



# Earthing

## Nature's primary health support

Dr John Kelsey reveals the many beneficial effects on our health of naturally re-connecting with the earth

**O**ur world essentially encourages our well-being. It has resources to support our health and mechanisms to assist recovery from illness. This is demonstrated in the historic use of foods for healing, such as kidney soup and spring onions as a kidney tonic. Naturopathy has drawn extensively on Nature's resources and herbs. The foundation for many pharmaceutical products lies within Nature's bounty.

More simply, we use Nature's less visible and more pervasive elements. Sunlight is fundamental to vitamin D synthesis. The Earth's geomagnetic field, both atmospheric and derived from the Earth, is supportive, the Schumann Resonance being well recognised.

One healing element that appears very fundamental to health and wellness but has been generally ignored is a tangible and conductive connection with the Earth, literally by having skin contact. This conductive path has shown profound benefits far beyond its simplicity of implementation, an approach that has been tagged 'The Barefoot Connection', reflecting the natural method of contact.

### Primary benefits of Earthing (grounding)

Standing barefoot on the ground (or otherwise connecting to the natural frequencies of the Earth) connects the human body with an unlimited supply of free electrons resident in and on the surface of the Earth. It also connects the body with rhythmic cycles of the Earth's energy field.

Earthing immediately equalizes your body to the same energy level, or potential, as the Earth.<sup>1</sup> This synchronizes internal biological clocks, hormonal cycles and physiological rhythms, and suffuses the body with negatively charged, free electrons (negative ions) abundantly present on the surface of the Earth.<sup>2,3</sup>

Providing electrons and biological synchronisation represents the two primary benefits of Earthing - or grounding. A third is the loss of induced body voltage from exposure to domestic and other electromagnetic fields. Many people comment on improvements based on these factors when they walk barefoot on the grass, bare earth or beach. Similar feedback is reported with indoor earthing.

### The lost connection

A combination of increased indoor living and the wearing of insulated rather than conductive, leather shoes contribute to this loss of conductive earth contact.<sup>4</sup> Leather conducts electrons and therefore maintains a conductive contact between the Earth and the feet. Rubber and plastics are electrical insulators and therefore block the beneficial flow of electrons and information from the ground to the body.

The Earth's negative electrical surface charge is the accumulated effect of thousands of thunderstorms worldwide. The Earth's surface is electrically conductive and is maintained at a negative potential by a global electrical circuit, which has three main generators: the solar wind entering the magnetosphere, the ionospheric wind and thunderstorms.<sup>5</sup>

An estimated 1,000 to 2,000 thunderstorms are continually active around the globe, emitting thousands of lightning strikes per minute. This creates a constant current of thousands of amperes transferring positive charge to the upper atmosphere and negative charge to the surface of the Earth. The Earth's surface is therefore an abundant source of free electrons<sup>5</sup> and is highly conductive, with the charge evenly and rapidly dispersing across the surface.

The research and development of Earthing has occurred over the past decade and is largely due to the pioneering work of American Clint Ober, a former highly successful cable TV expert who investigated and developed it following his own personal health crisis. His story and research is described in his book, *Earthing*, co-authored with Dr Stephen Sinatra and Martin Zucker (see review this issue).

### The body: a tuning fork for life

The body's cells constantly draw information from the brain and the Earth's geomagnetic field in an effort to achieve what is called 'magnetic resonance'. This occurs when the brain matches a harmonic of the frequencies of the other organs (1-30 hertz or cycles per second).

This matching occurs especially during sleep, when the body is focused on recovery, repair and re-building.<sup>3</sup> During the day earthing continually compensates for the drain on our body's resources.<sup>6,7</sup>

Historically, our primary contact with the earth is via the feet. Feet have more nerve endings than any other part of the body and a major acupuncture point (K1). Feet represent reception and discharge points. They may be considered the primary exchange area but any

skin contact is also effective.

Use of earthing, both sleeping on a conductive deerskin on the ground or on an earthing sheet indoors, produces equivalent practical benefits. There are nerves and acupuncture points over the whole body and a high degree of interconnection, though subtle differences have not yet been explored.

The entire human body is reflected holographically onto the sole of the foot, as used in reflexology. The major acupuncture point on the sole (K1) is known as the Yong Quan or 'bubbling spring'. It is the first point of the Kidney meridian - the place where the body 'kisses the earth' - and from whence the body draws in the earth's support.

In Chinese medicine no distinction is made between the kidneys and adrenals. The kidneys are associated with Chi (resource) and the adrenals represent the dynamic part. The former are associated with fear and mobilise the adrenals' 'fight or flight' response. Exhausted adrenals compromise almost every level of well-being: energy, immune response and blood sugar control.

According to acupuncture theory, K1 can support recovery from fatigue and lethargy; it is considered a very important point on the kidney energy meridian for grounding, connecting with the earth and rooting the energy downward. So the connection is bi-directional; from K1, Chi moves up the body through the kidney meridian and from there to the body's vital organs, such as the heart, brain, lungs and liver.

If the bare foot is an important portal to health-giving electrons or Chi, the shoe must be one of the unhealthiest of inventions. That was certainly the view of the American chiropodist Samuel Shulman, who once declared: 'Footgear is the greatest enemy of the human foot.' He reached his conclusion after studying the health of those people in India and China who almost never wore shoes. As a result, they never suffered the usual foot problems of the West and their gait was superior.<sup>4</sup>

### Schumann Resonance effects

At the time when Professor Schumann published his research results in *Technische Physik* in 1952,<sup>8</sup> physician Dr Ankermueller immediately made the connection between the Schumann Resonance and the brain's alpha rhythm. Professor Schumann asked a doctoral candidate, Herbert König (who became Schumann's successor at Munich University), to look into this phenomenon. König demonstrated a correlation between the Schumann

Resonance (7.83Hz) and natural brain rhythms.<sup>9</sup> In 1979 he compared human EEG recordings with natural electromagnetic fields in the environment and found that the dominant frequency produced by Schumann oscillations is very close to the alpha rhythm frequency.

Dr Wolfgang Ludwig has been investigating the Schumann Resonance and its place in Nature for many years. His research expanded to measuring at sea where, due to good electrical conductivity, the Schumann waves are stronger, and then to underground measurements in mines. Here he recognized that the Earth's magnetic field fluctuated also and since it contains ions, there is an associated electrical waveform.

During his research Dr Ludwig came across the ancient Chinese teachings that state that Man needs two environmental signals: the Yang (masculine) signal from above and the Yin (feminine) signal from below and that they should be in balance for perfect health. Dr Jacobi at the University of Duesseldorf showed that the one-sided use of Schumann (Yang) wave simulation without the geomagnetic (Yin) signal caused serious health problems.

Research by Professor Wever at the Max Planck Institute and experience with astronauts has demonstrated that the absence of either disrupts health:

both signals are needed.<sup>10</sup> Thus there appears to be two Earth-based signals - from the Earth's magnetic field and from the same lightning strikes - that give rise to the Schumann wave. Humans have been exposed to both for eons and they form a background that we are attuned and respond to.

### Inflammation - a primary issue

Extensive literature shows that electrons from antioxidant molecules can neutralize free radicals. The National Library of Medicine web resource, *Pub Med*, lists over 7,000 studies and over 500 review articles from a search of 'antioxidant + electron + free radical'.

Biomedical research has documented correlations between chronic inflammation and all the chronic diseases, including those of aging and the aging process itself. Inflammation can be reduced or prevented by grounding the body.

The most important health consequence of earthing is considered to be providing the body with abundant electrons. The scientific research and hypotheses related to earthing point to a major impact on the inflammatory process as a result of this electron transfer.<sup>11</sup>

The human body has evolved a means to kill bacteria using reactive oxygen species (ROS) that are delivered to a site of injury by white blood cells.

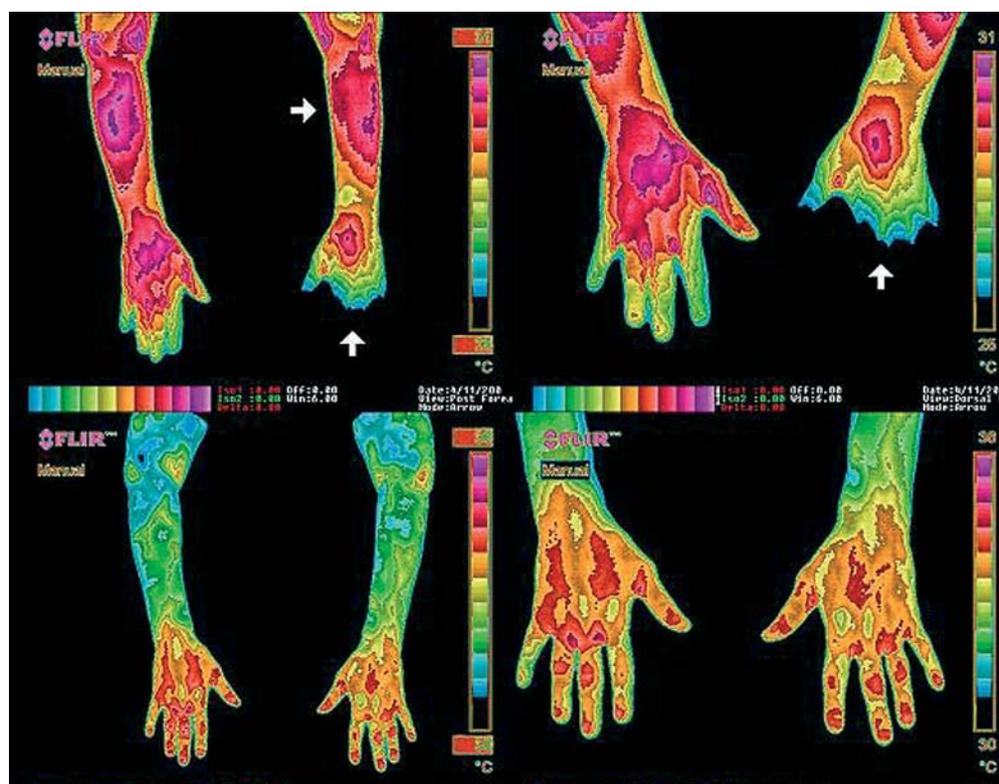


Fig 1. Top row images are of the upper extremities taken as a baseline (prior to earthing). The arrows denote the areas of poor circulation. The temperature of the left hand is so low that the fingers are at the same temperature as the room and cannot be seen (thermal amputation). The bottom row images were taken after four nights of sleeping earthed. Note the significant improvement in circulation with a return of normal thermal symmetry in both upper extremities.

Although very effective, ROS are also very reactive biochemically and can damage healthy tissue. ROS are usually positively charged molecules that need to be neutralized immediately to prevent them from diffusing into healthy tissue.

To do this requires negative charges. Nature has solved this problem by providing conductive systems within the human body that deliver to all parts of the body. This has been the arrangement throughout most of human history. Negative charges have always been available, thanks to the Earth, to prevent the inflammatory process from accumulating and damaging healthy tissues.



Fig 2. Changes in the right foot of a female, 50-year-old psoriasis sufferer before (a) and after (b) three months' exposure to earthing.

Acute inflammation is a natural healing process and is often accompanied by pain which, with reduced ability to heal, is reflected in a reduction in cell voltage - and the presence of free radicals. Thus, a lack of electrons can mean that chronic inflammation sets in, healing is not complete and chronic pain persists.

#### Skin issues

The effects of earthing are systematic and can be reflected in both internal and external change. Fig 2 shows the positive changes in a psoriasis sufferer after prolonged exposure to earthing.

#### Thermography studies

Thermography studies demonstrate that providing electrons - free ones from the Earth - helps to reduce unresolved inflammation. The proposed mechanisms are the electrons' antioxidant effects and cell re-charging.

Subjects: 38 women, 22 men	Test		Control	
	Same	Improv	Same	Improve
Time to fall asleep	15%	85%	87%	13%
Quality of sleep	7%	93%	87%	13%
Wake feeling rested	0%	100%	87%	13%
Muscle stiffness/pain	18%	82%	100%	0%
Chronic back/joint pain	26%	74%	100%	0%
General well-being	22%	78%	87%	13%

Fig 3. Effects on sleep patterns of using grounding sheet overnight for one month (Ober; 2003).

During 2004-5 Dr William Amalu, President of the International Academy of Clinical Thermography, conducted extensive research (20 studies) with earthing technology,<sup>12</sup> which demonstrated dramatic and rapid improvement of inflammation, pain reduction, increased range of motion, restoration of function and improved sleep.

Thermal imaging showed a reduction of inflammation after only minutes of earthing (Fig 1).

Figure 1 is from one of Amalu's studies and shows a 49-year-old female with chronic neck and upper back pain, restless legs during sleep and waking stiff

and sore. After four nights of sleeping on an earthing sheet she experienced a 65% reduction in pain, a 75% reduction in restless legs during sleep and an 80% reduction in waking stiff and sore. Steady improvement continued during the next 6 weeks.

#### Effects on sleep, pain and vitality

Poor sleep is a primary health issue.<sup>13,14</sup> A recent UK university study, based on 12,000 interviews, confirmed the results of previous American statements that 'lack of sleep is having a serious knock-on effect on our health' and that 'it is in all likelihood degrading Britain's health'.

A newspaper report on the study stated: '51% struggle to nod off or remain asleep', 'women suffer more than men: 75% vs 25%', '77% report concentration issues', '64% are less productive', '83% have mood problems', '63% lacked energy'.<sup>15</sup> Overall the study postulated 'an increased risk of developing new illnesses which may correlate with increase in diabetes and depression'. An earlier 2003 study by Clint Ober reinforced this conclusion and other aspects, as shown in Fig 3.<sup>6</sup>

#### Changes in heart rate variability

Heart rate variability (HRV) provides insights into autonomic nervous system activity and resilience, which is part of

the equation between vitality and stress resilience. Very low readings on energy reserves improved dramatically after just a one-hour of earthing.<sup>16</sup> These reflect positive changes taking place in cardiovascular adaptation, central regulation and the overall psycho-emotional state.

Almost unusually for such a simple process, Earthing has been and continues to be studied and corroborated,<sup>17</sup> progressively providing understanding of some of the mechanisms involved. Ober currently invests almost all of the profits from his Earthing products sales into research; one three-year study cost €400,000. Hopefully, such ongoing research will lead to the growing acceptance of earthing's many health benefits by orthodox medical practitioners. ☺

#### References

1. Applewhite, R. PE Static Prevention Inc; www.earthinginstitute.net\*
2. *Int Soc for Subtle Energies and Energy Medicine* 2007;18(3):11.\*
3. Chevalier G. Mori K, Oschman JL, The effect of earthing (grounding) on human physiology. *Euro Biol and Bioelect* 2006:600-21.\*
4. Shulman S. *J Nat Assoc Chiropradists* 1949:26-30.
5. Chevalier G. *The Earth's Electrical Surface Potential: A summary of present knowledge*.\*
6. Ghaly M, Teplitz D. *J Alt Comp Med* 2004;10(5):767-76.
7. Sokal K & P. *J Alt Comp Med* 2011;17(4):1-8.
8. Schumann W. *Z Naturforsch* 1952;149(7a).
9. König HL. Bioinformation - electrophysical aspects. In: *Electromagnetic Bioinformation*, Popp FA et al. (eds.), Urban und Schwarzenberg, 1979, p 25.
10. Ludwig W. *Informative Medizin*, VGM, Essen, 1999.
11. Oschman JL. Can electrons act as antioxidants? A review and commentary, *J Alt Comp Med* 2007;13(9):955-67.
12. Amalu W. *Medical Thermography Case Studies*. www.earthinginstitute.net
13. National Sleep Foundation, www.sleepfoundation.org/pressarchives
14. Worthman C. Slumbers unexplored landscape, Emory University, Atlanta; *Science News* 1999;156(13):205.
15. *Daily Mail* 14th Nov, 2011.
16. Chevalier G, Sinatra S. Emotional stress, heart rate variability, grounding, and improved autonomic tone: clinical applications, *CNS Integrative Med* 2011;109(3).\*
17. For studies see www.earthinginstitute.net or *J Envir Pub Health*, 2012, Article ID 291541; www.hindawi.com/journals/jeph/2012/291541

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