

GREEN COMPASSION NETWORK

PATIENT HANDBOOK OF CANNABIS ESSENTIALS



Cannabis is a flowering plant that has fibrous stalks used for paper, clothing, rope, and building materials; leaves, flowers, and roots used for medicinal purposes; and seeds used for food and fuel oil. Cannabis leaves and flowers are consumed in several forms: dried flower buds or various types of concentrated, loose, or pressed resin is extracted from the flowers or leaves through a variety of methods. Once mature, the plant's leaves and flowers are covered with trichomes, these are tiny glands of resinous oil containing cannabinoids and terpenes that provide physical and psychoactive effects.

Cannabinoids

Concentrations or percent of each type of cannabinoid ranges widely from plant to plant and strain to strain.

The first identified and best known cannabinoid is **THC (delta-9-tetrahydrocannabinol)**. THC has the most significant psychoactive effect of the cannabinoids. The ratio of THC to other cannabinoids varies from strain to strain. While THC has been the focus of breeding and research due to its various psychoactive and therapeutic effects, non-psychoactive cannabinoids have physiologic effects that can be therapeutic as well.

- * **Cannabidiol (CBD)** relieves convulsions, inflammation, anxiety and nausea—many of the same therapeutic qualities as THC but without psychoactive effects. It is the main cannabinoid in low-THC or CBD dominant cannabis strains. Today, cannabis breeders have been developing strains with greater CBD content for medical use.
- * **Cannabinol (CBN)** is mildly psychoactive and decreases intra-ocular pressure, and seizure occurrence.
- * **Cannabichromene (CBG)** has sedative effects and antimicrobial properties, as well as lowers intra-ocular pressure.
- * **Tetrahydrocannabivarin (THCV)** is showing promise for Type 2 diabetes and related metabolic disorders.

In addition to cannabinoids, other cannabis plant molecules are biologically active. A few other molecules known to have health effects are flavonoids and terpenes or terpenoids (the flavor and smell or “personality” of the strain). Cannabinoids, terpenoids, and other compounds are secreted by the glandular trichomes found most densely on the floral leaves and flowers of female plants.

Effects of Cannabis

Different people have different experiences. One individual may feel stress release, when another feels over-stimulated and stressed, while another may feel energized and on-task. There are many factors that impact the effect.

- * Amount used (dosage)
- * Strain of cannabis used
- * Method of consumption
- * Environment/setting
- * Experience and history of cannabis use
- * Biochemistry
- * Mindset or mood
- * Nutrition and diet
- * Types of cannabis

Though cannabis is biologically classified as the single species *Cannabis Sativa*, there are at least three distinct plant varieties: *Cannabis Sativa*, *Cannabis Indica*, and *Cannabis Ruderalis*, though the last is rare. There are also hybrids which are genetic crosses between sativa and indica varieties. Cannabis used for fiber is typically referred to as hemp and has only small amounts of the psychoactive cannabinoid THC, usually less than 1%.

Genetic “breeders” of the cannabis seed have developed thousands of different strains of cannabis from these three varieties. There are marked differences between sativa, indica, and hybrid. Today, we mostly find hybrids. It can be difficult to find pure indica or sativa.

All types of medical cannabis produce effects that are more similar than not, including pain and nausea control, appetite stimulation, reduced muscle spasm, improved sleep, and others. But most strains will have differing cannabinoid and terpene content, producing noticeably different effects. Many people report finding some strains more beneficial than others. For instance, strains with more CBD

tend to produce better pain and spasticity relief. As noted above, effects will also vary for an individual based on the setting in which it is used and the person's physiological state when using it. In general, sativas and indicas are frequently distinguished as follows:

Sativas

The primary effects are on thoughts and feelings. Sativas tend to produce stimulating feelings, and many prefer it for daytime use.

Some noted **Therapeutic Effects** from use of Sativas:

- * Stimulating /energizing
- * Increased sense of well-being, focus, creativity
- * Reduces depression, elevates mood
- * Relieves headaches/migraines/nausea
- * Increases appetite

Some noted **Side-Effects** from use of Sativas:

- * Increased anxious feelings
- * Increased paranoia feelings

Indicas

Indicas tend to produce sedated feelings and many prefer its for nighttime use.

Some noted **Therapeutic Effects** from use of Indicas:

- * Provides relaxation/reduces stress
- * Relaxes muscles/spasms
- * Reduces pain/inflammation/headaches/migraines
- * Helps sleep
- * Reduces anxiety
- * Reduces nausea, stimulates appetite
- * Reduces intra-ocular pressure
- * Reduces seizure frequency/anti-convulsant

Some noted **Side Effects** from use of Indicas:

- * Feelings of fatigue
- * "Fuzzy" thinking

Hybrids

Strains bred from crossing two or more varieties, with typically one dominant. For example, a sativa-dominant cross may be helpful in stimulating appetite and relaxing muscle spasms. Crosses are reported to work well to combat nausea and increase appetite.

Cannabis Consumption

Proper Dosage

There are some important things to understand about the dosing and administration of cannabis. In small doses, cannabis can be helpful for things like nausea, appetite, pain, sleep, mood and anxiety. However, in larger doses, cannabis can have the opposite effect, leading to an increase in anxiety, pain and/or depression. With cannabis it is important to remember That for most people, **"less is more"**. The bi-directional effects of of cannabis make it essential that you **"start low and go slow"**

to avoid experiencing any adverse reactions.

The most common side effects of Delta-9 tetrahydrocannabinol (THC) are: **dizziness, dry eyes and mouth, euphoria, increased heart rate, decreased blood pressure, fatigue and increased appetite.**

Cannabidiol (CBD) can cause psycho-activity: **dizziness, jitteriness, diarrhea, palpitations and even decreased appetite with prolonged use.**

The psychoactivity of a strain is mostly based on the ratio of CBD:THC. At 1:1 the psychoactivity begins to diminish, and at 4:1 CBD:THC or higher most users will not experience a psychoactive effect.

Delivery Methods

Today we have many different delivery methods for cannabis. In the past, the only option was smoking but now you can choose from vaporizing, edibles, tinctures, suppositories, topicals and transdermal patches. There are pros and cons to each delivery method.

Inhalation

The most well-known and popular delivery method for deriving effects from cannabis is smoking. Smoking cannabis flowers provides relief of symptoms within 5 to 15 minutes. For many patients with chronic pain, anxiety or acute nausea and vomiting, this delivery method is ideal. The number one concern with smoking cannabis is potential lung damage and/or cancer. Tashkin looked at the possible long-term effects on the lungs in chronic cannabis smokers and found hat there was no link to an increased risk



of lung cancer or chronic obstructive lung disease. In fact, researchers found that cannabis may have some protective effects against these illnesses in users who smoke it.

When individuals smoke cannabis in a joint or pipe, they are heating the medicine at a high temperature (close to 600 degrees). At that temperature, burning cannabis is more likely to produce carcinogens and tars. While smoking has not been correlated with any increased risk of lung damage or cancer, it can lead to chronic bronchitis and/or chronic cough.

It should be noted that smoking raw cannabis is currently prohibited by law in Ohio.

Vaporizing

A safe alternative to smoking is vaporization. There are many products available for vaping. Some patients vaporize the flowers or buds of the cannabis plant, while others prefer to vaporize concentrated cannabis. Names of concentrated forms of cannabis are oils, dabs, waxes, shatter, nail hits and rosin.

Concentrated forms of cannabis are often extracted with chemical solvents such as butane. Testing for residual solvents is critical to avoid inhaling high levels of residual solvent chemicals. Also, some concentrated forms of cannabis oil have been mixed with propylene glycol to ease inhalation administration. Inhalation of propylene glycol has been linked to respiratory and immune disorders.

The concentrated forms of cannabis have higher potency levels ranging from 50% to 90% THC. There is much debate about whether high potency cannabis is truly medicinal or just an attempt by people to get extremely intoxicated. For many patients with neuropathic or cancer-related pain, highly concentrated cannabis is most effective at relieving their pain.

Inhalation is a quick and easy way to medicate. Contrary to popular belief, inhalation is low-dose based and the easiest to control. Patients can titrate up slowly. While the onset of relief is fast, the length of relief is only around 2-3 hours. Inhalation requires more frequent administration and may not be ideal for long-lasting relief.

Vaporizing is the safest way to inhale your medicine because it heats the cannabinoid-laden oils to a point where they become airborne vapors, without bringing the other plant material to combustion. This drastically reduces the amount of tars and other chemical irritants that you otherwise would inhale. Vaporizers also emits much less odor than any other types of smoking.



How to Use a Vape Pen

Begin by exhaling completely. Place the tip of the vaporizer between your lips and draw vapor in for 1-3 seconds. Then remove the device from your lips, inhale fresh air until your lungs are completely full, pause for 1-2 seconds, and then exhale completely.

Avoid high potency vape pens (>70% THC) until you have more experience with cannabis inhalation, or entirely, as these have a higher likelihood of producing tolerance-building and adverse effects.

Ingestible Cannabis

Ingestible cannabis can include anything from cookies, brownies, candies, capsules, tinctures, sprays, tea, and oils. The advantage of ingesting



cannabis is that it will provide much longer relief than inhalation. In general, patients can experience a reduction their symptoms for 6-8 hours or more. Most ingestible that are in the form of edibles (cookies, brownies, candies, sodas) come in dosages that far exceed the necessary amount to obtain relief.

When cannabinoids are ingested they are processed through the liver. The liver converts delta-9 tetrahydrocannabinol (THC) into 11-hydroxy-THC (11-OH-THC) which is a much more potent form of THC. The bio-availability of ingested cannabis ranges from 4% to 20%.

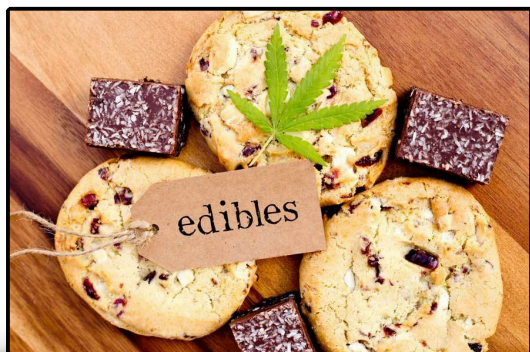
Cannabis is fat soluble, delaying the full onset of action from 1-3 hours. These factors make it difficult to dose a majority of THC rich-rich-edibles. The high variability of ingested cannabis, along with the delayed onset of effectiveness, can lead to potential over-medicating. Often, while a patient is waiting for relief they will consume more than they need, thinking that they didn't take enough originally.

Excessive dosage can be uncomfortable and happens most often with edibles.

Edibles, such as baked goods, lozenges and capsules, can be difficult to divide into equal amounts. Take the example of a brownie that has 100 mg of cannabinoids per package. How can you guarantee, when you divide that brownie into several small pieces, that within each piece the cannabis is evenly distributed? In a cannabis-naïve patient, a recommended starting dose is generally between 2.5mg to 10 mg of cannabinoid. The more potent the product, the higher chance a patient has of over medicating.

In finding and using the right dose. Use small amounts of edibles and wait 2 hours before gradually increasing the dose, if needed.

The effects of eaten cannabis may be more pronounced and onset of the effects will be delayed by an hour or more and will typically last longer than inhalation. Using edible cannabis effectively will usually take some experimentation with particular product types and dosage. Digesting cannabis also metabolizes the cannabinoids somewhat differently and can produce different subjective effects depending on the individual.



Tinctures, Sprays, and Oils

Liquid forms of cannabinoids can be a great way to start low and slow. As long as the products are clearly labeled with dosing, you can start with as little as one drop or one spray. By definition, a tincture is in an alcohol or glycerin base. Among many cannabis products, tinctures are now being developed in an oil base (such as olive oil, coconut oil or medium chain triglycerides (MCT) oil).

Sprays can also be a great way to start low and slow. Many cannabis sprays deliver a metered dose allowing patients to self-titrate.

To find your ideal dosage and to enhance your therapeutic benefits:

Start with no more than two drops and wait at least an hour before increasing the dosage, incrementally and as necessary.



Topicals and Transdermals

This is one of the safest ways to administer your medication and may be the best option for certain pains or ailments. Rubbing cannabis products on the skin will not result in a psychoactive effect.



Topical cannabis products can be beneficial for localized issues. Pain, muscle spasm, eczema, psoriasis, bug bites and/or burns can be treated with topical cannabis. The advantage is that the cannabinoids will act locally (and not regionally), thereby decreasing the potential for systemic side effects.

Animal studies have shown that THC topically is two times stronger than hydrocortisone. Topical THC can be effective at reducing itching and inflammation on the surface of the skin. CBD has also been shown to decrease inflammation, muscle tightness and itching. As a topical, CBD absorbs into the skin 10x better than THC. When using a topical, patients can expect to



experience relief within 20 minutes, and that relief can last for several hours.

Transdermal products can also come in patches and/or topical gel pens. The transdermal products have been designed to penetrate the skin and reach the blood stream for more systemic relief. Patches can provide relief within 20 minutes, and the effects can last for 12 hours. Additionally, if a patch is removed, any adverse reaction will dissipate within 20 to 30 minutes. This can be a great way to introduce medical cannabis if you are concerned about negative side effects, since it will give you more control over dosing and administration.

Know Your Variety

Cannabis comes in many varieties, roughly divided between sativa's that originated near the equator and indica's that come from northern latitudes, though modern breeding programs have created a wide range of hybrids. Each variety has its own cannabinoid and terpene profile and subtly different effects. Whether you use Sativa-dominant, Indica-dominant or a Hybrid makes a difference.

- * Take note of what effect each variety produces for you (therapeutic and unpleasant effects); keeping a log can be helpful.
- * Use higher potency cannabis so that you use less medicine. Concentrates can be useful, particularly if you need higher doses.
- * Experiment with high CBD strains, particularly for nausea, appetite, and pain.
- * Take a medicine vacation periodically. While cannabis does not produce tolerance in the way opiates do, reducing or ceasing cannabis use can yield enhanced effects when restarted. Either reduce or stop for however long it feels comfortable for you.
- * Change the variety if the one you're using seems to be losing its effectiveness.
- * Whenever possible, choose organic cannabis products never consume cannabis that has been treated with pesticides.

Think About Drug Interactions

No significant interaction between cannabis and other drugs are known at this time, however research indicates that cannabis enhances the effects of opiate painkillers. Little is known about the interaction of cannabis and other pharmaceutical medications, but it is important to consider any complementary effects.

Some studies show interactions with barbiturates, theophylline (Quibron-T, Theo-24, Uniphyll), fluoxetine (Prozac), disulfiram (Antabuse), sedatives, antihistamines, etc.

A synergistic effect can occur with alcohol use; limit mixing the two.

Consider Safety for Yourself and Others

Indicas can cause drowsiness. Don't consume cannabis and drive or operate heavy machinery. Cannabis use can impair motor skills. Find a safe environment to consume your medicine. Wait at least 2-3 hours after you medicate to determine its effect before operating a vehicle or machinery.

Secure cannabis and all medications away from the reach of children.

Managing Medicine Costs

If paying for your medicine is an issue, try a few of these tips.

- * Spend less than \$100 on medicine. Many new patients are convinced to buy much more medicine than they need.
- * Purchase small amounts of a variety of different products. Every person has an individualized response to cannabis, and the purpose of your first few trips is to sample enough products to get a better idea of what's right for you.
- * Decide if you want to use a specific delivery method (e.g. inhalation, ingestible/oral, topical). If you're not sure, we recommend trying both inhalation and ingestible/oral for most conditions, plus topical if you're treating pain or skin conditions.
- * Track your costs to get an accurate picture of your spending on cannabis.
- * If you access your medicine through a dispensary, use discount cards or promotional coupons. Do comparison shopping.
- * Do not obtain all your cannabis at once from the dispensary. Wait until you are certain of the therapeutic effects of a certain strain or product before exhausting your 90 supply.
- * Store your medicine properly to maintain quality over time. Airtight glass jars secured in a cool dark place work best.



Tips for Reducing Unpleasant Effects

If you're experiencing an adverse effect after taking cannabis **focus on your breathing and relax**. Try cosying up on the couch, watching TV or listening to music. **Social interaction** with others is another helpful distraction. A quick sniff of **black pepper** or chewing on a peppercorn is known to reduce effects of THC. Consuming **lemons and pine nuts** have also been reported as helpful in reducing the effects of THC. Also, a dose of CBD dominant cannabis (low-THC) can counteract the effect of THC. A **cold shower** is a time-tested method to invigorate your senses and turn your body and brain's attention away from the unpleasant effects of THC. Finally, a **30-45 minute rest** should help to make you feel more alert and refreshed.

Special Considerations

As with all cannabis products, you should be looking for medicines free of pesticides, solvents, molds, fungus and bacteria. This should not be an issue if you secure your cannabis from a State regulated dispensary or medical marijuana treatment center (MMTC).

Without such standards in place, pesticide use in growing cannabis is unregulated. Solvents, such as butane, hexane and isopropyl alcohol are used to extract concentrated forms of cannabis. Testing the final cannabis product for pesticides, mycotoxins, residual solvents and potency helps ensure that the safety of the medicine being consumed.

Always secure your medical cannabis from a State of Ohio regulated dispensary.

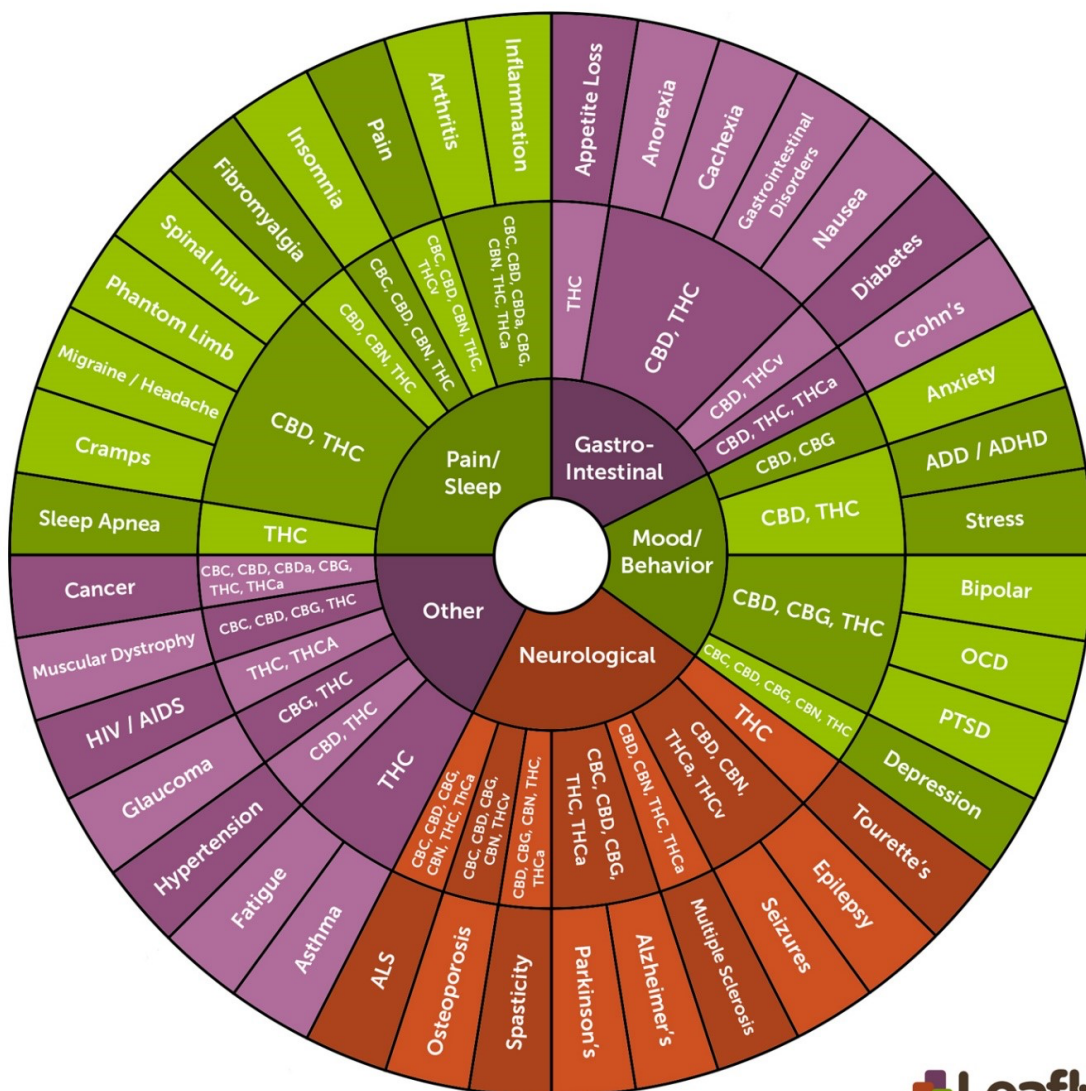
Finally, cannabis is best when it is individualized. Dosing is not a one-size-fits-all model, nor is it a silver bullet. You are strongly encouraged to always be actively involved in directing your medical cannabis treatment options and delivery methods.

CBD vs. THC

Unlike THC, CBD is a non-psychoactive compound with relaxing and medicinal properties. CBD actually helps counteract the anxiety associated with THC, so it's a perfect starting point for new users. The wheel below contains some conditions and symptoms along with CBD/THC combinations that have been shown to be the most successful for treatment.

Whether a Sativa, Indica, or Hybrid designation, THC and CBD profiles are specific to plant types. As a consumer, you'll want to pay attention to potency, dose, and chemical profile (i.e., cannabinoids and terpenes)

While some patients may not initially prefer the psychoactive effects of THC, its inclusion is a vital part of cannabis therapy. Science has identified what is known as the "entourage effect", the medicinal benefit achieved from using the sum of all parts of the plant. By including a low-THC ratio with CBD you will achieve greater therapeutic effects than with CBD alone.



Keeping A Cannabis-Use Journal

To establish an optimal treatment regime with cannabis, you will need to balance the effects of different strains, doses, and methods of ingestion. It may be helpful to record your therapeutic relationship with cannabis on an ongoing basis. One method is keep a cannabis-use journal that captures your experience,

Date/Time: Record every time you consume cannabis with the current date and time of day.

Amount: The amount of cannabis used (gram estimate or other consistent measure).

Strain: The name, strain or variety of the cannabis medicine used. If you don't know the name, write a detailed description of the medicine.

Code: Strains are generally described as I=Indica, S=Sativa, S/I=Sativa-dominant Indica Cross, and I/S=Indica-dominant Sativa Cross.

Type: This is the form of cannabis consumed: dried bud flower, concentrates tinctures/sprays, edibles, transdermal patch/topical. You may want to use: F=flower, C=concentrate, T=tincture/spray, E=edible, TO=topical.

Cannabinoid Content: Refers to the percent of THC, CBD and/or CBN. If you have this information available to you, write down percentages of each cannabinoid. If you're using edibles or similar, a description of potency is helpful.

Mode: Write down how you used your medication. Such as, V=vaporize, E=eat/digest, T=tincture or spray, TO=topical

Periodically reviewing your journal can help both you and your doctor make decisions about what works best. To start, keep a detailed journal, as described below, for at least a one week. In keeping a cannabis-use journal, try to keep things standardized, and be as consistent as possible. Here are some journaling tips on useful

Therapeutic Effects: List any positive effects experienced (physical, mental, social, behavioral, etc.)

Negative Side Effects: List your negative effects.

Timing: How quickly did you experience the first therapeutic effects? When did you feel the peak of relief? When did it start to noticeably dissipate? How long until effects were gone?

Prompts: List the specific factors that told you it was time for medicine, as well as the general symptoms of conditions being treated (e.g. pain, nausea, anxiety, etc.)

Mood/Mindset: Record your mood and feelings before and after you used cannabis.

Setting: Where were you? Were you at home, at a gathering, in public? Sitting, standing, or lying down?

Who you were with: Were you by yourself, with a friend, a large group?

What you were doing: Just before using cannabis, what was going on? What were the activities or circumstances leading up to it?

Tips for Patients

