Cannabis (Marijuana) and Cannabinoids

url: https://www.nccih.nih.gov/health/cannabis-marijuana-and-cannabinoids-what-you-need-to-know  
  
  
Cannabis (Marijuana) and Cannabinoids: What You Need To Know  
Is marijuana the same thing as cannabis?  
People often use the words cannabis and marijuana interchangeably, but they don t mean exactly the same thing.  
  
The word cannabis refers to all products derived from the plant Cannabis sativa.  
  
The cannabis plant contains about 540 chemical substances.  
The word marijuana refers to parts of or products from the plant Cannabis sativa that contain substantial amounts of tetrahydrocannabinol (THC). THC is the substance that s primarily responsible for the effects of marijuana on a person s mental state. Some cannabis plants contain very little THC. Under U.S. law, these plants are considered industrial hemp rather than marijuana.  
Throughout the rest of this fact sheet, we use the term cannabis to refer to the plant Cannabis sativa.  
  
What are cannabinoids?  
Cannabinoids are a group of substances found in the cannabis plant.  
  
What are the main cannabinoids?  
The main cannabinoids are THC and cannabidiol (CBD).  
  
How many cannabinoids are there?  
Besides THC and CBD, more than 100 other cannabinoids have been identified.  
  
Has the U.S. Food and Drug Administration (FDA) approved cannabis or cannabinoids for medical use?  
The FDA has not approved the cannabis plant for any medical use. However, the FDA has approved several drugs that contain individual cannabinoids.  
  
Epidiolex, which contains a purified form of CBD derived from cannabis, was approved for the treatment of seizures associated with Lennox-Gastaut syndrome or Dravet syndrome, two rare and severe forms of epilepsy.  
Marinol and Syndros, which contain dronabinol (synthetic THC), and Cesamet, which contains nabilone (a synthetic substance similar to THC), are approved by the FDA. Dronabinol and nabilone are used to treat nausea and vomiting caused by cancer chemotherapy. Dronabinol is also used to treat loss of appetite and weight loss in people with HIV/AIDS.  
Is it legal for dietary supplements or foods to contain THC or CBD?  
The FDA has determined that products containing THC or CBD cannot be sold legally as dietary supplements. Foods to which THC or CBD has been added cannot be sold legally in interstate commerce. Whether they can be sold legally within a state depends on that state s laws and regulations.  
  
Are cannabis or cannabinoids helpful in treating health conditions?  
Drugs containing cannabinoids may be helpful in treating certain rare forms of epilepsy, nausea and vomiting associated with cancer chemotherapy, and loss of appetite and weight loss associated with HIV/AIDS. In addition, some evidence suggests modest benefits of cannabis or cannabinoids for chronic pain and multiple sclerosis symptoms. Cannabis isn t helpful for glaucoma. Research on cannabis or cannabinoids for other conditions is in its early stages.  
  
The following sections summarize the research on cannabis or cannabinoids for specific health conditions.  
  
Are cannabis and cannabinoids safe?  
Several concerns have been raised about the safety of cannabis and cannabinoids:  
  
The use of cannabis has been linked to an increased risk of motor vehicle crashes.  
Smoking cannabis during pregnancy has been linked to lower birth weight.  
Some people who use cannabis develop cannabis use disorder, which has symptoms such as craving, withdrawal, lack of control, and negative effects on personal and professional responsibilities.  
Adolescents using cannabis are four to seven times more likely than adults to develop cannabis use disorder.  
Cannabis use is associated with an increased risk of injury among older adults.  
The use of cannabis, especially frequent use, has been linked to a higher risk of developing schizophrenia or other psychoses (severe mental illnesses) in people who are predisposed to these illnesses.  
Marijuana may cause orthostatic hypotension (head rush or dizziness on standing up), possibly raising danger from fainting and falls.  
The FDA has warned the public not to use vaping products that contain THC. Products of this type have been implicated in many of the reported cases of serious lung injuries linked to vaping.  
There have been many reports of unintentional consumption of cannabis or its products by children, leading to illnesses severe enough to require emergency room treatment or admission to a hospital. Among a group of people who became ill after accidental exposure to candies containing THC, the children generally had more severe symptoms than the adults and needed to stay in the hospital longer.  
Some long-term users of high doses of cannabis have developed a condition involving recurrent severe vomiting.  
There have been reports of contamination of cannabis/cannabinoid products with microorganisms, pesticides, or other substances.  
Some cannabis/cannabinoid products contain amounts of cannabinoids that differ substantially from what s stated on their labels.  
Can CBD be harmful?  
Unlike Epidiolex (the purified CBD product sold as an FDA-approved prescription drug), over-the-counter CBD products may contain more or less CBD than stated on their labels, and because of less rigorous regulatory oversight than prescription drugs, they may also contain contaminants, such as THC.  
  
CBD may have side effects, including decreases in alertness, changes in mood, decreased appetite, and gastrointestinal symptoms such as diarrhea. CBD may also produce psychotic effects or cognitive impairment in people who also regularly use THC. In addition, CBD use has been associated with liver injury, male reproductive harm, and interactions with other drugs. Some side effects, such as diarrhea, sleepiness, abnormalities on tests of liver function, and drug interactions, appear to be due to CBD itself rather than contaminants in CBD products; these effects were observed in some of the people who participated in studies of Epidiolex before its approval as a drug.  
  
Research Funded by the National Center for Complementary and Integrative Health (NCCIH)  
Several NCCIH-funded studies are investigating the potential pain-relieving properties and mechanisms of action of substances in cannabis, including minor cannabinoids (those other than THC) and terpenes (substances in cannabis that give the plant its strain-specific properties such as aroma and taste). The goal of these studies is to strengthen the evidence regarding cannabis components and whether they have potential roles in pain management.  
  
NCCIH is also supporting other studies on cannabis and cannabinoids, including:  
  
An observational study of the effects of edible cannabis and its constituents on pain, inflammation, and thinking in people with chronic low-back pain.  
Studies to develop techniques to synthesize cannabinoids in yeast (which would cost less than obtaining them from the cannabis plant).  
Research to evaluate the relationship between cannabis smoking and type 2 diabetes.  
More To Consider  
Don t use cannabis or cannabinoids to postpone seeing a health care provider about a medical problem.  
Take charge of your health talk with your health care providers about any complementary health approaches you use. Together, you can make shared, well-informed decisions.  
For More Information  
NCCIH Clearinghouse  
The NCCIH Clearinghouse provides information on NCCIH and complementary and integrative health approaches, including publications and searches of Federal databases of scientific and medical literature. The Clearinghouse does not provide medical advice, treatment recommendations, or referrals to practitioners.  
  
Toll-free in the U.S.: 1-888-644-6226  
  
Telecommunications relay service (TRS): 7-1-1  
  
Website: https://www.nccih.nih.gov  
  
Email: info@nccih.nih.gov(link sends email)  
  
Know the Science  
NCCIH and the National Institutes of Health (NIH) provide tools to help you understand the basics and terminology of scientific research so you can make well-informed decisions about your health. Know the Science features a variety of materials, including interactive modules, quizzes, and videos, as well as links to informative content from Federal resources designed to help consumers make sense of health information.  
  
Explaining How Research Works (NIH)  
  
Know the Science: How To Make Sense of a Scientific Journal Article  
  
Understanding Clinical Studies (NIH)  
  
PubMed   
A service of the National Library of Medicine, PubMed contains publication information and (in most cases) brief summaries of articles from scientific and medical journals. For guidance from NCCIH on using PubMed, see How To Find Information About Complementary Health Approaches on PubMed.  
  
Website: https://pubmed.ncbi.nlm.nih.gov/  
  
MedlinePlus  
To provide resources that help answer health questions, MedlinePlus (a service of the National Library of Medicine) brings together authoritative information from the National Institutes of Health as well as other Government agencies and health-related organizations.  
  
Website: https://www.medlineplus.gov  
  
Key References  
Kafil TS, Nguyen TM, MacDonald JK, et al. Cannabis for the treatment of Crohn s disease. Cochrane Database of Systematic Reviews. 2018;(11):CD012853. Accessed at https://www.cochranelibrary.com/ on June 10, 2019.  
Kafil TS, Nguyen TM, MacDonald JK, et al. Cannabis for the treatment of ulcerative colitis. Cochrane Database of Systematic Reviews. 2018;(11):CD012954. Accessed at https://www.cochranelibrary.com/ on June 10, 2019.  
Lutge EE, Gray A, Siegfried N. The medical use of cannabis for reducing morbidity and mortality in patients with HIV/AIDS. Cochrane Database of Systematic Reviews. 2013;(4):CD005175. Accessed at https://www.cochranelibrary.com/ on June 10, 2019.  
M cke M, Phillips T, Radbruch L, et al. Cannabis-based medicines for chronic neuropathic pain in adults. Cochrane Database of Systematic Reviews. 2018;(3):CD012182. Accessed at https://www.cochranelibrary.com/ on June 10, 2019.  
National Academies. The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research(link is external). Washington, DC: The National Academies Press. 2017.  
Nielsen S, Sabioni P, Trigo JM, et al. Opioid-sparing effect of cannabinoids: a systematic review and meta-analysis. Neuropsychopharmacology. 2017;42(9):1752-1765.  
Richards JR, Smith NE, Moulin AK. Unintentional cannabis ingestion in children: a systematic review. Journal of Pediatrics. 2017;190:142-152.  
Segura LE, Mauro CM, Levy NS, et al. Association of US medical marijuana laws with nonmedical prescription opioid use and prescription opioid use disorder. JAMA Network Open. 2019;2(7):e197216.  
Shover CL, Davis CS, Gordon SC, et al. Association between medical cannabis laws and opioid overdose mortality has reversed over time. Proceedings of the National Academy of Sciences. 2019;116(26):12,624-12,626.  
Smith LA, Azariah F, Lavender VT, et al. Cannabinoids for nausea and vomiting in adults with cancer receiving chemotherapy. Cochrane Database of Systematic Reviews. 2015;(11):CD009464. Accessed at https://www.cochranelibrary.com on June 10, 2019.  
Stockings E, Campbell G, Hall WD, et al. Cannabis and cannabinoids for the treatment of people with chronic noncancer pain conditions: a systematic review and meta-analysis of controlled and observational studies. Pain. 2018;159(10):1932-1954.  
Torres-Moreno MC, Papaseit E, Torrens M, et al. Assessment of efficacy and tolerability of medicinal cannabinoids in patients with multiple sclerosis. A systematic review and meta-analysis. JAMA Network Open. 2018;1(6):e183485.  
U.S. Food and Drug Administration. Vaping illness update: FDA warns public to stop using tetrahydrocannabinol (THC)-containing vaping products and any vaping products obtained off the street. Accessed at https://www.fda.gov/safety/medical-product-safety-information/lung-injury-update-fda-warns-public-stop-using-tetrahydrocannabinol-thc-containing-vaping-products on October 9, 2019.  
Whiting PF, Wolff RF, Deshpande S, et al. Cannabinoids for medical use. A systematic review and meta-analysis. JAMA. 2015;313(24):2456-2463.  
Yadav V, Bever C Jr, Bowen J, et al. Summary of evidence-based guideline: complementary and alternative medicine in multiple sclerosis: report of the Guideline Development Subcommittee of the American Academy of Neurology. Neurology. 2014;82(12):1083-1092.  
  
Acknowledgments  
NCCIH thanks D. Craig Hopp, Ph.D., Inna Belfer, M.D., Ph.D., and David Shurtleff, Ph.D., NCCIH, for their review of the 2019 edition of this publication.  
  
This publication is not copyrighted and is in the public domain. Duplication is encouraged.  
  
NCCIH has provided this material for your information. It is not intended to substitute for the medical expertise and advice of your health care provider(s). We encourage you to discuss any decisions about treatment or care with your health care provider. The mention of any product, service, or therapy is not an endorsement by NCCIH.