

Using an Earthing Mat Helps You Get a Good Night's Sleep

Analysis by [Dr. Joseph Mercola](#)

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STORY AT-A-GLANCE

- › Earthing mats boost sleep quality by cutting down wake time and ramping up REM and NREM sleep, as shown in an animal study
- › Exposure to these mats amps up your antioxidant activity and dials down the expression of orexin, a wake-promoting neuropeptide in the brain
- › Grounding, the practice of connecting with the Earth's surface, promotes body stability by reducing inflammation, pain and stress
- › The health advantages of earthing include better blood flow and faster recovery from muscle damage
- › Nondrug treatments like earthing offer safe options for improving sleep and lowering anxiety, without the side effects of medications

Are you looking for a simple way to improve your sleep quality? Investing in an earthing mat might be the answer you've been searching for.

Grounding, the practice of making direct contact with the earth's surface, has been gaining interest for its various health benefits, and recent research highlights its ability to enhance sleep quality.¹ Exploring its practical applications, such as using an earthing mat or going barefoot outdoors, offers a natural way to improve your sleep patterns.

But the benefits of grounding go beyond just sleep improvement. Research suggests this strategy also influences other physiological processes that impact your overall well-

being.

Using an Earthing Mat Boosts Sleep Quality

An animal study published in the International Journal of Molecular Sciences² revealed that earthing mats significantly reduce wake time and increase both REM (Rapid Eye Movement) and NREM (Non-Rapid Eye Movement) sleep in animal subjects.

Conducted by Korean researchers, the study demonstrated that when exposed to earthing mats, animal subjects showed considerable improvements in their sleep patterns, demonstrating a notable extension of total sleep duration as exposure time increased.

To test their theory, the researchers divided their test subjects into four groups – a control group (Nor), a group that used an earthing mat for seven days (A-7D), a group that used an earthing mat for 21 days (A-21D) and a group that used an electronic blanket for 21 days (EM).³

Based on electroencephalography (EEG) results, they found that the A-21D group had significantly reduced wake time and increased rapid eye movement (REM), non-rapid eye movement (NREM), and total sleep time compared to the Nor group. The A-21D group also demonstrated a significant increase in NREM, REM and total sleep time, and a decrease in wake time compared to the EM group.

These findings make earthing mats a compelling non-pharmacological alternative to traditional sleep aids, which often come with undesirable side effects. As noted by the study authors:

“Traditionally, pharmacological treatments such as benzodiazepines and barbiturates have been employed to manage sleep disorders or insomnia. However, these medications are associated with potential adverse effects, including dependency, cognitive impairment, and residual daytime sedation.

We anticipated that this study would elucidate the effects of the earthing mat on sleep and provide insights into its influence on sleep-related mechanisms, thereby laying the groundwork for future research on the interactions between earthing and sleep regulation.”

So how exactly do earthing mats impact your sleep? The study focused on two key areas that led to better sleep – orexin and superoxide dismutase (SOD) levels in your brain.

Grounding Regulates Levels of This Wakefulness-Promoting Neuropeptide

Orexin is a crucial neuropeptide that regulates wakefulness. According to the featured study:

“The orexin system is recognized as a significant target in the regulation of endogenous adenosine-mediated sleep homeostasis. Orexins, neuropeptides expressed exclusively by neurons in the LH, are implicated in a variety of functions, including feeding, addiction, and the regulation of sleep/wake cycles.”

To put it simply, when your orexin levels are high, you feel more alert and find it harder to sleep. Think of orexin as your brain’s alarm clock – an earthing mat essentially turns the volume down, making it easier for your body to switch into sleep mode. You also spend more time in both REM (Rapid Eye Movement) and NREM (Non-Rapid Eye Movement) sleep.

Furthermore, the researchers found that prolonged exposure to earthing mats led to more significant decreases of orexin in the lateral hypothalamus (LH), which resulted in extended periods of uninterrupted sleep.⁴

“We examined orexin expression in the LH and found that the number of orexin-positive cells was lower in the A-7D group and A-21D group than in the Nor

group. The A-21D group exhibited a significantly decreased number of orexin-positive cells compared to the EM group.”⁵

By lowering orexin levels, earthing mats help achieve longer and more stable sleep. It’s a natural and non-pharmacological way to improve sleep quality, unlike using medications that have adverse side effects.

Using an Earthing Mat Boosts Levels of Antioxidants in Your Brain

When you sleep, your brain goes through a recovery and regeneration process that helps inhibit oxidative stress. But if you’re sleep-deprived, your levels of superoxide dismutase (SOD), an antioxidant enzyme that reduces oxidative stress in the brain, decreases.

With the help of an earthing mat, your SOD levels increase, which then reduces oxidative stress and promotes relaxation and mental calmness. As explained by the authors:

“Previous studies have shown that antioxidant enzyme activity, including SOD, increases in animal models subjected to sleep deprivation. Consistent with these findings, the present study demonstrates that exposure to A-7D and A-21D significantly increased SOD levels in the LH.

This result suggests that these treatments may reduce oxidative stress and improve the brain’s oxidative defense system. The observed increase in SOD levels supports the hypothesis that interventions designed to maintain or restore antioxidant enzyme activity can mitigate oxidative damage associated with sleep deprivation and enhance overall brain health.”⁶

Grounding While Sleeping Eases Chronic Pain and Speeds Up Muscle Recovery

The connection between grounding and improved sleep offers an intriguing avenue for enhancing overall well-being without the side effects associated with conventional sleep

aids. However, the benefits of grounding go beyond sleep improvement. Connecting to the Earth also reduces inflammation, pain and stress.

For instance, grounding has been reported to alleviate delayed onset muscle soreness (DOMS) and promote faster recovery from muscle damage, highlighting its ability to boost physical recovery in athletes and active individuals.⁷

The study,⁸ conducted by researchers from the University of Salzburg, found that participants who were grounded using an electrically conducted device while they were sleeping exhibited faster recovery from muscle damage and/or less pronounced markers, as compared to those who did not.

The grounded individuals showed less muscle soreness, lower levels of creatine kinase in the blood and quicker overall recovery. These positive outcomes were attributed to reduced muscle damage-associated inflammation markers, which grounding appears to mitigate effectively.

“GRD [grounded sleeping] might be seen as a simple methodology to enhance acute and long-term recovery after intensive eccentric exercise,” the researchers concluded.⁹

Other Notable Benefits of Grounding

Grounding through earthing mats or direct contact with the Earth has shown promising results in various areas of health, such as:

- **Keeping your heart healthy** – An intriguing study investigated grounding’s impact on blood viscosity post-exercise. According to the researchers, individuals who were grounded showed a noticeable reduction in both diastolic and systolic blood viscosity compared to those who were not.¹⁰ This finding is significant because lower blood viscosity is associated with improved circulation and cardiovascular health.

- **Improving sleep in Alzheimer's patients** – A 2022 randomized, double-blind study involving individuals with mild Alzheimer's disease also demonstrated its remarkable benefits on sleep quality.¹¹

The participants, who were either grounded or sham-grounded for 30 minutes daily for over 12 weeks, reported significantly better sleep, as measured by the Pittsburgh Sleep Quality Index.¹² This suggests that grounding helps enhance sleep for those suffering from cognitive impairments.

- **Easing chronic pain** – Another study published in the journal EXPLORE¹³ tells the story of an 85-year-old man suffering from chronic pain whose quality of life improved after grounding while sleeping. He had persistent low back pain and shoulder pain that interfered with his sleep, experiencing stiffness and soreness upon waking.

After just two nights of grounded sleep, he reported having “50% less pain, 80% reduction in pain interfering with sleep, and 75% reduction in waking stiff and sore.” He continued doing this, and after four weeks, reported that the pain was “totally gone with only occasional mild stiffness.”¹⁴ This case exemplifies how grounding brings rapid and tangible relief for chronic pain sufferers.

How to Maximize the Benefits of Grounding

There are significant concerns about grounding practices in North America, particularly regarding high voltage transients from utility stations that can contaminate ground electrons. Dr. Sam Milham, author of "Dirty Electricity," is among the experts who have raised these concerns.

Due to this issue, which appears to be unique to North America, I personally avoid grounding practices on the continent – with one exception, I still enjoy grounding while walking in the ocean, as it provides the purest form of electrical grounding available.

Having said that, if you choose you can incorporate earthing mats into your daily routine is a practical solution to improve sleep quality. To get maximum benefits, follow these

tips:

- **Ground your mattress while sleeping** — Place the mat on your mattress and ensure direct skin contact. This continuous grounding throughout the night helps to reduce wakefulness and promote longer REM and NREM sleep phases.
- **If you're working at a desk, keep your bare feet on an earthing mat while working** — Grounding mats work well provided you have a grounded electrical outlet and are particularly beneficial if you live in a high-rise. When using an earthing mat, make sure your bare skin is in contact with it. There should not be a layer of clothing between you and the mat.
- **Use a grounded yoga mat when exercising indoors.**

In addition to using earthing mats during bedtime, I recommend spending time outdoors whenever possible. Exercising barefoot outdoors is a great way to incorporate earthing into your daily life and will also help speed up tissue repair and ease muscle pain associated with strenuous exercise.

The ideal location for walking barefoot is the beach, close to or in the water, as saltwater is a great conductor. (Your body is also somewhat conductive because it contains a large number of charged ions, called electrolytes, dissolved in water. Your blood and other body fluids are therefore good conductors.)

A close second would be a grassy area, especially if it's covered with dew, and /or bare soil. Ceramic tiles and concrete are good conductors as long as they've not been sealed; painted concrete does not allow electrons to pass through very well. Materials like asphalt, wood and typical insulators like rubber or plastic will not allow electrons to pass through and are not suitable for barefoot grounding.

While any amount of grounding is better than none, research has demonstrated it takes about 80 minutes for the free electrons from the Earth to reach your blood stream and transform your blood, which is when you reap the greatest benefits. So, ideally, aim for 80 to 120 minutes of grounding each day.

If you're still experiencing sleep difficulties even after incorporating grounding into your routine, you must look at other areas of your lifestyle, such as adjusting your pre-bedtime habits, modifying your sleep area or eliminating sources of light and EMFs in your bedroom. I recommend reading my [33 tips for a good night's sleep](#) to help guide you in improving your sleep sanctuary.

Sources and References

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