



CANNABIS THERAPY

Medical Cannabis for the Layperson

June 20th, 2019

UNDERSTANDING MEDICAL CANNABIS IN CANADA

- Gain basic understanding of medical cannabis and science supporting use
- Understand current Canadian cannabis regulations
- Understand basic approach for patients seeking medical cannabis



ASSUMPTIONS

“Cannabis medicine is just medicine”

“All ethical standards and best medical practices to which providers adhere to when prescribing medications, remain applicable”





WHERE DID WE START?

LONG HISTORY OF MEDICAL USE

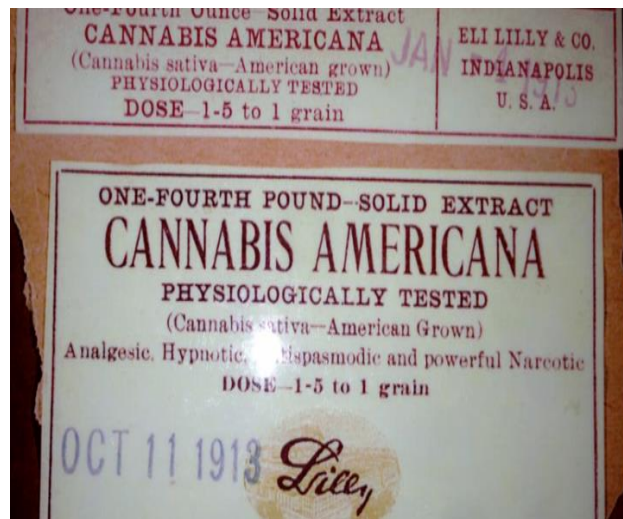
- Formal medical use of cannabis can be traced back at least **5,000 years** to ancient China and Egypt.
 - **100 AD**, Chinese surgeon Hua T'uo used a mixture of wine and cannabis as a surgical anaesthetic.
 - **In 1839**, Irish physician Dr. William B. O'Shaughnessy published *On the Preparations of the Indian Hemp, or Gunjah* reviewing the use of cannabis in rheumatism, rabies, cholera, tetanus, cramps and delirium tremens.
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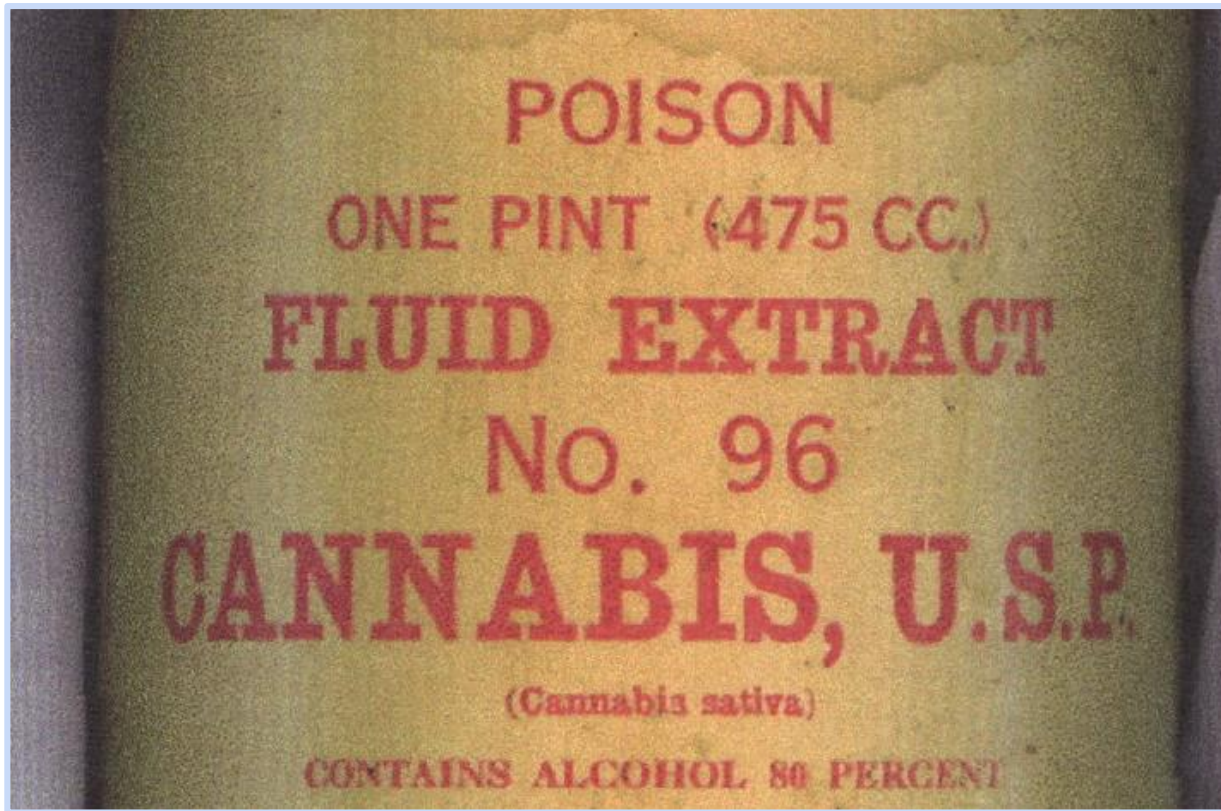
MEDICAL CANNABIS - HISTORY

By late 19th Century, cannabis-based medications were widely used in North America

Manufactured by Burroughs-Wellcome, Bristol-Meyers Squibb, Parke-Davis, and Eli Lilly.



THEN... POLITICS START

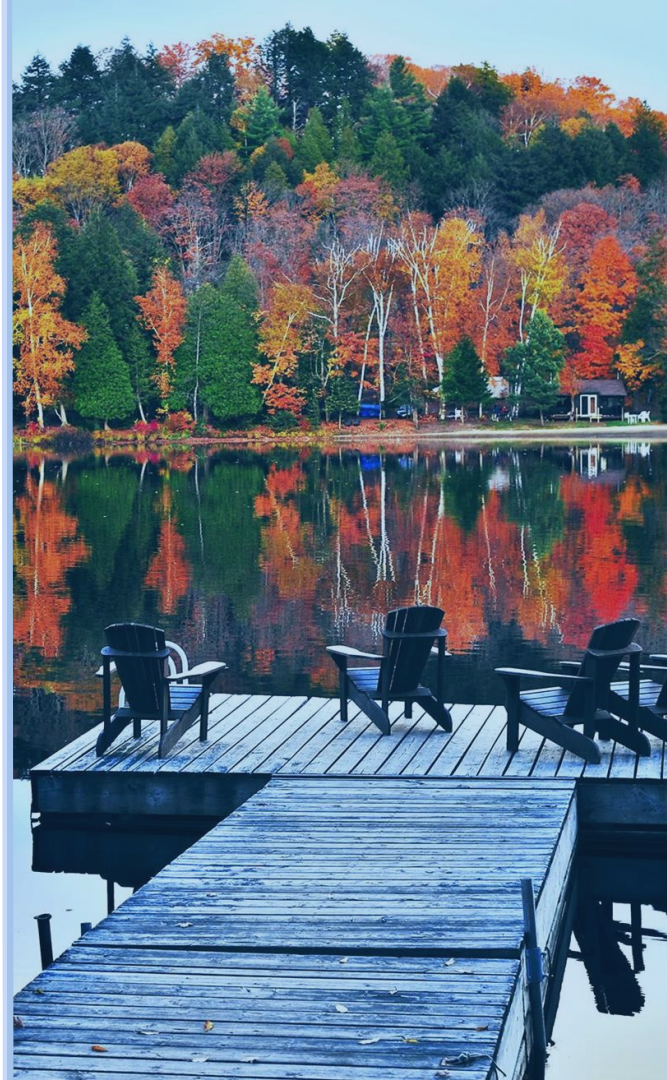


Scientific Support Never Went Away

- 3 scientific commissions between 1944 - 1972 recommended decriminalization and reintroduction of cannabis medicine.
 - La Guardia Commission (US 1944)
 - Le Dain Commission (Canada 1972)
 - Shafer Commission (US 1972)
 - Baby Boom and Gen X - personal experience and social observation
 - Support for medical cannabis has come from citizen support and challenged in Canadian courts)
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STATUS IN CANADA

- **1923** - Outlawed (*1937 in US*)
 - **1972** - Le Dain Commission
 - **2001** - Medical Marijuana Access Regulations (MMAR)
 - **2013** - Marijuana for Medical Purposes Regulations (MMPR)
 - **2016** - Access to Cannabis for Medical Purposes Regulations
 - **2017** - Proposed Cannabis Act
 - **2018** - Pending full legalization July
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WHAT IS THE LAW TODAY?

- Cannabis (marijuana) is legal for adult recreational and medical use across Canada

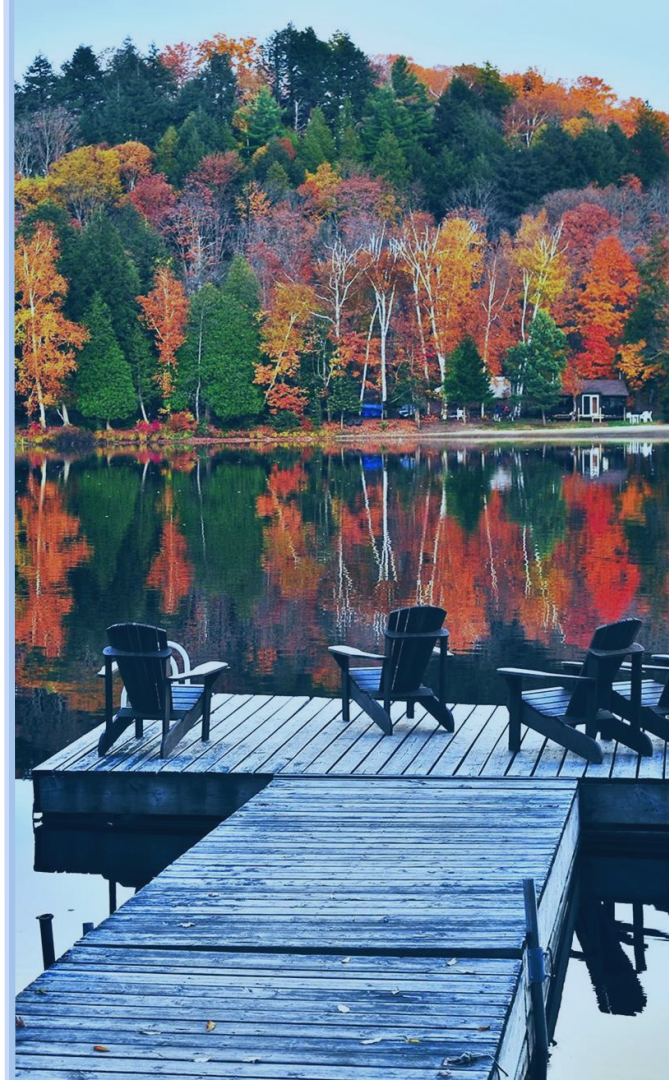


Government
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CANNABIS ACT – 2018

- Medical and Recreational products have same plant origin but are otherwise different.
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WHAT IS CANNABIS? THE PLANT

CANNABIS: TRICHOMES

- Trichomes are resin glands found on the buds and leaves of the marijuana plant.
 - This sticky resin contains concentrated cannabinoid compounds in the plant, including terpenes and flavonoids.
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HOW DOES MEDICAL CANNABIS WORK?



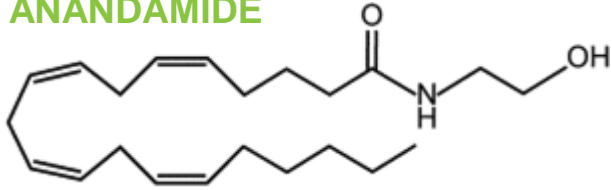
**CANNABINOIDS AND THE
ENDOCANNABINOID SYSTEM**

THE ENDOCANNABINOID SYSTEM

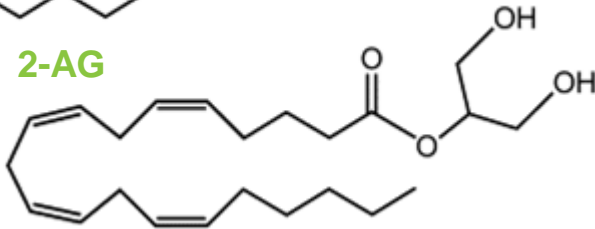


ENDOCANNABINOIDS

ANANDAMIDE



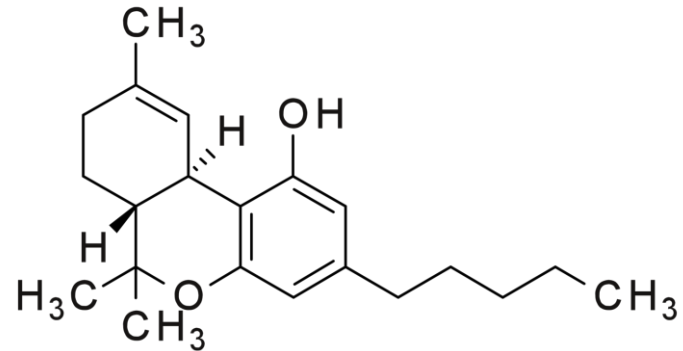
2-AG



PLANT CANNABINOID



THC

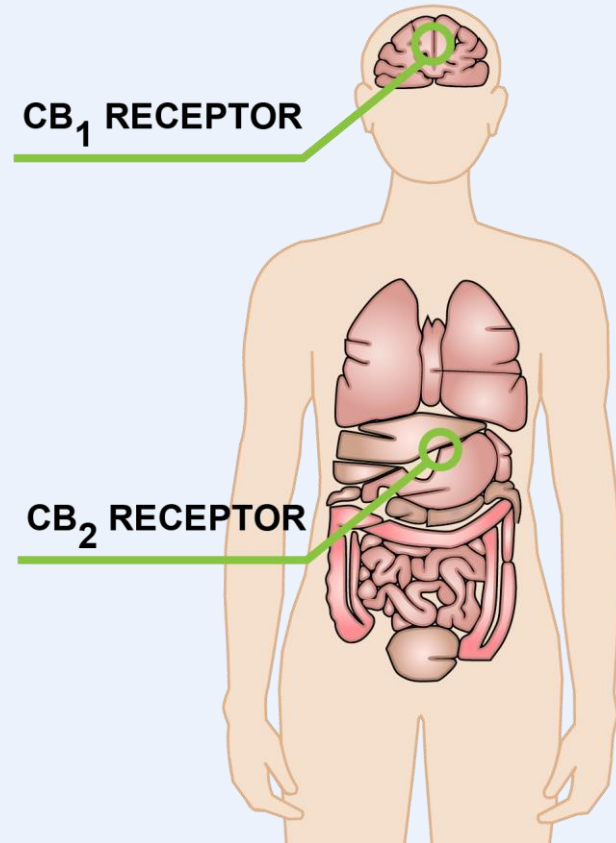


- Endocannabinoids include Anandamide and 2-Arachidonylglycerol (2-AG)
- ? N-Arachidonyl dopamine (NADA)

THE ENDOCANNABINOID SYSTEM

- Active cannabinoid compounds affect the body through specific cannabinoid receptors:
 - **CB1** - central and peripheral nervous system
 - **CB2** - Peripheral tissues + immune system

HOMEOSTASIS mechanisms related to multiple physiologic processes



THE ENDOCANNABINOID SYSTEM

- Modulator of neurotransmitter pathways
 - Homeostasis mechanisms related to multiple physiologic processes
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- Inflammation
 - Appetite
 - Metabolism
 - Cardiovascular function
 - Bone density
 - Synaptic plasticity
 - Pain
 - Memory
 - Sleep
 - Reward/addiction
 - Stress regulation
 - Mood
 - Reproduction
 - Digestion
 - Endocrine function
-

Medical Cannabis



- Cannabis plant contains approx 100 unique chemicals called phytocannabinoids.
- Many of these compounds have potential therapeutic benefit as medicines
- Only one of these compounds (THC) is psychoactive
- Medicinal and recreational cannabis products tend to have very different chemical profiles
- When used properly under guidance of a health care provider the goal is relief of symptoms without impairment

CANNABIS PLANT-CHEMISTRY



CANNABINOIDS

- **THC**
 - **CBD**
 - **CBG**
 - **CBC**
 - **CBGV**
 - **THCV**
 - **CBDV**
 - **CBCV**
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TERPENOIDS

- Linalool
 - Caryophyllene
 - Terpinolene
 - Humulene
 - Limonene
 - Myrcene
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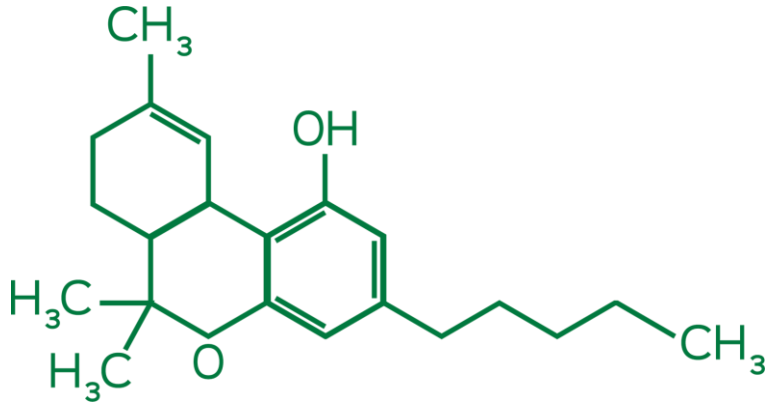


FLAVONOIDS

- Quercetin
 - Apigenin
 - Cannafavin
 - Luteolin
 - Kaempfert
 - Orientin
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TETRAHYDROCANNABINOL (THC)

- Δ^9 -THC - most well known and well studied cannabinoid
- Responsible for most of the psychotropic effects of cannabis.



THC has multiple proven therapeutic effects:

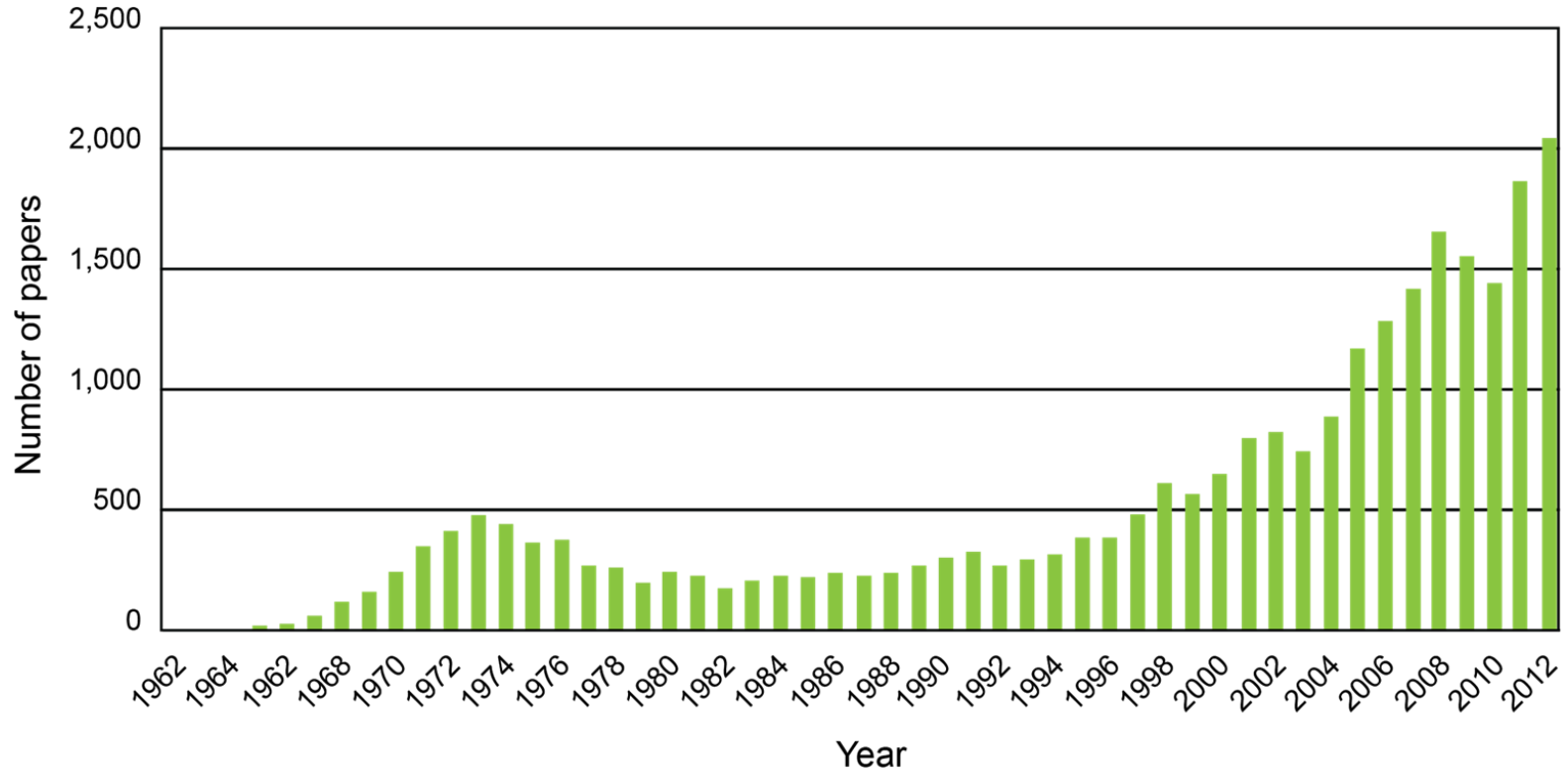
- Pain relief
- Nausea and vomiting
- Appetite stimulant
- Insomnia
- Glaucoma
- PTSD



CLINICAL EVIDENCE

GROWING BODY OF RESEARCH

Medline-indexed publications on cannabis and cannabinoids
1962 - 2012



NATIONAL ACADEMIES REPORT (2017)

Evidence for Therapeutic Benefits of Cannabis

- Substantial/conclusive evidence of cannabinoid efficacy in:
 - Chronic pain
 - Spasticity of multiple sclerosis
 - Control of nausea
- Moderate evidence of cannabinoid efficacy in:
 - Improving sleep in those with chronic medical conditions, e.g., chronic pain, fibromyalgia, etc.
- Limited evidence of cannabinoid efficacy in:
 - Treatment of certain anxiety disorders and PTSD
 - Promoting appetite and weight gain
- No or insufficient evidence of cannabinoid efficacy in:
 - Treatment of cancers, irritable bowel syndrome, epilepsy, movement disorders due to Huntington Disease or Parkinson Disease, Schizophrenia

MEDICAL CANNABIS USE BY CANADIANS

- Top 3 reasons Canadians choose to use medical cannabis”
 - Chronic Pain
 - Anxiety and depression
 - Sleep problems
- Good evidence exists to support using Cannabis medicine to relieve a wide range of additional symptoms.
 - Nausea and Vomiting associated with cancer treatment
 - Anorexia and cachexia associated with chronic disease
 - To help decrease use of opiates or other prescribed medications
 - Palliative Care
- Increased Quality of Life with minimal risks and side effects



- Amyotrophic lateral sclerosis
 - Fibromyalgia
 - Crohn's
 - Glaucoma
 - Headache and migraine
 - Motor disorders, i.e. Huntington's, Parkinson's
 - Osteoarthritis
 - Psychiatric disorders
 - Rheumatoid arthritis
 - Spinal cord injury
 - Concussion
 - Wasting syndrome
 - Any debilitating condition
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SIDE EFFECTS

- Most common acute side effects include: tachycardia, sedation, dizziness, somnolence, dry mouth, blurred vision, postural hypotension.
- 2008 CMAJ review found 97% of 47,779 adverse effects were not serious.

ACUTE

Hyperemesis syndrome

Impaired coordination

Impaired performance

Anxiety

Suicidal ideations/tendencies

Psychotic symptoms

Increased risk of motor vehicle accidents

CHRONIC

Mood disorders

Exacerbation of psychotic disorders (in vulnerable patients)

Cannabis use disorder

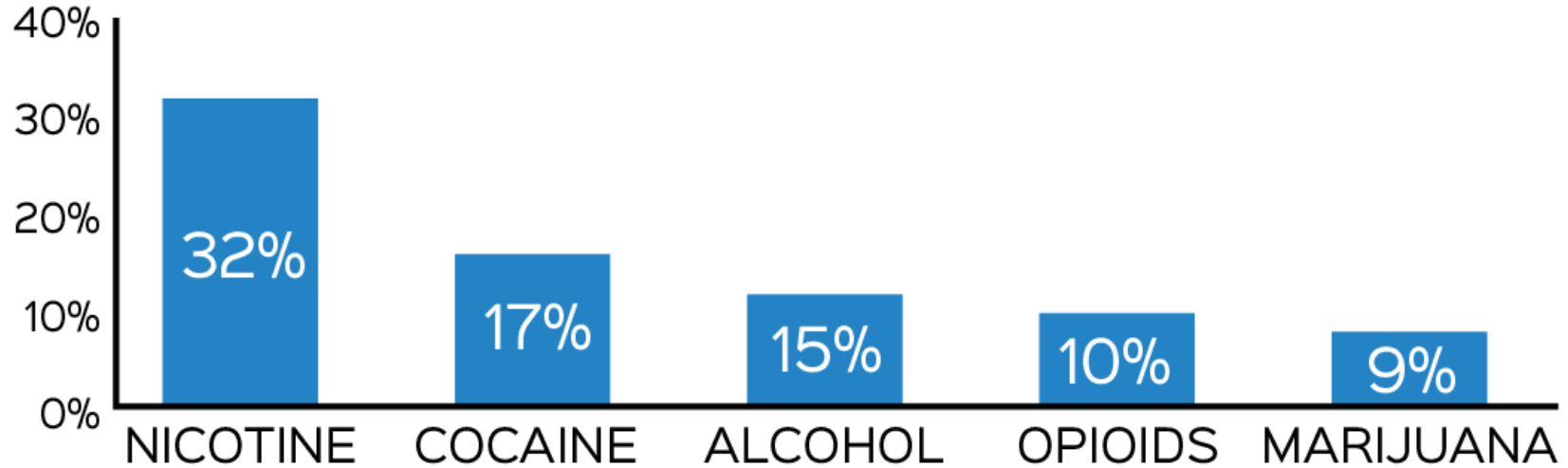
Withdrawal syndrome

Neurocognitive impairment

Cardiovascular and respiratory diseases

Other diseases

DEPENDENCE RISK



- There is evidence that physical and/or psychological dependence can occur, especially with chronic, heavy use.
- Withdrawal symptoms are seen when use is abruptly halted or discontinued.

● Health Canada. *Information for Health care Professionals*. 2013, p 30.
● Anthony JC, et al. *Findings from the National Comorbidity Survey*. *Exp Clin Psychopharm* 1994;2:244-68.
● Vowles, KE et al. *Rates of opioid misuse, abuse, and addiction in chronic pain: a systematic review and data synthesis*. *Pain* 2015;156(4):569-76. doi: 10.1097/01.j.pain.0000460357.01998.f1.

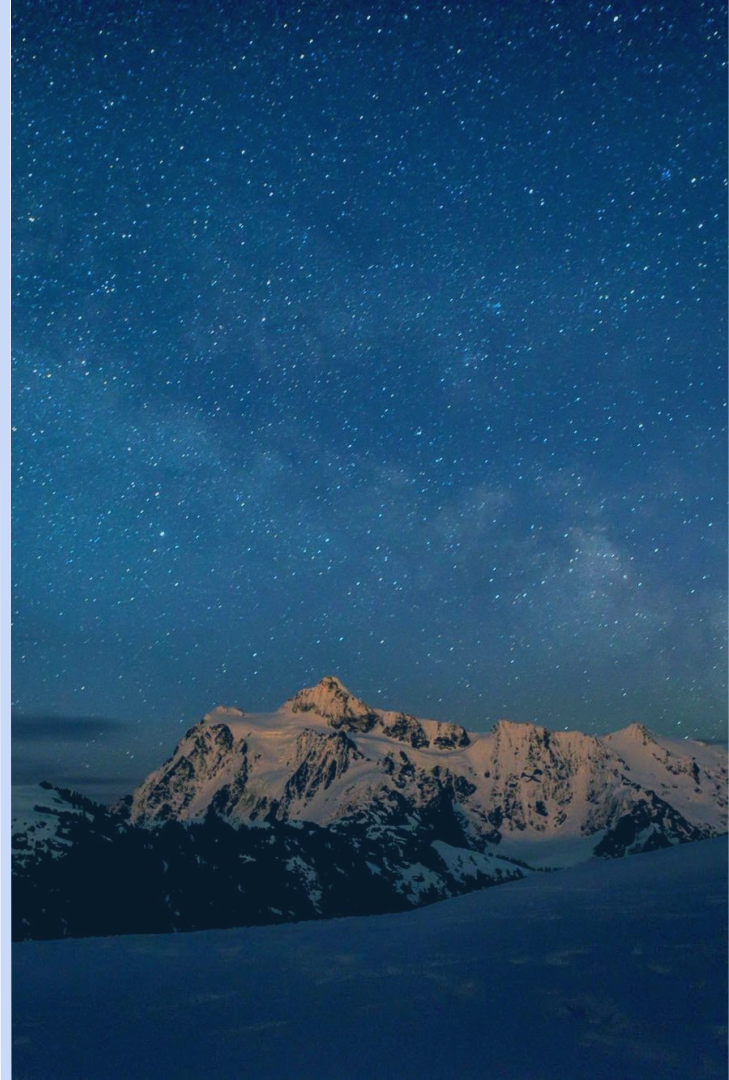
RISK OF PSYCHOSIS

- Original cannabis, modern high-potency cannabis and synthetic cannabinoids: increasing risk for acute psychosis.

“Epidemiologic studies provide strong enough evidence to warrant a public health message that cannabis use can increase the risk of psychotic disorders”

“There is still uncertainty over the extent to which cannabis use can induce psychosis in the absence of genetic vulnerability”

- Broad consensus that cannabis should not be used in patients <18 yrs old (? 21, ? 25)
- Minimum age for recreational use in Canada is still being debated.



CONTRA-INDICATIONS

- No absolute contraindications
 - Patients underage 18/25
 - Patients with severe cardiac disease
 - Patients with severe respiratory disease
 - Patients with severe hepatic or renal dysfunction
 - Patients with personal or family history schizophrenia
 - Patients with current or past history of substance abuse
 - Patients on current psychoactive medications
 - Patients who are pregnant or breastfeeding
 - Patients with history of severe adverse effect or allergy
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DRUG INTERACTIONS

- No reported severe or fatal interactions
 - Strong caution with other sedatives
 - Care with anticoagulation meds
 - Care with epileptic meds
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DOSAGE & ADMINISTRATION

DOSAGE FORMS

Medical cannabis can be provided for ingestion or vaporization



Dried cannabis and cannabis oils are available from LPs



Smoking is not recommended



DOSING

START LOW AND GO SLOW

- Keep dose as low as possible to control symptoms.
 - Start with 1 'puff' of inhaled cannabis, or 1-2 drops tincture or oil. Start q daily or BID
 - Define a clear clinical endpoint, and adjust dosage to achieve that goal.
 - Dose titration requires active patient participation
 - Detailed daily diary is a good tool to evaluate therapy.
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How to obtain medical cannabis

- See an experienced licensed health care provider

A physician or nurse practitioner (HCP) must provide a signed medical document that allows the patient to purchase their cannabis directly from a Licensed Producer

- Receive counselling and education regarding available product choice from LP's
- Order product and receive through the mail
- Adjustment of dose, frequency and product type via close follow-up with provider



PATIENT ENGAGEMENT IS CRUCIAL

- Outpatient cannabinoid therapy is individualized + patient-directed
- Patient must be a committed, active participant.
- Education and follow-up are key
- Patient's must keep a detailed diary/journal

HCP should regularly review the patient's diary and discuss ongoing therapy and results.



LICENSED PRODUCERS (LP)

Approximately 100

5 – 10 large LPs

LPs are regulated extensively under a number of stringent categories.



Sunniva, The Sunniva Canada Campus, Okanagan Falls, BC

LICENSED PRODUCERS (LP)

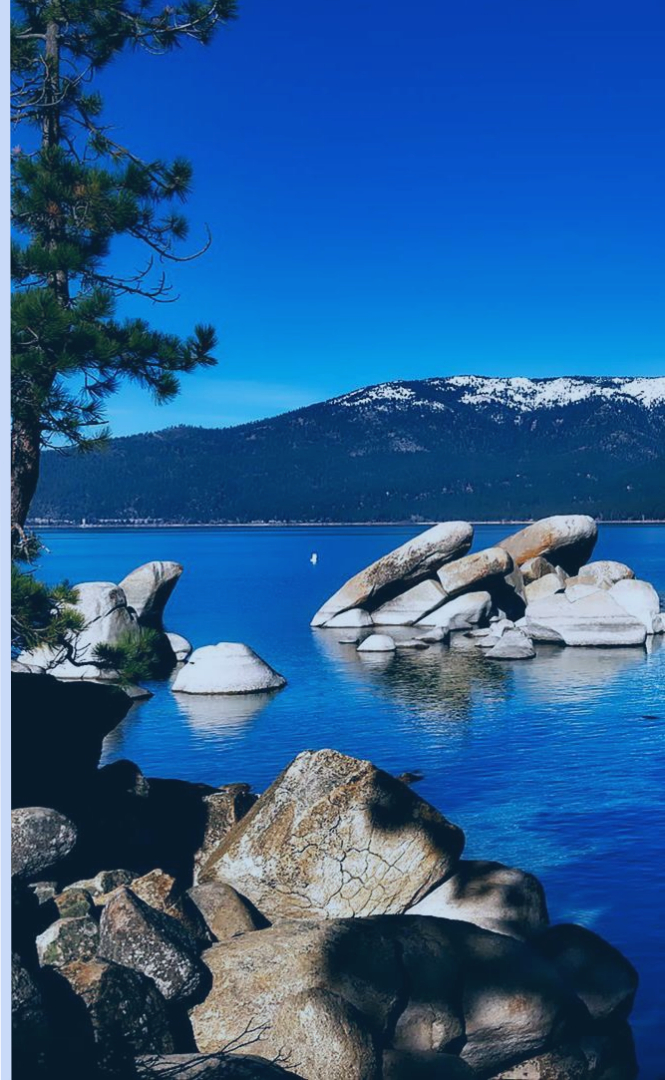




CONCLUSION

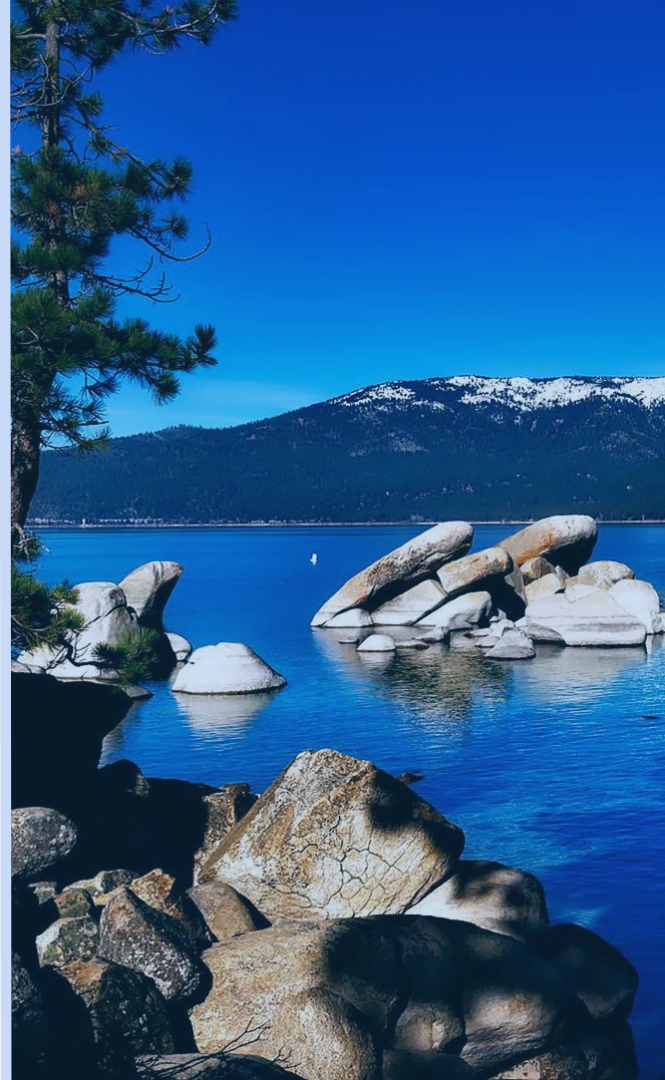
SUMMARY

- Medical Cannabis is legal across Canada
 - Accessed through licensed physicians or Nurse Practitioners like any other medicine
 - Most medical cannabis is non-psychoactive and can be used without impairment
 - Medical cannabis is incredibly safe
NO medical cannabis deaths
 - Side effects usually less than many commonly used medications
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SUMMARY

- Long history of established, safe medicinal use.
 - Recent prohibition - politics rather than science.
 - Multiple therapeutically active compounds in cannabis.
 - Works via an existing natural body system
 - Research shows benefit in multiple conditions
 - Relief of symptoms, improve QoL, and reduction of opioids and other medications.
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SUMMARY

- Medical cannabis treatment requires active patient and physician engagement
 - Licensed Producers are extensively regulated and provide safe pesticide free product
 - Physicians and patients should educate themselves and be comfortable before proceeding
 - Medical research supporting use is increasing.
 - Medical cannabis is tax deductible
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QUESTIONS?



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