NIH Awards $3 Million to Study Cannabidiol for Pain Relief

Nine grants will enable researchers to study CBD and other components of marijuana.

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The National Center for Complementary and Integrative Health (NCCIH), part of the National Institutes of Health (NIH), has announced that it will grant nine new research awards, totaling approximately $3 million, to study the potential pain-relieving properties of cannabidiol (CBD) and other non-psychoactive components of cannabis.

“The treatment of chronic pain has relied heavily on opioids, despite their potential for addiction and overdose and the fact that they often don’t work well when used on a long-term basis,” NCCIH director Helene Langevin, MD, said in a statement. “There’s an urgent need for more effective and safer options.”

The NCCIH’s mission is “to define, through rigorous scientific investigation, the usefulness and safety of complementary and integrative health approaches and their roles in improving health and health care.”

Cannabis contains multiple compounds known as phytochemicals, including more than 110 cannabinoids and 120 terpenes, according to the NCCIH. The most familiar of these —and the only one that has been studied extensively to date—is tetrahydrocannabinol (THC), which is chiefly responsible for marijuana’s psychoactive, or high-inducing, effects.

CBD, a non-psychoactive component, is widely used for a variety of conditions including relief of pain, anxiety, depression, insomnia and nausea. Although 11 states and Washington, DC, currently allow recreational use of cannabis, and many more have authorized medical marijuana, CBD is legally available throughout the United States.

Proponents have made a wide range of health claims for CBD, THC and other cannabis components, including their purported ability to treat cancer, diabetes and heart disease. These claims mostly have not been well studied in rigorous clinical trials—although in some cases laboratory research is in its early stages—in part because the federal government has long restricted marijuana research.

However, Marinol (dronabinol), a synthetic form of THC, is approved by the Food and Drug

Administration for AIDS-related wasting and for relief of nausea and vomiting in people taking chemotherapy for cancer. And Epidiolex, a CBD oral solution, was approved last year for the treatment of certain seizures in children.

The new awards support research on a broad range of marijuana cannabinoids and terpenes, as well as terpenes from hops, a plant related to cannabis that's best known as an ingredient in beer. The research award recipients are as follows:

- Children's Hospital, Boston—Mechanism and Optimization of CBD-Mediated Analgesic Effects
- University of California, San Francisco—Neuroimmune Mechanisms of Minor Cannabinoids in Inflammatory and Neuropathic Pain
- Research Triangle Institute, North Carolina—Minor Cannabinoids and Terpenes: Preclinical Evaluation as Analgesics
- New York University School of Medicine—Identifying the Mechanisms of Action for CBD on Chronic Arthritis Pain
- University of Texas, Austin—Synthetic Biology for the Chemogenetic Manipulation of Pain Pathways
- University of Utah, Salt Lake City—Exploring the Mechanisms Underlying the Analgesic Effect of Cannabidiol Using Proton Magnetic Resonance Spectroscopy
- Emory University, Atlanta—Mechanistic Studies of Analgesic Effects of Terpene Enriched Extracts From Hops
- University of Illinois, Urbana-Champaign: Systematic Investigation of Rare Cannabinoids With Pain Receptors
- Temple University, Philadelphia—Analgesic Efficacy of Single and Combined Minor Cannabinoids and Terpenes.

Only one of the studies supported in this round of awards will enroll humans, while the rest involve laboratory or animal research. According to an Associated Press report, University of Utah researchers will run brain scans on volunteers with lower back pain who will be randomly assigned to eat chocolate pudding either with or without a CBD extract to see how it affects pain-signaling pathways.

Researchers at the University of Illinois aim to create a library of less common cannabinoids that may play a role in relieving pain, producing them in a lab because marijuana itself contains such tiny amounts that it's too costly and time-consuming to isolate enough for research, grantee David

Sarlah, PhD, of the University of Illinois, told the Associated Press.

Together, these studies should shed more light on the potential benefits and possible risks of CBD and other marijuana compounds, which are increasingly used despite the current lack of evidence.

“The science is lagging behind the public use and interest,” said NCCIH deputy director David Shurtleff, PhD. “We’re doing our best to catch up here.”

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