

We would like to begin by acknowledging that the land on which we gather is the traditional territory of the Haudenosaunee, and most recently, the territory of the Mississaugas of the New Credit First Nation. Today, the meeting place of Toronto (from the Haudenosaunee word Tkaronto) is still the home to many Indigenous people from across Turtle Island and we are grateful to have the opportunity to work in the community, on this territory.

Cannabis

RAAM nurse videoconferences May 8th, 2019

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Outline

- ▶ Legalization
- ▶ Endocannabinoid system
- ▶ Therapeutic effects/uses
- ▶ Strains of cannabis
- ▶ Absorption, Distribution, Metabolism and Effect
- ▶ Adverse Events
- ▶ Resources
- ▶ Q/A

Disclosures

- ▶ None
- ▶ No affiliation with a cannabis clinic or LP

Cannabis Use in Canada

- ▶ In Canada, 43% of people aged 15 years and older have used cannabis in their lifetime, with 12% having used cannabis in the past year.
- ▶ Men use cannabis more commonly than women do (16% vs 8%), with the highest use in those aged 18 to 24 years (33%).
- ▶ Statistics Canada (2018) Reports that 3.4 Million Canadians use cannabis every year

LEGALIZATION

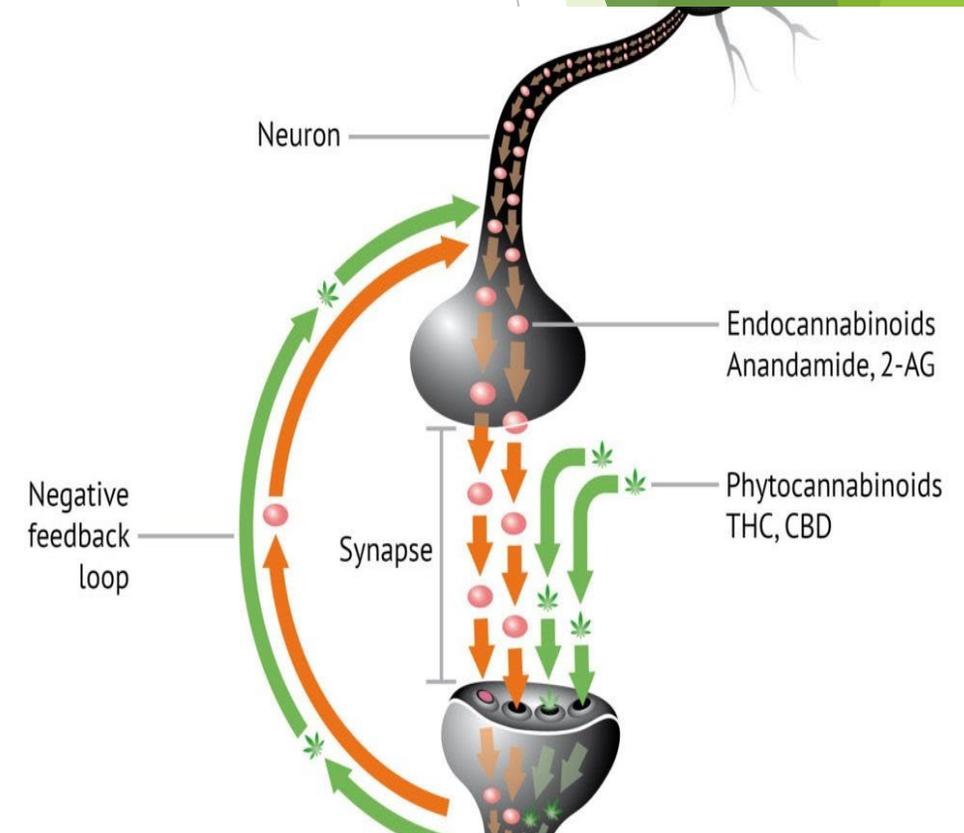
- ▶ As of October 17, 2018, cannabis is legal in Canada for both recreational and medicinal purposes, and governed under the [Cannabis Act \(Bill C45\)](#). Part 14 of the [Cannabis Regulations](#) specifically address access to cannabis for medical purposes and replaces the Access to Cannabis for Medical Purposes Regulations (ACMPR), which is no longer in force. As a result, **cannabis is no longer listed as a controlled substance** under Schedule II of the *Controlled Drugs and Substances Act*.
- ▶ Possession limit of 30gm per person
- ▶ Minimum age to purchase is 19
- ▶ You can purchase dried/fresh cannabis, plants, oils, seeds

***Canadian Girl Scout Sells
Out Of Cookies Outside
Dispensary On First Day
Of Legal Weed***



Endocannabinoid System

- ▶ A physiological neuromodulatory system
- ▶ Regulates: central/peripheral nervous system, stress, anxiety, digestive, immune and motor function
- ▶ Endocannabinoids are produced in the post-synaptic terminal
- ▶ They bind to cannabinoid receptors on the pre-synaptic terminal
- ▶ Once stimulated they activate a signal cascade that suppresses the release of neurotransmitters
- ▶ Neurotransmitter suppression changes the frequency of post-synaptic neuronal firing





CB1 receptors

- ▶ Location: presynaptically in the CNS, PNS, Peripheral tissue
- ▶ Activation: causes regulation of neurotransmitters (DA, SHT, NE < GABA, Glutamate)
 - Blocks N, P, Q type Calcium channels (same mechanism as Keppra/Lamotrigine and Carbamazepine)
 - ▶ 10 x more common than opioid receptors



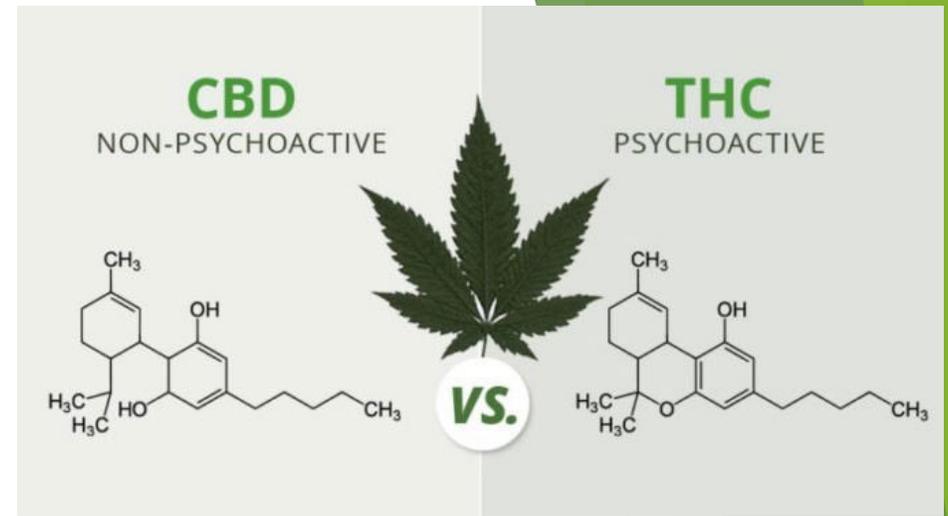
CB2 Receptors

- ▶ Location: hemopoietic cells, immune tissue, T and B cells
- ▶ Activation: CB2 receptors modulate the release of cytokines and cell migration
 - Causes apoptosis in cancer cells, decrease progression of ALS and atherosclerosis

TRPV1 Receptors

- ▶ Location: Peripheral Nervous System (aka capsaicin receptor)
- ▶ Activation: reduces pain signaling and influences motor behaviour
 - Degrading enzymes: fatty acid amide hydrolase (FAAH), MAGL, COX-2

PHYTOCANNABINOIDS



▶ THC: TETRAHYDROCANNABINOL

- Most abundant phytocannabinoid
- MOA: partial CB1/CB2 receptor agonist. Higher affinity at CB1 (CNS)
- Uses: analgesia, appetite regulation, insomnia, spasticity
- Biphasic effect (effective at low doses, worsens symptoms at high doses)

▶ CBD: CANNABIDIOL

- Second most abundant phytocannabinoid
- MOA: CB1/CB2 antagonist, CB2 inverse agonist, TRPV1 agonist, SHT1 agonist
- Uses: anti-inflammatory, analgesia, anxiolytic, anti-epileptic, neuroprotective



Conditions Related to the Endocannabinoid System Health Canada Guidelines (2018)

- ▶ Palliative care
- ▶ Chemotherapy-induced nausea and vomiting (CINV)
- ▶ Wasting syndrome (cachexia) and loss anorexia in AIDS and cancer patients, and anorexia nervosa
- ▶ Multiple sclerosis, amyotrophic lateral sclerosis, spinal cord injury and disease
- ▶ Epilepsy
- ▶ Pain (Acute pain, chronic pain, Experimentally-induced inflammatory and chronic neuropathic pain, Neuropathic pain and chronic non-cancer pain, Cancer pain, “Opioid-sparing” effects and cannabinoid-opioid synergy, Headache and migraine)
- ▶ Arthritides and musculoskeletal disorders
- ▶ Movement disorders (Dystonia, Parkinson’s, Huntington’s, Tourette’s)
- ▶ Glaucoma
- ▶ Asthma
- ▶ Stress and psychiatric disorders (Anxiety and depression, Sleep Disorders, PTSD, Alzheimer’s disease and dementia)
- ▶ Alcohol and opioid withdrawal symptoms
- ▶ Inflammatory skin diseases (dermatitis, psoriasis, pruritus)
- ▶ Gastrointestinal system disorders (irritable bowel syndrome, inflammatory bowel disease, hepatitis, pancreatitis, metabolic syndrome/obesity)

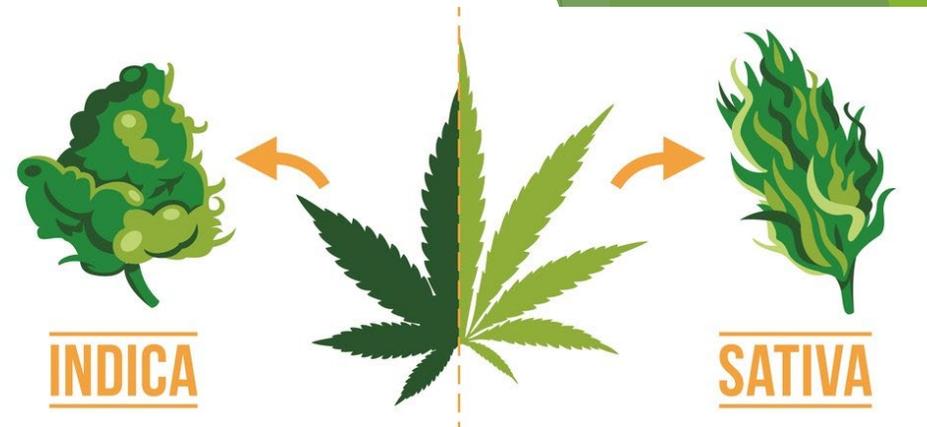
Stronger Evidence

- ▶ Nerve pain
- ▶ End-of-life pain
- ▶ Nausea and vomiting caused by chemotherapy
- ▶ Muscle spasticity caused by multiple sclerosis (MS) or spinal cord injury

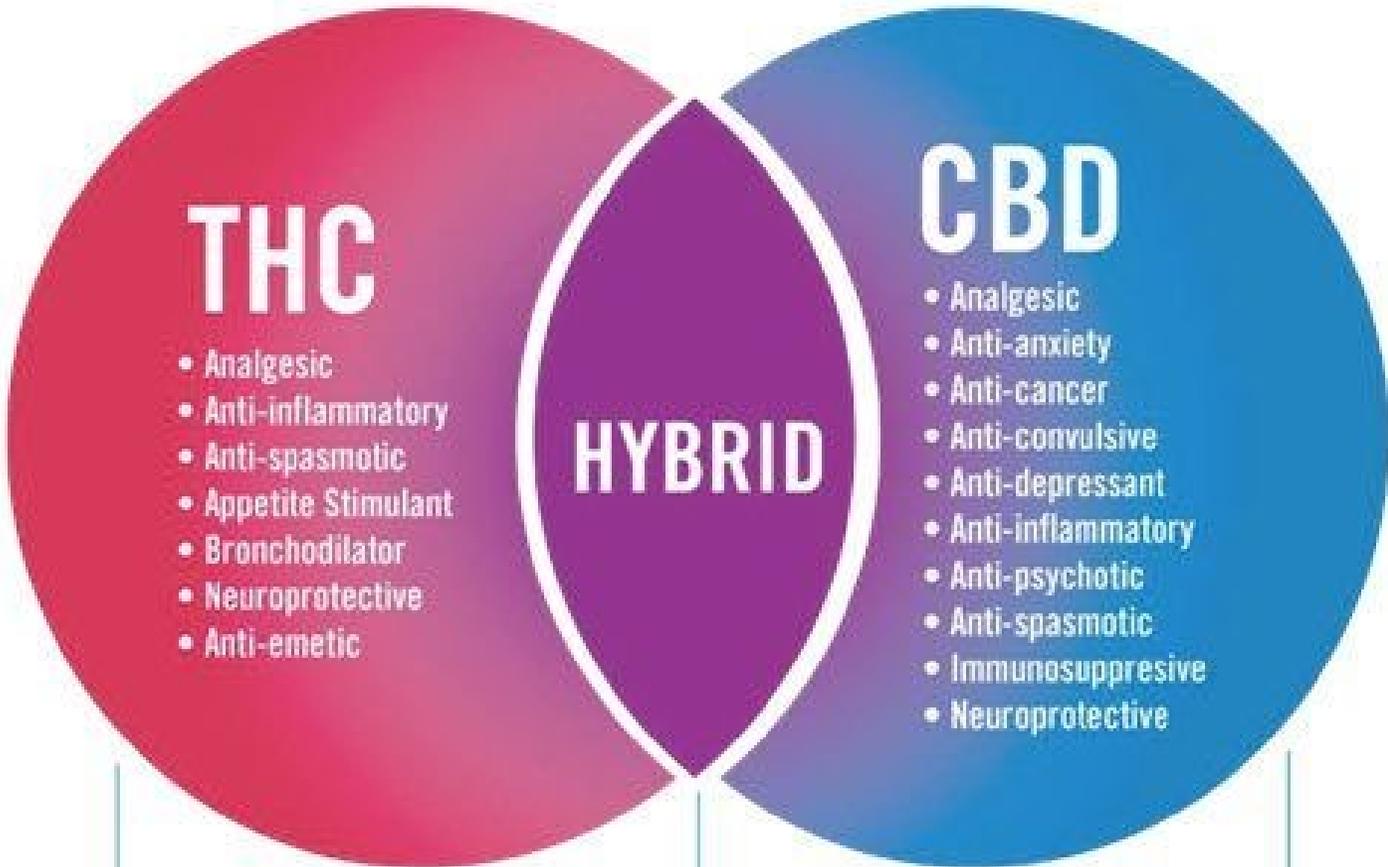
What percentage of patients will get better?

Benefit	With Placebo	With Cannabinoids
Reduce nerve pain	30%	38%
Reduce end-of-life pain	23%	30%
Reduce nausea and vomiting caused by chemotherapy	13%	47%
Reduce spasticity caused by MS or spinal cord injury	25%	35%

Indica vs Sativa



- ▶ Sativa: uplifting, energetic, cerebral, more euphoric, daytime use
Known as “haze”
- ▶ Indica: relaxing, calming, body effects, nighttime use
Known as “kush”
- ▶ Important for OCS classification, labs have proven no true distinction due to cross breeding



THC 20:1 — 2:1 — 1:1 — 1:2 — 1:20 **CBD**

HYBRID



ADME

- ▶ **Absorption:** depends on method of consumption
 - Inhalation: onset 3-5 min, duration 2-4 hours, 35 % bioavailability
 - PO: oils/capsules/edibles: onset 30-120 min, duration 4-8 hours, 10 % bioavailability
 - Topical: ointments, suppositories: unknown (CBD is 10x more permeable than THC)
- ▶ **Distribution:** highly lipophilic, highly protein bound, long half life (> 4 days)
 - Detectable levels 4-8 days after 1 x use, up to 30 days with chronic use



ADME

- ▶ Metabolism: CYP450, 3A4, 2C9, 2C10
- ▶ THC/CBD inhibits 3A4, 2C9, 2C19
- ▶ Potential drug interactions:
 - Anticholinergics: increased side effects
 - CNS depressants: increase sedative, lethargy, drowsiness
- ▶ Drugs that can *increase* effects of cannabis:
 - ▶ Amiodarone, clarithromycin, diltiazem, erythromycin, ‘azoles, verapamil, ritonavir
- ▶ Drugs that can *decrease* the effects of cannabis:
 - ▶ Carbamazepine, phenytoin, rifampicin, St. John’s Wort
- ▶ Drugs that may have *increased* effects with cannabis:
 - ▶ Alcohol, benzodiazepines (specifically high dose clobazam), opiates



ADVERSE EFFECTS

- ▶ CVS: tachycardia (inhaled), vasodilation, postural hypotension, bleeding (*monitor with Coumadin*)
- ▶ GI: decreased motility, hyperemesis, xerostomia
- ▶ CNS: drowsiness, dizziness, sensory impairment, euphoria, short term memory loss, motor impairment
- ▶ Psychiatric: paranoia, **schizophrenia**, anxiety

- ▶ **Contraindications:** Pregnant, Breastfeeding, Hx of psychosis, recent MI, schizophrenia (THC)
- ▶ **Limit THC:** Under 25, Over 55, hx of arrhythmia, panic attacks, decreased GFR

Can nurses administer cannabis?



- ▶ Legally under the cannabis act: yes
 - ▶ Must be under your professional treatment and cannabis is required for the treatment
 - ▶ Knowledge/skill/judgment to administer safely: understanding of substance and form, means of authenticating cannabis and dosing, evaluate efficacy
 - ▶ Adverse effect management
 - ▶ You can have possession of cannabis in this scenario
- (CNO, 2018)
- ▶ At WCH this would be from a patient's home supply

THC/THC		CBD/CBD	
Total THC	2.668 %	Total CBD	0.000 %
THC Total	19.039 %	CBD Total	0.040 %

Hospital Setting

- ▶ The *Occupational Health and Safety Act* (OHSA) sets out the rights and duties of employers and workers. These duties are aimed at protecting the worker and can be applied to workplace impairment that arises from substance use. The employer's duties include ensuring that workers *are not impaired* while working and taking every reasonable precaution to ensure that workers are protected. The worker's duties include reporting to **work fit for duty**, assisting in ensuring a safe workplace, and complying with safety policies
- ▶ The legalization of recreational cannabis is not expected to result in any changes to the rights and duties under the OHSA. However, the **provincial *Cannabis Act* prohibits cannabis use in “workplaces” within the meaning of the OHSA**. The definition of “workplace” under the OHSA is “any land, premises, location or thing at, upon, in or near which a worker works”.

WCH policy (being updated)

- ▶ Important to note: **Unacceptable conduct:** Include “possession for consumption or use of alcoholic beverages, or possession for consumption or use of non-medical cannabis, while on Hospital premises”.
- ▶ Use of recreational cannabis at work: The use of recreational cannabis is strictly regulated and **clearly and completely prohibited** in the workplace (the definition of which is broad, fluid, and unfixed).

Prescribing

- ▶ Require completion of the Medical Document Authorizing the use of Cannabis for Medical Purposes under the Access to Cannabis for Medical Purposes Regulation

<https://www.canada.ca/en/health-canada/services/drugs-medication/cannabis/licensed-producers/sample-medical-document-marihuana-medical-purposes-regulations.html>

 Health Canada / Santé Canada

Your health and safety... our priority. / Votre santé et votre sécurité... notre priorité.

Medical Document Authorizing the use of Cannabis for Medical Purposes under the Access to Cannabis for Medical Purposes Regulations

Help on accessing alternative formats, such as Portable Document Format (PDF), Microsoft Word and PowerPoint (PPT) files, can be obtained in the [alternate format help section](#).

For related information, please see Health Canada's [Information for Health Care Practitioners](#).

This document may be completed by the applicant's health care practitioner as defined in the Access to Cannabis for Medical Purposes Regulations (ACMPR). A health care practitioner includes medical practitioners and nurse practitioners. In order to be eligible to provide a medical document, the health care practitioner must have the applicant for the medical document under their professional treatment. Regardless of whether or not this form is used, the medical document must contain all of the required information, (see in particular s. 9 of the ACMPR).

Your health care practitioner may use this form to provide you authorization to use cannabis for medical purposes. Your health care practitioner may use a different form, but the required information as per section 9 of the ACMPR (outlined below) must be included.

Access via Health Canada licensed producers: Should you choose to access cannabis from a licensed producer, this form must be sent directly to the licensed producer of your choice. You may choose any licensed producer who is authorized to sell to registered clients. Please see the Health Canada website for a list of licensed producers. Should you wish to switch from one Health Canada licensed producer to another a new medical document will be required as licensed producers are required to keep the original medical document on file.

Access via production for own medical purposes: Should you choose to produce your own cannabis, or designate someone to produce it for you, the original of this document must be sent to Health Canada with your Registration Application Form.

Patients Given Name and Surname:

Patients Date of Birth (DD/MM/YYYY):

Daily quantity of dried marihuana to be used by the patient: grams / day

The period of use is day(s) or week(s) or month(s).

Note: The period of use cannot exceed one year

Health care practitioner's given name and surname:

Profession:

Health care practitioner's business address:





Available Guidelines

- ▶ **Simplified Guidelines for Prescribing Medical Cannabinoids in Primary Care (2018)**
 - ▶ Cannabis was not recommended as first or second line treatment for any conditions studied
 - ▶ Possible third line treatment for neuropathic pain, CINV, spasticity in MS or SCI
- ▶ **The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research (2017)**
 - ▶ Included over 10,000 research studies, most of which come from systematic reviews, meta-analyses
 - ▶ *In vitro* and *in vivo* animal studies were not included



Licensed producers

- ▶ They ONLY way to purchase LEGAL medical cannabis in Canada was via a licensed producer and sent through Canada Post. This is subject to rigorous testing and policies.

This changed April 1st- now there are brick and mortar stores. There are 25 legal permits- currently only 10 are open in Ontario (1 in Toronto). 6 permits were given for Toronto.

- ▶ Currently 90-100 LP's in Canada <https://www.canada.ca/en/health-canada/services/drugs-medication/cannabis/industry-licensees-applicants/licensed-cultivators-processors-sellers.html>
- ▶ Some insurance companies have coverage (typically under health spending account)

Provider	Contact	Qualification	Criteria of Symptoms	Coverage Limits
 ALBERTA BLUE CROSS [®]	1-800-661-6995 ab.bluecross.ca	Doctor's note needed under Health Spending Account.	Generally limited to treatment for spasticity and neuropathic pain associated with multiple sclerosis, and nausea/vomiting due to chemo.	Capped by individual plan or Health Spending Account.
 Desjardins Insurance	1-800-463-7843 desjardinslifeinsurance.com	Must be 21 years of age or older, completed pre-authorization process, and failed prior traditional treatments.	Limited to pain related to advanced cancer, refractory neuralgia, nausea and vomiting caused by chemo, spasticity caused by multiple sclerosis or a lesion of the spinal cord.	Capped by individual plan or Health Spending Account, annual max between \$1,500 and \$ 6,000. Excludes PerformPlus.
 Empire Life	1-800-267-0215 empire.ca	May be covered but depends on individual plan.	Case by case evaluation.	Capped by individual plan or Health Spending Account.
 THE Great-West Life ASSURANCE COMPANY	1-780-917-7800 greatwestlife.com	Doctor's note needed under Health Spending Account.	Case by case evaluation.	Capped by individual plan or Health Spending Account.
 gsc green shield canada	1-888-711-1119 greenshield.ca	Must be 25 years of age or older, completed pre-authorization process, and failed prior traditional treatments.	Limited to chronic neuropathic pain, treatment for spasticity and neuropathic pain associated with multiple sclerosis, and nausea/vomiting due to chemo.	Capped by individual plan or Health Spending Account, annual max between \$1,500 and \$ 6,500.
 MANITOBA BLUE CROSS [®]	1-888-596-1032 mb.bluecross.ca	May be covered but depends on individual plan.	Case by case evaluation.	Capped by individual plan or Health Spending Account.
 Manulife	1-800-268-6195 manulife.ca	May be covered but depends on individual plan, completed pre-authorization process, and failed prior traditional treatments.	Case by case evaluation.	Capped by individual plan or Health Spending Account.
 M Markers Insurance <small>(Subsidiary of Evergreen Pacific)</small>	1-647-557-5824 markersinsurance.com *To be released Q2 2019	*Proof of valid medical documentation from a licensed physician after filling out the online application.	*Based wholly on individuals medical document, potential to cover both physical and mental ailments.	*Capped by individual plan or Health Spending Account.
 SSQ insurance	1-800-565-4550 ssq.ca	Completed pre-authorization process, and failed prior traditional treatments.	Limited to chronic neuropathic pain, treatment for spasticity and neuropathic pain associated with multiple sclerosis, and nausea/vomiting due to chemo.	Capped by individual plan.
 Sun Life Financial	1-877-786-5433 sunlife.ca	Completed pre-authorization process, and failed prior traditional treatments.	Limited to cancer, multiple sclerosis, rheumatoid arthritis, HIV/AIDS, or need of palliative care.	Capped by individual plan.

Please note that only medical cannabis is eligible for insurance coverage in Canada. Current as of Jan 31 2019.

Health Canada Tracking

- ▶ Online Cannabis tracking tool and licensing system. This allows industry to submit and view the progress of online applications.
- ▶ Enables the tracking of cannabis
- ▶ Prevents legal cannabis from being diverted
- ▶ Prevents illegal cannabis from being introduced to the legal market
- ▶ It is **ILLEGAL** to take cannabis across the international border (even medical)

Tips/Pearls

- ▶ Vit C will metabolize THC
- ▶ CBD is the antidote to THC
- ▶ Hyperemesis: hot shower
- ▶ Start low and go slow

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Questions?

Resources: ocs.ca

[Simplified guideline for prescribing medical cannabinoids in primary care](#)

www.cfp.ca/content/cfp/64/2/111.full.pdf

<https://www.cfpc.ca/cannabis-resources/>