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CANNABINOID CHRONICLES

Medical Cannabis News and Information

US FDA Approves Its First Cannabis-Derived Medicine

The US Food and Drug Administration (FDA) on June 25 approved for the first time a drug made from cannabidiol (CBD), a molecule derived from the cannabis plant. The drug, Epidiolex, was approved for the treatment of two types of epilepsy, Dravet syndrome and Lennox-Gastaut syndrome, rare childhood-onset forms of epilepsy that are among the most resistant to treatment. Well-designed clinical trials have shown that the Epidiolex product of CBD can be helpful in reducing or eliminating seizures in these epilepsy syndromes.

While medical cannabis supporters may cite the FDA approval of Epidiolex as evidence of the benefits of cannabis, it is not an endorsement of any CBD or cannabis product. This product differs from most other CBD products available in cannabis dispensaries in that it is a highly concentrated and purified pharmaceutical grade medicine. It is the only CBD product to receive FDA approval, at this time. Other pharmaceutical grade products may be developed and approved in the future. Additionally, this product could be approved by the FDA for other types of epilepsy or diseases.

The next step in the process of making this CBD product available is rescheduling by the DEA. Currently, CBD is a Schedule I drug, meaning that it has abuse potential and no proven medical use. As a Schedule I drug, CBD use is greatly restricted and controlled. Now that the FDA has approved a medical use, the DEA has 90 days to reschedule the drug, making it available for medical uses and for medical research.

It is unclear at this time what the DEA will determine as an appropriate schedule for CBD. Once the DEA has rescheduled CBD, the Epidiolex product will be available for physicians to prescribe. While the current FDA approval of this CBD product is for two specific epilepsy

syndromes, the FDA does not restrict its use only to epilepsy. Physicians will be able to legally prescribe this product for any use when they believe there is sufficient scientific evidence.

Cannabidiol is a complex molecule that is produced by the cannabis plant. Cannabis has been proposed for centuries as a medicinal plant; only recently has CBD been studied scientifically for various disorders.

Compared to THC, CBD works at different receptors in the brain and other parts of the body. In this way, CBD is very different from THC and may offer new mechanisms of treatment. For this reason, CBD has received a great amount of attention as a possible treatment for many different disorders. CBD has been proposed as a cure or treatment for many disorders and diseases, including epilepsy, chronic pain, anxiety, multiple sclerosis (MS), amyotrophic lateral sclerosis (ALS) and insomnia.

GW Pharmaceuticals grows its own supply of cannabis in secure glass houses in the UK. To ensure uniformity in the genetic composition of the plants, selected seedlings are maintained as clones. The plants are then processed into a liquid solution of CBD.

Source: <http://theconversation.com/approval-of-drug-derived-from-cannabis-not-necessarily-a-win-for-weed-99018>

<https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm611046.htm>

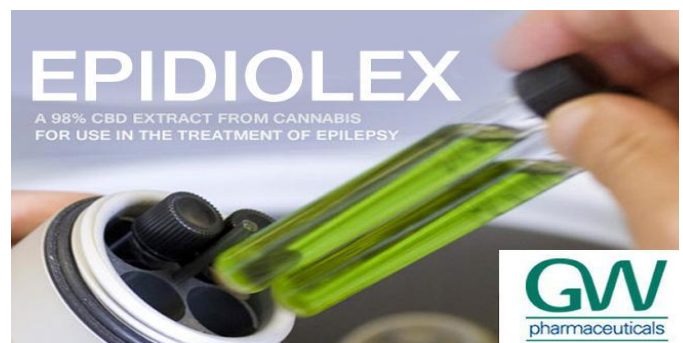


Image: <https://www.medicaljane.com/2014/07/02/preliminary-study-cannabis-based-drug-may-help-battle-treatment-resistant-epilepsy/>

Human: Cannabis use is associated with decreased mortality in hospital after a heart attack

In a study with 1,273,897 patients with acute myocardial infarctions, cannabis use was associated with decreased in-hospital deaths. Furthermore, cannabis use was not associated with increased risk of adverse short-term outcomes following a heart attack. In total, 3854 patients reported cannabis use. Researchers of the Division of Cardiology of the University of Colorado Anschutz in Aurora, USA, analysed hospital records from 8 states between 1994 and 2013.

Cannabis users were more likely to be placed on mechanical ventilation (odds ratio 1.19). They were significantly less likely to die (OR 0.79), experience shock (OR 0.74) or require an intra-aortic balloon pump (OR 0.80) after acute myocardial infarction (AMI) than patients with no reported cannabis use. Authors wrote that these “results suggest that, contrary to our hypothesis, marijuana use was not associated with increased risk of adverse short-term outcomes following AMI. Furthermore, marijuana use was associated with decreased in-hospital mortality post-AMI.”

Source: <https://www.ncbi.nlm.nih.gov/pubmed/29995914>

Human: CBD reduces seizures in several further childhood-onset epilepsy forms according to an open-label study

In an open study with 46 patients with CDKL5 deficiency disorder or Aicardi, Doose, and Dup15q syndromes, a treatment with CBD reduced the frequency of convulsive seizures. Investigators of New York University School of Medicine, USA, included patients aged 1-30 years with these severe childhood-onset epilepsy forms. They were treated with CBD for at least 10 weeks.

The percent change in median convulsive seizure frequency for all patients taking CBD decreased from baseline to week 12 by 51.4% and week 48 by 59.1%. CBD was generally well tolerated. Authors wrote that the study “provides class III evidence for the long-term safety and efficacy of CBD administration in patients with treatment-resistant epilepsy” associated with these disorders.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/30006259>

Animal: Increased activity of the endocannabinoid system may be beneficial in Huntington's disease

In a mouse model of Huntington's disease (HD,) goal-directed behaviour progressively declined with age, which was restored by increased levels of the endocannabinoid 2-AG (2-arachidonoylglycerol). Authors wrote, that “cannabinoid receptor-based therapies may benefit neuropsychiatric care for HD.” University of Maryland School of Medicine, Baltimore, USA.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/29925886>

Human: Legalization of cannabis for medical use in the US is associated with reduced opioid prescriptions

“Statewide medical cannabis legalization appears to have been associated with reductions in both prescriptions and dosages of Schedule III (but not Schedule II) opioids received by Medicaid enrollees in the US,” scientists from the Department of Family Medicine and Public Health of the University of California in San Diego, USA, wrote. They analysed state-level opioid prescription records from 1993 to 2014 of data from Medicaid. Medicaid is a US program that helps with medical costs for some people with limited income and resources.

For Schedule III opioid prescriptions, medical cannabis legalization was associated with a 29.6% reduction in number of prescriptions, 29.9% reduction in dosage, and 28.8% reduction in related Medicaid spending. No evidence was found to support the associations between medical cannabis legalization and Schedule II opioid prescriptions. Authors estimated that, if “all the states had legalized medical cannabis by 2014, Medicaid annual spending on opioid prescriptions would be reduced by 17.8 million dollars.” Schedule II opioids are morphine, fentanyl and others. Schedule III opioids are buprenorphine, tramadol and others.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/29989239>

Cells: Cannabis compounds interact synergistically for anti-cancer activity against colon cancer

Colon cancer cells were exposed to several ethanol extracts from cannabis. Researchers found that some cannabis compounds acted synergistically to produce toxic effects on these cancer cells, induce cell cycle arrest and apoptosis (programmed cell death). Among these compounds is cannabigerolic acid (CBGA). Agricultural Research Organization, Volcani Center, Bet Dagan, Israel.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/29992185>

Animal: Activation of the peripheral CB1 receptor may be beneficial chemotherapy-induced peripheral neuropathy

In a study with rats with cisplatin-induced peripheral neuropathy, the administration of a synthetic cannabinoid, which does not penetrate into the brain, suppressed allodynia. Allodynia refers to a pain sensation from a stimulus (e.g. touch, cold), which usually does not cause pain. Laboratory of Neuropharmacology, University of California, Los Angeles, USA.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/29981335>

Human: Cannabis may have therapeutic effects in patients with sickle cell disease

An analysis of 44 patients who received cannabis for medical reasons showed that cannabis products may be beneficial in patients with sickle cell disease. Yale Cancer Center, Yale University, New Haven, USA.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/30014039>

Anti-Tumoural Actions of Cannabinoids

The endocannabinoid system has emerged as a considerable target for the treatment of diverse diseases.

In addition to the well-established palliative effects of cannabinoids in cancer therapy, phytocannabinoids, synthetic cannabinoid compounds, as well as inhibitors of endocannabinoid degradation, have attracted attention as possible systemic anti-cancer drugs.

As a matter of fact, accumulating data from preclinical studies suggest cannabinoids elicit effects on different levels of cancer progression, comprising inhibition of proliferation, neovascularisation (natural formation of new blood vessels), invasion and chemo-resistance, induction of apoptosis and autophagy, as well as enhancement of tumour immune surveillance.

Although the clinical use of cannabinoid receptor ligands is limited by their psychoactivity, non-psychoactive compounds, such as cannabidiol (CBD), have gained attention due to preclinically established anti-cancer properties and a favourable risk-to-benefit profile.

Thus, cannabinoids may complement the currently used collection of chemotherapeutics, as a broadly diversified option for cancer treatment, while counteracting some of their severe side effects.

Sources: <https://www.ncbi.nlm.nih.gov/pubmed/30019449>
<https://bpspubs.onlinelibrary.wiley.com/doi/abs/10.1111/bph.14426>

US Cannabis Experience: The Kids Will Be All Right

As Canada prepares to legalize cannabis sales in a few months, what can be learned from four years of practical, hands-on experience in the western US? The first take-away is that all the fretting about the impact on children and teens is largely unwarranted. Washington state Grade 10 students' rate of cannabis smoking remained unchanged pre- and post-legalization.

"We thought we would see a significant increase in teen use," said Rick Garza, director of the Washington State Liquor Control and Cannabis Board. "But what the kids will tell you is that they didn't need adults to legalize it to get their hands on cannabis."

Larry Wolk, Colorado's Chief Medical Officer, said that the most reassuring news for lawmakers in Canada is that legalization of cannabis has had virtually no impact on public health in Colorado or other states.

There has been no appreciable increase in cannabis use, especially in young people; there has been no increase in impaired driving; and there has been only a slight blip in emergency-room admissions, which Dr. Wolk attributes principally to cannabis tourists who come to Colorado and overindulge, particularly on edibles.

Source: <https://www.theglobeandmail.com/cannabis/article-the-cannabis-experience-from-the-us-tells-us-the-kids-will-be-all/>

CBD from Non-Cannabis Sources

Cannabidiol (CBD), the second most common cannabinoid in the cannabis plant, is becoming more popular due to its various medicinal benefits and non-psychoactive properties. CBD occurs naturally in the cannabis (high-THC) and hemp (low-THC, 0.3% or less) plants.

Chemists have been able to synthesize CBD in the lab for years, but it's very expensive - from one research supply source, it's \$159/10mg, and many patients require hundreds of milligrams to achieve therapeutic benefits.

One recent example of alternative CBD production comes from the hop plant. Isodiol International Inc. claims to have created the only source of CBD from a non-cannabis plant. Isodiol has not shared any data supporting their ability to create CBD from hops.

Another example is using yeast to create cannabinoids. Yeast do not naturally produce cannabinoids, but by manipulating their DNA yeast can produce both the precursor molecules from which cannabinoids are made and the enzymes which convert the precursor molecules into particular cannabinoids or terpenes that would naturally be found in the cannabis plant. And it's less expensive than traditional cultivation methods; Liberte estimates that they'll be able to create a gram of CBD for 20 cents, far less than cultivation and extraction of CBD from cannabis or hemp plants. Plus, there's the added benefit of a lower environmental impact; cannabis and hemp plants require a substantial amount of water and energy (especially for indoor grow operations).

Since plants other than cannabis don't possess the DNA that allows them to naturally produce enzymes that convert CBGA into THCA or CBDA, a new gene-manipulating technique known as CRISPR may work. Using CRISPR, scientists could insert the DNA for the enzymes that convert cannabigerolic acid (CBGA) into THCA and CBDA (add heat to convert to THC or CBD), thus converting the hemp plant into a cannabinoid producer.

Sources: <https://isodiol.com/isodiol-news/isodiol-international-inc-announces-launch-markets-first-hops-derived-cbd-products/>
<https://www.leafly.com/news/science-tech/does-cbd-only-come-from-cannabis-and-hemp?>
<http://www.librede.com/>



Pediatricians Say Young Patients Have Used Medical Cannabis

A 2017 questionnaire for the Canadian Paediatric Surveillance Program found 419 of 835 respondents had a patient who had used either authorized or unauthorized cannabis for a medical reason.

The one-time study did not detail how many cases involved unauthorized use, the nature of the condition being treated, nor the ages of the patients. But principal investigator Richard Belanger in Quebec City says he's surprised by the number of young cannabis users and says it points to the need for more information for doctors, parents and patients.

Belanger notes that more than a third of respondents said they had been asked by a parent or adolescent patient to prescribe cannabis.

"We really want to make clear that cannabis is not only an adult issue, either for recreational but (also) medical purposes," Belanger said of the findings.

He suspected younger kids received authorized use for conditions including refractory seizures, cerebral palsy, and chronic pain, while adolescents were more likely to be unauthorized users and to treat other conditions "such as sleep problems or anxiety."

The higher-than-expected usage could also be because the doctors surveyed generally treat kids with chronic and severe conditions that may require alternative treatments, and because most respondents came from urban and academic centres more likely to handle severe cases.

The survey found a clear majority of respondents had no knowledge or minimal knowledge on why cannabis might be prescribed for a child or youth and what products and dosages may be authorized.

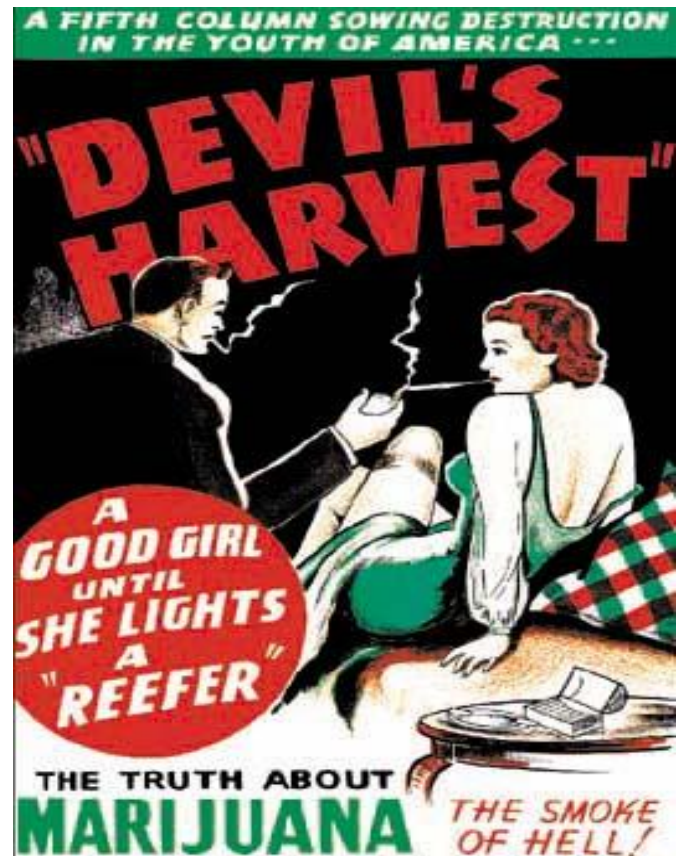
Source:

<https://www.thestar.com/news/cannabis/2018/07/12/half-of-pediatricians-surveyed-say-their-young-patients-have-used-cannabis-for-medical-reasons.html>

17 Laboratories Available for Private Cannabis Testing

After being barred from accepting any cannabis for testing other than that from the government's licensed producers, Health Canada now lists 17 laboratories authorized to provide testing services to individuals. For a complete list visit: <https://www.canada.ca/en/health-canada/services/list-licensed-dealers.html>

Source: <https://cannabislifenetwork.com/17-laboratories-available-for-private-cannabis-testing/>



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948 View Street, Victoria
250-383-4105

Victoria Brain Injury Soc.
830 Pembroke St., Victoria
(250) 598-9339

HepC BC
2642 Quadra Street, Victoria
250- 595-3892

BC Cancer Agency
2410 Lee Ave, Victoria
(250) 519-5500

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www.tousawlaw.ca

DrugSense
www.drugsense.org

BC Coalition of People With Disabilities
1-800-663-1278

Health Canada
<http://www.hc-sc.gc.ca/dhp-mps/marihuana/index-eng.php>

Drug Policy Alliance
www.drugpolicy.org

Media Awareness Project
www.mapinc.org

Together Against Poverty Society
302-895 Fort Street, Victoria
250-361-3521

"Love is at the root of everything - all learning, all parenting, all relationships. Love, or the lack of it. And what we see and hear on the screen is part of who we become."

-- Fred Rogers (children's television presenter on "Mister Rogers' Neighborhood", actor; 1928 -2003)