

Why Sleep Deprivation Is a Recipe for Ill Health

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✓ Fact Checked

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STORY AT-A-GLANCE

- › Getting quality sleep, and enough of it, is the single most effective thing you can do to reset your brain and body and invigorate your health on a daily basis
- › Lack of sleep has been shown to raise your risk for chronic illnesses such as dementia, cancer, diabetes, heart disease and obesity. The World Health Organization has declared shift work a “probable human carcinogen” because it causes circadian disruption
- › Research has shown that a single night of sleeping just four hours lowers the amount of natural killer cells – powerful immune fighters that target malignant cells – by 70%
- › During REM sleep, the visual, motor/kinesthetic, emotional and memory centers ramp up their activity. Meanwhile, your prefrontal cortex – the “CEO of the brain” that rules rationality and logical thinking – shuts down
- › Extreme sleep deprivation can cause delusions, hallucinations and irrational or psychotic behavior, caused by the fact that your brain goes to sleep and you begin to experience your dreams while awake

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In the featured video, Joe Rogan interviews professor Matthew Walker, Ph.D., founder and director of the University of California Berkeley's Center for Human Sleep Science and author of the book "Why We Sleep: The New Science of Sleep and Dreams,"¹ in which he shares the latest discoveries about sleep and how it impacts virtually every area of your physical and mental health.

I read Walker's book last fall, and share his view that sleep is profoundly important — even more important than diet and exercise. After all, you're not likely to reap maximum rewards from other healthy lifestyle habits if you're constantly exhausted. Beyond that, lack of sleep has been shown to raise your risk for chronic illnesses such as dementia, cancer, diabetes, heart disease and obesity.

In fact, the World Health Organization has tagged shift work as a "probable human carcinogen" because it causes circadian disruption.² Lack of sleep is also associated with shorter lifespans. Like Walker, I believe getting quality sleep, and enough of it, is the single most effective thing you can do to reset your brain and body and invigorate your health on a daily basis.

Sleep Deprivation Is a Form of Self Abuse

There are many reasons why you may sleep poorly, and one may simply be related to your mindset. Many, especially in the U.S., still view lack of sleep as a badge of honor — a sign of drive, ambition and achievement at the expense of sleep. Worse, good sleep is often characterized as a sign of sloth.

As noted by Walker in one of his lectures,³ "We want to seem busy, and one way we express that is by proclaiming how little sleep we're getting. It's time for us to reclaim our right to a full night of sleep, without embarrassment or the stigma of laziness. In doing so, we may remember what it feels like to truly be awake during the day."

According to Walker, "Humans are the only species that deliberately deprive themselves of sleep for no apparent reason," and based on his studies, he is convinced no one can make it on five hours or less of sleep without suffering some level of short-term impairment or long-term illness.

There's an exceptionally rare genetic mutation known as advanced phase sleep syndrome that allows some to thrive with minimal sleep, but you're far more likely to be struck by lightning than have this rare genetic mutation.

Rogan and Walker also discuss more acute symptoms of sleep deprivation. This includes wild hallucinations, sometimes reported by ultra-marathoners and others who for various reasons have attempted to go without sleep for extended periods of time. As an example, Walker recounts the story of Peter Tripp, a disc jockey who, in 1959, tried to break the world record for sleeplessness. He stayed awake for eight days straight, doing a continuous broadcast from Times Square.

"By Day Three, he was having florid delusions and hallucinations," Walker says. "He was seeing spiders in his shoes; he became desperately paranoid, thinking people were trying to poison him ..." He also became belligerent and abusive toward everyone around him. "He was clearly psychotic," one of the attending psychiatrists said. His experiment is detailed in the short video below.

How and Why Sleep Deprivation Can Trigger Psychosis

In a very real sense, when you forgo sleep for extended periods of time, you begin to dream while awake – hence the delusions and hallucinations. Rapid eye movement (REM) sleep is a 90-minute deep sleep cycle during which you dream.

Tripp's experiment revealed that even though he was awake – walking around and talking – his brainwaves showed he was asleep, and it was during the REM cycles that he was most likely to hallucinate. Essentially, he was experiencing his nightmares in an awake state.

Tripp finally went to bed after remaining awake for 201 consecutive hours, and slept for 24 hours. Upon waking, there were no signs of delusions and Tripp reported feeling quite normal. His wife, however, disagreed, saying he'd changed. The couple eventually got divorced.

The attending psychiatrists also agree that after his experiment, his personality had changed, and that the change appeared to be permanent. He was no longer as cheerful and easygoing as he'd been before. Arguments with his boss led to the loss of his job as

well. Those who knew him best insist those eight days of sleep deprivation damaged his psyche long-term.

Parts of Your Brain Become More Active During Sleep

As explained by Walker, your brain doesn't shut down during sleep. Quite the contrary. While some parts are subdued, other parts become far more active than during wakefulness. During REM sleep, the visual, motor/kinesthetic, emotional and memory centers all ramp up their activity. Meanwhile, activity in your prefrontal cortex – the "CEO of the brain" that rules rationality and logical thinking – decreases.

This is why dreams can be so visually and kinesthetically powerful, sucking you into a vortex of emotion while simultaneously being completely irrational and illogical. And, when you are sleep deprived, this "dreaming while awake" state can start to seep through, as it did in Tripp's experiment. Indeed, studies have shown skimping on sleep is a surefire way to lose emotional control, become more emotionally volatile – and more irrational.

If you frequently feel emotionally off-kilter or struggle with a short fuse, chances are you might manage your emotions a whole lot better were you to get more sleep on a nightly basis. Walker also cites research showing there's a dramatic difference in injury rates between those who sleep enough and those who don't. Athletes who get just five hours of sleep have a 60% higher injury rate than those who get nine hours.

Five Common Enemies of Sleep

Walker defines sleep deprivation as sleeping less than six hours a night,⁴ and statistics show half of all American adults fail to get the recommended eight hours of sleep each night. An estimated 1 in 3 is getting six hours of sleep or less per night. According to a Gallup Poll,⁵ Americans slept an average of 7.9 hours a night in 1942. Today, the average is six hours and 31 minutes, Walker says, adding, "That means there's a huge swath of people well below that average."

Walker also notes that "One of the big problems with lack of sleep is that you don't know you're sleep deprived when you're sleep deprived! Your subjective sense of how well you're doing with a lack of sleep is a miserable predictor for how you're doing objectively." So, with sleep deprivation being so rampant, what's the cause? Walker pins the blame for our consistently declining slumber patterns on the following "enemies of sleep:"

- **Alcohol and caffeine** – These and other substances, such as sleeping pills, interfere with sleep quality and sleep time
- **Artificial lighting** – We have effectively electrified the night, and light at night damages your health by degrading your sleep
- **Loneliness, anxiety and depression** – The longing for connection and the effects of mental illness can often interfere with or cause people to forego sleep
- **Long work hours** – The international business environment, increased global competition and longer commuter times are just a few of the factors contributing to the increase in work hours and stress-related burnout
- **Overcommitment** – Schedules are filled from morning to night, and many people are unwilling to trade entertainment or socializing with family and friends for sleep

When asked by The Guardian if he takes his own advice about sleep, Walker replied:⁶

"I give myself a nonnegotiable eight-hour sleep opportunity every night, and I keep very regular hours. If there is one thing I tell people, it's to go to bed and to wake up at the same time every day, no matter what. I take my sleep incredibly seriously because I have seen the evidence.

Once you know that after just one night of only four or five hours of sleep, your natural killer cells – the ones that attack the cancer cells that appear in your body every day – drop by 70 percent, or that a lack of sleep is linked to cancer of the bowel, prostate and breast ... how could you do anything else?"

Simple Sleep Hacks to Improve Your Sleep

As noted by Walker, there are a number of ways to "hack" your biology to improve your sleep. Following are some of his favorites. For many more, see "[Sleep – Why You Need It and 50 Ways to improve It.](#)"

- **Keep a regular sleep schedule seven days a week** – Go to bed and wake up at the same times each day, even on the weekends. This will help your body to get into a sleep rhythm and make it easier to fall asleep and get up in the morning. To this, I would add getting bright sunlight exposure in the morning and for at least a half-hour to an hour right around noon, to help reset your circadian clock.
- **Avoid bright lights and minimize use of electronics in the evening** – Both bright lights and electronic screens are major sleep thieves, robbing you of the ability to fall asleep quickly. Research has shown that the more time you spend on electronic devices during the day, and especially at night, the longer it takes to fall asleep and the less sleep you get overall.^{7,8}

Walker suggests dimming the lights in your room and reading a book rather than watching TV or using electronics before bed. If you must use electronics in the evening, I recommend installing blue-blocking software such as [Iris](#), or use blue blocking glasses.

- **Make sure your bedroom is cool enough** – Studies show the optimal room temperature for sleep is between 60 to 68 degrees F. Keeping your room cooler or hotter can lead to restless sleep. When you sleep, your body's internal temperature drops to its lowest level, generally about four hours after you fall asleep. A cooler bedroom mimics this natural temperature drop. Sleeping naked can also help.
- **Keep your feet warm** – While your body needs to be cool, your extremities need to stay warm for optimal sleep. At least one study has shown that wearing socks to bed reduces night waking.
- **Take a hot bath or sauna before bed** – When your body temperature is raised in the late evening, it will fall at bedtime, facilitating sleep. The core body temperature drop that occurs when you exit the bath signals your body it's time for bed.

Beware of Electric and Electromagnetic Fields

Based on the research I've done, I believe eliminating electric and electromagnetic fields (EMFs) in your bedroom is a really important factor that can improve both your quantity and quality of sleep. EMFs have the ability to disrupt your pineal gland's production of melatonin and serotonin, and are a significant contributor to mitochondrial damage and dysfunction, which is at the heart of virtually all chronic disease.

EMF exposure has also been linked to neuronal changes that affect memory and your ability to learn.⁹ EMFs harm your body's mitochondria by producing excessive oxidative damage, so "marinating" in EMFs all night, every night, can cause or contribute to virtually any chronic ailment, including premature aging. Ideally, shut down the electricity to your bedroom by pulling your circuit breaker before bed. Also be sure to shut down your Wi-Fi.

Keep in mind that even if you completely shut off the electricity in your bedroom, your room may still be electrified. This is what happened to me, and when I used sophisticated body voltage measurements I was able to detect this. This is a result of electrical fields (not electricity) transferred into your home by the electric utility and spreading in your home.

This can be remediated using certain kinds of shielding paint that is then grounded to form a Faraday cage, which stops the fields from entering your bedroom.

Should You Use Melatonin?

Rogan asks Walker about the use of melatonin. Is it advisable to use melatonin if you're having a hard time falling asleep? Walker recommends the use of melatonin to resynchronize your circadian clock when traveling between time zones. "You can use melatonin strategically for jet lag," he says. "Once, however, you are stable within the new time zone, melatonin does not seem to be efficacious for healthier sleep ... But if it works for you — no harm, no foul. Keep taking it."

Ideally, it is best to increase your melatonin level naturally, which is achieved by exposing yourself to bright sunlight in the daytime (along with full spectrum fluorescent bulbs in the winter) and complete darkness at night. If that fails or isn't possible, I'd suggest trying a 5-HTP, which I believe is a superior approach to using melatonin, especially if you're older.

5-HTP is a hydroxylated form of tryptophan that easily passes your blood brain barrier. Your body converts 5-HTP first into serotonin (which may give your mood a boost), and then into melatonin. In one study, an amino acid preparation containing both GABA (a calming neurotransmitter) and 5-HTP reduced time to fall asleep, increased the duration of sleep and improved sleep quality.¹⁰

You can also take some magnesium malate or glycinate before bed to increase body relaxation. Cannabidiol (CBD) oil is yet another option. CBD oil not only helps reduce pain and muscle spasms, which may keep you awake, but also promotes general relaxation and has been shown to improve sleep.

To Optimize Your Health, Make Sure You Get Enough Sleep

Regardless of the reason for your sleeplessness, research linking chronic poor sleep and lack of sleep to disease and illness cannot be ignored.

Research (cited by Walker) has shown that a single night of sleeping just four hours lowered the amount of natural killer cells – powerful immune fighters that target malignant cells – by 70%. In other words, a single night of sleep deprivation throws you into what Walker calls "a remarkable state of immune deficiency" that raises the risk that cancer cells will multiply in your body.

Additionally, each spring, when we lose an hour of sleep due to the switchover to daylight saving time, there's a 24% increase in heart attacks – and that's from the loss of a single hour. In the fall, when we gain an hour of sleep, there's a 21% decrease in heart attacks.

"That's how fragile and vulnerable your body is to even just the smallest [change in] sleep," Walker says. Sleeping just six hours a night for seven days straight has even been shown to distort gene activity. Genes related to immune function were switched off, while genes related to tumors, chronic inflammation and stress were overexpressed.

The scientific facts underscore my belief that there is no substitute for, nor any excuse for not getting, a full night's rest. If you think you "don't have the time" to sleep for seven or eight hours because you have too much work on your plate, think again.

As noted by Walker, "Why do we overvalue workers that undervalue sleep?" The fact is, sleeping less does not equate to greater productivity. In fact, the complete opposite is true. When you're working on an inadequate amount of sleep, attention, logic, efficiency and productivity go down the drain and emotional reactivity goes up.

Given its importance, I encourage you to take a few moments today to evaluate your sleep habits. Are you getting enough sleep? If not, what's one change you can make to improve the length and/or quality of your sleep? If you need help getting started, check out my "16 Chronological Tips to Improve Your Sleep," or read through "Sleep – Why You Need It and 50 Ways to improve It," hyperlinked earlier.

Sources and References

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