

## Best Cases In Biological Medicine Series #6

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*Biological medicine works. The purpose of this series is to collect illustrative cases from different practitioners in order to demonstrate the highly effective principles and practice of Biologic Medicine. If you have cases which have teaching value for others using Biological Medicine in practice, please email them in Word format to Dr. David I. Minkoff M.D. at [drminkoff@bodyhealth.com](mailto:drminkoff@bodyhealth.com). They will be presented each month as part of the Best Cases in Biological Medicine series.*

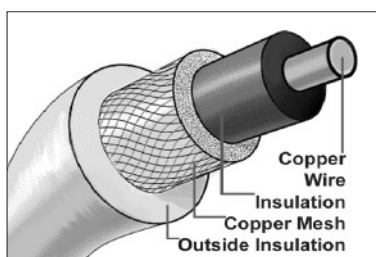
*I think you will find this article very interesting and very much in the field of Biological Medicine. The authors are probably two of the most notable experts in the field of Energy Medicine. One is the consummate research scientist, Dr. James Oschman, author of *Energy Medicine The Scientific Basis*, and *Energy Medicine in Therapeutics and Human Performance*. The other is probably the most notable clinician for sports medicine in the world, Dr. Jeff Spencer, physician to Lance Armstrong, Tiger Woods, Chad Reed and many others.*

*They bring to us a "new" therapy called Earthing. Earthing is the antidote for electromagnetic radiation. Please enjoy.*

### Clinical Aspects of Earthing

This remarkable story begins a few years ago, when a retired cable TV executive began to think about biology. Clint Ober spent 23 years in television, and saw how the cable industry succeeded by giving customers images that were superior and more reliable than broadcast TV. Cable has now been perfected to the point that a single wire can simultaneously deliver hundreds of TV channels, multiple high-speed Internet connections and phone lines, all without distortion and without interfering with each other. What on earth could this have to do with health? The answer will surprise you.

A key to the success of cable TV was developing effective shielding so that signals did not leak out, and so that electromagnetic noise did not leak in. And the key to shielding was grounding.



The TV cable consists of an inner copper conductor surrounded by a braided or mesh shield. The shield, in turn, must be electrically connected to the earth. This enables the

earth to deliver or absorb electrons as needed to prevent the build-up of electrical charges on the shielding. If the programming signal leaks out of the cable before it gets to your set, or if signals from the outside bleed into the TV signal, you see "snow" or other kinds of distortion on your screen. To prevent this, all parts of a communication system must be at the same electrical potential as the earth's surface.

In 1999, while living in retirement in Arizona, Clint Ober began to wonder about grounding in relation to human beings. It was obvious that the widespread use of plastics and polymers in shoes, carpets and furniture was causing most people to spend their lives ungrounded their skin virtually never come in direct contact with the surface of the earth. Replacing leather-soled shoes with plastics was a big step: once a leather sole has become impregnated with salts and moisture from sweat, it becomes a good electrical conductor. Replacing leather with plastic disconnects people from electrical contact with the earth. Clint wondered if this might affect health.

What Clint discovered is astonishing. In this article, we refer to Clint's discovery as "earthing", to distinguish it from the "grounding" of electrical equipment and cables.

To study the degree of earthing of his own body, Clint used a simple voltmeter. This enabled him to measure the potential between the earth and his skin. He connected one terminal of his voltmeter to a wire attached to a steel rod driven into the ground. By touching the other meter terminal with his finger, he could measure the voltage between his body and the earth.

Clint began by checking his body voltage when he was sitting at his computer. There was a substantial potential of some 4 to 5 volts on his body. This voltage comes from wires, appliances, and other sources of electric fields.

Clint wandered around his house with his thumb on the terminal of the voltmeter, observing how his body voltage varied as he moved from place to place. He noticed that his bedroom and his bed were the most electrically active regions of his house. The bed is up against the wall, and is close to electrical wires hidden behind the wall covering.

Clint wondered how people might be able to develop a better contact with earth during their daily activities. This is a challenge, since people are constantly moving from one environment to another. Clint realized that the time people stop moving is when they are asleep. Perhaps connecting the bed to the earth would be helpful.

To test this idea, Clint placed a crude conducting system on his mattress and connected it to a wire that went out his bedroom window to a rod pushed into the earth. When he lay down on this surface, his body voltage dropped to nearly zero. This meant that lying on the conducting system on his mattress was equivalent, electrically, to lying directly on the earth. He wondered if this arrangement might help him sleep better. At that time, Clint did not sleep well. Several surgeries years before had left him with chronic back pain that kept him awake every night.

Clint's first night of sleeping earthed was revealing. He lay down with his voltmeter and confirmed that his body voltage had dropped to close to zero. He quickly fell asleep with the voltmeter on his chest; he woke up the next morning with the voltmeter still on his chest. He had slept soundly for the first time in years, and had not moved during the entire night. This was the beginning of Clint's remarkable journey.

Excited by this discovery, Clint decided to try the system on some of his friends. While they thought this was a rather strange thing to do, the results were astonishing. Everyone reported that they slept much better on the grounded mattress. A few days later, one of Clint's friends mentioned that he was no longer stiff and sore when he woke up in the morning. Clint suddenly realized that he had stopped taking pain pills when he woke in the morning. He had been waking stiff and sore for years, and these problems were simply gone.

It was at this point that Clint realized that he might have discovered something important. Within 30 days, he moved to California to find researchers and engineers who might help test the idea and further develop the earthing system. He began to investigate every aspect of the electrical properties of the human body and learn as much as he could about sleep. It occurred to him that there might be a similarity between the human body and a TV cable, with hundreds of channels of information flowing through it. In the body, there are miles of nerves and blood vessels and other fluid spaces that conduct electrical signals from place to place. Perhaps the skin resembles the braided

shielding on a TV cable. When the skin is grounded, it might prevent the entry of "noise" that can disturb physiological signaling. While this seemed to be an astonishing idea at the time, it now appears, from further research, that this may be correct.

Clint's obvious first question was whether there was any possibility that sleeping grounded could be harmful. A medical electronics expert recommended that Clint put a protective fuse in the earthing wire, as is done with any electrical device. In the extremely unlikely event that the grounding wire might come in contact with electricity, this fuse would protect the person sleeping on the mattress pad.

Medical and electronics experts reassured Clint that earthing during sleep could not possibly be harmful. In fact, he realized, being earthed has actually been the natural state of living systems throughout evolutionary history. It is separation from the earth that is unnatural.

Clint's initial conversations with scientists created a lot of laughter. Researchers were simply not interested in earthing, in spite of the fact that people who tried it were getting dramatic results. One is reminded of a quote from Albert Einstein: "If at first, the idea is not absurd, then there is no hope for it." To many, earthing during sleep seemed totally absurd. But we now know that earthing is providing a lot of hope for a problem with enormous impact on our society and our health. But how do you research a phenomenon like this?

No research is needed to prove that a good night's rest makes one feel better. This is something everyone knows. And a vast amount of research has shown that lack of sleep impacts virtually every physiological system in the body. Several scientific journals and many books are dedicated to research on the benefits of quality sleep and the problems that arise when sleep is compromised.

All of this research can be summarized by stating that sleep is the time when our bodies repair and restore the wear and tear on systems we use during our waking hours. Most healing takes place during sleep, and lack of sleep stresses the body. And stress contributes to a wide range of chronic diseases and disorders. Insomnia is a vast problem, affecting some 70 million Americans. Lack of sleep costs many billions of dollars a year in lost productivity, health-care expenses, and traffic accidents. In spite of its huge impact, insomnia continues to be a very difficult problem.

After consulting with a scientist at UCLA, Clint Ober set up his own blinded study of 60 people with sleep problems, pain, and stiffness. He installed an improved version of the mattress pad in their homes. Each pad was earthed with a steel rod driven into the ground near a healthy bush or tree. For the randomly selected controls, he used a plastic plug instead of a fuse in the grounding wire.

The result was a series of subjective reports that people went to sleep more quickly, slept throughout the night, woke feeling more rested, had reduced muscle stiffness, reduced chronic back and joint pain, and improved general health. Several subjects reported significant relief from asthmatic

and respiratory conditions, rheumatoid arthritis, PMS, sleep apnea, and hypertension. A consistent observation was rapid resolution of inflammatory conditions.

During this first study, Clint measured the electric fields on people in various sleeping arrangements. He would always measure the voltage on their bodies before and after connecting the earthing mattress pad.

One woman had crippling arthritis in the joints of her hands and arms, and had difficulty walking. Since it would be hard for her to walk from her comfortable chair to her bedroom, Clint decided to demonstrate the change in body voltage while she sat in her chair. He substituted an EEG-type electrode patch for the mattress pad. He placed a patch on each of the woman's arms, using one to measure body voltage and the other to connect her to the earthing rod. When Clint connected the earthing wire, her body voltage dropped to zero.

After chatting for 5-10 minutes, the woman said the pain in her arm was much better, and she asked Clint to move the patch up to her elbow. After some more conversation, she reported that the patch on her other arm was not working (this patch was actually connected to the voltmeter). So Clint disconnected the meter and attached the earthing wire to the patch. After a few more minutes, the woman reported reduction in pain in that arm as well.

Clint immediately went to a medical supply store and got more electrode patches. He called some of his friends who had arthritis and other painful conditions, and gave them electrode patches and earthing wires. He told them to put the patches on the parts of their bodies that were painful and connect them to the earthing wires.

Remarkably, everyone reported a virtually instantaneous reduction in pain. Hence an accidental discovery led to another application of earthing for specific parts of the body. The earthing patch seemed to produce very rapid reduction in inflammation.

In early 2000 Clint formed a corporation to research earthing, develop additional earthing products, and patent his ideas. United States Patent 6,683,779, for a personal body grounding system, was issued to AC Ober on January 27, 2004.

Clint met an anesthesiologist, Maurice Ghaly M.D., who was skeptical of the results. So Dr. Ghaly set about to prove that Clint's observations were wrong. After thinking about the possibilities, Dr. Ghaly decided to study whether or not earthing affects cortisol levels. Cortisol a reliable indicator of both stress and inflammation.

In collaboration with Dale Teplitz, Dr. Ghaly studied a group of 12 people reporting pain and poor sleep. Ober measured the effects of earthing on each subject with a voltmeter. He found an average of 3.27 volts on the body surface without earthing and 0.007 volts after earthing. This is an average of over a 400-fold decrease in the environmental alternating current electric field on the body.

The subjects were grounded to the earth during sleep for eight weeks in their own beds using the conductive mattress pad. Saliva was analyzed to determine the rhythm of daily

cortisol levels before and after six weeks of sleeping earthed. The subjects were asked to assess symptoms of sleep dysfunction, pain and stress daily throughout the test period.

To his surprise, Dr. Ghaly found that earthing shifted the 24-hour circadian cortisol rhythms toward normal. Subjectively reported symptoms, including sleep dysfunction, pain and stress were reduced or eliminated in nearly all of the subjects.

Dr. Ghaly concluded that grounding the human body to earth during sleep reduces nighttime levels of cortisol and re-synchronizes cortisol hormone secretion more in alignment with the natural 24-hour circadian rhythm profile. The research paper describing these results will be published in October of 2004.

In 2003, news of the earthing story reached Jeffrey Spencer, D.C., a specialist in athletic recovery and performance. Jeff is the chiropractor for Lance Armstrong and the U.S. Postal team participating in the Tour de France. To support his work on the Tour, Jeff is constantly looking for better and more efficient ways to improve performance, minimize risk of injury, reduce injury downtime and enhance recovery. He utilizes a variety of modalities to keep the team healthy during the race.

The rigors of training, competition, travel and performance anxiety plague all high level performers. But the Tour is probably the most extreme of all athletic events in terms of physical and mental stress. These athletes must perform at a brutally high level every day for 23 days, with only 2 days off. The race covers some 3427 km (2100 miles) on the ground, and ranges from sea level to 2645 m (8700 feet) in altitude. Crashes are violent events that can cause massive physical and emotional trauma.

Jeff was prompted to investigate earthing because of the Ghaly and Teplitz study, showing that earthing can restore normal cortisol rhythms. This tied right in with his experience in the Tour de France, since cyclists and other high performance athletes often show abnormalities in their cortisol rhythms, and sleeping becomes difficult. A common finding at the Tour de France is that after a week's racing, the cyclists begin to have trouble sleeping. Their bodies are over-stimulated from the excessive physical demands, and they simply can't relax. This leads to accelerated body breakdown, opening the door to illness, GI disturbances, tendonitis, slow wound healing and loss of morale.

After running therapeutic trials on himself and some of his clients, Jeff was convinced of the clinical efficacy of earthing. He realized that sleeping earthed on a regular basis would provide athletes with a tremendous advantage over their competition. In the world of athletics the key to better and more consistent performance is achieving a balance between training stress and recovery. In Jeff's experience the next horizon in performance will come from better recovery, and not from more sophisticated training models. Few athletes recover as completely as they can. This shows up in biochemical profiles revealing deficiencies in hormones, minerals, amino acids and essential fatty acids.

In Jeff's view the "missing link" is sleep. Sleep is the time when growth hormone stimulates the body to repair itself, metabolic wastes are cleared, and oxidative stress is neutralized. Sleep involves countless processes, some known and others as yet unknown, that bring the body back to baseline. After quality sleep, the body is ready to meet the demands of the new day at full capacity. Sadly, few athletes sleep well. The cost is increased risk of injury, illness, diminished performance, depression and a shortened career.

Prior to the 2003 Tour de France, Clint Ober designed special earthing systems that would allow the members of the U.S. Postal team to be earthed during sleep. The team was in a different hotel every night, and at some locations earthing was not practical. But Jeff was able to earth the team often enough to get a good picture of the effects. Jeff used earthing during the Tour to support the normalization of cortisol rhythms, not to treat diagnosed medical conditions. The following summarizes the clinical outcomes observed on the Tour.

1. Sleep was universally improved.
2. Tendonitis was virtually eliminated
3. Wound healing (abrasions) was vastly accelerated
4. All members of the team completed the Tour
5. Illness frequency and duration were much diminished over previous Tours.
6. Consistency of performance was significantly improved
7. Team morale remained high throughout the entire Tour
8. Recovery from exertions and injuries of the previous day was extremely high

These findings are consistent with Jeff's observations on other athletes he works with. Earthing has become one of the essential components of the "bag of tricks" Jeff uses to deal with career-threatening injuries and to prepare his clients for competition. At the same time, Jeff has begun to utilize infrared thermography to document the rapid reduction of inflammation produced with earthing. Pain, compromised range of motion, swelling, redness and inflammation are all consequences of injury that are readily reversed with earthing.

Research on earthing continues. Virtually every process in the body involves electrical activity of one sort or another. The brain, heart, musculature, lymphatic and glandular systems all produce and respond to electrical signals. Research in progress is showing that all of these systems are affected by earthing, and the effects are in the direction that one would expect from reduction of stress profiles, relaxation, and better sleep.

Einstein's prediction has proven correct for earthing. An idea that seemed, at first, to be absurd, is giving hope for those who are not sleeping well, and for those who need to recover from stresses of any kind. While more research is needed, the successes of Jeff Spencer's world-champion athletes documents that something very special is happening when we reconnect with the earth. 🌸

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*For more information on Earthing please contact James L. Oschman, Ph.D., Nature's Own Research Association, PMB 170, 827 Central Avenue, Dover, NH 03820, USA*