

Nurturing the Nervous System-Heart Connection



Perhaps one of the most overlooked Earthing dividends – and so beneficial in these stressful times – is the rapid calming influence that takes place within the autonomic nervous system (ANS) that regulates functions like heart and respiration rates, digestion, perspiration, urination, and even sexual arousal.

The effect begins pretty much instantly when you connect with the Earth. The ANS shifts from a typically overactive sympathetic mode, associated with stress, into a parasympathetic, calming mode.

To help you appreciate this benefit, we would like to share details on a heart rate variability (HRV) study that we previewed briefly in the Earthing book in 2010. The study, published in 2011 in *Integrative Medicine: A Clinician's Journal*, was conducted by electrophysiologist

Gaetan Chevalier, Ph.D., and cardiologist Stephen Sinatra, M.D.

You may not be familiar with HRV, so here's a quick synopsis, courtesy of Dr. Sinatra:

"In cardiology, a balanced ANS supports good HRV and is an indicator of better heart health. Conversely, the presence of disturbed ANS and HRV means an increased risk of arrhythmias, coronary artery spasm, and sudden cardiac death. HRV has also become a reliable clinical tool for measuring survival potential after a heart attack. HRV is not the same thing as heart rate. Your heart beats faster when you exert yourself or become stressed, and it slows down when you relax — but that's not HRV. HRV refers to the imperceptible variations in the heart's beat-to-beat interval that result from the basic breathing process. We refer to it technically as respiratory sinus arrhythmia. You can't feel the difference, but when you breathe in, your heart rate increases just ever so slightly. When you breathe out, it decreases every so slightly. We can see these fluctuations on an electrocardiogram, and we've learned even more from sophisticated computer analyses of beat-to-beat intervals.

"Let me give you an example here. Have you ever had an electrocardiogram exercise stress test on a treadmill? If so, you may recall that you remain hooked up for a bit of time after the test. The reason is that your doctor wants to see what your heart rate is doing after exertion on the treadmill. Your heart rate may rise to 150 beats a minute during the test. Afterward, it should drop down into a de-accelerated zone of say 100 beats or less in about six minutes. If not, and it stays higher, you have a classic indicator of disturbed HRV, and increased likelihood of cardiovascular trouble. You may, for instance, have a beat rate of 112. That's not good enough. I remember as a young cardiologist years ago waiting even a half-hour or so for some patients' heart rates to drop down sufficiently."

Surrounded as we are these days by constant psychological arousal from stressful news and a volatile world, anything that can improve ANS and HRV function is of great benefit for overall health. Exercise, tai chi, yoga, and meditation are examples of activities that improve ANS and HRV. You become more relaxed and you sleep better. This effect is precisely what many people report after they start Earthing.

The Chevalier-Sinatra study involved monitoring test subjects before, during, and after 40-minute grounding sessions while seated comfortably in a recliner chair. It confirmed a balancing effect on

sympathetic and parasympathetic function and a restoration of normal tone that reduces the stress response. These improvements go beyond basic relaxation and may explain in part the repeated feedback from people experiencing lower blood pressure and improved arrhythmias after they start Earthing.

Medical research has made it clear also that HRV is a superb indicator of your ability to cope with both internal and external changes. It is, in fact, “the most accurate predictor of sudden death and the most accurate reflector of stress,” according to Paul Rosch, M.D., president of the American Institute of Stress in New York City. “If you can alter your HRV, that is, increase it, you can reduce the likelihood of stress-related disorders, including cardiovascular disease.”

For individuals who experience anxiety, emotional stress, panic, fear, and/or symptoms of involuntary muscle contractions and spasms, including headaches, cardiac palpitations, and dizziness, Earthing appears to represent a genuinely promising strategy. Such individuals often see positive changes within 20 to 40 minutes.

Dr. Sinatra says this about stress: “As a cardiologist, I have repeatedly treated the human wreckage that stress — acute or chronic sympathetic overdrive — can exact. In trying to rebuild and restore the wreckage, I have applied the best tools that both conventional and alternative medicine has to offer. Reconnecting the body to the Earth offers perhaps the most natural tool available anywhere. I’ve seen this simple remedy do some amazing things.”

Dr. Sinatra shared these examples:

- After 10 weeks of sleeping grounded, a 73-year-old woman reported that her blood pressure went down by 10 points and she sleeps much better.
- A couple started sleeping grounded. Her snoring stopped and he sleeps better. Her blood pressure went down from 150/90 to 120/80 after one night!
- One woman was experiencing benign but distressing PVCs (premature ventricular contraction), a form of arrhythmia characterized by racing of the heart or extra or skipped beats). She said that sleeping grounded eliminated them. Not only that, her husband’s atrial fibrillation episodes also stopped. He had been taking Coumadin for his condition and, in conjunction with his doctor, was able to reduce the dosage. (Coumadin is a popular blood thinner medication. Earthing also has a blood thinning effect. Anyone on blood thinning medication who wants to start Earthing must consult with his/her physician and keep close track of their INR, a widely-used measurement of the blood’s clotting tendency).

Previous Earthing investigations have demonstrated a marked alteration in a variety of biological parameters after about 20 to 30 minutes. Others in several days. Some show even a dramatic change immediately at grounding (in less than a second or two). The HRV study showed an instant change in HRV that kept improving all the way to the end of the 40-minute period of grounding, suggesting a greater benefit with time. We believe that the ANS may be one of the first, and possibly the first, of the major body systems that react to Earthing.

The HRV study offers additional proof that connecting to the Earth creates a calmer nervous system and increases its efficiency. Earlier experiments are posted in the research section of our website.

A recent article published in the journal *Medical Hypotheses* by a neurosurgeon and cardiologist in Poland suggests that the Earthing likely plays a primary role as a neuromodulative factor enabling the nervous system to better adapt to the demands of the organism and the environment.