

Many Insomniacs Remain Conscious During Sleep

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✓ Fact Checked

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STORY AT-A-GLANCE

- › Up to 70 million Americans have a sleep disorder, the most common of which is insomnia; 10% of American adults struggle with chronic insomnia and 30% report occasional or short-term insomnia
- › Research finds you can remain consciously aware even while your brain and body are sleeping
- › Insomniacs who report being awake even when their brain wave patterns indicate they're sleeping have increased activity in brain areas associated with conscious awareness during the dreamless phase of sleep
- › If you struggle with insomnia and frequently feel you've not slept a wink, processes involved in reducing your conscious awareness during sleep may be impaired. Practicing mindfulness meditation is thought to target these processes and may help improve your sleep experience
- › Sleeping pills are very limited in their effectiveness and have serious side effects. Safe and natural sleep aids include melatonin, 5-HTP, valerian, chamomile tea and CBD oil

Editor's Note: This article is a reprint. It was originally published April 19, 2018.

According to the American Sleep Association,¹ up to 70 million Americans have a sleep disorder, nearly 40% unintentionally fall asleep during the day at least once a

month and nearly 5% have nodded off while driving at least once. Insomnia is the most common sleep disorder, with 10% of American adults struggling with chronic insomnia and 30% reporting occasional or short-term insomnia.

Interestingly, insomniacs will often insist they've not slept a wink all night, even though they've actually been sleeping. Researchers have now discovered there's a reason for this discrepancy in experience, and it has to do with consciousness. In a nutshell, even though the brain is sleeping, insomniacs remain consciously aware, and therefore believe they've not slept at all.

Many Insomniacs Remain Conscious Even When Asleep

Daniel Kay, a psychology professor at Brigham Young University in Utah who led the study,² told Medical News Today,³ "... [Y]ou can be consciously aware and your brain [can] be in a sleep pattern. The question is: What role does conscious awareness have in our definition of sleep?" Traditionally, it's been believed that sleeping involves the absence of conscious awareness, but Kay's team was able to conclude that this is not categorically true.

To investigate the role of consciousness during sleep, the team analyzed the sleep patterns and subjective experience of 32 people with insomnia and 30 who reported sleeping well.

Once the participants were deemed to be asleep, based on their brain patterns, a radioactive tracer was injected into their arms. Using brain imaging, the researchers were able to examine neurons that remained active during sleep, and their exact locations. The following morning, the participants were asked about their subjective experience of their sleep. Medical News Today explains the results:

"The study found that people with insomnia who reported that they had been awake, even when the polysomnography showed otherwise, had increased activity in brain areas associated with conscious awareness during the

dreamless phase of sleep – that is, nonrapid eye movement sleep ...

[I]t is normal during the process of falling asleep for the brain to send inhibitory neurons that make people less and less consciously aware until they've reached a state of deep sleep. However, what the findings of the new study suggest is that people with insomnia may not feel as though they're asleep until their brain experiences a greater inhibitory activity in areas that are linked to conscious awareness."

Normal Sleepers May Not Get as Much Sleep as They Think

As noted by the authors,⁴ "Brain activity in the right anterior insula, left anterior cingulate cortex, and middle/posterior cingulate cortex may be involved in the perception" of insomnia. People who reported sleeping well turned out to have increased activity in the same areas of the brain as insomniacs. The reason for this is because your brain goes through "an inhibition process" when you fall asleep, gradually lowering your conscious awareness.

While insomniacs require a greater level of inhibition before their consciousness recedes, many good sleepers report falling asleep long before their brainwaves indicate that they're actually sleeping. This is basically the reverse situation of insomnia: Good sleepers lose conscious awareness at a very low level of inhibition, making them believe they fell asleep much faster than they actually did, based on their brain patterns.

Mindfulness Meditation Recommended for Insomniacs

So, if you struggle with insomnia, frequently feeling you haven't slept a wink, what can you do? Kay says, "In patients with insomnia, processes involved in reducing conscious awareness during sleep may be impaired. One of the strategies for targeting these processes may be mindfulness meditation. It may help the patients

inhibit cognitive processes that are preventing them from experiencing sleep."

Practicing "mindfulness" means you're actively paying attention to the moment you're in right now. Rather than letting your mind wander, when you're mindful, you're living in the moment and letting distracting thoughts pass through your mind without getting caught up in their emotional implications.

You can add mindfulness to virtually any aspect of your day – even while you're eating, working or doing household chores like washing dishes – simply by paying attention to the sensations you are experiencing in the present moment. Mindfulness meditation, on the other hand, is a more formal practice in which you consciously focus your attention on specific thoughts or sensations, and then observe them in a nonjudgmental manner.

This is just one type of meditation; there are many forms available. Transcendental meditation, for instance, is one of the most popular forms of meditation, practiced by millions of people around the world. It's simple to perform. Simply choose a mantra that has meaning for you, sit quietly with your eyes closed and repeat your mantra for a period of about 20 minutes, twice a day.

The idea is to reach a place of "restful" or "concentrated" alertness, which enables you to let negative thoughts and distractions pass by you without upsetting your calm and balance. Some aspects of mindfulness, mindfulness meditation and other forms of meditation overlap.

For instance, focusing your mind on your breath is one of the most basic, and most rewarding, relaxation and meditation/mindfulness strategies there is. To learn more about meditation and the different forms of practice available, see "[Meditation Connects Your Mind and Body](#)."

Common Factors That Keep You Awake

Aside from the possibility that you're simply misperceiving your inability to sleep, certain environmental factors can make it more difficult to fall asleep. This includes such things as:⁵

- **Your pillow being too hot** — A cool pillow, and more importantly the room temperature overall, will decrease your core body temperature, which induces drowsiness. In one study, insomniacs equipped with a cooling cap fell asleep within 13 minutes — three minutes faster than normal sleepers — and remained asleep 89% of the night. Reader's Digest⁶ suggests placing your pillow in the freezer for a few minutes before bed to cool it down.
- **Starting a new medication** — A number of different drugs can cause insomnia, including blood pressure medications, antidepressants and steroids. Oftentimes, this side effect can be ameliorated by changing the time at which you take the drug. Beta-blockers, prescribed for **high blood pressure** and/or arrhythmia, for example, are typically best taken in the morning instead of at night.
- **Pets** — As much as you love your fur babies, if they're hogging your bed or filling it with hair, consider keeping your pets out of your bed. According to one Mayo Clinic study,⁷ while some find their pets help them sleep better, approximately 20% of pet owners admitted the animal disrupted their sleep in one way or another.
- **Cold feet** — While cooling your head induces sleep, cold feet can keep you tossing and turning. The solution: Wear socks to bed.
- **Exhaustion** — While exhaustion is frequently confused with tiredness, the two are not the same. When exhausted from stress or overwork, your brain tends to be on high alert. This "cognitive popcorn" can make it difficult to fall asleep, no matter how exhausted your body is. Rather than falling into bed right away after a long day, try winding down, allowing your mind to settle before trying to fall asleep.

When Anxiety or an Overactive Mind Keeps You Awake

One of my favorite tools for resolving anxiety that contributes to insomnia is the [Emotional Freedom Techniques](#) (EFT), which combines tapping on certain points of your body with verbal statements that help pinpoint the underlying issues. In the video above, EFT therapist Julie Schiffman demonstrates how to tap for sleep.

EFT helps to release worries, fears and even physical symptoms that stand between you and a good night's sleep by reprogramming your body's reactions to many of the unavoidable stressors of everyday life, making it easier to take them in stride.

When stress triggers are reduced, you will naturally sleep better. In 2012, a triple blind study⁸ found that EFT reduced cortisol levels and symptoms of psychological distress by 24% – more than any other intervention tested. This is enormously significant, as there are few things that will destroy your health faster than stress.

Researchers at the American Academy of Sleep Medicine discovered that how you cope with stress might have an even greater impact on your sleep than the number of stressors you encounter.

They also found that mindfulness therapies worked best for suppressing the "mental chatter" that inhibits the onset of sleep. Lead author Vivek Pillai, Ph.D., wrote,⁹ "While a stressful event can lead to a bad night of sleep, it's what you do in response to stress that can be the difference between a few bad nights and chronic insomnia."

Avoid Sleeping Pills for Insomnia

To learn more about the ins and outs of sleep, and lots more tips and strategies to improve your quality and quantity of your rest, please see "[Sleep – Why You Need It and 50 Ways to Improve It](#)." Whatever you do, avoid sleeping pills. Not only do they have extremely limited benefits, the side effects can be quite severe. Take Belsomra, for example, a next-gen type sleeping pill that acts on a neurotransmitter called orexin "to turn down the brain's 'wake messages.'"

The company's own clinical trials showed the drug allowed people to fall asleep an average of six minutes sooner than those taking a placebo, and stay asleep 16 minutes longer.

More than 1,000 consumer complaints against Belsomra have been filed with the U.S. Food and Drug Administration, with complaints ranging from lack of effectiveness and next-day drowsiness to sleep paralysis, heart problems and suicidal ideation. One in 5 reports claim the drug made them the opposite of sleepy.¹⁰

Other research has found sleeping pills like Ambien, Lunesta and Sonata reduce the average time it takes to fall asleep by about 13 minutes compared to placebo, while increasing total sleep time by about 11 minutes.¹¹ Interestingly, participants believed they had slept longer, by up to one hour, when taking the pills. This is thought to be due to anterograde amnesia, which causes trouble with forming memories.

When people wake up after taking sleeping pills, they may, in fact, simply forget they'd been unable to sleep. Sonata is also associated with addiction.¹² Studies have also shown that use of sleeping pills increase your risk of death and cancer.¹³ To learn more about the hazards of sleeping pills, see Dr. Daniel Kripke's e-book, "The Dark Side of Sleeping Pills."¹⁴

Natural Sleep Remedies

Fortunately, there are far safer options. While you work on addressing the root causes of your sleep problems, temporarily using a natural sleep aid may help you get to sleep easier. Following are a handful of alternatives:

- **Melatonin** — In scientific studies, melatonin has been shown to increase sleepiness, help you fall asleep more quickly and stay asleep, decrease restlessness, and reverse daytime fatigue. Melatonin is a completely natural substance, made by your body, and has many health benefits in addition to sleep. Start with as little as 0.25 milligrams (mg) and work your way up in 0.25 mg

increments until you get the desired effect.

- **5-hydroxytryptophan (5-HTP)** – One of my favorite sleep aids is 5-HTP. 5-HTP is the hydroxylated form of tryptophan. It easily passes your blood brain barrier when it is converted to serotonin (thereby giving mood a boost) and then to melatonin (enhancing sleep).

I believe this is a superior approach to using 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.¹⁵

- **Valerian root** – Studies have found valerian root helps improve the speed at which you fall asleep, depth of sleep (achieving deep sleep 36% faster¹⁶) and overall quality of sleep. Start with a minimal dose and use the lowest dose needed to achieve the desired effect, as higher dosages can have an energizing effect in some people. Typical dosages used in studies range between 400 mg and 900 mg, taken anywhere from 30 minutes to two hours before bed.
- **Chamomile tea** – This herb is typically used in the form of infusions, teas, liquid extracts or essential oils made from the plant's fresh or dried flower heads. It has sedative effects that may help with sleep, which is why chamomile tea is often sipped before bed.
- **Cannabidiol (CBD) oil** – Another alternative is to take CBD oil. By bringing tissues back into balance, CBD oil helps reduce pain, nerve stimulation and muscle spasm. It also promotes relaxation and has been shown to improve sleep.

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Diet and sleep quality are the most important modifying factors of the microbiota-gut-brain axis. Gut microbiota affects the neuro-immuno-endocrine pathways. The communication pathways between the microbiota and the brain include the vagus nerve, intestinal hormonal signaling, the immune system, the metabolism of tryptophan, short chain fatty acids. Chronic stress generates tiredness and fatigue that is the cause of insomnia, opposing the production of melatonin. Melatonin represents helps to reestablish mental and physical rhythms, reestablishing the balance between brain modulators.

Melatonin is naturally produced from tryptophan, a precursor to 5-HTP, which is converted to serotonin. The cerebral pineal gland converts serotonin to melatonin when there are low light levels, being the basis of our circadian rhythms. For this we also need enough calcium, B6, folate, B12 and D. Prolonged stress levels have been correlated with HPA axis hyperactivity, decreased sleep duration, as well as reduced REM sleep and delta power, leading to poorer quality sleep, impaired memory, poorer mood regulation, which can in turn lead to more stress.

Stress also leads to significant changes in the composition of the cecal and fecal microbiota, with alterations in metabolites and immune signaling pathways that affect sleep quality, depression, neurogenesis, and microglial activation. Stress, including stress in the first years of life, is a key risk factor for leaky gut syndrome, with altered homeostasis of the gut-brain axis that is strongly related to anxiety, depression, and sleep disorders. www.sciencedirect.com/.../S2352289516300509 (2018) www.verywellmind.com/relationship-between-stress-and-sleep-3144945 (2020)

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Sleep deprivation induces damage to the mucosa of the small intestine, by inhibiting the secretion of melatonin. Supplementation with melatonin can effectively improve injury to the mucosa of the small intestine caused by sleep deprivation. The improvement in MT was caused by inhibition of oxidative stress, inflammation and activation of the NF- κ B pathway.

www.sciencedirect.com/.../S1567576919320168 (2020) Sleep deprivation and stress has - a reciprocal relationship Disturbance of sleep homeostasis is often accompanied by increased activity of the hypothalamic-pituitary-adrenal (HPA) axis, which leads to an increase in circulating levels of stress hormones.

These hormones follow a circadian release pattern under unchanged conditions and participate in sleep regulation. royalsocietypublishing.org/.../rsfs.2019.0092 (2020) Suboptimal sleep increases the risk of developing type 2 diabetes. In addition, sleep disturbances are a common reality for children and adults living with type 1 or type 2 diabetes, altering and being affected by physiological and psychosocial / behavioral factors. . Regarding biological pathways (Fig.

1), there seems to be a reciprocal relationship for type 2 diabetes, in which sleep characteristics negatively impact neurological and endocrine systems, promote obesity and type 2 diabetes, in addition to exacerbate glycemic results, while diabetes itself often leads to difficulty sleeping. onlinelibrary.wiley.com/.../dme.14211 (2020) Lack of sleep has been identified as a risk factor for poor glycemic control in people with type 2 diabetes. Sleep characteristics are more strongly associated with glycated hemoglobin. europepmc.org/.../31719053 (2020)

Sleep disturbances are associated with cognitive decline. In conclusion, the frequency and severity of sleep disorders appear to follow the evolution of cognitive decline. The general results of the objective measures seem more consistent than those highlighted by the subjective measures. The frequency and severity of sleep disturbances seem to follow the course of cognitive decline. Sleep disturbances are common in AD and are involved in impaired memory consolidation and clearance of metabolites from synapses (ie, including β -amyloid), which are implicated in AD neurogenesis. Sleep can also play an important role in cognitive reserve and in the restoration of neurobehavioral functions and psychological aspects, for example.

One in four people with AD have severe sleep dysfunction, such as repetitive awakenings or other sleep disorders, i.e. , insomnia, hypersomnia or circadian rhythm disturbances. Some authors identified sleep disorders in the preclinical phases of AD as a predictor of the incidence of dementia. One third of people with mild cognitive impairment have sleep disorders. The most commonly reported sleep disorders are insomnia, sleep-related breathing disorders, restless legs syndrome, and REM sleep behavior disorders. www.mdpi.com/.../htm (2022)

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Research suggests that people experience a variety of different states within deep sleep. "The idea that dreamless sleep is an unconscious state is not well supported by the evidence," according to Evan Thompson, one of the authors. of the article and professor of philosophy at the University of British Columbia. conscious experiences during all sleep states, including deep sleep, According to the researchers, there are three categories of deep sleep that people experience: the first state people do not integrate into dream images. The second arise perceptions and bodily sensations, even from the external environment, such as sounds. The third phase is true dreamless deep sleep, but also conscious awareness on the part of the person, that is, people can become aware of being asleep when they are not dreaming.

This state may be similar to the experiences of Indians and Tibetans. Meditators are more likely to stay in this state with increased gamma band activity, which has been linked to a number of different brain functions, including attention and memory. Declarative, memory retrieval memory is consciously part of this deep sleep, and emotional processing and motor skill memory have been linked to REM sleep, although full memory processing involves interactions between different sleep phases. Does consciousness disappear in dreamless sleep?

www.sciencedirect.com/science/article/abs/pii/S1364661316301528 (2017).-----

link.springer.com/.../s13164-022-00663-9 (2022)

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I practice meditation regularly, it helps me to rest my brain and eyesight and to produce melatonin for eye and general health. Meditation practices regulate the hypothalamic pituitary adrenal (HPA) axis. Meditation practices are reported to increase levels of melatonin the precursors of melatonin, especially serotonin and norepinephrine. Meditation increases the concentration of melatonin by slowing down its hepatic metabolism or by increasing synthesis in the pineal gland. Considering the role of melatonin in sleep maintenance, it could be concluded that meditative practices improve melatonin levels and therefore sleep quality.

Meditation, in addition to promoting melatonin levels, acts on the stress hormones cortisol and catecholamines in response to stress. Additionally, meditation techniques are also known to increase dehydroepiandrosterone, anterior pituitary hormones such as growth hormone, thyroid-stimulating hormone (TSH), prolactin- Acute increases in plasma melatonin levels occur overnight after a period of meditation In conclusion meditation, with its global effects on the functions of the body and the brain, helps to establish a harmony between the body and the mind.

Thus, meditative practices as a global integrated phenomenon of self-regulation open up a broader field for understanding the unique aspects of human sleep and consciousness. The findings indicate elevated melatonin and serotonin levels in long-term meditators with possible beneficial effects in lowering stress and improving relaxation in people. www.frontiersin.org/.../full (2012).----
www.sciencedirect.com/science/article/abs/pii/S0301051100000351 (2020).---
www.sciencedirect.com/science/article/abs/pii/S1550830723000678 (2023).----

Ronald_H

My 23andMe Report: "Ronald, based on your genetics, you are not likely to be an especially deep sleeper. Several studies have linked a genetic variant in the ADA gene to differences in a certain type of brain activity that characterizes deep sleep, called delta waves. People with your genetic result have delta waves that are about as strong as average, and also tend to feel less sleepy than deep sleepers after a night of missed sleep." Further, I have evidence that it is one of my many of hereditary survival-of-the-fittest advantages. Without conscious knowledge, my brain is analyzing the environment, sounds and such for genuine threat.

Without me knowing it, I sleep soundly even if a friend is trying to wake me up. But from deep sleep, and with my eyes closed, I instantly awoke with knowledge that a shadow momentarily crossed my window and looked to see a man outside. Hours later I woke to his hands reaching into the window with hardly a sound and in the dark. I called police and they caught him in seconds because I awoke from deep sleep with instant full readiness to act which has happened before upon potential threats. He is now convicted in court on burglary with evidence that he is a highly-skilled and stealthy burglar that almost never gets caught. RonaldHLevine4548@yahoo.com

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Reduce sugar, caffeine, chocolate, glyphosate, MSG, stress. Reduce or eliminate LED lights after sundown and EMF exposure throughout the day and around your sleeping area. Get a hair test mineral analysis (HTMA) to determine levels of minerals and heavy metals.

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