

# Medical cannabis compound alleviates nightmares associated with PTSD

Charité - Universitätsmedizin Berlin

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 Reviewed

Nightmares are among the most agonizing symptoms of post-traumatic stress disorder (PTSD) – a condition that can develop after exposure to severe traumatic experiences, such as disasters, serious accidents, acts of violence, or wartime experiences. Individuals affected relive the events intensely at night, as if they were real, time and time again. This results in extreme sleep deprivation and fear of going to bed. Existing pharmacological treatment approaches often fail to adequately relieve these nightmares. Researchers at Charité – Universitätsmedizin Berlin investigated whether a prescription medication containing THC – one of the active compounds of the cannabis plant – could help. As they report in *Nature Medicine*, more than half of the participants responded to treatment, while more than a third experienced a complete disappearance of nightmares.

Drastic or even life-threatening events can have lingering effects, like an echo. This is referred to as post-traumatic stress disorder (PTSD). The brain is unable to process these overwhelming experiences and stores the memories in such a way that they cannot be consciously controlled. They resurface again and again. Also at night, when people with PTSD relive the trauma over and over again until they wake up – usually in a state of panic. Antidepressants or blood pressure-lowering medications are commonly used to provide relief, among other treatments, but these are only partially effective and usually do not help relieving the nightmares. A medication specifically for treating trauma-related nightmares has not yet been approved in Germany.

Prof. Stefan Röpke conducts research on trauma-related disorders at the Department of Psychiatry and Neurosciences on the Benjamin Franklin Campus of Charité. In their search for new treatment approaches and avenues, he and his team, along with other partners, focused on the principal psychoactive compound of the cannabis plant: tetrahydrocannabinol, or THC for short. This active ingredient, also known for its psychoactive effects, interacts with the body's endocannabinoid system, which is involved in regulating sleep, stress, and the processing of emotional memories. Stefan Röpke explains: "There is

evidence suggesting that during REM sleep – the intense dream phases in which the brain processes experiences and regulates emotions – THC reduces dream activity and thereby alleviates nocturnal stress responses."

## **A cannabinoid specifically targeting nightmares**

Cannabis-based medications are already finding use in pain management, typically when standard treatments prove insufficient or patients cannot tolerate them. In Germany, this has been possible since the so-called "Cannabis for medical purposes" law took effect in 2017. Since then, it has become easier to use plant-derived or synthetically produced cannabinoids for medical and medical-scientific purposes. For their current study the researchers selected a form of THC derived directly from the cannabis plant in the form of drops – the prescription medication Dronabinol. The aim was to determine whether this approach could alleviate nightmares associated with PTSD and whether its use is safe in this context.

More than 170 patients with post-traumatic stress disorder and frequent, intense nightmares participated in the study. For a ten week period, they received either the medication or an identical-looking, cannabis-flavored placebo every evening before bedtime. Neither the healthcare providers nor the participants knew who was receiving which treatment – the gold standard of medical research, a so-called double-blind, placebo-controlled study.

By the end of the study period, nightmares had decreased to a significantly greater extent in the Dronabinol group than in the placebo group. On a scale of zero to eight points, the nightmare burden decreased by an average of 3.7 points, compared to only 2.2 points in the placebo group – a difference that is clearly noticeable to those affected.

“More than a third of the patients treated with Dronabinol reported that they no longer experienced any nightmares after ten weeks. Another 21 percent reported that their nightmare burden had been at least halved. And about five out of six patients in the dronabinol group felt their health had markedly improved.”

*Prof. Stefan Röpke, Department of Psychiatry and Neurosciences,  
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## No dependence or severe side effects

According to the studies, the cannabinoid had a specific effect on nightmares and sleep, but not on all PTSD symptoms. Moreover, the severity of the post-traumatic stress disorder and any accompanying depression did not change conclusively. Nevertheless, the majority of participants experienced significant relief, as the tormenting nightly re-experiencing of the traumatic event was interrupted, allowing for restful sleep. Taking the medication did not cause any severe side effects; however, the researchers observed moderate and mild side effects such as dizziness, headache, or increased appetite more frequently. The study team did not observe any withdrawal symptoms after the end of the study period and the discontinuation of the evening doses. In the next steps going forward, the researchers now aim to determine whether taking the cannabinoid is also effective and safe over the long term, or whether a tolerance effect develops over time.

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### Source:

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