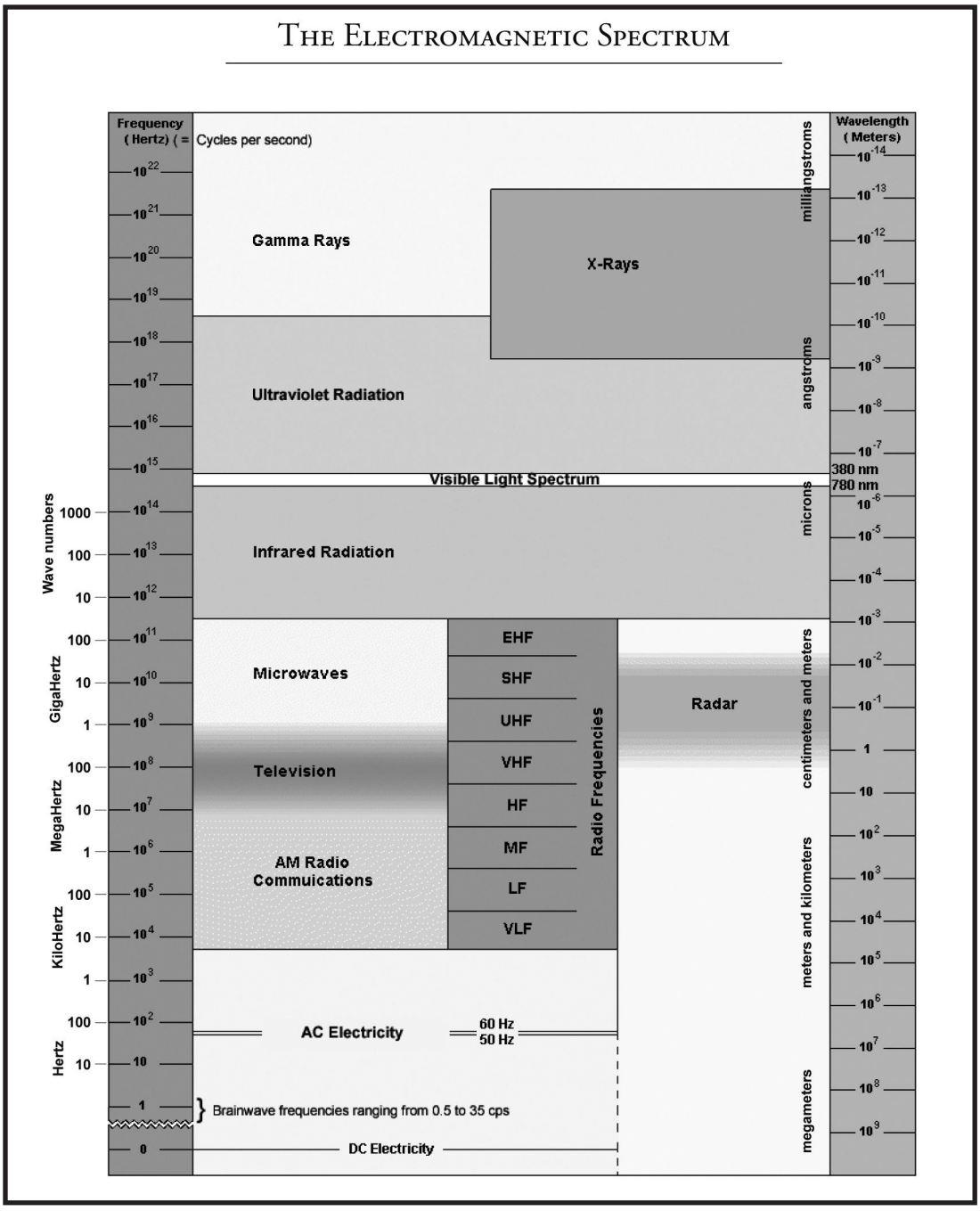



*Figure 1: The Electromagnetic Spectrum*

electrical devices and some passive (non-electrical) materials, we can produce tangible physical phenomena. For instance, we access frequencies on the radio spectrum with an antenna, which transmits and receives radio broadcasts. An X-ray machine utilizes certain radiation on the X-ray band, which allows us to see inside the body, and so on.

The existence of an EM field includes both electric and magnetic fields. An EM field has certain properties, electrical fields have other properties, and magnetic fields possess yet others. Electrical and magnetic fields can be separated from EM fields as their own distinct energies. They can also exist in EM fields in varying proportions.

### Frequency, Wavelength, and Amplitude

All the energies in the EM spectrum have different frequencies. The term *frequency* pertains to the number of cycles per second at which a wave vibrates or moves. (The designation "CPS" has now been replaced with *hertz*, or *Hz*.) Waves also have different *sizes* or *lengths*, with various terms such as micron, angstrom, nanometer, and meter used to measure the length. (The waves shown here are *sine* waves. Different shaped waves will be discussed later.) See Figure 2.



***Wave*** is a *movement of energy* along a directional axis.

***Frequency*** is a *rate of oscillation* measured by the number of wave cycles per unit time (usually in hertz).

***Wavelength*** is the *length* or *distance* between *two identical points* on the wave (which comprises *one complete wave cycle*). This is described with different terms of measurement, depending on the size of the wave.

***Amplitude*** is the point of *maximum intensity* of the signal (usually regarded as the highest point on the wave). It is comparable to turning up the volume on a radio.

*Figure 2: Key EM Wave Definitions*

The peak of the wave is the highest point on top. The trough of the wave is the lowest point on bottom. The length of a wave is often measured peak to peak. (See arrows in Figure 3 below.) Technically, however, any portion of the wave can be used as a reference point, as long as the measurement addresses one complete cycle (peak to peak, trough to trough, etc.).

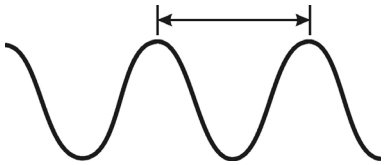


*Figure 3: Length of One Wave Cycle*

As the number of waves within a given space—in other words, their *frequency—increases* in number per second, their size becomes *smaller*. And as the number of waves *decreases* in number per second, their size becomes *larger*. Put another way, the *higher the frequency* or oscillation rate of a wave, the *smaller the wavelength*. The *lower the frequency* or oscillation rate of a wave, the *larger the wavelength*. "A homely comparison to visualize this," Kovács analogizes, "may be a motley army of giants and dwarfs, all under orders to reach the same goal simultaneously; in order to do so the giants step out leisurely, while the dwarfs run and take hundreds of steps for each one of the giants."[1]

In Figure 4 below, the frequency of the top wave is higher than the frequency of the bottom wave, because the distance is shorter between the peaks of the waves. The wave forms in this example are simple *sine* waves.

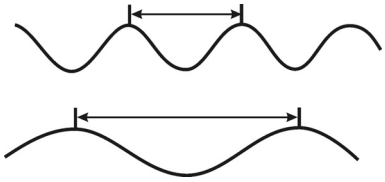


*Figure 4: Comparing Two Frequencies*

In order from slower-moving to faster-moving, frequencies in the EM spectrum include radio waves, microwaves, infrared light, visible light, ultraviolet light, X-rays, and gamma rays.

### Electric Fields and Magnetic Fields

So far, I have been discussing electromagnetic radiation from the EM spectrum. Electromagnetic *radiation* (radiant energy) and electromagnetic *fields* (non-radiant spaces in which energy exists) operate somewhat differently. Both come from electromagnetic sources. However, energy that *radiates* exists separately from its source. It travels away from its source, and it continues to exist even if the source is turned off. EM *fields* are not projected out into space. They no longer exist when the energy source is turned off.

Static electricity and magnetism are both static fields that share a complex and intimate relationship with each other. An oscillating electric field generates an oscillating magnetic field, and an oscillating magnetic field generates an oscillating electric field. Each exists at right angles to the other. Most importantly, when *movement* is introduced to either a static electrical field or a magnetic field, they become *electromagnetic* fields. This will be important to remember when we later examine a number of different electromedical devices.

### *Sound*

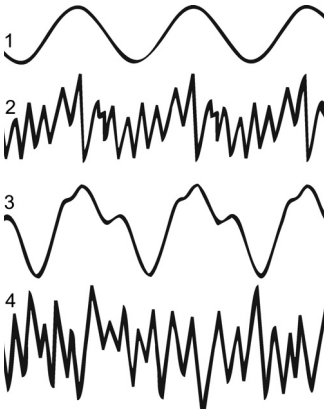
The EM spectrum is often compared to sound, since the two phenomena share many of the same features. Sound is comprised of *mechanical pressure waves* in a compressible medium such as air or water. Put another way, sound is created when an object moves with enough force to displace (compress) the surrounding air (or other medium capable of carrying these waves). We hear many of these waves (air currents) as audible frequencies (sound), because after the air reaches the ear, it minutely moves the eardrum—a delicate drum-like membrane—and sends the oscillations to the brain, where they are then decoded into traffic noise, music, spoken words, the barking of a dog, and so on. The waves of sound could be created by a pen dropping on a desk, someone's vocal cords being moved in speech, or a violin string being plucked.

The frequency of a wave (expressed as cycles per second) that applies to the EM spectrum also applies to music, a subset of sound. The pitch of a note depends on its frequency. A *lower frequency*, or an oscillation rate of *fewer* Hz, is *slower-moving* and produces a *lower tone*. A *higher frequency*, or an oscillation rate of *more* Hz, is *faster-moving* and produces a *higher tone*.

Frequency can be more easily understood and perceived with music than with random sound (noise). Noise—as well as some harsh electronic music—is comprised of *disorganized waveforms*. This disorganization manifests acoustically as indistinct, muddy pitches. Music, on the other hand, is comprised of *organized waveforms*. This organization manifests acoustically as distinct, discernible pitches. The difference between music and noise can be seen on an oscilloscope—a testing device that shows visually what we hear acoustically—with real-time pictures of wave forms (Figure 5). Noise, or random sound, on the oscilloscope appears as irregular wave forms, while music or pure tones appear as regular wave forms. For most people, the acoustic and the visual correlate: music is more pleasing than noise to the ear, and regular waveforms are more pleasing than irregular waveforms to the eye. In Figure 5, in the examples of music, all the instruments are playing the same note.

The wave forms of *music* on an oscilloscope show organization, with obvious patterns.

The wave forms of *noise* on an oscilloscope show disorganization, with no discernable pattern.




**Music – Symmetry**

1. **Tuning Fork.** Very pure sound; prongs vibrate regularly.
2. **Violin.** Bright sound, angular waveform. Same pitch as tuning fork: peaks of the waves are the same distance apart and pass at the same rate as those produced by the tuning fork.
3. **Flute.** Playing same note as first two. Purer sound than that of the violin, so its waveform is more rounded.

**Noise – Asymmetry**

4. **Cymbal.** Irregular patterns and jagged, random waveforms, no discernible pitch. No regular pattern of peaks and troughs.

Photo courtesy of, and text adapted from,
*Dorling Kindersley Encyclopedia*

*Figure 5: Comparing Music and Noise Wave Forms on an Oscilloscope*

### *Different Shapes of Waves*

As illustrated in the diagram of notes played by various instruments, waveforms have different *shapes*. Figure 6 shows some common ones in their simplest form.

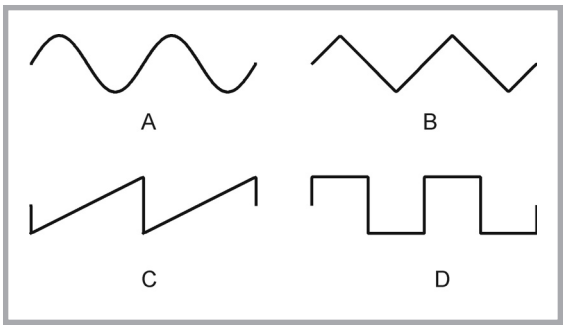



*Figure 6: Wave Forms.*
*(A) Sine; (B) Triangle; (C) Sawtooth; (D) Square*

The more complex an object, the more frequencies it contains. Also, the more complex wave forms it will have. A useful analogy between simple and complex forms is the difference between plucking a single string (which represents a simple organism like an amoeba) and playing an entire orchestra (which represents a complex organism like a human being).

### Symmetry and Asymmetry: The Language of Math and Music

The symmetry of music and the asymmetry of noise can also be described *mathematically*. Mathematically, sound is comprised of random frequencies that have *little or no relationship* to each other. Mathematically, tones or music are comprised of frequencies that *do* have relationships to each other. (A single, true tone will naturally be in symmetry with itself.) The absence of certain mathematical relationships in sound and the presence of those relationships in music explain why sound can irritate the nerves and music can calm them.

Although EM fields and sound transmit frequencies in different ways, the mathematical measurements representing the relationship between electromagnetic frequencies are the same as for music. Put another way, the harmonic relationships of each system are governed by identical mathematics. The frequencies of musical tones and the EM spectrum exist in octaves, higher harmonics, and lower harmonics of each other. Both musical tones and EM spectrum frequencies have mathematical relationships to some of the other frequencies that are higher or lower. For example, a frequency that is multiplied or divided by two produces a higher or lower *octave* of itself.

As with sound, EM fields possess symmetry and asymmetry. Various electromedical devices can detect the equivalent of either noise or music in the oscillations of cells and tissues in the body. When the oscillations are *not mathematically harmonious* (which corresponds to noise), there is *disease and degeneration*. When the oscillations are *mathematically harmonious* (which corresponds to music), *the cells function optimally and correctly*.

### Pulsed Magnetic Fields

There are many ways to induce an EM field. One way is with magnetism. Although magnetism per se exists in a static state, inducing movement in a magnetic field creates a corresponding movement in the electric field that naturally exists at right angles to it. The result is *electromagnetic radiation*. When this type of EM radiation is created from movement, it is commonly referred to as *pulsed*.

Pulsing a wave means that the signal is "on" for a brief period, then off, then on, then off, etc. Pulsing is independent of the frequency, which is equivalent to a note in music. The pulsing is like the rhythm.

Carrying the analogy further, a wave taking up its full cycle of "space" is a whole note. A wave taking up only half of that cycle is a half note. A wave taking up only one quarter of that cycle is a quarter note, a wave taking up only one eighth of that cycle is an eighth note, and so on. Speaking musically, the "on, off, on, off" aspect of the wave could also be regarded as "note, rest, note, rest, etc."

Many of the pulsed magnetic fields that are used in electromedical devices have a "rhythm" comparable to only an eighth note, because the wave is "on" for only a brief period. But that brief period is long enough to induce movement in the body. The movement of the EM radiation in the body translates into ion transport, increase in blood and lymph flow, and more. Any frequency can be pulsed.

In Figure 7, the bottom line shows a "lag time," or interval when the wave is at rest, before it resumes its upward-moving cycle.

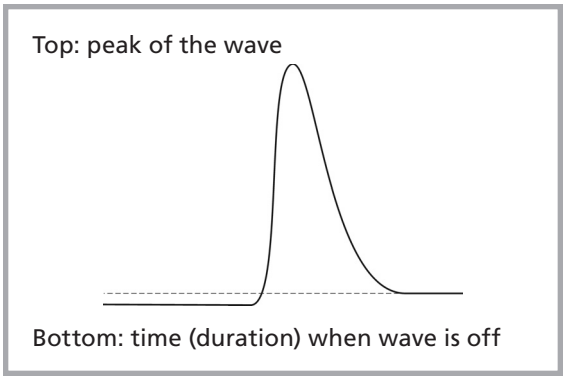



*Figure 7: Wave Lag Time*

Figure 8 shows two waves in succession. Here, the "lag time" or rest interval between the waves is easily seen. Note that there is no trough to the wave because it has been truncated.

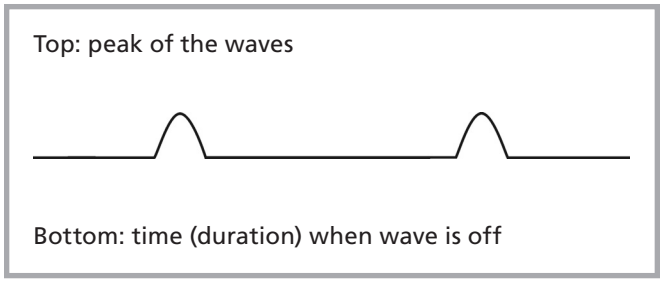



*Figure 8: Two Waves*

Pulsed electromagnetic radiation induces therapeutic results, which is why it is used. Some electromedical devices using pulsed EM fields will be discussed later.

## THE ELECTROMAGNETIC BODY

### *Energy in Living Systems*

Electromagnetic waves can be used for diagnostic purposes because living organisms are energy-based. Historically, most cultures have erroneously regarded the body solely as a mechanical and biochemical organism. But every cell in the body is a transmitter and receiver of electromagnetic information. The following are examples of how human beings, animals, and plants contain and respond to EM fields:

- During migration, monarch butterflies, locusts, and even blindfolded birds navigate flawlessly. Salamanders and turtles also use magnetic fields to navigate. We now know that magnetite, a highly magnetic mineral, is found in the tissue and brains of insects, birds, reptiles, and amphibians.
- Bacteria use their magnetic sense to burrow deeper into the mud. We now know that magnetite is also present in bacteria and protozoa.
- Many kinds of fish are able to follow each other in organized formations ("schools") due to the magnetic fields generated by the magnetite in their bodies.
- The whiskers of dogs, cats, and other animals are now recognized to function as antennas, due to their sensitivity to electromagnetic fields.
- In plants, the sharp points of leaves, as well as pine needles and the blades of some species of grass, act like antennas for electrical signals.
- Melatonin, a hormone that (among other functions) helps induce sleep, is produced by the pineal only in darkness. We now know that the pineal gland, deep inside the brain in the skull, is exquisitely sensitive to light.
- Stingrays find food because they can detect normal, minute amounts of electrical discharge or magnetic fields emanating from their prey.
- Fish, dolphins, and whales use both the Earth's magnetic fields and sonar (sound) for navigation and communication.
- The behavior of some animals has long been used to forecast earthquakes. Cattle stampede, birds sing at the wrong time of day, mother cats move their kittens, snakes seek shelter. B. Blake Levitt writes: "It is now thought that [the animals] are reacting to changes in the Earth's magnetic field, as well as to electrostatic charges in the air—long before the quake actually occurs or registers on even the most sensitive instruments."[2]

In his article "The Electrical Properties of Cancer Cells,"[3] medical doctor Steve Haltiwanger describes how the body partly functions as a living electrical circuit. Various cells and tissues are conductors (allow for electron flow), insulators (inhibit electron flow), semiconductors (allow for electron flow in only one direction), capacitors (accumulate and store charge, later to release that charge), and so on. Cells transmit and receive energy, and each has its very own frequency with which it oscillates.

Magnetic fields applied to the body create biological changes, as do electrical fields (which are related to magnetic fields). We now know that in humans, the sinuses, some other bones in the face, and various tissues in the body contain magnetite.

Not only is every cell in the body a transmitter and receiver of electromagnetic information, it is these various *electromagnetic frequencies that precede and correspond to biochemical functions*. For example, healthy cells oscillate at higher frequencies than do unhealthy cells such as cancer cells. The lower frequency of cancer is reflected by (and causes) the aberrant biochemical reactions within the cell. Put another way, the biochemical differences between normal healthy cells and cancer cells correspond to the differences in the electrical properties of each. The same holds true for magnetic fields. Magnetic fields correspond to biological activity. A change in the magnetic field means a change in the cells, either beneficial or harmful.

### *Harmful Effects of EM Radiation and EM Fields*

In the last century, medical doctor and stress pioneer Hans Selye observed that when bodily tissues are subjected to

repeated, intense input—whether chemical (environmental pollutants, adrenal "fight-or-flight" hormones) or mechanical pressure (bruising)—the body perceives it as stress. It responds by tightening the envelope of membranous fascia that surrounds the muscles. This, in turn, causes significant biochemical malfunctions, not the least of which is the disruption of the cell membrane. Other stressors that can disrupt cell integrity include the actual puncturing of the cell membrane, and microbial infection. Cell permeability for the proper materials is key. If glucose, other nutrients, and beneficial hormones cannot efficiently enter the cell, and if wastes cannot completely exit, microbes can proliferate and degenerative disease can occur.

To Selye's list of stressors, I would add destructive EM radiation and EM fields. It has been known for decades that electrical fields can damage cells. B. Blake Levitt writes:

> Direct current (DC) is the steady flow of electrons in one direction. Alternating current (AC) is an electron flow that changes strength and alters direction within a certain cycle; the AC field collapses and reappears with its poles reversed every time the current changes direction. . . . Direct current creates a steady magnetic field. But with alternating current, each time the direction of the electrons is reversed, or flipped, a powerful magnetic field is created that fluctuates at the same frequency.[4]

Another reason these fields are dangerous is that the waves are *coherent*. Although the sun constantly transmits naturally-occurring radio frequencies, microwaves and other EM fields, this radiation is generally *diffuse*, whereas alternating current is *concentrated. Concentrated radiation is not natural.* For example, you need to purposely harness, focus, augment, and direct a bombardment of electrons to turn on a light bulb. These highly coherent, synthetic EM fields interfere with the body's signaling processes. Levitt points out:

> The human race has never before in its evolutionary history been exposed to such fields on a continuous basis, and there are serious and mounting concerns about the effects not just on individuals but on our entire ecosystem. Since the turn of the [20th] century . . . we have surrounded ourselves with a veritable sea of artificially produced electromagnetic fields, all with a presumption of safety that . . . should never have been made.[5]

The harmful effects of some EM fields are many and varied. Jacqueline Krohn and colleagues point out numerous studies showing that

> electric workers and their children have a higher risk of brain tumors. The incidence of childhood leukemia is higher in children who live near power lines that carry high voltage. Powerline exposure has also been associated with an increased incidence of suicide.
>
> These studies support the hypothesis that ELFs [extremely low frequencies] act as a cancer promoter. ELF fields interact with the cell membrane and can affect hormones, calcium exchange, and tissue growth. It is postulated that the ELFs suppress the production of melatonin, a cancer inhibitor, by the pineal gland.[6]

The effects of ELF fields is more than mere "postulation," as other researchers have corroborated. Smith and Best cite formal published studies linking the following maladies to extremely low frequency, electromagnetic fields:

- Allergies
- Autoimmune disorders, such as lupus erythematosus and multiple sclerosis
- Birth defects and genetic abnormalities
- Cancers of various types, including brain tumors and leukemia
- Emotion and mood changes, including higher percentages of suicides
- Eyestrain and headaches
- Fatigue and sleep disturbance
- Heart attacks
- Hormonal abnormalities
- Infectious disease increase
- Lowered fertility, miscarriages, and pregnancy problems, including stillborn children
- Nervous system disorders, including confusion, convulsions, dizziness, hyperactivity, and memory loss
- Stress increase and intolerance[7]

The harm from EM fields and EM radiation also depends on the proximity of the person, animal, or plant to the source of the energy. A milligauss is a unit of measurement of the strength of an electromagnetic field. According to tables from the Environmental Protection Agency reprinted in Levitt's book, a blender from six inches away emits between 30 and 100 milligauss; an electric can opener six inches away emits between 500 and 1500 milligauss; a hair dryer six inches away emits

between 1 and 700 milligauss; and a ceiling fan twelve inches away emits between 3 and 50 milligauss.[8] Some sources maintain that even 2 milligauss is enough to disrupt a person's biological function and that the maximum emission a person can safely absorb is only 1 milligauss. This is why there is a high rate of illness among people living near major power lines, cell phone towers, electrical generators, and similar disruptors.

### *Healing Effects of EM Radiation and EM Fields*

Considering the extent that artificially created, non-beneficial EM radiation surrounds us, it's not surprising that (aside from the contributing factors of poor diet, pathogens, and chemical pollutants) so many people are ill. The good news is, if frequencies can harm, they can also be used to heal. Cells have the ability to positively and healthfully respond to minute electromagnetic stimulus—as long as certain criteria are met. The stimulus must be from the correct region of the EM spectrum. It must be further refined (if necessary) to an exact frequency, or combination of frequencies, on that EM band. It must be the correct intensity. It must have the correct shape wave or wave packet. It must be administered in the correct amounts. And it must be accurately and precisely aimed at the target.

In electronics, the term *inductive coupling* refers to the transfer of energy from one component to another through a shared magnetic field. In electromedicine, the response of living cells to beneficial EM radiation is also known as inductive coupling. Once the EM fields inside a cell are exposed to EM radiation, the fields within the cell start to move. Along with this energetic process, the corresponding biochemical responses are activated, such as the movement of electrolytes through the cell membrane, excretion of wastes, and so on. Inductive coupling is being utilized in a growing number of extremely effective electromedical devices.

Researchers are discovering that many of the beneficial effects from electromedical devices come from *pulsed magnetic fields* (which, by definition, become electromagnetic radiation). Pulsing a magnetic field does more than induce movement in the body receiving the signal. Because pulsing, by definition, means that there is an "off" period to the signal, it ensures that the human or animal receiving the signal does not become resistant to its effects. A good analogy is someone tapping your arm. At first you pay attention; but after awhile, the body becomes impervious to the sensation so it can focus on other stimuli. This is one of the secrets of electromedicine devices that are effective.

Correctly employed, frequency therapies can increase cell energy, normalize membrane conductivity, lessen oxidative stress, reduce the amounts of inflammatory chemicals in the blood, improve protein synthesis, boost feel-good endorphin levels, restore depleted adrenal function, and enhance immune function. The restoration of these metabolic processes lead to the regeneration of tissue as well as resistance to disease.

"Bigger is better" and "More is better" figure prominently in the Western mindset. The unbridled use of massive doses of many different kinds of drugs and the routine practice of "prophylactic" invasive surgery illustrate this mentality. Another, more humane edict—"Less is more"—reflects what the body usually needs. The exquisite sensitivity of cells to electromagnetic fields of all kinds explains why electromedical devices work—and why the more gentle ones work the best. Low power energies might not be easily perceived subjectively, but they are the most compatible with living systems precisely because they are of lower power.

Electromedicine therapies may use many portions of the EM spectrum: electrical current, magnetism, visible light, far infrared (FIR), ultraviolet (UV), and heat (in the form of specific FIR wavelengths). In the following sections, I'll discuss some therapies that use various EM wavelengths. I'll also explore one use of sound for therapeutic purposes.

## EM RADIATION: RIFE FREQUENCY THERAPY

Rife frequency therapy is named after its inventor, Royal Raymond Rife. After this technology was enthusiastically embraced by some of the most prominent physicians and scientists of the 1930s and part of the 1940s, it was driven underground by the pharmaceutical interests and the American Medical Association (AMA). Only in the last couple of decades has rife technology emerged again in popularity, albeit in an altered form.

Royal Rife was born in Nebraska in 1888. Educated in the fields of optics, electronics, biology, and chemistry, he studied at Johns Hopkins University and had two years of training to perform eye surgery and six years of training with optical scientist and researcher Hans Luckel (who worked for German-based company Zeiss Optics). Rife designed and built many medical research instruments including spectroscopes, optical tools, micromanipulators, and stop-motion photomicrographs. However, one of his most famous inventions was the 200-pound, 5,682-part Universal Microscope, which stood between two and three feet high.

During Rife's time, specimens had to be killed and stained in order to be seen under a microscope. Even modern electron microscopes, which produce high-resolution images, kill the specimens being viewed, because in order to make

the specimens visible, an electron microscope bombards them with electrons in a vacuum. However, the Universal Microscope (completed in 1933) allowed microorganisms (even tiny viruses) to be viewed in their live state with crystal clarity. This held great promise in finding cures for diseases, because if you can see how living organisms respond to stimuli, you may find a way to destroy them.

As it turned out, the "stimuli" from Rife consisted of frequencies produced by an EM field. If Rife exposed a virus or bacterium to a particular frequency and the pathogen began to vibrate—and then either grew weak or completely broke apart—he knew that he had found the *resonant frequency* (or simply *frequency*) of the microbe. "Any object has a certain natural or resonant frequency," explains James L. Oschman:

> Strike it, bump it, pluck it, or heat it, and it will tend to vibrate at a specific frequency. This applies to a bone, a piece of wood, a molecule, an electron, or a musical instrument. . . . In the living body, each electron, atom, chemical bond, molecule, cell, tissue, organ (and the body as a whole) has its own vibratory character [as well]. . . . In terms of vibrations, the human body can be compared to a symphony orchestra. Each molecule corresponds to a particular instrument. Each bend, rotation, or stretch of a chemical bond has a certain resonant frequency, and will give off certain "notes" if it is energized. Since molecules, water, and dissolved ions are constantly bumping into each other at body temperature, all parts are constantly jiggling and absorbing and emitting energy. . . . When two objects have similar natural frequencies, they can interact without touching; their vibrations can become coupled or entrained. For electromagnetic interactions between molecules, the word "resonance" is used more often than entrainment. In the older literature you will find the term "sympathetic vibrations."[9]

The microbe's frequency (the number of cycles per second at which it vibrated) was also known as its Mortal Oscillatory Rate (MOR). An analogy explaining how Rife's ray tube worked was the cliché of the soprano who shatters a glass with her pure, focused tone. If enough power were applied, the resonant frequency killed the microbe or debilitated it enough so that the body's own immune cells could then dispose of it.

Royal Rife's ray machine (whose inspiration and fundamental operation appear to have come from Albert Abrams's Oscilloclast) delivered frequencies in the radio frequency (RF) range by sending an electrical current through a tube filled with noble gases (mostly argon and neon). The gases would light up the tube, and the frequencies were emitted as EM radiation. It was the *EM wave*, rather than the luminescence from the light, that disabled or killed the pathogens. Rife discovered the resonant frequencies for cancer, typhus, *E. coli*, and other microorganisms. People given "terminal" diagnoses by their doctors would often become well when exposed to the Rife Ray. A microbial MOR frequency administered at a low power level is harmful to a microbe, but does not harm a larger host such as a human being or animal because the host has a much more complex structure than a microbe—and, hence, will barely feel the power input that can kill a tiny microbe.

Many modern, second-generation rife machines also contain plasma tubes filled with noble gases, although some rife-type frequency devices utilize hand-held, tubular metal electrodes to deliver frequencies into the body via electrical current. Most of the tubes are freestanding; one unit has long glass rods that are held. Due to technology changes—and FCC regulations against devices transmitting over long distances in the RF range because they interfere with radio broadcast signals—today's units emit much weaker signals in lower ranges, mostly from one to 20,000 Hz (hertz).

Rife technology devices can range from simple to elaborate, with varying programming capabilities. Smaller units can be the size of large loaves of bread, while large ones equal the size of tower computers. The user inputs the desired frequencies into the computerized machine, and a signal is sent to the noble gases in the tube. The resulting EM field disables or kills the microorganisms in the body, while also inputting energy into the body's cells.

In countries outside the United States, such as Germany and Romania, rife technology is seriously researched and publicized. Its legal status as a medical treatment means that the technology is freely used in clinics and doctors' offices. In North America, open-minded medical practitioners and health seekers have a more difficult time finding manufacturers of rife frequency devices, because after the 1940s, the FDA quashed this technology. About a dozen manufacturers in North America are making rife-style devices. In Europe, there are even more companies making frequency devices.

Two excellent freestanding plasma light frequency devices are especially popular in North America: the PERL, and the P3 units (from different companies). The PERL is a highly respected frequency device made by Resonant Light Technology Inc., from Canada. The 18-pound, 13" x 5.5" x 17" machine is equipped with a

leaded silica glass tube filled with 100% argon. When the noble gas is lit by the transmitted RF energy, the PERL emits frequencies (up to three signals simultaneously) over a 27 megahertz carrier. Frequency selection is from .001 Hz to 400,000 Hz. The selectable waveform (square, sine, or sawtooth) has a range of up to 30 feet. The customer can either program frequencies into the unit or use one of 25 banks of pre-programmed protocols. The equipment's management system (manufacturing quality and customer support) has received an international standard of certification; so should the company decide to apply for Class II Medical Device status for the PERL, they will have met all the requirements. Resonant Light Technology Inc. cannot legally state that the PERL is a therapeutic device for use on humans in Canada, but the company does suggest other applications: therapeutic use with animals, extending the life of food in clinically controlled food storage lockers, slowing the growth of mold and fungi in greenhouses, and reducing the parasitic count within fruit orchards. Energizing the body is an obvious application as well.

Pulsed Technologies, which has offices in both the United States and Romania, makes several different devices. The frequency outputs of this company's units range from .01 Hz to an impressive 1,000,000 Hz (1 megahertz). The Precision Pulsed Plasma system (P3) is a non-contact, radiant device that operates on principles that do not require RF. The P3 is driven by the Precision Function Generator (PFG), into which the user programs frequencies and various waveform shapes. Both PFG models may also be used separately from the plasma unit as contact (electrode) devices. The computer software, included with the machines, contains modules suitable for laboratory, professional, group, or individual use. Thus, many practitioners and researchers as well as lay customers use this equipment. The company's emphasis on research—Pulsed Technologies sponsors the Eastern Europe-based professional Research and Resource Exchange Network—has been particularly welcome in Europe, where doctors have seen great improvements in the subjects enrolled there in clinical trials. Applications of a Pulsed Technologies unit are similar to those of the PERL. The uses for a freestanding plasma light unit are limited only by the imagination of the user.

Although Rife's technology appeals to holistically oriented health practitioners, it is simple enough to be utilized by the layperson as well. The largest market in the United States consists of people who want to improve their own health, as well as the health of their family, friends, pets, and farm animals.

In Rife's era, it was proven that his frequency devices disabled microbes that made humans and animals sick. But we now know that selected frequencies can regenerate tissue. Some of the frequencies that Rife used may have done both.

## ELECTRICAL CURRENT

### *Frequency Specific Microcurrent*

Most people are familiar with the ubiquitous TENS unit, which uses electrical current for pain control. For this treatment, specific frequencies (generally ranging from 40 Hz to 150 Hz) are applied to the body through electrodes. But consider the mechanism by which TENS suppresses pain: it stimulates A-beta suppressing fibers and *overwhelms* the C-pain fibers in the body. The effects are similar to that of continually rubbing a painful spot: after a while, the pain lessens because the area becomes numb. However, from a holistic perspective, this is not the best way to manage pain, since the TENS unit relieves pain not through body awareness (which allows the system to self-correct), but through lack of awareness (which may not allow for self-correction). This is why the effects of TENS treatments are often temporary.

Frequency Specific Microcurrent (FSM) treats nerve, muscle, and fascia pain by using a wider range of frequencies (from 3 Hz to 970 Hz) to favorably alter tissue and restore health, using minute amounts of micro-amperage current. A TENS unit has an output of up to 100 milliamps, which can overwhelm the body with current that is easily felt. In contrast, the output of FSM is in microamps (millionths of an amp), which is not readily perceived by the body even though its effects are. (An ampere is a measure of the movement of electrons or current.) Significantly, the output of FSM imitates the output produced naturally by the body within each cell. The amount of FSM current is not strong enough to stimulate sensory nerves, so the treatment usually cannot be felt and is painless, as well as safe, non-invasive, and effective.

Microcurrent can often eliminate pain entirely because instead of simply masking symptoms, it helps to restore cell function. A TENS unit decreases cell energy (ATP production) by about 50%, decreases cell membrane transport by up to 40%, and decreases protein synthesis by 50%. However, since Microcurrent uses less than 500 microamps, cell energy (ATP production) increases (rat studies show by 500%), as does amino acid transport into the cell. This aids in waste product removal, and protein synthesis. Preliminary studies also suggest that FSM helps insulin bind with the appropriate receptor sites on the

cell membrane and that it activates fibroblasts, connective tissue cells that secrete collagen and other beneficial substances around living cells.

Microcurrent was used in the early 1900s by physicians and osteopaths in the form of an electromedical device that delivered DC wall current. In 1987, the device used for FSM was developed by an engineer named Glen Smith. Eight years later, chiropractors Carolyn McMakin and George Douglas discovered some frequencies used in a 1920s electromedical device and began applying them in their practice.

There are several size units, ranging from the largest (18" x 9.5" x 6.5") to the "home care" portable unit that's about the size of a portable Walkman and is operated by one 9-volt battery. All come with various electrode attachments. Although the use of frequencies is not regulated (so is neither approved nor disallowed by the FDA), the devices that provide the current—the Precision Microcurrent machine and the FSM Auto Care and Sports Care unit—are permitted by the FDA to be used in a medical setting, and by prescription. The FDA has approved all microcurrent devices for sale in the category of TENS devices, even though TENS devices all deliver milli-amperage current rather than the much smaller (and biocompatible) levels of micro-amperage current.

Candidates for this therapy have arthritis, chronic low back pain, fibromyalgia (especially associated with neck injury), diabetes-related and other neuropathic pains, and myofascial pain (from trigger points in the head, neck, face, and lower back). People with asthma, liver dysfunction, kidney stones, shingles, endometriosis, and irritable bowel syndrome also benefit, although Dr. McMakin reports, "Most cases of post herpetic neuralgia improve with five to six treatments but require the frequencies for scar tissue and inflammation in the nerves damaged by the virus."[10] Many practitioners know how difficult it can be to manage, let alone cure, fibromyalgia. However, those diagnosed with fibromyalgia and treated with FSM no longer meet the diagnostic criteria for fibromyalgia as set by the American College of Rheumatology.

Injuries from accidents or surgeries, especially if treated within four hours, are found to yield reduced pain and greatly accelerated healing. Symptom relief includes reduced inflammation, increased range of motion, improved visceral organ function, and more manageable emotional states. There are frequencies for over 200 conditions, ranging from inflammation and scar tissue to hard-to-document conditions such as mineral deposits and toxicity.

"Body tissues," says McMakin, "respond to frequencies through the principles of biological resonance—responding to the signals like a radio responds to frequencies from a radio station."[11] Since there is no human or electronic biofeedback component to this technology (just a needle on the instrument indicating whether or not the current is flowing), the practitioner is trained to recognize the most common pain complaints and to diagnose and treat them. This therapy must be administered by a health care practitioner; laypersons are not permitted to receive training or purchase units.

### *The Tennant Biomodulator®*

Another electromedical device that emits small amounts of current is the hand-held biofeedback unit, the Tennant Biomodulator®. The Biomodulator® has its origins in the Russian Scenar, acronym for Self-Controlled Energo Neuro Adaptive Regulator. The Biomodulator's predecessor was developed by Russian scientists in the 1970s to address an unexpected problem with their space program: the forced feeding of antibiotics to all cosmonauts, whether they were ill or well. If one crew member got sick and took antibiotics, all the crew members would end up with the drug in their system, since urine was recycled into the shared drinking water. Creating an electromedical device to treat cosmonauts in space would eliminate the "need" to administer antibiotics. This device—about the size of a remote control—was aptly nicknamed the "Star Trek Device" by the press.

According to Russian clinical studies, the Scenar proved effective in 80% of all cases. Of those, two-thirds enjoyed full recovery, and the remainder had significant healing. Over 50,000 successful outcomes were reported for circulatory, endocrine, respiratory, gastrointestinal, neurological, muscular, skeletal, and genito-urinary problems.

In 2004, Texas-based Jerry Tennant, MD, developed an easier-to-use, more effective version of the Russian invention, powered by two AA batteries, called the Tennant Biomodulator®. Whether it is moved across the body or resting still on a particular area, its biofeedback feature operates by sending out a series of precisely modulated electrical currents to the skin, measuring the body's response, and then emitting different signals in response to the changes recorded by the skin. This therapy is drug-free, non-invasive, safe, pain-free, and inexpensive (considering the number of conditions for which it can be used). In general, subjects not only feel positive effects after the first session, but the effects are long-lasting.

The Biomodulator®, equipped with newly discovered frequencies, also has an assessment mode that allows the user to determine the approximate voltage of the cells. The amount of voltage, and whether that voltage is plus or minus, helps the practitioner or user determine whether the tissue is mildly or severely inflamed or

mildly or severely degenerated. Based on the readings, the practitioner then knows which therapy mode to employ. The device also has a setting for "automatic," which is a combined biofeedback and signal input mode.

Dr. Tennant points out that trauma, pain, real or imagined danger, constant fear, an unbalanced pH, and food allergies turn on the sympathetic (fight-or-flight) nervous system and keep it turned on, so the parasympathetic nervous system, which regulates digestion, sleep, hormone secretion, immune function, and so on, no longer works properly. Being "sympathetic-on 24 hours a day, seven days a week" creates conditions of "typical chronic disease and chronic fatigue," he says.[12] Once the body starts to malfunction, it gets used to being in a pathological state, a trend that can be difficult to reverse. However, the Biomodulator® stimulates the healing process by normalizing the sympathetic and the parasympathetic nervous systems. People have reported relief from swelling and inflammation, as well as faster and more complete healing of wounds, improvement in circulation and other functions, rapid pain relief, and easier recovery from infections. The device is most commonly used for treatment of muscle pain and injuries, but it is also being clinically studied for the improvement or complete elimination of symptoms of arthritis, tendonitis, hypertension, hearing loss, and asthma.

The Biomodulator® works primarily by stimulating the C-fibers. C-fibers, which comprise 85% of all nerves in the body, produce healing neuropeptides and other regulatory peptides that, in turn, reestablish the body's normal physiology and propel it to heal itself. Since the peptides last for several hours, the healing process continues after the treatment is over. "Once we balance the autonomic system," writes Tennant, "the gut will start absorbing nutrients, the endocrine glands will rest and recover, [and] the immune system will recover."[13]

A key to the success of these units is the restoration of voltage to the cells. A malfunctioning cell cannot metabolize properly. Once the voltage to organs and other bodily tissues is normalized, cellular toxins can be eliminated and water imbalances can be corrected.

To treat, the practitioner first asks the subject the location of the pain, discomfort or dysfunction. If there is clear symptomatology, the practitioner goes to the problem area. However, the spine and abdomen are also key areas to address, even though they might not seem to directly relate to the stated symptoms. Problem areas are perceived by the practitioner as a difference in the sound emitted by the device and by a feeling of "stickiness," a magnetic-like pull that prevents the unit from easily moving across the area. The session is over when the "drag" is eliminated and the client relaxes. Often, the skin around the treated area reddens, due to increased circulation.

The Biomodulator® comes with optional attachments that can treat through hair and on smaller skin areas. The Biomodulator® is a FDA-cleared Class II device for symptomatic relief and management of chronic, intractable pain, and adjunctive treatment in the management of post-surgical and post-traumatic pain. Licensed health care practitioners can use it in their practice. However, it's not necessary to see a professional if you need treatment. Laypersons who want a device for their own use can obtain a prescription from their physician or from Dr. Tennant.

## OSCILLATING MAGNETIC FIELDS: DR. HENRY LAI'S MALARIA TREATMENT

Within the last decade, some exciting research emerged from the University of Washington. Bioengineering professor Henry Lai, along with three colleagues, discovered a way to eliminate malaria using very weak magnetic fields. This has enormous significance, since in addition to symptoms of fever, head and joint aches, and shivering, malaria often causes seizures and death (if infected blood cells block the blood vessels leading to the brain). The World Health Organization estimates that up to 2.7 million people die of malaria every year, one million of whom are children. In the last two decades, the Plasmodium parasite that causes malaria has become increasingly resistant to pharmaceuticals, so they are no longer effective in eradicating the disease.

Dr. Lai's treatment is simple and elegant: the Plasmodium parasite becomes weak and dies when exposed to weak alternating—oscillating—magnetic fields. While the death throes of Plasmodium may sound similar to what happens to microbes when exposed to frequencies emitted by rife-style frequency devices, in this case, the magnetic field does not emit variable frequencies.

The principle behind Lai's magnetic device is based on the parasite's unique metabolism. After the person is bitten by the mosquito carrying Plasmodium, the parasite first penetrates the liver and then re-enters the bloodstream to feed off the hemoglobin in red blood cells. Plasmodium eats the globin portion of the hemoglobin molecule, but it lacks the enzyme needed to break down the iron-containing heme in the hemoglobin. Since free heme molecules can cause membrane damage, Plasmodium protects itself by arranging the heme molecules into long stacks—like "tiny bar magnets."[14] Lai believes that the oscillating magnetic field affects the parasite in two possible ways. Either the heme molecules cannot form stacks

and are free to move in the parasite and cause harm. Or, the stacks spin as a result of the magnetic field and mechanically injure the parasite. Both scenarios cause damage and death to the parasite. Although there is only a minute amount of iron in a heme stack, it is enough to be affected by magnetic fields.

Experiments show 33% to 70% fewer parasites in exposed than unexposed samples. According to Lai, this indicates a significant slowing of the parasite's metabolic functions—sufficient to manage the disease. The researcher says it is unlikely that Plasmodium would develop a resistance to magnetic fields. Lai also believes this treatment will not harm the human host: "It's a very weak magnetic field, just a little stronger than the Earth's. The difference is that it is oscillating."[15] "I think," he adds, "it should be safe for short-term (hours) exposure."[16]

This modality is in the experimental stage, as there is still more research to be done.

## PULSED ELECTROMAGNETIC FIELDS: THE ONDAMED®

Whereas Dr. Lai's technology utilizes a generalized weak magnetic field that oscillates, or travels back and forth, other devices use a pulsed electromagnetic field that also conveys frequencies. One such device is the ONDAMED® System, which was developed by German electronics engineer Rolf Binder. The machine consists of the base unit (18.5" x 14" x 4"), which weighs about 25 pounds in its heavy-duty case, and various applicators that are placed on the body (spine, abdomen, neck, foot, etc.) or held. The software includes three operating modules that introduce various frequency patterns, times and intensities, and one module of 173 preset programs. Frequencies range from 0.1 Hz to 32,000 Hz. The pulsed magnetic field emitted by the unit covers a small but focused area.

At the start of the session, the practitioner hangs an applicator around the client's neck. Then the practitioner holds the subject's wrist while simultaneously scrolling the machine through a range of rapidly and sequentially emitted programs. When a frequency is emitted that the body may need, a sudden change in the radial (circulatory) pulse occurs. The change in the subject's pulse can feel like excitation (jumping or throbbing), or weakening (slower, less obvious). (This physiological response, known as the Vascular Autonomic Signal or VAS, was discovered by medical doctor Paul Nogier in 1966.) Thus, the "biofeedback" aspect of the ONDAMED® is the person's bodily response, as perceived by the practitioner, to the unit's EM radiation emissions.

The practitioner enters into the machine's memory those frequencies that elicit a response. Then the practitioner scrolls through the frequencies that had been entered, choosing the top two frequency patterns that caused the strongest reaction—and which therefore will have the greatest therapeutic value. The frequencies best suited to the client at that moment are induced through the neck applicator (worn by the subject) as the practitioner scans the body with the hand-held applicator, feeling the person's pulse for the strongest response. The body area causing the strongest response is the site of application.

Not everyone's pulse completely normalizes for the duration of treatment; Binder says that the client undergoes a period of integration. The next time the client is tested, other areas (and other frequency patterns) may prove more useful. During therapy, not more than two frequencies are administered at one time to ensure that the communication pathways in the body are clear.

While the company is not allowed to make medical claims for the device, the biofeedback has worked well for pain management, stress relief, detoxification (waste elimination and nutrient absorption), reduction of addictive patterns (such as smoking), and weight management. People suffering from allergies, arthritis, inflammation, lymphatic and hormonal problems, infections, and pain report that their symptoms subside or are completely eliminated through use of the device. The ONDAMED® is rapidly becoming very popular with smokers to stop nicotine addiction, as it shows a 95% effectiveness rate, with an average of one to three sessions to achieve results. Those with other health conditions generally notice improvement in five sessions, although some people require more. The range is generally one to 20 sessions.

One can only speculate at this time as to how it works. To this end, medical doctor Wolf-Dieter Kessler recounts discussions about ONDAMED® with physics professor J.B. Sharma:

> Each organ has specific natural frequencies corresponding to its healthy state, to which it resonates if driven by an appropriate external frequency. . . . One way to visualize the underlying mechanism of ONDAMED® is to look at the body and its constituent parts as oscillators. In a healthy body, the ensemble of the oscillators "vibrate" in harmony with each other. . . . Under this model, disease may then be understood as a departure from a healthy synchronous vibration. The [diseased] parts of the body . . . display a lower energy or a chaotic, asynchronous vibration. The difference between

> an optimally functioning state and a diseased state in the human body is detectable by Nogier's pulse feedback method . . . [during which] a very small shock is created to the cardiovascular system when a specific frequency hits a diseased site, which then evokes a tempering or "tuning" of the oscillating components through resonance. . . . The asynchronously vibrating components of the diseased body will resonate harmoniously for a brief moment when hit by the proper frequency. . . . Further treatment with the appropriate frequencies would then bring all components back into synchronous vibration with the tendency to maintain that state of higher order.[17]

Continuing what W.D. Kessler states is a hypothesis: Deviations from the frequencies of healthy tissue indicate energy blockages that can then lead to health problems. On the biochemical level, blockage of an area is synonymous with a static field, characterized by accumulated acids or excess hydrogen ions (H+), which block the transfer of the magnetic impulses the body needs for the smooth flow of information. The ONDAMED®'s function may be based, in part, on Maxwell's finding that superimposing one magnetic field on another induces the flow of electrons.

"We don't want to assume that we know why the body responds to the ONDAMED® in the way it does," says Binder. "There are physical, emotional, biological, physiological, and energetic responses. We know there is lots of information flowing back and forth. But how the body is processing that information—and why it changes in response to one stimulus and not another—is something we cannot answer right now. The body and its functions are simply too complex. What we do know, is that the therapy works."[18]

What we can say with certainty, is that the ONDAMED® introduces specific electromagnetic impulses into the body, which in turn "jump start" the movement of electrons to the organs, glands, muscles, vessels, bones, nerves, or other tissues that require a more efficient flow of information.

The ONDAMED® is approved by the Institutional Review Board as a non-invasive secondary therapeutic device for the alleviation of pain, discomfort, and general malaise in the treatment of various disorders. The device can be used by both physicians and laypeople, although it's difficult to use to self-treat. The inventor, though naturally pleased by the reports of success, is circumspect. "It's very important to get the body working by itself," he emphasizes. "You don't want to get the body dependent on a drug, or the machine, for that matter."[19]

## MONOCHROMATIC VISIBLE LIGHT: LASER AND LED

To the uneducated general public, the word "laser" evokes a dangerous beam, usually red, that is used in restricted industrial and medical situations. But safe laser therapy has been used by health practitioners all over the world for almost 30 years. Most of the early research and published data, which spanned the late 1970s to early 1980s, was from Russia. Later, as more medical studies and research papers continued to be published, various medical organizations and government agencies all over the world (including the National Aeronautics and Space Administration in the United States) began using this modality as well.

Lasers and LEDs (short for *Light Emitting Diodes*) can be made to produce any color wavelength. The emission of the light (whether it's a red, green, blue, or other color) is due not to glass, paint, or pigment—it is solely the wavelength of the light itself that gives the beam its characteristic color. Since the wavelength is always a single frequency, the color is known as *monochromatic*. Although some types of lasers include mechanisms that emit heat in the form of invisible infrared radiation, for this discussion we are interested in lasers (and LEDS) that utilize single-wavelength (monochromatic), visible light for *phototherapy*, in the *red* spectrum.

Laser and LED therapies differ in some important ways, but they also share similarities. Both light technologies are based on the energetic behavior of electrons. Normally, electrons occupy a fixed place in one or more orbital rings that sequentially surround the atom's nucleus. When they become excited, electrons move faster and jump to higher orbits. When they relax and return to their original position, electrons release energy in the form of light, or photon units. The wavelength of a photon—in other words, its color—is determined by the amount of energy released when the electron drops to a lower orbit. *It is this emitted light that is harnessed in visible light laser and LED technology.*

Although light lasers and LEDs occupy a certain range of frequencies (frequency band) in the EM spectrum, the frequency being used is almost always identified by the length of the wave, rather than the actual frequency itself as described in hertz. In the band of visible light, wavelengths are measured in nanometers (nm). One nanometer, the length of one complete wave, is one billionth of a meter and roughly about the size of a human cell.

The lasers and LEDs that emit a red color range from about 630 nm to 670 nm. Some clinicians prefer a 660-nm wavelength, asserting that this length wave is overall easiest for the tissues to absorb. Others prefer a ruby red 630- or 635-nm wave, based on research published in the *Journal of Clinical Laser Medicine & Surgery* stating that a 630-nm wavelength appears "to be most commonly associated with bacterial inhibition. The findings of this study might be useful as a basis for selecting LLLT [low level laser therapy] for infected wounds."[20] In this case, "bacterial inhibition" consists of the retardation of the growth and functioning of pathogens. "What is good for the body is usually bad for pathogens," says chiropractor and laser therapist Gerry (pronounced "Gary") Graham. "For example, the right pH for the body is the wrong pH for pathogens. Similarly, 635 nm is the worst wavelength for most pathogens but is beneficial for human tissue."[21]

Regardless of the specific favored wavelength, researchers and practitioners who use red light find that it works on the principle of *bio-modulation*—turning a cell's function on or off through physiological means. Monochromatic red light stimulates blood circulation, increases lymphatic drainage, and promotes cell metabolism by stimulating photoreceptors in the mitochondria living within the cell. (Mitochondria are tiny living organelles with their own DNA and reproduction cycles, which live in symbiotic harmony with the cell, and control many important cellular processes including energy production.) Except on the eyes in the case of a laser (explained in a moment), the light can be applied to every part of the body: skin, soft tissue, muscle, bone, brain, organs, lymphatic fluid, glands, and blood. Used over an artery, the light can improve the condition of immune cells—leukocytes, T-cells, and B-cells within the bloodstream—so they can more efficiently disable pathogens.

Dr. Tiina Karu, professor of Laser Biology and Medicine in Russia, is reported to have discovered the following:

> There are photoreceptors at the molecular-cellular level which, when triggered, activate a number of biological reactions: DNA/RNA synthesis, increased cAMP levels [cyclic adenosine monophosphate, a molecule involved in many biological processes], protein and collagen synthesis, and cellular proliferation. The result is rapid regeneration, normalization, and healing of damaged cellular tissue. In essence, light is a trigger for the rearrangement of cellular metabolism.[22]

Single-wavelength light maintains its integrity while radiating. Its ability to travel along the meridians of the body without being dispersed into the surrounding tissues makes it useful for Chinese medicine treatments. A phototherapy device can be built to house a single light or many, but only one wavelength at a time should be shone on the body. Only monochromatic light affects the photoreceptors. If different wavelengths are simultaneously applied to the tissue, the cell receives conflicting signals and cannot respond properly.

LEDs and lasers can also be pulsed so that for a duration of time at regular intervals, the beam is on, off, on, off, etc. Pulsing the light stimulates healing. A continuous, steady emission (no pulse) sedates pain.

### *LazrPulsr® 4X LLLT Laser*

Laser is an acronym for *Light Amplification by Stimulated Emission of Radiation*. To produce light, a laser diode can contain argon, helium, neon, or krypton.

The monochromatic light emitted by the lasers under discussion is *coherent*. This means, from a physics standpoint, that all the peaks and valleys of the waves line up. The waves are high at the same time, and low at the same time (Figure 9). In practical terms, this means that the light is directional and focused—or *collimated*—instead of scattered. This optical arrangement provides the intensity and precision of the beam and is probably the most expensive component of a laser diode assembly.

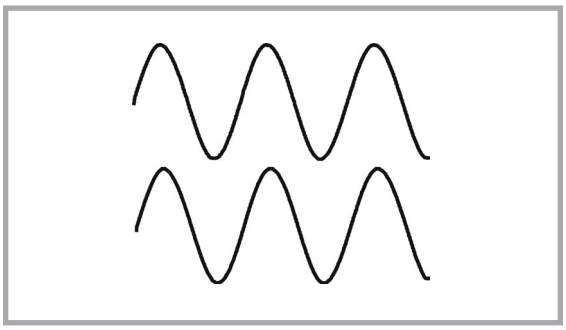


*Figure 9: Coherent Waves (In Phase with Each Other), an Alignment Found in Lasers*

Not all lasers utilizing red light have the same effects. Most people are familiar with the high-intensity, high-power "hard" lasers that are used by industry (to cut through steel and other metals) or by doctors (used during surgery to make clean cuts into the body, cauterize wounds, and remove unwanted tissue). These high-intensity lasers are legally restricted devices because of the damage they can cause and are not the most therapeutic.

Genuine low-intensity, low-power lasers—also called "soft" or "cold" lasers—emit far less power than their restricted high-intensity counterparts. Their use for healing is also known as *Low-Intensity Laser Therapy*

(LILT) or *Low Level Laser Therapy* (LLLT). The legal standard for what constitutes a low level laser can be confusing, however, because in some countries, a device legally classified as a LLL has enough power to heat tissue. Some laser therapists maintain that devices affecting cells through bio-modulation should not be categorized with devices that heat tissue. Australian laser experts Kerry Tume and Sean Tume suggest the following standard: "the energy output is low enough so that the treated tissue does not rise above . . . normal body temperature."[23] Similarly, Dr. Graham allows "up to only a 0.1 degree Fahrenheit increase in temperature, because otherwise it is a hot laser with different, and less desirable, effects." Here is an instance, Graham points out, where "less can be more. Most people still fall for the idea that if 10 mW [milliwatts] will do a job in ten minutes, then 100 mW will do the same job in one minute, and 1000 mW will do the same job in one-tenth of a minute. But this isn't true. The majority of lasers used for meridian therapy use [excessively high-powered, tissue-heating] infrared lasers. With these instruments, you can damage the meridians and over-stimulate tissues."[24]

With these parameters in mind, Graham developed the rechargeable hand-held LazrPulsr® 4X. His device emits a 635-nm beam, which as stated earlier is reported as anti-microbial. The LazrPulsr® 4X contains ten channels that can be programmed by the user, in addition to over 40 channels that emit pulses consistently shown to restore different tissues and bodily functions.

*Pulse* refers to the number of times the beam of light is turned on and off in one second. The pulse rates can be as low as one, or as high as 1,000,000, in which the light is being turned on one million times and then turned off one million times each second. "Even though the eye cannot detect movement above 45 Hz or so," Graham explains, "the body's tissue can clearly detect and recognize these pulse rates in the tens of billions per second."[25] Numbers commonly used as rife technology frequencies are often applied as laser pulse rates, and the effects are similar.

One success story of many that Dr. Graham recounts involves a man whose ability to climb stairs improved dramatically (assessed with a radial pulse test) after laser treatment because the oxygen-carrying capacity of the hemoglobin increased by 400%. The Tumes agree with Graham that laser therapy works on all manner of conditions. These include injuries to ligaments, tendons, nerves, and other tissue; skin conditions; bone problems (such as osteoarthritis); first, second, and third degree burns; dental problems; infections including herpes; and, of course, chronic pain.

The laser beam can be applied without risk to almost any part of the body (including trigger points and fascia). However, due to the precision of the beam, care must be taken to avoid shining the device directly into the eyes or even on the closed eyelid, because this can cause tissue damage and even blindness. "It would take several seconds of continuous direct exposure, shining directly into the eye, to cause significant permanent damage," Graham points out. "This is virtually impossible for any adult to do accidentally."[26] The FDA, which has classified the LazrPulsr® 4X as a IIIa device, has not determined that the device causes significant risk to the eye, so protective eyewear is not required.

Safety features for the LazrPulsr® 4X include a laser cover to protect the user from accidentally shining the unit into the eyes, and a low enough power density (five milliwatts) to ensure additional protection. There is also a digital lock that ensures against accidental use by children and inexperienced users. Finally, the unit is designed so that the user can program and operate it with one hand, while maintaining control of the direction of illumination with the other.

Dr. Graham's LazrPulsr® is available for sale by prescription only. With a little practice and training, it can be employed safely and effectively for healing by practitioners and knowledgeable laypersons.

### *LED Devices from Light Energy Company*

LED is an acronym for *Light Emitting Diode*. It is sometimes erroneously called a soft laser or laser, but it is not—the monochromatic light emitted by LEDs is *incoherent*. This means, from a physics standpoint, that the waves are emitted at random intervals because the peaks and valleys of the waves do not line up (Figure 10). In practical terms, this means that the light is multi-directional and diffuse, *not* directional and focused (collimated).

The lack of beam coherence and precision makes LED therapy safe enough to be used even by children—and difficult to abuse. The advantage of LEDs over lasers is their ability to be used directly on the eyelid to regenerate injured eye tissue. Also, an LED array is much less

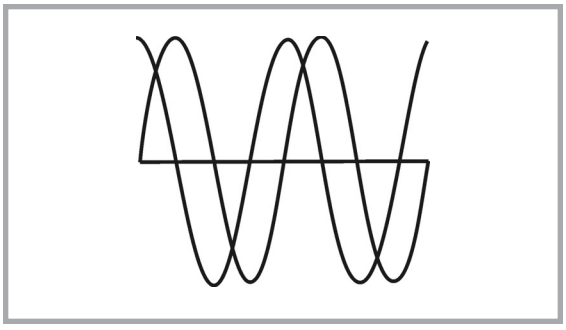


*Figure 10: Incoherent Wave (Out of Phase with Each Other), an Alignment Found in LEDs*

expensive than a soft laser. It too has widespread applications. "In Israel," report Cocilovo and Rosen, "medical doctors utilize incoherent light transmitted by light emitting diodes (LEDs) in the practice of neurology, dentistry, dermatology, physiotherapy, and in cosmetic applications to promote collagen and elastin formation."[27]

Although LEDs are fairly common and easy to obtain, some unique products were developed by Dave Olszewski of Light Energy Company. He has some very powerful multiple-diode LED products that, due to the pattern and spacing of the lights, have enhanced effects because the penetration is deeper than what would be achieved with a single light. The 17-LED Light Disc, a plastic 8" x 5" paddle with detachable 12-inch handle, has a penetration range of 8 inches, from up to 15 inches away, and the beam can travel through clothes. (An attachable handle allows easy application of the light on hard-to-reach areas of the body such as feet, ankles, and back.) The 23-LED Light Pad, which is like a stiff, flexible, wide belt with tie-strings, can be strapped onto the body or draped during sleep. Penetration ranges from 8 inches to 15 inches, and this beam can also travel through clothes.

Other items include the 3-LED Tri-Light, which is safe to be used for skin conditions, cosmetic facial treatments (such as wrinkle removal), or even eye injuries. This device can run either on a 9-volt battery or an AC/DC adapter, is about the size of a Sony Walkman®, and has a penetration range of two inches. The simplest device is the single-diode Light Shaker that runs on a 9-volt battery.

Until the 1980s, low-level lasers were used almost exclusively for phototherapy because researchers thought that the light needed to be coherent, and prior promising research with incoherent light was nearly forgotten. Subsequently, some clinicians determined that coherency did not make a huge difference. "Dr. Karu," write Cocilovo and Rosen, "contends that coherent light is not necessary, that incoherent light is equally effective at producing clinical results. Furthermore, she found that coherent light is converted to incoherent light in the body. The exact effect depends on the wavelength, dose, and intensity."[28] There is a question as to whether these conclusions were based on *in vitro* or *in vivo* research; the effects of light can be different in a culture than a living body. Nevertheless, enough users report benefits with LEDs to warrant its further investigation as a serious therapy. There is one anecdotal report that cannot be contested: This author successfully treated a scratch on the cornea with the Light Shaker after a piece of plastic fell into her eye. After one hour of holding the light onto the closed, tearing eyelid, the pain and tearing were gone, vision was unaffected, and no more problems occurred.

### *LED Devices from Good Energy Products*

Two very interesting portable LED devices from Good Energy Products use incoherent light, but for a secondary function: they are carriers of frequencies that are imprinted in water. Slightly larger than a fountain pen and smaller than a flashlight, both the Chi Pen® and the Advanced Chi Stimulator® contain water cartridges through which the light shines. When applied to the body, the energy produces different results, depending on what frequencies have been programmed into the fluid.

The frequencies in both devices are geared more to balancing the body than they are to microbe destruction: most of the energy in the water is from either homeopathic remedies, or frequencies that researchers have established are emitted by healthy tissue. The inventor, Bill Wolfe—a naturopath as well as dentist—has seen major positive changes occur with his clients who use the devices.

The simpler piece of equipment, the 5½-inch Chi Pen®, operates on two AAA batteries. Embedded in the casing is a vial of water that has been imprinted with the frequencies emitted by healthy organs, glands and bodily tissues. A 625-nm red light (at 900 milliwatts power) passes through the water to the tip of the penlight, carrying regenerative frequencies designed to restore and balance the body's energy meridians. Although "balancing meridians" is a broad term, the implications are profound, as blockages in the meridians can cause unlimited symptoms and conditions, ranging from inflammation and pain to organ and gland malfunction. This easy-to-use instrument is intended for people to use at home for self treatment.

The 10½-inch-long Advanced Chi Stimulator®, which operates on two AA batteries, contains three light emitters. These lights are in the infrared spectrum (950 nm at 450 mW power), which promotes deeper penetration into the tissue than does visible light. (When the instrument is turned on, it emits a blue color so the user can direct the wave to the targeted area, and avoid shining the invisible IR light into the eyes.) A major advantage of the Advanced Chi Stimulator® is that instead of a permanent cartridge in the casing that contains only one program, this unit is equipped with eleven interchangeable, programmed, water-filled lenses. These discs are screwed onto the tip of the device, allowing the user to select from a range of frequency formulas—not only Chi Energy, but also Detox, Infection, Inflammation, Lymphatic,

Root Canal, Sinus, Stimulation, Toothache, Trauma, and Relaxation.

The LEDs from Good Energy Products are specifically designed to stimulate acupuncture and muscle trigger points, and to assist with pain management, skin conditions, wound healing and dental problems. The devices don't have to be used over long periods, as results are rapidly seen. To stimulate points, the user is instructed to place the laser against the skin for about one minute per point. For local pain and swelling, the laser is placed for 3 minutes on the area with the most intense symptoms, and then for a minute each on spots surrounding the main area. For skin conditions such as acne, burns, insect bites and cold sores, two or three times a day the light is held about ¼ inch above the target area and moved very slowly back and forth for a few minutes.

Dental pain management is one of Dr. Wolfe's specialties. For 3 minutes, the user places the light against the skin over the most painful region. Less painful areas are treated for only a minute each. For gum conditions, Wolfe advises, pull the lip back and hold the light for 3 minutes about ¼ inch from the target area. Although Wolfe recommends doing this two to three times a day, often relief can be felt immediately. If the subject experiences pain directly after applying the frequencies, this is a good sign: it signifies a desirable improvement in blood flow and increased waste removal. Relief is usually felt the next day. To help minimize post-operative discomfort and pain, Dr. Wolfe tells his clients to use the LEDs about a half hour before the dental work. The laser will not numb the area, but help with healing afterward.

These instruments can be used for animals as well as humans. Dr. Wolfe explains that photonic light accelerates healing partly due to its stimulation of endorphins, critical in pain management. He emphasizes that his instruments do not replace proper medical or dental treatment.

In addition to lasers and LEDs (which come with a generous warranty), Dr. Wolfe has produced an impressive line of highly effective, frequency-infused dental products and skin creams, including toothpaste, mouthwash, and anti-aging and analgesic preparations. There are also MSM supplement crystals infused with neurotransmitter frequencies for mental clarity, to be taken during the day, and frequencies to help with sleep, to be taken before bedtime.

Although the personal care products are made with natural (not synthetic) ingredients, Wolfe feels that the benefits from the botanicals, herbs, essential oils, and other materials are secondary compared to their main purpose: as carriers of frequencies into the body. For those disinclined to use high-tech devices, the skin and dental health products are a wonderful way to administer frequency healing. And those who are comfortable with, and employ, electromedical devices, find that these personal care products augment the effects of whatever else they're using.

## FAR INFRARED HEAT THERAPY

Heat therapy is thousands of years old. Whether the heat source was a dry sauna, steam bath, or hot water bath, the ancients understood that when people perspire, they feel better. We know today that sweating is one of the body's chief methods of eliminating waste, whether exogenous (from outside the body) or endogenous (from inside the body). Poisonous chemicals, heavy metals, and metabolic wastes are routinely trapped by the body's tissues, especially the fat cells—which encapsulate the toxins to protect the bloodstream. These toxins not only exacerbate illness; in many instances, they cause illness.

The chemical load we carry was dramatically illustrated during a Spring 2001 Public Broadcasting System (PBS) special about the chemical industry's suppression of evidence that their own products cause cancer. When newsman Bill Moyers had his blood drawn and analyzed, his blood sample contained over eighty common industrial chemicals, including alcohols, solvents, pesticides, petroleum-based synthetics, PCBs, and Persistent Organic Pollutants (POPs). Given this eclectic and horrifying sample, it's easy to see why so many people today are ill.

During sweating, the fatty tissue vibrates faster, dumping its toxic load into the interstitial fluid (outside and between the cells). These interstitial wastes—which normally would have to be processed by the lymph system, urinary tract, and/or liver—are released through the pores of the skin. This lightens the elimination burden of these other systems, giving them a chance to rest.

Sweating does more than eliminate toxins. It raises the pH of some portions of the body to a more alkaline state because chemical wastes and the products of cell metabolism are generally acidic. Although sweat therapy is not identical to having a fever, there are similarities between the two. When infected, the body produces a fever to "cook" microbes, most of which cannot survive in temperatures of over 103°F or 104°F (39.4°C or 40°C). Sauna therapy can also make it too hot for microbes to survive if the core temperature is raised enough. During fever, more endorphins (natural pain killers) are produced by the body. This, too, occurs during sauna therapy, which accounts for its pain-relieving benefits. During fever, the body produces more enzymes, which the white blood

cells need to destroy pathogens. This occurs during sauna therapy as well. In a sauna, the heating of the body alone helps to relax the nerves and tissue fibers.

Modern scientists have discovered that the *source* of heat used to make us sweat can make a difference between highly effective and less satisfactory detoxification. Dr. John Harvey Kellogg, famous for creating breakfast cereal, is less known for having invented the electric light bath that preceded today's far infrared (FIR) sauna cabinet. Even less publicized are the sophisticated tests he conducted in the early part of the twentieth century. Using devices he invented, Kellogg measured the toxins in the urine and sweat of healthy volunteers who took Russian baths, Turkish baths, and sessions in the doctor's own electric light cabinets. The light bath encouraged the release of more toxins than did the steam cabinets. And the test subjects also became hotter, faster, because *the heat waves from the light bulbs in Dr. Kellogg's sauna were in a particular far infrared range*. Far infrared contains among the most beneficial EM frequencies that the body requires for growth, repair, and health.

The amount of FIR emitted by a body or object is part of its electromagnetic signature. The movements of atoms and their constituent particles—as well as the movements of the chemical bonds between molecules—change direction, rotation, and orbit, depending on their frequency. These changes also correspond to alterations in the electrical and magnetic fields that they emit.

Far infrared wavelengths range from about 5.6 to 1000 microns. For healing purposes, we are interested in only a tiny portion of the FIR spectrum that ranges from about 5.6 microns to 9 microns in length, radiating heat from, respectively, about 470°F to 120°F (243.3°C to 48.9°C). (The shorter wavelengths are hotter.) A heat source that emits a particular, narrow band of FIR is the most effective for sauna therapy. Not surprisingly, a wavelength of about 9.35 microns corresponds to a temperature of 98.6°F (37°C).

Water molecules are very efficient absorbers and emitters of far infrared radiation that's about 9 microns in length. This wavelength also causes water clusters to become smaller, more motile, and more easily absorbed into the tissues. Put another way, water *intrinsically resonates* within these particular wavelengths. Whereas other EM spectrum wavelengths (such as the much longer radio waves) pass through water, a 9.4 micron far infrared wavelength will be absorbed by the water itself and cause its temperature to rise. People's ability to absorb and emit FIR is related to the ability of water to absorb and emit FIR. The human body is comprised of nearly 70% water, which helps to explain why people respond in such a positive way to FIR.

For the vast majority of people, FIR is the most effective means of inducing a sweat. There are many FIR saunas on the market today. One sauna cabinet manufacturer, Saunex™, not only uses heaters that selectively emit only the most beneficial FIR wavelengths, the company also has almost completely eliminated the harmful EM field that normally accompanies electrical wiring.

## SOUND

Although electromedicine is the name of a class of various therapeutic devices that utilize selected EM frequencies, during the educational seminars I give on rife therapy and electromedicine, people often ask me if tones can be substituted therapeutically for various EM frequencies. The answer is "Yes, under certain conditions."

Sound is commonly defined as existing only if there is a medium (such as air and water) to carry the vibrations, as sound cannot be heard in a vacuum. *But all frequencies in the electromagnetic spectrum—whether in the form of visible light, radio waves, gamma waves, etc.—have a corresponding sound or tone, even if it does not transmit through air or water and even if we are not capable of hearing it*. (This is probably the origin of the phrase, "music of the spheres.") Since sound and EM radiation are mathematically related, theoretically, all electromagnetic waves can be translated into audible sound, and the two modalities might be interchangeable for healing purposes.

Sound and music therapies (as with heat therapies) have existed for centuries. But in the last several decades, sound healing has enjoyed a renaissance. Tuning forks, crystal and metal bowls, classical music from certain composers, and sounds from nature (cricket and bird songs, waterfalls) have become popular for soothing the soul and emotions, if not outright physical healing.

The scientific precision of our modern age demands a different focus. We already know that every organ, gland, and tissue in the body emits EM radiation, and that this radiation corresponds to tones. New systems are based on this knowledge. For instance, biologist David Deamer decoded and translated some of the vibrational frequencies from select portions of DNA into audible tones, and musician Susan Alexjander later added voice and instruments to these tones on a CD. Also, scientists are using acoustically translated DNA in a number of novel experiments (the tones emitted by live and dying yeast cells occupy many Internet websites). However, a unique use of sound, called VoiceBio™©, was first developed in 1995 by naturopath Kae Thompson-Liu.

VoiceBio™© is a non-invasive way of analyzing the function of organs, glands, and various body systems,

based on the tones (EM radiation) they emit. If we could hear the symphony expressed by a living body, we would hear the liver vibrating to the note of G, the heart vibrating to the note of A#, and so on. Thompson-Liu discovered that the body's frequencies are reflected in the voice, no matter which octave the person uses when speaking or singing.

In an ideal world, each of the 12 notes of a scale would be represented on a graph of the voice (called a voiceprint). But due to poor diet, trauma, injury, infection, chemical poisoning, faulty genetics, or a combination of these conditions, most voiceprints show unequally represented notes that have huge variations beyond the normal, expected, uneven "bell curve." The notes can all be present (thus falling within the range of good health) or be overemphasized, weak, or missing entirely from the voice (thus falling within the range of compromised health). Assessing the heavy, normal, and weak areas of a voiceprint can help pinpoint which body parts or systems are off-balance.

For the VoiceBio™© assessment, the client records a voice sample into a sensitive microphone connected to a small Walkman-size piece of proprietary equipment called VIBE (an acronym for Visual Image of Body Energy). Then VIBE sorts, translates, and graphs the tones (ignoring word content) onto a voiceprint that quantifies the frequencies. The graph is displayed on a computer screen connected to the VIBE. VIBE was developed because Thompson-Liu found that the sound cards in computers are unreliable, sometimes varying as much as two tones in accuracy. The actual voice sampling takes five minutes or less.

There are several ways to supply the body with the balancing frequencies. The client can listen, through stereo headphones, to a palm-size tone box (called a "sonic balancer") encoded with personalized sound formulas. Derived by Thompson-Liu using complex mathematical computations, the sound formulas are different for every person—even those who need the same notes—since they are based on how the client's brain is fundamentally organized. Although the VoiceBio™© sound formulas are subjectively experienced by the conscious ear more as white noise than patterned pitches, the effects are like healing music rather than disorganized noise, in part because the notes are in the very low range of human hearing. Most important, the tone boxes can be programmed so that the brain learns to produce the weak or missing notes on its own. This brings VoiceBio™© therapy into the realm of holistic self-regulation, rather than allopathic substitution. The client can also listen to the missing notes as either straight musical tones or music in that key. In the case of overemphasized notes, the VoiceBio™© practitioner suggests detoxification and cleansing of the corresponding organs and systems.

The most powerful effect of all, however, occurs when the clients themselves generate the needed tones by singing or humming. (It also makes the therapy cost-effective for the client.) One might think that a highly depleted or stressed individual cannot muster enough energy to hum, and that the very ill need a "jump-start" from an external source, such as the sonic balancer. However, the reality is "quite the opposite," Dr. Thompson-Liu states. "The very ill see the fastest results by even humming the note for just a brief period a day. I have *never* found a client who could not hum something. Trials conducted in the past year in four states show that having the clients do it themselves is more effective than the sonic balancers by over 200 percent."[29]

Usually, after a month, the client is retested to see if the same formula is needed, if a different formula is needed, or if the client needs to continue at all. Although results to sound therapy can be felt within days or even hours, the listening or humming continues over a period of weeks and even months, depending on the severity of the condition and the person's ability to respond.

Thompson-Liu's discovery that all notes correspond to specific nutrients and drugs (as well as body parts and systems) brings another level of specificity to VoiceBio™©. A voiceprint helps the practitioner pinpoint which nutrients are most needed by the client. (The nutrients may have an obvious relationship to the organs or glands whose notes they share; but sometimes they do not. Nevertheless, the system works.) Thus, nutritional support in the form of vitamin, mineral and herbal supplementation is integrated with the VoiceBio™© therapy.

The voiceprint can also show which pharmaceuticals might be useful. If the client is taking a drug whose frequency matches a note that is already too high, continuing to take the drug can further stress the note. However, the voiceprint can help determine the drug that may be better suited to the client, if there is another drug that produces the same (desired) effect but resonates in a note that's too low (or at least not as high).

It is important to emphasize that there are many nutrients that resonate in any given note (C, C#, D, etc.), because each note has a *range* of cycles per second. (Historically, what precisely constituted middle C and the rest of the scale depended on the country and era.) However, the frequency of each nutrient is extremely precise, which is why any transmission device must be accurate to the second decimal point. Thompson-Liu devoted many years of research (and expensive laboratory tests) to find the frequencies of nutrients (vitamins, minerals, amino acids, fatty acids, etc.) as well as toxins

and drugs. Some sound treatment systems have posted nutrient frequencies on the Internet that are incorrect, because they compute frequency based on the molecular weight of the elements that comprise the nutrients, rather than on the wavelengths themselves. (Weight measures how heavy something is, and has nothing to do with oscillation or frequency.) As with most electromedical therapies, sound protocols obtain the best results with the exact frequencies.

Healing with sound will become imperative if global government restrictions to supplements become more severe. People could assimilate the frequencies of their chosen supplements via headphones, or even sound recordings. Since this user-friendly modality does not make medical claims, it can be implemented by laypeople as well as health practitioners.

## SUMMARY

The body is comprised of EM radiation. It emits EM waves and responds to EM waves. All biological functions correspond to electromagnetic phenomena. The electromagnetic energies that exist in living tissue are extremely potent. When you target a living cell with the precise frequency that it needs, it will respond favorably, and health can be restored in an amazingly short period of time.

Electromedicine covers a vast territory of different energies. The therapies reviewed here—EM radiation, electrical current, oscillating and pulsed magnetic fields, visible red light, and FIR (perceived as heat)—are only a few samples. Other frequency therapies not covered include radio waves and microwaves on the benign portion of the EM spectrum, and bands of visible light besides red. Conventional physics does not regard sound as part of the EM spectrum per se. However, every frequency in the EM spectrum has a corresponding sound, even if we cannot hear it. Thus, audible sound has an intricate relationship to EM frequencies and can also be utilized for healing.

The health restoration effects of correctly applied energetics cannot be underestimated. As with any modality, one must be careful when using frequencies, be they disseminated by electromedical equipment or sound. However, as those who have benefited from electromedical therapies can attest, the correct energies, properly used, can be an integral part of one's wellness protocol. Electromedicine and sound are the healing of the future. Whether you are a health care professional or a seeker of health, these therapies are well worth exploring.



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# Appendix D

# Selected Published Studies in Electromedicine

*Don't worry about people stealing an idea.*
*If it's original, you will have to ram it down their throats.*
—Howard Aiken, American computer pioneer and physicist (1900–1973)

There are thousands of articles in medical and scientific journals on the use of electromagnetic (EM) fields, electric fields, electrical current, static magnetic fields, pulsed magnetic fields, frequency-induced diathermy (heat), and more, to treat all kinds of conditions—ranging from bone fractures and muscle sprains to Parkinson's and cancer.

Of special significance is the mention of hyperthermia to treat cancer. During hyperthermia, most of the body or selected areas are safely subjected to high temperatures. The cancerous tissue is either killed directly by the high heat, or it becomes so permeable that only minute amounts of locally injected chemicals are needed to destroy it (thus avoiding the chemical poisoning of the entire system). The clinical use of hyperthermia is not new. The modality was routinely employed seven thousand years ago in Egypt, and it has been used by the Western medical comunity for about 200 years. Yet despite the article "Hyperthermia, still experimental, may win place in cancer therapy"—which appeared in a 1981 issue of the *Journal of the American Medical Association*—few people with cancer today are given the option of receiving heat treatments. Apparently, their doctors are ignorant of its simplicity, safety and effectiveness.

The articles listed below range from the 1960s to the present, beginning with the most recent (although studies on electromedical modalities have been in print for over a hundred years). In my very small sample, I include only those journal articles that are peer reviewed and are (except for one) in English. I also focus on the therapeutic rather than harmful effects of various EM fields. For instance, documentation on the dangers of cell phone radiation was not included, as my purpose here is to cite articles examining the healing potential of selected frequency therapies. The majority of authors write about the practical applications of frequencies to treat disease conditions that include bone breaks, cancer, neurological degeneration, and infections. Other authors discuss how to evaluate or improve the equipment used to disseminate the therapies, while still others address the effects of different frequencies on specific biological functions, such as enzyme and immune cell production. In a few instances, I mention which frequencies were used in the clinical trials.

Worth noting is one 2009 paper, "Amplitude-modulated electromagnetic fields for the treatment of cancer: Discovery of tumor-specific frequencies and assessment of a novel therapeutic approach," which discusses the application of Rife's technology without using his name or referring to his research or clinical trials. The abstract states in part: "Because *in vitro* studies suggest that low levels of electromagnetic fields may modify cancer cell growth, we hypothesized that systemic delivery of a combination of tumor-specific frequencies may have a therapeutic effect. We undertook this study to identify tumor-specific frequencies and test the feasibility of administering such frequencies to patients with advanced cancer. . . . Cancer-related frequencies appear to be

tumor-specific and treatment with tumor-specific frequencies is feasible, well tolerated and may have biological efficacy in patients with advanced cancer." The article also mentions that two of the authors have filed a patent on the use of electromagnetic fields for the diagnosis and treatment of cancer—in other words, Rife's technology!

A note about the article on allergic rhinitis: the successful use of 465 Hz is not surprising, as that frequency is used to successfully target *Candida albicans*, and most sinus infections have been found to be fungal rather than bacterial in nature.

The articles below, and thousands more, are listed at http://www.emf-portal.org/_index.php. This website in turn links to other sites that display the entire articles or their abstracts.

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# Appendix E

# Rife Research in the United States

*Only a fool of a scientist would dismiss the evidence and reports in front of him and substitute his own beliefs in their place.*

—Paul Kurtz, PhD (born 1925)

professor, author, editor, publisher, also known as the "Father of Secular Humanism"

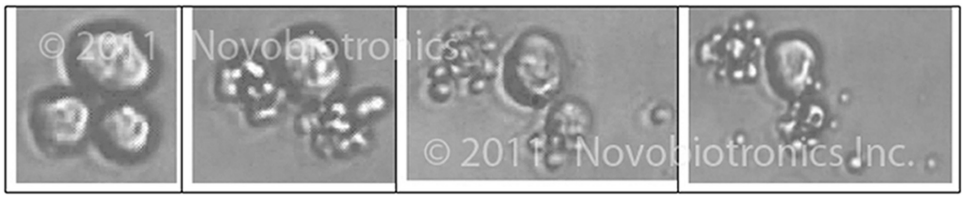
In August 2009, scientific research was begun in Philadelphia, Pennsylvania, that involved the assistance of established (mainstream) medical personnel and actually included the name "Rife" in its title. Anthony G. Holland, PhD, a music professor known for his conducting, composing and performing, had learned of Rife therapy and recognized its value. With the cooperation of inventor-chiropractor James Bare, he made several presentations with a Bare-Rife plasma frequency device and secured the help of several scientists, including the director of a cancer lab who has a PhD in oncology from Johns Hopkins University.

Dr. Holland's background in digital waveform synthesis and analysis, acoustics and physics—along with his interest in health and frequency therapy—made him ideal to organize and supervise the research team. The research, which is ongoing, is called "Plasma Emission Field Treatment," or PEFT. Novobiotronics Inc., a non-profit corporation (www.novobiotronics.com), was formed to fund the studies showing the effects of the Bare-Rife device on cancer cells and pathogens. (The company calls the equipment a "Rife-Bare" device. Like some other rifers, I put Bare's name first because the machine is contemporary and was not designed by Rife.)

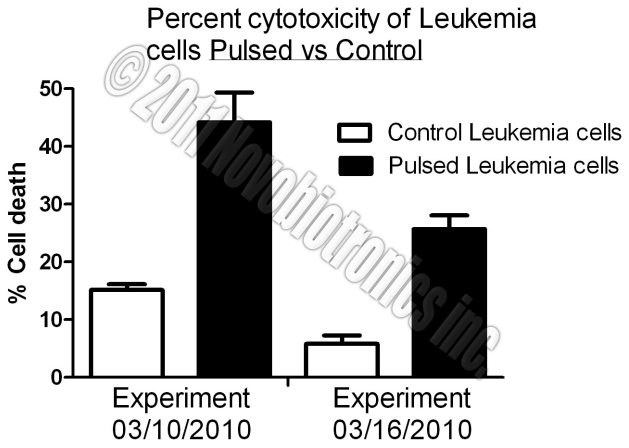
At the time this book was going to press, the researchers were still collecting data. They had not yet published the results of all the experiments, the identities of all the team members, or the frequencies and pulse rates used with the cell cultures. Therefore, only some preliminary information can be reported now. But so far, the results are very promising: the Bare-Rife machine has proven capable of destroying, *in vitro,* pancreatic, ovarian and leukemia cancer cells, as well as slowing their growth. The earliest experiments on human pancreatic cancer cells caused dramatic changes in cell *morphology,* which is the size and shape of cells. These changes can cause cells to grow at a slower rate than normal (desirable in the case of cancer).

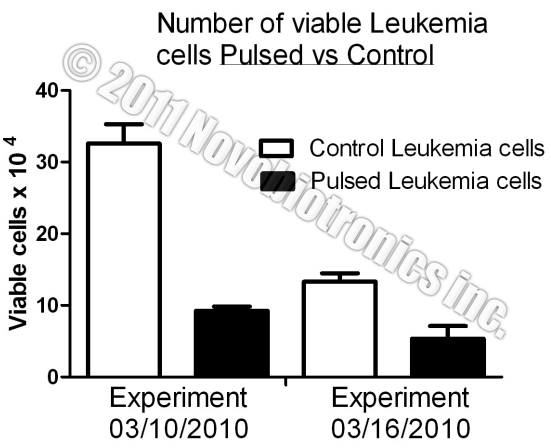
"The cancer cells," Dr. Holland explained in an email sent July 13, 2011, "are grown in special plastic dishes . . . where they establish themselves and start to grow very rapidly, much the way a cancer tumor grows in the human body. . . . It's very easy for the cancer researchers to simply count how many cancer cells were killed by the new treatment."

Data from the leukemia cell experiment is shown on the next page. This particular test, under the auspices of Dr. Holland, was conducted over the course of four months from 2009–2010, at the Division of Surgical Research of Thomas Jefferson University Medical College, with a special prototype plasma device designed and built by Dr. James Bare. The data shows that certain types of cancer cells can be killed *in vitro* (graph, left) and simultaneously slowed in their growth rate (graph, right). The term "pulsed" in the charts refers to cells that were exposed to the Bare-Rife machine.




*Above: Human leukemia cells breaking up under PEFT.*
*The same three leukemia cells are shown throughout the montage.*
*Two cells are undergoing a morphological transformation*
*and eventual breakup, caused solely by PEFT.*




*Photomontage and charts courtesy of Dr. Anthony G. Holland, Novobiotronics Inc.*

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*A powerful agent is the right word. Whenever we come upon one of those intensely right words the resulting effect is physical as well as spiritual, and electrically prompt.*

— Mark Twain, American writer, critic and humorist (1835–1910)


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Note: Not every microbe and disease in Chapter 5 (the Frequency Directory) is included here, as Chapter 5 is in itself an annotated index. However, this index does contain all of the primary (overview) categories in Chapter 5, as well as many health conditions listed in sub-headings. For a complete directory of diseases, along with their frequencies, see Chapter 5.


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# About The Author



*Photo courtesy of Paul Silverfox*

Writer, educator, artist and musician, Nenah Sylver has devoted her life to the exploration of healing on mental, emotional, physical and spiritual levels. Her early training in music led to subsequent studies in spirituality and physics—all complementary paths to her lifelong passion, the science of frequency.

Starting as a young adult, Nenah worked for two decades as a singer-songwriter, playing piano and guitar. She performed in New York City clubs and coffeehouses, traveled for revues, wrote lyrics and music for two off-Broadway plays, and won five songwriting awards. During that time, Nenah also performed for Hospital Audiences, Inc., an organization that specializes in bringing music to adults and children in hospitals, residential treatment centers and nursing homes.

For fifteen years, Nenah had a private practice in body-mind psychotherapy based on the principles of physician and natural scientist Wilhelm Reich. In 1996, she received her PhD from the Union Institute & University in Transformational Psychology, a multi-disciplinary program of holistic health, psychology and gender studies. Then, in what began as a quest for help with her own health issues, Nenah started researching Royal Rife and his inventions along with other electromedicine therapies. Her extensive knowledge of effective and safe holistic protocols eventually coalesced into *The Rife Handbook*.

Among other publications, Nenah's writing credits on psychology, feminism, health and social change include *The New Internationalist*, *Off Our Backs*, *Beiträge zum Werk von Wilhelm Reich* (Contributions to the Work of Wilhelm Reich), and the anthologies *Journeys of the Heart: Perspectives on Intimacy in America* (Bruner-Mazel), *Glibquips: Funny Words by Funny Women* (Crossing Press), *Closer To Home: Bisexuality and Feminism* (Seal Press), *An Introduction to Women's Studies* (Simon & Schuster), *Transforming a Rape Culture* (Milkweed Editions), *Women, Culture, and Society: Readings in Women's Studies* (Simon & Schuster), and the forthcoming anthologies *Bullying: Beyond the Schoolyard* (Teatro V!da, 2011) and *The Rebirth of Prometheus* (Inner Traditions, 2012). Her volume of poetry, *Birthing*, was published in 1996 by Woman in the Moon Publications. She has been cited in *Utne Reader* and *The New Yorker*, and her artwork was used to illustrate an anthology of short stories, to which she also contributed narrative.

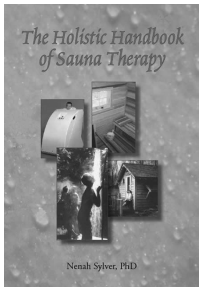
Perhaps Nenah is best known for her writing in the health field. In addition to articles in *Natural Living Today* and *Natural Food & Farming*, "Toxic Products, Deceptive Labels" appeared in *Nexus* in 2000. Dr. Sylver's comprehensive book, *The Holistic Handbook of Sauna Therapy*, was published in 2004. In 2008, the two-part "Healing with Electromedicine and Sound Therapies" and "Hypothyroidism Type 2: a new way of looking at an old problem" appeared in *Townsend Letter*. Excerpts from *The Rife Handbook* have been translated into German and Korean, and the entire book is being translated into Spanish and German.

The author has appeared on the Pacifica radio station WBAI-FM and on NBC-TV to discuss lifestyle choices. Additional radio interviews have featured health, electromedicine, and alternatives to toxic chemicals in the home. She is also an interviewee in the upcoming feature-length documentary, "Back From The Edge," in which leading figures in the complementary health field discuss solutions to failed medical care in the US.

Nenah conducts educational seminars on holistic health and electromedicine, and is a featured speaker at Rife conferences all over the world. She lives with her lifetime companion and their dogs.

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