****

***Earthing / Grounding References & Resources***

**REFERENCES:**

* Applewhite R. [The effectiveness of a conductive patch and a conductive bed pad in reducing induced human body voltage vias the application of Earth ground](https://earthinginstitute.net/wp-content/uploads/2016/07/Applewhite-Body-Voltage-study.pdf). Euro Bio & Bioelectromagnetics. 2005; (1):23-40.
* Brown R. [Effects of Grounding on body voltage and current in the presence of electromagnetic fields.](https://www.liebertpub.com/doi/10.1089/acm.2015.0340?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub++0pubmed) J Alt Complem Med. Sep 2016; 22(9):
* Brown R, Chevalier G, Hill M. [Grounding after moderate eccentric contractions reduces muscles damage.](https://www.researchgate.net/publication/282659138_Grounding_after_moderate_eccentric_contractions_reduces_muscle_damage) Open Access Jour Sports Med. Sept 2015; 6:305-317.
* Brown R, Chevalier G, Hill M. [Pilot study on the effect of grounding on delayed-onset muscle soreness.](https://www.liebertpub.com/doi/10.1089/acm.2009.0399) Jour Alternative Complementary Med. Mar 2010; 16:3 (online).
* Chamberlin K, Smith W, et al. [Analysis of the charge exchange between the human body and ground: Evaluation of “Earthing” from an electrical perspective](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4241473/). J Chiropr Med. Dec 2014; 13(4):239-246.
	+ Plante A. [How the human body uses electricity](https://www.graduate.umaryland.edu/gsa/gazette/February-2016/How-the-human-body-uses-electricity/#:~:text=Resting%20cells%20are%20negatively%20charged,and%20out%20through%20the%20membrane.). Univ Maryland Grad School.
* Chevalier G, Mori K, Oschman JL. [The effect of Earthing (grounding) on human physiology.](https://www.researchgate.net/publication/241219438_The_effect_of_Earthing_grounding_on_human_physiology) Nov 2005 (online).
* Chevalier G, Sinatra ST, Oschman JL, Delany RM. [Earthing (grounding) the human body reduces blood viscosity—a major factor in cardiovascular disease.](https://www.liebertpub.com/doi/10.1089/acm.2011.0820)  Jour Alternative Complementary Med. 2013; 19:2 (online).
* Chevalier G, Melvin G, Barsotti T. [One-hour contact with the Earth’s surface (grounding) improves inflammation and blood flow—A randomized, double-blind, pilot study.](https://www.academia.edu/34314235/One_Hour_Contact_with_the_Earths_Surface_Grounding_Improves_Inflammation_and_Blood_Flow_A_Randomized_Double_Blind_Pilot_Study) Health. 2015; 7:1022-1059.
* Chevalier G. [The effect of grounding the human body on Mood1.](https://www.academia.edu/84848080/The_Effect_of_Grounding_the_Human_Body_on_MOOD1) Psych Reports; Mental & Phys Health. 2015; 116(2):534-542.
* Chevalier G, Patel S, Weiss L, Chopra D, Mills PJ. [The effects of grounding (earthing) on bodyworkers’ pain and overall quality of life: A randomized controlled trial](https://www.sciencedirect.com/science/article/pii/S1550830718302519?via%3Dihub). May-June 2019; 15(3):181-190.
* Chevalier G, Sinatra ST. [Emotional stress, heart rate variability, Grounding and improved autonomic tone: Clinical applications](http://imjournal.com/pdfarticles/IMCJ10_3_p16_24chevalier.pdf). J Integrat Med. Jun/Jul 2011; 10(3):16-21.
* Chevalier G, Sinatra ST, Oschman JL, Sokal K, Sokal P. [Earthing: Health implications of reconnecting the human body to the Earth’s surface electrons](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3265077/). J Environ Public Health. 2012:291541 (online).
* Elkin HK, Winter A. [Grounding patients with hypertension improves blood pressure: A case history series study](https://pubmed.ncbi.nlm.nih.gov/30982019/). Altern Ther Health Med. Nov 2018; 24(6):46-50.
* 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](https://pubmed.ncbi.nlm.nih.gov/15650465/). J Altern Complement Med. Oct 2004; 10(5): 767-76.
* Jamieson IA, Jamieson SS, ApSimon HM, Bell JN. [Grounding & human health—a review.](https://iopscience.iop.org/article/10.1088/1742-6596/301/1/012024) Jour of Physics: Conference Series. 13th Int Conf on Electrostatics, April 2011 (online).
* Koniver L. [Grounding and skin repair: The power of DC energy](https://www.gavinpublishers.com/assets/articles_pdf/Grounding-and-Skin-Repair-The-Power-of-DC-Energy.pdf). Curr Res Complement Altern Med. 2023; 7(3): 1-4.
* Koniver L. [Practical applications of grounding to support health](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10105020/pdf/main.pdf). Biomed Jour. 2023; 46:41-47.
* Menigoz W, et al. [Integrative and lifestyle medicine strategies should include Earthing (grounding): Review of research evidence and clinical observations.](https://www.sciencedirect.com/science/article/pii/S1550830719305476) Explore. 2020; 16(3):152-160.
	+ Dash P. [Integrative and lifestyle strategies should include Earthing (grounding): Review of research evidence and clinical observations.](https://www.academia.edu/95794976/Integrative_and_lifestyle_medicine_strategies_should_include_Earthing_grounding_Review_of_research_evidence_and_clinical_observations) Explore. 2023; 16:152-160.
* Mori KC. [The effect of earthing on human physiology.](https://www.academia.edu/61956183/The_Effect_of_Earthing_on_Human_Physiology) Subtle Energies & Energy Medicine. 2007; 18(3): 11-34.
* Mousa HA. [Prevention and treatment of COVID-19 infection by earthing](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9381424/). Biomed Jour. Feb 2023; 46(1):60-69.
* Müller E, Proller P, Ferreira-Briza F, Aglas L, Stoggl T. [Effectiveness of grounded sleeping on recovery after intensive eccentric muscle loading.](https://www.researchgate.net/publication/330678606_Effectiveness_of_Grounded_Sleeping_on_Recovery_After_Intensive_Eccentric_Muscle_Loading) Front Physiol. 2019; 10:35.
* Oschman JL. [Can electrons act as antioxidants? A review and commentary](https://www.liebertpub.com/doi/pdf/10.1089/acm.2007.7048). Jour Alter Complem Med. 2007; 13(9):955-967.
* Oschman JL. [Charge transfer in the living matrix](https://pubmed.ncbi.nlm.nih.gov/19524846/). J Bodyw Mov Ther. July 13(3):215-28.
* Oschman JL. [Illnesses in technologically advanced societies due to lack of grounding (earthing)](https://www.researchgate.net/publication/365115883_Illnesses_in_Technologically_Advanced_Societies_Due_to_Lack_of_Grounding_Earthing). Biomedical Jour. Nov 2022; 46:17-29.
* Oschman JL. Our place in nature: [Reconnecting with the Earth for better sleep](https://pubmed.ncbi.nlm.nih.gov/15650460/). J Altern Complment Med. Oct 2004; 10(5):735-6.
* Oschman JL, Chevalier, Brown R. [The effects of grounding (earthing) on inflammation, the immune response, wound healing, and prevention and treatment of chronic inflammatory and autoimmune diseases.](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4378297/) J Inflamm Res. 2015; 8:83-96.
* Sinatra ST, Sinatra D, Sinatra SW. [Grounding—The Universal Anti-Inflammatory Remedy.](https://www.researchgate.net/publication/366312096_Grounding_-_The_Universal_Anti-Inflammatory_Remedy) Biomed Jour. 2022; 46:1 (online).
* Sokal K, Sokal P. [Earthing the human body influences bioelectrical processes.](https://www.academia.edu/94044269/Original_Articles_Earthing_the_Human_Body_Influences_Physiologic_Processes) Jour Alternative Complementary Med. 2010; 17(4):301-308.
* Sokal P, Sokal K. [The neuromodulative role of earthing.](https://www.sciencedirect.com/science/article/abs/pii/S0306987711003641) Medical Hypotheses. 2011; 77(5):824-826.
* Williams, ER, & Heckman, SJ. [The local diurnal variation of cloud electrification and the global diurnal variation of negative charge on the Earth](https://www.academia.edu/11111545/The_Local_Diurnal_Variation_of_Cloud_Electrification_and_the_Global_Diurnal_Variation_of_Negative_Charge_on_the_Earth). Journal of Geophysical Research: Atmospheres. !993; 98(D3):5221-5234.
* Zucker M, Chevalier G, Ober C. [Grounding the human body: Healing benefits of earthing.](https://chopra.com/articles/grounding-the-human-body-the-healing-benefits-of-earthing) ([www.chopra.com](http://www.chopra.com) website. Online article with references.)

**BOOKS:**

* Ober C, Sinatra ST, Zucker M. [Earthing: The most important health discovery ever! (2nd ed).](https://www.barnesandnoble.com/w/earthing-clinton-ober/1118357319) 2014: Basic Health Publications.
* Sinatra S, Sinatra S, Whiteley S. [Get Grounded Get Well](https://grounded.com/earthing-book). 2023: Hampton Roads Publishing.
* Hoekstra E, Ramirez-Smith O. [The Mother Earth Effect: Connect to the Earth and Heal.](https://www.themothereartheffect.com/) 2022: 4Bidden Knowledge Inc.

**BOOK CHAPTERS:**

* Oschman L, Chevalier G, Ober AC. [Biophysics of Earthing (Grounding) the human body. In: Bioelectromagnetic and Subtle Energy Medicine (book, 2nd ed).](https://earthinginstitute.net/wp-content/uploads/2018/05/biophysics-of-earthing-grounding-the-human-body-2015.pdf)  PJ Rosch (Ed), CRC Press, New York, NY; 2015:427-450.

**WEBSITES/ONLINE INFORMATION:**

* Healthline
	+ [Grounding: Exploring Earthing science and the benefits behind it.](https://www.healthline.com/health/grounding#_noHeaderPrefixedContent)
* Ultimate Longevity LLC
	+ [Grounding Research Study Summaries](https://www.ultimatelongevity.com/docs/grounding-research-study-summaries.pdf)
* The Earthing Institute
	+ [What is Earthing?](https://earthinginstitute.net/what-is-earthing/)
	+ [A brief (and certainly incomplete) history of Earthing](https://earthinginstitute.net/brief-history-of-earthing/)
* Better Earthing
	+ [What is Earthing/Grounding and can it transform your health?](https://betterearthing.com.au/what-is-earthing/)
	+ [Free e-book](https://betterearthing.com.au/ebook/)
* Harmony 783
	+ Is there a science behind grounding? Myths debunked.
* Earthing Vitality
	+ [Scientific Research on Earthing/Grounding](https://www.earthing-vitality.org/scientific-research-on-earthing-grounding/)
* Grooni Earthing
	+ [The complete guide to earthing & grounding: Harnessing the Earth’s natural energy for health and wellness](https://grooniearthing.com/). (Free e-book)

**MORE MAINSTREM PUBLICATIONS**

* A recent article (2022) from USA Today: [Have you heard of ‘grounding’ or ‘earthing’? What it is and why it’s getting attention.](https://www.usatoday.com/story/life/health-wellness/2022/08/10/earthing-grounding-what-to-know/10264397002/)
* The U.S News & World Report (2017): [Grounding: Hype or healing?](https://health.usnews.com/wellness/articles/2017-11-03/grounding-hype-or-healing) provides a fairly respectful overview.
* [This article from The Wall Street Journal )](https://kanebridgenews.com/stand-outside-barefoot-for-better-health-i-feel-like-an-oddball-but-if-it-works-it-works/) (2014) briefly describes concepts of it, but certainly from a skeptical perspective.

**QUESTIONS & COUNTER REFERENCES**

In an attempt to be as transparent as possible, it is worth noting the articles, researched opinion articles, and other sources which urge caution, feel more research is necessary (which is accurate) or are just very counter to supporting its benefits:

* Dr. Andrew Weil, a well-respected health and wellness physician, discusses his observations on the topic [here in this blog post](https://www.drweil.com/health-wellness/balanced-living/healthy-living/is-there-anything-to-earthing/) (2022), suggesting that more research is needed to be able to more fully ascertain what benefits there are.
* This is a post which is important to consider when it comes to grounding in the home using grounding products titled [“Is Grounding Good For You?”](https://www.emfanalysis.com/is-grounding-good-for-you/) The author goes into a number of factors which should be taken into consideration when using products that connect directly into the ground plug of a house outlet. It is a bit technical but provides important elements when deciding the best way to try and ground when contacting the Earth directly or when using a grounded rod is not possible.
* [This article from Ohio State University, The Psychology of Extraordinary Beliefs](https://u.osu.edu/vanzandt/2018/04/18/body-earthing/) (2018) which is a group of “ordinary students exploring extraordinary beliefs”, goes deeper into the concept of grounding’s popularity is more about confirmation bias and the placebo effect than what science can (currently) support.
* [The author of this piece](http://chadorzel.com/principles/2014/05/28/earthing-is-a-bunch-of-crap/) (2014) certainly has some qualms about the concept and, even from the title of the article (“Earthing” Is A Bunch of Crap”), he demonstrates a clear bias of opinion. This is a good example of the challenge of trying to find unbiased information—from either point of view—at times.

**GROUNDING/EARTHING PRODUCTS**

Like many things, there are products which are certified in terms of quality testing, consistency of product development, honored return policies, customer service, etc. For more respected Grounding/Earthing products, they should have Earthing® or Ground Therapy® logo:

 

These companies are certified distributors of Earthing/Grounding products:

* [Earthing](https://www.earthing.com/) (Clint Ober founded and original Earthing® products)
* [Grounded](https://grounded.com/) (Dr. Stephen Sinatra founded, cardiologist and renowned Grounding/Earthing researcher)
* [Groundology (U.K.)](https://www.groundology.co.uk/) (official UK distributor)
* [Sleep Grounded (Canada](https://sleepgrounded.ca/)) (official Canadian distributor)
* [Ultimate Longevity](https://www.ultimatelongevity.com/earthing-grounding/products/) (official supplier)

The following are companies which have products which are knock-offs and may or may not provide quality products. Many companies have recognized the potential marketplace for selling products in this area since they do not require regulation by the FDA or any other governing organization. Many have become increasingly more sophisticated in their advertising, marketing, etc. so may seem to be a credible organization but may be the opposite. They are producing and/or selling inferior products, poorer quality, missing certain components, may contain toxic materials, etc. Proceed with caution:

* Grooni (most popular on this list, seemingly respectable and has a moderately decent score on [ScamAdvisor](https://www.scamadviser.com/check-website/grooni.com), but some unknown elements to their business and poor customer service), Bio Energy Products, Earthing Original (earthingoriginal.com), Earthing Power, Earth and Moon, Earth Wellness, Groundluxe, Grounding Brand, Grounding Official (groundingofficial.com), Grounding Therapy, Med Bed, Real You, Talc, Therapy Grounding, Vital Reaction