Does Cannabis Help Insomnia?

What does science tell us about cannabis' effectiveness in treating the most common sleep disorder, insomnia?

February 4, 2020 By Michael Breus, PhD

In the United States and around the world, cannabis is more popular than ever. Attitudes about cannabis are changing fast—and so are laws that govern its use for medical and recreational purposes. As has been the case for thousands of years, people use cannabis for a variety of reasons, many therapeutic, including to alleviate anxiety and relieve pain. One of this ancient medicinal plant's most popular uses through the ages? To help with sleep.

What does science tell us about cannabis' effectiveness in treating the most common sleep disorder, insomnia? That's what I'll be discussing today, with a look at the latest science on the effects of cannabis on insomnia.

What is insomnia, exactly?

First, let's tackle a quick refresher on what insomnia is, because it's a term that carries a lot of meaning and detail. At its essence, insomnia is a difficulty falling sleep and/or staying sleep, when you have the time and circumstances to get the sleep you need. Insomnia exists both as a set of symptoms and a clinical disorder. That's to say, people can experience symptoms of insomnia without necessarily having insomnia disorder. (That's no reason not to address the symptoms; even insomnia symptoms that don't meet the criteria for a clinical sleep disorder can be disruptive and undermining to sleep, health, well-being and performance.)

What distinguishes insomnia symptoms from insomnia disorder? To a great degree, the severity and frequency of symptoms, and—this is important—the impact of those symptoms on daily functioning. The more frequent, severe, and disruptive, the more likely insomnia symptoms constitute a sleep disorder.

The duration of symptoms can matter to—but keep in mind, insomnia disorder can flare up quickly and cause significant disruption before resolving, all within a short time span. Acute insomnia comes on suddenly and typically lasts for as little as a single night, up to a few weeks. Insomnia is considered chronic when it is present at least three nights a week for three months.

Scientific estimates suggest that somewhere between 35-50% of the adult population experience insomnia symptoms every year, with somewhere between 10-30% of the population suffering from insomnia disorder. Among that 10-30%, an estimated 40-70% have insomnia disorder that is

chronic.

What are the symptoms of insomnia?

- Trouble falling asleep
- Difficulty staying asleep, with frequent and/or prolonged awakenings at night
- Waking very early
- Waking feeling unrefreshed

People with insomnia disorder also typically experience some form of daytime impairment, including:

- Fatigue, daytime sleepiness
- Irritability and mood disturbances
- Problems with memory, concentration, attention
- Decrease in energy, motivation, initiative
- Lack of interest and/or capacity for social interactions
- Physical pain and discomfort, including muscle tension, headache, gastrointestinal distress
- Anxiety or worry about one's ability to sleep

A person need not have all the sleep symptoms and daytime impairment in order to have insomnia disorder. Even one symptom and one form of daytime impairment is enough. Often, however, symptoms occur together, and daytime impairment is spread across multiple issues.

How does cannabis help insomnia?

Studies show cannabis is already widely used by people in treating their insomnia and sleep issues. That's not new. With its long history as a medicinal herb, cannabis has been employed for centuries to help with trouble falling asleep and staying asleep, to make sleep more refreshing, and to extend sleep's duration.

In recent years, scientific studies have found that insomnia is a top reason for using cannabis, along with issues including pain, anxiety and depression, which often co-occur with insomnia. One study published in 2019 found that among cannabis users who said they were using cannabis to improve sleep, 84% said it was "very" or "extremely" helpful. And 83% of people who reported having used over-the-counter sleep medications in the past were able to either reduce or eliminate those drugs from their routines, when they began using cannabis for sleep. That's important because many of the OTC sleep aids have been linked to Alzheimer's disease.

So, what does the science tell us about how effective cannabis is at improving insomnia?

Research into the effect of cannabis on insomnia and its symptoms stretches back decades.

Studies from the 1970s, 80s, and 90s show cannabis can have a broad impact on sleep, including shortening the time it takes to fall asleep. Difficulty falling asleep is a hallmark symptom of insomnia.

Cannabis can be sedating

What's behind the ability of cannabis to make falling asleep easier and faster? Most often, that's been attributed to the sedative effects of the cannabinoid THC. (For a refresher on THC and other cannabinoids, read some of my previous articles here and here.) Indeed, most of the early studies of cannabis and sleep focused on THC-heavy strains of the plant.

Research on cannabis' influence over sleep problems has been hampered historically, by laws making cannabis illegal even medicinally, and by long-embedded negative attitudes about cannabis. Now that those laws and attitudes are changes—and cannabis is showing up in so many products related to health and wellness—scientific interest and inquiry are on the rise. That's important: we need plenty of rigorous research to show us precisely how cannabis affects different aspects of sleep, and how it may best be used therapeutically to help alleviate insomnia and other sleep issues.

Terpenes have sleep-boosting abilities

One promising element of more recent research is that scientists are looking more closely at the other active compounds of cannabis, and how they affect sleep. (The more we understand about how different cannabinoids and other components of this complex plant influence sleep, the better medical professionals and patients and consumers themselves will be able to identify the type of cannabis that's right for their individual needs.)

For example, several different terpenes found in cannabis have been shown to have sedative effects. Terpenes are tiny molecules found across the plant world. They give taste and aroma to plants and fruit. They also have therapeutic abilities, from pain and inflammation relief to anxiety reduction. Cannabis contains hundreds of different terpenes; several have been identified as having sedative properties and at reducing specific insomnia symptoms.

- Myrcene, Limonene, Terpineol, and Terpinolene all have been shown in research to function as sedatives
- Pinene and Phytol have been shown specifically to shorten the time it takes to fall asleep, and phytol has also been shown to increase overall sleep amounts

We're really just at the beginning of the investigation into how individual terpenes may address sleep problems, including insomnia. For a more in-depth look at terpenes—what they are, how they work, where to find them—you can read this recent article.

CBD is emerging as a sleep promoter

The cannabinoid CBD (cannabidiol) has shown up everywhere in recent years, and it's being used for things like stress and anxiety relief, pain management, enhanced concentration/focus, and

even sexual enhancement. We've still got a lot to learn about CBD's impact on insomnia, and on sleep more broadly. Some recent research indicates that this cannabinoid may have a role to play in improving insomnia symptoms. I've talked before about CBD and its potential therapeutic benefits for sleep, both directly and indirectly through addressing anxiety, physical pain, and other sleep-disrupting conditions.

In particular, one 2018 study caught my eye recently. It's perhaps the first study to analyze the effects of medical cannabis (in dried form) on insomnia, as measured under naturalistic, real-world conditions (i.e., not in a lab). Researchers found cannabis significantly improved insomnia symptoms overall. In particular, they found CBD was associated with more significant relief from symptoms of insomnia than THC. The study also discovered a pretty staggering range of cannabis strains being used to treat insomnia—more than 460 different strains among a group of slightly more than 400 individuals. That shows just how much choice is out there, and how much potential for specialization and targeting may be possible, in matching strains to sleep and specific sleep problems like insomnia.

To be clear, we need to see more laboratory-based, rigorously controlled studies. But this kind of real-world investigation also delivers valuable information and insight, and can point to future directions for scientific inquiry.

How cannabis may address comorbid insomnia

Another way to think about the influence of cannabis on insomnia is in terms of the type of insomnia. There isn't just one kind. We've talked about acute and chronic, and I've discussed how cannabis appears to be particularly effective in addressing onset insomnia—trouble falling initially to sleep.

Comorbid insomnia (until relatively recently this was often referred to as "secondary" insomnia), is insomnia that arises alongside another medical condition. Not all insomnia disorders are comorbid, but many are. Insomnia frequently arises with other health conditions, and as a side effect of medication and other treatments for health problems. There's a growing body of research indicating that cannabis can be useful in treating comorbid insomnia. For example:

Physical pain is a major source of insomnia. A robust body of research demonstrates that cannabis can alleviate physical pain. Pain management is another prime reason why people use cannabis in the first place. Recent research shows cannabis can improve pain and insomnia symptoms. This 2014 study found a group of people using cannabis therapeutically had an average of 64% reduction in their pain severity, and about half of them experienced signification relief to their insomnia.

Anxiety is another condition that causes significant problems for sleep, and a big driver of insomnia and its symptoms. (It's also another major reason why people use cannabis and cannabis-derived products such as CBD oil.) This 2019 study found people using cannabis for insomnia and comorbid conditions, including anxiety, depression and physical pain, reported significant improvements to all their co-occurring conditions. It's worth pointing out that three-

quarters of participants in this study had 2 or more conditions simultaneously. It's common for insomnia to exist in a cluster of other health conditions, both physical and psychological, and to have these factors all interact with one another in complex, escalating ways.

It's not only anxiety and depression with insomnia that cannabis may effectively treat. Studies are starting to show that cannabis may help alleviate insomnia symptoms that occur with PTSD, or post-traumatic stress disorder. Sleep disorders, including insomnia and REM sleep behavior disorder, as well as intense nightmares, are frequently present with PTSD. With its ability to help improve sleep onset (i.e., to make falling asleep easier), and to reduce nightmares and suppress some amounts of REM sleep (when most active, intense dreaming occurs), cannabis appears to be promising as a therapy for PTSD-related insomnia. This is an exciting and important area of research that deserves critical attention.

One of the best-known uses of therapeutic cannabis is for relief from cancer symptoms and the side effects of cancer treatment. Cannabis has a well-documented ability to relieve pain, reduce nausea, and alleviate anxiety. That makes this complex plant well suited to address symptoms faced by people living with cancer and undergoing treatment. Insomnia often occurs with cancer and as a result of therapies such as radiation and treatment. Research, including this 2019 review of studies, shows cannabis may improve insomnia that is comorbid with cancer.

These are just a few of the comorbid insomnia conditions that cannabis has shown promise in treating. In future discussions, we'll look at some of these conditions and their relationship to sleep and cannabis therapy in greater depth—and we'll also continue to go where the research takes us, as cannabis is investigated in relation to other comorbid insomnia conditions.

Coming soon in this series, a look at how the effects of cannabis on sleep compare to another common real-world sleep aid: alcohol.

Sweet Dreams,

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The Sleep Doctor

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