

Who we are

The Clinic Network Canada Inc. specializes in the diagnosis, management and treatment of chronic pain issues. Physicians specialize in interventional treatments and minimally invasive techniques that can offer relief to patients suffering from everything from chronic headaches to degenerative disc disease. Medical cannabis therapy is one of the treatments used within The Clinic Network Canada Inc.

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Cannabis Patient Guide



THE CLINIC NETWORK CANADA INC.
Medicinal Cannabis Patient Support Program



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Cannabis Sativa

Early and ancient historical accounts suggest that cannabis was used as a medicine in China as early as 2800 BCE.

In 200 CE, the Chinese surgeon Hua T'o used an anesthetic formulation prepared from cannabis resin and red wine in complicated and painful surgeries.

Chemical Constituents and Composition

- Over **100 phytocannabinoids**, classified into 11 different types (e.g. THC, CBG & CBD)
- Over 400 non-cannabinoid constituents



Cannabis Subspecies



Sativa

- Characterized by narrower leaflets, thinner cortex and more branches
- Historically a source of hemp fibre
- Believed to induce a more elevated and energetic high with pure varieties described as causing paranoia and a feeling of a racing heart



Indica

- Characterized by wider leaves and shorter stature
- Originated in the Hindu Kush region of Central Asia
- Traditionally grown and bred for making hashish
- Believed to induce a more sedating high, giving users a lethargic feeling



Ruderalis

- Low THC variety native to Eastern Europe and Russia
- Grown in the wild
- Not used for therapeutic applications

Although cannabis varieties can be differentiated and defined as being indica or sativa, the majority of varieties that are currently available are a hybrid of both types; with dominance of one type over the other.

This being the case, certain varieties that are advertised as being a sativa or indica subspecies of cannabis are most likely to be a hybrid and may not manifest themselves as giving the type of high that the person consuming it might expect.

The **cannabinoid concentration** (i.e., percentage of THC and/or CBD) is a more reliable and scientifically-based measure for determining the potency of intoxication that will be experienced.

Dosing Principles

A patient initiated on medical cannabis therapy will require the support of the healthcare professionals in her circle of care when it comes to the aspects related to dosing such as: initiation, titration, maintenance and tapering off.

It is important to note that **there is no standardized dosing schedule for all patients and cannabis dosing is highly individualized**. Everyone reacts differently to cannabis. Healthcare professionals are mindful of variations in sensitivity levels and in assessing a patient's experience with cannabis.

The goal when initiating and titrating cannabis dosing is to determine the lowest effective dose which maximizes the therapeutic effects while simultaneously minimizing the adverse or negative effects. In general, patients should start at a low dose and slowly and gradually increase the dose until the lowest effective dose is determined.

Your healthcare practitioner and/or pharmacist will determine whether you should begin at a lower dose or a standard initiation dose and monitor the effectiveness and safety of your therapy.

Topicals

Topicals are cannabis extract preparations that can include creams, salves and liniments which are applied to the skin. The cannabinoid concentration in topicals varies depending on the formulation. Further research is required to determine the efficacy, time of onset, peak and duration of effects of administering topical cannabis.



The following table compares the onset, peak and duration of effects related to the different cannabis administration methods:

Administration Method	Inhalation (smoking/vaping)	Oral Ingestion (oil, edible products)
Onset of Effects	Seconds to minutes	30 minutes to 1.5 hours
Peak Effects	30 minutes to 1.5 hours	2 to 6 hours
Duration	2-4 hours; can last up to 6 hours, and in some cases, up to 24 hours	Approximately 12 hours; and in some cases, up to 24 hours

Driving Impaired

It is a serious criminal offence to be caught driving impaired. Convicted individuals may face fines, criminal charges and jail time.

Health Canada states that impaired driving is the leading cause of criminal death and injury in Canada. Cannabis impairs your judgment, ability to react and increases your chance of getting into an accident.



Combining cannabis with alcohol causes further impairment, leading to an even greater risk of getting into an accident.

The effects of cannabis use can remain for up to 24 hours. The time it takes for the effects to wear off depends on a number of factors, including how much and how often an individual has consumed it and whether it was inhaled or ingested.

For more information, please visit:

<https://www.canada.ca/en/services/health/campaigns/cannabis/impairment.html>

Cannabinoids



The leaves and flowering tops of cannabis contain over 100 different cannabinoids known as phytocannabinoids (plant-originating cannabinoids).

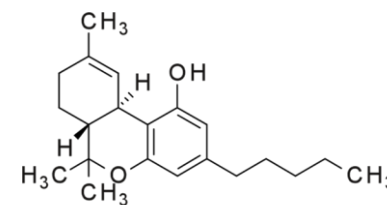
THC and CBD are found in highest concentrations compared to other phytocannabinoids and exist in their inactive states (THCA, CBDA) in the

cannabis plant. They are converted to their active forms (THC, CBD) through a process called decarboxylation.

Decarboxylation occurs by transforming phytocannabinoids into their respective active states through heating (e.g. vapourizing, cooking and smoking) and has been shown to occur between the temperatures of 98°C and 200°C. This is why consuming cannabis in its dried or raw form does not cause intoxication as the human body's internal temperature is not warm enough to decarboxylate cannabis flower.

Delta-9-Tetrahydrocannabinol (THC)

THC is the major psychoactive constituent found in cannabis, the most studied of the phytocannabinoids and is responsible for the majority of the commonly known effects of cannabis.



The effects of THC are variable, depending on the individual, dose-dependent and can impact the following functions: concentration, memory, mood, cognition and appetite.

Cannabidiol (CBD)

CBD is found in its acidic form (CBDA) in the flowering tops and leaves of the cannabis plant.

Cannabidiol has been studied to an extent and has demonstrated to have therapeutic effects such as anti-inflammatory and anti-spasmodic effects while not causing its user to experience intoxication.

Terpenes

Terpenes are a group of compounds found in cannabis that are responsible for their distinguishing and varying aromas. They are thought to contribute to the therapeutic effects of cannabis, along with phytocannabinoids.

Although the number of terpenes are but a fraction of the amount of phytocannabinoids found in the cannabis plant, the minuscule amount can still work to affect and complement their effects.

Terpenes are not unique to the cannabis plant and are found present in the essential oils of plants such as lavender, eucalyptus and oranges. Further research is required to learn more about their pharmacological properties, however, they may have anti-oxidant, anti-anxiety, anti-inflammatory, anti-bacterial, anti-neoplastic and anti-malarial properties.

The following lists some of the most commonly found terpenes as well as their respective aromas and known therapeutic properties:



Limonene

- Lemon and lime aroma
- Found in citrus fruit and Valencia oranges
- Anti-anxiety, anti-depressant, anti-fungal and anti-bacterial properties



Linalool

- Sweet flowers and citrus aroma
- Found in lavender, mint and cinnamon
- Anti-anxiety, anti-depressant, anti-bacterial and anti-inflammatory properties
- Sleep aid/relaxant



Alpha-pinene

- Pine and rosemary aroma
- Found in pines, conifers and rosemary
- Pain reliever and bronchodilator
- Anti-inflammatory, anti-fungal and anti-bacterial properties



Beta-Caryophyllene

- Peppery spice and wood aroma
- Found in black pepper and cloves
- Anti-inflammatory, antioxidant, anti-anxiety, anti-bacterial and anti-spasmodic properties

Administration Methods

The most common administration methods of cannabis for both medical and recreational purposes are inhalation (smoking and vaporization) and oral ingestion (cannabis oils and capsules). As the number and variety of cannabis products expand due to regulatory changes, other administration methods (i.e. topicals) and cannabis products (baked goods) are expected to become more readily available.

Smoking

Smoked cannabis is the process of combusting the plant material by burning a cannabis cigarette (joint) or putting it in a pipe or water pipe (bong).

Smoked cannabis has a rapid onset of action (within minutes) and a shorter duration of effect. Combustion of plant material produces toxic by-products and therefore smoking cannabis is highly discouraged and not considered a preferred administration method.



Vaporizing (Vaping)

Vaporized cannabis is another method of cannabis inhalation using a device which heats up the plant material to a set temperature, allowing decarboxylation and producing vapours which are then inhaled.



It is a better method of inhaling cannabis, by comparison to smoking, as there is a smaller amount of toxic by-products being produced and is generally a more efficient method of extracting cannabinoids.

The onset and duration of effects of vaporized cannabis is similar to that of smoking with the effects being felt within minutes and remaining for a shorter period of time when compared to ingested cannabis.

Oral Ingestion

Oral ingestion of cannabis involves consuming cannabis oil via a syringe or dropper or by ingesting capsules containing cannabis oil. Oral ingestion also encompasses edible cannabis products such as homemade baked goods as well as edibles that will be available for sale as of December 2019. Oral administration results in a slower onset and longer duration of action.



Drug Interactions



Drug interactions involving cannabis and cannabinoids can manifest themselves in a variety of different ways and can depend on factors such as cannabinoid ratio and concentration (THC and CBD), administration method (orally ingested or inhaled) and dose.

Central nervous system (CNS) depressant drugs such as benzodiazepines and alcohol have demonstrated to have clinically significant interactions with cannabis.

CBD Interaction with Anticonvulsants

A notable interaction exists between CBD and anticonvulsants such as Clobazam and Phenytoin. Patients taking CBD as well as Clobazam should be closely monitored and Clobazam dosage will need to be adjusted to reduce and avoid side-effects associated with an excess of Clobazam which may include: increased seizure frequency, ataxia, restless sleep, tremor, drowsiness, irritability, loss of appetite and urinary reduction.

Please consult with your pharmacist and/or healthcare practitioner to determine whether cannabis will interact with your current medication and to be advised on how to mitigate any negative or unwanted side-effects resulting from the interaction(s).

The Endocannabinoid System (ECS)

The endocannabinoid system (ECS) is a lipid signaling system comprised of cannabinoid (CB) receptors as well as endogenous cannabinoids known as Anandamide and 2-AG found in all vertebrates, affecting all systems of the body and implicated in the following physiological and pathophysiological processes:

Nervous system
Development

Immune function

Inflammation

Appetite

Metabolism and energy

Homeostasis

Cardiovascular function

Digestion

Bone development and
density

Synaptic plasticity and
learning

Pain

Reproduction

Psychiatric disorder

Psychomotor
behaviours

Memory

Wake/sleep cycles

Regulation of stress and
emotional states



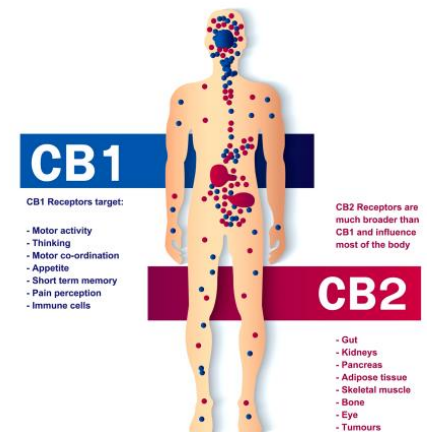
Cannabinoid Receptor 1 (CB1):

Are mostly located in the central nervous system, however are also found in lower concentrations in the heart, liver, fat tissues, stomach and testis.

Cannabinoid Receptor 2 (CB2):

Are mostly located in peripheral immune-related organs such as tonsils, spleen, thymus, bone marrow, and immune cells.

Phytocannabinoids such as THC and CBD interact directly with our endocannabinoid system (ECS) by binding with our cannabinoid receptors.



Therapeutic Applications of Cannabis

Conditions for which cannabis therapy is used

Research suggests that there is substantive or conclusive evidence of efficacy for cannabis as a therapy to treat the following conditions:

Chemotherapy-Induced Nausea and Vomiting (CINV)



Chronic Pain

Spasticity due to Multiple Sclerosis



Epilepsy/Intractable Seizures

Contraindications - Continuation



Cardiovascular Complications

Individuals with severe cardiopulmonary disease with occasional hypotension, possible hypertension, syncope and tachycardia should avoid cannabis use.

In case studies and observational studies, negative effects such as myocardial infarction (heart attack), stroke and arteritis have been observed in middle-aged and older acute and chronic users.

Women planning to become pregnant, are pregnant or are breastfeeding

Cannabis during pregnancy should be avoided as THC has been shown to cross into the placenta and may harm or damage fetal development.

In some clinical studies examining short-term neonatal outcomes, reduced birth weights have been reported.

The reported long-term effects noted in clinical studies included: lower scores on language, memory and reasoning in preschool-aged children.

Prenatal cannabis exposure has manifested itself as negatively impacting attention, memory and neurodevelopmental maturation and increasing hyperactivity and impulsivity.

Young Persons (under 25)

Growing evidence of cannabis use in adolescence is suggesting that THC exposure to the developing brain may negatively impact neural development and mental health.

Evidence is showing a correlation between high potency cannabis and addiction.

Allergy or Hypersensitivity to Cannabis

Evidence is being reported to suggest an increase of hypersensitivity and allergic reactions to cannabis.

Those affected have experienced a number of symptoms including, but not limited to, sore throat, congestion, eczema and anaphylaxis. Furthermore, higher doses and more frequent use has been associated with side effects that are more severe in some users, some even experiencing bronchitis and exacerbations of asthma.



Contraindications

Individuals with the below contraindications should avoid medical/adult use cannabis due to the risks of serious adverse events and serious complications:



Personal History of Psychiatric Disorders or Family History of Schizophrenia

Anxiety, PTSD, Depression and Bipolar Disorder:

Patients should be cautious when considering cannabis therapy, especially with THC-dominant products. While lower doses may reduce anxiety and elevate moods, higher doses tend to exacerbate anxiety and depression.

Schizophrenia and Psychosis:

Clinical studies have reported behavioural and cognitive effects mimicking acute psychosis related to acute exposure to THC-predominant cannabis products. Cannabis use has been linked with earlier onset and increased risk of schizophrenia in vulnerable individuals and individuals having a family history.



Respiratory Diseases (asthma, COPD)

Cannabis smoke contains respiratory irritants also found in tobacco smoke and is especially not recommended in patients with respiratory disease. Orally ingested cannabis, however, may be an acceptable administration method for these patients.



History of Substance Abuse

Patients with a history of substance abuse should approach cannabis with caution as they are more susceptible to developing physical and psychological dependence known as Cannabis Use Disorder. Healthcare Practitioners will often use a number of different tools in the form of questionnaires (CUDIT, ORT) to help assess and determine the risk of cannabis dependence prior to issuing a medical document.



Severe Liver or Renal Diseases (incl. Hepatitis C)

There is evidence to suggest that a relationship exists between THC-dominant cannabis use and the risk of liver fibrosis progression associated with hepatitis C infection. "Cannabis should not be used in patients with severe liver or renal disease. In patients with ongoing chronic hepatitis C, daily cannabis use has been shown to be a predictor of steatosis severity in these individuals" [Health Canada, 2018]

Conditions for which cannabis therapy is used

Patients are being prescribed cannabis for a wide variety of conditions for which scientific data confirming its efficacy is still required.

Multiple clinical trials and further research are required to corroborate the individual anecdotal accounts/testimonials reported by individuals using cannabis as a therapy for the following conditions:

- Arthritis/Osteoarthritis
- Fibromyalgia
- Rheumatoid Arthritis
- PTSD
- Neuropathic pain
- Anxiety/Sleeping Disorders
- Palliative Care
- Alzheimers/Dementia
- Movement Disorders
- Inflammatory bowel disease/Chron's Disease



Safety Considerations

Commonly Experienced Effects of THC-Predominant Cannabis

The most frequently reported adverse effects associated with THC include the following:

- Drowsiness
- Dry Mouth
- Coordination Disturbance
- Headache
- Difficulties Concentrating
- Blurred Vision
- Relaxation
- Euphoria
- Dizziness
- Less common: nausea, dry eyes, malaise and visual hallucinations



Cannabis Poisoning

Cannabis poisoning occurs when an individual overconsumes cannabis, leading to very unpleasant and sometimes dangerous adverse effects.

The symptoms of cannabis poisoning can include:

- Chest Pain
- Rapid heartbeat
- Respiratory depression
- Nausea and/or vomiting
- Psychotic episode
- Severe anxiety or panic attack

While cannabis poisoning is not known to be fatal, it may require emergency medical attention, depending on the severity.

Cannabis poisoning typically occurs with higher THC and/or edible cannabis products. It is generally easier to overconsume cannabis from oral consumption due to the delayed onset of effects (compared to inhalation which occurs within minutes). **Those affected by cannabis poisoning should immediately cease consumption and seek medical attention.**

