



The purpose of this resource is to provide you with reliable, evidence-based information about medical cannabis to help you make informed choices about your arthritis care.

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INTRODUCTION

Increasingly, many people are exploring medical cannabis as a treatment option for their arthritis. While cannabis can't cure arthritis or slow disease progression, some people report that it helps to alleviate their symptoms of pain, inflammation and anxiety.

The purpose of this resource is to provide you with reliable, evidence-based information about medical cannabis to help you make informed choices about your arthritis care.

For some people, medical cannabis can help improve quality of life, but it's not right for everyone. Typically, medical cannabis is used only after trying other arthritis management strategies first, such as therapeutic exercise, weight management, and pain relief medication. If you've tried other methods and you're still seeking relief, it's important to get the facts and speak to a healthcare professional before trying cannabis.

This guide can help you start a discussion with a healthcare provider about medical cannabis. Here you'll find:

- 1. An introduction to medical cannabis and the science behind it:
- 2. Ways it can be used to help address arthritis symptoms;
- 3. Potential side effects and risks; as well as,
- 4. Ways to access and take medical cannabis.

KNOWLEDGE CHECK: Are medical cannabis and recreational cannabis accessed the same way?

No. While some people may self-medicate with recreational cannabis, this is not a safe substitute for supervised care. A doctor or authorized nurse practitioner can help decide if medical cannabis is appropriate for a person, and if so, provide them with a medical document to purchase products or seeds from a licensed producer. Recreational or non-medical cannabis is purchased from an authorized retailer online or in a store.



"Medical cannabis" refers to any products made from cannabis or its active ingredients and intended for health purposes. While medical and recreational cannabis can come from the same plant sources, the key difference is that one is intended for medicinal purposes and the other is not, so available products will focus on different chemical properties depending on the desired results.



In Canada, the supply of medical cannabis is controlled by the Federal government, which regulates production and distribution. While non- medicinal cannabis is now legal in Canada, the Arthritis Society recommends obtaining a document for medical cannabis from an authorized healthcare professional. This will help ensure appropriate dosing, monitoring of effects and symptoms, as well as access to rights that recreational cannabis users don't have, such as an increased carrying limit.

MEDICAL CANNABIS	RECREATIONAL CANNABIS		
Used to address symptoms of various health conditions	Used for non-medicinal purposes		
Dosing can be indicated so that there is little to no euphoric effect ("high")	Generally used for euphoric effect ("high")		
Requires medical document (authorization)	Not a safe substitute for supervised care		
Accessed directly from a Health Canada Licensed Producer or grown	Accessed from an authorized recreational cannabis retailer or grown		

Self-medicating with recreational cannabis is not a safe substitute for supervised care by a doctor or nurse practitioner. To purchase medical cannabis products, you will need a medical document signed by an authorized healthcare professional.

Although cannabis has been legal in Canada for certain medicinal purposes since 2001, it is not a Health Canada-approved treatment. According to the <u>Government of Canada's website</u>, "Studies supporting the safety and efficacy of cannabis for therapeutic purposes are limited and do not meet the standard required by the Food and Drug Regulations for marketed drugs in Canada." While Health Canada has approved some cannabis-based medications for certain conditions such as multiple sclerosis, most cannabis products available have not gone through Health Canada's drug review and approval process.



It is the position of the Arthritis Society that medical cannabis offers a potential alternative to traditional pharmaceuticals for the treatment of chronic pain and other symptoms of arthritis. While there is more to learn, the **Arthritis Society acknowledges that there is sufficient** evidence already to accept the use of cannabis as medicine, and is committed to ensuring that people living with arthritis have access to timely, relevant and accurate information to make informed treatment decisions (<u>Arthritis Society</u>, 2018).

While some people find medical cannabis helpful, it should not be used if you:

- Are pregnant or breast-feeding;
- Are allergic to cannabinoid products; or,
- Have a history of psychotic illness, substance abuse or suicidal thoughts.



People under the age of 25 are also advised against using medical cannabis for arthritis symptoms, as it can impact mental health and brain development in young people. Determining whether it might be an appropriate treatment requires a discussion with your doctor.

For more resources on medical cannabis, visit the **Arthritis Society's Medical Cannabi**s webpage: arthritis.ca/medicalcannabis



WHAT IS MEDICAL CANNABIS?

Cannabis is a **fl**owering plant that has been used for medicinal purposes for over 10,000 years. The plant produces chemicals called **cannabinoids**, which can be used to treat the symptoms of several **conditions**, **including arthritis pain and inflammation**. **THC and CBD are the key active ingredients in** medical cannabis, which stand for **tetrahydrocannabinol** and **cannabidiol**. These chemicals interact with our body's **endocannabinoid system**, **involved with pain**, **inflammation**, **immune function**, appetite, heart function, memory, and mood.

THC and CBD can address different symptoms and have different effects, so if you're considering medical cannabis, it's important to speak to a healthcare professional with training in the area to determine what product might right for you.



- THC is the chemical responsible for the intoxicating effects of cannabis, that feeling of euphoria or being "high."
- CBD, on the other hand, is non-intoxicating and won't make you feel high. It can even help counteract the effects of THC.
- You can get products with mostly CBD, mostly THC, or a mixture of both.

If you are looking for symptom relief but are worried about the effects of THC, choose a product that is high in CBD and low in THC (1.5mg/ml or less).

The amounts of THC and CBD vary in different parts of the cannabis plant, with the flower (or bud) containing the highest levels of THC. Levels of THC and CBD will also vary depending on the product preparation as well as type of cannabis.

Cannabis Types

Historically there are three main types of cannabis, also called subspecies: Sativa, Indica and Ruderalis. Due to cross-breeding practices there are few strains that are pure Sativa or Indica and most strains available in Canada represent a cross between the two types. Hybrids subspecies typically refer to strains of cannabis that are a balance between the Sativa and Indica types.





Cannabis Sativa

Cannabis Sativa is the species most cultivated in the West. It is typically a tall plant with narrow leaves and a long flowering cycle, growing best in warm, sunny climates.





Cannabis Indica

Compared to the Sativa subspecies, Cannabis Indica is a short plant with broad leaves and short flowering cycle. It can thrive in colder climates with a shorter growing season.

Cannabis Ruderalis

The Cannabis Ruderalis plant is the smallest in size compared with Indica and Sativa and grows quickly. It can adapt to extreme environments, but isn't used very often on its own, given its limited effects.



Hybrids

Cannabis growers can create different subspecies from combinations of parent plants in order to produce certain desired effects. These plants are typically grown on farms or in greenhouses.

Cannabis Sativa has often been associated with a more stimulating, invigorating effect and thought to be better for daytime use.

Cannabis Indica has been associated with a more sedating, relaxing effect, and thought to be more appropriate for evening. However, experts now suggest that a more useful classification is whether a product is higher in THC, CBD, or a balance between the two.

THC-dominant products will create a high, euphoric feeling, while CBD-dominant products provide more clear-headed symptom relief. Products that are a balance between the two cannabinoids can produce mild euphoria.

If you are sensitive to the effects of THC, or if it causes paranoia and anxiety, you may want to choose products that are higher in CBD, which can help counteract the effects of THC.



What are strains?

Strains are different breeds of cannabis. These are cultivated to produce particular effects on the user. A strain can be a pure or hybrid variety of one or more of the subspecies Sativa, Indica or Ruderalis. A strain name might refer to the region it's from, what effects or aromas it might produce, or could even just be a branding tactic.

Because a strain's characteristics can differ from one grower to the next, it's important to focus on the chemical components of a product and its intended effects. If you are accessing medical cannabis from a reliable source, the strains and chemical composition should be generally consistent.

Who should not take medical cannabis?

Medical cannabis isn't right for everyone. There are a number of factors that can make it unsafe for someone to use medical cannabis.

The Canadian Rheumatology Association has identified that you should not take medical cannabis for arthritis symptoms if:

- You are allergic to cannabinoid products
- You are pregnant or breastfeeding
- You have a history of current or past psychotic illness, substance abuse disorder, previous suicide attempts or suicidal ideation.



People under the age of 25 are also advised against using cannabis, as it can impact brain development, particularly THC-dominant products. A doctor should always be consulted before trying cannabis products for arthritis symptoms.

Other groups that are at an increased health risk and should only use medical cannabis with caution include:

- Elderly people
- People with an unstable mental health disease
- People with a history of current moderate or severe cardiovascular or pulmonary disease
- People working in settings requiring high levels of concentration and alertness







 People who are also taking sedative-hypnotics or other psychoactive drugs

Additionally, smoking medical cannabis poses a risk to people with respiratory diseases such as chronic obstructive pulmonary disease. Caution should be used in individuals with severe liver or kidney disease. Individuals with severe cardiac disease, low or high blood pressure, or rapid heart rate are at increased health risk with cannabis, particularly if using THC predominant products.

People who are planning to become pregnant, are pregnant or are breastfeeding are cautioned against using cannabis. Cannabis can be transferred to the baby through the breastmilk. Exposure to cannabis as a fetus or infant can also negatively affect motor and neurodevelopment.

Cannabis with a significant amount of THC should not be taken before or while operating a vehicle. Several studies detail the negative effects of cannabis on motor coordination, alertness and reaction times. Using cannabis before or while operating a vehicle increases the risk of serious and fatal car accidents.



Seniors and Medical Cannabis

Seniors with multiple chronic health conditions may face additional risks associated with cannabis use, including potential cognitive changes, confusion, falls, or interactions with other medications. This will depend in part on the amount consumed and the level of THC in a medical cannabis product. Kidney and liver functioning may be compromised in some older adults, which can make it more difficult for the body to process a drug like cannabis. These effects are more likely to occur when cannabis is consumed in higher quantities with higher amounts of THC, while the risks associated with low doses of CBD- dominant products are reduced.

To reduce potentially negative effects, seniors using medical cannabis should stay well-hydrated, start with a low dose of a CBD-dominant product, and cut back or refrain from using opioids or sleeping pills. It's important to discuss the use and dose of any medications with your doctor and pharmacist.



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CBD & THC

Cannabis has male and female flowers which grow on different plants. Female cannabis plants produce the components extracted for medical use. While all parts of the plant can be used, the flowers of unpollinated female cannabis plants have the highest concentration of cannabinoids.

Over 100 cannabinoids and 300 other non-cannabinoid chemicals have been identified in the cannabis plant. However, the two most researched and used cannabinoids are THC (tetrahydrocannabinol) and CBD (cannabidiol).

THC is the chemical that can cause a "high" feeling when used in sufficient quantities, but in small doses it can be helpful.

Both CBD and THC can help with pain relief. CBD may help address inflammation, anxiety and poor sleep. Small doses of THC may also help with nausea and low appetite. Using CBD and THC together in combination can sometimes be the most effective.



Products are available with very low amounts of THC that can help you benefit from its therapeutic qualities without producing intoxicating effects.

Everyone reacts to cannabis differently, so if you're experiencing side effects, adjusting your dose and strain can help until you find the right balance of CBD and THC for you.

CBD

CBD, or cannabidiol, is a non-intoxicating cannabinoid, which means it will not make you feel high, and it can even help counteract the effects of THC when they are used together. Studies have shown that CBD can help reduce arthritic inflammation and relieve chronic pain. CBD also holds therapeutic properties that make it a treatment option for managing anxiety and insomnia, which are symptoms that can sometimes accompany arthritis.



THC

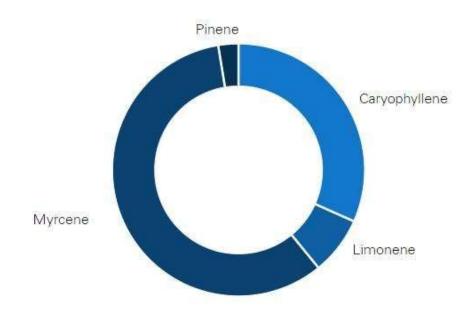
THC, or tetrahydrocannabinol, is the intoxicating component of cannabis that can cause feelings of **euphoria or being "high". This high can be induced even a**t modest doses for new consumers, so starting with low doses (e.g., 1.5 mg) is advisable. Intoxicating effects of THC can include altered sense of time, increased appetite, and memory or motor impairment with slower response times.

Approximately 20-30% of people may experience increased anxiety or panic. These effects are dose related, so starting with a small dose is always advisable. THC alone or in combination with CBD can help alleviate anxiety in some people and also contribute to pain control.

Terpenes and flavonoids

In addition to the cannabinoids CBD and THC, you might also hear people referring to terpenes and flavonoids when talking about medical cannabis. Terpenes and flavonoids are the chemical compounds responsible for the scents and flavours of cannabis. These compounds are extracted from the cannabis flower and made into essential oils which can then be used for flavourings and fragrances.

Some people with arthritis also report that terpenes have played a role in symptom relief for them, though there is currently little evidence available on this.







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HOW DOFS CANNABIS WORK?

Our bodies naturally produce certain types of cannabinoids, called endocannabinoids (endo meaning "internal").

These are molecules that interact with receptors throughout our body called endocannabinoid receptors. Together, the endocannabinoids and their receptors make up the endocannabinoid system, which helps regulate several important functions in our body. This system participates in processes such as sleep, appetite, pain, sensory perception, memory and learning.

KNOWLEDGE CHECK: Endocannabinoids are found in the cannabis plant.

False. Cannabinoids are found in the cannabis plant. Endocannabinoids are produced naturally in our bodies.

THC and CBD are considered external cannabinoids because they are not made by our body but are able to interact with our endocannabinoid receptors. Because they are similar in chemical structure to the cannabinoids produced by our body, THC and CBD can bind to the endocannabinoid receptors and influence various systems. CBD can also interact with non-cannabinoid receptors

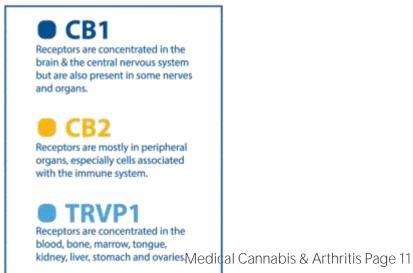
to

ENDOCANNABINOID SYSTEM AND HUMAN RECEPTORS

mediate some of its effects.



HUMAN CANNABINOID RECEPTORS





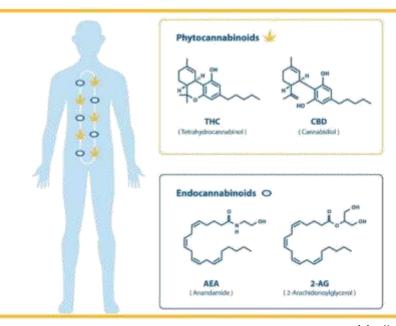
CBD and Pain Relief

Our nervous systems contain a protein called the vanilloid receptor, or TRPV1. These receptors are involved partly in the transmission and control of pain signals. Decreased activity of the receptors can lead to decreased pain, or desensitization. CBD is thought to work in part by decreasing the activity of vanilloid receptors. These receptors are also called capsaicin receptors because of how they affect pain. You may have heard of capsaicin before, which is found naturally in hot peppers. It is often used in topical creams to help relieve pain. Capsaicin can initially create a burning sensation, but then numbs the area and desensitizes it to pain.



Similarly, CBD can initially activate the vanilloid receptors that signal pain, but then cause receptor activity to decrease, dampening the sensation and relieving pain.

FUNCTIONS OF HUMAN ENDOCANNABINOID SYSTEM





Additionally, CBD helps relieve pain by enabling natural pain- relieving properties produced by our bodies to last longer. Our endocannabinoid system produces a cannabinoid called anandamide, that can have analgesic effects, though these often don't last long. CBD helps by interfering with the breakdown of anandamide, so it stays in our system longer.

CBD can also help stimulate our serotonin receptors that are responsible for pain regulation, resulting in a decrease in pain.

THC and Pain Relief

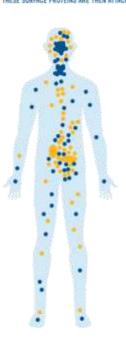
THC molecules work by attaching to the two main cannabinoid receptors in our body: Cannabinoid 1 (CB1) receptors, which are mostly found in the brain and spinal cord, and Cannabinoid 2 (CB2) receptors, which are mostly found in the peripheral nervous system and immune cells. Because THC naturally binds to CB1 receptors, it can influence areas of the brain responsible for memory formation, motor coordination, pain perception, emotion regulation and sensory perception.

HUMAN ENDOCANNABINOID SYSTEM

THE MOST WELL KNOWN CANNABINDID RECEPTORS, GBI AND CR2, ARE PROTEINS THAT ARE IMBEDDED IN THE MEMBRANE OF CELLS.
THESE SURFACE PROTEINS ARE THEN ATTACHED TO ANOTHER PROTEIN THAT DETERMINES THE SIGNALING DIRECTION ACTIVATION OR INHIBITION.

CB1
CB1 Receptors target:

Appetite
Immune cells
Motor activity
Motor coordination
Pain perception
Short term memory
Thinking



CB2
CB2 Receptors target:

Adipose tissue
Bone
Cardiovascular system
Central nervous system
Eyes
Gut
Immune system
Kidneys
Liver
Pancreas
Reproductive system
Respiratory tract
Skeletal muscle
Skin
Tumors

CB₁

CB1 Receptors are primarily found in the brain and central nervous system, and to a lesser extent in the other tissues.

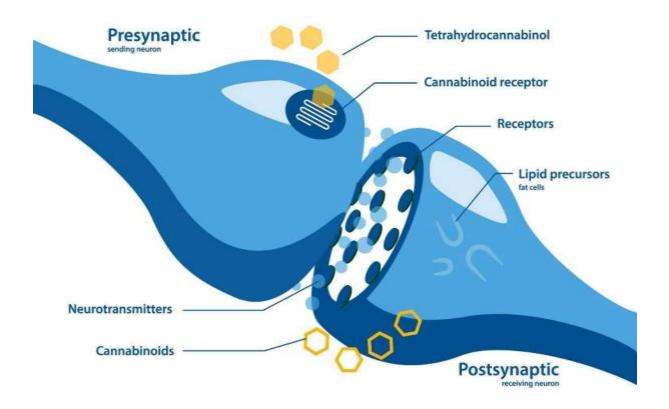
CB2

CB2 Receptors are mostly in the peripheral organs especially cells associated with the immune system.

THC's ability to interact with both CB1 and CB2 receptors allows it to regulate systems responsible for pain perception and immune reactions. Because of this, THC has the potential to alter pain perception and decrease inflammation. CBD helps counteract some of the psychoactive effects of THC by changing the shape of CB1 receptors, making it more difficult for THC to bind to them. Both CBD and



THC regulate pain perception and inflammation and have potential therapeutic benefits for individuals experiencing chronic pain.





MEDICAL CANNABIS AND ARTHRITIS

How can medical cannabis help with arthritis symptom relief?

As discussed in the section "How does cannabis work?", cannabinoid receptors regulate several systems in our bodies. These include our pain perception and sleep cycles. Because the cannabinoids CBD and THC interact with these receptors, there are a variety of ways that medical cannabis can provide arthritis symptom relief. While it may help relieve symptoms, medical cannabis is not an alternative to standard arthritis treatments, such as disease-modifying anti-rheumatic drugs (DMARDS) or biologics. If you are considering medical cannabis, it should be discussed with your healthcare provider as part of your complete treatment plan.

Pain and Pain Relief

Our body communicates pain signals to the brain along an ascending, or upward-moving, pathway called the spinothalamic tract. Think of this tract like a highway that takes signals from a part of your body all the way up to the brain where the signal is interpreted as pain.

Acute and Chronic Pain

Acute pain occurs when the signals are the result of an injury or illness that causes damage to your body. Acute pain will go away once the body has healed. Chronic pain, on the other hand, lasts longer and can occur even after an injury or illness has improved. People with arthritis often experience chronic pain, meaning that pain signals can last for months or years even if there is no new damage.

Pain Relieving System

Fortunately, complementing this pain signaling system is a "pain-relieving system". Our bodies have a system in place to dampen the intensity of the pain signals travelling up to the brain. This downward-moving pathway is called the descending tract

The descending tract travels from your brain stem to the site in your spinal cord where the pain signal was communicated. Here, it can release pain-relieving chemicals that reduce the intensity of the pain signals, thereby reducing our perceived pain.

Pain-Relief Chemicals

When the body is not experiencing pain, the descending pathway does not release these pain-relieving chemicals. When we do experience pain signals, the ascending pathway communicates directly with the descending tract telling it to start sending the "pain-relief chemicals". The molecules responsible for communicating this message are your body's own cannabinoids.



Cannabinoid Receptors

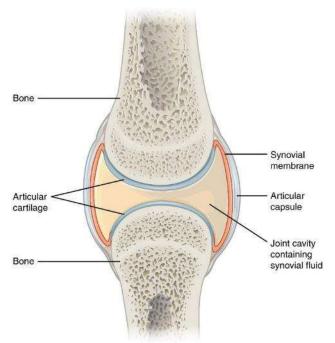
The cannabinoids in medical cannabis are thought to use the same process to achieve their pain-relieving effects. THC molecules bind to the CB1 receptors on the descending pathway to promote the release of natural pain-relieving chemicals in our bodies. CBD is also thought to activate serotonin receptors that are responsible for pain regulation. This means cannabinoids such as CBD and THC have the potential to treat pain that has not responded well to conventional pain therapies.

Anti-Inflammatory Properties

Inflammation is a body's natural defensive response to tissue injury. Molecules that promote inflammation are released during tissue damage to increase blood flow and promote repair. However, this can become a problem for people with arthritis, who experience ongoing joint and tissue damage.

While the exact processes underlying the antiinflammatory effects of CBD are unclear, it's believed that CBD can reduce inflammation throughout the body. In one study involving animals, CBD was able to suppress inflammation by reducing inflammation-creating molecules by 48%. In another study, CBD reversed the pain sensitivity caused by inflammation and nerve pain.

Also, because we have endocannabinoid receptors in our immune cells and the synovial fluid surrounding joints such as our knees, shoulders, hips, wrists and elbows, CBD and THC could play a role to help manage inflammation in these areas.





FORMS OF MEDICAL CANNABIS

Medical cannabis can be taken orally, inhaled or applied topically as a cream.

Oral formulations include oils, capsules or edibles. Another oral alternative is mouth sprays or strips that dissolve on the tongue. In comparison to forms which are swallowed, these oral forms work faster. The fastest way to use medical cannabis is through inhalation. Depending on the form of medical cannabis, how quickly you experience its effects and how long those effects last can vary.

Method of Consumption	About this method	How quickly it takes effect	How long the effects last	Smallest dose available
Inhaled	Heating dried cannabis in a vaporizer, oil cartridges in a vape pen or e-cigarette	Within minutes	Up to 3 hours	1 inhalation/puff
Sublingually (under the tongue)	Sprays, oral dissolve strips	10 to 30 minutes	6 to 12 hours	1 spray (2.5 mg THC & 1.8 mg CBD/spray); 1 strip (4.7 mg THC & 0.0 mg CBD/strip)
Ingested (oil-based)	Cannabis oil, capsule or softgel	10 to 60 minutes	Up to 12 hours	1 ml syringe (<1 mg THC & 20 mg CBD/ml); 1 capsule or softgel (<1 mg THC & 5.0mg CBD/capsule)
Ingested (food)	Edibles (baked or cooked into food)	30 minutes to 2 hours	Up to 12 hours or more	Not applicable
Topicals (on the skin)	Creams, lotions	Not fully understood	Up to 6 hours or more	Not applicable



Fast Acting

Medical cannabis that is inhaled enters your bloodstream quickly with effects felt within minutes and lasting up 3 hours. Traditionally, cannabis has been smoked as a cigarette or in a pipe, though these forms of consumption are not recommended for patients. Smoking can damage the lungs and worsen pre-existing lung conditions. Current forms of inhalation involve heating the dry cannabis in a vaporizer which releases the active components from the plant. A newer method uses oil cartridges in a vape pen or e-cigarette, bypassing the need to use dry plant material. Both forms of vaporizing allow for a patient to consume small doses of medical cannabis to determine its effects. You can learn more about dosage and the rate of effect in the Dosage section of this module.

Long Lasting

Alternatively, cannabis that is ingested enters your digestive system where it is broken down and absorbed into the bloodstream. Because this process takes some time, the effects are not felt for 30 to 60 minutes after taking it. Since food can affect how quickly the effects are felt, it is recommended that patients be consistent and either take ingested forms of cannabis (such as oil) on an empty stomach, or with a small amount of food until they learn how quickly the effects are felt.

When compared to inhaled forms, the effects of ingested cannabis last longer and can stay in your system for up to 12 hours.

Cannabis Oil

Cannabis oil is made by extracting concentrated cannabis resin from the flower of the plant. The resin is then diluted with a carrier oil, such as sunflower, avocado, or coconut MCT (medium-chain triglyceride). Finally, it is put in a softgel or capsule form or left as an oil. New formulations use this oil to make oral sprays, quick dissolving oral strips and vaporizable cartridges.



Medical cannabis capsules and oil make it easier to accurately track dosing and find the lowest dose for pain management.



When choosing cannabis oil, it is better to select a CBD-only oil or a mixed CBD and THC oil to avoid high concentrations of THC.

Most oils come in a bottle with a dropper, though many producers provide a small syringe (without a needle) to measure out the exact amount of oil you require. If a syringe is not provided, these are easily purchased at a pharmacy.

If you choose to take the oil under your tongue, make sure to hold it there for at least one minute. This allows the oil to transfer directly into the blood stream through the sublingual membrane under the tongue. If you choose to swallow cannabis oil or mix it with food such as full-fat yogurt or peanut butter, the oil will be digested, which will take longer for effects to be **felt. See** "Edibles" **below**.

Sublingual (Under the Tongue) / Oromucosal Sprays and Oral Dissolvable Strips



Oromucosal sprays are applied under the tongue and absorbed into the bloodstream through the oralmucosa lining, the mucous membrane that lines the inside of your mouth. Oral strips are placed on the tongue where they quickly dissolve. Both of these methods work more quickly than oral forms which are swallowed.

Each spray or strip delivers a standard amount of medical cannabis, making dosing easier than with a vaporizer which uses dry plant

material. For individuals using medical cannabis for the first time, it is recommended that you start with a low dose to learn how medical cannabis affects you and your symptoms. For further information, visit our section on Dosage.

Topicals (lotions, creams, topical oils)

Oil extracts rich in cannabinoids are used to make topical cannabis products. These can be applied directly on the skin, where the cannabis is absorbed into the blood stream. Topical cannabis products are used to reduce pain or inflammation in the area where they are applied, rather than as an overall pain reliever. There are no guidelines available on dosing for topical cannabis products.



Fdibles



"Edibles" is the term used to describe cannabis-infused foods. They have traditionally been found in many forms, such as cookies, brownies, candy, caramels or chocolate. Cooking fats such as olive oil, coconut oil and butter can also be infused with cannabis and added to other food items. Medical cannabis edibles are now legal in Canada, with certain restrictions. Cannabis-infused foods are processed by the digestive system and can take up to 2 hours to reach peak effects.

When taking edibles, it is important to use caution and take small amounts with lower doses of THC. The effects of cannabis-infused foods are highly individualized and can be stronger



than with other forms of cannabis. Also, because of the length of time it takes for them to enter your system, some people may take too much because they think the **fi**rst dose was ineffective.

Inhaled Medical Cannabis (vaporizers, e-cigarettes, joints/cannabis cigarettes)



Dried cannabis is usually available either as dried whole flowers ("bud") or milled ("prepared" or "ground"). To prepare dried cannabis for sale, whole flowers from the cannabis plant are harvested, the stem and leaves are trimmed, and the flowers are dried to a specific moisture content. Dried cannabis must be heated for it to work in the body. To create a joint or cannabis cigarette, the ground flower is rolled up in a small piece of paper called a rolling paper, then lit and smoked like a cigarette. Sometimes a filter

is added.

Vaporizers and e-cigarettes instead use a heating element to create a vapor or aerosol that can be inhaled without having to burn the cannabis. A vape pen is a type of vaporizer that uses concentrated cannabis oil cartridges instead of **dried flower**.



Smoking medical cannabis is not recommended by Health Canada. Several studies have outlined the risk of lung cancer and lung disease associated with smoking. Vaporizers provide a better alternative to cigarettes as there is no combustion of plant material in vaporizers. THC and CBD molecules are released from the dry plant without burning the plant, which reduces the amount of exposure to unpredictable chemicals before the desired effects are achieved.

Recently, there have been reported cases of e-cigarette and vaporizer-associated lung injury in the case of THC- dominant oils.

KNOWLEDGE CHECK: Which method(s) can be used to consume cannabis for medical purposes?

Oils, oral sprays and strips, topicals (creams, oils), edibles, inhaled (vaporizers, e-cigarettes, joints). Any of these methods can be used. When trying a new form of medical cannabis, always start with a low dosage and allow time for the full effects to be felt.



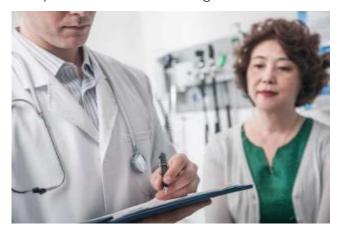
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ACCESSING MEDICAL CANNABIS

In Canada, to purchase medical cannabis products, you will need to obtain a medical document signed by a doctor or authorized nurse practitioner.

If your family doctor isn't familiar with cannabis, ask to be referred to a medical cannabis clinic. If you live in a rural or remote area, online virtual consultation services are also available. Make sure to use a reputable service that can connect you with a doctor or nurse practitioner with training on cannabis.

A trained professional can help determine if medical cannabis might be appropriate for you. Before making a decision, they should be aware of your physical and mental health history, your diagnosis of arthritis, other physical or mental health conditions you might have, your reasons for considering medical cannabis, and any medications you are taking.



Medical parameters around dosage, method of consumption and contraindications of cannabis (when you shouldn't take it) are determined based on your medical history and experience with cannabis and should be discussed with your health care professional.

If the doctor or nurse practitioner determines that medical cannabis could be a good option for you, they can help you find the right dosage and product for your symptoms. With a medical document, you can purchase medical cannabis from a licensed producer, or you can choose to grow your own.

Licensed Producer

Producers licensed by the federal government follow extensive regulated safety standards, ensuring a more consistent quality for medical cannabis products. Buying medical cannabis through a licensed producer means that you will receive the product directly from them, usually through an online store. You can only access this store once you have registered with this licensed producer and have your medical document.





Growing your Own

If you want to grow your own medical cannabis, you will need to register with Health-Canada (https://www.canada.ca/en/health-canada/topics/production-cannabis-for-your-own-medical-purposes.html) and submit a form alongside your signed medical document. Once you're registered, you can order plants and seeds from licensed sellers. You can also have your self-grown cannabis tested by a licensed producer for THC and CBD content and contaminants. The number of cannabis

plants you can grow for medical purposes will be determined based on your medical document and how well the plants grow (and yield) in your part of the country. Keep in mind, this method of accessing cannabis means that you will need to process the plant yourself for consumption, whether you intend to smoke or vape it or turn it into another form, such as an edible.





DOSAGE

Cannabis affects each person differently depending on their body, the **strain of cannabis, and how it's** consumed.

There is no scientifically-supported dosage of cannabis for any medical condition, so the best approach is to start low and follow the plan and dosage authorization guided by your physician. Finding the right dose will take some trial and error and self-monitoring.

When determining an appropriate dose, your healthcare provider will want to maximize the potential therapeutic effects and minimize the side-effects. If you're new to cannabis, you will be advised by your healthcare provider to begin at a low dose and increase dosage gradually until you achieve the desired results.



If you experience side-effects such as nausea, dizziness, disturbances in attention, or disorientation, stop cannabis use and consult your health care professional.

How long cannabis lasts in your system varies based on how you use it and on your particular body:

Inhaled Cannabis

Cannabis that is smoked or vaporized starts working quickly but lasts for a shorter period. This is because the chemicals enter the bloodstream through the lungs and are carried throughout the body within minutes. The peak effects of inhaling cannabis can be felt roughly 30 minutes after beginning and can continue to be felt for up to 6 hours. This quick action can help relieve acute or occasional pain.

It's important to remember that smoking increases your risk for lung disease. Vaping is an alternative to smoking medical cannabis that avoids the harms associated with combustion but can still aggravate the throat and lungs. If you choose to inhale cannabis, start with one inhalation on your first day and gradually increase the dose by one inhalation each day until you reach a comfortable and safe dose.



Ingested Cannabis

Cannabis that is ingested through oils, capsules, foods or beverages has more potent effects, but takes longer to start working. Once ingested, cannabis can take two hours before effects are felt, and can last up to 12 hours. This slower action can help relieve chronic pain. Use caution when starting with ingested cannabis: start at a low dose and take your time before ingesting more. For capsules and oils, start at the lowest dose available. To avoid side effects from THC, start with CBD-based products. These may have a small amount of THC, though CBD helps counteract the effects of THC.

Regardless of whether you inhale or ingest cannabis, it may take time to experience the full effects with your first dose. Be patient when trying medical cannabis for the **first time.** Avoid taking more than one dose at a time to reduce the risk for cannabis toxicity.

There are currently no guidelines on dosage for topical cannabis products, although some individuals have experienced reactions such as rashes and itching with cannabis-based topical creams. If you're considering medical cannabis, consult your healthcare professional and licensed producer for guidance on daily amounts and dosing.





OTHER CONSIDERATIONS

Will medical cannabis replace my other medication?

According to the Canadian Rheumatology Association, medical cannabis is not an alternative to standard care for arthritis, so don't stop taking your regular medications unless advised to do so by your doctor. If you decide to try medical cannabis, make sure to ask a doctor or pharmacist about any potential interactions with your current medications.

As of now, medical cannabis is viewed as a potential therapy for managing chronic pain.

There is some conflicting evidence on how effective medical cannabis is at managing pain and inflammation. There is still a need for high-quality research evidence on the impact of long- term use of medical cannabis for treating arthritis pain, potential interactions with other medications, and the risks and benefits for patients with arthritis.



Currently, medical cannabis is used to treat symptoms of a variety of conditions, including nausea and vomiting related to chemotherapy medication, spasticity associated with multiple sclerosis, as well as neuropathic, chronic, and cancer-related pain. Medical cannabis is intended to be used to complement, rather than replace, current treatment options available for arthritis and chronic pain.

To maximize benefit, if you decide to use medical cannabis, it should be used along with other arthritis management strategies, such as therapeutic exercise, weight management and medication.

Are there any tests that need to be done before deciding if medical cannabis is right for me?

There are no formal tests to approve patients for cannabis. A doctor with training on medical cannabis will be able to determine if it might be an appropriate option for you based on the following: your physical and mental health history, your arthritis symptoms, other physical or mental health conditions you might have, your reasons for considering medical cannabis, and any medications you are taking. Based on this information, a doctor will be able to determine if this is an appropriate treatment option for you.



Is medical cannabis covered by my provincial/territorial or private drug plan?

Because medical cannabis is not a Health Canada approved treatment, it doesn't have a Drug Identification Number (DIN), which means it isn't covered by provincial or territorial health plans. Some private/group insurance plans cover medical cannabis, though many do not. Of those that do, coverage is often only available for certain conditions, such as rheumatoid arthritis.

There are some other options as well:

- 1. For Canadian veterans, medical cannabis is covered through Veterans Affairs Canada.
- 2. Some licensed producers may also have a compassionate pricing program that provides a discount to those who are eligible.
- 3. People who are part of provincial or territorial disability support programs might be eligible for coverage of cannabis- related medical devices such as a vaporizer, but will not receive coverage for cannabis itself.
- 4. If your medical cannabis costs aren't covered, you can claim the cost as a medical expense when filing your income taxes. To qualify, you will need to have a medical document signed by a doctor and receipts from the Licensed Producer where you purchase your medical cannabis.

Can I travel with medical cannabis?

Taking cannabis across international borders is illegal, whether it is for medical or recreational purposes. Even if you are travelling to countries that have legalized cannabis, transporting cannabis remains illegal. The same rules apply for bringing cannabis into Canada, which can result in criminal penalties in Canada and the country you are travelling from.

This includes cannabis-based products such as CBD oil, capsules or edibles, as well as dried cannabis plant.



EFFECTS ON SLEEP, ANXIETY, AND APPETITE

While medical cannabis has many symptom relief properties, it can also have side effects.

These effects can vary depending on the person, product and dosage. Gaining a better understanding of how cannabis affects the body can help you make a more informed decision and minimize some of the risks and side effects associated with medical cannabis.

Some effects of medical cannabis, such as its potential impact on sleep, anxiety and appetite, are experienced by some users as a benefit, while others experience these effects as negative or neutral.

KNOWLEDGE CHECK: Medical cannabis has the same impact on sleep for every user.

False. While evidence has emerged to support the role of medical cannabis in improving sleep, everyone will respond differently. CBD and THC content both have a role, and you should discuss with your physician what would work best for you.

Sleep

Many people living with chronic pain and arthritis have trouble sleeping due to pain or an underlying sleep disorder. Lack of sleep can feed into a cycle of increased pain and fatigue. The role of medical cannabis in regulating sleep is still poorly understood, despite some medical cannabis users reporting an increase in sleep quality with cannabis use.



Reducing sleep disturbances

Recently, a moderate amount of clinical evidence has emerged to support the role of medical cannabis in improving sleep. Researchers suggest that our endocannabinoid system, which interacts with THC and CBD molecules, helps regulate our sleep-wake cycle. Some studies have demonstrated that cannabis-based medications were able to reduce sleep disturbances in people with chronic pain.

However, not enough evidence exists at this point to make definitive claims.



Oils and sleep

The effect of medical cannabis on sleep can also depend on THC and CBD content, as well as on the particular product or subspecies. For those having a difficult time falling asleep and staying asleep, medical cannabis can be effective. For most patients suffering from pain or disrupted sleep, remaining asleep is particularly difficult. Cannabis oils are a good choice, as they take some time to work but their effect is more long-lasting than inhaled products.

A reasonable approach would be to select an oil that has a combination of CBD and THC and start with a small dose a few hours before bedtime. The amount taken at the same time every night can be gradually increased based on your response. In the morning you should be alert without any residual effects. It is important to discuss this with your physician, as patients may become over-sedated if they are already taking sleep medication.

It is best to avoid activities that require high alertness, such as driving or operating heavy machinery, until you know how a particular product and dosage affects you. It is illegal to drive if you have more than the legal limit of THC in your system. For more information, visit the section on Cannabis and Driving.

Anxiety

Amongst other therapeutic benefits, CBD is commonly associated with anxiety relief. Unlike THC, CBD does not have intoxicating effects. One small-scale study evaluating patients with generalized social anxiety disorder found that cannabis-based medications were more effective at reducing anxiety than a placebo. The exact mechanisms underlying the role of medical cannabis in reducing anxiety remains unclear and there is not enough clinical evidence to make definitive claims.

While some people also report that THC can help with anxiety, this seems to be a dose-dependent effect. When individuals consume higher doses of THC products, approximately 20-30% of people can experience increased anxiety, panic attacks and even paranoia or hallucinations. Using a product that is high in CBD and low in THC or using small doses of THC can help you avoid these adverse effects.



Appetite

People living with chronic pain may experience a decrease in appetite. In some cases, medications for arthritis can have side-effects such as nausea or vomiting that interfere with your desire to eat. Research evidence suggests that THC interacts with our hunger regulation system and can stimulate our appetite. Once cannabis enters our system, molecules like THC can interact with the feeding control areas of our brain and increase our desire for food. This is thought to be the reason for the cravings or



"munchies" commonly associated with cannabis. Also, given THC's capacity to help with nausea and calm the digestive system, a person may be more interested in eating if their nausea subsides. Some people suffering from nausea and low appetite find it helpful to vaporize a small amount of medical cannabis 15-30 minutes prior to a meal to stimulate appetite.

With the legalization of recreational cannabis, several studies have emerged investigating the role of cannabis in energy metabolism and hunger control. Results from these studies suggest that chemicals such as THC and CBD may play a therapeutic role in regulating appetite.

However, insufficient evidence currently exists about the effects of CBD on appetite. If you are concerned about developing an increased appetite, it may be better to start with a CBD-dominant product rather than THC-dominant product.



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SIDE EFFECTS

As discussed in the section "Who should not take medical cannabis?", there are certain groups of people who should avoid cannabis altogether.

This includes if you are under the age of 25, allergic to cannabinoids, pregnant or breastfeeding, or have a history of psychotic illness, substance abuse disorder, or suicidal thoughts. In addition, there are other factors such as side effects that should be taken into consideration when determining if medical cannabis might be an appropriate treatment option for you.



Cannabis and the developing brain

The endocannabinoid system is extensive, and its receptors are present throughout the body. Unfortunately, the effects of medical cannabis are not limited to specific systems. Once consumed, the chemicals in cannabis can bind to the endocannabinoid receptors throughout the brain.

While THC and CBD have helpful benefits, their effects on the brain can be potentially harmful. THC can influence the areas in our brain responsible for memory and learning. In a young, developing brain, exposure to THC can lead to short-term memory impairment.

Studies have shown that persistent THC use from childhood into adulthood has been linked to neuropsychological decline. As the young brain develops until the age of 25, frequent use of THC at an early age can result in cognitive problems.

Individuals 25 and under are cautioned against using cannabis products for treatment of arthritis symptoms and are advised to consult their physicians for alternatives to managing their pain. Visit the Arthritis Society s Managing Chronic Pain online module to learn more about managing your pain: https://arthritis.ca/support-education/online-learning/managing-chronic-pain



THC Side Effects

In contrast to its potential therapeutic benefits, the THC cannabinoid can impact our sensory processing, cognition and motor coordination. Even at low doses, the side effects of THC can be experienced. The impacts of cannabis depend on a multitude of factors including the concentration of THC, the amount consumed and method of consumption. While low doses of THC may produce only minor side effects, higher doses will produce more significant side effects.

According to Health Canada, some of the side effects of THC can include:

- dizziness, drowsiness, feeling faint or lightheaded, fatigue, headache;
- impaired memory and disturbances in attention, concentration and ability to think and make decisions:
- disorientation, confusion, feeling drunk, feeling abnormal or having abnormal thoughts, feeling "too high", feelings of unreality, feeling an extreme slowing of time;
- suspiciousness, nervousness, episodes of anxiety resembling a panic attack, paranoia (loss of contact with reality), hallucinations (seeing or hearing things that do not exist);
- impairments in motor skills and perception [including ability to drive], altered bodily perceptions, loss of full control of bodily movements, falls;
- dry mouth, throat irritation, coughing [if smoking or vaping];
- worsening of seizures;
- hypersensitivity reactions (contact dermatitis/hives);
- higher or lower blood levels of certain medications;
- nausea, vomiting;
- fast heartbeat.

Source: Health Canada, Health Effects of Cannabis, 2018.

THC will affect everyone differently, especially depending on the quantity consumed. For some people who experience minimal side effects, the effects of THC can be pleasant, which is why it has been used recreationally for many years. However, if you are concerned about the potential side effects of THC, it is best to opt for a product that is CBD-dominant with little THC content. CBD can also help counteract the effects of THC in products that contain small amounts of THC.





Pregnancy, Breast Feeding and Family Planning

Those who are pregnant, planning to become pregnant or are breastfeeding are cautioned against cannabis use.

In people who are pregnant, the chemicals found in cannabis can be transferred to the fetus and have adverse effects on development and fetal health. Cannabinoids can also be passed to a baby through breast milk and can negatively impact cognitive and motor development in infants.

Those who are planning to become pregnant are at increased risk for reproductive and pregnancy complications with cannabis use. Several studies that have analyzed the impact of cannabis on our bodies found that cannabis interacts with our hormone regulation system and can cause fluctuations in reproductive hormones responsible for ovulation, milk production and birthing.

Additionally, long-term use of products high in THC can lead to a decrease in sperm count, concentration and motility, as well as an increase in abnormal sperm morphology. This can make **conception more difficult.**

Central nervous system (CNS) Depressants and Cannabis

Medical cannabis belongs to a class of medications called central nervous system (CNS) depressants. CNS depressants work to slow down brain activity and are often prescribed for pain and anxiety relief. Included within this class are sedatives, tranquilizers and hypnotics.

When cannabis is used in combination with alcohol, opioids or other CNS depressants, it can amplify the effects of these drugs and increase the risk of toxicity.



Studies that have analyzed the effects of alcohol and cannabis together found that THC increases blood alcohol levels and heightens its effects on the brain. Because cannabis and alcohol are both CNS depressants, they lead to a heightened sedative effect when consumed together and can result in dizziness, nausea, vomiting, and fatigue.



Interactions

According to Health Canada (2016), cannabis can interact with a number of drugs. Before trying medical cannabis, make sure to let your doctor or pharmacist know about any prescription drugs, non-prescription drugs, or herbal products you are taking, especially:

1. Any drugs which slow down the central nervous system, causing drowsiness. These may include sleeping pills, tranquilizers, some pain medications, some allergy or cold medications, or anti-seizure medications.





2. Other medications such as antiretroviral drugs used in the treatment of HIV/AIDS, certain anti-depressants, stomach acid inhibitors, certain antibiotic and antifungal medications, certain heart medications, and Saint John's Wort.

Cannabis and Driving

The federal government has established legal limits for blood THC content and individuals cannot drive within two hours of being over the limit. While CBD does not cause impairment, some CBD-dominant products do contain low doses of THC. If you are taking a CBD-dominant product, it is best to avoid driving until you know how the product will affect you.



Several studies have evaluated crash risk in drivers

positive for THC. The use of cannabis before or while driving can heighten the risk of crash involvement. The short-term effects associated with THC such as impaired memory, altered sensory perception, and impaired performance in coordination tasks can negatively **impact a person's ability to** drive safely.

Distraction

Driving requires a high level of attention, coordination, awareness and decision-making. Additionally, factors such as weather, varying road conditions and vehicle conditions require a higher degree of awareness. Immediately after smoking cannabis (and half an hour after ingesting it orally) individuals can begin experiencing changes in sensory perception, depending on the dose and level of THC. While driving, these experiences can be distracting and have been associated with driving impairment.



Perception

The impact of THC on decision-making results in distorted perception of time and space and a decline in motor coordination. In fact, THC users have reported altered perceptions in time, with their perceived time moving by much quicker than real time. This distortion in time perception has been shown to negatively impact a person's driving behaviour

Motor coordination

Finally, several studies have examined the effects of THC on motor coordination. In a few such studies, cannabis users were asked to perform both simple and complex tasks to test their motor coordination, attention level and reaction times. Studies such as this help us understand how cannabis can contribute to unsafe driving behaviour and increase the risk of serious car accidents.

KNOWLEDGE CHECK: Using medical cannabis means you will definitely experience negative side effects.

FALSE. Everyone will respond to medical cannabis differently. The amount of THC you take, your other medications and your environment all have an impact on potential side effects occurring.



RISKS

As with any medication, there are risks with medical cannabis.

There are a number of factors that can make it unsafe for someone to use medical cannabis. There is an increased health risk for a number of groups, including:

- Elderly people
- People with an unstable mental health disease
- People with a history of current moderate or severe cardiovascular or pulmonary disease
- People working in settings requiring high levels of concentration and alertness
- People who are also taking sedative-hypnotics or other psychoactive drugs



Cannabis use has been linked to complications for those with heart disease. Specifically, THC increases heart rate and blood pressure. This poses a health risk for people with heart disease and blood flow problems.

Smoking cannabis also has health risks. Smoking cannabis has been compared to smoking nicotine or tobacco due to smoke being inhaled into the respiratory system. Cannabis smokers are at risk of lung infections, pneumonia and a decline in breathing function.

Even though vaping dried cannabis flower has been considered safer than smoking since it does not involve combustion, it can still aggravate breathing. There have also been recent illnesses potentially related to additives in illicit THC oil vape pens or e-cigarettes. When oil cartridges become available they will be Health Canada approved to ensure safety.

Kidney and liver impacts

Cannabis use has been linked to tissue scarring progression in people with liver disease. The endocannabinoid system, which helps to regulate many natural functions of the body, is also involved in how the liver retains fat. Because of this, cannabis can lead to further liver issues in those who already have liver disease.

Cannabis has also been connected with impaired kidney function and reduced blood flow to the kidneys. It is recommended that individuals with kidney and liver complications should abstain from daily cannabis use.





Psychosis and cannabis use

Cannabis can be harmful for individuals with high vulnerability for psychosis. Psychosis refers to a mental disorder where thoughts, emotions and perceptions are altered or impaired. If you have a personal or family history of schizophrenia, you are at an increased risk of developing psychotic symptoms with frequent cannabis use. If you have a current or past psychotic illness, substance abuse issues, or suicidal thoughts, you should not use medical cannabis.]

Can I overdose or get addicted?

Cannabis Toxicity

While it's not possible to overdose on cannabis, there is the risk of something called "cannabis toxicity" from over-consumption of THC. This means that there is too much cannabis in the body, causing a variety of symptoms. Symptoms can range from feelings of fear, depression and anxiety to increased heart rate, muscle spasms and lethargy.

If you experience these, or any unexpected side effects while using cannabis, seek medical attention immediately.

If you have no previous experience with cannabis, you should always start with a low dose. Increase the dose slowly (over days or weeks, not hours). Don't exceed the dose recommended by your doctor.

Chances of toxicity increase with orally-ingested products such as edibles, drinks, capsules, or oils. This is because orally-ingested products take longer to break down in our bodies than smoking or vaping, so people don't feel the effects as quickly and are more likely to take too much.

Cannabis toxicity, and its effects, depend on the ratio of THC to CBD in a product. You should avoid taking THC on its own. Having a balanced amount of CBD to THC, or higher CBD to THC ratio can help reduce some of the undesired effects of THC

THC amounts

Cannabis toxicity from THC can occur at amounts greater than 7mg/dose. Side effects from CBD can also happen, but at much higher doses than with THC. At extremely high amounts (over 500mg/day), CBD can result in negative side-effects including diarrhea, fatigue, vomiting and severe drowsiness.



Cannabis Dependence

Cannabis dependence can occur with increased tolerance to cannabis products, often caused by taking more than the recommended dose. This means that higher doses will be needed to cause the same effects. Consuming high quantities of THC regularly can lead to psychological and physical dependence and withdrawals. In severe cases, this dependence can become an addiction. Cannabis use disorder is characterized by the following behaviours:



- Cravings for cannabis or other depressants
- Continuous use of cannabis despite negative side-effects on health, social life or well-being
- Persistently seeking out cannabis

Another aspect of dependence is cannabis withdrawal. This occurs more often when high doses of THC are used frequently. Withdrawal symptoms may be experienced by some people after stopping high-THC cannabis use. Symptoms include irritability, anxiety, difficulty sleeping, decreased appetite, and/or depression.



CONCLUSION

Will medical cannabis replace opioids?

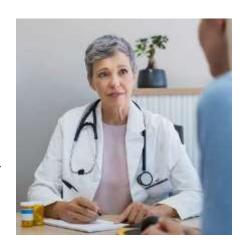
As medical cannabis becomes more widely used to treat chronic pain, how might this impact opioid usage? Opioids are a strong pain- relieving medication that are only used to treat pain when all other conventional therapies fail. They are not commonly used for arthritis but may be prescribed in extreme cases. Opioids are a narcotic and addictive. Prolonged use increases risk of addiction and/or accidental overdose. In fact, there were 2,800 opioid-related deaths in Canada in 2018 alone, many from accidental overdoses.

Medical cannabis offers many of the same therapeutic benefits as opioids, but with a much lower risk of addiction and no overdose deaths. Medical cannabis is an alternative to opioid prescriptions.

Studies have shown that patients using medical cannabis reduced their opioid use considerably. This can have a major impact on the roughly 4.5 million Canadians who used opioids to treat pain in 2017. The evidence suggests that medical cannabis is a lower-risk alternative to opioids, though it does still carry some risks of its own.

CONCLUSION

Medical Cannabis is not right for everyone. As discussed in the section "Who should not take medical cannabis?", there are certain groups that should avoid cannabis altogether, and others that should use it only with caution. If a healthcare professional determines it might be appropriate for you, medical cannabis could help relieve arthritis symptoms such as pain, inflammation, and poor sleep. In order to avoid the potential side effects of THC-dominant products, it's best to start with a CBD-dominant product that has little to no THC.



Talking with your healthcare professional will help you find the best method and dosage for using medical cannabis. You can also find out more on our Medical Cannabis webpage: https://arthritis.ca/treatment/medication/medical-cannabis



GET INVOLVED

The Arthritis Society is a leading advocate for research into the use of cannabis for medical purposes, and for the needs of people who use cannabis for medical purposes. For more information, visit our medical cannabis advocacy page: https://arthritis.ca/what-we-do/advocacy/medical-cannabis



SURVEY

Thank you for taking a few minutes to complete our survey: https://www.surveymonkey.com/r/courseseval Your feedback will guide the ongoing improvement of our programs to help you and other Canadians better manage your arthritis.

FLOURISH E-NEWSLETTER

Sign up to the flourish e-newsletter (www.arthritis.ca/flourish) to receive health and wellness advice, self management tips, inspirational stories and much more to help you move through life with arthritis.



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SOURCES

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SOURCES

Arthritis

- Abrams, Donald I. "The therapeutic effects of Cannabis and cannabinoids: An update from the National Academies of Sciences, Engineering and Medicine report." European journal of internal medicine 49 (2018): 7-11.
- Abuhasira, R., Schleider, L. B. L., Mechoulam, R., & Novack, V. (2018). Epidemiological characteristics, safety and efficacy of medical cannabis in the elderly. European journal of internal medicine, 49, 44-50.
- Ashton, C. H. (2001). Pharmacology and effects of cannabis: a brief review. The British Journal of Psychiatry, 178(2), 101-106.
- Alger, B. E. (2013, November). Getting high on the endocannabinoid system. In Cerebrum: the Dana forum on brain science (Vol. 2013). Dana Foundation.
- Bachhuber, M. A., Saloner, B., Cunningham, C. O., & Barry, C. L. (2014). Medical cannabis laws and opioid analgesic overdose mortality in the United States, 1999-2010. JAMA internal medicine, 174(10), 1668-1673.
- Bates, M. N., & Blakely, T. A. (1999). Role of cannabis in motor vehicle crashes. Epidemiologic Reviews, 21(2), 222-232.
- Baron, E. P., Lucas, P., Eades, J., & Hogue, O. (2018). Patterns of medicinal cannabis use, strain
 Medical Cannabis & Arthritis Page 40

- analysis, and substitution effect among patients with migraine, headache, arthritis, and chronic pain in a medicinal cannabis cohort. The journal of headache and pain, 19(1), 37.
- Bergamaschi, M. M., Queiroz, R. H. C., Chagas, M. H. N., De Oliveira, D. C. G., De Martinis, B. S., Kapczinski, F., ... & Martín-Santos, R. (2011). Cannabidiol reduces the anxiety induced by
- simulated public speaking in treatment-naive social phobia patients. Neuropsychopharmacology, 36(6), 1219.
- Boehnke, K. F., Litinas, E., & Clauw, D. J. (2016). Medical cannabis use is associated with decreased opiate medication use in a retrospective cross-sectional survey of patients with chronic pain. The Journal of Pain, 17(6), 739-744.
- Bolognini, D., & Ross, R. A. (2015). Medical cannabis vs. synthetic cannabinoids: what does the future hold?. Clinical Pharmacology & Therapeutics, 97(6), 568-570.
- Canadian Rheumatology Association (2019). Canadian Rheumatology Association (CRA) Position Statement on Medical Cannabis Use in Rheumatic Disease. Retrieved from: https://rheum.ca/resources/publications/canadian-rheumatology-association-cra-position-statement-on-medical-cannabis-use-in-rheumatic-disease/.
- Di Marzo, V., Bifulco, M., & De Petrocellis, L. (2004). The endocannabinoid system and its therapeutic exploitation. Nature reviews Drug discovery, 3(9), 771.
- Fitzcharles, M. A., Clauw, D. J., Ste-Marie, P. A., & Shir, Y. (2014). The dilemma of medical marijuana use by rheumatology patients.
- Gallily, R., Yekhtin, Z., & Hanuš, L. O. (2018). The Anti-Inflammatory Properties of Terpenoids from Cannabis. Cannabis and cannabinoid research, 3(1), 282-290.
- Garry, A., Rigourd, V., Amirouche, A., Fauroux, V., Aubry, S., & Serreau, R. (2009). Cannabis and breastfeeding. Journal of toxicology, 2009.
- Grotenhermen, F., & Müller-Vahl, K. (2012). The therapeutic potential of cannabis and cannabinoids. Deutsches Ärzteblatt International, 109(29-30), 495.
- Hazekamp, A., Ware, M. A., Muller-Vahl, K. R., Abrams, D., & Grotenhermen, F. (2013). The
 medicinal use of cannabis and cannabinoids—an international cross-sectional survey on
 administration forms. Journal of psychoactive drugs, 45(3), 199-210.
- Haroutounian, S., Ratz, Y., Ginosar, Y., Furmanov, K., Saifi, F., Meidan, R., & Davidson, E. (2016).
 The effect of medicinal cannabis on pain and quality-of-life outcomes in chronic pain. The Clinical



- journal of pain, 32(12), 1036-1043.
- Häuser, W., Petzke, F., & **Fitzcharles, M. A. (2018).** Efficacy, tolerability and safety of cannabis-based medicines for chronic pain management—An overview of systematic reviews. European Journal of Pain, 22(3), 455-470.
- Health Canada (2016). Consumer Information Cannabis (Marihuana, marijuana). Retrieved from: https://www.canada.ca/en/health-canada/services/drugs- medication/cannabis/licensed-producers/consumer-information- cannabis.html.
- Health Canada Information for Health Care Professionals: Medical Use of Cannabis (2016).
 Retrieved from: https://www.canada.ca/en/health-canada/services/drugs-medication/cannabis/information-medical-practitioners.html.
- Iffland, K., & Grotenhermen, F. (2017). An update on safety and side effects of cannabidiol: a review of clinical data and relevant animal
- studies. Cannabis and cannabinoid research, 2(1), 139-154.
- Iversen, L., & Chapman, V. (2002). Cannabinoids: a real prospect for pain relief. Current opinion in pharmacology, 2(1), 50-55.
- Klein, T. W., Newton, C., Larsen, K., Lu, L., Perkins, I., Nong, L., & Friedman, H. (2003). The cannabinoid system and immune modulation. Journal of leukocyte biology, 74(4), 486-496.
- Maccarrone, M., Maldonado, R., Casas, M., Henze, T., & Centonze,
- D. (2017). Cannabinoids therapeutic use: what is our current understanding following the introduction of THC, THC: CBD oromucosal spray and others?. Expert review of clinical pharmacology, 10(4), 443-455.
- Malfait, A. M., Gallily, R., Sumariwalla, P. F., Malik, A. S., Andreakos, E., Mechoulam, R., & Feldmann, M. (2000). The nonpsychoactive cannabis constituent cannabidiol is an oral antiarthritic therapeutic in murine collagen-induced arthritis. Proceedings of the National Academy of Sciences, 97(17), 9561-9566.
- Martín-Sánchez, E., Furukawa, T. A., Taylor, J., & Martin, J. L. R. (2009). Systematic review and meta-analysis of cannabis treatment for chronic pain. Pain medicine, 10(8), 1353-1368.
- Meier, M. H., Caspi, A., Ambler, A., Harrington, H., Houts, R., Keefe, R. S., ... & Moffitt, T. E. (2012). Persistent cannabis users show neuropsychological decline from childhood to midlife.



- Proceedings of the National Academy of Sciences, 109(40), E2657-E2664.
- Metz, T. D., & Stickrath, E. H. (2015). Marijuana use in pregnancy and lactation: a review of the evidence. American journal of obstetrics and gynecology, 213(6), 761-778.
- Musty, R. E. (2007). Cannabinoid Effects on Biopsychological, Neuropsychiatric, and Neurological Processes. In Marijuana and the Cannabinoids (pp. 303-315). Humana Press.
- Pava, M. J., Makriyannis, A., & Lovinger, D. M. (2016). Endocannabinoid signaling regulates sleep stability. PLoS One, 11(3), e0152473.
- Perrot, S., & Trouvin, A. P. (2019). Cannabis for musculoskeletal pain and arthritis: Evidence is needed. Joint, bone, spine: revue du rhumatisme, 86(1), 1.
- Russo, E. B., Guy, G. W., & Robson, P. J. (2007). Cannabis, pain, and sleep: lessons from therapeutic clinical trials of Sativex®, a cannabis-based medicine. Chemistry & biodiversity, 4(8), 1729-1743.
- Spindle, T. R., Cone, E. J., Schlienz, N. J., Mitchell, J. M., Bigelow, G. E., Flegel, R., ... & Vandrey, R. (2018). Acute effects of smoked and vaporized cannabis in healthy adults who infrequently use cannabis: a crossover trial. JAMA network open, 1(7), e184841- e184841.
- Turner, A. R., & Agrawal, S. (2018). Marijuana Toxicity. In StatPearls [Internet]. StatPearls Publishing.
- Ware, M. A., Fitzcharles, M. A., Joseph, L., & Shir, Y. (2010). The effects of nabilone on sleep in **f**ibromyalgia: results of a randomized controlled trial. Anesthesia & Analgesia, 110(2), 604-610.
- Ware, M. A., Wang, T., Shapiro, S., Collet, J. P., Boulanger, A., Esdaile, J. M., ... & O'Connell, C. (2015). Cannabis for the management of pain: assessment of safety study (COMPASS). The Journal of Pain, 16(12), 1233-1242.
- Whiting, P. F., Wolff, R. F., Deshpande, S., Di Nisio, M., Duffy, S., Hernandez, A. V., ... & Schmidlkofer, S. (2015). Cannabinoids for medical use: a systematic review and meta-analysis. Jama, 313(24), 2456-2473.

