

# YOUR CBD GUIDE

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## What you need to know about CBD

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## **YOUR GUIDE TO CBD**

CBD oil today is a hot topic and still one that many people have trouble understanding. In this guide we will discuss some very basic information such as what is CBD and where does it come from, frequently asked questions especially by those new to CBD, research studies on CBD, how CBD affects the body, how it is administered, and how we can get you started.

Are you ready?

# **SOME BASIC INFORMATION ON CBD**

## **What is CBD?**

Cannabidiol (CBD) is a phytocannabinoid (molecule synthesized by plants) discovered in 1940. It is one of some 113 identified cannabinoids (naturally occurring compounds) in cannabis plants, accounting for up to 40% of the plant's extract. As of 2018, preliminary clinical research on cannabidiol included studies of anxiety, cognition, movement disorders, and pain.

## **The Cannabis Plant**

The cannabis plant is made up of two main species for human consumption – Indica and Sativa.

The Indica is shorter and bushier and has wide leaves. They grow faster and have a high yield. When used for medical marijuana, they have a higher ratio of CBD to THC.

The Sativa plant is tall, thin, has narrow leaves and produces more fibre. They take longer to grow and mature and require a great deal more light. When used in medical marijuana, they have a higher ratio of THC to CBD.

## **Difference Between CBD and Hemp**

CBD is found in both marijuana and hemp. They are both made from different parts of the plant and have different purposes.

Hemp oil is made from pressing hemp seeds and has low levels of CBD and is used in a variety of products such as a protein supplement for food or in shampoos, skin conditioners, lotions and soap. It contains very little concentrations of cannabinoids and terpenes and is not the most desirable source of CBD oil and has almost no medical benefits.

Also, because it has no labeling standards, it can be called organic and pure CBD because providing proof is not necessary.

CBD oil is created by licensed producers and manufactured for the most medical benefit. They can contain a balance of THC and CBD or pure CBD and are used for a number of medical conditions. It is important to know which oil you are getting but more on that later.

The companies listed on our website are reputable companies and provide lots of information on the products they are selling.

## Types of CBD Oil

### \* Full Spectrum CBD Oil

Simply put 'full spectrum' means the full plant extract is included, so it not only contains the CBD but also other plant molecules. It retains the natural balance of the terpenes (combination of hydrogen and carbon) and cannabinoids of the plant.

Terpenes are what give the cannabis its aroma and flavor. They are the essential oils found in all plants.

“Terpenes are a large and diverse class of organic compounds, produced by a variety of plants, particularly conifers, and by some insects. They often have a strong odor and may protect the plants that produce them by deterring herbivores and by attracting predators and parasites of herbivores.” ~ Wikipedia

### \* Broad Spectrum CBD Oil

Broad spectrum products specifically contain zero THC. Manufacturers will use additional processing to remove all traces of THC. However, they can also be stripped of their natural essence.

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### **\* CBD Isolates**

CBD in its purest form is called CBD isolate. Isolates are colourless, odorless, and contain no other active ingredient. At room temperature, they are solid crystals. They can be consumed directly or as an additive in edibles and beverages.

### **\* CBD-Infused Oil**

CBD infused oil means a product has been infused with purified CBD isolate or CBD full spectrum concentrate. Check the labels – it should say CBD-rich hemp oil or extract or full spectrum CBD oil.

### **\* Raw CBD Oil**

When the essential oils of the hemp plant are first extracted, the end product is considered raw hemp extract.

### **\* CBD Concentrate**

When the raw hemp is put through a refining process to remove unwanted waxes and chlorophyll, it is considered CBD Distillate or CBD Concentrate.

# FREQUENTLY ASKED QUESTIONS

## \* Is CBD Legal?

Even though we have made huge strides, there is still a lot of confusion on this issue, some of it stemming from the fact people still don't understand the difference between marijuana and hemp. Hemp extract which is considered a food product is 100% legal. The FDA still has something to say about this.

***"Despite the farm bill changes, CBD can't yet be used in food or drinks because it is a pharmaceutical ingredient approved for use in certain drugs," FDA Commissioner Scott Gottlieb said in a statement.***

Hemp oil is legal in all 50 states, however, it is strongly urged that you know where your CBD is coming from and the specific laws of your area of residence. WE DO NOT OFFER LEGAL ADVICE.

In Canada, CBD oil made from cannabis plants and produced by Health Canada approved Licensed Producers are legal, not only medically but recreationally as well.

A registered patient with a medical prescription can purchase CBD oil through a licensed producer, as well as online through legal outlets such as the Ontario Cannabis Store or approved physical outlets. Products found in convenience stores, health food stores or illegal dispensaries are still not legal, nor are they governed for quality or strength.

## **\* Will CBD Get You High?**

In a word, no! CBD oil from hemp has very little to no THC which is the component responsible for causing a 'high' or a euphoria state.

## **\* Can CBD Interact Negatively with other Medication?**

Yes, CBD inhibits the cytochrome P450 enzyme which is involved in metabolizing some drugs. Some reports suggest that cannabis can cause adverse effects on patients taking blood pressure medication.

THC and CBD can increase warfarin or heparin (blood thinning drugs) levels.

*It is interesting to note that even grapefruit can interact with prescription drugs.*

## **\* What are the Side Effects of CBD Oil?**

I am sure many of you, especially those who have never tried CBD are concerned about any possible side effects and I don't blame you. Due diligence is necessary when planning to take anything new.



Will everyone experience side effects? I don't believe so. I have spoken to a few people who use it and they have not 'complained' about any, or maybe the benefits outweigh any minor discomforts they may have.

Some side effects include:

- \* Drowsiness
- \* Dry Mouth
- \* Low Blood Pressure
- \* Diarrhea

### **\* Does CBD Show Up On Drug Tests?**

Drug tests do not test for CBD; properly produced CBD from legal hemp cannot produce a false positive for THC use. CBD is considered to be undetectable in saliva or urine tests.

If you are required to undergo drug screening tests, you need to know "what is in your CBD oil and purchase from a reputable source." Do not use oil made from marijuana because you have no way of knowing if the product is THC free.

### **\* Are Products Tested for Quality and Safety?**

A lot of reputable companies use third party testing. Some things they test for are: Cannabinoid Profiling, Pesticide Testing, Microbiological Screening, Terpene Analysis, and Residual Solvent Testing. As a consumer, you have the right to ask this question.

### **\* What is CO2 Extraction?**

CO2 extraction is a process that uses pressurized carbon dioxide to pull the desired phytochemicals (biologically active compounds found in plants such as CBD) from a plant. The process acts as a solvent to extract CBD oil. It is also considered the most expensive and safest plant extraction method in the world.

### **\* Does CBD Affect Appetite?**

CBD, unlike THC, has a negligible impact on appetite.

### **\* How Much CBD Should I Take?**

It is recommended that you start out with small doses. Although each individual is different, a dose between 10 and 20 mg once or twice a day is enough to provide pain relief for many conditions. Personally, I started out with 5 mg and worked my way up to 10 mg twice a day (morning and at bedtime).

### **\* Can I Give My Pet CBD Oil?**

Yes, CBD is safe for pets but you should follow suggested dosage. If possible, seek out a veterinarian who is familiar with CBD products. He will be able to guide you with regards to dosage as this will depend on size of pet, weight, exercise routine, etc.

# CBD AND YOUR BODY

At the start of this Guide we talked about what CBD is and cannabinoids (CBD and THC). Here we will go a little deeper into how CBD works on our body.

CBD does not affect the same receptors as THC. Receptors are often located in the sense organs – ear, eye and skin and are defined as a protein molecule that receives chemical signals from outside a cell. When the chemical signals bind to a receptor they cause some form of cellular/tissue response, for example, a change in the electrical activity of a cell.

What does this have to do with CBD oil? Let's use Multiple Sclerosis (MS) as an example and how oils have been used to treat it. The National Society defines MS "as an unpredictable, disabling disease of the central nervous system which in turn disrupts the flow of information within the brain and between the brain and the body." MS is a highly neurodegenerative disease. It affects different people in different ways as well as with the severity of the symptoms. MS is more common in women than men and usually affects people between 20 and 50 years of age with the average age being 34.

Our bodies have natural cannabinoid receptors, found throughout the body, that work with the endocannabinoid system (neurotransmitters or chemical messengers – the way our cells communicate with each other) that bind to the cannabinoid

receptors. If there is a deficiency in these neurotransmitters, the receptors will not function properly; the central nervous system is the body's most densely populated area which is where multiple sclerosis attacks the nerve fibres. CBD can help calm the nervous system and help it find balance.

CBD Oil has been known to assist MS patients by managing inflammation, pain, muscle spasms, clinical depression, abdominal pain, and constipation.

It should also be noted here that MS patients are turning to CBD because prescribed drugs can be very expensive and has been known to produce very severe side effects.

## Other Common Cannabinoids

Remember in the beginning when we mentioned that there were 113+ cannabinoids in the cannabis plant. The most common, as we know, are CBD and THC (which is responsible for the 'high') but there are a few other important ones as well.

\* **Cannabichromene (CBC)** is the third most common cannabinoid. It bears structural similarity to the other natural cannabinoids (CBD and THC). It is non-psychoactive but believed to have anti-inflammatory, anti-depressant, and anti-fungal properties.

\* **Cannabinol (CBN)** is a non-psychoactive cannabinoid found only in trace amounts in Cannabis, and is mostly found in aged Cannabis. A study conducted in September 2012, examined the possibility of it being an appetite stimulant, as well as a pain reliever and antibiotic.

\* **Tetrahydrocannabivarin (THCv)** is less psychoactive than THC and is known to have neuroprotective (of the nervous system) properties. It is an appetite suppressant, reduces panic attacks and may help with Alzheimer's.

\* **Cannabigerol (CBG)** is non-psychoactive and is abundant in some industrial hemp varieties; there is suggestion it can be used as a muscle relaxant in conditions such as multiple sclerosis, sports injuries, and back pain.

\* **Cannabidivarin (CBDv)** is non-psychoactive and behaves similar to CBD.

\* **THCa and CBDa** are compounds found in raw cannabis, are non-psychoactive, used for anti-inflammatory, and antioxidant properties.

\* **Delta 8 THC** (less psychoactive than THC), according to the National Cancer Institute, is defined as:

*“An analogue of tetrahydrocannabinol (THC) with antiemetic, anxiolytic, appetite-stimulating, analgesic, and neuroprotective properties. [Delta-8-THC] binds to the cannabinoid G-protein coupled receptor CB1, located in the central nervous system... This agent exhibits a lower psychotropic potency than [Delta-9-THC], the primary form of THC found in cannabis.”*

## How Do Terpenes Affect the Body

Earlier, we mentioned that terpenes are what give the cannabis its aroma and flavor and are the essential oils found in all plants.

Terpenes can have a powerful effect on our moods. Here are some common terpenes and their benefits.

## **MYRCENE**

- One of the most abundant in cannabis
- Benefits - Anti-inflammatory, sedative, muscle relaxant, pain relief
- Aroma – musky, herbal, citrusy
- Found in mango, hops, bay leaves, lemongrass and eucalyptus

## **A-PINENE**

- Used around the world for thousands of years for its healing properties
- Benefits – anti-inflammatory, asthma relief, boosts energy, improves memory
- Aroma – pines, woody
- Found in pine trees, orange peels, conifer trees, turpentine

## **LINALOOL**

- Benefits – sleep aid, pain reliever, anti-inflammatory, relief from psychosis and anxiety
- Aroma – floral, citrusy
- Found in Lavendar

## **CITRONELLO**

- Used as a mosquito and moth repellent
- Benefits – anti-biological and anti-inflammatory properties, immune-regulating effects
- Aroma – heavy, fruity
- Found in geraniums, rose and citrus

## **CARYOPHYLLENE**

- Benefits – pain relief, anti-depressant, anti-inflammatory, relief of nausea
- Aroma – spicy, woody, peppery
- Found in basil, cloves and black pepper

## **LIMONENE**

- Bitter taste; commonly used as an additive in cosmetics and cleaning supplies
- Benefits – gastric reflux, toenail fungus, depression and anxiety
- Aroma – strong citrusy odour
- Found in lemons and other citrus rinds

## **HUMULENE**

- Benefits – anti-inflammatory, anti-tumour, appetite suppressant, pain relief
- Aroma – woody, earthy, beer, spicy
- Found in hops



# The Entourage Effect of Terpenes

Cannabinoids and terpenes work simultaneously with one another in a therapeutic way to produce a range of effects called the 'Entourage Effect' which is greater than the sum of its individual components.

While some research has been conducted on The Entourage Effect, more is needed.

# RESEARCH STUDIES

Speaking of more research, let's take a look a look at some of the research that has been done to date.

## **CBD The Early Years**

According to the British Journal of Pharmacology, research into individual cannabinoids began in the 1940's which was decades after cannabinoid was discovered in cannabis. This research led to the discovery of CB1 and CB2 receptors, the development of CB1- and CB2- (selective agonists and antagonists) and that the endogenous cannabinoid system was significant in health and disease and had important therapeutic applications.

Cannabis was used in religious ceremonies and recreationally, stretching back 5000 years. The discovery that cannabis is the unique source of 66+ compounds now known as cannabinoids, and the psychotropic effects of cannabis are produced mainly by tetrahydrocannabinoid (THC), is a much more recent one. (1)

## **Important Findings**

In June 2017, the NCBI published a review (clinical data and relevant animal studies) updating the safety and side effects of cannabidiol (CBD). Their conclusions were:

- CBD is safe
- Common side effects included tiredness, changes in appetite and diarrhea
- Side effects compared to prescription medicine are significantly fewer
- CBD can be used to supplement therapy
- More study is needed as research focused mainly on treatment of epilepsy and psychotic disorders

*NCBI (National Center for Biotechnology Information) is a part of the United States National Library of Medicine which is a branch of the National Institutes of Health. (2)*

### **CBD and Anxiety**

In a double blind study, 24 never-before-treated patients with SAD (Seasonal Affective Disorder) received CBD or placebo. The study was aimed at a simulated public speaking test. Each volunteer participated in only one session.

It was concluded that those with the CBD had significant reduction in anxiety, cognitive impairment and discomfort in their speech performance while the placebo group showed a significant increase in anxiety, cognitive impairment, discomfort, and alert levels. (3)

## **CBD and Sleeping Disorders**

In a study published in April 2017, research showed a possible therapeutic potential in the treatment of insomnia. CBD could help REM sleep behavior disorders, daytime sleepiness, and nightmares associated with PTSD as well as improving sleep of those in chronic pain. More controlled research is needed in order to understand the clinical implications. (4)

In another double blind study, findings supported that CBD does not alter normal sleep patterns of healthy people. Twenty-seven volunteers took either CBD or Placebo over two nights. The CBD did not induce any significant effects and did not interfere with the sleep cycle. (5)

## **CBD and the Central Nervous System**

In a review conducted in 2009, it was determined that CBD displays anticonvulsive, sedative, hypnotic, antipsychotic, anti-inflammatory and neuroprotective properties and has the highest potential for therapeutic use either alone or in combination with other phytocannabinoids (cannabinoids that occur naturally in the cannabis plant). (6)

## **The FDA and Medical Conditions**

### **CBD and Epilepsy**

Treatment of Epilepsy with CBD in children has been the focus of many researches.

In Canada, each year 15,500 people learn they have epilepsy with 44% of those being under 5 and 55% before the age of 10.

In the United States, currently epilepsy is the most common childhood brain disorder affecting approximately 470,000 children under the age of 17.

About two-thirds will outgrow their seizures by the time they become teenagers.

Over the years, CBD enriched extracts have been used to control seizures, specifically in children but evidence of the effects has reached a turning point in the past year. There is now Class 1 evidence that CBD improves seizure control in patients with certain epilepsies (7).

***UPDATE: JANUARY 2020:*** *In June 2018, the FDA approved cannabidiol (Epidiolex, an oral solution) for treating seizures associated with Lennox-Gastaut and Dravet Syndromes for patients aged 2 and over. This is the first drug containing a purified marijuana derivative that the FDA has approved.*

### **Veterans Affairs and PTSD (Post-Traumatic Stress Disorder)**

In June of 2018, the Senate Appropriations Committee voted to allow physicians with the Department of Veteran Affairs to issue medical marijuana recommendations to military veterans. It also directs the VA to carry out research looking into the benefits of medical cannabis using the whole plant cannabis and extracts which would include CBD oil. (8)

## Resources

(1) Cannabinoid pharmacology: the early years

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1760722/>

(2) Review updating safety and side effects of CBD

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5569602/>

(3) Cannabidiol Reduces the Anxiety Induced by Simulated Public Speaking

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3079847/>

(4) A Review of Cannabis, Cannabinoids, and Sleep

<https://www.ncbi.nlm.nih.gov/pubmed/28349316>

(5) No Acute Effects on Sleep-Wake Cycle of Healthy Subjects

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5895650/>

(6) Cannabidiol in medicine: therapeutic potential-CNS disorders

<https://www.ncbi.nlm.nih.gov/pubmed/18844286>

(7) Cannabinoids in the treatment of Epilepsy

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5767492/>

(8) The Senate Appropriations Committee approved amendment

<https://veteransview.com/news/medical-marijuana-for-veterans-senate-amendment-passes-for-pot-to-treat-ptsd-depression-pain>

# HOW TO ADMINISTER CBD

So far, we've covered a lot of information about CBD. Let's look at the different ways to administer it and which ones are recommended for certain conditions.

There are many conditions for which CBD is being researched and studied. Some of them are:

Acne; ADD; ADHD; Addiction; Anorexia; Antibiotic Resistance; Anxiety; Arthritis; Asthma; Bipolar; Digestive Issues; Depression; Inflammation; Migraine; Mood Disorders; Motion Sickness; Nausea; Chronic Pain; Obesity; OCD; Skin Conditions; Sleep Disorders; Spinal Cord Injury; Stress.

## **Bioavailability of CBD and What it Means**

Bioavailability means the percentage and rate at which a substance is absorbed in the bloodstream, so in the case of CBD, the substance would be both cannabinoids and terpenes. The only way to receive 100% bioavailability would be if it were injected directly into your bloodstream – not something most people would want to do.

Every other method will result in a percentage of the CBD available to the body.

## **CBD Tincture**

A CBD tincture usually has an oil or alcohol base and has a very potent cannabidiol content. The tinctures are administered under the tongue, thus being absorbed directly into the bloodstream via your mouth. It is considered that tinctures are more potent than edibles by about 10 to 40 percent.

## **Inhaled CBD**

Besides having a direct injection, CBD inhalation has the next highest bioavailability. The vapor is absorbed into the lungs and the effects are almost immediate. The range is estimated at between 25 to 60 percent. Other factors can have a bearing such as how much is inhaled, how quickly, and how deep it is drawn into the lungs.

## **How Long Does it Take for CBD Oil to Take Effect**

This is a very common question. There is no single factor that determines this. We know that no two individuals are alike, therefore, we know that such factors as our body makeup is different – age, health, weight, circulation, and metabolism; they will all have a bearing on the effects.



Another important factor is the number of cannabinoid receptors located throughout our bodies, and the ability of the body to produce endocannabinoids (endogenous lipid-based retrograde neurotransmitters that bind to the receptors) which could make a difference in how quickly the CBD takes effect.

Edibles will take longer than tinctures to react and can take from 20 minutes to an hour or more. These are estimates only and depend on the individual and the other factors mentioned.

## **Recommended Dosage**

As mentioned earlier, no two individuals are the same and there are many variable factors that need to be taken into consideration such as our body weight, concentration of the CBD, gender, etc.

One very important factor, however, is that the dosage and duration of consumption will depend on the person taking it and how it is being used – whether as a supplement or for a particular condition. Also, is the product a full spectrum oil with terpenes?

So you can see, with all these factors, you might be receiving too little and your money would be wasted and you would not achieve the desired results. Experiment until you find the right dosage for you, whether the product is higher in CBD or THC. For example, I can only eat  $\frac{1}{4}$  of a brownie that is predominately THC. More and I feel very uncomfortable and out of control. *My* body doesn't tolerate more very well; yours might be different.

Unless specifically prescribed by a doctor, here are some general guidelines.

(1) Stick with one product – this way your body has a chance to react to what you are using – changing different products will make it that much harder to figure out the correct dosage for you.

(2) Start small – If you are a beginner, a low dosage is a good idea. This way, your body will give you an idea how it reacts to the dosage. It is suggested that 1 mg (milligram) for every 20 pounds is a good ratio. Therefore, a 100 pound person would take 5 mg.

(3) Start just before bedtime – Some people get drowsy so if you do, then an hour before bedtime is good. This is how I started and then I would take a dose upon rising. Again, experiment to see how it affects you.

(4) Increase slowly. I have my medical marijuana license, therefore, it was recommended I take a little more each day until I reached the desired dosage. It is best to start with a little and increase as you go until you feel you are achieving the desired result.

(5) For medical advice seek an expert, whether it be through the internet (there is lots of information on others who have similar ailments) or medical professionals– find someone who is knowledgeable about CBD and can guide you in the correct dosage and product for your condition.

## Ways to Take CBD

There are several options available:

**Capsules:** are taken orally and are easier to measure the right dosage. Easier to take with you.

**Oils:** taken orally in measured doses, usually come in a bottle. These have a high concentration of cannabidiol; they can also be consumed in smoothies and edibles.

**Tincture:** is usually oil or alcohol based with a very high CBD content. Since it is administered under the tongue, it is absorbed directly into the bloodstream and reaction time is faster.

**Inhalation:** vaping is a concentrated oil in liquid form which is heated and then inhaled through a vape pen or E-cigarette - faster reaction time and higher bioavailability. Nebulizers simply convert a solution containing CBD into a mist or cloud and are less common at this time - can provide a measured dose unlike Vapes.

**Isolate:** which is a fine white powder and is pure cannabidiol with no other cannabinoids present, and is an excellent way to determine if CBD is right for you.

**Salves and Skin creams:** a natural remedy for skin problems such as acne or aches and pains in certain parts of the body. Can contain either pure CBD or full Spectrum CBD oil.

# GETTING STARTED

Wow, we have covered a lot of stuff!

All CBD products are not created equally. Unfortunately, there are many disreputable companies trying to make a quick buck. In fact, some are using very little CBD in their products or worse, using dangerous synthetic CBD so finding a trusted manufacturer is important.

A lot of companies mislabel their products. In fact, nearly 70% of cannabidiol extracts sold online are mislabeled.

## **So How Do You Find A Reputable Company?**

(1) Research the vendor's production methods – they should have a website or someone who can give you the information you are looking for. They should also be using the ethanol or CO2 extraction method.

(2) Know where your hemp (CBD source) comes from. In the US, for example, farmers are required to get certification from state departments of agriculture. This information should be on the retailer's or manufacturer's website.

(3) Note how much THC is in the CBD oil and make sure it does not exceed the recommended 0.3 percent.

(4) Make sure manufacturer uses the whole plant or Full Spectrum – this means the CBD not only contains Cannabinol, but also terpenes, flavonoids and other cannabinoids, making the benefits much higher than CBD alone. Companies will use the term ‘Whole Plant’ or ‘Full Spectrum.’ (Broad Spectrum is the same as Full Spectrum minus the THC.)

(5) A reputable company will provide recent lab results or quality customer service. Most reputable companies now do third party testing. Check their websites or ask questions if you cannot find the answer. Don’t underestimate good quality customer service! When in doubt, ask!!

## **FINAL THOUGHTS**

We sincerely hope that we have answered a lot of your questions!

Please take a moment and check out our website and feel free to ask any questions by using the contact form.

If you need assistance, our Shop section has several companies listed that can provide you with what you are looking for.

Thanks for hanging in to the end!

***"ALTERNATIVE PATHWAYS TO YOUR HEALTH"***