

EARTHING · GROUNDING



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CONNECTION WITH NATURE

A science-based guide

EARTHING ESPAÑA

F. J. González

EARTHING · GROUNDING

Reconnect with nature, improve your health

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First edition.

Every scientific reference cited in this book has been verified against its original source on PubMed / PubMed Central. See the full bibliography at the end of the book.

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Contents

Tap any chapter to jump straight to it.

[Introduction](#)

[Chapter 1 · History and origins of earthing](#)

[Chapter 2 · The science and the mechanism](#)

[Chapter 3 · The scientific evidence, benefit by benefit](#)

[Chapter 4 · The evidence by population group](#)

[Chapter 5 · Getting started: earthing in nature](#)

[Chapter 6 · Earthing in everyday life](#)

[Chapter 7 · Frequently asked questions](#)

[Chapter 8 · The limits of the scientific evidence](#)

[Chapter 9 · Conclusion](#)

[A final note and safety warnings](#)

[Bibliography](#)

Introduction

What are earthing and grounding?

You sleep eight hours and wake up tired. You spend the day with your phone in hand, your feet inside rubber-soled trainers, boxed in between concrete and glass, and by night your body can no longer tell day from night. If that sounds familiar, it isn't you: it's the quiet cost of having broken a contact your body took for granted throughout its entire evolutionary history — direct contact with the surface of the Earth.

The term earthing (also known as grounding) describes exactly the practice of recovering that contact: putting the human body back in direct relation with the Earth's surface. This can be done by walking barefoot on grass, sand, damp soil or rock; sitting or lying directly on the ground; swimming in natural water; or, when modern life makes that difficult, using conductive devices designed to reproduce that contact indoors: sheets, mats and patches connected to a grounding point.

Both terms — earthing and grounding — are used interchangeably in the scientific literature and refer to the same phenomenon: the transfer of free electrons from the Earth's surface to the human body through direct contact (Chevalier, Sinatra, Oschman, Sokal & Sokal, 2012).

“Nothing can stop you living in accordance with the nature you are part of.”

— Marcus Aurelius, *Meditations*, II.9

Reconnecting, one step at a time



It's never too late to recover a habit as old as walking barefoot.

The central hypothesis behind this practice is that the Earth's surface maintains a relatively stable negative electrical charge, and that direct contact allows an exchange of electrons that could influence physiological processes related to inflammation, oxidative stress and the autonomic nervous system (Oschman, 2007). This is a hypothesis backed by a preliminary body of research — mostly small pilot studies — that, as we'll see throughout this book and especially transparently in Chapter 8, still needs larger clinical trials and independent replication to become established within conventional medicine.

“Honesty about the state of the science is what sets a serious wellness proposition apart from an exaggerated promise.”

This book brings together the research available to date, explaining exactly what the studies say, what their limitations are, and how earthing can be safely and simply worked into everyday life. If there's one reason more people write to Earthing España than any other, it's sleep: that's why Chapter 3 gives it special attention, with full detail on why so many people find in earthing the missing piece of their rest.

CHAPTER 1

History and origins of earthing

Ancestral roots

Direct contact with the ground — walking barefoot, sleeping on natural mats, working the soil by hand — was part of daily human life for almost the whole of our history. The spread of insulated rubber soles and of raised flooring in modern construction is, in historical terms, a very recent phenomenon: it mostly took hold from the mid-20th century onward (Ober, Sinatra & Zucker, 2010).

Same ground, same skin



For more than 300,000 years, human beings lived with nothing between their feet and the Earth.

The modern popularization of the concept

The term “earthing” as used today in wellness circles was coined by Clinton Ober, a retired cable-industry professional who, from the 1990s onward, began investigating on his own the possible physiological effects of grounding. Ober later worked with cardiologist Stephen T. Sinatra and biophysics researcher James L. Oschman, leading to the first pilot studies published in peer-reviewed journals from 2004 onward (Ghaly & Teplitz,

2004) and to the popular book “Earthing: The Most Important Health Discovery Ever?” (Ober, Sinatra & Zucker, 2010).

It's worth noting, with the same honesty we apply to all the evidence in this book, that several of the leading researchers in this field — including Gaétan Chevalier, author or co-author of most of the studies cited here — have disclosed in their own publications commercial ties to companies in the earthing industry. This doesn't invalidate their findings, but it's relevant information that any critical reader, and any health professional, should know when weighing the evidence (see Chapter 8).

Why reconnecting with the Earth matters

Under normal conditions, the Earth's surface maintains a slightly negative electrical potential relative to the human body when it's insulated from the ground by modern footwear. The earthing hypothesis proposes that this contact allows a transfer of electrons that would neutralize reactive oxygen species (free radicals), a mechanism linked to reduced inflammation and oxidative stress (Oschman, 2007; Chevalier et al., 2012). The following chapters review, study by study, what evidence supports this hypothesis.

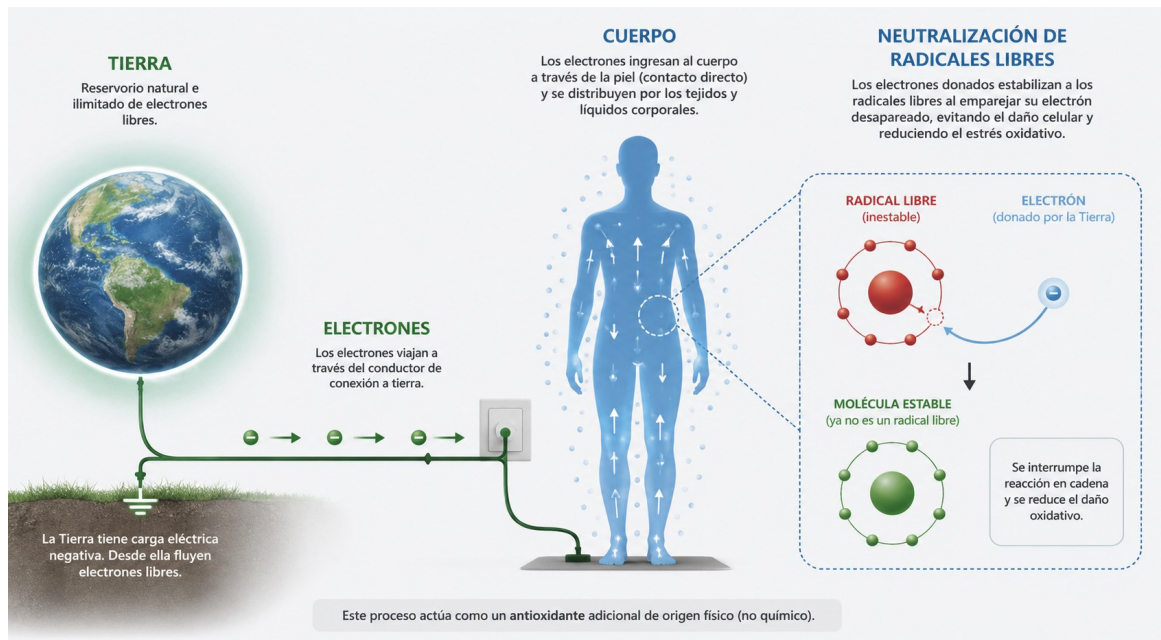
CHAPTER 2

The science and the mechanism

The free electron as a potential antioxidant

The core proposal, laid out at greater length by James Oschman (2007) in his review “Can electrons act as antioxidants?”, is that free electrons transferred from the Earth can act as electron donors to free radicals — unstable molecules with an unpaired electron that damage cells and tissue when they build up in excess. This neutralization would, in theory, reduce oxidative stress, a process implicated in cellular aging and numerous chronic diseases.

To understand why this would matter physiologically, it helps to explain the mechanism in a little more detail. A free radical is a molecule missing an electron in its outer shell; to “stabilize” itself, it steals an electron from a neighbouring molecule — a protein, a cell-membrane lipid, even DNA — setting off a chain reaction of oxidative damage. The body neutralizes these radicals naturally through internal antioxidants (like glutathione) and external ones (vitamins C and E, polyphenols). Oschman's hypothesis adds a third route: if the body maintains electrical contact with the Earth — which acts as a virtually unlimited reservoir of electrons — those electrons could be donated directly to circulating free radicals, acting as an additional antioxidant of physical, not chemical, origin. It's an elegant idea, plausible in terms of basic physics, but one that to date rests on indirect measurements — such as the inflammatory markers we'll see in Chapter 3 — rather than a direct biochemical demonstration of that electron transfer inside a living human body.



From the Earth to the body: how the electron travels, step by step.

One caveat is worth making clear: this biochemical hypothesis is plausible from the standpoint of basic physics, but it hasn't been directly and unequivocally demonstrated in humans with the same rigor as other well-established antioxidant mechanisms (such as the role of vitamin C or glutathione). It remains a reasonable theoretical model backed by pilot studies, not a mechanism confirmed by broad scientific consensus.

“Nature does nothing in vain.”

— Aristotle, Politics, Book I

Electrophysiological evidence

The first pilot study in this field (Chevalier, Mori & Oschman, 2006) recorded electroencephalogram (EEG), electromyogram (EMG) and blood volume pulse (BVP) signals in subjects before and during contact with the Earth, observing changes consistent with reduced muscle tension and reduced sympathetic tone (the “fight or flight” activation). The logic behind why physical contact with the Earth could alter these signals within minutes — too fast to be explained by a purely biochemical pathway — is what leads the authors themselves to propose a direct bioelectric mechanism: the human body, a saline electrical conductor, would shift its surface potential almost immediately upon connecting to a reference conductor like the Earth, similar to how any circuit stabilizes once

grounded. Being a pilot study, its results should be read as hypothesis-generating, not as conclusive proof.

Slowing down, literally



Contact with the ground, slow breathing: the body understands it can relax before the mind does.

What does the field's benchmark review say?

The most cited article in this field — Chevalier, Sinatra, Oschman, Sokal & Sokal (2012), published in *Journal of Environmental and Public Health* — gathers and summarizes the pilot studies available up to that date on inflammation, sleep, pain, cortisol and heart rate variability. It's a narrative review (not a systematic review or a meta-analysis), written by authors directly involved in the original research, which again doesn't invalidate its content but does limit its standing as an independent source.

The authors themselves sum up the underlying problem in a line worth quoting directly: “modern lifestyle separates humans from such contact” (Chevalier, Sinatra, Oschman, Sokal & Sokal, 2012). It isn't a marketing line: it's the conclusion of a scientific review on how we stopped touching the ground we came from.

CHAPTER 3

The scientific evidence, benefit by benefit

Sleep



Waking up with a clear head: the goal of this whole chapter.

If there's one question we hear more than any other at Earthing España, it's this: “why do I find it so hard to sleep well, when I'm doing everything I'm supposed to?”. You go to bed at a reasonable hour, skip afternoon coffee, you've even tried melatonin. And yet you wake up at three in the morning with your mind racing, or the alarm goes off and you feel like you haven't slept at all. You're not doing anything wrong: you're probably missing the oldest and simplest piece of all.

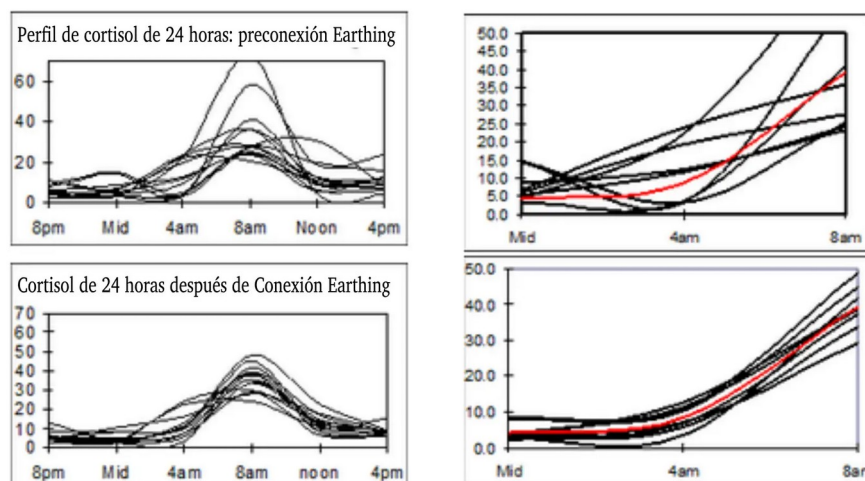
For 99.9% of human history, we slept in contact with the ground, or very close to it. That contact wasn't a wellness choice: it was simply how we lived. Today we sleep metres above the ground, on metal bed frames and synthetic mattresses, completely insulated from the Earth. We've gained comfort, but we've lost, without noticing, a signal the body had used for millennia to set its internal clock.

The study by Ghaly and Teplitz (2004), published in the *Journal of Alternative and Complementary Medicine*, is the original and most cited work on earthing and sleep. Twelve subjects slept grounded for eight weeks. The authors recorded a reduction in night-time cortisol levels toward a profile closer to the normal circadian pattern, along with subjective improvements in sleep quality and pain reported by the participants themselves. The study's own summary, as published, sets out the hypothesis that started it all: that grounding the body would produce “changes in sleep, pain and stress” (Ghaly & Teplitz, 2004) — precisely the three reasons people are still writing to us about, twenty years on.

Why would it improve sleep?

In a healthy person, cortisol follows a very specific circadian rhythm: it should be low at night and rise sharply on waking. When that rhythm flattens or reverses — common in chronic stress and insomnia — the body receives alert signals exactly when it should be resting. Ghaly and Teplitz's hypothesis is that contact with the Earth, by stabilizing the body's surface electrical potential, would reduce night-time sympathetic activation (the “fight or flight” system) and allow cortisol to return to its natural circadian pattern, supporting deeper sleep with fewer awakenings. It's an explanation consistent with what we know about chronobiology, although the study itself didn't directly measure autonomic nervous system activity during sleep, only its hormonal consequences.

Reducción del 54% en los niveles de cortisol a medianoche -
Aumento del 34% en los niveles de cortisol a las 8 a.m.



24-hour cortisol profile before and after sleeping grounded. Source: Ghaly & Teplitz (2004).

Limitations worth noting: the sample is small (12 people), this particular study had no sham-grounding placebo control group, and the sleep

improvements were based on subjective questionnaires, not polysomnography.

The 2025 update

Twenty years later, Park, Lee, Kim, Kim, Sohn, Kim, Rhie, Kim and Shim (2025), in *Advances in Integrative Medicine*, ran the best-designed trial to date on earthing and sleep: 60 participants, randomized to either a real earthing mat or an identical but disconnected mat (double-blind — neither participants nor researchers knew which group was which), used 6 hours a day for 31 days. The group with the real mat showed significant reductions in perceived stress, insomnia severity and daytime sleepiness, plus an increase in total sleep time recorded by activity tracker. Not every measure in the study improved equally — some sleep measures showed no significant difference — but it is by far the best bias-controlled study published on this specific question.

What actually changes when you sleep grounded

Beyond what the studies measure, here's what people most often describe the first time they try an earthing sheet or mat in their bed: it isn't an immediate, dramatic sensation on night one, but something closer to gaining ground little by little. Fewer tosses and turns. Shorter night-time awakenings, or none at all. And, above all, that feeling — as simple as it is valuable — of waking up with a clear head instead of dragging yesterday's tiredness along. We're not promising a magic switch: we're promising to give your body back a signal it should never have lost, through an intervention as passive as sleeping on a sheet.

If sleep is your main reason for looking into earthing, the most direct and best-documented path is to start with the bed: take a look at the [Adjustable Earthing Sheet Kit](#) or the [Earthing Bed Mat Kit](#), the two products we recommend most for exactly this.

Inflammation

Oschman, Chevalier and Brown (2015), in a review published in the *Journal of Inflammation Research*, propose that contact with the Earth could influence inflammatory markers by altering the surface electrical potential of blood cells, which would affect the immune response. Again, this is a review article with direct involvement from the field's original researchers, and its own authors acknowledge that more research with larger controlled trials is needed.

Why would it affect inflammation?

Acute inflammation is, in itself, a useful defence response: white blood cells (neutrophils) travel to a damaged area and release reactive oxygen species to destroy pathogens and clear damaged tissue. The problem arises when that response drags on longer than necessary, producing low-grade chronic inflammation, associated with cardiovascular disease, diabetes and joint deterioration. Oschman and colleagues propose that if the Earth's electrons can neutralize some of those reactive oxygen species once they've already served their defensive purpose, the inflammatory process would resolve faster, without needing to suppress the initial immune response — an important difference from conventional anti-inflammatories, which act by blocking the inflammatory cascade from the outset. This idea of “active resolution” of inflammation is consistent with broader lines of research in immunology, although the specific connection to earthing remains, as of today, hypothetical.

In practice, here's what many people describe after weeks of building earthing into their routine: less morning stiffness, joints that respond better with the day's first movements, an overall feeling of “less puffiness.” It doesn't replace any treatment, but it fits well as a background habit, with no known side effects, alongside whatever else you're already doing for your health.

Less stiffness, more movement



Hands are often the first thing to notice the change — and the first thing to be grateful for it.

Chronic pain and muscle recovery

The pilot study by Brown, Chevalier and Hill (2010), published in the *Journal of Alternative and Complementary Medicine*, is probably the most rigorous design of the field's early research: 8 healthy subjects, split into a grounded group and a sham-earthing control group, following eccentric exercise that induces delayed-onset muscle soreness (DOMS). Of 48 markers measured — blood count, muscle enzymes, cortisol, MRI imaging and subjective pain — 30 showed differences between the two groups that stayed consistent across the three days of follow-up, never crossing over — a statistically low probability of happening by chance. Among those, a smaller subset (white blood cells, neutrophils, bilirubin, creatine kinase, and both subjective and objective pain measures) also showed a clear relationship favouring the grounded group, consistent with less muscle damage and inflammation.

A more recent, better-designed study

Nearly a decade later, Müller, Pröller, Ferreira-Briza, Aglas and Stöggl (2019), in *Frontiers in Physiology*, revisited the question with a considerably stronger design: 22 participants (12 grounded, 10 sham-grounded controls), in a triple-blind trial — neither participants, the person administering the intervention, nor the data analyst knew which group anyone belonged to. After an intense downhill-running session designed to cause muscle damage, the grounded group showed favourable differences in muscle-damage markers and pain perception compared with the control group over ten nights of recovery. The sample remains modest (22 people), but the triple-blind design makes it a methodologically more reliable study than the original 2010 one.

Why would it reduce muscle pain?

Delayed-onset muscle soreness is caused, in part, by micro-tears in muscle fibres following eccentric effort (the type of contraction involved in, say, walking downstairs or decelerating a movement), which trigger a local inflammatory response and the release of enzymes such as creatine kinase into the bloodstream. The Brown, Chevalier and Hill study found the grounded group had lower levels of these enzymes and faster recovery on MRI scans, suggesting — if the antioxidant mechanism proposed in Chapter 2 holds — a smaller cascade of secondary oxidative damage after the initial muscle injury. It's a pilot study with a very small sample (4 people per group), but it stands out for including a placebo group and objective measures, not just questionnaires.

If you train regularly, this translates into something very concrete: fewer days dragging yourself through soreness, and getting back to feeling capable of performing at your best sooner. Walking barefoot on grass after training, weather permitting, is the simplest and most free way to try it.

Stress, anxiety and mood

The body before the mind



Sometimes all it takes is to stop, breathe, and let the nervous system find its own rhythm.

Chevalier (2015), in a double-blind study published in Psychological Reports, had 40 adults undergo one hour of real or sham grounding while completing validated mood scales (the Brief Mood Introspection Scale). The grounded group showed a statistically significant improvement in pleasant, positive mood states, greater than what relaxation alone would explain.

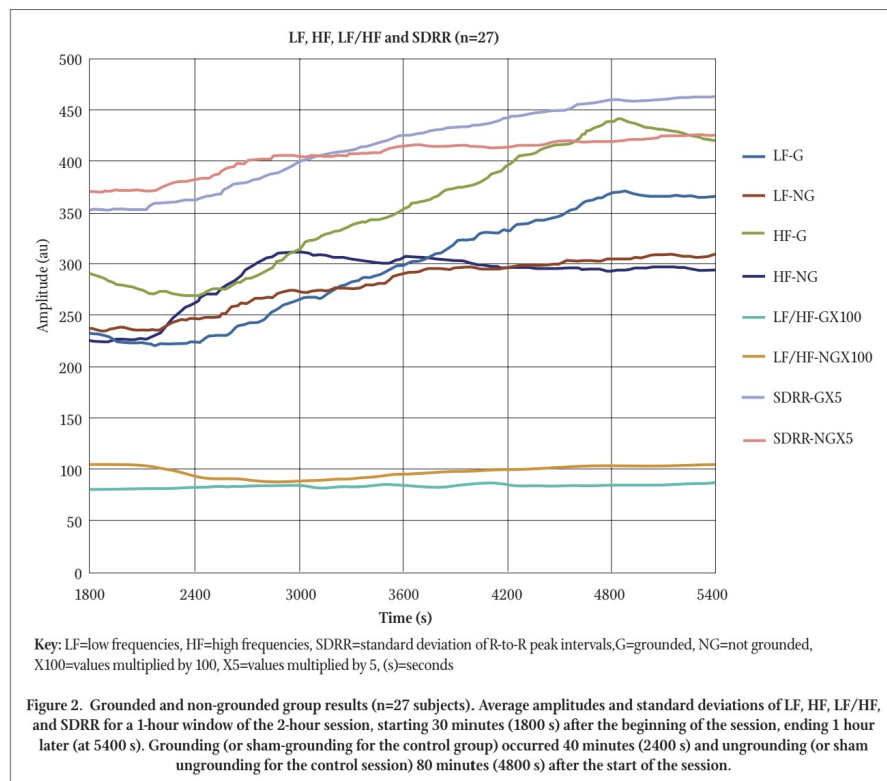
Why would it improve mood and reduce stress?

The autonomic nervous system has two branches that work in balance: the sympathetic branch, which prepares us for action and stress, and the parasympathetic branch, associated with rest and digestion. Modern chronic stress keeps the sympathetic branch almost permanently overactivated. Chevalier's hypothesis is that contact with the Earth shifts that balance toward the parasympathetic branch — measurably, for instance, through an increase in heart rate variability, a recognized indicator of healthy autonomic regulation. It's one of the better-designed studies in the field thanks to its double-blind design, although the length of

the intervention (one hour) and the sample size remain limited for generalizing long-term conclusions.

“Nowhere can a person find a quieter retreat than in their own soul.”

— Marcus Aurelius, Meditations, IV.3



Heart-rate LF and HF band amplitude, grounded vs. control group (n=27). Source: Chevalier & Sinatra (2011), Figure 2.

In this chart, the HF-G line (green) — the frequency band associated with parasympathetic activity — climbs steadily throughout the session in the grounded group, while the control group (HF-NG, dark blue) stays comparatively flat. It's the most direct piece of electrophysiological evidence in this chapter: it doesn't depend on what a participant reports feeling, but on an objective measurement of heart rhythm itself.

Chevalier and Sinatra (2011), in *Integrative Medicine: A Clinician's Journal*, link grounding to changes in heart rate variability consistent with greater parasympathetic activity (relaxation), although this is a clinical application article rather than an independent controlled trial.



That “shifting down a gear” you can see on someone's face before it shows up in any test.

Translated into everyday terms: it's that feeling of “shifting down a gear” that many people look for in yoga, meditation or a walk in the hills. Earthing doesn't replace any of those practices — in fact it pairs well with them — but it adds an extra, passive, effortless route to help the body ease off the accelerator and onto the brake.

Cardiovascular health

A heart that flows better



Gentle movement outdoors is already, on its own, a well-established cardiovascular ally.

Chevalier, Sinatra and Oschman (2013), in the Journal of Alternative and Complementary Medicine, reported a reduction in blood viscosity following contact with the Earth in a group of volunteers.

Why would it affect blood viscosity?

Under normal conditions, red blood cells carry a negative surface electrical charge that makes them repel one another, preventing clumping and helping them flow more easily through blood vessels — a phenomenon known as “zeta potential.” When that potential drops, red blood cells tend to clump together (a process called “rouleaux” formation), which increases blood viscosity and hampers microcirculation, a recognized cardiovascular risk factor independent of earthing. Chevalier, Sinatra and Oschman's hypothesis is that the supply of electrons from the Earth would reinforce that negative surface charge on red blood cells, increasing their mutual repulsion and thereby thinning the blood. It's a bioelectric explanation consistent with colloid physics, but this finding is preliminary and hasn't been replicated by research groups independent of the original team as of this book's publication.

CHAPTER 4

The evidence by population group

As of today there are no clinical earthing trials specifically and robustly designed for children, older adults or elite athletes as distinct populations: most available studies were carried out on healthy adult volunteers. What follows are reasonable extrapolations from that general evidence, not findings from independent studies in each group.

Children

Running barefoot, without a second thought



Long before any scientific theory existed, there was already a child's instinct to run barefoot across the grass.

There are no earthing studies in children. What is well established, independently of earthing, is that time outdoors and play in contact with nature are associated with benefits for children's physical and emotional development, based on evidence from paediatrics and environmental psychology — not specific to earthing. Earthing can be understood here as one more way of encouraging that outdoor contact, not as a proven medical intervention for children.

If the mechanism from Chapter 2 were correct, one might expect children — with an immune system and circadian rhythm still developing — to

respond at least as well as adults to a possible regulation of cortisol and the autonomic nervous system. But this is a reasoned extrapolation, not a finding: nobody has measured it in this population.

Adults

This is the group for which all the pilot evidence described in Chapter 3 exists: sleep, inflammation, pain, mood and blood viscosity.

Older adults

No rush, but never quite putting the shoes back on



Mobility and vitality don't come with an expiry date.

There are no specific studies in older adults, though their higher prevalence of chronic pain, sleep problems and low-grade inflammation makes them a group of theoretical interest for future research. Ageing is associated with a well-documented phenomenon in geriatrics and immunology called “inflammaging”: low-grade chronic inflammation that doesn't depend on any specific infection or injury, but simply on the passage of time. If the antioxidant mechanism proposed in Chapter 2 has any clinical relevance, it would be reasonable to expect older adults — with a higher baseline inflammatory load — to be, in theory, the group with the most room for observable improvement. Again: this is a reasoned hypothesis, not a confirmed finding. Older adults with pacemakers or other implanted electronic medical devices should consult their doctor before using conductive earthing devices (see Chapter 7).

Athletes

Back to the locker room without the extra soreness



The team that trains barefoot isn't chasing headlines: it's chasing better recovery between matches.

The Brown, Chevalier and Hill (2010) study on DOMS is the most directly relevant to this group, although its sample (8 people) is too small to draw firm conclusions about athletic performance. Intense exercise naturally and expectedly produces a spike in oxidative stress as part of the muscle-adaptation process; the open question is whether speeding up the neutralization of that oxidative stress with earthing aids recovery without interfering with the very signals the body paradoxically needs to grow stronger after effort. No study to date has explored this possible trade-off.

People with chronic illness

For years, the honest statement here was that no clinical earthing trial existed in patients with a specific medical diagnosis. That changed in 2025: Sokal, Broda, Zajac and Sokal, in the *Journal of Clinical Medicine*, published the first controlled earthing trial in a real clinical setting — patients recovering from spinal surgery. The study included 42 patients grounded during postoperative overnight rest, compared with 42 control patients operated on for the same reason (lumbar spondylosis) without earthing. The grounded patients showed a faster reduction in C-reactive protein and creatine kinase — markers of inflammation and muscle damage — along with lower reported postoperative pain.

It's a meaningful finding, and it needs to be placed precisely: it's a single trial, in a very specific surgical context, that still needs to be replicated by other research teams before it can be generalized to other chronic conditions. For everything else — arthritis, fibromyalgia, multiple sclerosis and similar conditions — there are still no specific clinical trials, even though many of them share a common denominator with the post-surgical context: chronic inflammation, precisely the process earthing proposes to act on. Anyone with a chronic illness should, at most, treat earthing as a general wellness complement, never a substitute for their medical treatment, and should consult their care team before adding it.

“What you cannot change, accept without railing against nature.”

— Seneca, Letters to Lucilius, 107

“A single clinical trial is not a definitive answer: caution and medical consultation should always come before enthusiasm.”

CHAPTER 5

Getting started: earthing in nature

Getting started with earthing requires no expense and no special preparation: the simplest and best-documented way is direct contact with natural surfaces.

Natural methods, at no cost



No cost, no devices, no excuses: just lie down.

- Walk barefoot on grass, sand, soil or natural rock.
- Sit or lie directly on the ground.
- Swim in natural water (sea, lake, river): water acts as a conductor.

Earthing devices for indoors

When daily access to natural surfaces isn't practical — because of climate, living in a high-rise flat, or work schedules — there are devices designed to reproduce contact with the Earth indoors, connected to the grounding point of the home's electrical installation (never to a live socket, only to the earth/ground connection).

The product, no filters and no overpromising



Adjustable Earthing Sheet Kit, with connection accessories included.

For sleep: the simplest way to start

Eight hours is a long time, and it's exactly when your body most needs to recover. Earthing sheets are made with silver conductive thread woven into cotton fabric, connect to the grounding point with a simple cable, and from there you don't have to do anything else: you go to bed and your body starts benefiting while you sleep, without changing a single habit. It's probably the most time-efficient way to bring earthing into your life. Check out the [Adjustable Earthing Sheet Kit](#) and the [Earthing Bed Mat Kit](#).



The Universal Earthing Mat — so unobtrusive you forget it's there working.

For the rest of the day: on the sofa, at the table, at the desk

Not all earthing has to happen in bed. Mats and patches let you stay connected while you work, watch a show, or simply read, with no need to change posture or routine: place them under your feet, hands or wrist, and they keep doing their job in the background. Ideal if you spend many hours seated indoors. Check out the [Universal Earthing Mat](#) and the [Earthing Yoga Mat Kit](#).

Safety note: all conductive devices must be connected exclusively to a certified grounding point, never directly to the mains supply. Before buying or installing any device, check the manufacturer's instructions.

Setting up your device, step by step

Before you connect: check the grounding point

It all starts with your home's electrical wiring, not the product itself. The black tester (grounding point tester) plugs directly into the wall socket and checks whether that socket has a working connection to earth: it's a test of your electrical installation, not of the Earthing product. The white tester, by contrast, is used afterwards, once the product is already connected, and checks that the conductive fabric itself — the sheet, the mat — has electrical continuity: it's a test of the product, not of your wiring. They're two different checks for two different things, and it's worth not confusing them.

If the black tester flags a problem with the socket, don't force the connection or try to interpret the indicator lights yourself: try another socket in the house that you know is grounded, or ask an electrician to check the wiring. Each tester model has its own manual for reading the LED signals, so check it before drawing conclusions.

The connection: grounding only, never live current

The Earthing adapter uses only the socket's grounding point, and is never connected to live or neutral. The cable includes a safety resistor of approximately 100 kΩ, precisely to limit any current flow. The product is never powered by the mains: it doesn't consume electricity, it only uses the grounding point as a reference.

Sheet: direct skin contact

Spread it over the mattress like a normal fitted sheet and connect it to the grounding point with its cable and adapter. For it to work, your skin needs to touch the conductive thread directly: a thin cotton pyjama may still allow some contact, but adding another sheet on top reduces conductivity considerably.

Bed mat: where to place it and how to clean it

Place it where your body will rest directly against it, never hidden underneath the fitted sheet — that would break the contact. Clean it with a damp cloth; it shouldn't go in the washing machine.

Sheet, mat, or pad?

There's no “better” option in clinical terms: no studies compare the different formats against each other, so we can't promise that one produces better results than another. The difference is about use, not effectiveness: the sheet is comfortable for overnight use and covers a large surface; the mat is a more easily cleaned alternative if you'd rather not wash a whole sheet; the pad is designed for your feet or hands while you work or rest seated.

Checking that the product works

With the product already connected, switch on the white tester and slide its metal contact along the conductive area of the fabric. A blinking green LED indicates electrical continuity up to that point. This test confirms the circuit is working correctly, not that any particular health benefit is occurring: that, as we've seen in earlier chapters, is a separate question still under study.

Caring for your sheet

Wash at 30°C with a mild detergent, no fabric softener or bleach — both can damage the conductive thread. Don't tumble dry or iron it. Hang it flat to dry, away from direct sunlight. Avoid applying body creams or oils just before bed, as they can insulate your skin from the conductive fabric.

Common questions

- Can I use a power strip? Yes, as long as its own grounding point is connected and working properly.
- Should I unplug it during a storm? That's a reasonable precaution for anyone who'd rather take it, though it isn't a strict requirement for use.
- Can I use an outdoor grounding rod instead of a socket? It's possible, but it requires a proper installation — not just any rod stuck in the garden will do, so check with a professional.

How long should you practise earthing?

There is no “minimum effective” duration established by scientific consensus. Available pilot studies have used anywhere from 40 minutes (Chevalier, 2010) to eight weeks of continuous overnight use (Ghaly & Teplitz, 2004). A reasonable starting point, consistent with the available evidence, is to begin with short sessions — 20 to 30 minutes — and increase gradually according to personal comfort.

CHAPTER 6

Earthing in everyday life

The best wellness routine isn't the most complete one — it's the one you actually keep up. That's why earthing works: it demands no discipline or willpower, just making use of moments you already spend on the sofa, at your desk, or in the park with your family.

At home

The living room is ready — all it needs is the blanket



Earthing doesn't ask for a lifestyle change; it asks to join the one you already have.

Your home is, by far, where you spend the most hours of your day. That's precisely what makes it the place with the most potential: a sheet on your bed works while you sleep, and a mat under the living-room table works while you watch a film or read. You add no task to your day: you simply let earthing happen around what you're already doing.

At work

Barefoot under the desk, connected on the inside



The workday stays the same; what changes is what's happening under the table.

Long days in front of a screen, with the body tense and the mind jumping from one task to the next, are exactly the scenario where a physiological pause is most welcome. A mat under the desk or a patch on the wrist doesn't interrupt your work or ask for extra time: it's simply there, under your feet or on your skin, while you get on with things. Check out the [Universal Earthing Mat](#) to bring it to your desk too.

With family

Memories that do you good too



No study measures this, but it doesn't need one: you can see it on everyone's face.

No product is needed here: just some time in the park. A picnic with shoes off, some gardening with your hands in the soil, or simply letting the little ones run barefoot across the grass are, besides being free, some of the best memories a family can build together — while everyone benefits from contact with nature along the way.

While travelling

Your suitcase can pack earthing too



Changing beds shouldn't mean giving up the routine that suits you best.

Travel usually means different beds, disrupted schedules, and that hard-to-explain tiredness that isn't always just about the early start. Portable earthing devices fit into any suitcase and let you keep the habit even as you change beds every few days. And if your destination has a beach, even better: walking barefoot along the shoreline is, at no cost at all, one of the most pleasant ways to practise earthing there is. There's no specific evidence on earthing and jet lag; what is well established is that exposure to natural light and walking outdoors while travelling helps regulate the circadian rhythm, independently of earthing.

CHAPTER 7

Frequently asked questions

Is earthing safe for everyone?

For most people, yes. People with implanted electronic medical devices (pacemakers, defibrillators) should consult their doctor before using conductive earthing devices. It's also important to make sure outdoor surfaces are safe and free of hazardous objects.

How long should I practise it each day?

There's no figure established by scientific consensus. Available pilot studies have used anywhere from 40 minutes to several weeks of overnight sessions. Starting with 20-30 minutes a day is a reasonable starting point.

Do I need special equipment?

No. Walking barefoot on natural surfaces is enough, and it's free. Earthing devices — sheets, mats, patches — are a practical alternative when daily access to nature isn't possible.

Can I practise it anywhere?

Anywhere you can make safe, direct contact with the Earth's surface: gardens, parks, beaches, woods or urban green spaces.

What are the contraindications?

The main one is the use of implanted electronic medical devices, in which case you should consult your doctor before using conductive products. When walking barefoot, avoid any surface with a risk of cuts or hazardous objects.

What does the scientific evidence say, in summary?

A set of studies — most pilot studies with samples of between 8 and 40 people, though the most recent ones (2025) now reach 60 and 84 participants — suggests possible benefits for subjective sleep quality, stress markers (cortisol), mood, and some markers of inflammation and blood viscosity. This is preliminary evidence, not definitive conclusions. Chapter 8 sets out these limitations honestly.

How do I know if earthing is “working” for me?

Any effects, if present, can vary from person to person. It helps to keep a simple log of changes in sleep, pain or perceived stress levels during the first weeks of practice.

“Of things, some are up to us and some are not.”

— Epictetus, Enchiridion, 1

Practising earthing — walking barefoot, using a conductive sheet, giving it a few minutes a day — is entirely up to you. The exact results you get are not. That distinction, as old as Stoic philosophy, is also the healthiest attitude to bring to any wellness practice whose evidence is still being built.

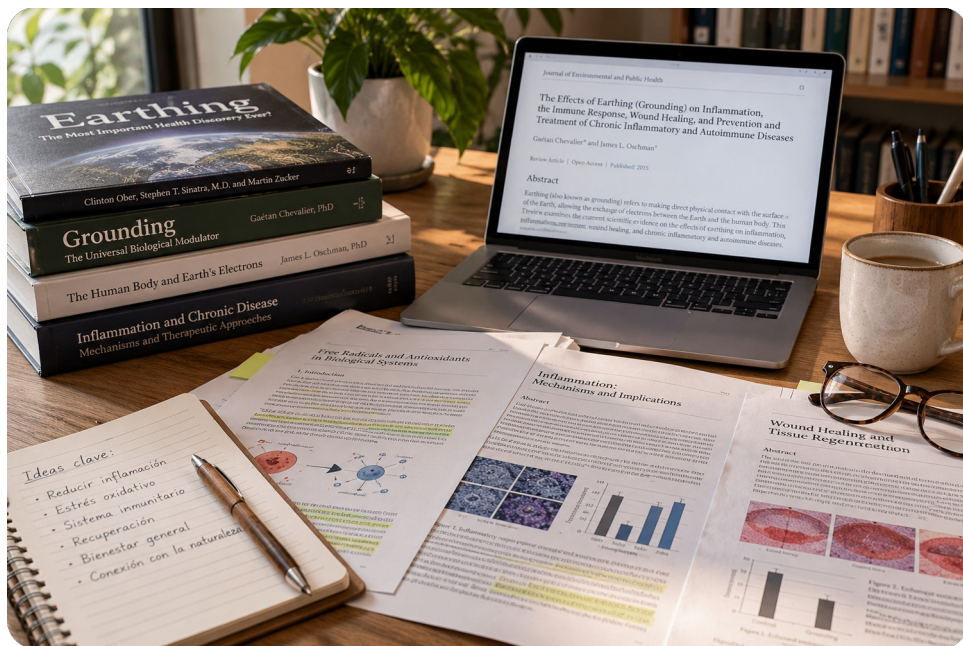
CHAPTER 8

The limits of the scientific evidence

This is, quite possibly, the most important chapter in this book if your goal is to understand earthing on your own terms, whether or not you're a health professional.

“It is the mark of an educated mind to seek, in each subject, only the precision its nature allows.”

— Aristotle, Nicomachean Ethics, Book I



Any serious researcher's desk: books, underlined passages, and more questions than at the start.

Small sample sizes

Most studies cited in this book include between 8 and 40 participants, though the two most recent ones (Park et al., 2025, with 60; Sokal et al., 2025, with 84) are starting to approach more robust sizes. These numbers are improving, but taken together they remain insufficient for a regulatory agency or an international medical consensus to treat them as definitive proof of clinical efficacy.

The absence of large independent clinical trials

As of this book's publication, there are no large-scale clinical trials — hundreds or thousands of participants, multicentre and independent of the original research team — confirming the pilot findings described in Chapters 3 and 4.

Possible conflict of interest

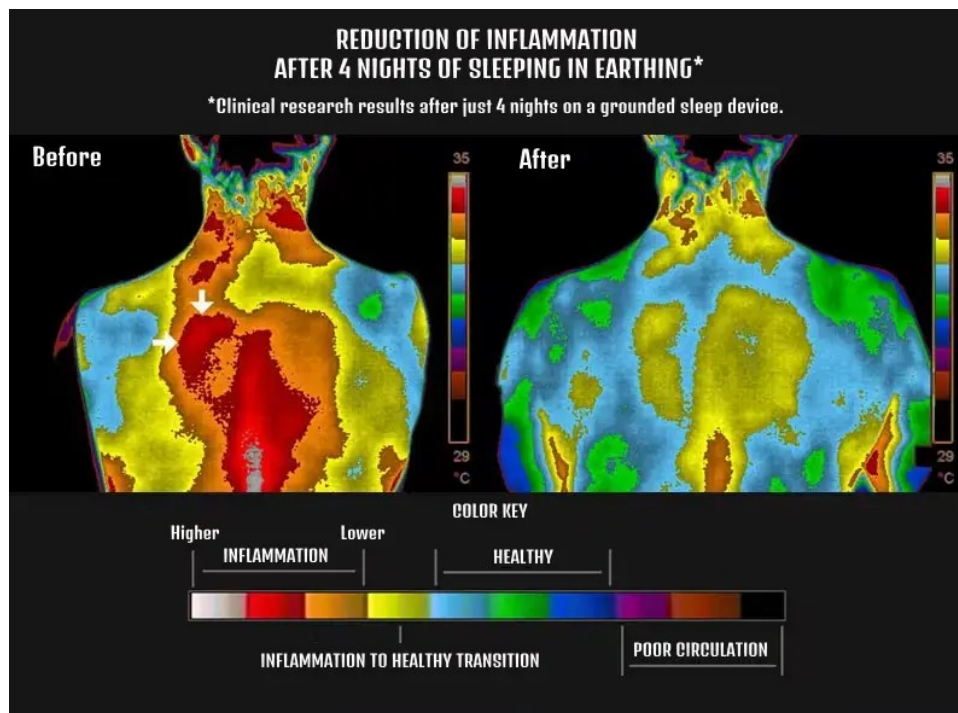
Gaétan Chevalier — author or co-author of most studies in this field — and some co-authors have disclosed in their own articles commercial ties to companies in the earthing industry, such as shareholdings or contracting work. This is a common practice, openly disclosed in serious scientific journals, but it's a factor that reduces the independent evidentiary weight of these studies, and one any critical reader should bear in mind.

Narrative reviews, not systematic ones

The review articles cited in this book (Chevalier et al., 2012; Oschman et al., 2015; Menigoz et al., 2020) are narrative reviews written by authors involved in the field, not independent systematic reviews or meta-analyses with a pre-registered protocol, of the kind followed, for example, by the Cochrane Collaboration. As of today, there is no Cochrane review on earthing or grounding.

An illustrative case: clinical thermography

One of the most striking images circulating about earthing is this one: a thermographic scan showing reduced inflammation across someone's back after four nights of sleeping grounded. It's a real image, published in Oschman, Chevalier and Brown (2015) — the same review article cited throughout this book — and comes from a series of 20 clinical cases documented by Dr. William Amalu between 2004 and 2005.



Thermography published in Oschman, Chevalier & Brown (2015), Figure 3, from the clinical cases of Dr. William Amalu (2004-2005).

This is exactly the kind of image worth looking at with the same standard we've applied to everything else: it's a single case — one person, with no control or placebo group — within a series of clinical cases, not a statistical trial. It's a powerful visual illustration of what the mechanism proposed in Chapter 2 predicts, and that's why we've included it; but a clinical case, however striking, doesn't substitute for a controlled trial with many participants. Honesty demands showing it with that caveat, not as if it were the definitive proof this book has spent eight chapters explaining still doesn't exist.

What is solid

- The premise that contact with nature and time outdoors benefit physical and mental wellbeing is well established by research independent of earthing, in environmental psychology and public health.
- The proposed bioelectric mechanism (electron transfer) is plausible from a physics standpoint, though its clinical relevance in humans isn't robustly confirmed.
- The available pilot studies show, consistently with one another, a direction of effect — subjective sleep improvement, reduced stress markers — that justifies continued research with larger studies.

Why the real potential could be greater than what we can demonstrate today

Here's an important nuance, and it's the one that closes this chapter. The mechanism proposed by Oschman, Chevalier and colleagues isn't specific to a single ailment: it's a foundational mechanism — neutralizing oxidative stress and resolving low-grade inflammation — that medicine links to a very wide range of processes, from cellular ageing to post-exercise recovery, immune function, or cardiovascular health. To date, earthing research has only tested a small sample of all the processes where that mechanism, if true, could have something to say.

Put another way: a specific benefit not yet being studied doesn't mean it doesn't exist. It simply means nobody has investigated it yet — and in a field with less than twenty years of scientific history and modest funding, that's the norm, not the exception. Science moves more slowly than human curiosity; almost every wellness practice that's mainstream today began exactly this way, with a handful of promising pilot studies years before the large-scale trials caught up.

Our position as a brand

At Earthing España, we believe that honesty about the state of the science is what sets a serious wellness proposition apart from an exaggerated promise. That's why we'd rather you decide to try earthing knowing exactly what evidence supports it and what questions remain open, not on the promise of a guaranteed result.

And that's also why we want you to leave this chapter with one clear idea: what we already know — with all its limitations — is promising. And given how broad the proposed mechanism is, it's reasonable to think that what hasn't been studied yet could, over time, give us even more reasons to reconnect with the Earth than the ones we can already cite by name.

CHAPTER 9

Conclusion



Sunrise over an open field, a clear horizon, a hopeful tone.

The available pilot evidence suggests — without proving, to the standard of certainty of an approved drug — a possible subjective improvement in sleep, a possible reduction in stress and inflammation markers, and a possible improvement in mood following contact with the Earth.

This is a low-risk practice — except for people with electronic medical devices — and low-cost if practised naturally. Trying it, with realistic expectations and, if you have any medical condition, with your doctor's approval, is a reasonable decision for anyone looking for simple wellness routines backed, at least in part, by preliminary evidence.

Earthing will remain a subject of ongoing research in the years ahead. This book will be updated as higher-quality studies are published.

“Reconnecting with the Earth is, above all, a simple gesture. That you decide to try it with honest information is the only thing that truly matters to us.”

Where to start

If you've made it this far, you already know more about earthing — its foundations, its evidence and its limits — than the vast majority of people who recommend it without having checked. All that's left is the easiest part: trying it.

If sleep is your priority, start with the [Adjustable Earthing Sheet Kit](#) or the [Earthing Bed Mat Kit](#). If you spend the day seated and want something for work, the [Universal Earthing Mat](#) is your best starting point. And if you'd rather see it all at once, you can visit [the full Earthing España store](#).

And if you'd rather not buy anything right now: go outside barefoot, in the garden, the park or the beach, this very week. It's free, and it's by far the best way to see for yourself what we've been talking about.

A final note and safety warnings

Before closing this book, a few necessary words. Everything above is for informational purposes only and does not replace the advice, diagnosis or treatment of a qualified healthcare professional.

If you have an implanted electronic medical device — a pacemaker, defibrillator or other — are pregnant, or live with a specific medical condition, consult your doctor before starting any earthing practice, especially if you'll be using conductive devices at home.

As you saw in Chapter 8, the scientific evidence on earthing is still a developing field, with mostly pilot studies. We've explained, as honestly as we can, what we know solidly and what still needs more research, because we believe an informed decision is worth more than an easy promise.

Thank you for staying with us this far.

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*What if the greatest wellness discovery of the last twenty years
turned out to be the oldest one of all?*

This book brings together, verified study by study, all the scientific evidence available on earthing: what we know about sleep, inflammation, pain and stress, what mechanism might explain it, and — with the same honesty — what remains an unconfirmed hypothesis. No empty promises. No shortcuts. Just the science, as it stands, and the simplest invitation of all: touch the ground again.

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