

SECOND EDITION

Earthing

The most important
health discovery ever!



Clinton Ober,
Stephen T. Sinatra, M.D.
Martin Zucker

Foreword by James L. Oschman, Ph.D.,
author of *Energy Medicine: The Scientific Basis*
With commentary by electrophysiologist Gaétan Chevalier, Ph.D.

Praise for Earthing



2011 NAUTILUS AWARD WINNER

WELLNESS/PREVENTION/HEALTH & HEALING

The Nautilus Awards recognizes books that promote spiritual growth, conscious living and positive social change, while at the same time stimulating the “imagination” and offer the reader “new possibilities” for a better life and a better world.

“This inspired and well-researched book explains the perils we face by being disconnected from the power and energy of the Earth and its boundless storehouse of free electrons. Could much of the disease, chronic inflammation, poor sleep, and more be the result of this? A brilliant hypothesis well-grounded in science.”

—NICHOLAS PERRICONE, M.D.,
AUTHOR OF *AGELESS FACE, AGELESS MIND*

“Earthing ranks right up there with the discovery of penicillin. This book is probably the most important health read of the twenty-first century.”

—ANN LOUISE GITTLEMAN, PH.D., C.N.S.,
AUTHOR OF *THE FAT FLUSH PLAN*

TOP 10 SPA AND WELLNESS TRENDS FOR 2013

“As modern-day humans become more cut off from nature, Earthing specifically refers to the movement promoting direct contact with the earth’s electron-rich surface . . . to help combat ‘nature deficit disorder.’”

—SpaFinder Wellness 10th Annual Forecast based on surveys of global spa and wellness businesses, travel agents, and consumers

“Earthing may be as fundamental as sunlight, air, water, and nutrients. ‘May the Ground be with you!’”

—GARY E. SCHWARTZ, PH.D., PROFESSOR OF PSYCHOLOGY AND MEDICINE, UNIVERSITY OF ARIZONA, AND AUTHOR OF *THE ENERGY HEALING EXPERIMENTS*

“Earthing the human body influences human physiologic processes. It may be the primary factor regulating endocrine and nervous systems.”

—KAROL SOKAL, M.D., PH.D., PAWEŁ SOKAL, M.D., PH.D., BYDGOSZCZ, POLAND

“In my psychiatric practice, I often recommend Earthing to patients. I consider it to be a powerful tool in my multidimensional healing medicine bag.”

—TRACY LATZ, M.S., M.D., CO-AUTHOR OF *SHIFT: 12 KEYS TO SHIFT YOUR LIFE*

“People have lost touch with the Earth. From a biblical perspective, people who lose touch with the Earth lose touch with God. Earthing reconnects us to the planet, to others, and, in a sense, to God.”

—GABRIEL COUSENS, M.D., AUTHOR OF *SPIRITUAL NUTRITION*

“Most people want the most health benefits for the least amount of work. This is it! Earthing gives you more benefits for the least work. There is no work!”

—DAVID WOLFE, M.S., AUTHOR OF *SUPERFOODS: THE FOOD AND MEDICINE OF THE FUTURE*

“This works! It has great promise. Something simple that should be used everywhere.”

—RICHARD DELANY, M.D., MILTON, MASSACHUSETTS

“Hormonal imbalances are so prevalent among women. Earthing has a profoundly beneficial effect in helping to balance the system and reduce symptoms.”

—AMANDA WARD, N.D., ENCINITAS, CALIFORNIA

“Earthing connects us to Nature and Nature is the ultimate source of health and healing. This book is a manual for one of Nature’s great healing secrets.”

—JOHN GRAY, PH.D., AUTHOR OF *MEN ARE FROM MARS, WOMEN ARE FROM VENUS*

“There may be nothing more basic or universal for healing people than Earthing. Getting reconnected to the Earth should be the new human vocation.”

—JED DIAMOND, PH.D., AUTHOR OF *STRESS RELIEF FOR MEN: HOW TO USE THE REVOLUTIONARY TOOLS OF ENERGY HEALING TO LIVE WELL*

“Earthing establishes a new and healthier level of what is normal in the physiology.”

—CHUCK MUNIER, D.M.D., AUGUSTA, MAINE

“The feedback from patients is now so strong that I know predictably, as a doctor, this will change a person’s life.”

—DAVID GERSTEN, M.D., AUTHOR OF *ARE YOU GETTING ENLIGHTENED OR LOSING YOUR MIND?*

“Earthing is a revolutionary health breakthrough that will change your life. Read this book, get grounded, and start the process of breaking the stress and illness cycle.”

—MARTIN GALLAGHER, M.D., D.C., AUTHOR OF *DR. GALLAGHER’S GUIDE TO 21ST CENTURY MEDICINE*

“Earthing has been a huge boost for me and the recovery process from injuries and exhaustion. I’ve been able to come back a lot stronger and feel a lot better.”

—CHRIS LIETO, THREE-TIME IRONMAN TRIATHLETE CHAMPION

“After a near-death accident, I was told I may never walk again, let alone run. However, by going barefoot, I was able to flip the on-switch to perfect health. Thanks in large part to Earthing, I have been able to run miles a day, pain free, and filled with joy.”

—MICHAEL SANDLER, CO-AUTHOR OF *BAREFOOT RUNNING AND BAREFOOT WALKING*

Earthing

The most important
health discovery ever!

Clinton Ober
Stephen T. Sinatra, M.D.
Martin Zucker

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*To the memory of Kay Wilson, who helped so, so much
in the early days of Earthing, and to all those many
other good people who saw that Earthing was
really something special and who gave me the needed
encouragement and support to carry on and bring this
knowledge to a world critically in need of it.*

—CLINTON OBER

*To my son, Step, who overcame near lethal electropollution
that ravaged six years of life and recovered with the help
of Earthing. You taught me so much about the tenacity
of the human spirit and how positive intention and
love can powerfully engage the healing process.
I am profoundly grateful for what you have taught me,
but infinitely more for the joy of still having you in my life.*

—STEPHEN SINATRA

*To Rosita, as always, and to the prospect of exploiting
our planet—for a change in a most magnificent way.*

—MARTIN ZUCKER



Foreword

By James L. Oschman, Ph.D.

***Author of Energy Medicine: The Scientific Basis and
Energy Medicine in Therapeutics and Human Performance***

This book unfolds an amazing story of discovery, a process that you, the reader, will soon experience for yourself as you read through the pages ahead.

It is a rare and humbling experience for a scientist to have the opportunity to explore new ground—and this story is all about ground—and participate in research that quickly infuses better health and more happiness into people's lives. It has been an exciting and challenging process for me. I was forced to ask questions that had never been asked before. The answers have ranged from fascinating to astounding, and they have shed light on some of the most important unsolved problems in physiology and medicine.

Among the many surprising revelations this book holds is an obvious, fundamental, and yet overlooked answer to the question of inflammation—recognized as the central health issue of our time—that surely will lay the foundation for many academic investigations and doctoral projects well into the future. To get an idea of the impact of inflammation on health, refer to Figure 1 on the next page. It tracks the dramatic proliferation of scientific studies on inflammation—now approaching 30,000 a year!—for nearly a half-century. Inflammation is thus being revealed as a critical link between our lifestyle and the soaring global increase of chronic diseases—the biggest health problems both in terms of cost and human

suffering. These revelations place the book you are about to read at the center of the most significant health issue in our modern age.

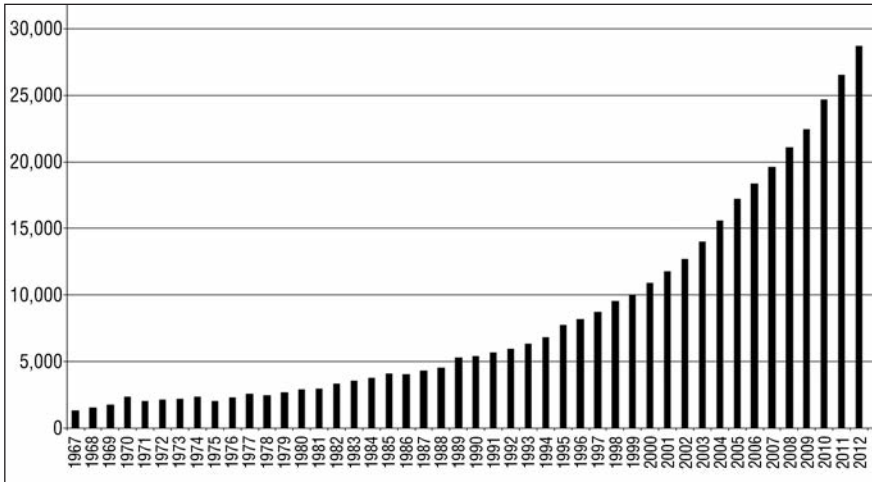


Figure 1. Year-by-year increase of published peer-reviewed studies on inflammation, 1967-2012. Source: Pub Med (National Library of Medicine database), as of January 2013.

I say that without equivocation, as an experienced academic cell biologist and biophysicist who has published dozens of articles in some of the world's leading scientific journals. The research in this book puts forward, and from a completely unexpected direction, a powerful explanation for the proliferation of inflammation and, most importantly, what we can do about it.

As you read this book, you will quickly learn some profound and life-impacting facts you never knew before about our relationship with the planet we live on. You'll learn, for instance, how electrons play a central role in this relationship. The role of electrons in biology and health has long been my favorite subject. Of special importance in my explorations of the electronic aspects of life was an association during the 1980s with the leading research group studying this subject, consisting of Nobel Laureate Albert Szent-Györgyi and colleagues from around the world at the Marine Biological Laboratory in Woods Hole, Massachusetts. A number of these great inquiring minds were electronic engineers and materials scientists recruited to study a field he created and named *electronic biology*.

Dr. Szent-Györgyi was considered one of the leading scientists of the twentieth century, and his research and writings have been a continuing source of inspiration and insight. I have published a series of articles and two books on the ways electrons can move about within the human body and the ways various therapeutic methods influence electron motions. The research summarized in this book adds a whole new dimension to our understandings of electronic biology.

The book traces the discoveries of Clinton Ober, a pioneer in the cable TV industry, who uncovered real health benefits from “Earthing,” his term for being barefoot outside or in bare-skin contact with special conductive sheets and mats indoors connected to the ground. Many people describe a significant sense of well-being as a result of Earthing.

The stories and the research in the book reveal the background, dynamics, and implications of this feel-good sensation, a real experience indicative of something profoundly important that most of us have been missing in our lives. This missing link is so profound in fact that it seems to do away with or dramatically improve so many health challenges common in this day and age: insomnia, the chronic pain of multiple diseases and injuries, exhaustion, stress, anxiety, and premature aging. Even the most superbly conditioned individuals—elite athletes—recover much faster from their exertions and injuries.

I was quickly and enthusiastically drawn into this research when I saw how many people experienced a wide variety of health and recovery benefits from simply connecting their bodies to the Earth. When my massage therapist began using Earthing with her clients, she achieved so many successes that physicians in the area began sending her their most difficult cases to treat. My challenge was to help determine precisely how Earthing produces such effects and to explain it as accurately as possible in the language of science.

Other researchers, from as far apart as California and Eastern Europe, have joined in this fascinating project. Our explorations have uncovered what is perhaps the most simple and natural remedy against proliferating, painful, and often deadly conditions, including the diseases of aging, created by various kinds of inflammation. As you will read further on, our hypothesis for how this remedy works is unlike any you have ever heard. In all its ramifications, we think it represents a new healing paradigm.

In short, Earthing restores and maintains the human body's most natural electrical state, which in turn promotes optimum health and functionality in daily life. The primordial natural energy emanating from the Earth is the ultimate anti-inflammatory and the ultimate anti-aging medicine.

For more than fifteen years, Clint Ober has tirelessly pursued a mission to awaken a skeptical world to a simple and forgotten fact: that the Earth beneath our feet contains great healing energy and that connecting ourselves to this energy is immediately beneficial as well as intuitively and remarkably simple.

As with any new discovery, Clint had to endure skepticism and derision from "experts," some of whom regarded him as crazy. But he persisted and has now gathered significant scientific evidence for his out-of-the-box idea. Moreover, many thousands of people who have applied the concept of Earthing in their lives feel, look, and sleep better, and they have less pain.

As we explored absolutely new avenues of research in order to validate the concept of Earthing and determine how it affects the human body, Clint turned out to be a rock solid and dedicated guide to those of us with Ph.D.s after our names. Clint often refers to his lack of education as a scientist, but what he has accomplished shows that determined and inspired individuals can accomplish an enormous amount by teaching themselves what they need to know. I have been continually astonished by his precise and accurate insights that go beyond the conclusions a logical scientific mind would usually develop. I feel that I have been privileged to work with a genuine discoverer and pioneer whose interest in helping others exceeds any personal interest by far.

Steve Sinatra, a Connecticut cardiologist who specializes in integrative medicine and has an interest in electromedicine, met Clint in 2001 and saw great promise for Earthing in his own field of cardiology, as well as medicine in general. Steve encouraged Clint to stick with it and pursue research, particularly the connection with inflammation, which had been found to be the probable cause of heart disease.

In 2010, Clint, Steve, and veteran health-writer Martin Zucker teamed up to write the fascinating Earthing story as a book. Since its publication, the book has been translated into more than a dozen languages. This second edition contains additional research and evidence of the Earth's potent healing properties.

To break new ground means to do something different from anything done before. If ever the term *groundbreaking* applies to a book, it certainly does here, literally and figuratively. This book is about the ground beneath our feet, and the revelation of a vital electrical continuum between the Earth and the living organisms that dwell upon it.

Walk, stand, and sit barefoot on the ground for a half hour or so. If you have PMS or arthritic pain or a backache or indigestion or jet lag or are just feeling fatigued, go outside (weather permitting, of course) with your bare feet placed directly on the Earth.

At the end of that time you will feel better. And as you feel better, a lightbulb will go off in your head. You will realize that although you live on the surface of the Earth your lifestyle has separated you from the limitless healing energy that, unknown to you, the surface beneath your feet holds. It's there, and always there, and yours for the taking.





PART ONE

Why We Are
Increasingly
Unhealthy—
The Missing
Link



CHAPTER 1

The Miracle of Mother Earth

In all things of Nature there is something of the marvelous.

—ARISTOTLE

The Earth beneath our feet provides sustenance in the form of food and water. It provides a surface to sit, stand, walk, run, swim, climb, play, and build on. And, it also provides something very surprising and marvelous, something you likely never, ever thought about.

Healing power.

Marvelous healing power.

In the book you are about to read, you will learn about this eternal healing power, the astonishing magnitude of which was discovered through the curiosity and persistence of a few individuals.

If possible, sit with your bare feet directly on the Earth—grass, gravel, dirt, sand, or concrete—while you read. If you do, you will simultaneously make your own personal discovery and experience what you are reading about. You will feel a positive shift within you as your body becomes infused with the natural healing power of the Earth.

In this book you will also read about people from all over the world who connect to this unlikely power source with remarkable results. People such as these:

- A former attorney for a Fortune 500 company who experienced a dramatic remission from lupus, a devastating autoimmune disorder.
- An Australian doctor who restores feeling to the numb feet of patients suffering from diabetic neuropathy.

- A paraplegic in Alaska who was unable to move his feet for twenty-five years after an accident, and is able now not only to move his feet but also to begin taking a few steps.
- And others suffering from common disorders who have gotten relief by reconnecting to Mother Earth.

We call the reconnection “Earthing” or “grounding.”

WHAT IS EARTHING?

Earthing is both a timeless practice and a modern discovery. It simply means living in contact with the Earth’s natural surface charge—being grounded—which naturally discharges and prevents chronic inflammation in the body. This effect has massive health implications because of the strong link between chronic inflammation and virtually all chronic disease, including the diseases of aging, and the aging process itself.

But don’t we all live on the Earth? you may be thinking.

Yes, we live on Earth, but most of us don’t touch the Earth anymore.

Throughout practically all of history, we humans have maintained a direct physical connection with the Earth—the skin of our bodies touching the skin of the Earth.

We walked barefoot and slept directly on the ground. We were at all times naturally charged with the healing energy of the Earth. Today, we mostly live and work insulated from the Earth. We wear non-conductive shoes with synthetic soles, walk on carpeted floors, and sleep in elevated beds. We do not live on the ground. We even live and work high off the ground, in high rises. We rarely go barefoot outside.

We’re disconnected.

We’re Earth-starved.

Consequently, our bodies have become chronically charged with inflammation, an unnatural development, and one that appears to represent an overlooked reason why immune dysfunction and inflammation-related health disorders have dramatically proliferated, ravaging adults and children alike. We’ve lost our electrical roots, the Earth’s electrical ground that serves as our primordial anti-inflammatory protection.

Earthing offers a simple remedy for the disconnect. It's as easy as being barefoot outdoors or sleeping, working, and relaxing indoors on conductive systems designed for the house and office. Whether outdoors or indoors, you are reconnecting to the Earth's natural surface charge and restoring a natural electrical state in your physiology.

This book documents how reconnecting and grounding the body consistently produces these and other common benefits:

- Rapid reduction of inflammation.
- Rapid reduction or elimination of chronic pain.
- Dynamic blood flow improvement to better supply the cells and tissues of the body with vital oxygen and nutrition.
- Reduced stress.
- Increased energy.
- Improved sleep.
- Accelerated healing from injuries and surgery.

Earthing is among the most natural and safest things you can do to improve your health; something simple yet astoundingly profound. It is not a treatment but a hugely rewarding return-to-a-core aspect of Nature that we have abandoned. Earthing is a missing link in the health equation.

This book tells why and what to do about it.

***The Most Important Health Discovery Ever? or
The Most Important Health Discovery Ever!***

In the first edition, the subtitle of our book ended with a question mark. For this, the second edition, we have chosen an exclamation point.

That's because we are even more convinced that reconnecting to the Earth represents a landmark health discovery, with great implications for our chronic disease-plagued society. About that we have no doubts and no question.



CHAPTER 2

Electrical You and Your Electrical Planet

Have you ever noticed a subtle tingling or sensation of warmth rising up from your feet during a barefoot stroll on a sandy beach or grassy field glistening with the morning dew?

Did you feel revitalized at the end of your walk?

If you did, you experienced the Earth energizing your body.

The fact is that we live on a planet alive with natural energies. Its surface teems with subtly pulsating frequencies, a phenomenon unknown to most people. Who regards the sand, grass, sidewalk, or dirt beneath their feet as an energy field?

But that indeed is what the ground is and always has been.

Put another way, your planet is a six sextillion (that's six followed by twenty-one zeroes) metric ton battery that is continually being replenished by solar radiation, lightning, and heat from its deep-down molten core. And just like a battery in a car that keeps the motor running and the wheels turning, so, too, do the rhythmic pulsations of natural energy flowing through and emanating from the surface of the Earth keep the biological machinery of global life running in rhythm and balance—for everything that lives on the land or in the sea.

People.

Animals.

Fish.

Plants.

Trees.

Bugs.

Bacteria.

Viruses.

Throughout history, humans have sat, stood, strolled, and slept on the ground without knowing that such simple contact transfers a natural electrical signal to the body.

Only recently has the knowledge and significance of this connection been explored and explained by scientific experts in geophysics, biophysics, electrical engineering, electrophysiology, and medicine. From them, we are learning that the Earth's electrical energy maintains the order of our own bodily frequencies just as a conductor controls the coherence and cadence of an orchestra. We all live and function electrically on an electrical planet. We are each of us a collection of dynamic electrical circuits in which trillions of cells constantly transmit and receive energy in the course of their programmed biochemical reactions. Think of them as microscopic electronic machines. The movement of nutrients and water into the cells is regulated by electric fields, and each type of cell has a frequency range in which it operates. Your heart, brain, nervous system, muscles, and immune system are prime examples of electrical subsystems operating within your bioelectrical body. The fact is, all of your movements, behaviors, and actions are energized by electricity.

OUR LOST ELECTRICAL ROOTS

Most people, even in this scientific age, are totally unaware of their bioelectrical nature. Practically no one has the slightest notion of an electrical or energetic connection between his or her body and the Earth. Nobody learns about it in school. So nobody knows that we have largely become disconnected and separated from the Earth. In developed societies, in particular, we have essentially lost our electrical roots. Our bare feet, with their rich network of nerve endings, rarely touch the ground. We wear insulating synthetic-soled shoes. We sleep on elevated beds made from insulating material. Most of us in the modern, industrialized world live disconnected from the Earth's surface. Although it is not something you probably have ever thought about, you may be suffering needlessly because of this disconnect. And you may be suffering severely, and in more ways than you could ever imagine.

As an analogy, think of a lightbulb with a loose connection. The bulb flickers, shines weakly, or doesn't light up at all. Many people go through life with flickering or weak health.

We believe this book is the first ever written about Mother Earth's natural "vibes" and how they keep us healthy and heal us—if we connect and stay connected to the source. Disconnected, the body seems vulnerable and prone to dysfunction, inflammation-related disease, and accelerated aging—a startling theory just beginning to gather scientific momentum.

This is the subject of our book.

The natural frequencies of the Earth that we speak of are waves of energy caused by the motions of subatomic particles called free electrons. Nobody has ever seen an electron, but you can think of them in the setting of a beehive. The bees, buzzing around the hive, are like electrons that move around the atomic nucleus in a "cloud" of energy. Another analogy used over the years is that of planets revolving around the sun. The nucleus contains protons, with a positive charge, and neutrons, that have, as their name implies, no charge. Electrons have a negative charge.

It is these electrons that give the Earth's surface a natural, negative charge. They are present, as science informs us, in a virtually limitless and continuously renewed supply, fed by the natural phenomena of rain and thousands of lightning strikes per minute. Maintaining contact with the ground allows your body to naturally receive and become charged with these electrons. When thus "grounded," you automatically absorb them, which in turn reduces electrical imbalances in the body and the oxidative free radicals involved in chronic inflammation and multiple diseases. The body's natural electrical state is restored.

This is the theory behind Earthing.

ELECTRICALLY CONDUCTIVE YOU

To understand the primordial relationship between bioelectrical you and your electrical planet, consider for a brief moment three types of materials used in electricity: conductors, insulators, and semiconductors. An example of a conductor is the metallic copper wiring in the walls of your house or in the electrical cord that you plug into an outlet from an appliance. The outer waves of electrons in conductors—corresponding in a simplistic way to the outermost bees buzzing around the beehive or to the distant planets orbiting around the sun—are so loosely bound that they easily move in the space between the atoms. They form a kind of gas around atoms and flow freely throughout the solid conductive material.

That is why they are called free electrons. Think of them as free spirits, so to speak, not bound in a relationship with any atom composing the solid material.

In insulating materials, electrons are held in a tight grip by their atoms. There are no free electrons and consequently no current can flow through these materials. Examples of insulating materials include plastic, rubber, glass, and wood. You can now see why most of the time you are separated from the Earth. Your shoes' soles are made of plastic or rubber, and your house is made mainly of wood. Semiconductors are in between, sometimes conducting, sometimes not. Their electrical conductance is not as good as a conductor but not as bad as an insulator. Semiconductors are the backbone of modern electronic equipment because their conductance can be controlled by the application of an electric field.

Just like the Earth, your body is mostly water and minerals. Both are good conductors of electrons, and that's what makes you and the Earth electrically conductive.

Homo erectus, back a hundred thousand generations or so, didn't know a thing about any of this. Neither did the hunter-gatherers who followed in the human timeline. Neither did the cultivator civilizations working the land about four hundred generations ago. And neither did the more recent Industrial Age incarnations. Even in today's electronic and wireless age, few know about the Earth's brimming reservoir of energetic free electrons.

Scientists back in the late 1800s first measured the Earth's subtle ground currents at different places around the world, using words such as "tranquil" and "quiet" to describe them. Present-day science refers to them as "telluric currents" and recognizes them as part of a larger system—called the "global electrical circuit"—involving clouds and the entire atmosphere. Geophysicists believe that this bank of almost limitless energy is continuously replenished with free electrons via an average of 5,000 lightning strikes per minute occurring perpetually around the planet. Without getting technical, the electrical potential present on the Earth's surface rises and falls according to the position of the sun. The intensity is more positive and energetic during the day, in support of your daily activities from wake up to shut down, and less positive and energetic during nighttime hours, promoting zzzzzs. This daily high and low pattern sets in motion and orchestrates internal body mechanisms that regulate sleep-wake cycles, hormone production, and maintenance of health.

PAST CONNECTIONS

The basic phenomena of electricity were known since antiquity, but electricity was only harnessed for industrial and residential use about 120 years ago or so. The electron itself was discovered only in 1897, so virtually throughout the human timeline nobody knew anything about electrons. But there was plenty of knowledge over the eons of time that the ground held special healing energy and was a basic aspect of connectedness to Nature. The Earth was sacred. This knowledge, passed down over countless generations, has survived in one form or another around the globe. Civilizations everywhere recognized and tuned in to the cycles of Nature for survival and health. They were aware of fundamental rhythms that regulate, for instance, sleep-wake cycles and maintenance of health, and they knew that we functioned in coordination with the Earth's cycles and rhythms. Awareness existed of connectivity among the principles of Earth, life, and health, but expressed in the language of the day.

Qi (pronounced *chee*) is a central principle in the long history of Chinese knowledge and is regarded as the energy or natural force that fills the universe. From India's Vedic past comes an equivalent term, *prana*, meaning "vital force."

In the Chinese tradition, Heaven Qi is made up of the forces that heavenly bodies exert on the Earth, such as sunshine, moonlight, and the moon's effect on the tides. Earth Qi, influenced and controlled by Heaven Qi, is made up of lines and patterns of energy, as well as the Earth's magnetic field and the heat concealed underground. And within the Earth Qi, individuals, animals, and plants have their own Qi field. All natural things, in this concept, grow and are influenced by the natural cycles of Heaven Qi and Earth Qi.

Earth Qi is absorbed, without thinking about it, when we walk barefoot, which may explain why it's so relaxing to walk without shoes and why exercises geared toward strengthening the body and relaxing the mind (yoga, tai chi, and qigong, for instance) are often practiced without footwear. A central focus in Chinese practices involves "growing a root" and has to do with opening up communication between the bottom of the feet and the Earth. This process occurs through the "yong quan point," also known in acupuncture as the "kidney 1 point."

The ancient Greeks surely knew something about this concept. Hercules, one of the greatest heroes of Greek mythology, fought and defeated the giant Antaeus, who was renowned as a great wrestler. As the story goes, Antaeus was invincible as long as his feet remained in contact with the Earth, from where he drew his strength. He had never been defeated. Hercules, knowing Antaeus' secret, lifts the giant off the ground and strangles him to death.

Native Americans certainly honored the connection to the Earth. The late Ota Kte (Luther Standing Bear), a writer, educator, and tribal leader from the Lakota Sioux tradition, summed it up this way:

“The old people came literally to love the soil. They sat on the ground with the feeling of being close to a mothering power. It was good for the skin to touch the Earth, and the old people liked to remove their moccasins and walk with their bare feet on the sacred Earth. The soil was soothing, strengthening, cleansing, and healing.”

CONNECT TO THE EARTH AND HEAL

This book will show you just how soothing, strengthening, and healing the Earth is. It will totally change the way you regard the ground under your feet and your relationship to the planet you live on.

For most people, reconnecting with Mother Earth usually means camping, hiking, gardening, going to the beach, or pursuing some other activity that returns us—in body and soul—to the bosom of Nature. The reconnection we talk about in this book is something different. By reconnection we mean taking off your shoes and socks and sitting, standing, or walking barefoot on the ground, something that is absolutely free and available (of course, where safe and comfortable). The reconnection can also involve the use of conductive bed sheets or floor mats linked by wire to a ground rod outside your house or office, or plugged into a wall outlet with a modern Earth ground system.

Either way, we call this reconnection process “Earthing” or “grounding,” terms we will use interchangeably. They simply mean you are connected to Mother Earth. What you are doing is akin to what is well known in the electrical world as grounding, the common practice of connecting equipment and appliances to the Earth to protect against shocks, shorts, and interference. Applied to people, Earthing naturally protects the body's delicate bioelectrical

“Vitamin G” for “Ground”

Exposure to sunlight produces vitamin D in the body. It's needed for health. Exposure to the ground provides “electrical nutrition” in the form of electrons. Think of these electrons as vitamin G—G for ground. Just like vitamin D, you need vitamin G for your health as well.

circuitry against static electrical charges and interference. Most importantly, it facilitates the reception of free electrons and the stabilizing electrical signals and energy of the Earth. Earthing remedies an electrical instability and electron deficiency you never knew you had. It refills and recharges your body with something you never knew you were missing . . . or needed.

As you will read in this book, the results of Earthing often translate into a significant improvement—even total transformations—in health and vitality. One thirty-six-year-old woman with advanced multiple sclerosis (MS) was so happy about her improvement after Earthing that she once ran out of her house, stood in the middle of the street, and screamed to all her neighbors to get grounded. She said she wanted to start the “bare-foot revolution” and teach everyone how to get well. She had tried Earthing out of desperation—something someone had told her about—after a doctor advised her to purchase an adjustable bed, a large screen television, and to make herself as comfortable as possible. MS doesn't get better, the doctor told her. In her case it did, and dramatically so.

Another woman spent over five years with debilitating pain, inflammation, fatigue, and sleep problems after a serious car accident. Despite a long career in the healthcare industry, she found herself locked in an exhausting struggle to regain her health. She went from one practitioner and treatment to another. “Like Humpty Dumpty in the nursery rhyme,” she said, “all of the king's horses and all the king's men could not put me back together again.” Unable to work, she found herself instinctively drawn to lying in the grass or walking barefoot on the beach. She began sleeping grounded and within months her pain, fatigue, and sleep problems vanished.

Even athletes, who operate at the most intense levels of physical human performance, have learned to ground and plug in to the natural energy

of the Earth. From a group perspective, perhaps the most dramatic demonstration of Earthing's effectiveness occurred at the Tour de France. The extreme physical and mental stress in this grueling race often causes sickness, tendonitis, and poor sleep among competitors. They tend to experience slow wound healing from accidents. In the 2003 to 2005 races, and again in 2007, American team cyclists were grounded after their daily competition. They reported better sleep, significantly less illness, practically no tendonitis, dramatic recovery from the day's racing, and faster healing of injuries. The practice has now been found to be so beneficial that other top athletes routinely Earth themselves.

Earthing is simple, basic, and powerful. We regard it as a genuine missing link in the health equation, something with astounding potential to do much good for humanity. Reconnecting to the Earth doesn't cure you of any disease or condition. What it does is to reunite you with the natural electrical signals from the Earth that govern all organisms dwelling upon it. It restores your body's natural internal electrical stability and rhythms, which in turn promote normal functioning of body systems, including the cardiovascular, respiratory, digestive, and immune systems. It remedies an electron deficiency to reduce inflammation—the common cause of disease. It shifts the nervous system from a stress-dominated mode to one of calmness and you sleep better. By reconnecting, you enable your body to return to its normal electrical state, better able to self-regulate and self-heal.

In 1863, the eminent biologist T. H. Huxley stated that “the question of all questions for humanity, the problem which lies behind all others and is more interesting than any of them, is that of the determination of our place in nature and our relation to the cosmos.” The content of this book explores that question from the simple perspective that your place in nature, in your immediate cosmos, requires you to be directly and routinely connected to the Earth under your feet.

In the pages ahead, we will explore the health implications of mankind's disconnect and present the unusual story about how the disconnect and the reconnect were discovered. You will read accounts of amazing healing from doctors and people from all walks of life. Most importantly, you will learn how easy it is to reconnect, to get Earthed, and to feel better.



CHAPTER 3

The Disconnect Syndrome

*Illnesses do not come upon us out of the blue.
They are developed from small daily sins against Nature.
When enough sins have accumulated, illnesses will suddenly appear.*

—HIPPOCRATES

The father of medicine clearly knew what he was talking about 2,500 years ago when he saw his Greek countrymen committing all kinds of sins against Nature. Imagine what he would think today just by looking at the most supposedly advanced country in the world. U.S. medical expenses, public and private, account for more than 17 percent of the gross national product and are projected to grow at a rate of 6 percent a year. By 2018, our medical bill will represent 20 percent of the country's earnings!

Ouch. That implies a lot of sickness and an inability of the medical system to prevent disease in the first place. Hippocrates would likely say there's a mighty amount of sinning going on.

In today's scientific age, an intense debate reverberates among researchers over what's to blame for the alarming increase in immune- and inflammation-related diseases.

In March 2008, an article by Rob Stein of the *Washington Post* brought attention to one of the primary issues responsible for the health meltdown: the decline of the human immune system. His article was entitled "Is Modern Life Ravaging Our Immune Systems?"

"First, asthma cases shot up, along with hay fever and other common allergic reactions, such as eczema," Mr. Stein wrote. "Then pediatricians

started seeing more children with food allergies. Now experts are increasingly convinced that a suspected jump in lupus, multiple sclerosis, and other afflictions caused by misfiring immune systems is real.

“Although the data are stronger for some diseases than others, and part of the increase may reflect better diagnoses, experts estimate that many allergies and immune-system diseases have doubled, tripled, or even quadrupled in the past few decades, depending on the ailment and the country. Some studies now indicate that more than half of the U.S. population has at least one allergy.”

Researchers blame modern living because the increases have shown up first largely in highly developed nations in Europe, North America, and elsewhere, and they are on the rise in other countries as they become more developed.

Globally, there’s an “unprecedented rise” in diseases associated with inflammation and immune dysfunction, according to a 2012 report from the International Inflammation Network of researchers.

“Disturbing,” said one French researcher, referring alone to the increase of autoimmune disorders, the difficult to treat and often disabling conditions stemming from a dysfunctional immune system that attacks the body’s own cells, tissues, and organs. Common autoimmune diseases include lupus, rheumatoid arthritis, multiple sclerosis, and type 1 diabetes. The cause remains unknown, and the reasons for the increase are poorly understood. Collectively, they are among the most prevalent diseases in the United States, afflicting between 15 and 24 million people, about 75 percent of them women.

THE RISE OF INFLAMMATION

All these conditions—as well as the major disease killers like cardiovascular disease, type 2 diabetes, and cancer—are linked to chronic inflammation, a subject that has taken over center court in medical research during the last few years. As *Time* magazine reported in a 2004 cover article, “Hardly a week goes by without the publication of yet another study uncovering a new way that chronic inflammation does harm to the body.” It torches the sensitive linings of the arteries that feed the heart and brain, leading to heart attacks and stroke. It chews up nerve cells in the brain

and may contribute to the development of dementia and Alzheimer's disease. It can promote the proliferation of abnormal cells and facilitate their conversion into cancer. "In other words," the magazine said, "chronic inflammation may be the engine that drives many of the most feared illnesses of middle and old age."

The rise of inflammation in medical awareness has spawned a new term: "inflamm-aging." Italian researchers coined it in 2006 to describe a progressive inflammatory status and a loss of stress-coping ability as two major characteristics of the aging process.

Inflammation is now believed to be the underlying cause of more than eighty chronic illnesses, and more than half of Americans suffer currently from one or more of them. Each year, millions die from these conditions. The most common chronic diseases cost the U.S. economy alone more than \$1 trillion annually—and that figure threatens to reach \$6 trillion by the middle of the century.

"Inflammation may turn out to be the elusive Holy Grail of medicine—the single phenomenon that holds the key to sickness and health," wrote William Meggs, M.D., Ph.D., of East Carolina University in his book *The Inflammation Cure: How to Combat the Hidden Factor Behind Heart Disease, Arthritis, Asthma, Diabetes & Other Diseases* (2003).

THE MISSING LINK

Clearly, the contemporary immune system is being overwhelmed. The usual suspects in the scientific debate include genetics, poor diet, air pollution, obesity, physical inactivity, and even living in sterile homes. What has become evident to us is that researchers have overlooked another factor, something right under their noses, or to be more anatomically specific, right under their feet. In this book, we propose to add something new to the list of offenders: the lost connection to our planet's natural flow of surface electrical energy and the electron deficiency in our bodies this creates. Our investigations strongly suggest that the incidence of soaring chronic diseases during our lifetimes has occurred during a period in which more and more people have become increasingly disconnected from the Earth.

Is this disconnect and deficiency a missing link, an overlooked reason why sickness statistics rise ever higher? Is it perhaps the biggest cause of

all? If inflammation is the Holy Grail of medicine, is connection to the Earth the Holy Grail of inflammation?

The answer to the first question is a resounding *yes*.

We don't presume to know yet the answer to the second and third questions. That will take years of investigation, but the initial research, along with many real life observations and experiences, provides intriguing evidence. This book is filled with that evidence. We believe that the information collected on the pages ahead packs the potential to reverse an alarming trend of failing health. We also think it can inspire entire new health standards and businesses based on reconnecting large segments of disconnected populations. We are sure that this information, if widely applied, can help any and all efforts to ease the healthcare burden shouldered by individuals, employers, and governments alike—literally from the ground up.

The evidence we have gathered strongly suggests that your health status stands to benefit in multiple ways when you reconnect, even if you are chronically and seriously sick and the medical system has little to offer you.

Throughout nearly all of our existence, the human immune system has provided protection for bodies living mostly in bare-skin contact with the Earth. We were naturally Earthed. Yet scientists haven't noticed that modern living involves a disconnect with Earth's stabilizing electrical energy and a loss of the body's natural grounded state, and that *this* loss may set up the immune system for malfunction.

Did the immune system—and the nervous system and other systems in the body—stop functioning properly when we began wearing shoes with insulating soles and living inside houses that insulate us from the natural frequencies of the environment?

Disconnecting Experimentally

What happens to the human body when it is separated from the subtle signals from the Earth was dramatically shown by experiments in Germany at the world-famous Max Planck Institute during the 1960s and 1970s. Researchers intentionally isolated volunteers for months at a time in underground rooms electrically shielded from the rhythms in the

Earth's electric field. Patterns of body temperature, sleep, urinary excretion, and other physiological activities were carefully monitored. All the participants developed a variety of abnormal or chaotic patterns, sort of like a head-to-toe arrhythmia. They experienced disturbed sleep and waking patterns, out-of-sync hormonal production, and overall a disruption in basic body regulation.

When electric rhythms comparable to those measured at the Earth's surface were pulsed into the metal shielding around the underground chambers, there was a dramatic restoration of normal physiological patterns.

These studies, involving hundreds of participants over many years, clearly documented the significance of the Earth's electrical rhythms for normal biological function. Normal rhythms in the body establish a stable reference point for repair, recovery, and rejuvenation—in short, for full health.

Clearly, the biological chaos induced in the experiments would lead in time to ill health. The conclusion is that the biological clock of the body needs to be continually calibrated by the pulse of the Earth that governs the circadian rhythms of all life on the planet.

Experiments like these, under controlled conditions, provide dramatic evidence. Yet we don't live underground. We live above the ground but not really on the ground—and that's the problem. We're disconnected. You can perhaps look at yourself and many people around you and get an idea of the consequences of this disconnect. There's a lot of sickness. Just read the health—rather, disease—statistics and you will see more evidence that in large or small part indicates a disconnect syndrome.

How are we disconnected even though we obviously live on the planet?

The Shoe Problem

Look at what you put on your feet on a daily basis. Most of you wear one form or another of footwear that evolved from simple foot coverings designed to protect against chilly and challenging ground conditions. You are likely wearing something much more elaborate, a statement reflecting your culture, fashion, behavior, and, in many cases, even identification with a tennis or basketball superstar. You habitually wear shoes even when they do not serve any practical purpose.

The late Dr. William Rossi, a Massachusetts podiatrist, footwear industry historian, prolific author, and keen observer, wrote many disturbing commentaries on what shoes do to our feet. He strongly believed that footwear is an integral part of foot care and often complained that shoe people didn't understand feet and foot-care people didn't understand shoes.

A "natural gait is biomechanically impossible for any shoe-wearing person," he wrote in a 1999 article in *Podiatry Management*. "It took four million years to develop our unique human foot and our consequent distinctive form of gait, a remarkable feat of bioengineering. Yet, in only a few thousand years, and with one carelessly designed instrument, our shoes, we have warped the pure anatomical form of human gait, obstructing its engineering efficiency, afflicting it with strains and stresses and denying it its natural grace of form and ease of movement head to foot."

Mechanical issues aside, Dr. Rossi was uncommonly attuned to the potential health risks caused by the separation of the Earth and the body created by modern shoes with soles made of insulating material.

"The sole (or plantar surface) of the foot is richly covered with some 1,300 nerve endings per square inch," he wrote in a 1997 article in *Footwear News*. "That's more than found on any other part of the body of comparable size. Why are so many nerve endings concentrated there? To keep us 'in touch' with the Earth. The real physical world around us. It's called 'sensory response.' The foot is the vital link between the person and the Earth. The paws of all animals are equally rich in nerve endings. The Earth is covered with an electromagnetic layer. It's this that creates the sensory response in our feet and in the paws of animals. Try walking barefoot on the ground for a couple of minutes. Every living thing, including human beings, draws energy from this field through its feet, paws, or roots."

Dr. Rossi referred to the foot "as a kind of radar-sonic base" providing a "little-known but vital function" that serves to "extract" energy from the Earth, similar to a plant root extracting moisture from the ground for nourishment. Such "ground-to-foot vibrations may thus be an important energizing power helping to serve the body's life forces," he suggested.

How right he was, even though he was mistaken in thinking that the source of this energy being drawn up into the body was magnetic. It is now

well established that the energy residing on the surface of the Earth is primarily electrical. The central theme of our book is that we draw electrical energy through our feet in the form of free electrons fluctuating at many frequencies. These frequencies reset our biological clock and provide the body with electrical energy. The electrons themselves flow into the body, equalizing and maintaining it at the electrical potential of the Earth. Just like standard electronic equipment that needs a stable ground to function well, so, too, the body needs stable grounding to also function well.

Dr. Rossi bemoaned the fact that modern shoe soles have separated us from the energy and feeling of the ground, which is so important to the foot's sensory response. He wrote: "The bottoms of our footwear are vir-

The "World's Most Dangerous Invention"

David Wolfe, an author, nutritionist, speaker, and outspoken authority on health and lifestyle, deems "the common shoe" as perhaps the "world's most dangerous invention." After almost twenty years of lifestyle research, he incriminates the shoe as one of the "most destructive culprits of inflammation and autoimmune diseases" in our lives because it separates us from the healing energy of the Earth.

"Put a shoe on," he says, "and it's gone."

The Largest Medical Experiment Ever?

Marika Sboros, health news editor of *Business Day*, South Africa's leading business and financial daily, offered this perspective in a May 29, 2013 article:

"It's only since the Second World War that we have become disconnected from the Earth—literally—by wearing synthetic-soled shoes. The resultant insulation may represent the largest medical experiment ever undertaken, in which billions of people unknowingly participate every day. Who among us realizes that the massive, unintended consequences may be compromised health? One thing is for sure: The growth in immune/autoimmune-related diseases, especially cancer, has been staggering."

A Diabetes-Shoe Connection?

Refer to the chart "Correlation or Coincidence" on page 85.

tually ‘deadened.’ A cross section of a shoe reveals several layers: outsole, midsole, insole filler material, footbed, cushioning, sockliner. An almost total blackout of sensory response.”

Dr. Rossi’s lament describes in a few words the post-World War II overhaul of shoe making. New materials entered the manufacturing scene: rubber, plastic, and petrochemical compounds. They have slowly squeezed out leather as the historical source of shoe soles. Nowadays, even makers of fancy men’s dress shoes are increasingly switching to rubber, plastic, and other non-conductive material, just as casual and work shoes before them. Leather (processed from hides), a conductive material when moist, has been the traditional source of shoes and sandals. The original lightweight, softsole, heel-less and simple moccasin—a piece of crudely tanned leather that envelops the foot and is fastened on with rawhide thongs—is possibly the closest we have ever come to an “ideal” shoe. It dates back more than 14,000 years.

In his writings, Dr. Rossi also noted another intriguing connection between the foot and the ground—an erotic connection. The human foot, he wrote, is “rich with vibratory and electromagnetic powers linked to Earth contact—which is one reason for its age-old association with human fertility and the reproductive system.”

The foot, he pointed out in his 1989 book, *The Sex Life of the Foot and Shoe* (Wentworth edition), is a primary sense organ lavishly equipped with “sexual nerves” and “every moment of standing or walking involves sensory contact with the ground.” Erotic sensations “can be aroused by the touch of Earth, grass, wind, air, sun, sand, water. Such a sensation is experienced when you remove your shoes and stockings on a warm day and walk barefoot on the grass or sand, or dip your feet into a cool pool. The exhilaration is strongly sensual.”

Beds and Beyond

For the most part, the modern structures we live and do business in—our homes and workplaces—are also non-conductive and separate us from the Earth’s healing electrons. Think about where you spend most of your day: in an apartment, house, or office elevated off the ground, with a layer of wood, synthetic carpeting, or vinyl covering the floor. Unless you live on

a dirt, cement, marble, or stone floor, it is unlikely that you are receiving any good vibes from below. We'll discuss later how living and working in multi-story edifices may create a risk to health.

Like shoes and houses, beds, too, have evolved. They further separate most of us nowadays from the Earth for the third of the time we spend sleeping. We sleep (or toss and turn, as is the case for the masses of insomniacs) on nice and comfy padded elevated beds, in elevated houses, avoiding creeping and crawling things in the night.

The first record of raised beds is associated with the Egyptian pharaohs and their wealthy friends, thanks to the innovations of local Bronze Age craftsmen (3,000–1,000 B.C.). Although the fashion and the bedding has changed in the centuries since, the simple concept of sleeping on a platform resting on four legs hasn't changed much.

Before the Egyptians, however, humans apparently snuggled up for the night on the ground and, of course, where accessible, in nice, dry caves. Believe it or not, in this modern age there are still cave dwellers around, most notably 40 million or so in mountainous north-central China. They live surrounded by the Earth, and the Earth's energy, and as we have heard, even with cable TV.

Anthropologists tell us they discovered evidence of grass-lined beds dating back over nine thousand years in southwest Texas. Pits were created in the soft sediment with grass piled in for some crude level of comfort. Whether straw, grass, or sleeping skins, these natural materials, when combined with perspiration from the body, have accommodated electron conductivity throughout the ages.

These are still the bedding materials of choice for many temperate-zone indigenous cultures around the world. Adult sleepers in traditional societies recline on skins, mats, the ground, or "just about anything except a thick, springy mattress," said a 1999 article at *Science News Online* that recommended researchers look at these societies for clues about sleeping patterns, insomnia, and nocturnal brain activity.

LIVING THINGS AS ANTENNAS

Our story brings us back to the transcendent question posed by T. H. Huxley about our relationship to Nature and the cosmos. In 1969, Matteo

Tavera, a French agronomist, put forward a unique answer in the form of a series of provocative hypotheses, contained in a largely unnoticed book, in which he argued that our place on the planet was to live in accordance with “natural electricity, which governs us all.” Agronomy is the application of a combination of sciences like biology, chemistry, ecology, earth science, and genetics. Tavera’s commentary, drawing from all these disciplines and many years of intimately observing Nature as a farmer, concludes that humans are paying a steep price in terms of degeneration and illness as a result of their separation from Nature.

Tavera’s book, published in France under the title of *La Mission Sacrée* (*The Sacred Mission*), emphasizes the unrecognized electrical relationship of all living things—including plants, animals, and humans—to the ground and sky. The Frenchman saw life on the planet as being regulated by an energizing continuum from above and below, and that our structures were designed by Nature to receive and transmit that energy. Think of our bodies and forms as antennas, he said.

Tavera lamented that the modern lifestyle included “princely like structures, all built close together . . . with isolating floors, plastic clothing, and rubber-soled shoes. The electrical contacts are slowed down or totally missing” and, as a result, an increase in chronic illness has become quite evident.

Eating more wholesome food, free of chemicals, and breathing cleaner air certainly contributes to better health. But our “sacred mission,” he said, involves reconnecting with Mother Earth. Tavera warned that “man persists in going on in the direction of error,” and while “Nature is forgiving, it has its limits to those who do not relate . . . and carry electricity through their bodies for the completion of the required health balance” necessary for survival.

The French naturalist said that humans should look at examples within the animal world to see why reconnection with Earth is so necessary. “Notice that a cow left in a stable with a more limited conduction of electricity due to the insulating effect of the building is usually cold and chilly,” he wrote. “Put this same cow in the fields under the same weather conditions and it is quite comfortable. The cold nights are bearable. Chickens in the natural state of roaming never get sick. Chickens, isolated by their coop, need to be covered and protected . . . [and] look at the

medicines that are required for the captive chicken. The quail in the wild have equal happiness in winter as in summer, without covering, without special lodging.

“The dog who is kept too long in the same habituation as his master and does not get to contact the Earth, as Nature intended, is keeping the veterinarian very busy.

“In the wild, the sanitary state of animals is excellent especially if it has not been soiled by the touch of man. Despite conditions seemingly uncomfortable to our eyes and probably because of those conditions, the wild animal knows no sickness. This privileged benefit is the result of his accomplishing his right to life by the proper exchange of the electric mediums.

“Be inspired by the wild animal [that] can survive so well on his own because of his constant contact with the Earth. Compare yourself to him a little.”

Within the context of modern times, Tavera offered a variety of practical suggestions that could seemingly fit into most of our lifestyles. They included the following:

- “Walk into the wilderness and choose the grassy areas instead of the asphalt roads. Try to walk barefooted or at least with a covering that allows the electrical contact or exchange. You will notice the difference in your mood, your health. It will keep you alive with joy in your heart.”
- “As often as possible expose any part of the skin of your body to the Earth or grass, or any natural water, lake, stream or ocean. In your garden . . . moist grass is a perfect conductor.”
- “Use the trunk of a tree to lean on and rob it of some of its electricity for your health’s benefit.”
- “Bathing, especially in ocean water (because of the salts) or lake or river, is extremely good for you. If you can, walk barefoot in these waters. If you have ever done it you have already seen the benefits on your nervous system, your sleeping, your appetite, and your attitude. When you are linked to the Earth and involved in the electric exchanges, you start feeling like a human being again.”

Matteo Tavera's writings are fascinating and alter the way one thinks about oneself, the environment, and our relationship with the cosmos. To read an English translation of his text on the Internet, visit the website www.earthinginstitute.net. His words offer great insight about our connectedness with Nature. What's even more fascinating is that the health implications raised by Tavera's commentary have been validated—not by a pedigreed scientist but by a non-scientist from the cable TV industry. His personal story follows next.



PART TWO

Personal
Discoveries





CHAPTER 4

Reconnecting: Clint Ober's Story

In 1993, I was forty-nine years old, successful, and feeling on top of the world. I had come a long way from challenging and humble beginnings as a boy who grew up on a farm, chased cows, baled hay, and spent long summer days walking barefoot up and down long rows of beets and beans pulling weeds.

When I was a teenager, my father died of leukemia, leaving my mother and six children to tend the crops and livestock. Being the eldest son, I had to drop out of school and run the family farm. This was common practice back then under those kind of circumstances.

By the early 1960s, my brothers were getting older. I felt a need to leave the land for the excitement of the “big city.” I wound up in the fledgling cable television industry. In the community I lived in, we only had two TV channels—one politically right, the other politically left, so the information we got was very slanted. I quickly saw that cable was the future of television. I jumped into it enthusiastically and had a lot of success organizing marketing campaigns to bring cable to people throughout Montana. I also climbed the poles, drilled the holes, sunk the ground rods, and ran the wire to install cable systems in many homes.

After a few years of working with local cable operators, I was hired as national director of marketing for a Denver company that soon grew to become the largest cable television operator in the United States. It was eventually acquired by AT&T. In 1972, I started my own business, specializing in developing cable television systems, as well as broadcast television and microwave communication properties. The company became

the largest provider of cable television marketing and installation services in the country. We had a nationwide army of contract installers working for us. When a cable system was approved for some town or city, we'd send in ten to a hundred installers. They would go through the area and install everybody who wanted cable. Then they would go to the next town, and so on. Over the years we installed cable in millions of homes throughout the country.

In an age before the Internet, I helped pioneer the first-ever cable modem and distribution through personal computers of news reports from news agencies around the world. I also became intimately involved in the early development of programming and marketing for the cable and telecommunication industries. I worked with the top people who created Cable News Network (CNN), Home Box Office (HBO), and other cable networks.

I was a highly successful entrepreneur and living the good life. I had a 5,000-square-foot mountaintop home in Colorado with a 360-degree view of Denver and the Rockies. My house was full of art and anything that money could buy.

In 1993, the good life came tumbling down. I developed a serious abscess in my liver from a root canal procedure. Eighty percent of my liver was badly compromised. The infection had spread throughout my body. All my organs were malfunctioning. I didn't get much hope from the doctors. They suggested that I put my affairs in order.

However, one young surgeon told me there was a chance to survive—although a small one—involving experimental surgery to remove most of my damaged liver. He didn't give me much hope, but it was the only hope I had. So I agreed. After twenty-eight days of painful recovery in the hospital and much physical therapy, I was able to go home. I slowly began to regain my health. It took about three or four months to be able to walk a few blocks and six months to walk a mile. Amazingly, within nine months my liver grew back to its original size.

IN SEARCH OF A PURPOSE

One morning during my long mending process, I awoke and looked outside and noticed the sky was a deeper blue and the trees were a more

vibrant green than I had ever seen before. At that moment, I felt alive again but very much different from before. A stark realization came over me that I didn't really own my home and the mountain of possessions I had. Rather, they owned me. My life had become all about taking care of my stuff. I'd spent my whole life accumulating, collecting, and taking care of it all, and trying to get more, perhaps to show off how big a success I was. I realized that I had become a slave to my possessions by my own making.

At that moment, I decided to set myself free and find something to fill my life with other than possessions. "I don't want anymore of this life," I said out loud to myself. "I want to do something different. Whatever time I have left I want to dedicate it to something worthwhile and with purpose."

I called my kids. They were all grown and scattered around the country. I told them to come and take whatever they wanted. "Anything you don't take, I'm going to give away," I said.

I sold the house. I sold the business to my employees. I went out and bought a recreational vehicle (RV), packed it up with a few necessities, and hit the road. I spent the next four years driving around the country, looking for myself and my mission. I spent a lot of time with my kids here and there, but a lot of time just doing nothing. I'd drive someplace and park for a while, waiting for something to show up.

One night in 1997 I was in Key Largo, Florida. I was getting antsy and impatient. Nothing was happening. Nothing was revealing itself to me. I had been in the same location now for a few months. While sitting and staring across the bay, I asked for guidance. I knew that something was waiting for me. When I returned to the RV, some words popped into my mind and I remember automatically writing them down on a piece of paper:

"Become an opposite charge."

Well, become an opposite charge to me meant to go out and poke people, and stir 'em up. Charge 'em up. I was sure getting impatient enough to do some stirring.

Then the second thing I wrote down was, "Status quo is the enemy." I didn't know what that meant except that I was getting tired of my status quo and doing nothing. That was the end of it. I wrote those thoughts

down on a yellow tablet and kept it for some reason. I had no idea what those words really meant.

Upon rising the next morning, an odd notion went through my mind that the Earth itself was trying to tell me something. I didn't know what, though. But I felt there was some urgency, and I knew I had to go west somewhere for the answer. I drove to Los Angeles and felt it was too crazy. Then I drove to Tucson and Phoenix, and neither of those places felt right. So I headed north and wound up in Sedona at ten one night. I parked at a recreational vehicle resort by a creek. The next morning I looked out and was enchanted by the beauty of the land. The scenery spoke to my roots, of growing up in rural Montana, exposed to Native American culture that emphasized the connectedness to the natural world.

"I'm staying here," I told myself, "until I find what I'm looking for." So I stayed for almost two years. I made friends with many local artists and gallery owners. As a hobby, and to keep me busy, I spent a lot of my time artistically lighting up the town's many art galleries.

My "lightbulb" went off one day in 1998. I was sitting on a park bench and watching the passing parade of tourists from all over the world. At some point, and I don't know why, my awareness zeroed in on what all these different people were wearing on their feet. I saw a lot of those running shoes with thick rubber or plastic soles. I was wearing them as well. It occurred to me rather innocently that all these people—me included—were insulated from the ground, the electrical surface charge of the Earth beneath our feet. I started to think about static electricity and wondered if being insulated like that could have some effect on health. I didn't know the answer, one way or another. The notion just popped into my mind.

I thought back to my years in television and cable. Before there was cable, you commonly had lots of flecks ("noise," we call it) in the TV picture. Or you had "snow" or lines and all kinds of electromagnetic interference. If you aren't old enough to remember that, you are likely familiar with the radio interference when you're driving near or under a power line and you hear all that crackle and pop.

In the cable industry, you have to ground and shield the entire cable system in every home to prevent extraneous electromagnetic signals and fields from interfering with the transmission carried through the cable.

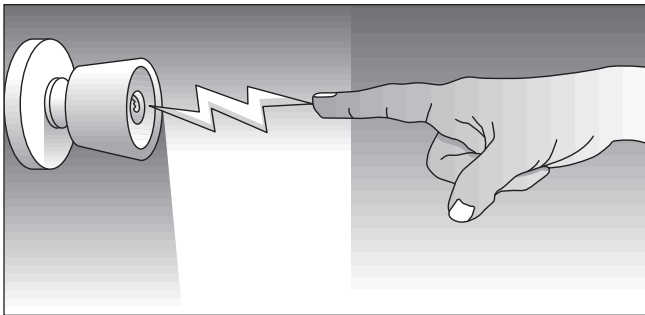
That's how you provide the viewer with a perfect signal and a crisp picture, as well as preventing signals on the cable system from leaking out into the environment and possibly disturbing police radio or TV station transmissions. The cable consists of an inner copper conductor, an insulating layer, and an outer shield. The shield is electrically connected to the Earth. It is grounded, so that the Earth can either deliver or absorb electrons and prevent damage from electrical charges. All of the cable system must be grounded and held at the same electrical potential as the Earth's surface.

What Is Electrostatic Discharge?

Static electricity is nothing more than the spark or minor shock we all experience, for instance, when we touch a metal doorknob after walking across a carpeted room (see figure below) or slide across a car seat. No big deal.

But in some industries, it is a very big deal. Centuries ago, armed forces had to use static control measures to prevent ignition of gunpowder stores. Today, such measures are required in the petroleum industry, where a random spark can also cause an explosion. In today's electronic industry, electrostatic discharge (ESD) causes billions of dollars in damage annually by destroying highly sensitive electronic parts and microchips. ESD affects production yields, manufacturing costs, product quality, product reliability, and profitability.

A whole static control industry has emerged with products such as wristbands, shoes, and conductive flooring that are widely used by electronics makers. These measures are designed to discharge potentially destructive charges.



Finger to the doorknob, showing electrostatic discharge.

THE BEGINNING OF AN ADVENTURE

Little did I know at the time, but my life was about to take a new and totally unexpected direction that would consume practically all my waking hours. It still continues to do so, a dozen years later.

It all started innocently with that one simple question: Could wearing rubber- or plastic-soled shoes, as we all do, and insulating ourselves from the ground, affect health? At the time I had a particular interest in health because earlier back surgeries had left me with constant back pain. I never slept well. I'd take Advil to go to bed, and in the morning I'd take Advil to get up and get through the day. I also took other pain medication, depending on how bad the pain was.

I knew that the body was conductive, that is, it conducts electricity. You don't have to know anything about electricity to understand that simple fact of life. Just go touch a doorknob on a very dry day and you can see or feel a spark every time. There's always a static charge on the body that builds up when you sit on fabric-covered furniture or walk on carpets.

An Amazing Experiment

Sitting there watching the foot traffic I realized that most people, certainly in the industrialized world, had little or no connection to the ground. In other parts of the world, like in the tropics and in Asia, Africa, and South America, rural people walk barefoot and often sleep on the ground. They are grounded.

I decided to try to answer the question I had asked myself. I went back to the apartment I was renting and picked up my voltmeter. (A voltmeter is an instrument that measures the electrical potential differences between the Earth and any electrical object, or any two points in an electrical circuit.) I connected a 50-foot wire to it and ran the wire out the living room door and attached it to a simple ground rod I stuck in the Earth. Then I started walking around the house and measuring the electrical charges being created on my body from being insulated from the ground. It was easy to measure the static electricity, as it would vary with every step that I took. What I found most interesting was the amount of electromagnetic field (EMF) induced potential (in volts) on my body. When I walked

toward a lamp, the voltage would go up. When I stepped back, the voltage went down. I tested this with all the electrical appliances in the living room and kitchen. The only appliances that did not create EMF voltage on my body were the refrigerator and my computer tower. They were grounded. From my background in the communications industry, this immediately made sense to me as we had to ground all of our electronic equipment to prevent electrical interference from EMFs.

Next I went to the bedroom, lay down on my bed, and registered the highest level of EMF voltage on my body. The bedroom was the most “electrically active” area of the apartment. The bed was up against a wall full of hidden electrical wires. I wondered if these electric fields could be affecting my ability to fall asleep because sleep was always a big problem.

Now my curiosity was really stirred up. The next day I went to the hardware store and bought some metallized duct tape that is used for furnace ducting. I laid some of that tape out on the bed to form a crude kind of grid. I took an alligator clip and attached it to one end of the duct tape grid. I connected a wire to it, ran the wire out the window, and fastened it to another ground rod similar to the one that the voltmeter was connected to. I then lay down on the duct tape grid and noticed that the meter was now showing nearly zero, meaning that I was in sync, that is electrically equivalent, to lying directly on the ground outside. Like all the cable systems I had installed, I was physically grounded. I was lying there fooling around with the voltmeter and the next thing I knew it was morning. I had fallen asleep with the voltmeter on my chest. I hadn't needed a pill to fall asleep. I had slept soundly for the first time in years, and I had hardly moved at all during the night.

“Wow, this is fascinating,” I said to myself. Something interesting had happened, but I didn't really understand the meaning of it. So I repeated this experiment on myself the next night. I fell asleep without a pill. The same thing happened the next night and the next and the next.

Getting High Off the Ground

After a few more days like this, I told a couple of friends about it and asked them if I could set up a similar kind of makeshift grid with metallic duct tape in their beds. That's how I started “grounding” people. It

was very innocent. One of the guys I grounded said to me, “You know, something is going on here. My arthritis pain is way down.”

I didn’t think too much about what he said, but a couple of days later I noticed that my own severe chronic pain had improved. I didn’t need the pain pills anymore. I was also feeling much better overall.

I didn’t understand anything about biology. I didn’t understand how the nerves or muscles worked, but a concept was dawning. It occurred to me that there might be an analogy between the human body and cable TV. Cable has hundreds of channels of information flowing through it. Similarly, the body has countless nerves, blood vessels, and other channels that conduct electrical signals. Maybe, I thought, when the body is grounded, it prevents the entry of “noise”—environmental electrical interference—that could disturb the internal circuitry. I started to understand in a simple way that without Earth contact the body was always being charged by the electromagnetic fields and static electricity in the bedroom or office or wherever. When you’re grounded, you don’t have a charge. When I grounded myself and my friends, the charges were removed, and we all started sleeping better and feeling better.

After I grounded a half dozen or so people, consistently improving their sleep and reducing their pain, I started to get a real high. I became more and more excited. I came to the conclusion that I may have made a great discovery. I said to myself there’s something very, very real here that needs to be further investigated.

I looked far and wide but didn’t find much information on grounding and health. In 1999, the Internet wasn’t nearly the information universe it is today. It was still fairly new and I didn’t find anything there.

I checked out the excellent university medical libraries in Arizona but didn’t come up with anything. There were a few anecdotal stories about Native Americans that were folklorish in nature. I was reminded of my younger days in Montana where many of my childhood friends were kids from the Indian reservation. I vividly remembered the time when the sister of one of my friends developed a bad case of scarlet fever. She was very sick. Their grandfather dug a pit in the ground and placed the girl in the pit. He built a fire, for warmth, near the pit, and sat next to it for a few days while the girl mostly slept. At the end of that time she was much better. I also remembered going to the home of one of my

friends after school and hearing his mother tell him to remove his shoes. "They will make you sick," she said. This all seemed very odd to me at the time, but I remembered that most things the Native Americans did were different from what I was taught to be normal. I later realized that there was always a reason based on much greater knowledge of Nature than I was ever taught.

I found information about barefoot enthusiasts who have long championed the idea of going unshod because they feel better. Some enthusiasts have formed organizations, such as the worldwide Society for Barefoot Living that promotes the benefits of taking shoes and socks off and walking naturally on the Earth. Their experience, along with medical research in the field of biomechanics, strongly suggests that many foot and back problems are partly caused by stresses and strains created by wearing shoes that force us to stand and move in ways the human body was not designed for. One dramatic example of this appears to be the success of barefoot runners. The shod foot may explain the high injury frequency in North American runners, in contrast to the extremely low running-related injury frequency in barefoot populations. Researchers have found, for instance, less force on the joints, and less plantar fasciitis and shin splints. This, however, wasn't really the information I was looking for.

I did find considerable information about electrostatic discharge and how people working on computer components and electronic chips had to be grounded in order not to damage any of the components electrically. But that wasn't it either. I had to keep looking.

I also wanted to know whether there was any possibility that sleeping "Earthed," as I started to call grounding, could be harmful. Electronics experts reassured me that the concept was perfectly safe. If you think about it, being Earthed is the natural state of living systems throughout history. It is the separation from Earth that is unnatural.

Beyond these few things, however, I couldn't uncover any concrete information anywhere relating to the possible health effects due to loss of natural grounding.





CHAPTER 5

Challenges of an Amateur Scientist

Emotionally, I was on a roller coaster. I came to the conclusion that nobody—past or present—had researched the grounding/health connection. I couldn't find any relevant information. When I realized that nobody else knew about it, I felt it was like the best day in my life and that I had discovered something important with which to help society in a big way. I had found my mission. And I was the only one who knew anything about it.

The euphoria didn't last long. Maybe that's the way it is with discoveries. The self-doubt starts to creep in that comes from being alone with some important understanding or breakthrough before anybody accepts your idea.

In my case, anybody who I talked to thought I was nuts. Nobody took me seriously. Nobody knew anything. My enthusiasm would always be returned by blank stares of indifference or negative responses. Who said this was so? People wanted hard facts. They wanted science. I was just an ex-cable guy talking about how the ground could reduce your pain and let you sleep better. What did I know? What credentials did I have?

So I went quickly from the best day in my life to the worst day. I was feeling down in the dumps one day in 1999 as I was sitting and talking with one of the guys in Sedona whom I'd grounded. He was telling me how good he felt and how big the change was in his life. Hearing him say those words reignited a spark and lifted my spirits.

I said to him, "I'm feeling good from this, too. Other people are telling me the same thing. This is real. I'm not making anything up. There's no ifs, ands, or buts about it. I've just got to find the answers."

With new resolve, I packed up and drove to California in my RV, an amateur detective trying to solve a mystery. I figured I'd spend a few months out there and hopefully turn up some real expertise that I could tap into, some people to teach me more, or to figure out how to quantify what all this was about.

“STRANGER IN A STRANGE LAND”

The first thing I did was try to interest sleep researchers in Southern California. I made phone calls. I knocked on doors. I introduced myself as a guy with an electrical background who has made some interesting observations about sleep and pain. I had seen dramatic results. I said I wanted to get some experts to validate my observations.

In pursuit of expertise, I felt like the hero of Robert Heinlein's old science fiction classic, *Stranger in a Strange Land*. I felt I was on another planet. I didn't speak the language. They didn't speak mine.

Imagine how I felt walking into the office of a scientist or doctor, if I got that far. The office walls were full of awards and diplomas. These were individuals who had spent years becoming experts in their field. And here I was, with absolutely no formal training in the field. The experts used biological terms I never heard of. When I would turn the conversation to electrical concepts that I understood, like voltages, electric fields, grounding, and positive and negative charges in the body, they were about as clueless as I was hearing them talk about what they knew.

Communication was just one problem. Another was that most scientists or doctors had no desire to get involved or lend their name to anything out of left field like this, something with no scientific history or legitimacy.

One scientist sat back and laughed in my face. He asked if I expected him “to believe that sticking a nail in the ground and connecting it to an iron bed pad and getting people to sleep on it will reduce pain.” He said he wouldn't believe it even if it were published in the *New England Journal of Medicine*.

One doctor told me that even if what I was saying were true, why should he tell patients to take off their shoes and get well for free?

Another stated that I needed to provide him with all the published research related to grounding the body and he would then take a look at

it. When I told him there was no research and that is why I was approaching him, he said to come back after someone substantiates the validity of grounding.

One amused researcher asked if I had any idea about what it takes to do research. He told me it would take five years and \$5 million to put together a real scientific study and get it published, if it even got that far.

Most of the experts I spoke to were polite, but nobody took any interest. They sent me on my way and wished me good luck. That's when I decided to do the first study myself.

GETTING THE SCIENCE BALL ROLLING

All wasn't lost though. At one university sleep clinic, I managed to talk to some friendly students. They said they would be willing to counsel me how to do a study. I didn't have a clue. One thing I had to figure out was how I could ground people for any length of time, long enough so that I could identify a measurable result. People are always moving around. They are busy.

So I went back to my own experience. The only way to do this, I realized, was when somebody was in bed, at night, when sleeping. That's the only time people are still. That seemed to be the most practical way to produce a measurement. So a bed pad of some sort seemed the best way to go. But I had to design something more substantial than the crude metallic duct tape grid I was using for myself and friends.

I contacted a company that makes protective equipment for the electronics industry. I had some special conductive fiber materials manufactured that I then bonded to 1-by-2-foot wool felt pads. The test subjects were to sleep directly on the pad placed on their bed. I fixed a metallic snap on each pad so I could connect it to a wire running to a ground rod stuck in the Earth outside the bedroom window. Now that I had a pad, I needed people for the experiment.

As you can imagine, no doctors would lend me patients for my little study. I was on my own. I got the inspiration for volunteers one day while getting my hair cut. I heard people in the salon talking about their health issues. I figured that a beauty salon could be a good source of volunteers.

I convinced the woman who operated the salon to try grounding first. I set her up with a grounded bed pad. Her feedback was positive. She was sleeping better. She enthusiastically approached some of her clients to participate in the study. I found others by leaving fliers in ten beauty shops in Ventura, California, where I was living at the time.

One of the people who stepped forward was a nurse. She was a great help, smoothing the way so I could enter the homes of strangers, explain the bed pads, actually place them in people's beds, and connect them to simple ground rods I stuck in the Earth outside their bedroom windows. What I was doing was not exactly your ordinary house call. In the end, I was able to enroll sixty people—thirty-eight women and twenty-two men—with sleep problems and a variety of joint and muscle pain.

Based on the advice I had received from the sleep clinic students, I divided the volunteers into two groups. Half slept on pads that were actually grounded. For comparison, the other half slept on bed pads that looked like they were connected to the ground rods, but I inserted a spacer on the wire to block conduction. The volunteers did not know if they were actually connected or not. I was the only one who knew.

The nurse interacted with the people during the thirty days' experiment. Then she collected the data. We then wrote up the experiment as an anecdotal study and published it in 2000 on *ESD*, an online journal that provides articles, technical papers, news items, and book reviews on the subject of electrostatic discharge.

The results were extraordinary. Here is what we found afterward when we compared the grounded group with the ungrounded one:

- 85 percent went to sleep more quickly.
- 93 percent reported sleeping better throughout the night.
- 82 percent experienced a significant reduction in muscle stiffness.
- 74 percent experienced elimination or reduction of chronic back and joint pain.
- 100 percent reported feeling more rested when they woke up.
- 78 percent reported improved general health.

Several participants reported unexpected but significant relief from asthmatic and respiratory conditions, rheumatoid arthritis, hypertension (high blood pressure), sleep apnea, and premenstrual syndrome (PMS). There were also reports of fewer hot flashes.

Discovery of the “Magic Pain Patch”

One woman who participated in the study had crippling rheumatoid arthritis in the joints of her hands and arms, and she had difficulty walking. I wanted to measure how much electrical charge she had on her body in her bedroom and asked her to hold a small, handheld tester for me. She couldn't. Her arthritis was too severe and too painful. So in order to get a reading I adhered an electrode patch—the same kind used by doctors when they do EKG (electrocardiogram) tests—on her forearm and connected it with an alligator clip to the ground wire coming into her bedroom. I then connected and disconnected the clip in order to read the change in the body charge between being grounded and ungrounded. After chatting for five or ten minutes while I was setting up the bed-pad system, the woman said the pain in her arm improved considerably. She then asked me to move the patch to her other arm. I did not believe what she was saying, but I did what she asked and moved the patch to the other arm. Minutes later, she said the pain in that arm had gone down a good deal as well.

After leaving her home, I immediately called several acquaintances I knew who had arthritis and other painful conditions, and gave them each setups with electrode patches, Earthing wires, and ground rods. I wanted to see if I could repeat this dramatic reduction of localized pain. Remarkably, each and every one of them reported a rapid reduction in pain. A couple of them referred to it as the “magic pain patch.” This is when I first discovered that localized Earthing of the body in this manner produced fast and dramatic reduction of local pain. It was kind of like pouring water on a fire.

Now I was really excited. I felt encouraged. But still no scientists would talk to me seriously about it. My student buddies told me that I needed to produce much more solid information to support my idea. Anecdotal studies wouldn't be enough, they said, and wouldn't stand up to scientific scrutiny.

Refining the Discovery

Initially I regarded the positive results I was witnessing as a consequence of eliminating static electricity and/or the shielding of the body from environmental electric fields. This assumption turned out to be absolutely true, but accounted only in part for all the good results.

When I installed the Earthing system in people's homes for the first study, I always measured their body voltages while they were lying in bed—both before and after placing the grounding pad on the bed. When I measured people with extremely high body voltage, I would think to myself that I should get some really good results from this person.

One day I set up a volunteer, a sixty-five-year-old man, who complained of chronic pain and problems with sleeping. He had no electrical devices near the bed. His floor was bare concrete. When I measured his body voltage, it registered near zero. With very little body voltage, I thought we wouldn't get any results from him. However, his feedback in the end was as good as others with high body voltages.

His case was the first indication I had that Earthing alone produced the results that I myself had experienced and observed in others. This realization stopped me in my tracks. I then had to learn everything I could about the Earth's electrical properties.

I learned, for instance, that the Earth's electrical surface charge is always negative, meaning that the surface is filled with free electrons. They are able to move and reduce a positive charge. In Nature, lightning is the best example of a negative charge reducing a positive charge.

If Earthing people reduces their chronic pain, that suggested to me that pain is related to positive charge. I then began to ground people in low- or no-electric field environments to replicate this observation and confirm that it was the grounding alone that reduced pain. The results were consistent. Earthing reduced pain no matter what the electrical environment. It wasn't until later that I learned the connection between chronic pain and inflammation, and the role of electrons.

NORMALIZING THE HORMONE OF STRESS

When the first study was published, it created a big stir among researchers and health practitioners concerned about the health risks from exposure

to environmental electric fields. One such person I met at this time was Maurice Ghaly, a retired anesthesiologist in Southern California who was interested in electric field research. I told him what I had learned. He pretty much dismissed my theory. But he said he would like to prove me wrong. It didn't make sense to him that grounding could do what I said it did.

Dr. Ghaly decided on a pilot study. He would measure the circadian secretion of cortisol on people before and after they slept grounded, over a period of a few weeks. Cortisol is known as the “stress hormone.” When you become worried, fearful, and anxious, your cortisol level rises. The rise stimulates a branch of the autonomic nervous system known as the sympathetic system. Your body shifts into a vigilant mode, ready, if needed, to fight or run, the so-called fight-or-flight mode. The hormone level comes back down after the vigilance and tension ease. A life of constant stress—from common things like money, work, or relationship problems—also causes your cortisol level to rise and remain high, creating a kind of sympathetic overdrive in the body. In our day and age, a consistently high level is a classic indicator of stress and is known to contribute to many health problems, like sleep disorders, hypertension, cardiovascular disease, reduced immune response, autoimmune disease, mood disturbances, and blood sugar irregularity. Stress of this kind also promotes inflammation in the body.

My first study was subjective, based on the feedback of people I grounded. This time we would measure a substance produced in the body, thus providing an objective measurement for the effect of Earthing on the physiology. It was a big step forward scientifically.

For the study, I needed something that would hold up even better than the previous bed pad. So I designed a sturdier bed pad that would fit over the whole mattress.

We enrolled twelve subjects who complained of sleep problems, pain, and stress. They slept on the Earthing pads I made up for eight weeks. Their individual daily cortisol levels were determined at four-hour intervals over a twenty-four hour period just before the start of the study and then once again at the three-quarter mark via a standard saliva test. The participants also reported daily how they were feeling throughout the entire experiment.

The study was published in a 2004 issue of the *Journal of Alternative and Complementary Medicine*. The conclusion was significant: Earthing during sleep resynchronizes cortisol secretion more in alignment with its natural, normal rhythm—highest at 8:00 a.m. and lowest at midnight. Figure 5-1 provides a visual representation of the dramatically improved cortisol group profile.

Subjectively, the participants reported improved sleep along with reduced pain and stress. Even more impressive was the fact that the improvements often occurred within the very first days of sleeping grounded.

Following is a summary of the findings:

- All but two subjects developed more natural cortisol rhythm, and one of the exceptions was someone already in a normal pattern.
- Eleven of twelve participants said they fell asleep faster.

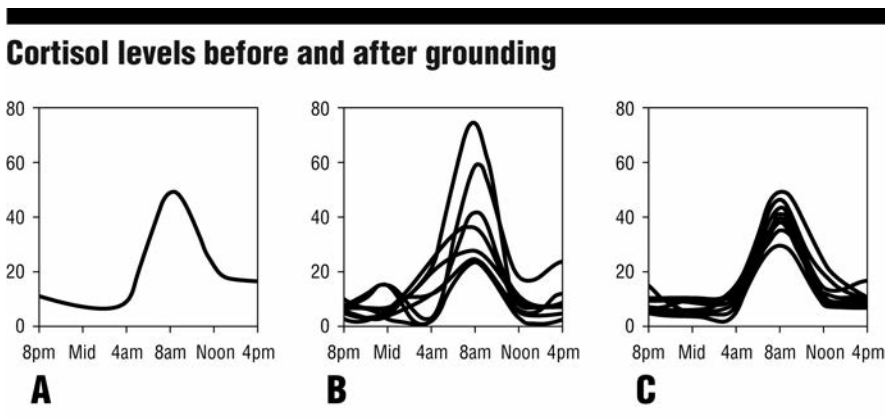


Figure 5-1. Realignment of natural cortisol rhythms.

In unstressed individuals, the normal twenty-four-hour cortisol secretion profile follows a predictable pattern—lowest around 12:00 midnight and highest at 8:00 a.m. (Graph A). The pre-grounding chart (Graph B) shows the wide variation of patterns among the study participants. Graph C represents the altered pattern of the participants after Earthing, showing a significant stabilization of cortisol levels. Seven participants registered a reduction in high- to out-of-range nighttime cortisol secretion, a 53.7 percent average drop; six had an average rise towards normal of 34.3 percent in 8:00 a.m. levels; and two with abnormally high 8:00 a.m. levels had an average drop of 38 percent. (Data adapted from *The Journal of Alternative and Complementary Medicine*, 2004.)

- All twelve reported waking fewer times during the night (from an average of 2.5 times to 1.4 times, a 44 percent reduction).
- Nine out of twelve said they felt more refreshed and less fatigued, with more daytime energy, while three reported no change.
- Of the eleven subjects who said before grounding that their pain interfered with general activities, seven now reported improvement and only four said there was no change.
- Nine out of twelve described reductions in their emotional stress and were less bothered by problems such as anxiety, depression, and irritability; two said there was no change; one said the stress was worse.
- Six out of seven participants with gastrointestinal symptoms reported improvements.
- Five out of six women with either PMS and/or hot flashes said their symptoms were better,
- All three individuals with TMJ (temporomandibular joint) pain said their discomfort was less.

The Sleep Connection

The study produced another quite interesting finding that was not published but provided more evidence about the multiple benefits of Earthing. Eight of our participants had an increase in melatonin ranging from 2 to 16 percent. Three subjects had no change in their melatonin level, and one experienced a decrease of 6 percent. The finding was exciting because melatonin is an important hormone that helps regulate sleep and other biological rhythms and is also a powerful antioxidant agent with anti-cancer properties.

Right from the start of my experimenting with Earthing—and by right from the start I mean my own initial experience—the positive impact on sleep has been very noticeable. This is a big deal. We all need good rest to allow our bodies to repair and recover from each day's activities. That's the way Nature set things up: cycles of rest and activity.

After I saw how grounding was helping people sleep, I started to research the sleep problem. I found a 2002 *Newsweek* article entitled “In Search of Sleep” that said there were an estimated 70 million problem sleepers in the United States alone. “I Can’t Sleep” was the title of a *Businessweek* cover story in 2004. From those, and many other sleep-related articles from all over the world, it became quite clear to me that quality sleep improves overall health and that poor sleep does just the opposite.

I also learned that back in the early 1970s researchers identified several behaviors that were positively linked to length of life. Sleep headed the list, followed by exercise, eating breakfast, and avoiding snacks. Weight, smoking, and moderating alcohol intake also made the list. Later on, researchers found that sleep deprivation may enable bacterial growth and that sufficient sleep may slow down bacterial growth. More recently, sleep deprivation—even a modest reduction—was found to promote inflammation in the body. Loss of sleep, even for a few short hours during the night, apparently prompts the immune system to turn against healthy tissue and organs. Other new studies suggest that sleep loss may also contribute to recurrent depression.

In my ongoing sleuthing, I learned that since the pioneering research in the 1950s of Hans Selye, the father of stress medicine, medical researchers believe there is a relationship between imbalances in cortisol and inflammatory pain.

It was becoming clearer and clearer to me that Earthing was something very special that could make people’s lives better in a multitude of ways. It was this vision that kept me going, because there were many times when I frankly felt overwhelmed by the challenge of me—an unknown quantity with no degree by my name, or even a high school education—proving a totally foreign concept to the scientific community.

MORE CHALLENGES: BEDS, SPOUSES, AND FASHION

My first sleep study created a buzz when it was published in 2000. I was hounded by people wanting bed pads. All of a sudden, there was a demand for this “quasi product.” I didn’t realize it at the time, but I was becoming somewhat of a designer of Earthing pads. Later, when I got involved in Earthing people in the world of sports, athletes didn’t want a whole

bed pad. It was too much to carry around. They wanted something they could roll up and put in a small bag and take with them when they traveled. Thus, the recovery bag was born: conductive silver strands woven into cotton sheets fitted together like a sleeping bag.

The products developed both out of a demand by people who heard about Earthing as well as a desire on my part to promote scientific research. It all started on an ad-lib basis with conductive duct tape and a wire connection to a ground rod. That's what I used in Arizona on myself, friends, and other interested people. It was all makeshift. Nothing sophisticated.

As this evolved, people simply wanted something more refined. Some people wanted sheets, so I started consulting with experts in the fabric industry. I first dabbled in polyester with carbon threads. But nobody wanted polyester, so I switched to cotton with conductive silver strands. That development cost more than \$1 million and took three to four years. I first had to find manufacturers to deal with what for them was a nuisance factor, and then test and retest. These were all prototype products that cost a lot of money to make, and for the most part, I was giving them away to athletes, doctors, and people in the studies and their relatives. It all mushroomed. I would get rid of one model, then order more, then get another batch of new material, and then another flurry of orders and requests. I never for a moment thought I would be in the sleeping or bedding industry.

In the early days, a lot of doctors started getting products for their patients. One of them called and asked if I had some kind of a "half pad," a sheet that didn't cover the whole bed. I asked why he wanted it. He referred to the spouse problem.

Spouse problem?

Here is what was going on: If a woman got a bed pad, the husband would get upset and say he didn't want anything to do with this, that it was just a waste of money. If the husband brought it home, the woman would say this is crazy and get it off her side of the bed.

Throughout this time, the mode of the day was to put sheets on your bed with the highest possible thread count. The buzz was 300-, 600-, 1,200-, and then 2,400-count sheets. The higher the count, the more luxurious, softer, and finer the fabric is supposed to be. This concept became very popular, but some experts think that higher thread counts simply mean a higher price tag.

Anyway, I got caught up in this. If you had anything else but high thread count on your bed, you were not in fashion. Then there was the issue of designer colors to match décor and color tastes. In a typical marriage, nothing goes on a bed without a woman's permission. So you couldn't put just anything on a bed—no matter what the health benefits.

I didn't need these kinds of extraneous issues. One day I decided to just make a half sheet that could be placed across the width of the bottom of the bed. You make contact with it with your feet, like putting your feet on the Earth, and this is your barefoot connection. The half sheet could also be used lengthwise on one side if a spouse didn't want to have anything to do with it.

The half sheet solved a lot of my headaches, as well as reducing the pain level for many people who slept on them.

A Cardiologist's Discovery: Steve Sinatra's Story

As an integrative cardiologist, I use both conventional and alternative medicine to help my cardiac patients. This approach has always worked superbly for me as a doctor and, above all, for my patients, because it focuses on the metabolic operation of cells and particularly the cells in the heart muscle that pump blood throughout the sixty thousand miles of blood vessels in the body. As such, I have used many excellent nutritional supplements, like coenzyme Q10 (CoQ10), carnitine, and magnesium, to boost the metabolic processes in the cells where energy production takes place.

Years ago, after a decade or so in practice, I slowly became aware of a curious pattern: increased patient complaints—notably arrhythmias and chest pain (angina)—around the time of a full moon or intensified solar flare activity. I don't remember how I actually connected the symptoms with celestial events—it may have been a patient who said something. I certainly had no real clue how to explain it. In any case, my curiosity was tweaked and I began looking for information, which led me into the amazing world of electromedicine.

The term may sound way out in left field and conjure images of Dr. Frankenstein, Dr. Sivana, Goldfinger, and otherworldly contraptions that snap, crackle, and pop. However, electromedicine is quite an accepted concept, most obviously for diagnostics that includes everyday medical tools such as EKGs and MRIs (magnetic resonance images). Less accepted, but gaining increased medical attention and respect, are electromagnetic treatment devices such as pulsed electromagnetic field units to address

pain and musculoskeletal disorder. Pain-reducing TENS (transcutaneous electrical nerve stimulation) machines, utilizing low electrical voltage, have been around for many years.

My research and conversations with experts has given me a growing understanding as to how electromagnetic events going on in the heavens or right here on the planet can have a response—positive or negative—on the heart, the brain, and the rest of the body. For sure, we terrestrials are not isolated from the rest of the universe and are subject to influences ranging from galactic and solar forces down to local, man-made electricity and electronics.

All beings are conglomerations of bioelectrical energy. In essence, our bodies function—for better or for worse—as a collection of dynamic electrical circuits.

One of the primary electrical entities in the body is the heart. Each beat is triggered by an electrical signal from within the heart muscle, activity that is recorded when you undergo an EKG in your doctor's office. Each signal, repeated nonstop during a lifetime, passes through cardiac circuitry, causing the heart to contract and push blood through the chambers and then out into your body.

Heart disease can disrupt this normal electrical and pumping operation. For instance, problems with the electrical system—known as arrhythmias—can make it difficult for the heart to pump blood efficiently. Because of the electrical nature of the heart, it was natural for a curious cardiologist like me to be attracted to energy and electrical concepts that might affect the cardiovascular system in some beneficial way.

In 2001, I was invited to speak at an electromedicine conference in San Diego. That's where I met Clint Ober. He had just completed his second study—how grounding affected cortisol and stress—and he was interested in discussing his research with a cardiologist who had an interest in electromedicine. He looked me up at the conference. We talked awhile, and I was immediately intrigued by his concept. Afterward, we met in his RV and talked in more detail. There was another medical doctor present, as well as a researcher who had developed a cuff to measure blood vessel elasticity. The researcher had his device with him and he used it to test our individual elasticity. You want your arteries to be good and elastic. Rigid, constricted blood vessels are symptomatic of high blood pressure

and arterial disease. My reading was good, but Clint's was enviously better. He was about two years older than me, so I was very impressed. I remember thinking how could this guy have a better result than me? Here I was, the big prevention doctor who wrote books and newsletters about healthy lifestyle!

Clint said in his usual soft-spoken voice that he believed the results had to do with the fact that he grounded himself all the time. He slept grounded, and he walked barefoot whenever possible.

Clint also shared with me his frustration with the medical and scientific community that had shown little or no interest in grounding. He was having a hard time getting a foot inside the door of science.

A NEW HEALING FRONTIER

If anything, I felt like a door to a new healing frontier had been pulled open by the most unlikely of individuals. Over my decades of practicing medicine, I had heard countless inspiring talks from the greatest and most honored medical experts. Doctors. Scientists. Professors. Nobel Prize winners. Clint Ober was none of those. He said he was "just" a cable TV guy who had made a discovery he felt could help alleviate suffering. I was impressed by his integrity and intentions. He was somebody with a mission. I felt he was on to something very important and fundamental, with great potential not just for cardiology, but also for the healing community at large. He had just a bare beginning of scientific evidence to back up his observations. Nevertheless, as a cardiologist, it made a lot of sense to me. In addition, my intuition was telling me this was big and exciting and on the mark.

For years, I had been doing a lot of research and writing about antioxidants. In my cardiac practice, I had found that antioxidant nutritional supplements, such as CoQ₁₀, gave a clinically significant healing boost to my patients. I was curious as to whether there was an antioxidant and inflammation connection to Clint's discovery.

Just a year or so before, Harvard researchers had published strong evidence to show that chronic inflammation was a leading cause of arterial disease that chokes off blood, nutrients, and oxygen to the heart and brain, resulting in heart attacks and stroke.

So inflammation and antioxidants were on my mind when I met Clint. I asked him about inflammation. Could grounding reduce inflammation? If it did, grounding might represent a new weapon against heart disease, the No. 1 disease killer in America, and many other common conditions linked to inflammation.

I didn't know the answer. Clint didn't know.

I asked if he could find out.

He said he would. And he did, pretty much on his own at first, and later with the help of a terrific biophysicist, James Oschman.

EARTH/BODY MEDICINE

Clint, with his knowledge of electricity and grounding cable TV systems, now began to exhaustively study physiology and the immune system. He quickly began putting two and two together. Electrical engineers knew that the surface of the Earth is pulsating with free electrons. Medical scientists didn't know that, but they did know that the body is electrical in nature, and that free radical molecules attract electrons and snatch them from other molecules, a process at the core of inflammation, tissue destruction, and disease. Clint theorized that if Earthing reduces pain, it must come from reducing or neutralizing the free radicals causing the pain during the inflammatory process. The free electrons must be putting out the fire.

Clint called me one day, excited about having found another important explanation for how grounding was working in the body. It didn't "just" normalize cortisol, improve sleep, and reduce stress, as if those weren't enough. If somebody is in direct contact with the Earth—barefoot or through one of his grounded pads—the free electrons flow into the conductive circuitry of the body and snuff out inflammation. Inflammation causes pain. People with pain who are grounded experience less pain.

For him, the connection was simple.

Get grounded.

Get well.

Get pain relief.

Heal.

People talk about mind/body medicine. I've been practicing that for years. I never heard anybody talk about earth/body medicine before Clint.

To me, this was another landmark finding, a major breakthrough. This was literally electromedicine from the ground up. A secret of the ages right under my feet. For me, the original anti-inflammatory and the ultimate antioxidant had been found.

SLEEPING AND FISHING GROUNDED

After meeting Clint, I had obtained one of his prototype mattress pads and started sleeping grounded. The difference was profound. My wife and I were both able to fall asleep faster. I still use that same pad to this day. I wrote about sleeping grounded in my health newsletter in 2002, and a number of my subscribers obtained a bed pad for themselves. Some took the time to give me feedback afterward and said it had made a difference in their lives.

In time, as I became involved in some of Clint's research projects and heard the feedback from people whose heart functions had improved, the exciting potential of Earthing as a tool against heart disease started to crystallize.

I travel a good deal, giving lectures and attending medical conferences, and sleeping in hotels has always been problematic. Later on, when Clint designed some portable models, we were able to sleep grounded on the road just as we did at home. Now I never leave home without my pad, and I'm always looking for opportunities to walk barefoot.

For years, I used to suffer with flare-ups of psoriasis, a common inflammatory condition of the skin. It would appear on my lower legs and elbows. I had always noticed that whenever I would go bonefishing off the Florida coast—a favorite recreational pursuit of mine—the psoriasis would virtually disappear for weeks afterward. I attributed that to the healing influence of being out in the sun, the vitamin D, the minerals in the salt water, and time off from the daily stresses of a busy cardiology practice. In bonefishing, you spend hours casting for fish with a fly rod while walking on white sand flats knee-deep in crystal clear water. After meeting Clint, I realized that there was another reason for the improvement of the psoriasis. I was grounded, barefoot in salt water that is highly conductive. As I was fishing, I was simultaneously giving myself a treatment. Now that I ground myself at night, the psoriasis is virtually gone.

Bob Tolve, an old fishing buddy of mine from Scarsdale, New York, shared an interesting story with me after I told him about Earthing. Bob is sixty-three, my age, and has been in the construction business for many years. When he started out as a young man, he worked for a while with a crew of older carpenters from Norway. He recalled them telling him that if he wanted to last in the business he should do as they do: first thing in the morning go out and walk barefoot on the wet Earth. That would take away the aches and pains of the profession, they said. Bob never forgot the story.



PART THREE

Connecting with Science





CHAPTER 7

The Original Anti-Inflammatory

The Earth itself is the original anti-inflammatory. And the planet itself is the biggest electron donor on the planet.

What does this mean to you?

Just imagine a mighty unseen cavalry of free electrons, galloping up through your body from the Earth and mopping up outnumbered forces of inflammatory free radicals. Electron deficiency, created by a lack of grounding, is eliminated and a healing process unfolds.

The inflammation, sickness, and pain in your body are but a manifestation—in large part or small—of an electron deficiency. The remedy is as close as the Earth you live on.

In 2000, Clint Ober was asked by a friend if he would ground an elderly gentleman who was bedridden with advanced rheumatoid arthritis. The man's hands, elbows, and feet were grotesquely misshapen and inflamed. He was racked with pain and could hardly move and then only very slowly. He was receiving comfort and at-home support from hospice, the national organization that offers services to patients whose life expectancy is six months or less.

Ober said he would come and see what could be done. It took three people to lift the man out of the bed in order to allow a conductive bed pad to be placed on it. The pad was then connected to a ground rod outside.

About ten days later, Ober received a phone call from the man, asking if he could come over again. He said that a squirrel had eaten through the ground wire.

“How do you know that?” Ober wanted to know.

“I went out and saw it had been chewed through,” the man said.

Ober was puzzled. How could a bedridden patient be up and about in his yard in a matter of a few days?

“That’s what I did,” he said. “I went out and saw it.”

Astonished, Ober drove up again. He found the man waiting for him, leaning against the front door. He said he was feeling better. And he was right about the wire. It had indeed been chewed up by an animal. Ober replaced it.

After the elderly patient had used the bed pad for a year, Ober learned from his friend that the man was much improved. He was doing household chores, tending to his fireplace, and even carrying firewood into the house from outside. The swelling had gone down. He was stronger, and he moved, talked, and expressed himself with new liveliness. The friend said that the once bedridden man had told him, “I feel I no longer have disease in my body.”

The man continued to sleep grounded every night for the next five years until he died.

This remarkable turnaround is nothing more than Earth energy in action. It reveals the largely unknown fact that the ground represents the biggest and best natural antioxidant and anti-inflammatory that exists.

In this chapter, we will describe the healing connection between the Earth and physical inflammation. You’ll get an idea how this connection

What Is Inflammation?

Everyone is susceptible to inflammation—from high-performance athletes to non-performance couch potatoes. It’s an equal opportunity hit man.

The word “inflammation” comes from the Latin *inflammatio*, meaning to set on fire. Inflammation is the complex biological response of the body to harmful stimuli, such as pathogens, damaged cells, or irritants. It is a protective attempt by the system to remove injurious or threatening agents as well as start the healing process for the affected tissue. In the absence of inflammation, wounds and infections would never heal and progressive destruction of the tissue would compromise survival.

has unlimited potential to reinfuse health and defuse pain among disconnected societies where there is increasing sickness despite all the money poured into medical research and treatments.

But before we get back to the Earth and how it snuffs out inflammation, let's first look at what inflammation is (see the inset on opposite page).

Your immune system protects you against pathogens and facilitates the rebuilding of tissue at sites of injury or surgery. When a problem develops someplace, your body does the equivalent of calling 911. The alarm sounds. White blood cells and other specialized cells rush to the site—the first responders. The white blood cells constantly cruise throughout the tissues of your body, like police patrol cars, ever on the alert for viruses, bacteria, or other alien microorganisms, as well as damaged cells created by trauma or internal irritants. As weapons, some of the cells release a shower of powerful free radicals (called an oxidative burst) that aid in the destruction of invading microorganisms and damaged tissue.

Free radicals have gotten a bad rap, and you will see why in a minute, but in reality they perform an essential service to the body. Simply put, they are electron-hungry molecules (needing one or more electrons to stabilize their molecular structure). You can call them electrophiles—electron lovers. Normally, these free radicals obtain their electrons by stripping them away from pathogens and damaged tissue. This activity kills the bad bugs you want out of your body and breaks down damaged cells for removal. As the remedial work winds down, excess free radicals produced during the immune response are neutralized by antioxidants or free electrons in the body.

This response is triggered whenever you have a disease or an injury. It is called the “inflammatory response.” As a result, you may feel the familiar signs and symptoms of inflammation: swelling, redness, heat and pain, and, depending where the site is, decreased range of motion.

CHRONIC INFLAMMATION = ELECTRON DEFICIENCY

Inflammation comes in two forms: acute or chronic. The acute type takes place as an initial response of the body to harmful stimuli. It involves the mobilization of plasma (the yellow-colored liquid component of blood)

and white blood cells from the blood into the injured tissue, as just described. That's okay. You want that to happen.

Then there is chronic (prolonged) inflammation. That you don't want. Chronic inflammation means a progressive shift in the type of activity going on at the site of inflammation. You get simultaneous destruction and healing of the tissue, but a harmful free-radical encroachment into healthy, surrounding territory. The destruction derby continues, and it can seriously harm you.

Free radicals obviously have starring roles in the immune response, but problems arise when the process fails to wind down completely after the job is done. The good guys become bad guys on a rampage, ripping up innocent, healthy cells. Think of security dogs that snag the burglar and then go after their owner. They continue attacking and oxidize healthy tissue. The immune system gears switch into overdrive, sending in more white blood cells that produce more free radicals. This activity is why free radicals have a bad rap and why scientists unanimously agree that free-radical activity is at the basis of chronic disease and the aging process, particularly accelerated aging and limited lifespan.

We believe that normal inflammation veers out of control because of lost contact with the Earth. People are suffering from an electron deficiency—not enough free electrons on hand to satisfy the lust of rampaging free radicals. They continue to attack the adjacent neighborhood of healthy tissue in an ever-expanding vicious cycle. The nonstop attack mode generates an autoimmune response manifesting as chronic inflammation. The immune system has run amok, attacking its owner—you.

We've simplified the scenario, but this is basically how it works. A destructive process unfolds that can continue silently and indefinitely even for dozens of years and lead to so many intractable modern diseases. Earlier we mentioned the new scientific term for this—inflamm-aging. Now you can see where it comes from.

INFLAMMATION AS A DISEASE-MAKER

The idea that chronic inflammation could be involved in disease began to gain serious attention over twenty-five years ago. At that time, two Australian researchers, Barry Marshall and Robin Warren, reported for the

first time that stomach ulcers were not caused by stress or spicy food but by inflammation triggered during bacterial infection. This discovery earned the pair a Nobel Prize.

A subsequent breakthrough occurred in the field of cardiology. Back in the mid-1800s, the famous German pathologist Rudolph Virchow had recognized that injured and inflamed arteries might be a source of heart attacks. His idea failed to gain traction during his time and faded away. Later, during most of the last half of the twentieth century, the cholesterol theory emerged, and since then lowering cholesterol has become a medical obsession and a multi-billion dollar business for pharmaceutical and food manufacturers. However, medical research has shown that half of all heart attacks and strokes occur among people with normal cholesterol levels. So during the 1980s, some cardiologists began to re-examine Virchow's ideas about inflammation.

The breakout came in a series of important studies beginning in 2000. Evidence from a women's study that monitored 28,000 initially healthy postmenopausal women introduced a new cardiovascular risk factor into the spotlight: C-reactive protein (CRP), a biochemical substance measured in the blood that indicates the presence of inflammation. People with the highest level of CRP had five times the risk of developing cardiovascular disease and four times the risk of a heart attack or stroke compared to individuals with the lowest level. CRP, the researchers said, predicted risk in women who had none of the standard risk factors and was the best predictor among twelve risk factors studied, including cholesterol. Harvard cardiologist Paul Ridker, M.D., the lead researcher, said, "We have to think of heart disease as an inflammatory disease, just as we think of rheumatoid arthritis as an inflammatory disease."

Dr. Ridker estimated that approximately 25 percent of Americans have normal to low cholesterol, lulling them into complacency, but at the same time they have elevated CRP they don't know about. This means that millions are currently unaware they have an increased risk for future cardiovascular trouble.

In the arteries, think of low-grade inflammation as a silent, creeping fire that consumes tissue. It leads to the weakening and eventual rupture of arterial plaques that directly trigger heart attacks and stroke. The CRP-inflammation link helps explain why so many heart attack and stroke victims have normal cholesterol levels.

Another example of a common disorder increasingly being seen as inflammation-related is diabetes. In type 1 diabetes, the kind that affects youngsters, the body's immune system attacks the pancreatic cells that make insulin. Insulin is the hormone responsible for controlling the blood sugar level and opening cell "doors" to sugar for use in energy production. Research also suggests that type 2 diabetes, the most common form of the disease and generally occurring in adulthood, begins with insulin resistance. This means that energy production stops responding properly to insulin. The reason for this, researchers believe, is an excess of inflammatory substances released from fatty tissue, particularly in the abdomen. Fat cells, once thought to be merely storage depots for energy and metabolically inert, are now known to be hotbeds of inflammation. This connection helps explain why obesity leads to diabetes. In addition, some studies suggest that eating certain foods may stoke more inflammation in the body and raise the risk of diabetes. They include foods high in sugar and other sweeteners, white flour products, trans fats, polyunsaturated vegetable oils, and processed meats.

It seems that hardly a day goes by without some new study pointing the finger at runaway inflammation as the core of some disease. Inflammatory diseases have become a global epidemic and include some of the most devastating disorders of our times. Table 7-1 lists just a few of them.

Along with the continuing flow of revelations regarding inflammation, researchers have also accumulated much evidence demonstrating that painful conditions are often the result of acute or chronic inflammation. One pain expert has postulated that the origin of all pain is inflammation and the inflammatory response.

Many physicians and researchers wonder what has caused inflammation to become so dangerously commonplace. When asked what causes inflammation in the first place, Harvard's Dr. Ridker said this: "We are witnessing evolutionary biology in action—an adaptive response (inflammation) in the past is now maladaptive in our current modern environment."

The discovery of the relationship of grounding to inflammation suggests that the once adaptive response called inflammation has maybe gone sour because of an electron deficiency from loss of direct contact with the Earth.

TABLE 7-1. CONDITIONS RELATED TO CHRONIC INFLAMMATION

DISEASE	HEALTH EFFECTS
Allergies	Inflammatory messengers stimulate release of histamine, leading to allergic reactions.
Alzheimer's disease	Inflamed brain tissues develop plaque; chronic inflammation kills brain cells.
Amyotrophic lateral sclerosis (ALS)*	Damage to motor neurons causes the body to launch an overzealous inflammatory counterattack, killing the motor neurons.
Anemia	Inflammatory messengers attack red blood cell production.
Arthritis	Chronic inflammation destroys joint cartilage and inhibits the release of lubricating and cushioning fluid in the joints.
Asthma	Inflammation leads to blocking of the bronchial passages.
Autism	Brain inflammation is present in most autistic children.
Cancer	Inflammation contributes to free radicals, tumor growth, and inhibits the body's defense against abnormal cells.
Cardiovascular disease	Inflammation causes thick, unhealthy blood and arterial disease, leading to blockage and plaque and increased risk of dangerous clots in the blood vessels that feed the heart and brain; inflammation also damages heart valves.
Diabetes, types 1 & 2	Type 1 diabetes, inflammation induces the immune system to destroy pancreatic beta cells; type 2 diabetes, fat cells cause the release of inflammatory messengers, leading to insulin resistance.
Fibromyalgia	Inflammatory compounds present in the body at an elevated level.
Common intestinal disorders	Crohn's disease, irritable bowel, diverticulitis, and other intestinal problems involve inflammation that causes pain, interference with digestion and assimilation of nutrients, and damage to the sensitive lining of the digestive tract.
Kidney failure	Inflammation restricts circulation and damages kidney cells that filter blood.
Lupus	Inflammatory compounds spark an autoimmune attack.
Multiple sclerosis	Inflammatory compounds attack the nervous system.
Pain	Activation of pain receptors, transmission and modulation of pain signals, and hypersensitivity of nervous system are all one continuum of inflammation and the inflammatory response.
Pancreatitis	Inflammation induces pancreatic cell injury.
Psoriasis and eczema	Inflammation-based skin disorders.

**ALS is often called Lou Gehrig's disease*

ENTER EARTHING: THE MISSING LINK

The land and seas of planet Earth are alive with an endless and constantly replenished supply of electrons. By making direct contact with the surface of the planet, our conductive bodies naturally equalize with the Earth. Figuratively speaking, we refill the electron level in our tank that has become low.

How do we know that the body absorbs those electrons? There are a number of ways we know.

One is common sense. The Earth is negatively charged. It has a virtually infinite supply of free electrons. Anytime you have two conductive objects and they make contact—such as your bare feet and the ground—electrons will flow from the place where they are abundant to the place where there are fewer of them. The electrical potential of the two objects will thus equalize. That’s grounding. Similarly, when you stick a ground rod in the Earth, it allows the electrons to flow from the Earth via a wire into an object. It could be a refrigerator, the shielding around a cable TV system, or you. Your body is conductive like the fridge.

Free radicals and electrons constantly interact in high-speed and in highly complex bioelectrochemical exchanges. Many free radicals are regarded in terms of being positively charged molecules, but some can actually be neutral or even negatively charged. These reactive molecules hunger for electrons. The Earth provides the body with a huge influx of electrons and reduces or shuts down the inflammatory destruction attributed to excess free radicals.

If you have a battlefield with electron-seeking free radicals running amok inside your body, guess what’s going to happen when you make contact with the Earth?

Big negatively charged Earth overwhelms little electron-hungry free radicals.

Science backs up the common sense. Science tells us that the body is one dynamic conductor of electrical impulses, or in the words of biophysicist James Oschman, “the living matrix.” Cells contain an internal framework known as the cytoskeleton that connects all parts of the cell, from the nucleus to the outer membrane. This “scaffolding” includes molecules that conduct energy and information inside each cell and outward to the surrounding environment, and in the opposite direction, from the environment to the innermost parts of the cell and nucleus. Similarly, the

surrounding environment, from your head to your toes, contains an extracellular network of conductive collagen and other proteins that are “hard-wired” to cell membranes. Thus, the living matrix inside and outside cells provides a body-wide network for antioxidant electrons, a pathway hooking up all parts of the body, including the nervous system and all sensory receptors, with all parts of every cell, including the genome in every cell. This pervasive system has extensions into every nook and cranny of the body and really represents, when you think about it, the largest organ system in the body. It is the “stuff” of all living structures.

When you think of yourself as an “antenna,” as the French agronomist Matteo Tavera describes all living things (we discussed his ideas in Chapter 3), you can see how we fit neatly into a universal energy continuum. We, and the stars, are bathed in it.

Michael Jordan and the Living Matrix

Think of the living matrix as a kind of warp-speed communication network inside your body.

Nobel Prize winner Albert Szent-Györgyi, the Hungarian biochemist who first identified vitamin C and was among the first to apply theories of quantum physics to the understanding of cancer, was always a scientist ahead of his time. He laid out the vision of a high-speed communication system in the body—he called it “electronic biology”—back in 1941. He said, “Life is too rapid and subtle to be explained by slow-moving chemical reactions and nerve impulses. The proteins are the stage upon which the drama of life unfolds. The actors can be none other than small and highly mobile units such as electrons and protons.”

To illustrate the blazing fast speed of communication within the living matrix, Dr. Oschman uses the analogy of Michael Jordan, one of professional basketball’s greatest players. It is the last game and the last seconds of the basketball playoffs. The game is tied, and of course the ball comes to Jordan. In an instant he springs into mid-air and launches the ball toward the basket. As the buzzer sounds and the game is over, the ball drops through the hoop. Jordan’s buzzer-beating shot wins the championship for his team. As the fans go wild, Jordan looks into the TV cameras, smiles, and shrugs his shoulders, as if to say, “Don’t ask me how I did that!”

Medical science utilizes the concept of the living matrix in a very practical and helpful way. Doctors use electrophysiological and biomedical instrumentation such as EKGs, EEGs (electroencephalograms), and EMGs (electromyograms) as diagnostic tools to monitor the electrical activities of the heart, brain, and muscles. These devices follow certain conductive pathways existing between internal organs and the body skin surface, and vice versa. The readings from the interior follow pathways to the skin surface, where they are picked up by electrode patches and led to the measuring devices. Pacemakers, defibrillators, and electroacupuncture demonstrate how this conductivity works in reverse: from the skin to the tissues and organs inside the body.

Electrons are the smallest possible negative charges of electricity. It is well established that negative charges (electrons) are attracted to positive charges. Connecting the body to the Earth automatically enables the conductive tissues of the body's living matrix to become charged with the Earth's free electrons. When this occurs, excess or residual immune response free radicals (which are electron hungry) suddenly have, as the old song goes, the object of their affection—a readily available supply of free electrons to bond with and reduce their oxidative and inflammatory mode. They are neutralized, quenched, satiated, and satisfied. Kind of like giving kids the keys to the ice cream store or opening the blood bank to Dracula.

As a result, the addiction of immune system-produced free radicals to oxidize healthy tissue to obtain their fix of missing electrons naturally disappears. The rampage is naturally inhibited, and with it the underlying mechanism of chronic inflammation and autoimmune disease. The body naturally conducts, and becomes charged with, the Earth's free electrons; that is, it equalizes with and maintains the natural electrical potential of the Earth. The end result, our observations and research indicate, is that the reconnection prevents or reduces chronic inflammation and consistently speeds recovery from exhaustion, acute trauma, and minor injuries. You'll read how that plays out in the very dramatic stories we've collected in Part Four of the book.

Typically, there's a quick reduction in inflammation-related aches and pain. Some acute headaches can vanish within minutes. The intensity of chronic pains often lessens significantly in twenty to forty minutes.

The effect of Earthing on inflammation and pain was dramatically demonstrated in a series of case studies conducted with thermography during 2004 and 2005. Thermography, also known as infrared imaging, is a noninvasive clinical technique that analyzes the skin surface temperatures as a reflection of normal or abnormal human physiology. The technique utilizes sophisticated computerized technology to translate temperature data and produce an image that is then evaluated for signs of possible disease or injury. The procedure has been around for more than thirty years and featured in thousands of medical studies. Among other things, it is widely used to help diagnose breast cancer, diabetes, nervous system and metabolic disorders, injuries, headaches and pain syndromes, neck and back problems, and arterial disease.

William Amalu, D.C., president of the International Academy of Clinical Thermography, performed Earthing studies on twenty patients with a variety of complaints, including chronic myofascial pain syndrome, muscular strains, ligamentous sprains, peripheral neuropathies, carpal tunnel syndrome, inflammatory joint conditions, Lyme's disease, and chronic sinusitis. The subjects were either grounded with conductive electrode patches in his office or slept on grounded bed pads at home. The results showed, through dramatic pictures, a major and rapid impact on inflammation and pain. A picture is worth a thousand words, so please refer to the color images (Plates 1–4) on pages 81–83 showing some of these changes.

Some patients experienced improvement in just one session. Within two to four weeks (of two to three half-hour treatments weekly), up to 80 percent improvement occurred in the cases that were followed up (60 percent of cases were followed). With ongoing grounding over weeks and months, the patients continued to get relief, feel better, and in some cases, their symptoms vanished altogether.

“The moment your foot touches the Earth, or you connect to the Earth through a wire, your physiology changes,” James Oschman says. “An immediate normalization begins. And an anti-inflammatory switch is turned on. People stay inflamed because they never connect with the Earth, the source of free electrons, which can neutralize the free radicals in the body that cause disease and cellular destruction.”



Connect to the Earth and Heal!

Beneath your feet outdoors is not just a mere patch of grass, dirt, sand, or concrete. It is an omnipresent source of natural healing energy. After you read this book, you will never look at the ground the same way.

We humans, as all other living beings, are electrical creatures on an electrical planet, and the ground beneath us is more than something we just stand, walk, play, and build on.

“This inspired and well-researched book explains the perils we face by being disconnected from the power and energy of the Earth. Could much of the disease, chronic inflammation, poor sleep, and more be the result of this? A brilliant hypothesis.”

—**Nicholas Perricone, M.D.**, author of *Ageless Face, Ageless Mind*

“Earthing ranks right up there with the discovery of penicillin. This book is probably the most important health read of the twenty-first century.”

—**Ann Louise Gittleman, Ph.D., C.N.S.**, author of *The Fat Flush Plan*

“Earthing may be as fundamental as sunlight, air, water, and nutrients.

‘May the Ground be with you!’ ”

—**Gary E. Schwartz, Ph.D.**, professor of psychology and medicine, University of Arizona, and author of *The Energy Healing Experiments*

“Most people want the most health benefits for the least amount of work. This is it! Earthing gives you more benefits for the least work. There is no work!”

—**David Wolfe, M.S.**, author of *Superfoods: The Food and Medicine of the Future*

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