

# Earthing

How to Ground Yourself  
in Better Health

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



Forward by James L. Oschman, Ph.D. \* Commentary by 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

**Basic  
Health**  
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# 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.

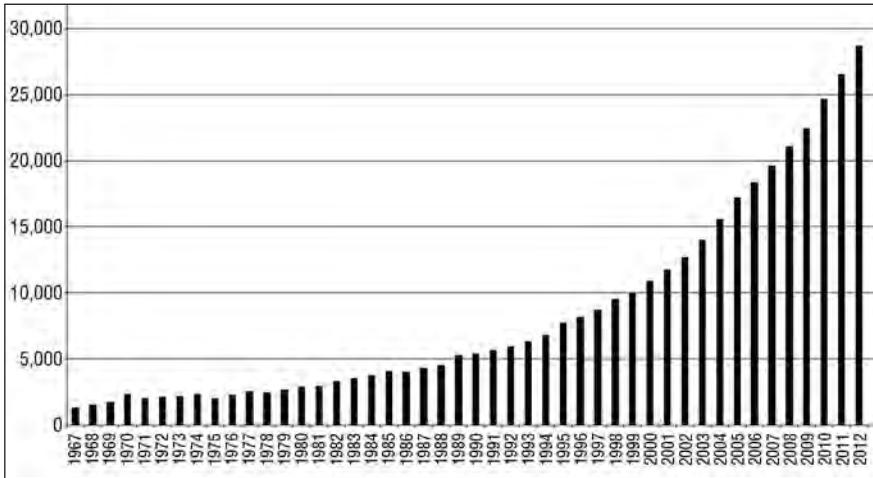


Figure 1. Year-by-year increase of published peer-reviewed studies on inflammation, 1967-2012. Source: Pub Med (National Library of Medicine database), as of January 2013.

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](http://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 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**

<b>DISEASE</b>	<b>HEALTH EFFECTS</b>
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.”

# The Feminine Connection: Earthing and Women

Women seem to get it.

They seem to respond intuitively and immediately to the “barefoot connection” and to the healing and energy of Mother Earth. This is not in any way a criticism of the masculine mind, but simply an observation based on years of demonstrating and explaining the concept of Earthing to thousands of people.

“Connect to the Earth and heal” was the way one group of women, in chorus, described Earthing some years ago.

Women seem to enjoy kicking off their shoes at the desk or at home, something you will rarely see a man do. It’s not so much that the shoes are uncomfortable, but rather more of a primordial and harmonious connection to the Earth that women may feel more intimately than men.

Women are caregivers by nature. Clint Ober has found that after experiencing the benefits of Earthing, women want to go out and tell everyone in their circle of family and friends. By comparison, men generally want to know how it works.

There is also an appearance factor here. One woman with multiple sclerosis who participated in a one-day Earthing study visited the restroom at the end of the day and then rushed back to the testing center all excited. “I look different,” she said. “Like I used to look years ago.” Other women have made this comment, even after just a half hour of grounding. And after sleeping grounded for a period of time, women often say they feel better and look better. They say their skin has more radiance, their eyes

are brighter, and they have more vitality. The impact on feeling and appearance is likely from a combination of things: elimination of an electron deficiency, better sleep, reduced stress and pain, and more natural and balanced functioning within the body. The feedback suggests that these factors work to help normalize many ongoing health issues and may even be helpful in the struggle against weight gain.

Earthing may contribute on the weight front in part by making you feel more relaxed and normalizing your level of cortisol (the stress hormone). People under stress often have a hard time following a healthy diet. They will frequently eat the wrong things to fill an emotional need or because of lack of time to prepare something healthy for themselves.

The body produces excess cortisol in times of physical and psychological stress. The hormone revs up fat and carbohydrate metabolism for fast energy. Too much stress and too much cortisol in the system can boost the appetite and, according to some studies, promote weight gain. What's more, stress and cortisol can promote fat deposition around the middle, a highly unhealthy and unsightly buildup referred to as abdominal adiposity. The problem with this form of belly fat is that it produces inflammatory chemicals and is a paramount feature of the metabolic syndrome that leads to cardiovascular disease and diabetes. We haven't specifically researched Earthing's effect on weight yet, but quite a few people have remarked about finding it easier to lose weight and keep weight off.

Hormones are a central—and often confusing—concern to women throughout much of their lives. No research has been done to date regarding hormones and Earthing other than a pivotal study on cortisol that we described earlier in Chapter 5. It is well known that hormones work in harmony with each other, even though we are far from understanding all the complex give-and-take and up-and-down interactions. Often, when the body's production of one hormone is off, others are affected, kind of like a domino effect. Cortisol is a close steroid relative of progesterone and more distantly to estrogen. So there could be some impact here that has not been measured yet. Something positive is happening, though. We have received feedback from many women describing relief from debilitating symptoms of PMS and menopause, sometimes quite rapidly.

## IN THEIR OWN WORDS

In the original cortisol study published in 2004, the participants provided comments on their health issues prior to and after eight weeks of sleeping grounding. Following is a summary of feedback from five of the female participants. Their responses represent a vision of possibilities from Earthing after just a short period of time. Keep in mind that each person is an individual and is likely to respond differently from the next person. However, the feedback is fairly typical of many other observations made over the years.

### **Participant No. 1, fifty-three years old, menopausal**

#### ***Pre-Study Complaints***

- Difficulty going to sleep.
- Wakes up two to three times a night for last three years.
- Muscle cramps in legs.
- Chronic muscle pain throughout body.
- Hot flashes.

#### ***End of Study Feedback***

- “Fall asleep faster and easier.”
- “Neck pain lessened.”
- “Leg and foot cramps have lessened.”
- “Arm and lower back pain gone by the very first week.”
- “TMJ (temporomandibular joint disorder) problem significantly improved.”
- “Reduction in hot flashes.”

### **Participant No. 2, twenty-four years old**

#### ***Pre-Study Complaints***

- Trouble sleeping for seventeen years; takes a long time to fall asleep; wakes up after several hours and can't sleep again; wakes up exhausted.

- Daily headaches.
- Migraines one week before period.
- Menstrual cramps, mood swings, bloating, irritability, depression, and weight gain.
- Digestion: bloating, nausea, diarrhea, gas, and constipation.

### ***End of Study Feedback***

- “By the third night, decreased time to go to sleep and slept through the night.”
- “Able to fall back asleep within a few minutes after waking up, and no more nightmares.”
- “Wake up refreshed instead of exhausted.”
- “No more daily headaches.”
- “Decreased PMS, including food cravings, bloating, and depression.”
- “Digestion improved with less bloating, constipation, and nausea.”

### **Participant No. 3, fifty-two years old, menopausal**

#### ***Pre-Study Complaints***

- Sleeps very lightly.
- Wakes up feeling tense several times during the night.
- Wakes up feeling tired in morning; feel tired all day.
- Pain in left hip, sporadic for several years.
- Allergies (food and airborne) since age thirteen.
- Digestion: gas.

#### ***End of Study Feedback***

- “Have felt more rested and feel like I need an hour less sleep per night.”
- “Deeper relaxation.”
- “Stopped having any pain at all in my left hip.”
- “First few days, I experienced tingling and heat in areas of my previous

physical injuries—similar to an acupuncture treatment. After about three days, these vague feelings subsided.”

- “Allergies have definitely lessened.”
- “Better digestion.”
- “I noticed that I stopped clenching my jaw at night.”
- The participant reported that her husband, who was not part of the study, but who was sleeping grounded next to her, “began sleeping fewer hours, has more energy, and has stopped snoring.”

### **Participant No. 4, forty-two years old**

#### ***Pre-Study Complaints***

- Trouble falling asleep; light restless sleep.
- Wakes up feeling tired; also, trouble waking up from naps.
- Fibromyalgia since 1992 car accident; a lot of joint pain in arms, legs, ankles.
- Gastrointestinal upset; gas.

#### ***End of Study Feedback***

- “The general quality of my sleep improved; not immediate, but a gradual change.”
- “Sleeping much deeper.”
- “A lot less fatigue because of less pain.”
- “My fibromyalgia has improved considerably because of diminished pain and fatigue; the joint pain is gone, with occasional pain in the left arm.”
- “I am feeling much better, I haven’t been sick at all.”

### **Participant No. 5, forty-four years old**

#### ***Pre-Study Complaints***

- Trouble sleeping; wakes up two to three times each night with physical discomfort.

- Numb fingers on left hand for last four months; carpal tunnel syndrome.
- Bad cramps, breast tenderness, mood swings, weight gain, painful heavy periods, and uterine fibroids for many years.
- Hot flashes at night (or maybe night sweats).
- History of anxiety attacks.

### ***End of Study Feedback***

- “Gradually sleeping better”
- “Two episodes of waking up between 4:30 and 5:30 A.M. with anxiety that subsides by early afternoon.
- “Less numbness in hand and fingers, especially at night; not needing to wear a brace at night.”
- “Menstrual periods not as severe; cramps not as strong.”
- “Feeling better physically and emotionally.”

## **FAST TRACK TO VIBRANT— A ONE-HOUR EARTHING “TIME TRIAL”**

How fast can Earthing improve vitality? A 2012 women’s wellness conference in Southern California was the setting for an informal experiment to put that question to the test.

About 100 women in attendance filled out questionnaires before and after a one-hour talk on Earthing. The questions covered individual assessments about energy, pain, stress/irritability, mood, circulation, and flexibility. About half the audience was familiar with Earthing.

The experiment was set up in this way:

Upon entering the hotel conference room, the women received a “goody bag” containing the questionnaire, a pen, an Earthing patch and cord, and a pocket mirror that lights up. Why the mirror? So they could easily view themselves before and after the talk, and see how they looked.

Once seated, the attendees filled out the “before” section of the questionnaire asking for their subjective impressions on how they felt, using a 1 to 10 scale.

Prior to the presentation, an Earthing wiring system had been laid out throughout the room. It allowed each attendee to place the patch on the bottom of one foot, and then connect the cord to the room-wide Earthing system connected to grounded wall outlets.

At the end of the talk, everyone filled out the “after” section of the questionnaire. Here are the questions and the results:

### 1. ENERGY

**Q:** Before (or after) Earthing, my energy level is \_\_\_\_\_ (*a numerical range from horrible, to OK, to magnificent*).

**A:** 78 percent reported more energy, on average an increase of about 40 percent.

### 2. PAIN

**Q:** The level of pain in my body before (or after) Earthing is \_\_\_\_\_ (*a numerical range from extremely painful, to OK, to I am pain free*).

**A:** 60 percent of those with pain said they had less pain at the end, and an average decrease of about 30 percent.

### 3. STRESS

**Q:** My level of stress and irritability before (or after) Earthing is \_\_\_\_\_ (*a numerical range from terrible, I am extremely stressed, to OK, to I feel calm/centered*).

**A:** 77 percent reported less stress, on average about 50 percent better.

### 4. MOOD

**Q:** My overall mood before (or after) Earthing is \_\_\_\_\_ (*a numerical range from terrible, I feel extremely low, to OK, to my mood is wonderful*).

**A:** 82 percent said their mood had improved, with an average of 40 percent.

### 5. COMPLEXION

**Q:** Before (or after) Earthing, when I look into the mirror, my face looks \_\_\_\_\_ (*a numerical range from dull & pale, to OK, to vibrant & full of color*).

**A:** 73 percent thought they looked better, with an average improve-

ment of 38 percent. We attributed the change to improved circulation and more calmness, even from just an hour of Earthing.

## 6. CIRCULATION

**Q:** Before (or after) Earthing, the temperature of my hands/feet are \_\_\_\_\_ (*a numerical range from poor—my hands/feet are ice, to OK, to great—my hands/feet are warm*).

**A:** 65 percent stated that their circulation had improved, and on average by 32 percent.

## 7. FLEXIBILITY

**Q:** Before (or after) Earthing, if I reach down to touch my toes, my flexibility is \_\_\_\_\_ (*a numerical range from poor, I am extremely stiff, to OK, to excellent, I feel very flexible*).

**A:** 62 percent reported improvement, with about a 23 percent improvement.

The results were “phenomenal, demonstrating how rapidly Earthing can enhance a woman’s vitality, and likely a man’s as well, although guys being guys they might be more reluctant to admit it,” said Christy Westen, D.C., who gave the talk on Earthing and organized the experiment.

Keep in mind that these changes occurred within an hour of being seated on typically hard, uncomfortable conference chairs next to people you don’t know.

Dr. Westen summed up the experience thusly: “Most people think that creating more vitality in life requires a ton of time, effort, and sacrifice. You have to sweat it out in the gym, strenuously try to eat the perfect diet, and offload as much stress as possible. To be sure, these are essential ingredients in a healthy lifestyle recipe, but often not so easy to accomplish. Earthing, on the other hand, requires no strain whatsoever and is, in fact, one of the easiest things you can do for your health. Just reconnect to the Earth, and even in one single hour you can feel a difference, sometimes profoundly, and without any side effects! Make this a routine in your life and you really put yourself on a direct path to becoming simply vibrant!”

## STORIES OF MENSTRUAL AND MENOPAUSAL RELIEF

**Amanda Ward, N.D., Encinitas, California, naturopathic doctor:** “I started Earthing myself and had phenomenal results. My sleep was deeper. When I would become run down, I would wrap myself up in a grounding sheet and recover quickly. However, the most dramatic effect was on my own menstrual issues. I used to have horrific PMS with heavy periods and severe cramping and pain. Nothing I tried was helping me much, even though I have a lot of tools at my disposal as a health practitioner. At times the situation would be debilitating enough so that I had to stay at home.

“After about two months of Earthing, I started to notice an improvement. Then every month my periods would become a little better. In about a year, my menstrual difficulties completely resolved. Now, I might get a bit of irritability, but all the physical symptoms are gone.

“As I began to see the improvements in my own life, I began recommending Earthing to patients. I do a lot of hormone balancing and nutrition to support women’s health issues. I use a broad array of methods, so it is hard to say exactly which treatment is helping the most. However, patients have told me that they feel more balanced with Earthing than they do on the other programs alone. My clinical impression is that women who do the Earthing along with bioidentical hormones definitely seem to have a superior experience. There is a lot of synergy here. Hormonal imbalances are so prevalent, and Earthing seems to be such a simple and profound tool to smooth out those imbalances.

“I have seen particularly good results with perimenopause and menopause, with reduction of symptoms like hot flashes, night sweats, insomnia, and irritability.

“Some of the mothers in my practice have told me that they have used Earthing sheets and helped their kids recover faster from cold and flu symptoms. I’ve heard this feedback even from women whose children have weaker immune systems and tend to be sick frequently. The mothers will take the grounding sheet they themselves use and wrap up the kids in it when they are watching TV. If the kids sleep grounded, I’ve heard, they sleep a lot better.”



**Dale Teplitz, M.A., San Diego, California, health researcher:** “Ever since my periods began at age thirteen, and until I was forty-five, I suffered routinely with severe PMS and menstrual symptoms. In the week prior to each period, I experienced gradually increasing water retention, food cravings, headaches, and weight gain. I was irritable. My skin was itchy and uncomfortable. My body ached and felt painful to the touch. For several nights prior to every period, I could not sleep. Over the years, I took diuretics to help with the water retention and sleeping pills for those difficult nights.

“PMS also affected my personality and relationships; I had emotional ups and downs, anxiety, and often felt depressed. Medication left me feeling emotionally numb.

“Once my period began, the PMS symptoms would go away to be replaced by severe cramps and heavy bleeding. The pain and fatigue often prevented me from working. I lived on anti-inflammatories during this time, which disturbed my digestion.

“At the age of forty-five, I started sleeping grounded. One month later, all my PMS symptoms went away. I was astounded. In one stroke, I was able to eliminate the sleeping pills, diuretics, anti-inflammatories, and other medications. I was free of symptoms, and I felt like a new person.

“Two years later, I entered menopause. I was feeling a bit anxious about what might lie ahead because I had heard horror stories from other women. It seemed that those who had a lot of PMS issues had the most difficulty going through menopause.

“To my surprise, I sailed into menopause effortlessly. I had a gradual decrease in the frequency and duration of periods until they eventually disappeared. I did not experience sleeplessness. I only had mild and brief hot flashes, which I determined were related to certain foods or red wine. There were no hormonal-type mood swings all my friends reported. Some of my friends have had menopause symptoms for more than ten years now, well into their sixties.

“Another thing that amazes me is that when I was in my early forties, I had been diagnosed with osteopenia, a condition in which bone density is below normal and may lead to osteoporosis. For several years in a row, I had a dual energy x-ray absorptionmetry scan, or DEXA scan, that showed decreased density of my thigh and ankle bones. When I was tested again

at age forty-eight, after sleeping grounded for three years, the osteopenia was gone. I was tested again at fifty-two, and it was still gone! My bone density looked great.

“I am convinced that Earthing took away my symptoms of PMS, cramps, and menopause. I doubt that indigenous women who live directly on the Earth are troubled with symptoms of hormone imbalance. I can't imagine how much better my life would have been if I had learned about Earthing thirty years sooner, but nobody knew about it then. So I consider myself lucky to have heard about it at all. I could have continued suffering much longer.”



**Melissa Dawahare, N.D., R.N., Tempe, Arizona, naturopathic physician:** “Prior to starting Earthing in 2012, I routinely experienced moderate menstrual cramping (at a 3 to 4 level out of 10). That stopped with Earthing, and right away.

“I have found that I recover from intense cardio and resistance workouts faster, with no or minimal muscle soreness. Before, there was always some discomfort afterward.

“I noticed that my immune system appears to be stronger. I don't catch a cold as easy and if I feel like I am coming down with one, sleeping grounded takes it away.

“My kids sleep grounded as well. They also have better immunity. Their colds are less severe and they last half the time. They sleep longer, harder, and deeper.”

## “I HAVE MY HEALTH BACK”

**Elizabeth Hughes, Ph.D., Madison County, Wisconsin, former corporate executive:** “At age twenty-one, I developed fever, sore throat, muscle soreness, headaches, swollen glands, and fatigue. My doctor thought I had a case of mononucleosis, a viral condition that frequently strikes young adults. I spent a lot of time in bed and out of commission for the next twenty-five or so years, with one variation or another of some sickness. It

seemed to me that my doctors used different names for the shifting symptoms according to whatever mystery disease was in vogue at the time: things like chronic fatigue, Epstein-Barr virus, fibromyalgia, and Ramsay Hunt syndrome. One doctor thought I had MS. I didn't.

"I was stuck in a system where doctors have great intentions but few explanations about how you got sick and very little to heal you with. A few doctors said it was all in my head and offered antidepressants and psychotherapy. Early on a team of six interns reviewed my case and said they didn't know what was wrong even though my symptoms were obvious.

"Many chemicals made me sick. For a long time, I couldn't set foot in a hairdresser's salon or department store. New synthetic fabrics, carpets, outgassing solvents, and volatile compounds were a problem.

"I did all I could to get well. When conventional treatments failed, I tried the alternatives. I drank 16 ounces of wheat grass juice daily to detoxify myself. I ate pure organic uncooked food. I had my amalgam fillings removed to get rid of mercury in my body. I got some temporary relief from all these things, but nothing lasting or really substantial.

"Despite ongoing health issues, I managed to earn a Ph.D. and work in corporate America at a very high level. When I got very sick, I just had to go on disability and drop out for a while.

"I was always searching for an answer, but I could not find it. I even joined support groups with other women who had the same kind of complaints. It was so bad and so hopeless for some of those women that they actually talked about committing suicide. After some temporary relief from one thing or another, I would go back to work so I could earn enough money to pay for treating the next episode.

"Around 2005, I learned about Earthing and got grounded. Within six weeks, I was a new person. I was amazed. Shocked is actually a better word. There was no more pain in my body. My symptoms of whatever the doctors variably called my condition were gone, as were the tender, painful breasts, something I had always dealt with during menstruation. Later, the hot flashes I began experiencing as I entered menopause, subsided and then disappeared with additional Earthing.

"I got my health back, and without any medication. And it's been that way now for eight years."

## MOTHER EARTH HELPING MOTHERS

### Return to Dancing After Childbirth, Knee Pain

**Olivia Biera, Los Angeles, California, healing arts consultant:** “I’ve been involved for years professionally as a traditional Aztec dancer, performing at festivals and historical locations. This is very vigorous dancing, very lower-body intensive. After having my daughter in 2005, I was anxious to get back into it, but I didn’t have the same flexibility and muscularity that I had had before. I think I pushed myself too hard trying to come back and did something to my right knee that caused chronic inflammation. An MRI showed no tear, just deep inflammation. The knee was like one big swollen balloon that hurt badly. It was difficult to walk up stairs. Driving and carrying my baby made it worse. In addition, my right hip was also giving me a lot of trouble after childbirth.

“I had to do something. Massage and other therapies I tried weren’t working. It was almost impossible to stretch. At one point in 2007, I was two weeks away from exploratory knee surgery. That’s when I started sleeping and working grounded. I immediately noticed an ability to sleep through the pain. From one week to the next, the inflammation began to go down. After about six weeks, it was 30 to 40 percent less—and that was without icing. Simply sleeping well and using essential oils for relief. I no longer needed to sleep with a pillow between my legs to ease the pain. The pain was slipping away. I never had that surgery. Today, in 2013, I continue to sleep grounded. My knee is 100 percent!

“Perhaps the biggest surprise is what happened to my nicotine craving. No matter how many good health practices I followed, like yoga and good diet, I couldn’t kick the craving. I’d been smoking for thirteen years when I became pregnant. I quit. It’s not that I smoked a lot, but at the end of my workday I had a craving for cigarettes that would drive me nuts. I would smoke one cigarette and then maybe another cigarette. After six weeks, the craving was gone, and I haven’t smoked since.

“I also experienced a definite release of emotional stresses. At the time I started grounding, I had a lot going on in my life. I definitely noticed right off the bat a sense of rejuvenation and emotional ‘grounding.’ I was grounded physically and that grounded me emotionally and even spiritually, in the sense of being connected to the Earth.

“My sleep pattern changed as well. I recognized quickly that I was sleeping deeper. I also noticed something with my daughter that was quite interesting. She always used to fall asleep in a curled, fetal position. She would typically roll around the bed until she found the perfect curved position to sleep in. Then, at age two, when she started to sleep grounded, she fell asleep straight as a board—the very first night. It was like a magnet pulled her into the sheets, and she slept totally relaxed. She is eight now and a very deep sleeper. I sense it strongly when she becomes overly ‘amped’ from electronics, and then irritable and unable to relax before bed. It is a relief to be able to use the Earthing sheet.

“At my office, we use grounded floor mats. There are computers, printers, telephones, and electronic equipment, which probably emit a lot of electromagnetic pollution. I myself used to get tired. Not after I began working grounded. I grounded the whole office and there has been a tremendous increase in productivity and in terms of being alert, not having computer drain, staying with the game, and getting it done.”

### **Single Mom and Son Sleeping and Coping Better**

**Donna Zerger, Colorado Springs, civil engineer-math teacher:** “Earthing has had major benefits for me and my son since we started sleeping grounded in early 2013.

“Personally, I sleep so much better and deeper, and notice that I dream again. I have a renewed sense of calmness that extends into my days and work world and makes it easier for me to cope and separate myself from other people’s ‘stuff.’ My energy level has increased dramatically and I have more focus. Earthing has reduced, and made nearly nonexistent, many years of neck pain due to two vertebrae being fused together. My hot flashes are half of what they were before, so that’s another factor in improved sleep. And my skin is not as dry as before. It’s much smoother. At one point, a week after I started grounding, I was putting in very long work weeks at the school and people were remarking how well rested and younger I looked!

“My twelve-year-old son is experiencing deeper sleep, more vivid dreams, and a much better sense of well-being and calmness. He has dyslexia, dysgraphia, dyscalculia, focus issues, bad gut and wheat/gluten

intolerance, but since we've been grounding we have seen school grades, moods, coping skills, and reaction to food greatly improved. Since he is sleeping better, it is easier for him to get up for school. That goes for me as well. And we're both staying calmer and having an easier time dealing with conflict. This is a profound benefit.

"Another mom we know whose son has autistic-type issues has noticed improvements since starting Earthing well.

"And then there are the animals in our lives: one dog and three cats. I have the half sheet horizontal across the bottom of the bed and it is quite common to wake in the night and/or morning to find that the cats have burrowed beneath the blankets to gain access to the sheet. The cats will also sit or lay on our Earthing mats at our computers. Our dog also sneaks onto the bed to lay on the sheet, and especially sought it out recently when he hurt his hind leg. It seems that our animals want to get grounded and fully 'charged.'"

## **Pregnancy Boost**

**Stephanie Okeafor, Paradise Valley, Arizona, personal trainer and microcurrent therapist:** "The most dramatic thing for me has been the effect on my pregnancy, and particularly the first trimester. This was my first pregnancy.

"I am a very active person and follow a rigorous fitness routine. When I became pregnant, I didn't run as much, but I was still doing the same intensity of lifting, lunges, and cross-training activities. I realized quickly that I was okay in the moment doing these workouts, but afterward—within the next hour or so—I would feel pretty exhausted.

"I would go home and say okay, I'm pregnant, I'll take a nap. I need to take care of myself. But I never really needed a big nap. I would lie down on the grounding sheet, and after twenty minutes I would get up, feeling completely alert and rested, and ready to go.

"I have had a very easy pregnancy compared to most women I've talked to. No sickness at all. I worked out the entire time. I had excellent energy except for after the workouts. Also, it was over 100 degrees every day for the last half of my pregnancy. People wondered how I did so well with all the heat.

## Is There an Earthing-Fertility Connection?

**Russell Whitten, D.C., Santa Barbara, California, chiropractor:** “I started grounding patients back in 2000, and I had some great feedback from many of them. A few told me, however, they didn’t know if it was working or not. I began to realize they no longer had pain and had forgotten they had it before, unless I mentioned it.

“My patients have frequently told me that their dreams become more vivid when they start to sleep grounded and, in some cases, almost psychedelic-like.

“Perhaps the most amazing Earthing story I have witnessed involves my own wife, Joey. She had not been able to get pregnant during the eight years of her first marriage. Then, for the first six years of our relationship, she was still unable to conceive. From a medical standpoint, everything appeared normal, but it just never happened. In 2000, we started sleeping grounded, and within a month she became pregnant, for the first time, at the age of thirty-five.

“In my opinion, there was nothing else but grounding that could explain it. I had been giving her chiropractic adjustments for a couple of years at that point so that wasn’t what made the difference.

“Within six months of meeting Clint Ober, I had grounded roughly fifty of my patients’ beds. It was soon reported back to me that several of my patients who were in their forties had become pregnant after starting to sleep grounded. Each had had their children in their twenties and now years later were able to conceive again. It seemed like more than just a coincidence to me. I also heard that women’s periods became less symptomatic and their hormonal systems seemed to normalize. There may be great potential here for the fertility industry.

“Joey gave birth in April 2001 to a boy. He was born at home on our grounded bed. We named him Tiger because my wife had had a vivid dream while pregnant that she had a tiger in her belly. We wanted to create a name that said something about him and his spirit.”

“I’m absolutely sure that being fit helps the situation. Conceiving when you’re in good shape puts you ahead in the game compared to someone who starts out her pregnancy not in shape. However, I have a lot of friends who are in great shape, and they’ve had a hard time throughout their preg-

nancy. I know each pregnancy is different, but getting great sleep and grounding for an extra twenty minutes here and there during the day I'm sure is a big reason for my energy level."

Note: Stephanie had a home birth in October 2009. The rest of her story was filled in by her husband Chike, a retired professional football player: "It all went beautifully. Stephanie rocketed through it. She was very powerful. I was awestruck. Our midwife was very impressed. I was able to catch my daughter and cut the umbilical cord. She came out and her eyes were clear and alert. She started feeding pretty much right away. Stephanie is six foot and I am six foot five, and Anaya Louise, our daughter, weighed in at 10 pounds, 4 ounces. Mother and baby did very well, and both are staying grounded."

## Rx For Pregnancy Hives

U.S. doctors call it pruritic urticarial papules and plaques of pregnancy (PUPPP) and European doctors, polymorphic eruption of pregnancy (PEP). In simple language, it is an outbreak of annoying, itchy hives on the body that occurs during the third trimester in about 1 out of 160 pregnancies. The condition has no known cause, although some research says it may be due to maternal hypertension.



**Jasmin White, Rochester Hills, Michigan, community mental health counselor:** "When I was pregnant with my first daughter, I had pregnancy hives for fourteen weeks. Nothing got rid of them. It was horrible. When I was carrying my second child, I developed the hives again, but much later, at thirty-two weeks, and they were much worse. My doctors tried different medication, but nothing worked. My husband was using an Earthing sheet and it occurred to me at that point to give it a try. I'm so glad I did! I slept on the sheet for two days and the hives were gone! It was amazing. I slept on it the rest of my pregnancy and will do so again the next time I have a child. It saved my sanity. For sure, I will be sleeping on the sheet for every pregnancy I go through in the future.

“We share the sheet with our kids (ages two and four) whenever they develop eczema outbreaks, which is frequent. It seems to clear up the eczema quickly, as quickly as one night of use. We also keep them on the sheet when they are sick and it seems to help them get better quicker.”



APPENDIX D

# The Earthing Institute

[www.earthinginstitute.net](http://www.earthinginstitute.net)

Visit our site—Earthing’s official information website—to read about the newest developments and studies regarding Earthing, as well as the growing collection of articles, videos, and feedback from around the world. You will also find answers to frequently asked questions about Earthing.



## APPENDIX F

# Earthing in Earlier Times and Indigenous Cultures

The physiological effects of grounding the human body have been documented only recently, yet physical contact with the ground has been understood by cultures throughout history in terms of connectedness or attunement with the spirit of the Earth.

What is not clear to us are these questions:

- To what degree was there understanding that this contact had specific healing properties?
- How was such understanding applied therapeutically or preventively?

Finding specific references is challenging, particularly since past cultures typically lived barefoot or used conductive animal hides for footwear and bedding. Keep in mind that when the body perspires, the moisture creates a channel of conductivity that permeates the hide. So either used as footwear or for sleeping, such natural material would allow the Earth's electrons to be transferred into the body. Thus, most cultures would have been routinely grounded to the planet's surface electrical charge, even though there was likely no awareness of the dynamics of this contact.

Being thus connected in ordinary daily life would have been sufficient to keep chronic inflammation and many typical modern diseases at bay, as well as to create other health benefits we attribute to Earthing. Earlier cultures would probably not have known the effects of being disconnected with the Earth, as they didn't have many options to be insulated other than time spent living or sleeping in elevated structures made from wood. Stone or dirt floors would have been conductive.

If you have any expertise about how grounding was utilized specifically for health purposes in the past, or even in contemporary indigenous cultures, kindly contact us at [info@earthinginstitute.net](mailto:info@earthinginstitute.net).

Meanwhile, we hope you will find the following articles on past barefoot and grounding practices of interest.

## **AFGHANISTAN'S BAREFOOT WARRIORS**

Thanks to Faizullah Kakar, Ph.D., Minister for Advising the President on Health and Education Affairs in Afghanistan, and a former official in the World Health Organization, we have learned about a historical group of warriors in the Kandahar region of his country who conducted their warfare activities barefoot.

The story, as Dr. Kakar tells it, goes back to the early eighteenth century when hardy and outnumbered Afghan rebels repeatedly fought off the powerful occupying armies of neighboring Persia and established an independent kingdom.

“Historians usually focus on the character of the leaders, but little attention is paid to the soldiers who do the actual fighting,” he related. “Even less frequent is the historical focus on the physical and psychological factors that brings success to an army. Who were the men that liberated Kandahar and later established the current state called Afghanistan some 300 years ago?”

“They were called the Lashkar-i-Pai-loochaan, ‘the barefoot army.’ Armed with a yearning for freedom, the people of Kandahar are well known for their bravery. Their mistreatment by outside rulers and an invading army enraged them and motivated them to struggle for freedom. The leaders had strict criteria for new recruits. Volunteer newcomers had to pass tests of loyalty, hardiness, and fighting skills to qualify. One of the physical requirements was to be able to live and fight barefoot on the scorching hot rocks in the summer and on freezing snow in the winter.

“I wonder,” he said, “how the barefoot practice contributed to their stamina and resistance against severe weather conditions?”

Dr. Kakar’s question raises good questions. In past times, soldiers and warriors surely conducted their military activities barefoot or with con-

ductive footwear made of hides. They slept on the ground. How did these practices contribute to stamina, resistance, strength, and ability to heal from battle wounds? These are questions we can only speculate about.

We know that connection to the Earth improves circulation, energy, and healing. Clint Ober makes this observation: “If I work barefoot on a concrete floor or outdoors, I can work longer with more energy. As soon as I put shoes on, I can’t go very long. It’s the energy from the Earth keeping me more alert and energetic. We evolved on this energy. Think of the Kenyan and Ethiopian barefoot runners, and Tarahumara people of northwestern Mexico who run great distances barefoot.”

In today’s Afghanistan, according to Dr. Kakar, the “barefoot people” of Kandahar have a reputation as being the healthiest segment of the country’s population. They also have a reputation as outstanding wrestlers. They still walk and work barefoot, he says.

“We also have more than 2 million nomads in Afghanistan,” he adds, “and each spring, whenever new grass sprouts, they take their shoes off and walk on wet, green grass. This centuries-old tradition says that the practice is good for the eyes. In northern Afghanistan, especially in the province of Balkh, the people have a tradition called *pai-kubee*. It entails stomping on wet grass with bare feet in the early springtime in the belief that this is good for health.”

As far as his own connection with the Earth is concerned, Dr. Kakar told us that since grounding himself regularly in 2011 he has experienced improved energy, deeper sleep, and elimination of aches and pains. He also told us about his niece who reported relief from headaches and low energy after she started Earthing. What really impressed him, he said, is that when she moved to another residence, where she was not able to ground herself, the headaches returned.

Dr. Kakar describes himself as an “Earthing ambassador” and has spread the word in Afghanistan among his colleagues, the media, and medical students. In 2013, he told us that some government officials were now walking barefoot on the grass in their yards.



## ADOLF JUST AND “EARTH POWER”

*“In all cases, and in all diseases, man can recover and again become happy only by a true return to nature: man must today strenuously endeavor, in his mode of living, to heed again the voice of nature, and thus choose the food that nature has laid before him from the beginning, and to bring himself again into the relation with water, light and air, earth, etc., that nature originally designed for him.”*

—ADOLF JUST, *RETURN TO NATURE! THE TRUE NATURAL METHOD OF HEALING AND LIVING*, 1903

In the late 1800s, a natural health movement emerged in Germany. One leading figure was Adolf Just (1859–1936), a pioneer of naturopathy, who founded a famous sanatorium (still in business) in the Harz Mountains. His work was said to have influenced Mahatma Gandhi.

Just’s healing routines included a vegetarian diet, the use of clay packs applied to the skin, special “porous” clothing, the avoidance of alcohol and smoking, and an emphasis on walking barefoot and sleeping on the ground. His activity drew considerable international attention, and inspired naturopathic movements in the United States and elsewhere.

In his book *Return to Nature!* Just placed significant attention on what he describes as “Earth power.”

“As long as man wore no shoes or clothes,” he wrote, “he was always in direct touch with the Earth, both when he moved and when he rested. Such a close connection of man with the Earth is therefore the intention of nature. It corresponds, moreover, to a holy, inviolable law of nature, the transgression of which will always sternly be avenged.”

Just had become increasingly convinced “of the great curative effect” of barefoot contact with the Earth. “The feet are in a certain sense for man what the roots are for plants. Man draws vital energy and strength out of the Earth through his feet.”

Just had drawn inspiration from a rural Bavarian parish priest named Sebastian Kneipp, who had become somewhat of a healing celebrity. In an 1893 book entitled *My Water Cure*, Father Kneipp described various ways in which people could apply water for healing purposes. He also

extolled the virtues of walking barefoot. It was the “simplest and most natural practice for bracing the system,” he said.

Could not this barefoot effect be expanded “on behalf of man in a still greater degree?” Just wondered. That question inspired him to recommend that patients sleep under quilts on the ground.

“They were thereby brought closer to the Earth during sleep,” he wrote. “This was at once felt as a gain; sleeping became pleasanter and was more invigorating. But soon the patients lay down on the soft grass entirely naked, even without a shirt. They soon broke out in enthusiastic exclamations over the wonderful effect of the Earth upon the body during the night's rest. The opinion was often expressed that *all* diseases, but especially the score of serious nervous troubles of our age, would entirely lose their terrors if only sleeping and lying on the Earth at night once became customary in the curing of diseases. It is indeed a fact that the effect, which the forces of the Earth have upon man during the night, is quite incredible.

“By sleeping on the ground, consequently, more than by anything else, the entire body is aroused from its lethargy to a new manifestation of vital energy, so that it can now effectively remove old morbid matter and masses of old faeces from the intestines, and receive a sensation of new health, new life, and new unthought-of vigor and strength.

“Whether it is because the body at night, especially during sleep, is lying perfectly quiet, or because the influence of the Earth on the body is more powerful at night than in the day time, the fact certainly is that one does not experience the extraordinary curative effect of the Earth nearly as much in going barefooted . . . as at night.”

Just observed that the first few nights on the ground might be rough, but “after that, and sometimes even in cases of protracted and obstinate insomnia, a long, exceedingly refreshing and strengthening sleep will set in. But generally most persons will soon begin to sleep less and less . . . and (yet) the brighter, fresher and stronger will they feel the next day.”

After a few nights, his patients were typically “attracted to their bed on the ground, and strongly refused to tolerate anything under them. In rainy nights I was often concerned about having the patients come into the huts to sleep, so that the quilts should not get so wet, but it was with difficulty that I could induce the sick people to leave the ground. Soon, also, the hardness of lying on the ground is no longer felt. Nor need we fear that

the Earth is too cold at night to lie on entirely naked under covers; we shall only experience the sensation of a delightful coolness.”

For beginners, he recommended lying naked on the ground under covers only on warm summer nights, or in very mild spring and autumn nights.

Just sought to make his paying guests maximally comfortable and built his natural outdoors beds on a layer of sand four to eight inches. The sand could be covered with burlap or linen, he noted, “without weakening the effect of the Earth power.”

Just strongly disapproved of modern beds. “The defectiveness of beds will be felt as long as men shall decline to sleep on the bed which kind nature herself has created for her creatures,” he wrote, “and which she has endowed with a magic power by which man receives a greater enjoyment of life.”

To promote the idea of sleeping on the ground to patients, Just often referred to animals in the wild. He wrote: “Hares and deer, when they prepare their lair, carefully remove all leaves, bits of wood, etc. The fox and badger drag many things into their dens, but their resting place is kept perfectly free. It is always on the bare ground. They evidently do this to be more directly in touch with the Earth, so that the forces of the Earth may exert the strongest possible effect. The animals do not scrape together grass, leaves, wood, and the like for their beds—birds only do this in order to prepare a warm nest for hatching. It is a very striking fact that the animals of the woods always remove all the wood and leaves, and even the snow, so as to make an entirely bare spot on the Earth where they may lie down and rest. I once observed a domestic hog that was sick and was let out of its sty. On my advice it was left entirely alone, so that it might do what it wanted to. It went into the vegetable garden, grubbed itself somewhat into the ground in a cabbage bed, and remained quietly lying there. After a few days it returned and—was perfectly well.”

Just didn’t expect people to rush to his ideas, but he urged them to consider at least going barefooted “excepting a few very cold weeks in winter . . . without ever feeling the custom as a torture or a burden, but rather as the greatest delight and pleasure. Going barefooted is no asceticism, but an augmentation of the enjoyment of life. For the Earth has her son again, as soon as man goes barefooted, and can again shower on him fresh health and true happiness.”

## **GEORGE STARR WHITE, M.D.: LESS GROUNDED, LESS HEALTH**

George Starr White, M.D., Ph.D. (1866-1956), a prodigious and prolific physician, attracted considerable attention and controversy because of his outspoken advocacy of natural healing methods and criticism of medical dogma during the late 1800s and first part of the twentieth century. Among the ideas he promoted in his many books and lectures was to apply the Earth's energy for healing and better sleep. He often recommended to patients with sleeping difficulties to ground themselves in bed with a bare copper wire placed under the bottom sheet. The other end of the wire was attached or soldered to a ground rod outside, a water or gas pipe, or a steam radiator.

In *Cosmo-Electro Culture for Land and Man*, a book he published in 1940, he contended that the less humans lived grounded—connected in some manner to the Earth—the more unhealthy they became. He learned over many decades, he said, “that all animals and humans who lived naturally were always directly or indirectly grounded. So-called civilization has attempted to make it possible for humans, as well as some animals, to live not grounded, but the results are consequently bad.”

## **THE HADZABE—A BAREFOOT WAY OF LIFE**

Iowa psychotherapist-anthropologist GERAL BLANCHARD, L.P.C., is author of *Ancient Ways* (2011), a book about indigenous healing traditions around the world. He has studied and lived with many native populations, including the Bushmen of Africa. He shared the following information with us:

“The vast majority of Bushmen have been assimilated into the dominant African melting pot culture and so there are but a few thousand that still live on the Earth, hunting and healing as they did for tens of thousands of years. These individuals include the Hadzabe in northwest Tanzania, whom I have visited a number of times. They have the closest link to the Earth I have ever seen in my travels and studies. They appear to be quintessential spokespeople for Earthing.

“They sit and walk on the Earth all day long. They are hunter-gatherers; one of the extremely rare foraging groups remaining on Earth. They

sometimes sleep under the partial cover of a thatched hut, but at most are separated from the Earth only by a woven mat made from vegetation or by an impala hide. By day, they are seated with each other directly on the Earth, talking and resting, between hunts.

“This near-extinct group, like so many other Bushmen, sometimes wear sandals made from spent motorcycle tires found in their meanderings, or from animal hides, or plastic versions donated by missionaries. Much of the time you see sandals scattered on the ground and both adults and children walking around barefoot.

“The Hadzabe connection to the land is virtually unbroken; they avoid civilization and entering into any steel-covered buildings because they believe such structures are not healthy in part because they are not in connection with the Earth. In fact, most of them won't let their children be taken to government schools as the children are kept in sheltered structures with metal roofs.

“Government studies of the Hadzabe reveal that their health is better than most other rural Africans, the majority of whom are agricultural and pastoral, but most of whom, unlike the Hadzabe, have access to Western-style healthcare. Simply put, the Hadzabe receive little or no organized healthcare, primarily because they don't get ill. Interestingly, each individual knows enough about natural remedies that a doctor/shaman is not part of their culture; they are walking compendiums of plant medicines who simply take care of themselves. Everyone is efficacious in all aspects of life, including being his or her own ‘doctor.’ The Hadzabe diet doesn't lend itself to all the maladies related to obesity. They have none.

“The studies speak of extremely good eyesight, hearing, and teeth. There appears to be no cancer. Women experience few effects of menopause. There are no reports of issues such as hot flashes. Menstrual periods are shorter than in the West, only about three days in length; the flow is not as copious. Women remain hardy into their seventies. Sterility is rare. Sexually transmitted diseases are comparatively uncommon when compared to neighboring tribes that live indoors. Injury and death are usually the result of accidents: cuts, falls, animal encounters, including snakebites. Infant mortality during the first year is high, about 21 percent.

“Heading south into South Africa, Botswana, and Namibia, you find other groups of Bushman distantly separated from their northern coun-

terparts long, long ago. Unlike the Hadzabe, the southern Bushman—the Kalahari Desert Kung, San, and Ju'hoansi peoples—practice so-called 'trance dances.' They are said to be masters of using 'boiling energy,' or *num*, as it is called, for healing. Num is the Earth's energy, and is regarded as a spiritual energy that can help people cross time barriers and communicate with ancestors. Num is felt, at first, on their bare feet during all-night dancing. It moves up the entire body to the head. Legs can be seen trembling; eventually the entire body shivers and then convulses. It creates piercing heat (as if it is coming from pointed 'arrows') in the abdomen that leaves its carriers bent forward. It resides primarily in the pit of the stomach and the base of the spine. The liver and spleen are thought to heat up. An altered state develops, called *kia*, when energy reaches the brain. Rapid, shallow breathing is used to bring the num up. When you are filled with num, others want to touch you as this type of healthy energy is thought to be contagious, but a desirable spreading contagion quite the opposite of illness. They use healing touch from their fluttering hands to heal one another. During *kia*, with the Earth's energy filling the individual and group, amazing physical feats are possible, including handling or walking on fire, seeing inside other people's bodies with x-ray-like vision, as well as improved long-distance sight.

“Unlike many Western doctors and scientists who break the body down into separated organs, the Bushmen refer to a more holistic healing process experienced with num. Not only are they healed of their few existing ailments, perhaps more importantly their social ties are strengthened. Being the oldest people on Earth, they still maintain primal powers and remain 'plugged into' the Earth's natural regenerative and recalibrating forces.

“Many anthropological types, like myself, have seen enough seemingly extraordinary human abilities tapped from nature by indigenous people that it would appear the human race is atrophying in its ability to use such healing forces.”



## APPENDIX G

# Earthing Research

### Biological Studies

Chevalier G, Sinatra ST, Oschman JL, et al. "Earthing (grounding) the human body reduces blood viscosity: A major factor in cardiovascular disease." *Journal of Alternative and Complementary Medicine* 2013; 19(2): 102-110; published online at: <http://online.liebertpub.com/doi/pdplus/10.1089/acm.2011.0820>.

*Objectives:* Emerging research is revealing that direct physical contact of the human body with the surface of the earth (grounding or earthing) has intriguing effects on human physiology and health, including beneficial effects on various cardiovascular risk factors. This study examined effects of 2 hours of grounding on the electrical charge (zeta potential) on red blood cells (RBCs) and the effects on the extent of RBC clumping. *Design/interventions:* Subjects were grounded with conductive patches on the soles of their feet and the palms of their hands. Wires connected the patches to a stainless-steel rod inserted in the earth outdoors. Small fingertip pinprick blood samples were placed on microscope slides and an electric field was applied to them. Electrophoretic mobility of the RBCs was determined by measuring terminal velocities of the cells in video recordings taken through a microscope. RBC aggregation was measured by counting the numbers of clustered cells in each sample. *Settings/location:* Each subject sat in a comfortable reclining chair in a soundproof experiment room with the lights dimmed or off. *Subjects:* Ten healthy adult subjects were recruited by word-of-mouth. *Results:* Earthing or grounding increased zeta potentials in all samples by an average of 2.70 and significantly reduced RBC aggregation. *Conclusions:* Grounding increases the surface charge on RBCs and thereby reduces blood viscosity and clumping. Grounding appears to be one of the simplest and yet most profound interventions for helping reduce cardiovascular risk and cardiovascular events.

Sokal P, Jastrzebski Z, Jaskulska E, et al. "Differences in blood urea and creatinine concentrations in earthed and unearthed subjects during cycling exercise and recovery." *Evidence-Based Complementary and Alternative Medicine* 2013; published online at: <http://www.hindawi.com/journals/ecam/2013/382643>.

Contact of humans with the earth, either directly (e.g., with bare feet) or using a metal conductor, changes their biochemical parameters. The effects of earthing during physical exercise are unknown. This study was carried out to evaluate selected biochemical parameters in subjects who were earthed during cycling. In a double-blind crossover study, 42 participants were divided into two groups and earthed during exercise and recovery. One group was earthed in the first week during 30 minutes of cycling exercise and during recovery, and a second group was earthed in the second week. A double-blind technique was applied. Blood samples were obtained before each training session, after 15 and 30 minutes of exercise, and after 40 minutes of recovery. Significantly lower blood urea levels were observed in subjects earthed during exercise and relaxation. These significant differences were noted in both groups earthed at the beginning of exercise ( $P < 0.0001$ ), after 15 ( $P < 0.0001$ ) and 30 minutes ( $P < 0.0001$ ) of exercise, and after 40 minutes of relaxation ( $P < 0.0001$ ). Creatinine concentrations in earthed subjects during exercise were unchanged. *Conclusions:* Earthing during exercise lowers blood urea concentrations and may inhibit hepatic protein catabolism or increase renal urea excretion. Exertion under earthing may result in a positive protein balance.

Chevalier G, Sinatra ST, Oschman JL, et al. "Earthing: Health implications of reconnecting the human body to the Earth's surface electrons." *Journal of Environmental and Public Health* 2012; published online at: [www.hindawi.com/journals/jeph/2012/291541](http://www.hindawi.com/journals/jeph/2012/291541).

Environmental medicine generally addresses environmental factors with a negative impact on human health. However, emerging scientific research has revealed a surprisingly positive and overlooked environmental factor on health: direct physical contact with the vast supply of electrons on the surface of the Earth. Modern lifestyle separates humans from such contact. The research suggests that this disconnect may be a major contributor to physiological dysfunction and unwellness. Reconnection with the Earth's electrons has been found to promote intriguing physiological changes and subjective reports of well-being. Earthing (or grounding) refers to the discovery of benefits—including better sleep and reduced pain—from walking barefoot outside or sitting, working, or sleeping indoors connected to conductive systems that transfer the Earth's electrons from the ground into the body. This paper reviews the earthing research and the potential of earthing as a simple and easily accessed global modality of significant clinical importance.

Sokal K, Sokal P. "Earthing the human organism influences bioelectrical processes." *Journal of Alternative and Complementary Medicine* 2012; 18(3): 229-234; published online at: <http://online.liebertpub.com/doi/abs/10.1089/acm.2010.0683>.

*Objectives:* This article describes interaction of the Earth's mass—electrolytic conductor on the electrical environment of human organism—aqueous environment and skeleton. In this environment, bioelectrical, and bioenergetical processes take place. *Methods and subjects:* Measurements of electric potential on tongue, teeth,

nails, and in venous blood in subjects earthed and unearthed were conducted in Faraday's cage with the use of an electrometer placed outside the cage. Measurements were performed in subjects in lying position and in movements of standing up and lying down. *Results:* In the unearthed human organism in the lying position, electric potential measured in examined points is around 0 mV. Contact of the Earth by a copper conductor with a moistened surface of the human body evokes a rapid decrease of electrostatic potential on the body and in venous blood to the value of approximately  $-200$  mV. This effect is immediate and general. Interruption of contact with the Earth causes a rapid return of the potential to its initial values in examined points. Changes in electric potential measured in venous blood and on mucosal membrane of the tongue reflect alterations in electric potential of the aqueous, electrical environment. Up-and-down movement of the insulated human organism causes transient changes in potential in the human electrical environment. During the same movement, values of potential in the electrical environment of an earthed human body remain constant. *Conclusions:* These results indicate that up-and-down movement and the elimination of potentials in the electrical environment of the human organism by the Earth's mass may play a fundamental role in regulation of bioelectrical and bioenergetical processes. The Earth's electromagnetohydrodynamic potential is responsible for this phenomenon.

Sokal P, Sokal K. "The neuromodulative role of Earthing." *Medical Hypotheses* 2011; 77(5): 824-826; published online at [www.medical-hypotheses.com/article/S0306-9877\(11\)00364-1/abstract](http://www.medical-hypotheses.com/article/S0306-9877(11)00364-1/abstract).

Neuromodulation is a process of inhibition, stimulation, modification and regulation or therapeutic alteration of activity, electrically and chemically in the peripheral, central or autonomic nervous systems. Direct electric current or electric field alternates the function of nervous system. Coupling the human organism with the Earth directly or via a wire conductor changes the electric potential not only on the surface of the body but also inside it, changing the potential of electric environment of the human organism. Earthing refers to a direct contact with the Earth with bare feet, or contact with the Earth with the use of conductive wire attached to the human body during sleeping, or daily activities. During earthing this electric potential equals with the electric potential of the Earth and the value of it depends on location, time, atmospheric conditions, moisture of the surface of the Earth. The earthing, which changes the density of negative charge in the electric environment of the human body, influences physiological processes. Our medical hypothesis states that contact with the Earth (earthing) directly or via a conductive wire plays a role as a neuromodulative factor, probably primary, which enables the nervous system to be better adapted to the demands of the organism and ambient environment. It helps to restore the natural, electrical status of the electrical environment of the organism and thus the nervous system. Earthing generates immediate changes in electroencephalography (EEG), surface electromyography

(SEMG), and somato-sensory evoked potentials (SSEPs). We hypothesize that earthing through its complex action on the bioelectrical environment of human organism and alternations in electrolyte concentrations regulates correct functioning of the nervous system. Earthing significantly influences on the electrical activity of the brain.

Chevalier G, Sinatra ST. "Emotional stress, heart rate variability, grounding, and improved autonomic tone: Clinical applications." *Integrative Medicine: A Clinician's Journal* 2011; 10(3): 16-21; published online at <http://74.63.154.231/here/wp-content/uploads/2013/06/Chevalier-Sinatra-HRV-Paper-2011.pdf>.

Over the last few years, the utilization of integrative biophysics for medical application has been increasing in popularity. Grounding or earthing is the oldest and most basic form of natural bioelectric potential that supports physiological and electrophysiological changes in the body. Since previous investigations have shown that grounding profoundly affects skin conductance within seconds, we hypothesized that grounding may also improve heart rate variability (HRV). In this study of 27 final participants, grounded subjects had improvements in HRV that go beyond basic relaxation ( $P < .01$ ). Since improved HRV has such a positive impact on cardiovascular status, it is suggested that simple grounding techniques be utilized as a basic integrative strategy in supporting the cardiovascular system, especially under situations of heightened autonomic tone (ie, when the sympathetic nervous system is more activated than the parasympathetic nervous system).

Sokal K, Sokal P. "Earthing the human body influences physiologic processes." *Journal of Alternative and Complementary Medicine* 2011; 17(4): 301-308; published online at [http://74.63.154.231/here/wpcontent/uploads/2013/06/Sokal\\_Sokal\\_earthing\\_influence\\_physiology-2010.pdf](http://74.63.154.231/here/wpcontent/uploads/2013/06/Sokal_Sokal_earthing_influence_physiology-2010.pdf).

*Objectives:* This study was designed to answer the question: Does the contact of the human organism with the Earth via a copper conductor affect physiologic processes? *Subjects and experiments:* Five (5) experiments are presented: Experiment 1—Effect of earthing on calcium-phosphate homeostasis and serum concentrations of iron (N=84 participants); Experiment 2—Effect of earthing on serum concentrations of electrolytes (N=28); Experiment 3—Effect of earthing on thyroid function (N=12); Experiment 4—Effect of earthing on glucose concentration (N=12); Experiment 5—Effect of earthing on immune response to vaccine (N=32). Subjects were divided into two groups. One (1) group of people was earthed, while the second group remained without contact with the Earth. Blood and urine samples were examined. *Results:* Earthing of an electrically insulated human organism during night rest causes lowering of serum concentrations of iron, ionized calcium, inorganic phosphorus, and reduction of renal excretion of calcium and phosphorus. Earthing during night rest decreases free tri-iodothyronine and increases free thyroxine and thyroid-stimulating hormone. The continuous earthing of the human

body decreases blood glucose in patients with diabetes. Earthing decreases sodium, potassium, magnesium, iron, total protein, and albumin concentrations, while the levels of transferrin, ferritin, and globulins  $\alpha_1$ ,  $\alpha_2$ ,  $\beta$ , and  $\gamma$  increase. These results are statistically significant. *Conclusions:* Earthing the human body influences human physiologic processes. This influence is observed during night relaxation and during physical activity. Effect of the earthing on calcium-phosphate homeostasis is the opposite of that which occurs in states of weightlessness. It also increases the activity of catabolic processes. It may be the primary factor regulating endocrine and nervous systems.

**Brown D, Chevalier G, Hill M.** "Pilot study on the effect of grounding on delayed onset muscle soreness." *Journal of Alternative and Complementary Medicine* 2010; 16(3): 265-273; published online at [http://74.63.154.231/here/wpcontent/uploads/2013/06/Brown\\_Chevalier\\_Hill\\_earthing\\_delayed\\_muscle\\_2010.pdf](http://74.63.154.231/here/wpcontent/uploads/2013/06/Brown_Chevalier_Hill_earthing_delayed_muscle_2010.pdf).

*Objectives:* The purpose of this pilot study was to determine whether there are markers that can be used to study the effects of grounding on delayed-onset muscle soreness (DOMS). *Design and subjects:* Eight healthy subjects were exposed to an eccentric exercise that caused DOMS in gastrocnemius muscles [calf muscle] of both legs. Four subjects were grounded with electrode patches and patented conductive sheets connected to the earth. Four (4) control subjects were treated identically, except that the grounding systems were not connected to the earth. *Outcome measures:* Complete blood counts, blood chemistry, enzyme chemistry, serum and saliva cortisol, magnetic resonance imaging and spectroscopy and pain levels were taken at the same time of day before the eccentric exercise and 24, 48, and 72 hours afterwards. Parameters consistently differing by 10% or more, normalized to baseline, were considered worthy of further study. *Results:* Parameters that differed by these criteria included white blood cell counts, bilirubin, creatine kinase, phosphocreatine/inorganic phosphate ratios, glycerolphosphorylcholine, phosphorylcholine, the visual analogue pain scale, and pressure measurements on the right gastrocnemius. *Conclusions:* In a pilot study, grounding the body to the earth alters measures of immune system activity and pain. Since this is the first intervention that appears to speed recovery from DOMS, the pilot provides a basis for a larger study.

**Chevalier G.** "Changes in pulse rate, respiratory rate, blood oxygenation, perfusion index, skin conductance and their variability induced during and after grounding human subjects for forty minutes." *Journal of Alternative and Complementary Medicine* 2010; 16(1): 81-87; published online at [http://74.63.154.231/here/wpcontent/uploads/2013/06/Chevalier\\_earthing\\_pulse\\_rate-2010.pdf](http://74.63.154.231/here/wpcontent/uploads/2013/06/Chevalier_earthing_pulse_rate-2010.pdf).

*Objectives:* Previous studies have shown that grounding produces quantifiable physiologic changes. This study was set up to reproduce and expand earlier electrophysiologic and physiologic parameters measured immediately after grounding with

improved methodology and state-of-the-art equipment. *Design and subjects:* A multi-parameter double-blind experiment was conducted with 14 men and 14 women (age range: 18–80) in relatively good health. Subjects were screened for health problems using a commonly used health questionnaire. They were seated in a comfortable recliner and measured during 2-hour grounding sessions, leaving time for signals to stabilize before, during, and after grounding (40 minutes for each period). Sham 2-hour grounding sessions were also recorded with the same subjects as controls. *Outcome measures:* This report presents results for 5 of the 18 parameters measured. The parameters reported here are: skin conductance (SC), blood oxygenation (BO), respiratory rate (RR), pulse rate (PR), and perfusion index (PI). *Settings/location:* This study was performed in a rented facility in Encinitas, California. The facility was chosen in a quiet area for its very low electromagnetic noise. *Results:* For each session, statistical analyses were performed on four 10-minute segments: before and after grounding (sham grounding for control session), and before and after ungrounding (sham ungrounding). There was an immediate decrease in SC at grounding and an immediate increase at ungrounding on all subjects. RR increased during grounding, and the effect lasted after ungrounding. RR variance increased immediately after grounding then decreased. BO variance decreased during grounding, followed by a dramatic increase after ungrounding. PR and PI variances increased toward the end of the grounding period, and this change persisted after ungrounding. *Conclusions:* These results warrant further research to determine how grounding affects the body. Grounding could become important for relaxation, health maintenance, and disease prevention.

Chevalier G, Mori K. “The effect of earthing on human physiology (part II): Electrodermal measurements.” *Subtle Energy and Energy Medicine* 2007; 18(3): 11–34; published online at <http://journals.sfu.ca/seemj/index.php/seemj/article/view/9/7>.

The human body evolved while living in direct electrical contact (electrically grounded) with the earth. The question that arises is: Does loss of electrical contact with the earth affect human physiology? This double-blind study was designed to address this question by measuring several electrophysiological parameters of the body. Subjects were assigned to an experimental group that was grounded to the earth after a 28-minute baseline recording. Grounding the body (earthing) was achieved by placing electrode patches on the soles of the feet and connecting them to a conductive cable that was attached to a metal rod planted in the earth. The total recording time was 56 minutes. *The control group was not grounded but "sham grounded."* Part 1 of this study presented results from measurements taken with clinical biofeedback equipment. This paper presents results obtained on Jing-Well points using the SSVP (Single Square Voltage Pulse) method. With the SSVP method we were able to corroborate results presented in our first paper with the biofeedback system. The SSVP method results are that grounding the body produces a reduction in tension (relaxation) of the internal organs and a reduction in

inflammation. We also postulated that the body was developed to take advantage of the contact with the earth through the feet by developing a system of distribution of electrons through the kidney meridian at kidney 1. The present findings are consistent with the results of our previous study, which concluded that grounded subjects experienced a reduction in stress and a normalization of the functioning of the autonomic nervous system after earthing.

Chevalier G, Mori K, Oschman, JL. "The effect of Earthing (grounding) on human physiology." *European Biology and Bioelectromagnetics*, January 31, 2006; 600–621; published online at <http://74.63.154.231/here/wp-content/uploads/2013/06/The-effect-of-earthing-on-human-physiology-Part-1-2006.pdf>.

Previous research showed that connecting the human body to the earth during sleep normalizes circadian cortisol profiles and reduces or eliminates various subjectively reported symptoms, including sleep dysfunction, pain, and stress. We, therefore, hypothesized that earthing might also influence other aspects of physiology. Fifty-eight healthy adult subjects (30 controls) participated in a double-blind pilot study. Earthing was accomplished with a conductive adhesive patch placed on the sole of each foot. An earthing cord led outdoors to a rod driven into the earth. A biofeedback system recorded electrophysiological and physiological parameters. Upon earthing, about half the experimental subjects showed an abrupt, almost instantaneous change in root mean square (rms) values of electroencephalograms (EEG) from the left hemisphere (but not the right hemisphere) and all of them presented an abrupt change in rms values of surface electromyograms (SEMGs) from right and left upper trapezius muscles. Signal variance in rms muscle potentials also increased significantly. Earthing decreased blood volume pulse (BVP) in 19 of 22 experimental subjects ( $p < 0.001$ ) and in 8 of 30 controls ( $p \cong 0.1$ , not significant); heart rate (HR) was not affected. From these results, it appears that earthing the human body has significant effects on electrophysiological properties of the brain and musculature, on the blood volume pulse, and on the noise and stability of electrophysiological recordings. Taken together, the changes in EEG, EMG, and BVP suggest reductions in overall stress levels and tensions, and a shift in autonomic balance upon earthing.

Ghaly M, Teplitz D. "The biologic effects of grounding the human body during sleep as measured by cortisol levels and subjective reporting of sleep, pain, and stress." *Journal of Alternative and Complementary Medicine* 2004; 10(5): 767–776; published online at [http://74.63.154.231/here/wpcontent/uploads/2013/06/Ghaly\\_\\_Teplitz\\_cortisol\\_study\\_2004.pdf](http://74.63.154.231/here/wpcontent/uploads/2013/06/Ghaly__Teplitz_cortisol_study_2004.pdf).

*Objectives:* Diurnal cortisol secretion levels were measured and circadian cortisol profiles were evaluated in a pilot study conducted to test the hypothesis that grounding the human body to earth during sleep will result in quantifiable changes in cortisol. It was also hypothesized that grounding the human body would result in

changes in sleep, pain, and stress (anxiety, depression, irritability), as measured by subjective reporting. *Subjects and Interventions:* Twelve subjects with complaints of sleep dysfunction, pain, and stress were grounded to earth during sleep for 8 weeks in their own beds using a conductive mattress pad. Saliva tests were administered to establish pregrounding baseline cortisol levels. Levels were obtained at 4-hour intervals for a 24-hour period to determine the circadian cortisol profile. Cortisol testing was repeated at week 6. Subjective symptoms of sleep dysfunction, pain, and stress were reported daily throughout the 8-week test period. *Results:* Measurable improvements in diurnal cortisol profiles were observed, with cortisol levels significantly reduced during nighttime sleep. Subjects' 24-hour circadian cortisol profiles showed a trend toward normalization. Subjectively reported symptoms, including sleep dysfunction, pain, and stress, were reduced or eliminated in nearly all subjects. *Conclusions:* Results indicate that grounding the human body to earth ("earthing") during sleep reduces nighttime levels of cortisol and resynchronizes cortisol hormone secretion more in alignment with the natural 24-hour circadian rhythm profile. Changes were most apparent in females. Furthermore, subjective reporting indicates that grounding the human body to earth during sleep improves sleep and reduces pain and stress.

### Earthing Electrical Study

Applewhite R. "The effectiveness of a conductive patch and a conductive bed pad in reducing induced human body voltage via the application of earth ground." *European Biology and Bioelectromagnetics* 2005; 1: 23–40; published online at [http://74.63.154.231/here/wpcontent/uploads/2013/06/Applewhite\\_earthing\\_body\\_voltage\\_2005.pdf](http://74.63.154.231/here/wpcontent/uploads/2013/06/Applewhite_earthing_body_voltage_2005.pdf).

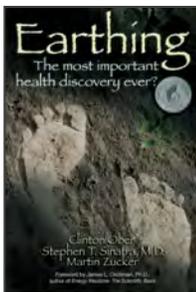
Voltage induced on a human body by capacitive coupling to the external environment was measured using a high-impedance measurement head. The body was then earth grounded by means of a conductive patch and a conductive bed pad. Each method reduced the coupled 60Hz mains voltage by a factor of at least 70. This result, along with the measurement of the voltage drop across an in-line resistance in the conductive patch provided evidence of a simplified electrical network model of the human body.

# Sample excerpt of Earthing book

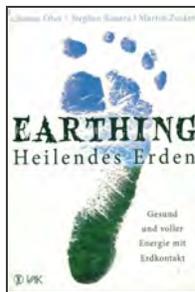
The complete Earthing book is available at all online and retail bookstores.

Also available in the following languages:

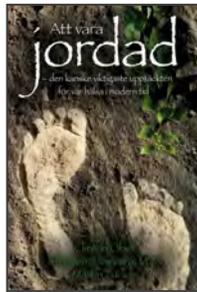
## English



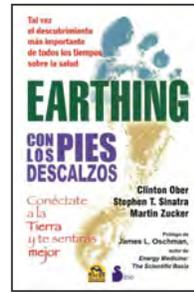
## German



## Swedish



## Spanish



## French



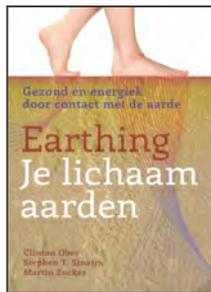
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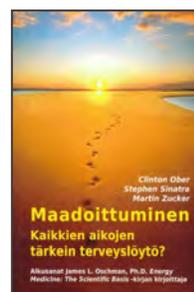
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## Dutch



## Finnish



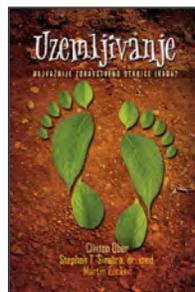
## Polish



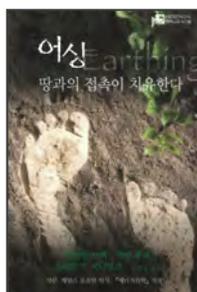
## Russian



## Croatian



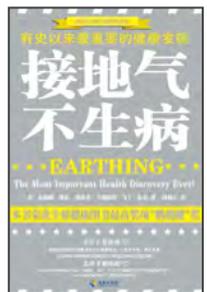
## Korean



## Japanese



## Chinese



# Connect

## to the Earth and Heal!

All living beings are electrical creatures on an electrical planet. The ground beneath us is more than a mere patch of grass, dirt, sand, or concrete: it is an omnipresent source of natural healing energy.

If you have sickness, pain, and inflammation, you might be electron deficient. The Earth itself is Nature's original anti-inflammatory and can remedy your deficiency, improve your health, invigorate your energy, and optimize your sleep.

You will never look at the Earth the same way again...

"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."

— Anne 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  
Author of The Energy Healing Experiments

