

Using CBD For Sleep: Can CBD Help Treat Insomnia?

BRITTANY SMITH

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4 COMMENTS

As more people begin using CBD for sleep, we wanted to take a closer look at the science behind cannabidiol as a treatment for insomnia.

Sleep has baffled humans for millennia, and although scientists have tried to unravel its secrets, it is still a bit mysterious. For the [50-70 million Americans with insomnia](#), it is even more elusive. Standard treatments often lose effectiveness over time and carry risks of dangerous [side effects](#). Finding relief can be a gruelling task.

However, research has shown that [cannabidiol \(CBD\)](#) may be a promising alternative or addition to conventional medications. To understand how people use CBD for better sleep, some basic knowledge of insomnia and the science of sleeping is necessary.

WHAT IS INSOMNIA?

Insomnia is by far the [most common](#) of all sleep disorders. People with insomnia struggle falling and staying asleep and suffer from poor sleep quality. As many as [20 percent of adult Americans](#) meet the diagnostic criteria for either primary (independent of outside factors) or secondary (accompanying another illness) insomnia.



During insomnia, the brain goes into flight-or-flight mode, leaving would-be sleepers too alert to drift off.

When someone with insomnia attempts to fall asleep, their brain enters a state that is known as hyperarousal. During hyperarousal, the body goes into fight or flight mode and is on guard for anything that may be a threat. This increased state of alertness makes it difficult to fall asleep, remain asleep and get restful sleep.

WHAT CAUSES INSOMNIA?

Approximately 70-90 percent of [people with insomnia](#) have a mental or physical illness that is the primary cause. Over-the-counter, prescription and illegal drugs can also cause insomnia. Occasionally, it affects people independent of any outside factors.

Physical conditions that can lead to insomnia include asthma, [heart disease](#), chronic pain, seizures, renal dysfunction, and Alzheimer's. Most psychiatric conditions can lead to sleep disturbances, especially depression and anxiety. Secondary insomnia often

results in a vicious cycle where sleeplessness worsens the primary disease, which worsens insomnia.

HOW IS INSOMNIA TREATED?

Doctors manage insomnia using pharmacological and behavioral treatment methods. Non-medicinal treatment includes stimulus control, cognitive behavioral therapy or relaxation therapy. These include breathing techniques, progressive muscle relaxation, mindfulness, and meditation.

Benzodiazepines, non-benzodiazepine hypnotics (sedative medications used for the treatment of insomnia and during surgical procedures) and melatonin receptor agonists are standard pharmacological treatments. Over-the-counter sleeping pills and supplements, like synthetic melatonin, are another common medication taken to manage insomnia.

CONVENTIONAL TREATMENT RISKS

Hypnotic medications used to treat insomnia are known for their potential to cause grave [side effects](#). These include addiction, severe allergic reaction, memory lapses, hallucination, suicidal thoughts or actions, and abnormal sleep behaviors like sleepwalking. They may also lose effectiveness as tolerance is built or cause complications from drug interactions when another condition requires medication.

Among [patients treated with pharmaceutical and over-the-counter medications](#), 48 percent report being dissatisfied with the amount of time it takes to fall asleep (sleep onset latency or SOL) and wake up. A 2001 study of [30 insomnia patients](#) found medication coupled with relaxation therapies caused SOL to plummet from 124 to 29 minutes. The participants using only pharmaceuticals did not experience a change in sleep onset latency, suggesting hypnotics alone are not always successful.

THE SCIENCE OF SLEEP

To understand how cannabidiol can boost sleep it is necessary to understand the biological process responsible for inducing sleep. In humans, circadian rhythm governs a 24-hour sleep schedule that is regulated by the hormone [melatonin](#), a product of the pineal gland. This process begins with the retina; during the day a signal is sent from the eye through the brain, down the [spinal cord](#) and back up to the pineal gland, telling it to refrain from making melatonin.

At night, these signals do not activate, allowing the pineal gland to begin producing melatonin. The amino acid tryptophan is absorbed into the pineal gland via the bloodstream, then converted into 5-hydroxytryptophan by the enzyme tryptophan hydroxylase. It is then turned into serotonin by the enzyme aromatic amino acid decarboxylase before finally becoming melatonin.

CBD COULD INCREASE MELATONIN

Cannabidiol may help stimulate melatonin production by boosting levels of tryptophan in the bloodstream; this is accomplished by reducing [tryptophan degeneration](#) caused by mitogen, the protein that tells cells to divide. CBD improves serotonin production in the same way, as an increase in tryptophan availability aids in serotonin synthesis in the brain.



Using CBD for sleep may increase melatonin levels and help ease health conditions that cause insomnia.

[Inflammation](#) adversely affects tryptophan cells and CBD reduces inflammation. When tryptophan is readily available in the bloodstream, the pineal gland can produce melatonin more effectively, leading to better sleep. Small doses of CBD may also help improve daytime wakefulness, helping to reset the 24-hour sleep cycle and restore balance over the long-term.

A 2018 study tracked [409 patients with insomnia](#) during 1059 medical marijuana administrations using an educational app. Participants reported their self-perceived insomnia symptoms before and after using cannabis. On average, users reported a 4.5-point decrease after consumption, using a 0-10 visual analog scale. Researchers found that cannabis strains with higher cannabidiol levels more effectively relieved insomnia than ones with higher tetrahydrocannabinol levels.

TREATING CONDITIONS THAT CAUSE INSOMNIA WITH CBD

Cannabidiol alleviates many of the primary conditions associated with secondary insomnia through its antioxidant, analgesic and anti-inflammatory properties. It has proven useful in mitigating symptoms of anxiety, depression, [chronic pain](#), and autoimmune disease, among others. It also helps control the [endocannabinoid system](#), which regulates mood, pain, appetite, cognitive function, and other biological processes.

A 2015 case study showed cannabidiol was [effective in treating insomnia](#) induced by anxiety and post-traumatic stress disorder. The subject, a 10-year-old girl, had been abused and was being prescribed pharmaceutical treatments. However, these were only partially effective over the short-term and caused extreme side effects.

Over 5 months, the girl took 25 mg [CBD supplements](#) at bedtime and 6-12 mg sublingual doses as needed during the day to [control anxiety](#). After 5 months, the girl's score on the Sleep Disturbance Scale for Children had decreased from 59 to 38, indicating she no longer suffered from insomnia.

USING CBD FOR SLEEP

Research haven't determined the best dose of CBD for sleep onset latency. However, a 2014 study found a 15 mg dose of [CBD increased alertness](#), suggesting a higher dosage would work more efficiently for treating insomnia.

A 2018 study of medical marijuana users found cannabis strains with higher cannabidiol levels more effectively relieved insomnia than ones with higher tetrahydrocannabinol levels.

Unlike traditional sleeping pills, research demonstrates cannabidiol is relatively safe. CBD does not appear to be habit forming, even in very high doses. For example, a 2018 study found that an oral dose of 750 mg of [CBD did not show potential for abuse](#) among 43 people with a history of using two or more drugs for recreational purposes (polydrug use). Hypnotic medications alprazolam and dronabinol demonstrated a risk of dependency among the same participants.

WHEN TO SEE A DOCTOR FOR INSOMNIA

It is vital for anyone experiencing distress or impairment from insomnia to seek the advice of a healthcare professional. Poor sleep quality can negatively influence productivity, mental health, and cardiac function.

While some individuals find success using medicinal marijuana to treat insomnia, research suggests [tetrahydrocannabinol may impair sleep quality](#) long-term. Cannabidiol on its own is not shown to have the same risks. However, individuals taking pharmaceutical medications should consult with a physician prior to taking CBD.

IS CBD THE SLEEP AID OF THE FUTURE?

Studies from as far back as 1972 consistently demonstrate the [potential of cannabis to improve sleep](#). New research focused specifically on cannabidiol is exhibiting the same positive results, with little potential for adverse long-term effects. Using CBD for sleep is shaping up to be a promising alternative to some risky and inefficient hypnotic medications.