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# CANNABINOID CHRONICLES

## Medical Cannabis News and Information

### **Poor Quality Cannabis Causes Researchers to Pull Out of Study**

Controversy over the poor quality and low potency of US government-grown cannabis has apparently caused one of the nation's leading research universities to pull out of a federally approved study into cannabis and post-traumatic stress disorder (PTSD) in veterans.

Johns Hopkins University of Maryland was slated to help conduct the multiyear clinical trial, sponsored by the non-profit Multidisciplinary Association for Psychedelic Studies (MAPS). But last week Sean Keirnan, president of the advocacy group Weed for Warriors ([www.wfwproject.org/](http://www.wfwproject.org/)), called the university and was surprised to hear, in a recorded message, that Johns Hopkins was no longer involved in the study.

When pressed as to why Johns Hopkins University has withdrawn from the MAPS trials, the school released a statement:

"It is Johns Hopkins' mission to conduct high quality scientific research and save lives. Johns Hopkins elected to withdraw from the MAPS study of cannabis in veterans with PTSD prior to any participant enrollment because our goals for this study weren't in alignment. Johns Hopkins remains dedicated to helping military veterans, finding improved treatments for PTSD, and conducting innovative research to enhance our understanding of both the risks and benefits of cannabis/cannabinoids."

Basically, the cannabis supplied was of very poor quality (<https://www.leafly.com/news/politics/photos-prove-government-grown-cannabis-basically-ditch-weed>) in the PTSD trials. For those that may remember the cannabis produced by Prairie Plant Systems in the early years of Health Canada's MMAR in the 2000's, the NIDA product looks just as poorly.

MAPS spokesman Brad Burge, the group's director of

communications and marketing, said "NIDA wasn't able to provide the relatively high THC level that we wanted to look at. We asked for a 12% THC strain, and they were only able to get us a 10%."

The doctor overseeing the study was less charitable in her description. "It didn't resemble cannabis. It didn't smell like cannabis," Dr. Sue Sisley told PBS NewsHour (<http://www.pbs.org/newshour/updates/scientists-say-governments-pot-farm-moldy-samples-no-guidelines/>) earlier in March 2017. It resembled green talcum powder, and there were also some questions about the government-grown cannabis being contaminated with mold.

With John Hopkins University's departure, the study will still go ahead at a MAPS outpatient facility in Arizona. Originally, half of the veterans were to be from Arizona, and half from Maryland. Now all veterans in the study will have to be enrolled in Arizona's medical cannabis program.

This latest challenge to the PTSD study underscores the obstacles to federally approved research into the effects of cannabis, research that often proceeds at a snail's pace. Efforts to get the MAPS study off the ground were stalled for nearly five years before the DEA granted its approval last year. Contrarily, the DEA recently relaxed its nearly 50-year monopoly on cultivating cannabis for medical research in America, finally allowing others to cultivate research-grade cannabis.

**Source:** [www.leafly.com/news/science-tech/dustup-nida-grown-ditch-weed-leads-johns-hopkins-ditch-ptsd-study](http://www.leafly.com/news/science-tech/dustup-nida-grown-ditch-weed-leads-johns-hopkins-ditch-ptsd-study)



Image: <http://www.maps.org/>

# **International Association for Cannabinoid Medicines (IACM) Bulletin**

## ***Human: Medical cannabis patients rate cannabis as very effective***

Patients who use cannabis for medical purposes rate cannabis as highly effective in relieving different symptoms, according to research by scientists of the Universities of Arizona and Maine. The goal of this report was to provide an in-depth qualitative exploration of patient perspectives on the strengths and limitations of medical cannabis. Members of dispensaries (n = 984) including two-thirds with chronic pain completed an online survey.

In response to "How effective is medical cannabis in treating your symptoms or conditions?", with options of 0% (no relief) to 100% (complete relief), the average was 74.6%. The average amount spent on cannabis each year was \$3,060 US (about 2870 EURs). Responses to "What is it that you like least about MC?" identified twelve themes including money (28.4%, e.g. "The cost is expensive for someone on a fixed income").

**Source:** <https://www.ncbi.nlm.nih.gov/pubmed/28328576>

## ***Cells: Palmitoylethanolamide may be useful against inflammation of the brain***

In a study, rat microglia and human macrophages were investigated to evaluate whether the endocannabinoid PEA (palmitoylethanolamide) affects inflammation. Findings suggest indirect regulation of the CB2 receptor in microglia of the brain. Authors wrote that "PEA can be explored as a useful tool for preventing/treating the symptoms associated with neuro-inflammation in CNS disorders."

**Source:** <https://www.ncbi.nlm.nih.gov/pubmed/28336953>

## ***Human: CBD-rich cannabis reduced seizures in children with epilepsy according to a survey***

In 43 children from Mexico using cannabis rich in CBD (cannabidiol), 51% experienced a moderate to significant decrease in seizure frequency, and an additional 16% of cases were free from seizures, according to a survey of their parents. The number of antiepileptic drugs being used was reduced in 9/43 (20.9%) cases. No serious adverse effects were reported.

**Source:** <https://www.ncbi.nlm.nih.gov/pubmed/28392943>

## ***Animal: The number of CB2 receptors increases in some brain regions following anxiety and exercise***

In mice, which were subjected to social fear for five minutes on four days or had access to running wheels, the levels of CB2 receptors increased in certain brain regions. Authors wrote that "these results suggest that the CB2 receptor system is rapidly induced during anxiogenic social interactions plus fear conditioning or exercise; with responses potentially adaptive for coping mechanisms."

**Source:** <https://www.ncbi.nlm.nih.gov/pubmed/28392296>

## ***Human: Low age associated with higher problematic cannabis use among medical cannabis users***

In a study with 217 medical cannabis patients lower age was associated with a higher risk of problematic cannabis use. This is the result of a study by scientists from Palo Alto University, Stanford University and other scientific institutions across the USA. Data were collected at a medical cannabis dispensary in San Francisco and patients were grouped into age-defined cohorts (younger: 18-30, middle-aged: 31-50, and older: 51-72).

All three age groups had similar frequency of cannabis use over the past month. However, the quantity of cannabis used and rates of problematic cannabis use were higher among younger users relative to middle-aged and older adults. Authors concluded that "findings suggest that there is an age-related risk for problematic cannabis use among medical cannabis users, such that younger users should be monitored for cannabis use patterns that may lead to deleterious consequences."

**Source:** <https://www.ncbi.nlm.nih.gov/pubmed/28340421>

## ***Human: Effects of cannabis on testosterone levels***

In a study with 1577 men, there was no difference in serum testosterone levels between ever users of cannabis and never users. However, serum testosterone was inversely associated with time since last regular use of cannabis. Serum testosterone concentrations were higher in men with more recent cannabis use.

**Source:** <https://www.ncbi.nlm.nih.gov/pubmed/28395129>

## ***Animal: A THC preparation, which may be used locally at the eyes***

In a study with rabbits, a new THC preparation significantly improved the penetration of THC into the anterior segment of the eye following topical application. Enhanced ocular penetration resulted in significantly improved lowering activity on intraocular pressure. School of Pharmacy, University of Mississippi, USA.

**Source:** <https://www.ncbi.nlm.nih.gov/pubmed/28399267>

## ***Cells: Cannabigerol (CBG) is counteracting oxidative stress, mediated by the CB2 receptor***

Researchers investigated the potential of CBG (cannabigerol) to counteract oxidative stress in macrophages and certain blood cells. CBG exhibited a potent action in inhibiting oxidative stress by down-regulation of the main oxidative markers, and this effect was mediated by the activation of the cannabinoid-2 receptor.

**Source:** <https://www.ncbi.nlm.nih.gov/pubmed/28348416>

**For more info visit: [www.cannabis-med.org](http://www.cannabis-med.org)**

## **Tousaw Responds to Island Health Medical Cannabis Edibles Ban**

Lawyer Kirk Tousaw has sent a letter to Dr. Stanwick of Island Health in response to the recent ban on edible medical cannabis products on Vancouver Island.

Visit Tousaw's website for a complete statement:

<http://www.tousawlaw.ca/2017/04/10/a-response-to-vancouver-island-health-authority-aka-island-health-regarding-cannabis-edibles/>

Source: <http://www.tousawlaw.ca/>

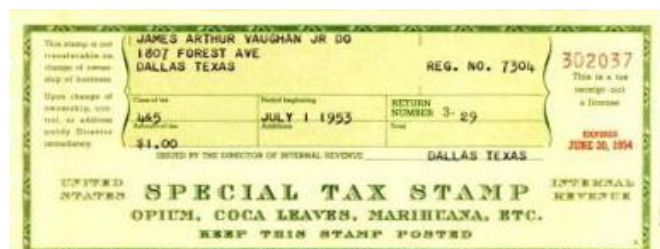
## **Substitution of Medical Cannabis for Pharmaceutical Agents for Pain, Anxiety, and Sleep**

A prior epidemiological study identified a reduction in opioid overdose deaths in US states that legalized medical cannabis (MC). One theory to explain this phenomenon is a potential substitution effect of MC for opioids. This study evaluated whether this substitution effect of MC for opioids also applies to other psychoactive medications.

New England dispensary members (n = 1,513) completed an online survey about their medical history and MC experiences. Among respondents that regularly used opioids, over three-quarters (76.7%) indicated that they reduced their use since they started MC. This was significantly ( $p < 0.0001$ ) greater than the patients that reduced their use of antidepressants (37.6%) or alcohol (42.0%). Approximately two-thirds of patients decreased their use of anti-anxiety (71.8%), migraine (66.7%), and sleep (65.2%) medications following MC which significantly ( $p < 0.0001$ ) exceeded the reduction in anti-depressants or alcohol use. The patient's spouse, family, and other friends were more likely to know about their MC use than was their primary care provider.

In conclusion, a majority of patients reported using less opioids as well as fewer medications to treat anxiety, migraines, and sleep after initiating MC. A smaller portion used less anti-depressants or alcohol. Additional research is needed to corroborate these self-reported, retrospective, cross-sectional findings using other data sources.

Source: <https://www.ncbi.nlm.nih.gov/pubmed/28372506>



## **UBC Study Looking at How Terpenes Interact with Cannabinoids**

Medical cannabis research has only just begun to grasp the synergistic relationships between the cannabinoids, terpenes and flavonoids found in the cannabis plant. Dr. Ethan Russo, a long-time cannabis researcher, came to a similar conclusion a few years ago, stating that future research would need to look at these interactions. His research found that cannabis strains with similar cannabinoid profiles can exert a different effect; it was determined that other compounds in the plant, such as terpenes and flavonoids, might be making the difference. Lately, scientists at the University of B.C. have identified about 30 genes related to the characteristic flavours of cannabis. The finding, published in the journal *Plos One* (<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0173911>) on March 29, 2017, is a first step toward standardizing different varieties of cannabis.

As Canada moves toward recreational cannabis, breeders and growers will want to identify different varieties of cannabis for flavour, but also for their psychoactive effects and potency, said Jorg Bohlmann, a professor in the Michael Smith Laboratories. Bohlmann likens the complex interaction of dozens of flavour genes to the sound of an orchestra, in which each song is a specific combination of instruments of different tone and volume.

The flavours of wine and cannabis are heavily influenced by the presence of a variety of chemical compounds called terpenes produced by the plant in certain amounts, many of which are found in both wine grapes and cannabis flowers. The researchers scanned the genome of cannabis plants to identify genes known to be associated with flavour in other plants.

“In the wine industry, grape varieties are highly standardized, but with cannabis it's a bit of a wild west,” he said. “The plants have all sorts of names and when it comes to the cannabinoids - the psychoactive compounds - there is a scary level of variation in potency.”

Medicinal cannabis growers and a soon-to-be legitimized recreational cannabis industry will be interested in flavour, but even more interested in defining and standardizing the therapeutic and psychoactive chemistry of cannabis, said UBC botanist Jon Page, founder of Anandia Labs, a biotech and cannabis testing firm.

“A big focus of breeding in Canada has been about increasing or modifying the levels of compounds such as tetrahydrocannabinol (THC) and cannabidiol (CBD),” he said. “It may be that terpenes, which affect flavour and fragrance, are also modifying the psychoactive and therapeutic properties (of cannabis).”

Source: <http://www.mapinc.org/drugnews/v17/n114/a01.html?180>

# Loblaw and Shoppers Drug Mart to Cover Employee Medical Cannabis

Loblaw Companies Limited and Shoppers Drug Mart just announced in an internal staff memo that effective immediately it will be covering medical cannabis under the employee benefit plan up to a maximum of \$1,500 per year.

However, coverage will only be for a limited group of illnesses.

Claims to insurance provider Manulife “will be considered only for prescriptions to treat spasticity and neuropathic pain associated with multiple sclerosis and nausea and vomiting in chemotherapy for cancer patients,” said Basil Rowe, senior vice-president of human resources at Loblaw Companies Ltd., owner of Shoppers, in the memo.

According to Loblaw/Shoppers spokesperson Tammy Smitham, “We will continue to review evidence as it becomes available for other indications”.

Since cannabis does not yet have a Drug Identification Number recognized by insurers, it isn't covered under typical drug spending. However, it will be covered through a special authorization process where plan members will pay and submit their claim after. About 45,000 employees will be eligible, including 22,000 Shoppers store staff and 3,000 corporate staff along with 20,000 corporate and store management employees at George Weston/Loblaw, including Weston Foods.

With Canada on the cusp of legalization, Shoppers applied last October to become a licensed cannabis producer for the purpose of retailing medicinal cannabis but hasn't got word on approval yet.

“Considering they want to retail it, it would be hypocritical of them not to make it accessible to their

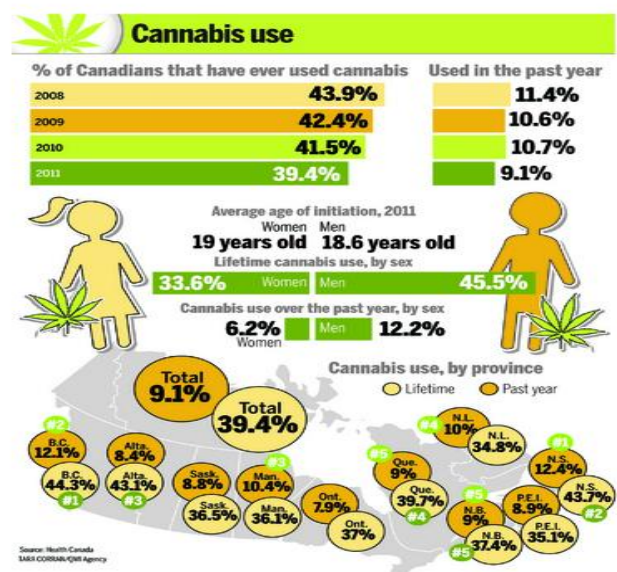
employees,” said Khurram Malik, lead cannabis financial consultant at Jacob Capital Management.

He says Shoppers/Loblaw would be the largest private sector company to offer the benefit to employees. The average cost of medical cannabis is about \$7 a gram, he said, and the annual cost to consumers is about \$1,300 to access the drug, based on average consumption of half a gram per day.

Currently, patients with prescriptions are only legally permitted to buy medical cannabis directly from licensed producers and have the product mailed, although a substantial number access medical cannabis through storefront dispensaries, some of which have been around for upwards of two decades.

Depending upon which poll you read (or care to believe), there are mixed feelings about obtaining recreational cannabis at a pharmacy.

Sources: <http://www.mapinc.org/drugnews/v17/n113/a01.html?180>



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**DrugSense**  
[www.drugsense.org](http://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](http://www.drugpolicy.org)

**Media Awareness Project**  
[www.mapinc.org](http://www.mapinc.org)

**Together Against Poverty Society**  
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***“There is nothing more dangerous than to build a society with a large segment of people in that society who feel that they have nothing to lose. People who have a stake in their society, protect that society, but when they don't have it, they unconsciously want to destroy it.***

**-- Martin Luther King Jr.**