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# CANNABINOID CHRONICLES

## Medical Cannabis News and Information

### **Physicians Seek More Education for Prescribing Cannabis**

In the fall of 2018, third-year medical student Yipeng Ge experienced a cannabis-related emergency-room consultation at the Ottawa Hospital Civic Campus.

A patient was unable to tolerate food and fluid after vomiting excessively for several days prior to the visit. Her medical history included irritable-bowel syndrome (IBS), migraines, chronic pain... The list went on. Her remedy of choice was cannabis. It seemed to be the only medication that could control her pain and symptoms related to IBS.

Ge's first thought: the patient's state was caused by excess consumption of cannabis. But due to limited education, Ge didn't feel comfortable counselling her cannabis use or providing additional resources. He ended up simply telling her to smoke less cannabis.

Like Ge, medical professionals across Canada are dealing with the uncomfortable task of talking to patients about cannabis, even though they know very little about the substance. As a result, doctors and students alike are demanding more cannabis-related medical education to fill this long-standing knowledge gap.

"It's not just a few people with severe diseases that want cannabis for medicinal use," said Dr. Mark Ware, chief medical officer at Ontario-based Canopy Growth Corporation. "People come in and ask if they should try cannabis for pain and anxiety, or agitation and dementia...it's now a national public policy and more people are open to trying it."

In late November 2018, Ware spoke to more than 500 family doctors - at the annual Refresher Course for Family Physicians - about the controversies that challenge cannabis research today. He was bombarded with questions.

Doctors are feeling an increased pressure from patients to guide them through cannabis use, but they just don't

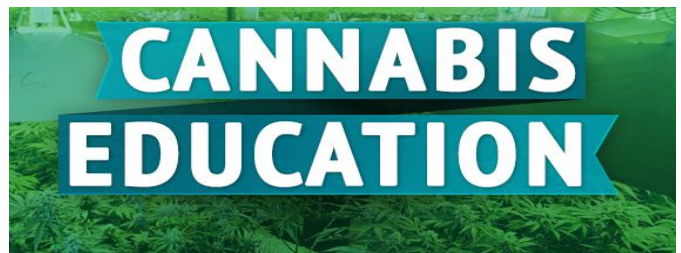
know what to say. As Ware put it, "Doctors are hungry for information."

A 2012-13 study published in the open-access journal *BMC Medical Education* on cannabis for therapeutic purposes found that 70% of respondents would be better able to treat patients using medical cannabis with more education. The lowest knowledge levels were found in dosing and creating effective treatment plans.

Confusion around the medical profession led Ge and fellow Canadian Federation of Medical Students (CFMS) members to produce a cannabis position paper this past spring. It recommends that Canadian medical schools create a longitudinal evidence-based cannabis curriculum in undergraduate medical education, provide specialized cannabis training in continuing medical studies, and expand funding for medical education and research on cannabis. It also says that a lack of comprehensive education on the history, biology, pharmacology, safety, efficacy, and patient approaches of cannabis translates into poor clinical practice and negative patient outcomes.

For the CFMS, a solution would introduce an undergraduate medical education curriculum that includes interactive small-group teaching, online modules, and instructional lectures. However, they are aware of their greatest obstacle: the scarcity and lack of diversity of experimental, observational, and clinical studies on cannabis use.

**Sources:** <https://www.straight.com/cannabis/1174731/doctors-call-more-education-when-it-comes-prescribing-cannabis#>



**Image:** <https://www.medicaljane.com/2013/11/30/educational-opportunities-within-the-cannabis-industry/>

## ***Human: Cannabis rich in THC may be useful in the treatment of fibromyalgia***

In an experimental placebo-controlled study with 3 different strains of cannabis provided by the company Bedrocan, THC-rich cannabis reduced pain. Study results by researchers at Leiden University Medical Center, The Netherlands, and Bedrocan International were published in the journal *Pain*. On 4 different occasions, 20 patients with fibromyalgia received either the variety Bedrocan with 22 mg THC, the variety Bediol with 13 mg THC and 18 mg CBD, Bedrolite with 18 mg CBD or a placebo. The two cannabis varieties containing THC caused a significant increase in pressure pain threshold relative to placebo. CBD inhalation increased THC plasma concentrations but diminished THC-induced analgesic effects, indicative of synergistic pharmacokinetic but antagonistic pharmacodynamic interactions of THC and CBD. Authors wrote that this “experimental trial shows the complex behavior of inhaled cannabinoids in chronic pain patients with just small analgesic responses after a single inhalation.”

**Sources:** <https://www.ncbi.nlm.nih.gov/pubmed/30585986>  
<https://bedrocan.com/fibromyalgia-study-proves-effectiveness-of-bedrocans-products/>

## ***Human: Vaporization may be more effective than smoking cannabis***

In a study with 17 healthy adults with no past-month cannabis use, THC blood concentrations were higher after vaporizing than with smoking cannabis with the same THC content. Scientists of the Johns Hopkins University School of medicine in Baltimore published their research in the *Journal of Analytical Toxicology*. They received cannabis containing 0, 10 or 25 mg THC in six double-blind sessions. Blood concentrations of THC and its metabolites (11-OH-THC, THCCOOH) were dose-dependent for both methods of administration, but higher following vaporization compared with smoking. THC was detected longer in oral fluid compared to blood. Authors wrote that “cannabis pharmacokinetics vary by method of inhalation and biological matrix being tested. Vaporization appears to be a more efficient method of delivery compared with smoking.”

**Source:** <https://www.ncbi.nlm.nih.gov/pubmed/30615181>

## ***Canada: Prices for cannabis increased after legalization***

The average price for a legal gram of cannabis was \$9.70 CAD in the past year. This is nearly 50% higher than cannabis from the black market. Statistics Canada says it looks like Canadians are still turning to the black market, and claims things such as widespread cannabis shortages, delivery delays and issues with websites may have been contributing factors.

**Source:** <http://www.durhamradionews.com/archives/116164>

## ***Human: Cannabis use is associated with lower risk for factors associated with diseases of heart and blood vessels***

In a study with 253 men, greater cannabis use was associated with lower body mass index and other risk factors for cardiovascular disease. Scientists of the Department of Psychology of Arizona State University in Tempe published their research in the recent issue of *Psychosomatic Medicine*. Participants were followed from age 7 to age 32. Cannabis use was associated with lower body mass index (BMI), better waist-to-hip-ratio (WHR), better HDL and LDL cholesterol, lower triglycerides, lower fasting glucose, and lower blood pressure (both systolic and diastolic). A theoretical explanation for this long-term effect of cannabis despite the well-known appetite-enhancing effects of the drug is provided by scientists at Indiana University in South Bend, USA, in the journal *Cannabis and Cannabinoid Research*.

**Sources:** <https://www.ncbi.nlm.nih.gov/pubmed/30589665>  
<https://www.liebertpub.com/doi/10.1089/can.2018.0045>

## ***Human: Many patients substitute their standard medication with cannabis***

According to a survey with 392 participants suffering from different medical conditions, medical cannabis users reported a greater degree of trust in cannabis compared to standard medication, researchers of the Population Studies Center of the U. of Michigan wrote. In comparison to pharmaceutical drugs, medical cannabis users rated cannabis better on effectiveness, side effects, safety, addictiveness, availability, and cost. Due to the medical use of cannabis, 42% stopped taking a pharmaceutical drug and 38% used less of a pharmaceutical drug. A substantial proportion (30%) reported that their treating physician did not know that they used medical cannabis.

**Source:** <https://www.ncbi.nlm.nih.gov/pubmed/30616501>

## ***Human: Cannabinoid receptors may be therapeutic targets in the treatment or prevention of endometrial cancer***

An analysis of endometrial biopsies from women with endometrial cancer (EC) and women without this cancer showed that CB1 receptors in cancer patients were reduced by 90% and CB2 receptors by 80%. Authors wrote that these “data suggest that the loss of both types of CB receptors is potentially involved in the development of or progression of EC and that CB1 and CB2 receptor expression could serve as useful histological markers and therapeutic targets in the treatment of or prevention of EC.”

**Source:** <https://www.ncbi.nlm.nih.gov/pubmed/30569804>

**More info: [www.cannabis-med.org/](http://www.cannabis-med.org/)**

## Research Studies of 2018

With the advent of recreational cannabis legalization in Canada, and a large increase in the amount of cannabis legally grown for research purposes in the USA, medical cannabis research is poised to accelerate in the future. Additionally, the scope of inquiry includes exploring the potential benefits, not focussing on the potential harms. Below are a handful of studies from 2018:

### 1. Cannabis Safely, Effectively Provides Pain Relief to Seniors

In a study with over 900 elderly patients: The most common indications for cannabis in the elderly were pain and cancer; at six months of cannabis treatment, 93.7% reported improvement in their condition; at six months of treatment, the number of reported falls was significantly reduced; medical cannabis decreased the use of prescription medicines, including opioids.

### 2. Cannabis Enhances Pain-Relief from Opioids

A February 2018 study published in *Neuropsychopharmacology* showed that in a double-blind, placebo controlled study, “cannabinoids combined with opioids produce synergistic anti-nociceptive effects, decreasing the lowest effective anti-nociceptive opioid dose (i.e., opioid-sparing effects) in laboratory animals.” In other words, by adding cannabis to their treatment plan, pain patients can get the same amount of relief from smaller doses of opioids, thus reducing dependence and other potential harms.

### 3. CBD Has Profound Antidepressant Effect in Rodents

CBD is known as a key component of cannabis oil given to children with Dravet Syndrome and other seizure disorders. According to a new study published in *Molecular Neurobiology*, researchers in Brazil working with rodents noted that CBD reduced depression associated behaviors after a single dose, improvement that lasted a full week after the treatment.

### 4. Cannabis Enhances Sex

Three new studies published in 2018 point to cannabis enhancing sexual pleasure and increasing sexual frequency.

The first two studies, conducted by researchers at St. Louis University in Missouri, surveyed hundreds of women and found that among those who had used cannabis immediately prior to sex, 3% called it sex-ending, 65% called it enhancing, 23% said it made no difference, and 9% expressed no opinion.

In the final study, researchers at Stanford University extracted data on tens of thousands of American adults taken from the National Survey of Family Growth, and found that compared with abstainers, men who consumed cannabis weekly reported 22% more sex, and women reported 34% more, with sexual frequency even higher among those who used more than once a week.

### 5. CBD May Help Treat Methamphetamine Addiction

In the first study to ever look at methamphetamine addiction specifically, researchers at the University of Sydney and Macquarie University in Australia in September 2018 published a study that found cannabidiol (CBD) in doses of 80 mg per kilogram of body weight reduced the motivation of rats “to self-administer methamphetamine and relapse to methamphetamine-seeking behavior following abstinence.”

### 6. CBD Restores Brain Changes Caused By Regular Cannabis Use

In the early 2000’s, cannabinoids were found to be effective in “limiting neurological damage following...stroke and trauma, or in the treatment of neurodegenerative diseases, such as Alzheimer’s disease, Parkinson’s disease, and HIV dementia.”

One potentially troubling result of frequent THC-rich cannabis use, however, is a reduction in size of the hippocampus, which is involved in cognitive performance, controlling anxiety, and tamping down stress.

Neuroscientists in Australia recently sought to determine if cannabidiol (CBD) could restore that loss, and found that after 10 weeks of giving four 50-milligram CBD capsules per day to regular cannabis smokers, their hippocampus anatomy had been markedly restored - even among subjects who’d continued to consume THC-rich cannabis throughout the test period.

**Sources:** <https://www.ejinme.com/article/S0953-6205%2818%2930019-0/abstract>  
<https://www.nature.com/articles/s41386-018-0011-2>  
<https://link.springer.com/article/10.1007%2Fs12035-018-1143-4>  
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## **Licensed Producer Caught Selling Unauthorized Cannabis**

Bonify, a Winnipeg-based licensed cannabis producer, has been stripped of its senior management team after a third-party investigation found the company sold unauthorized product in Saskatchewan.

George Robinson, the contractor hired to investigate the troubled company facing two Health Canada recalls, said the three Bonify executives were also accused of bullying and threatening staff workers who tried to speak up.

"I don't know what their motivation and driver is, but what they did was not at all remotely close to following the regulations," said Robinson, chief executive of RavenQuest Technologies Inc.. He decried the conduct of the executives as "creative entrepreneurialism."

Robinson said a number of front-line staff tried to speak out about the 200 kilograms of unlicensed cannabis that arrived at its Winnipeg production facility but were pressured to look the other way.

"That's a real, sad position to put really, good quality people in, but sometimes they make the choice to protect their families, their livelihood and we don't hold them accountable for those forced decisions," he said. "In fact, we continue to support them."

Complaints about the unauthorized cannabis eventually reached senior managers and the company's board of directors. Robinson said it appears that Bonify sold unapproved cannabis because it felt pressure to satisfy its supply agreements with Saskatchewan and Manitoba.

Health Canada is investigating what went wrong, but he said he was not aware if police authorities were also probing the company. Robinson said it would be up to federal and provincial regulators to alert police.

Earlier in December 2018, Health Canada issued a recall of two Bonify strains over contamination issues that were sold at three Saskatchewan retailers.

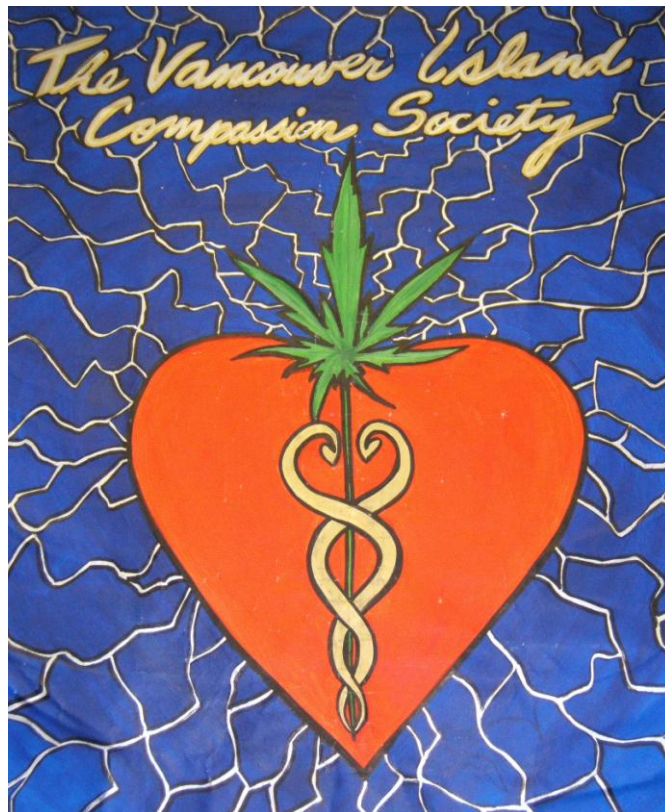
Robinson confirmed December 27<sup>th</sup> that the product was

unauthorized, containing traces of bacteria, yeast, mould and the unconfirmed presence of E. coli. He refused to call the products "illegal" or "illicit."

Robinson said Bonify voluntarily chose to suspend all retail sales in Saskatchewan and is no longer selling medicinal cannabis as the company tries to restore regulators' confidence. All existing Bonify products have been seized from Manitoba retailers and delisted. Robinson said he expects it will take months before the company re-enters the larger retail market.

**Sources:** <https://www.cbc.ca/news/canada/manitoba/bonify-recalled-cannabis-manitoba-1.4959609>

<https://www.cbc.ca/news/canada/saskatchewan/2-strains-cannabis-recalled-health-canada-1.4945552>



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**Health Canada**  
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***"Genuine beginnings begin within us, even when they are brought to our attention by external opportunities."***

**-- William Bridges (American author; 1933 – 2013)**