

The Many Medicinal Benefits of Cannabis and Cannabidiol (CBD)

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✓ Fact Checked

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STORY AT-A-GLANCE

- › There are many medical benefits to cannabis and CBD (cannabidiol) and they are increasingly recognized by the scientific community
- › As of 2022, 19 states have legalized cannabis for adult use and the 2018 Farm Bill legalized industrial hemp as a crop
- › As patients and the medical community embrace cannabis and CBD for pain relief, harm and even deaths from opioids will diminish
- › Los Sueños Farms outside of Pueblo, Colorado, the largest U.S. cannabis farm with 36 acres and 36,000 plants, shows how technologically advanced the industry has become
- › The existence of cannabinoid receptors in humans and other mammals, called the endocannabinoid system, gives clues to why cannabis and CBD affect so many body systems positively
- › Many industries, from Big Pharma to the alcohol, lumber, gas and oil and clothing industries, could lose profits from a booming cannabis industry

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Production of cannabis is booming as the medical benefits of CBD (cannabidiol) are increasingly recognized.

According to Project CBD, at least 50 conditions¹ are believed to be improved by CBD, including pain, seizures, muscle spasms, nausea associated with chemotherapy, digestive disorders such as colitis and inflammatory bowel disease (IBD), degenerative neurological disorders such as dystonia, multiple sclerosis, Parkinson's disease, mood disorders, anxiety, PTSD and high blood pressure.

Yet, despite the legalization of cannabis for adult use in 19 states² in the past few years and the inclusion in the 2018 Farm Bill of industrial hemp as a crop,³ the U.S. Food and Drug Administration up until recently listed CBD as a Schedule I drug, the most dangerous drug category reserved for drugs like heroin and LSD.

The classification made no sense because CBD is nonpsychoactive – it is not addictive, does not produce a "high" and there are few to no dangerous side effects. In fact, there seems to be no reason for the FDA and Drug Enforcement Agency's (DEA) long-term vilification of CBD except possible collusion with Big Pharma, whose dangerous and lucrative pain treatments.

In 2022 opioids are causing over 100,000 Americans' deaths every year – equivalent to around 274 deaths a day. In states where CBD and cannabis are becoming widely used, there are few reports of negative social or medical consequences. Conversely, there is evidence that in the same states where cannabis is legal, there have been fewer opioid emergencies, overdoses and deaths.⁴

The restrictive, Schedule I classification of CBD has also produced medical "refugees" – people whose health conditions are only improved by CBD, not pharmaceutical products, forcing them to relocate to states with looser CBD laws.

A Surprising but Suspicious Change in CBD Classification

At the end of 2018, FDA surprised many with this modification of the Schedule I classification for some CBD products:⁵

"With the issuance of this final order, the Acting Administrator of the Drug Enforcement Administration places certain drug products that have been

approved by the Food and Drug Administration (FDA) and which contain cannabidiol (CBD) in schedule V of the Controlled Substances Act (CSA). Specifically, this order places FDA-approved drugs that contain CBD derived from cannabis and no more than 0.1 percent tetrahydrocannabinols in schedule V.

This action is required to satisfy the responsibility of the Acting Administrator under the CSA to place a drug in the schedule he deems most appropriate to carry out United States obligations under the Single Convention on Narcotic Drugs, 1961."

Schedule V drugs are considered to have a lower potential for abuse than other controlled drugs.⁶ The category includes drugs whose benefits may outweigh risks such as those for antidiarrheal, antitussive and analgesic conditions such as cough preparations with less than 200 milligrams of codeine like Robitussin AC, Lomotil, Motofen, Lyrica and Parepectolin.

Yet, does the recent modification of schedule status really reflect new realism on the part of the FDA, or is it simply a nod to drug makers' desire to "get in on the action" and market share? After all, we have seen a similar phenomenon when Big Pharma attacks the reliability, effectiveness and quality control of popular supplements and vitamins while hypocritically seeking to market the same products themselves.

Cannabis Farms Are Becoming Large and Efficient

The Los Sueños Farms,⁷ outside of Pueblo, Colorado, with 36,000 plants, depicted in a recent video called "Largest Outdoor Cannabis Farm in World, Canna Cribs Episode 4," from Growers Network, reveals how technologically far the industry has come.

The 36-acre farm, which consists of four separate farms, processes 40,000 pounds of "biomass" each harvest. Depending on the genetic expression of the plants, some are grown outside, some in greenhouses and some in greenhouses with no walls to allow

solar maximization while permitting fresh air to circulate and prevent too much heat from accumulating.

For the outdoor plants, an advanced drip watering system with an emitter every 12 inches provides pressure compensated irrigation and the ability to provide specific nutrients. Drones with several lenses hover above the plants and report back their respiration rate, any insects or disease risks and plants that might be struggling for one reason or another. Humidity and lighting are computer controlled for indoor plants.

When the crop is ready, cannabis flowers are dry trimmed in an advanced piece of machinery called a twister. While the machinery does not require human labor, a quality control person does inspect the product as it comes out of the twister to make sure all stems have been removed at their base.

Cannabis Post Production Processing Is Crucial for Quality

Fertility and nutrients are important, say Los Sueños Farm employees, but the quality of the product itself comes down to curing. In massive curing rooms, racks of product dry at a temperature of 64 degrees Fahrenheit and are made ready for packaging in seven to 10 days.

They are then vacuum packed and nitrogen sealed in 10-pound bags. The bags have a window so customers can view the cannabis and assess its quality without exposing it to the harmful effects of light or environmental humidity.

After the cannabis leaves Los Sueños Farms, preparation continues for the end user. At processing facilities and retail dispensaries like the Colorado-based Mesa Organics, a partner of Los Sueños, sophisticated extraction methods are then used to cull the raw crude extract from the plant material.

At Mesa Organics, supercritical CO₂ is used for the extraction process, not hydrocarbons, says owner Jim Parco, because "any hydrocarbons that are burned over 900 degrees convert to benzene" which can be lethal.

In fact, hydrocarbon extraction is banned in some parts of California, says Parco, because of the "occupational risks to the communities." The use of supercritical CO2 also creates a purer product. After lipids, waxes and terpenes are removed through extraction, CBD, THC and other cannabinoids from the plant remain and the product is ready to be marketed.

A Cannabinoid With Many Benefits

CBD is one of some 104 compounds classified as cannabinoids in cannabis plants, with as many as seven or eight more recently discovered compounds that may be considered cannabinoids.⁸ CBD is contained in both Cannabis Sativa (hemp) and Cannabis Indica (marijuana), but hemp has such a low CBD content, it is primarily grown for fiber and seed – uses we will discuss later.

It is not a surprise CBD has so many benefits since there is actually an endocannabinoid system in the human body and other mammals. It is part of our physiology. Cannabinoid receptors, which recognize and interact with CBD, are found in the human brain, lungs, liver, kidneys and immune system.

There are myriad medical uses attributed to CBD, and the list keeps growing. Here are some uses that have recently been scientifically documented.

Allergic asthma – "CBD treatment decreased the inflammatory and remodeling processes in the model of allergic asthma," according to the *European Journal of Pharmacology*⁹

Anxiety and sleep – "Cannabidiol may hold benefit for anxiety-related disorders," *The Permanente Journal*¹⁰

Autism spectrum disorders (ASD) – "Cannabis in ASD patients appears to be [a] well tolerated, safe and effective option to relieve symptoms associated with ASD," *Scientific Reports*¹¹

Blood pressure – "This data shows that acute administration of CBD reduces resting BP and the BP increase to stress in humans," JCI Insight¹²

Cancer pain, nausea and lack of appetite – "The National Cancer Institute currently recognizes medicinal C. sativa as an effective treatment for providing relief in a number of symptoms associated with cancer, including pain, loss of appetite, nausea and vomiting, and anxiety," BioMed Research International¹³

Cancer/tumors – "Cannabidiol (CBD), one of the compounds present in the marijuana plant, has antitumor properties," Cancer Letters¹⁴

Diabetes – "These results suggest that the neuroprotective effects of CBD in middle-aged diabetic rats ... are related to a reduction in neuroinflammation," Neurotoxicity Research¹⁵

Epilepsy – "CBD is a well-tolerated and effective antiseizure agent and illustrates a potential disease-modifying effect of CBD on reducing both seizure burden and associated comorbidities well after the onset of symptomatic seizures," Epilepsia¹⁶

Inflammation – "CBD that exerts prolonged immunosuppression ... might be used in chronic inflammation, the terpenoids ... might thus be used to relieve acute inflammation," Cannabis and Cannabinoid Research¹⁷

Irritable bowel diseases – "Clinical trials suggest that there may be a therapeutic role for cannabinoid therapy in the treatment of IBD," Current Gastroenterology Reports¹⁸

Multiple Sclerosis – "As cannabis legalization has impacted the variety of cannabis products available, there appears to be growing numbers ... using cannabis ... reporting use of highly efficacious products with minimal side-effects," Multiple Sclerosis and Related Disorders¹⁹

Neurodegenerative and cardiovascular diseases – "CBD has been found to possess antioxidant activity in many studies, thus suggesting a possible role in the prevention of both neurodegenerative and cardiovascular diseases," BioMed Research International²⁰

Ovarian function/female reproductive system – Impacts "the female reproductive system where it affects folliculogenesis, oocyte maturation and ovarian endocrine secretion," Journal of Ovarian Research²¹

PTSD and nightmares – "Administration of oral CBD in addition to routine psychiatric care was associated with PTSD symptom reduction ... CBD also appeared to offer relief in a subset of patients who reported frequent nightmares as a symptom of their PTSD," Journal of Alternative and Complementary Medicine²²

Pain, migraine, detoxification from opioids – "There is accumulating evidence for various therapeutic benefits of cannabis/cannabinoids, especially in the treatment of pain, which may also apply to the treatment of migraine and headache. There is also supporting evidence that cannabis may assist in opioid detoxification and weaning, thus making it a potential weapon in battling the opioid epidemic," Headache²³

Parkinson's and Alzheimer's diseases – "CBD may be effective in the treatment of five syndromes, currently labeled recalcitrant to therapeutic success, and wherein improved pharmacological intervention is required: intractable epilepsy, brain tumors, Parkinson's disease (PD), Alzheimer's disease (AD) and traumatic brain injury," Frontiers in Integrative Neuroscience²⁴

Pediatric seizures – "The efficacy and safety profile of CBDV suggest it may have therapeutic value for early life seizures," Neuropharmacology²⁵

Why Is There Such Resistance to Cannabis and CBD?

Despite CBD's many benefits, it remains in a legal no man's land, says the Brookings Institution:²⁶

"Over the past 22 years, 33 states have legalized cannabis for medical purposes, and over the past six years, 10 states have legalized cannabis for adult use. Every one of those programs is illegal under federal law, with no exceptions [if federal authorities choose to prosecute] ...

Even CBD products produced by state-legal, medical or adult-use cannabis programs are illegal products under federal law, both within states and across state lines ... Under the 2018 Farm Bill, there will be more broadly available, legal, CBD products; however, this does not mean that all CBD products are legal moving forward."

Many trace the original vilification of cannabis which gained it Schedule I status to its association with hippies and opposition to the Vietnam War 50 years ago. Not only were "pot" arrests a way of muzzling protestors, the "out of the box" thinking that marijuana fostered fed young people's strong questioning of authority, fueling the counter culture and war opposition.

But, as I noted earlier, the medical use of CBD oil, especially as a treatment for pain, also represents a significant threat to the sale of opioids which have so enriched Big Pharma in the last decade.

The cannabis plant also poses economic threats to the lumber, energy, food and other industries; its fiber products can be used to make paper, biofuel, building materials, food products and oil, clothing, shoes and even jewelry.

In fact, according to Viridis Labs, industrial hemp "can be used in an estimated 50,000 different products across a wide spectrum of industries including textiles, bioplastics, Cosmetics, building materials and human and animal."²⁷ Still, if the use of CBD were more widely adopted by Americans for medical treatments, we would probably all be healthier.

Sources and References

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