Medical Marijuana 101:
A Patient's Perspective

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October 2016

How Does It Work?

The process to become a patient in Colorado is somewhat expensive, albeit less expensive than many other states. The Marijuana Enforcement Division fee is $15 dollars, but the doctor can add up to over $200.

A pediatric patient has to have 2 doctor recommendations, from doctors that have a relationship with the patient. Extended plant counts (over 6), require extensive documentation and that the doctor not only follow up, but work with other doctors on the person's medical team.

"When applying for an extended plant count, I had to provide my previous medical records, all my current physician's contact information, and even access to my cannabinoid therapy journal", said Bridget Seritt.

After getting the paperwork done, patients have the option of growing the plants for themselves, having a caregiver grow them, or they can sign them over to a dispensary.

Most patients will choose to sign the plants over to a caregiver, or register them with a dispensary. Dispensaries serve the needs of most medical cannabis patients, however a higher percentage of patients with life-threatening illness choose to use caregivers instead. Their reasons include:

- **Cost.** Cost is the first reason a patient chooses a caregiver. **Patients treating cancers, autoimmune diseases, and epilepsy use concentrates, topicals, edibles, and inhaled cannabinoids to achieve dosing 25+/mg kg depending on their illness.** Some illnesses. Like epilepsy, autoimmune disease, and cancer run up to $3,000/month in a dispensary.
- **Selection.** Many dispensaries do not give patients a choice when it comes to strain selection. Each strain has a unique chemical make up, and is an entirely different medicine. Patients need to be able to experiment with cannabinoid ratios.
- **Chemicals.** Patients who have chronic health issues, often have chemical sensitivities. In the last 2 years, there have been numerous recalls over pesticide residue. Caregivers offer a choice for organic cannabis.

Patients: Bridget Seritt and Bob Crouse with Lily Williams.

While the caregiver and dispensaries are largely popular, many patients find growing their own therapeutic and cost effective. Growing allows them to customize treatment, regulate chemicals, and provides the equivalent of health insurance.

A quick Google search for "Buy Charlotte's Web CBD" turns up a page that has a 5,000mg bottle for $279.00. Some pediatric patients are known to take over 1,500mg per day to mange their symptoms. This cost adds up. Concentrates take more plant material and some concentrates like THCa oil cannot be made from older, dried material.

Excessive business fees and regulations have pushed the price of cannabinoid therapy up, leaving seriously ill patients like Bob Crouse with either the option to grow or seek a caregiver. Mr. Crouse's ability to grow cannabis saved his life and managed his cancer. (1)

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Medical Marijuana 101:

Busting Myths

- **Myth: Medical Marijuana patients use their illnesses as an excuse to get high.** This could not be further from the truth. In the majority of cases, patients are replacing medicines that are more psychoactive than the cannabis. Some of the medications that cannabis can replace are: benzodiazepines, opiates, and sleep aids like zoldipam. A patient often ends up with more mental clarity and higher functioning after incorporating phytocannabinoids into their regimens.
- **Myth: Smoking is the most common way to use medical cannabis.** Patients with chronic illness or cancers actually chose ingested methods more often than inhaled. In the last several years, topicals have also risen in popularity and are a staple for patients with chronic pain issues. Ingested Fully Extracted Cannabis Oil (FECO) or Rick Simpson oil (RSO) are the most considered method of baseline treatment. Both of those are different extraction methods for essential oils of the cannabis plant, that includes all the chemicals necessary for therapies. This is the most concentrated form of cannabis offered to patients.
- **Myth: A full grown plant produces 1-3 pounds.** When hearing grow weight statistics on the news, those numbers are wet weight with roots and debris included. These numbers do not translate into usable plant material for medicine. The average harvest of an indoor grown plant is a pound wet. After the plant is dried and cured, up to 2/3 of the weight is lost. Therefore, the average harvest (depending on the strain and size of the plant) is usually between 6 and 8 ounces, which is maybe a week supply if your phytocannabinoid dose is 1,000mg of pure phytocannabinoid oil per day. Many cancer regimens follow this dosing schedule, and the more advanced the cancer is, the higher the dosing.
- **Myth: There is no science to back up medical claims.** There is a lot of science. The anti-seizure properties in cannabis have been known since the late 1940's, and anti-tumoral properties were discovered in the early 1970's. Presidents from Nixon on, have commissioned studies regarding the medical value of cannabis. Each reported valid medical information that was overlooked . In 1999, the Institute of Medicine compiled benefit studies. This document recommended that medical cannabis be rescheduled so more research could be done. This was not acted upon. (3) Several recent reschedule attempts have also occurred without a positive result.
- **Myth: Marijuana kills brain cells.** GW Pharmaceuticals (#20140228438 A1) and the US Government (#6630507) both hold patents on the use of phytocannabinoids as neuroprotectors. This means that cannabis use actually helps protect brain cells, and is now being looked at as an option for stroke and traumatic brain injury. Treatment of neuropathy is one of the more common uses for cannabis.

The use of topical cannabis is very common and non-psychoactive.

*Cannabinoid*Patents (2)

- 20150313867—Anti-tumoral effects of cannabinoids.
- 20150086653—Phytocannabinoids and cancer.
- 20160184259—glaucoma
- 20150359755 A1—epilepsy
- 20150335590—epilepsy
- 20140343136—inflammatory bowl diseases
- 20140228438—neurodegenerative disease treatment
- 20160136128—Use of phytocannabinoids and ovarian cancer.

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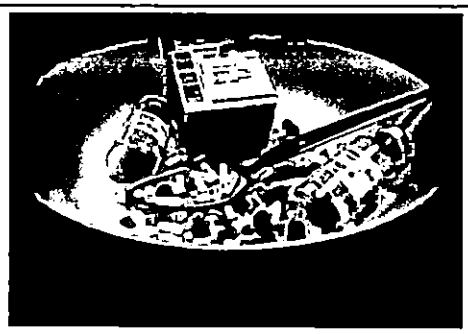
Common Medicines Replaced with Cannabis

- Zoldipam or other sleeping pills
- Chemotherapy
- Muscle Relaxers
- Nausea Medicines
- Biologics like Enbrel or Humira
- Opiates and highly addictive pain pills
- Anti-seizure medicines
- Benzodiazepines
- Nonsteroidal anti-inflammatory drugs



A one month supply of pharmaceuticals taken by a patient with rheumatoid arthritis. All the pills have been replaced with cannabis.

A Sample Treatment Plan

Cancer/Autoimmune Diseases

- Juicing (3-4oz fresh plant material daily)
- Inhaled (determined by symptoms for immediate release/ acute symptoms
- FECO or RSO of 1,000mg baseline (more depending on weight/severity of disease)
- Topicals (everyday use, 5000mg per 8 oz., which is 5 oz. of material weekly/bi-weekly)
- Edibles (as needed for extended release relief) Edibles are usually made from concentrated oils and butters. That can be an additional 1-2 pounds of plant material a month.
- Suppositories, which can be tailored to dose and can also add several pounds of raw plant material each month.

Other conditions requiring similar plans:

- Epilepsy
- Traumatic Brain Injury
- Parkinson's Disease
- Alzheimer's Disease
- Chronic Pain
- Neurological Disorders
- Gastrointestinal Disorders

A Brief, Brief Description of The Endocannabinoid System

Every vertebrate on the planet has an endocannabinoid system. This system regulates homeostasis in the body and helps several other systems to function. Your body even makes its own versions of THC and CBD, called anandamide and 2-AG. While this has been one of the least studied systems in humans, we do know that our endocannabinoid system governs healing, mood, immunity, and hunger. (4) (5)

When a cell becomes injured, it actually develops cannabinoid receptors waiting for one of the endocannabinoids to help. This suggests that these receptors are essential in the body's ability to heal itself. (5) Cannabis is one of the few phytonutrient sources of chemicals that interact with that system significantly.

Schedule I classification means that research on the endocannabinoid system with phytocannabinoids has been little to none. At this point, we all know that cannabis has medical value. If it didn't, patients would not be fighting so hard. For several, this is life or death. More than you can imagine. **-In Memory of Benton MacKenzie**

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Medical Marijuana 101:

Why So Confusing?

Science

If you ask 10 people about cannabinoids and their functions, you will get 25 different answers. Our endocannabinoid system is one of the least studied systems we have.

The process of science is very linear. One compound—one function. Unfortunately cannabinoids don't work like that. Not only are they biphasic (meaning higher dosing as a different effect than lower dosing), and bind to receptors in interesting ways, but they follow the "Entourage Effect". While THC is the most well known and studied cannabinoid, there are over 80 known and all interact with each other to determine the effect. All of this makes cannabis difficult to study.

Another huge road block to research is the process. In order to use real cannabis, the study has to be approved by the FDA, NIDA, and the DEA. If it is a private study, the Department of Health is also involved. Two of those entities strictly deal with drug abuse and have publically said that approving "benefit" studies does not align with their mission. Often those studies are declined. Of the approved studies, the cannabis comes from the Federal farm in Mississippi. A quick browse of their selection reveals the farm lacks the variety and potency found in state medical programs.

This leaves most researchers with analogs, or synthetic cannabinoids. Spice and K2 are synthetic cannabinoids and deaths are associated with their over use. No deaths are associated with the overdose of phytocannabinoids. Synthetics are not the same. Scientists have synthesized similar chemicals, but have not been able to create identical chemicals.

Until cannabis is rescheduled to allow proper scientific research on whole plant medicine, the "science" will be incredibly convoluted. Even if cannabis was descheduled today, it would take 10-15 years to catch up, and many patients don't have that time.

"SPICE AND K2 ARE SYNTHETIC CANNABINOIDS AND DEATHS ARE ASSOCIATED WITH THEIR OVER USE. NO DEATHS ARE ASSOCIATED WITH OVERDOSE OF PHYTOCANNABINOIDS."

Defying the Stigma

The stigma of using cannabinoid therapy is still pretty intense. Many patients never reveal their medication to friends out of fear. The majority of cannabis patients do not fit the "stoner" stereotype, and do not identify with recreational culture. Therefore it has never occurred to most patients until they are out of pharmaceutical options.

This means that the patient has gone through multiple harsh drugs and already exhausted all other options. In fact, most patients truly believed that cannabis was a bad, illicit drug before coming to cannabinoid therapy. However, once using marijuana as treatment, patients are surprised at its efficacy and safety. Many patients often express the feeling of betrayal after learning just how safe it is. **Jennie Stormes has this to say, "I used to be like them and thought the same about cannabis. I had zero choice but to consider it and when looking at the science I felt lied too and betrayed. My son could have had an effective treatment years ago."**

Despite all the anecdotal and scientific evidence, many patients often find themselves judged by others. Even children using cannabis have to fight the stigma in schools. Imagine how it will be when they go to get jobs and can only choose certain employers because they need a particular medicine. If your child needed anti-seizure pharmaceutical, it would be illegal for a job to discriminate based on that. The same should ring true for cannabis. Our children deserve better.

Veterans and cannabis patients with Heroes Pack train service dogs.

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What is Layering?

As we've discussed, patients treating illnesses like autism, epilepsy, cancer, and others need higher dosing of cannabinoids. Achieving the optimum dosing is not possible through inhaled methods only. Using different methods also provide varied effects which makes multiple methods mandatory. Using multiple methods of dosing is called **layering**, as described in the book The ECS Therapy Companion Guide, by Regina Nelson.

For example, a cancer patient uses essential oils (FECO), edibles, topicals, and suppositories in addition to inhaled cannabis. The goal, especially in aggressive diseases, is to saturate the endocannabinoid system with phytocannabinoids in order to stimulate the body's natural healing systems. Patients can easily go through several ounces of dried plant material daily through layering techniques. Twelve plants may supply a patient with their allotment of inhaled cannabinoids for a couple months, but does not usually provide enough affordable access to achieve standard dosing.

Out of Colorado's 102,830 patients, 21,448 currently have symptoms severe enough to warrant plant counts over 6. The most commonly recommended plant counts are 11-25 plants, and just over 12,000 Colorado patients have extended counts.

How Much Does It Take?

- 1000mg daily FECO baseline dose, the patient needs roughly **8-9 ounces of dried plant material a week.** That alone is roughly 2.2 pounds a month.
- 1,000mg tincture (some go through this daily), patients needs1-1.5 ounces of additional material.
- Most severe patients choose to juice 3-4 ounces of fresh plant material daily (cannabis is highly nutritious) adding even more to what a patient needs.
- Just having these 3 treatment methods require no less than 116.2 ounces (7.25 pounds) minimum per month.
- Add strain rotation in (it is typical for a patient to rotate between 5 or more strains to manage varied symptoms), and you have now something unsustainable without preserving the patient's ability to grow. The average price per ounce of dried plant material is $125 (varies by location.) These don't count topical and inhaled methods, which are common.

"OUT OF COLORADO'S 102,830 PATIENTS, 21,448 CURRENTLY HAVE SYMPTOMS SEVERE ENOUGH TO WARRANT PLANT COUNTS OVER 6."

THINGS TO REMEMBER

- Cannabinoid content in oil varies based on strain, extraction methods, and other variables.
- Patients don't always harvest for THC potency, and plants are usually not grown very large.
- Having access to multiple strains is essential for most patients. The compounds in cannabis vary greatly based on type, and therefore manage different symptoms.
- Cost is the biggest reason a patient chooses to grow. Most patients are chronically ill and don't have excess income.
- Recommended plant counts are based on the severity of the condition, not necessarily the disease.
- PTSD is not a qualifying condition in Colorado yet, and Veterans (in large numbers) take advantage of Colorado's growing laws to offset the costs of only having recreational access.
- Over 90% of Colorado's Medical Marijuana Cards are for severe pain from underlying conditions not covered under the state law.
- **Harvest amounts vary widely based on strain, grow environment, cannabinoids needed, and phenotypes.**

http://keepitlegalcolordo.org

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CPRC Co-Founder, Aisha Sawyer's extended plant count patient and daughter—2 time cancer survivor My'isha!

"I'd rather be illegally alive, than legally dead."

-Coltyn Turner, 16 year old Colorado Springs resident

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More Reading and Sources

(1)Bob Crouse's Story

http://www.huffingtonpost.com/2012/07/03/bob-crouse-leukemia-patie_n_1647445.html

(2) Endocannabinoid Patents. http://tgs.freshpatents.com/Cannabinoids-bx1.php

(3) *1999 Institute of Medicine Recommendation Press Release*, Drug Policy Alliance. http://www.drugpolicy.org/news/1999/03/us-institute-medicine-study-benefits-medical-marijuana-outweigh-risks-long-awaited-scie

(4) Nelson, Regina. The eCS Therapy Companion Guide. 2015.

(5) The Colorado Department of Health & Education. http://www.colorado.gov/cdphe/medicalmarijuana

*****This document was created by Canna-Patient Resource Connection, and has been reviewed by Dr. Michele Ross of IMPACT Network.**