

Medical Cannabis 101

Cannabis can be used safely and effectively for multiple medical conditions so long as it's used properly, as illustrated in this document. Improper use of cannabis can, in rare instances, result in severe consequences including psychosis and death. As a physician, I feel it is very important for patients that wish to medicate with cannabis do so properly and thus need to understand the basics of medical cannabis.

Cannabinoids

The cannabinoids are a group of approximately 100 chemicals that are produced by the cannabis plants. These chemicals are structurally similar to some neurotransmitters found in the human body. Because of the structural similarity, when cannabinoids are ingested, the cannabinoids react with the nerve receptors. The cannabinoids exist in two main forms: the acidic water-soluble form found in the raw plant and the more fat-soluble form produced when the acidic cannabinoids are heated.

The practical difference between these two forms is that the fat-soluble form can easily cross the blood brain barrier and interact with nerve receptors in the brain, producing mental effects. Where as the water-soluble form does not cross the blood brain barrier and will not have a psychoactive effect on the user.

THC and CBD

The two main activated cannabinoids are THC and CBD. The THC is psychoactive and the CBD for practical purposes is “psycho calming.” When a product containing THC and CBD is used, the effects will depend on the ratio of THC to CBD. An average ratio would be something like 21:1 (THC:CBD). As the CBD in the ratio rises, the psychoactivity goes down. When the ratio reaches about 1:1 (THC:CBD), the psychoactivity will be minimal.

When medicating with the active cannabinoids (THC, CBD), the ratio chosen will depend on the conditions being treated, other medical conditions present, and patient preference. There is a lot of recent interest in using CBD alone in pediatric seizure disorders. The most famous strain for seizure disorders is “Charlotte's Web.” In addition to its antiepileptic and nervous system calming effects, CBD is also often used as an antipsychotic, mood stabilizer, and for anxiety. CBD has been used for pain but is not very effective unless some THC is used with it. Many people use marijuana products that have THC:CBD ratios of 1:1 or 1:2 for pain relief without psychoactive effects. CBD alone is extremely good for anxiety but excess amounts of CBD can cause depression. In

addition, CBD also blocks the anti-depressant effects of THC. For these reasons, CBD needs to be used with caution in patients who suffer from depression.

During my almost 30-year long career as a Medical Doctor, treating patients and based on extensive research, I have determined that THC is one of the best antidepressant medications in existence. It is also excellent for pain, ADD/ADHD and any kind of G.I. issues including nausea and lack of appetite. THC is also useful in treating anxiety at lower doses. Too much THC can cause multiple adverse affects including anxiety, panic attacks, paranoia, palpitations, cardiac stimulation, mania, mood destabilization, psychosis, and in extreme cases, death. When medicating with cannabis, it is extremely important to start low and work your way up gradually to avoid adverse effects.

Acidic Cannabinoids

There are options when medicating with the two major cannabinoids in cannabis that include using the acidic cannabinoids (THCA, CBDA). Since the acidic cannabinoids do not cross the blood brain barrier, they are typically used to treat peripheral pain and inflammation when a mental effect is not desired. These are especially useful in autoimmune diseases like Crohn's, lupus and rheumatoid arthritis.

Juicing raw cannabis is a way people can medicate with these acidic cannabinoids (THCA, CBDA). Information can be found on YouTube. Dr. William Courtney is the expert on cannabis juicing.

Cannabis Strains

There are many other chemicals in the cannabis plant in addition to the approximate 100 cannabinoids that are known. Many of these chemicals will influence, modify, and add additional effects to those of the cannabinoids. The terpenes are a group of essential oils that are mostly responsible for the cannabis aroma. Each cannabis strain has an individual terpene profile that is responsible for that strain's specific effect.

We divide cannabis strains up into three major categories. The categories are indica, hybrid and sativa. Traditionally, cannabis had either predominately indica (stoned) or sativa (high) effects. Traditional indica effects are an overall calmed body, numbing feeling, usually associated with some drowsiness. Indica is usually used for pain, anxiety, and insomnia. Too much indica effect can cause depression. Sativa effects are known as the "head high," cerebral focused, uplifting and activating. Sativas are traditionally used for depression, ADD/ADHD, and lethargy. Traditionally, sativas were not used for pain and were known to even make pain worse, especially migraine or headache pain. Hybrids are crosses between indica and sativa type strains. This results in hybrid strains possessing varying amounts of indica and sativa effects. Essentially all

strains of medical cannabis on the market now are genetically hybrids. We now have strains with either: indica, sativa, or mixed (hybrid) effects. This allows us to find sativa effect strains with indica genetics for pain control or indica strains with sativa genetics to treat depression.

Basically, the overall effect of any cannabis strain will depend on the entourage effect of the ratio of THC to CBD, plus the amplified effects of all the terpenes present in the terpene profile.

Methods for Medicating

There are many ways to medicate with cannabis. The most well-known is smoking. Other methods of cannabis inhalation are vape pens, vaporizers and concentrates.

Inhalation

With all forms of cannabis inhalation, the effects start almost immediately with a peak in approximately 15 minutes and a duration of anywhere from 45 minutes up to almost 4 hours.

Sublingual and Buccal

With sublingual products under the tongue, onset is usually in about 15 minutes with a duration of 1 to 4 hours. Buccal products seem to have an onset of 15 to 30 minutes, with a duration of 3 to 6 hours.

Edibles

Edible products have an onset anywhere from 20 minutes up to 2 hours and a duration of 4 to 12 hours. Generally, a liquid edible on an empty stomach will onset in approximately 20 minutes and then have a duration of about 4 to 6 hours. A solid edible on a full stomach will often take up to 2 hours to take effect and will have a duration of closer to 6 to 12 hours.

When new patients start edible medical cannabis products, I usually recommend starting with a product that has effects somewhere in the hybrid range. They can later move to products with more indica or more sativa effects as needed. I usually recommend a starting dose of 5 to 10mg, divided into two doses, separated by 1 to 2 hours. The first dose would be 2.5mg to 5mg of total cannabinoids (THC&CBD). The best time for a trial dose is usually on a Saturday in the afternoon. This is a good way to assess side effects, sedation or lack of it, and fall risk in the elderly.

Topicals

Medical cannabis can also be used in the form of topical patches. These are particularly good for conditions where there is a specific location of pain, for instance, post back surgery. Patches allow patients to take their full dose of cannabinoids through the site of their pain and gives both local and systematic pain relief. All forms of topical creams, lotions, ointments, and balms are also made with medical cannabis. When medicating with marijuana topicals, it is important to understand that only lipophilic substances are absorbed well through the skin. Topical hydrophilic lotions and creams are not absorbed. Topicals that use alcohol as a vehicle are better absorbed than water soluble products, but not absorbed as well as pure lipid soluble ointments and balms. THC and CBD in a lipophilic vehicle gives the best penetration and pain control. Be aware there will also be some systemic absorption with some resulting mental effects and possible impairment if a lot of topical is used.

Proper Dosing

For patients new to medical cannabis, side effects and adverse reactions can be minimized by starting low and raising the dose slowly. **The usual starting dose for new patients is between 5 to 15 mg of total cannabinoids.** If a patient is starting with 5 mg of a product with THC:CBD at a 1:1 ratio, that would mean the dose contains 2.5mg of THC and 2.5mg of CBD.

When starting off, patients have the option of using products that are predominately THC, CBD, or something in between. The choice usually depends on how much psychoactive effect is needed. After a ballpark ratio of THC:CBD is chosen, the next choice is whether the ratio should be used in an indica, hybrid, or sativa. If a 1:1 ratio is used in a sativa, it will tend to be activating and elevating (high). A 1:1 ratio in an indica will cause drowsiness and a body numbing feeling (stoned). In a 50/50 indica/sativa hybrid, a 1:1 ratio is usually felt as neutral to a little sedating. For most patients, it is usually best to start someplace in the hybrid range. From there, starting patients can choose to go to strains with more indica or more sativa effects.

Medications can be chosen as blends of indica, sativa, or hybrid strains. If a product is labeled as cannabis and nothing else, it typically is made of whatever strains are available. These types of products typically end up somewhere in the hybrid range. Patients can also use products made from specific cannabis strains. I find Leafly.com to be a useful resource on which strains other medical marijuana patients are using for specific conditions. A search for a condition like arthritis would show which indica, hybrid and sativa strains that other patients are using. THC and CBD percentages are also listed so patients can determine if that strain has a proper THC to CBD ratio for them.