

CBD found to ease anxiety without the risks of THC

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Cannabis products high in the nonintoxicating compound CBD can quell anxiety better than THC-dominant products—and without the potential side effects, new University of Colorado Boulder research suggests.

[The study of 300 people](#), published in the journal *Cannabis and Cannabinoid Research*, is the first randomized trial to examine how legal, commercially available cannabis impacts anxiety symptoms.

The study comes as one in five U.S. adults suffer from an anxiety disorder, making it the most common mental illness in the country, and prescriptions for anti-anxiety medications are on the rise.

"We need more data before we can say conclusively that there are long-term, beneficial effects, but the [short-term effects](#) were very clear: CBD was associated with tension and anxiety relief with limited harm," said senior author Cinnamon Bidwell, associate professor in the Department of Psychology and Neuroscience and the Institute of Cognitive Science.

A first-ever trial

Adults rank anxiety among the top three medical reasons (along with sleep and pain) for turning to cannabis, a.k.a. marijuana, for relief. Yet research on whether it works has been mixed.

Some studies have suggested that using cannabis too frequently or using potent products high in the intoxicating cannabinoid THC (tetrahydrocannabinol) can actually worsen anxiety long-term. Others have shown that adding CBD to THC-heavy products might counteract some of their negative effects, including the impairment and paranoia that can emerge right after use.

To better understand the distinct short-term and long-term effects of both CBD and THC (the two primary cannabinoids, or active ingredients, in cannabis), the research team recruited 300 people with anxiety: Forty-two were not cannabis users; 258 had tried it at some point. The larger group was assigned to use one of three flower products: a THC-dominant product (24% THC and 1% CBD); a CBD-dominant

product (1% THC, 24% CBD); or one with 12% CBD and 12% THC.

Federal law prohibits the possession or distribution of commercially available cannabis on college campuses, including for research purposes, so participants were directed to purchase their assigned product from a designated dispensary and use it on their own time, off-campus.

Over four weeks, participants could use the [cannabis products](#) as much and as frequently as they wanted to. On average, the study participants used the designated products three times per week.

During the study, researchers drove a mobile laboratory to each participant's home and tested them prior to and directly after they smoked cannabis in their home.

Surprising results

At the end of the study period, all four groups reported decreased anxiety. But the cannabis groups saw greater reductions in perceived anxiety than the non-cannabis group, and those using CBD-dominant products showed the most improvement of all.

Surprisingly, while those in the CBD-dominant group didn't feel impaired, they did feel less tense immediately after smoking. They were also less likely to experience paranoia immediately after use than those in the two other cannabis groups.

"Our findings suggest that THC did not increase anxiety long-term and that CBD-dominant forms of cannabis were associated with acute tension reduction that may translate to longer-term reductions in anxiety symptoms," said Gregory Giordano, a professional research assistant at the CU Center for Health and Neuroscience, Genes and Environment (CUChange).

Bidwell, co-director of CUChange, noted that CBD has greater anti-inflammatory properties than THC, so it's possible that CBD-dominant products could reduce anxiety by quelling inflammation in the brain and nerves. However, she said that even a touch of THC—1%—can also have a swift impact on mood.

While numerous prescription drugs are available for treating anxiety, many come with side effects and can lead to dependency. And both early and frequent use of THC can increase risk for cannabis-related harms, such as problem use and cognitive difficulties, Bidwell said.

"Our study suggests that CBD products may be able to relieve [anxiety](#) in the moment for adults who use them, and possibly longer-term, in a way that is meaningful and doesn't necessarily produce the same risks or harms of THC or prescription medications," said Bidwell. "We need more data before we can make conclusive recommendations, but this is promising news."

More information: L. Cinnamon Bidwell et al, Acute and Extended Anxiolytic Effects of Cannabidiol in Cannabis Flower: A Quasi-Experimental ad libitum Use Study, *Cannabis and Cannabinoid Research* (2024). [DOI: 10.1089/can.2023.0187](https://doi.org/10.1089/can.2023.0187)

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