



# PATIENT PRIMER

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Companies are making great cannabis medicines and selling these formulations.

But no one is interpreting how to use these cannabinoid formulations as medicine for patients.

That's what we do here at Lumir Clinic.

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2023 Holistic Caring & The Green Nurse™

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# Introduction

The Holistic Caring & The Green Nurse Medical Cannabis Primer is intended to be a quick reference E-book for those beginning their journey into using cannabis as medicine. This guide is NOT intended to be used as medical advice as people respond to cannabis differently.

If you have specific questions regarding medical cannabis and your needs, please reach out to us on our Nurse Line at 970-404-HOPE (4673)

Throughout this E-book, you will discover the main areas of knowledge concerning Medical Cannabis for consumers and caretakers: Overview of the Endocannabinoid System, legal issues related to cannabis use across the globe, therapeutic potentials for healing specific ailments, and safe shopping and use of cannabis.

This leads to understanding the Right Substance, Right Mode & Right Dosage.

## Right Substance



This includes learning about the most common & accessible cannabinoids in medical cannabis, & how each is used therapeutically & how to synergize whole plant medicine to optimize benefits and mitigate side effects.

## Right Mode



This will cover different methods of administration for consumption including inhalation, ingestion, sublingual, topical, suppository use & how to safely introduce cannabinoids into the body.

## Right Dosage



This means having the right potency or amount of cannabinoids within the various methods of administration to trigger a therapeutic response and reduce symptoms, but not enough to create side effects.



**Companies are making great cannabis medicines  
and selling these formulations.  
But no one is interpreting how to use these  
cannabinoid formulations as medicine for patients.  
That's what we do here at Lumir Clinic.**

Lumir Clinic was founded in 2022 to support patients and consumers to utilize cannabis as medicine across the globe.

Holistic Caring® was founded in 2016 by Elisabeth Mack, RN, BSN, MBA, to serve patients new to cannabis, and to educate health professionals in San Diego, CA. Her training programs for nurses are now robust online programs to train all healthcare professionals going forward to smartly practice medicinal cannabis therapeutics.

The Green Nurse® was founded in 2016 by Sherri Tutkus, RN, BSN, to serve patients and health professionals new to cannabis in Boston, MA. Her passion for the plant emerged after saving her own life, working tirelessly to save others as well as time and money in their cannabis journey. Get inspired by tuning into her 3x award winning [\*The Green Nurse Podcast\*](#).

In 2021, we merged firms to unite our complementary skill sets and better serve the modern audience. Today, we operate out of Lumir Clinic, the premier global source to efficiently run our Nurse Line, Patient & Provider Consulting, and Educational Programs. Together we inspire & support the adoption of cannabinoids as catalysts to better health

**Today we operate Lumir Clinic @ [www.LumirClinic.com](http://www.LumirClinic.com) to serve all.  
Visit our site, call our Nurse Line at 970-404-HOPE (4673)  
and begin living your best life.**

# History of Cannabis

Cannabis has been used for thousands of years as a medicine for many symptoms including, but not limited to arthritis, digestion, depression, insomnia, and pain. 10,000 years ago, there are references to Cannabis being grown in Asia, the Middle East, and Africa. In the 1800's British physician William O'Shaughnessy studied in India and learned how to make formulations from the resinous compounds of Cannabis Sativa.

Cannabis extracts were listed in the American pharmacopeia from 1850-1941. However, the Marijuana Tax Act of 1937 removed it from use, and the Controlled Substance Act (CSA) of 1970 classified cannabis a Schedule 1, thereby making it illegal. Both moves were political and racially motivated. The sanctioning of Cannabis to a Schedule 1 controlled substance meant that Cannabis was declared to have no medicinal properties and is highly abusive. The CSA also took away the ability to research the effects of Cannabis in humans.



Cannabis Prohibition continued until 1996 when California passed the Compassionate Use Act, which allowed doctors to recommend Cannabis use for medical purposes. In 2023, 37 states have legal medical programs, and 21 have adult use or recreational access to Cannabis products. Worldwide, over 40 countries have legalized Medical Cannabis.

To determine the legal status and accessibility of Cannabis in your state, please check [NORML.org](https://www.norml.org).

Americans are not alone in legalizing cannabis. In 2020, the United Nations voted to reclassify cannabis removing it from the 1961 Single Convention on Narcotic Drugs. Most of the progressive countries voted in favor, while the more conservative countries like China, Russia and The Middle East voted no. Dozens of countries around the world are developing programs and permitting residents to grow their own plants. Laws are uneven, unimplemented, and slow to develop but global access is slowly becoming adopted policy. Most of the world requires Good Manufacturing Practices (GMP) certification to import or export these medicines, assuring the public that they were grown, extracted, and produced using the highest degree of pharmaceutical standards.

# The Scientists who led the world to understand Cannabis

## PROFESSOR RAFAEL MECHOULAM



In 1964, Dr. Raphael Mechoulam isolated the molecular structure of THC & CBD, and teams around the world have proven that humans respond to this plant at a biological level.

The discovery of the ECS or endocannabinoid system was made in 1988 – 1992 when receptors, endocannabinoids, and degrading enzymes were found to regulate homeostasis, or cellular balance. Today, countries around the world are contributing to the science. Pre-clinical data show the ability to regulate imbalances in neurological, immune, pain, cancer, gastrointestinal, endocrine, and metabolic dysfunction.

## PROFESSOR LUMIR HANUŠ

In 1992, Dr. Lumir Hanuš discovered our first endogenous cannabinoid, Anandamide. Ananda is Sanskrit for “Bliss”, so named for the reaction obtained by activating the CB1 receptor in the brain.

Lumir Hanus remains active in the field of cannabinoid therapeutics today in Israel, the cradle of research into the science of how and why this sacred plant works as medicine.

Professor Lumir serves on the Cannim Group Medical Advisory Board and our Lumir formulations are named for him.



# How Cannabis Works



## The Endocannabinoid System

The endocannabinoid system (ECS) is an evolutionary balancing system of our biochemistry. The ECS is the master regulatory system that autoregulates all our 11 organ systems, immune system and other neurotransmitter signaling systems (feedback systems) to keep our bodies in homeostasis or balance.

Homeostasis means internal balance when conditions change externally. The physiological systems in our 'smart body' depend on the Endocannabinoid System to make constant adjustments to influence our sensory awareness, pain perception, appetite, digestion, mood, memory, and motor function, inflammation, immune function and tumor surveillance, fertility, reproduction, temperature, hormonal balance, bone formation, eye pressure, stress adaptation, sleep, endocrine function, neural development, and neuroprotection.

The 11 organ systems have direct roles in keeping our bodies in balance, however the ECS fine tunes and regulates the signals between cells and synapses to ensure proper communication to keep your body working optimally like a switchboard operator.

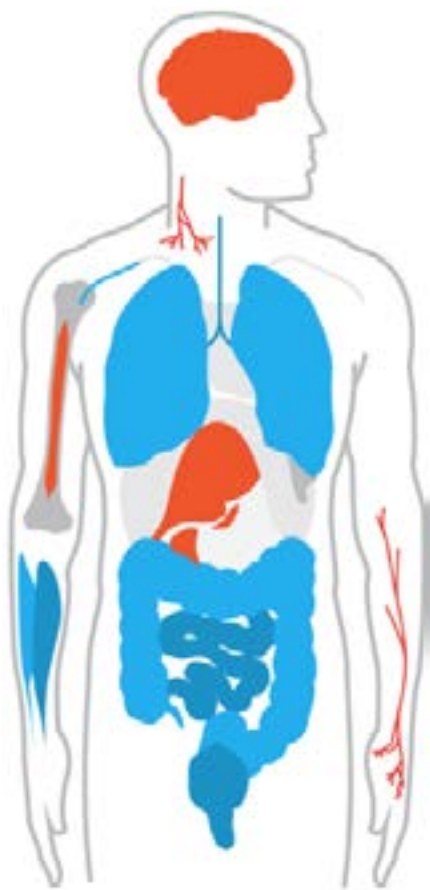
Research into cannabis showed us that we have an endocannabinoid system, not because of the cannabis plant, but because we make molecules in our body very similar to the plant. We make internal endogenous cannabinoids, AEA and 2AG, while the cannabis plant makes phytocannabinoids such as THC and CBD.

The ECS monitors and adjusts the communication between all our systems at the same time: the nervous and immune systems, tumor surveillance, bone strength, blood pressure, adrenals, & hormones.

# The Miracle of Cannabis

Cannabis causes its physiological effects in the body because it plugs into the cannabinoid receptors (CB1, CB2) in our body like a lock and key. Our body makes endogenous compounds called Anandamide and 2-AG, endocannabinoids that help regulate our 11 other body systems by providing a “Feedback Loop”. Endocannabinoids fine tune through retrograde signaling – ‘telling the body to turn something up or down’ as needed to keep the body in balance or at homeostasis.

The endocannabinoid system (ECS) affects human physiology with respect to how we: eat (appetite, nausea, digestion, and nutrient absorption), sleep (circadian rhythm, falling and staying asleep, dreaming), relax (calming anxious thoughts, reducing fight or flight, feeling grounded), forget (trimming aversive memories, calming PTSD, letting go of fear), and protect (immune and tumor patrol and regulation). All mammals have an ECS that governs the body, making fine-tuning adjustments everywhere in the body. This is an evolutionary biological system that must function, or we die.



## CB1 Present

- Central Nervous System (Brain & Spine)
- Lungs
- Vascular System
- Muscles
- Gastrointestinal Tract
- Reproductive Organs

## CB2 Present

- Spleen
- Bones
- Skin

## CB1 & CB2 Present

- Immune System
- Liver
- Bone Marrow
- Pancreas

# Locks, Keys & Enzymes

## Receptors (Locks)



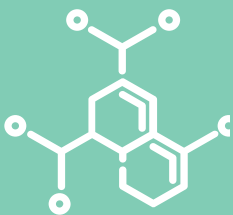
The locks where the (Endocannabinoids - keys) enter. Endocannabinoids (Keys - Anandamide and 2AG) activate these Receptors (Locks) named CB1 & CB2. Activating the receptors control many functions within the cell to restore balance. These receptors are upregulated or increased when the body is in distress. With injury or illness, the body creates receptors to seek its own endocannabinoids to restore balance, auto correcting imbalance.

## Endocannabinoids (Keys)

The protein compounds that your own body makes endogenously are called Anandamide (AEA), & 2-AG. These cannabinoids 'assist' other neurotransmitter signaling systems such as dopamine and serotonin to do their jobs more effectively. Endocannabinoids are created 'on demand' to direct communication within other messenger signaling systems to respond to stress. The internal endocannabinoids (AEA & 2-AG) travel backwards, or retrograde, to correct imbalances between cells, synapses, and system.



## Enzymes (FAAH & MAGL)



Created to synthesize and degrade the endocannabinoids after they are used. Enzymes take care of the digestion and excretion of used up endocannabinoid messengers that are not needed any longer in our bodies. CBD inhibits FAAH, allowing us to keep circulating our own Anandamide. FAAH & MAGL do not degrade THC or Cannabis plant compounds. Plant nutrients are metabolized and excreted through normal digestion.



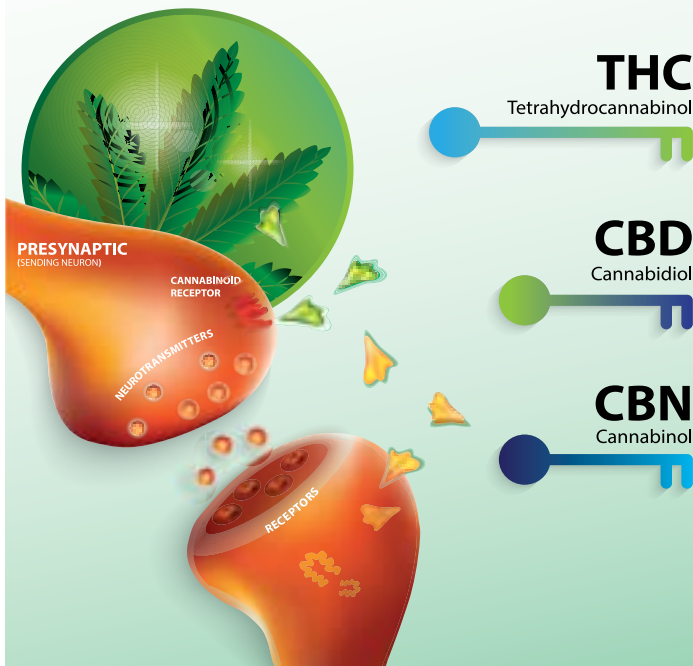
# There are 3 components in the Endocannabinoid System

## The Human Endocannabinoid System

CBD, CBN and THC fit like a lock and key into existing human receptors. These receptors are part of the endocannabinoid system which impact physiological processes affecting pain modulation, memory, and appetite plus anti-inflammatory effects and other immune system responses. The endocannabinoid system comprises two types of receptors, CB1 and CB2, which serve distinct functions in human health and well-being.

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

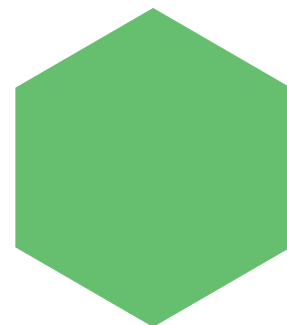
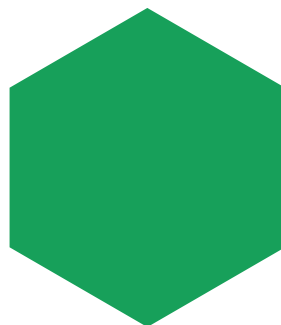
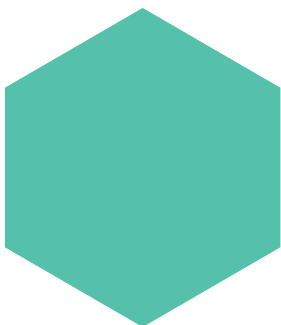
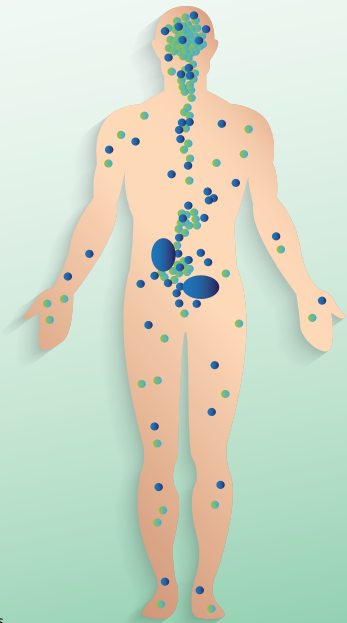
Receptors are found on cell surfaces



CBD does not directly "fit" CB1 or CB2 receptors but has powerful indirect effects still being studied.



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



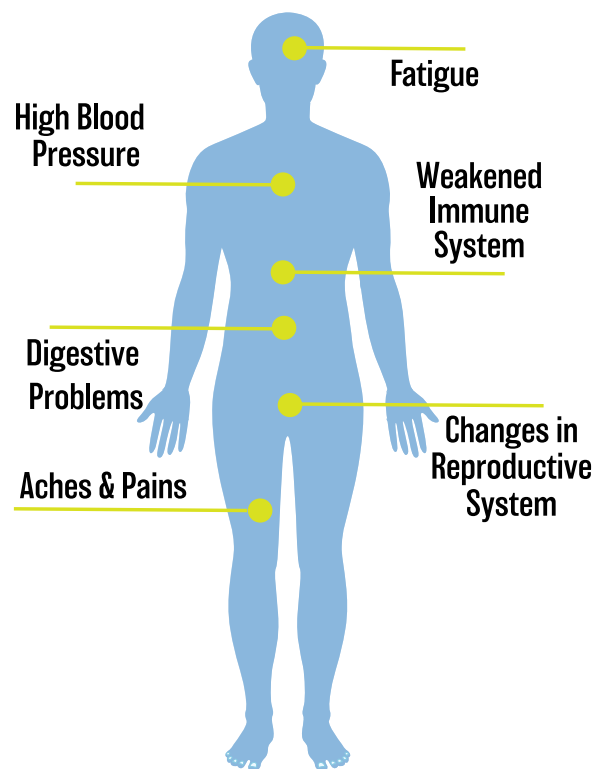
# ECS Examples

## FIGHT OR FLIGHT RESPONSE

The protein compounds that your own body makes endogenously are called Anandamide (AEA) & 2-AG. These cannabinoids 'assist' other neurotransmitter signaling systems such as dopamine & serotonin to do their jobs more. Endocannabinoids are created 'on demand' to direct communication within other messenger signaling systems to respond to stress. The internal endocannabinoids (AEA & 2-AG) travel backwards, or retrograde, to correct imbalances between cells, synapses & systems.

Because phytocannabinoids from the Cannabis plant activate the same CB1 & CB2 receptors that your body normally would, supplementing with full spectrum cannabinoids may restore the performance of your endocannabinoid system, keeping your body in balance.

### The Effects of Stress on the Body



If you are low on your endogenous cannabinoids (not making enough of your own anandamide & 2AG ) you may not be able to turn off that switch.

Without the ECS turning off the adrenaline, you will remain in chronic fight/flight/ stress, producing excess cortisol and hindering your body's ability to go back to homeostasis.

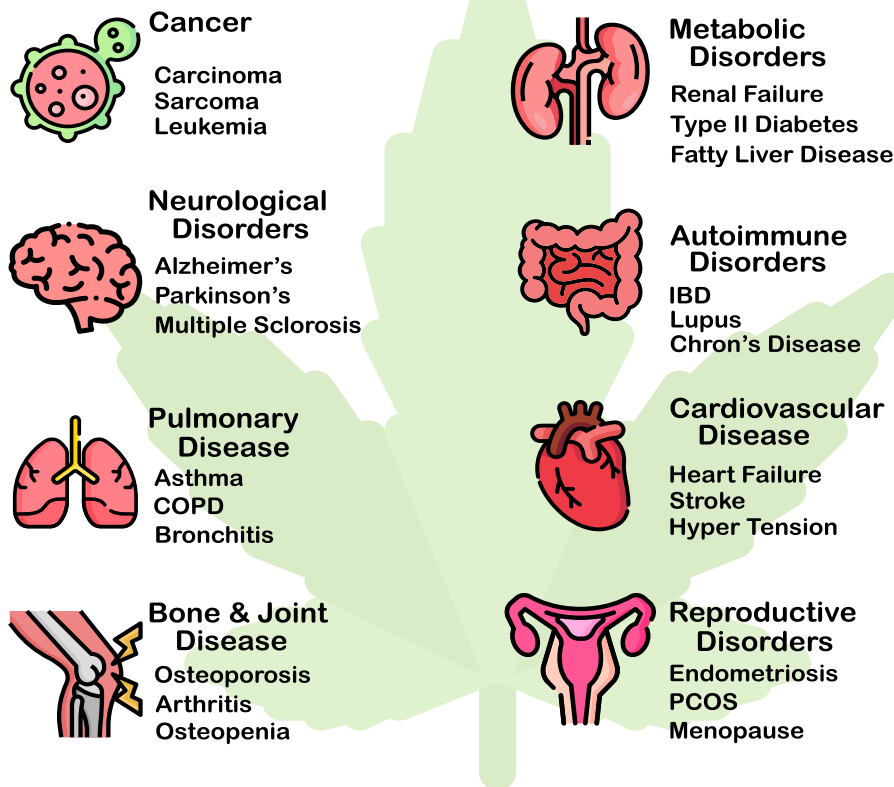
Without the proper messaging of the ECS, our body doesn't have the tools necessary to function optimally or autocorrect.



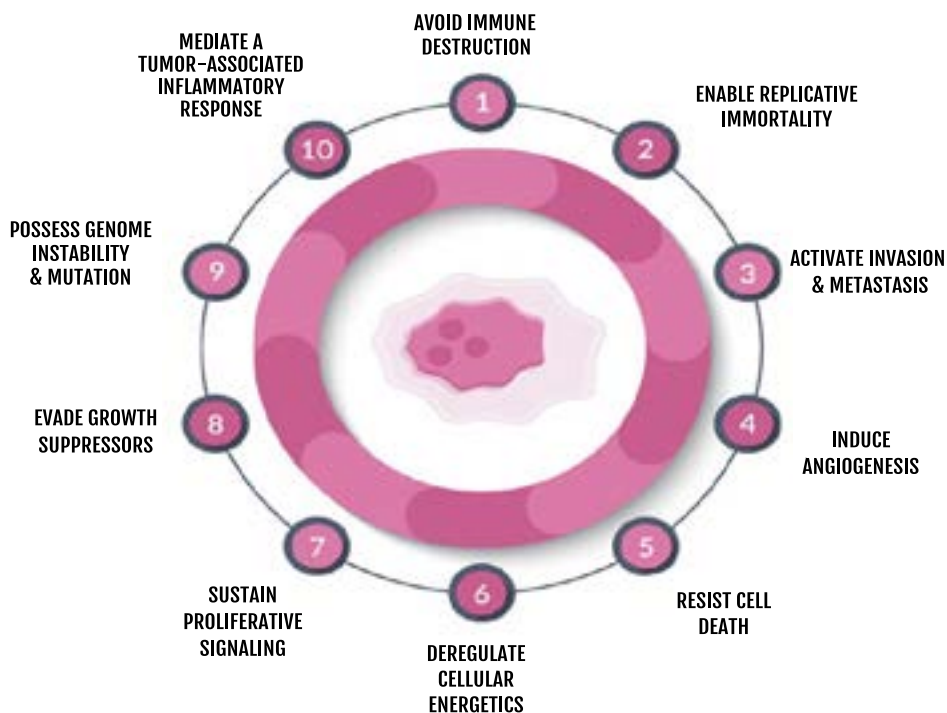
# INFLAMMATORY RESPONSE

If you fall and scrape your knee, the dirt germs start to invade. The ON switch activates the ECS to create endocannabinoids to provide messages to activate the body's inflammatory response releasing cytokines to go to the area to fight infection and kill the germs. Once the germs are dead the body is ready to stop releasing pro-inflammatory cytokines and the OFF switch signals the ECS to create endocannabinoids to turn off the inflammatory response.

## Cannabis vs Chronic Inflammation



If you are low on your endocannabinoids, you may not be able to turn off the inflammation, and your body will continue to produce pro-inflammatory cytokines causing ongoing inflammation. Because phytocannabinoids from the Cannabis plant activate the same CB1 & CB2 receptors that your body normally would, supplementing with full spectrum cannabinoids may restore the performance of your endocannabinoid system, keeping your body in balance.



## CELL LIFE CYCLE RESPONSE

We are amazing human beings capable of reproducing cells in our bodies. About 330 billion cells are replaced daily, equivalent to about 1% of all our cells. All cells have a lifespan, and towards the end of the cell lifecycle they get a signal to replicate. The ON switch activates the ECS to create endocannabinoids to provide messages to replicate cells. Once replicated, the ECS activates messages to turn OFF the cell replication signaling.

If you are low on endogenous cannabinoids, replication signals may not turn off and get messages for the cells to keep replicating even when they don't need to. This is a simple explanation for the mistakes made in over-replication of cancer cells that invade healthy tissues. Because phytocannabinoids from the Cannabis plant activate the same CB1 & CB2 receptors that your body normally would, supplementing with full spectrum cannabinoids may restore the performance of your endocannabinoid system, keeping your body in balance.

# The Science



## Endocannabinoids

The endocannabinoid system (ECS) is a biological system composed of endocannabinoids, which are endogenous lipid-based retrograde neurotransmitters that bind to cannabinoid receptors, and cannabinoid receptor proteins that are expressed throughout the vertebrate central nervous system (including the brain) and peripheral nervous system. The endocannabinoid system remains under preliminary research, but may be involved in regulating physiological and cognitive processes, including fertility, pregnancy, during pre- and postnatal development, appetite, pain-sensation, mood, and memory, and in mediating the pharmacological effects of cannabis.

Two primary endocannabinoid receptors have been identified CB1 and CB2, CB1 receptors are found predominantly in the brain and nervous system, as well as in peripheral organs and tissues, and are the main molecular target of the endocannabinoid ligand (binding molecule), anandamide, as well as its mimetic phytocannabinoid, THC. One other main endocannabinoid is 2-arachidonoylglycerol (2-AG) which is active at both cannabinoid receptors, along with its own mimetic phytocannabinoid, CBD. 2-AG and CBD are involved in the regulation of appetite, immune system functions and pain management.



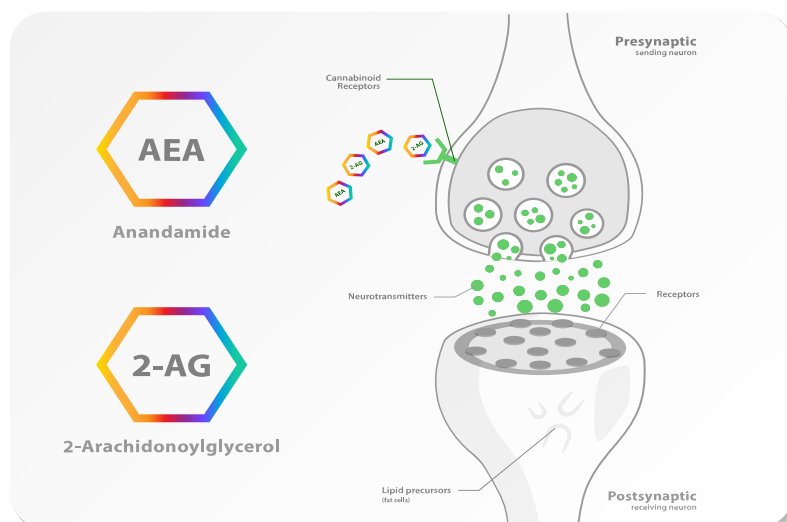
Anandamide



2-Arachidonoylglycerol

## Cannabinoids Mimic the Endocannabinoids

The protein compounds that your own body makes endogenously are called Anandamide (AEA) & 2-AG. These cannabinoids 'assist' other neurotransmitter signaling systems such as dopamine and serotonin to do their jobs more effectively. Endocannabinoids are created 'on demand' to direct communication within other messenger signaling systems to respond to stress. The internal endocannabinoids (AEA & 2-AG) travel backwards, or retrograde, to correct imbalances between cells, synapses & systems.



# ENDOCANNABINOIDS vs PHYTOCANNABINOIDS

ENDOCANNABINOIDS ARE CANNABINOIDS THAT OUR BODIES PRODUCE INTERNALLY. WHEREAS, PHYTOCANNABINOIDS ARE NATURALLY-OCCURRING AND CONCENTRATED IN THE OIL RESIN OF THE CANNABIS LEAVES AND BUDS.



## Endocannabinoids

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## Phytocannabinoids



The cannabis plant and other plants produce cannabinoids, which interact with our body's receptors. These plant cannabinoids are known as phyto-cannabinoids. Phyto is a prefix that means "pertaining to derived from plants". They are categorized as any plant-derived natural product with the capability to directly interact with the body's cannabinoid receptors or share chemical similarity with cannabinoids.

Furthermore, phytocannabinoids from cannabis have significantly influenced research on the endocannabinoid system. So far, they have become widely known for their medicinal properties in recent years. In particular, the cannabis plant contains over 400 chemical entities, and more than 60 of them are cannabinoid compounds, which have varying effects.



Cannabidiol



Cannabidivarin



Cannabigerol



tetrahydrocannabinol



Tetrahydrocannabivarin



Cannabidiolic acid



Cannabichromene



Cannabinol



Tetrahydrocannabinolic acid

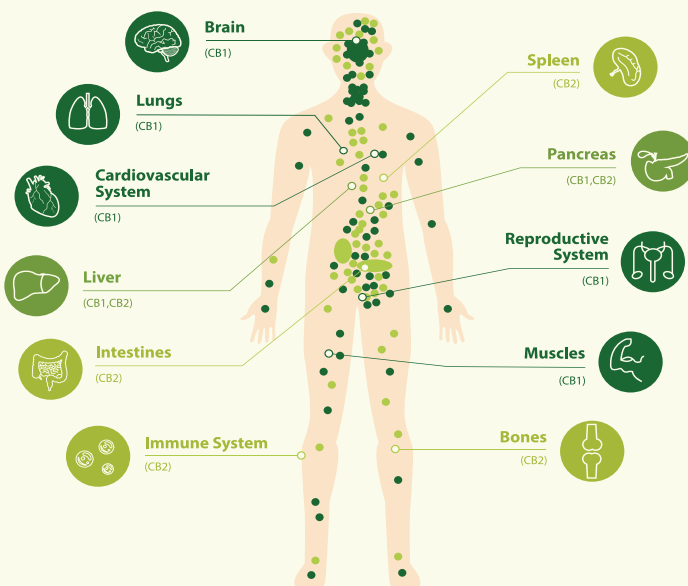


Delta-9 tetrahydrocannabinol

Phytocannabinoids such as the THC compound from Cannabis mimic the Endocannabinoids to fulfill the cell signaling duties that are needed to return the body to homeostasis.

# HOW DOES CBD WORK IN THE BODY?

INTRODUCING CBD TO THE BODY CAN HELP REDUCE THE SYMPTOMS OF A WIDE RANGE OF ILLNESSES INCLUDING EPILEPSY, MULTIPLE SCLEROSIS, CHRONIC INFLAMMATION, DEPRESSION, DIABETES, RHEUMATOID ARTHRITIS, ANXIETY AND OPIOID WITHDRAWAL.



### Potential benefits of activating the CB1 Receptors

- Lower anxiety
- Lower blood pressure
- Lower intestinal inflammation
- Relieve depression
- Reduce fear and paranoia

### Potential benefits of activating the CB2 Receptors

- Help with alcohol and nicotine addiction
- Increase appetite
- Neurodegenerative diseases
- Reduce chronic pain
- Reduce inflammation
- Stress response

# CLINICAL ECS DEFICIENCY



As you can see, it is critical to keep our ECS running effectively to manage the health of all our 11 physiological systems. When the 3 components to our endocannabinoid system don't work effectively, messages don't get relayed and the body malfunctions, hindering our ability to adapt to outside stressors.

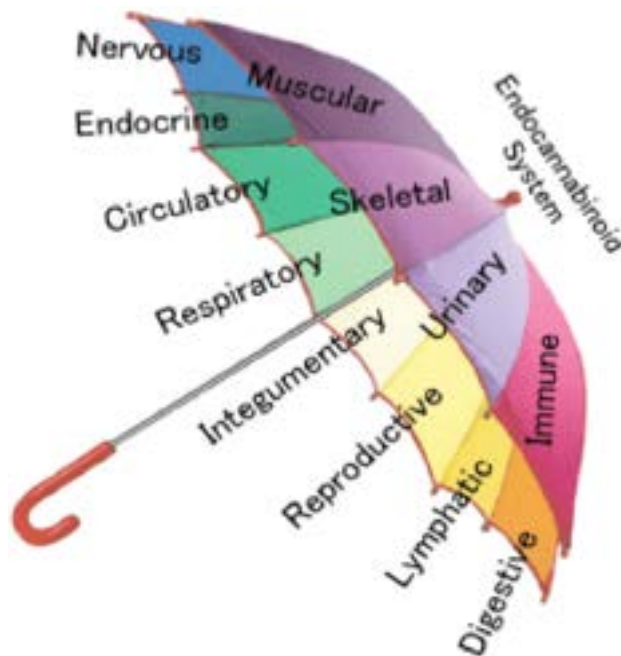
Endocannabinoid system deficiency becomes a clinical syndrome when the body is unable to auto correct, and errors in signaling systems accumulate. Chronic pain conditions, fibromyalgia, irritable bowel syndrome, migraine, and other refractory conditions can be attributed to clinical ECS deficiency.

Scientists at the National Institute of Health (NIH) stated in 2003 that the ECS is involved in all disease processes, and the ECS may be the most important system in our body because it regulates all our other organ systems and messenger signaling systems. It makes sense to learn to care for that system as a means of disease prevention, and to improve outcomes with other conventional therapies.

Everything that we do or don't do in our lives regarding health, wellness, and lifestyle affects the endocannabinoid system. Exercise, nutrition, meditation, connection, speaking up and setting boundaries, finding meaningful work, and pursuing joy supports a healthy ECS. Adding functional medicine tips, supplements, and working with integrative providers is important for a healthy ECS.

# Endocannabinoid System

Largest Neurotransmitter Signaling System  
Regulates all other systems



## SUPPORTING OUR ECS WITH MEDICAL CANNABIS

Cannabinoids found in the cannabis plant (CBD & THC) 'mimic' the endocannabinoids that your body makes (anandamide and 2AG). Supplementing with products such as full spectrum CBD can boost your own endocannabinoid system in many ways.

If you are not making enough Anandamide and 2-AG, you can supplement with CBD rich formulations to help you produce and retain more of your endocannabinoids. Phytocannabinoids like CBD & THC become the 'keys' needed to bind with your receptors (locks) and correct imbalanced cell signals. It is like getting a new set of keys to substitute for the ones you lost or can't make enough of.

# Therapeutic Potential

## The Vast Therapeutic Potential of

## Cannabinoid Medicines

As health professionals, we seek to help people discover the potential for CBD and medical cannabis to reduce suffering and improve quality of life. Psychoactive effects have limited the use of cannabinoids in traditional medicine, but those can be managed with proper dosing. It is not a cure-all, but Cannabis can ease pain, anxiety, insomnia, inflammation & distress, all of which promote a better quality of life.

BDS Analytics, a data company found that 65% of cannabis users have medical conditions that are alleviated by cannabis:

Patient Comment	Ailment/Illness	Typical Rx Prescribed
"It makes me relax."	Anxiety	Xanax, Klonopin, Valium
"It helps me sleep."	Sleep disorder	Ambien, Lunesta, Unisom
"It calms me down."	ADHD/Anxiety	Ritalin, Adderall, Vyvanse
"It helps me think."	ADHD	Ritalin, Adderall, Vyvanse
"It helps my stomach."	GI, IBS, IBD	Pepto, Pepcid, Prilosec
"It helps me talk to people."	Social anxiety	Buspirone, Xanax, Zoloft
"It makes spending time with my spouse more fun."	Sexual dysfunction	Viagra, Cialis



**When we think about conditions, it will now be helpful to imagine the CB1 and CB2 receptors & how cannabinoids affect these receptors to promote homeostasis or cellular balance.**

## Alzheimer's



Cannabinoids can help slow the progression of Alzheimer's through neuroprotection offered by CBD, and THC may reduce the beta-amyloid plaque formation which they are exploring at the Salk Institute. This could palliate the needs of family's caretaking for those with behavioral issues like agitation and anxiety. We are awaiting clinical trials with humans to learn specific dosing to reduce the tremors from Parkinson's, but we know cannabis lessens the rigidity and improves mood and sleep. For MS conditions, cannabis offers a reduction in spasticity, interstitial cystitis, and bladder issues, while lowering pain and depressive scores in the approval of Sativex, an approved 1:1 CBD:THC oil marketed in almost 30 countries.

## Psychiatric



In psychiatry, we look to use cannabinoids for anxiety, depression, insomnia, PTSD & stimulate new neuron growth enabling neural plasticity, which stimulates new learning to help change behaviors. Working together with a good psychotherapist and nutritionist to heal the gut may help mental health issues that patients have suffered for decades & eliminate or reduce the need for difficult to use pharmaceuticals.

## Neurological



When talking about neurological systems, cannabinoids will seek to level out GABA, glutamate, and the other neurotransmitters to find the Goldilocks zone (just right spot) in the brain and CNS. Cannabinoids may alleviate seizures, autism, and brain disorders, and promote balance in the nervous system.



## Cancer



There are preclinical studies that show cannabis to have anti-tumor properties to one day directly battle cancer. Cannabinoids can stimulate apoptosis or cell death, inhibit angiogenesis, stripping away nutrients from tumor cells, and be antiproliferative, or preventing it from spreading. Every cell has a start date and an end date, and cannabinoids seem to cause cancer cells to turn themselves off again and prune the malignancies. For today, we have observational data showing cannabinoids reduce the side effects of nausea and vomiting caused by chemo and radiation and help people rest. They also help sleep, appetite & mood.

## Addiction



Addiction studies in the lab show mice and rodents choose to self-administer opiates less often with CBD on board. People in real life report reductions in alcohol use, smoking, and drug cravings with CBD, and rehab is more effective.

## Chronic Pain



In chronic pain, nociceptive signals from injured tissues get turned down in the dorsal horn areas on the way to the brain, like having a volume button to quiet pain. This boosts other Rx like opioids effectiveness as well, reducing overall dosing needs.

## Autoimmune



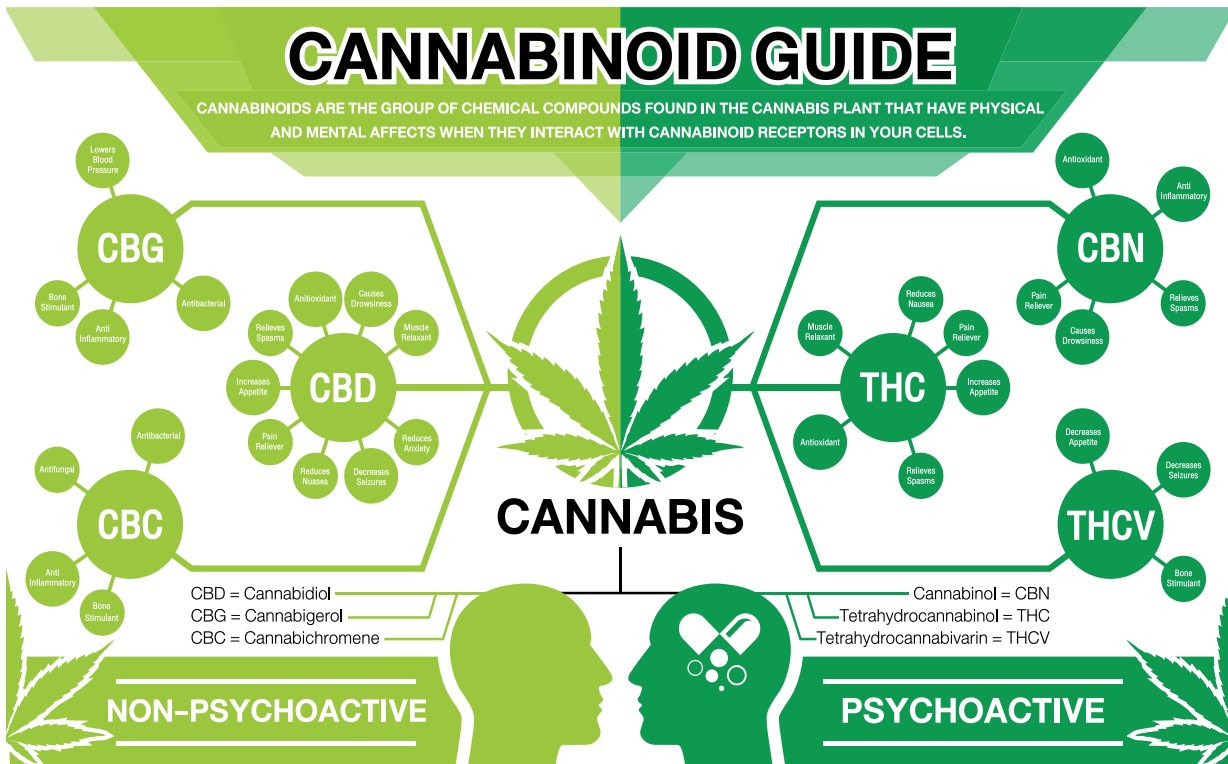
Autoimmune issues can improve by stabilizing the immune response from excessive inflammation, as discussed in the immune cells section. A 'just right' response is needed to battle infection and inflammation & phytocannabinoids may be able to accomplish what expensive new drugs laden with side effects do, but more naturally and with a highly personalized approach.

# Right Medicines

## PHYTOCANNABINOIDS

Phytocannabinoids are the plant compounds within Cannabis that bind to receptors mimicking the ECS. Supplementation with whole plant medicine can rebalance us when we are deficient.

CBD, THC, CBDA, THCA, CBG, THCV and CBN are the most used cannabinoids that people can access in dispensaries today. CBD & THC are the most prevalent, and dosing with these two cannabinoids for health & wellness is offered via many routes of administration. Pre-clinical data remains in animal models, and evidence in humans is informally self-reported or tracked in observational trials. The FDA does not regulate CBD or THC yet as a medicine, and health claims reported from these molecules are not formally allowed.



# Plant Components



## CBD

CBD is non-impairing but may be termed psychoactive because it brings a sense of calm. CBD does not directly bind to CB1 or CB2 but acts as an assist around many other body receptors. CBD can inhibit the breakdown of our own endocannabinoid Anandamide, naturally promoting our sense of wellbeing. CBD is neuroprotective and antioxidant, which means that it protects nerve cells from breaking down and cleans up damage from free radicals & toxins. CBD activates other receptors in the body such as serotonin, which can help reduce anxiety, lift the mood, and aid sleep. CBD is a potent anti-inflammatory which can reduce pain and promote movement enabling better activity levels. CBD may quiet an excessive immune response in bones, muscles, joints, and the gut which can calm autoimmune conditions. CBD is an approved anticonvulsant marketed as Epidiolex; an FDA approved pharmaceutical for severe epilepsy.

THC binds to both CB1 & CB2 receptors leading to many benefits. The psychoactive or euphoric effects occur when THC binds to the CB1 receptors in the brain. Memory, senses, perceptions, and sense of time can be altered. Small amounts of THC are usually pleasurable and relaxing, but larger doses can trigger anxiety, fear, and paranoid thinking. Initial dosing needs to start low and increase slowly. THC may reduce pain, spasms, nausea, vomiting, may promote better appetite & THC may increase sedation which is why many people take it for better sleep. Cancer treatment side effects such as pain, nausea, and vomiting may be relieved by using THC. THC can reduce the painful muscle spasms of MS, may promote creativity in work & may improve mood.



## THC



## CBD

CBD & THC are often called the power couple as they activate and synergize each other. CBD minimizes the anxiety or psychotic side effects from THC, and THC will help CBD be more effective. They occur naturally together in the plant, but modern breeders often grow plants dominated by either CBD or THC for commercial purposes. CBD & THC can be blended in ratios to reduce symptoms and distress with varying degrees of intoxication, sedation & effects. Popular ratios of CBD to THC include: 1:1, 4:1 & 20:1. Daytime dosing uses higher CBD ratios to promote unimpaired function with more energy, while evening dosing leans higher in THC levels to reduce pain and promote sleep.



## THC



**CBN**

CBN is non-impairing & is aged or oxidized THC. CBN has been found to be sedating which is why many CBN products are made for sleep issues. CBN is calming to the central nervous system and may also help with nausea & overall inflammation.



**THCv**

THCV is mildly intoxicating in large doses, and may boost energy and focus, metabolic functions, reduce appetite & improve energy and insulin sensitivity and overall inflammation.



**CBG**

CBG is non-impairing, anti-inflammatory, anti-anxiety, and may calm & soothe digestion which is why modern CBG products are marketed for gut health.



**CBDA**



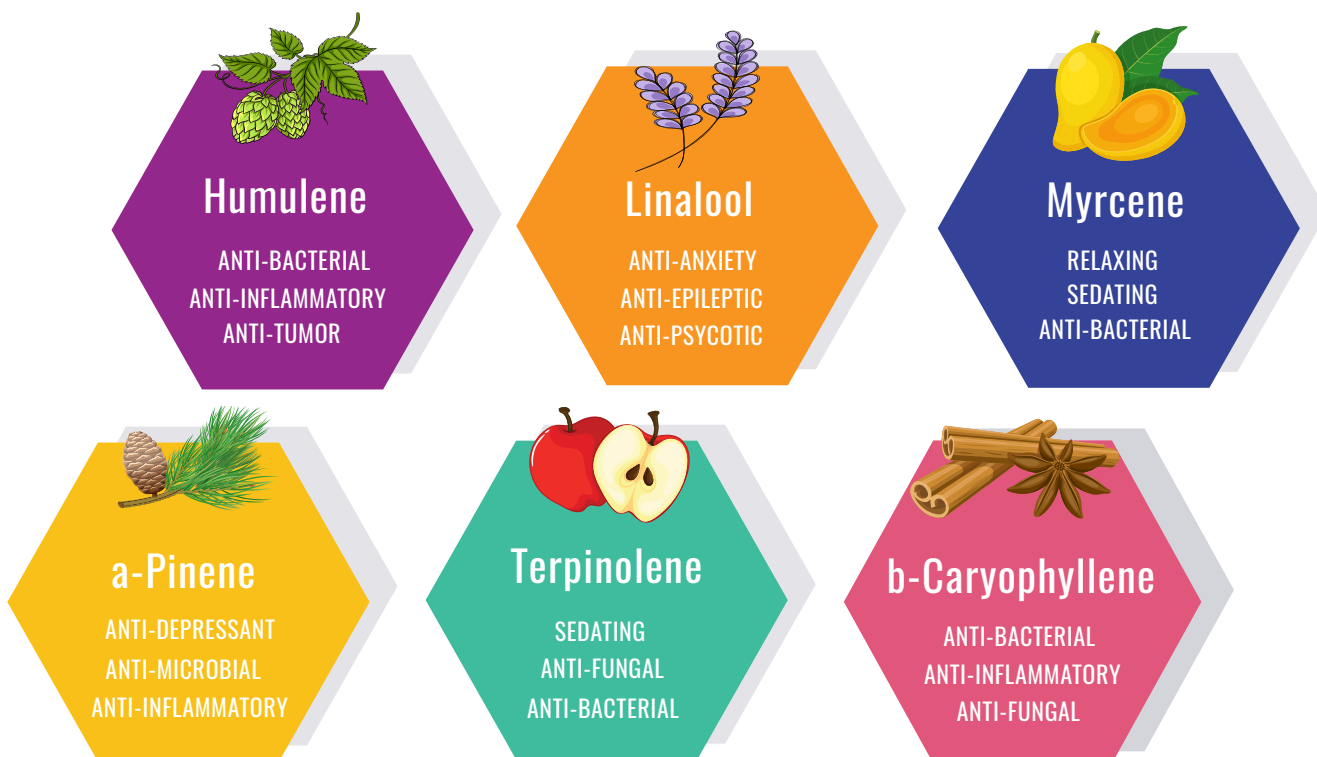
**THCA**

THCA and CBDA are non-impairing and are the acidic forms of raw, unprocessed THC & CBD in the plant. They have anti-inflammatory and anti-tumor effects, and support the health of the immune response. They can reduce nausea, anxiety and activate physiological balancing of the ECS in tumor surveillance and monitoring.

# Terpenes

Terpenes are organic compounds that produce specific smells and tastes. They are found in cannabis, essential oils, plants, trees, and foods. In the cannabis plant the terpenes help ward off attacks from animals, insects, and fungus during the growth cycle of the plant. When a cannabis plant goes through the curation process, the terpenes become oxidized resulting in what we know are terpenoids.

Terpenes are synergistic to cannabinoids and contribute to the entourage effect with their own healing properties. Familiar terpenes include black pepper, pine, citrus, hops, and lavender. The entourage effect suggests that utilizing cannabinoids and terpenes together produces more potent medicinal effects than isolated compounds. The whole of the plant is greater than its individual parts. The most common terpenes in cannabis are Myrcene, Beta-Caryophyllene, Limonene, Alpha-Pinene, Linalool, Humulene, Terpinolene.



The Entourage effect describes that as cannabinoids and terpenes work together as whole plant full spectrum medicines, the results are greater than the sum of the parts. Lab analysis of an oil noting the presence of all the cannabinoids, terpenes, and flavonoids show greater activation of receptors to achieve healing with the least cause of side effects. Full spectrum whole plant oils should be the first consideration when looking for supplements. The most important step in supplementing is getting a 'final form' oil that mirrors the plant while living. Preserving the cannabinoids and terpenes is critical to healing the body from disease.

# Right Mode/Product Type

Products focus around the 5 main routes of use or administration:

- Inhalation (smoke/vape)
- Oral (Ingestion/eating)
- Sublingual (oral mucosal/under the tongue)
- Topical (creams/roll-ons)
- Suppository

Route	Inhalation	Oral	Oromucosal	Transdermal	Topical	Rectal
<b>Onset</b>	1-15 mins	30-180 mins	15-20 mins	15-20 mins	20 mins	Variable
<b>Duration</b>	2-4 hours	5-8 hours	4-6 hours	6-12 hours	2-3 hours	Variable

When we use the term systemic, it means that the cannabinoids enter the bloodstream where they can be transported around the body to bind to any receptors in need to affect physiology. Each mode of use delivers cannabinoids in a different fashion, resulting in different effects on the body and experiences for the user.

As cannabinoids circulate in the bloodstream, it is possible to reduce multiple symptoms at once. A person who suffers migraine headaches as well as peripheral neuropathy (weakness, numbness, and pain) in the feet can benefit in two ways from one medicine. This is what we call pleiotropic – affecting many physiologies at one time. Traditional pharmaceuticals affect one receptor at a time and may cause many side effects – this is pleiotropic in the wrong way. Each pill can make you sicker. Cannabinoids are pleiotropic in the right way, as each dose of tincture may heal several things at the same time.

Understanding Cannabis products and dosing will help you make progress by the day, week, month, and year. Cannabis helps you feel better today, but the cumulative effect of slow physiological repair is the true victory.

## 5 Main Routes of Administration

### INHALATION

Inhalation can be done by drawing smoke or vapor into the lungs. Smoking a small, rolled cannabis cigarette or “joint” is a traditional method of using cannabis. Vaporizing dry herb is a healthier option that uses lower temperatures and doesn’t combust the plant materials. Vape pens are battery-operated devices with a cartridge filled with the Cannabis oil.

Inhalation is the fastest method of administration, getting cannabinoids into the bloodstream within minutes. It’s also the easiest way to titrate your dose. Take 1 puff, which is about 2mg, and if more is needed take a second puff. Duration lasts from 1 - 2 hours. Immediate effects from inhalation grants fast relief of pain or other symptoms that need relief.

Dispensaries carry vast assortments of dried flowers of Indica, Sativa, and Hybrid blends. Quantities vary from a gram, eighth, quarter, and ounce. Vape oil cartridges are sold in various blends of CBD, THC, ratios, and terpene assortments which influence the effects greatly. Quantities vary from half to full grams and are portable and convenient.



### TOPICALS

Cannabinoids applied to the skin activate both CB1 (turning down pain) & CB2 (reducing inflammation) receptors through the skin. Topicals may ease pain, spasms, neuropathy, & skin conditions. Many treat lesions and minor skin irritations with a salve or balm.

Topicals are made from CBD, THC, and various CBD:THC ratios. CBD may penetrate the skin better than THC. Most commercial products also contain essential oils like arnica, frankincense, and lavender for additional benefits & synergistic effects.

Transdermal patches (like a nicotine patch) can be applied to the skin and have special molecules to penetrate the bloodstream for a systemic effect. Transdermal patches create a continuous dose of long-acting medicine for up to 48 hours.

Topical products include creams, gels, balms, & bath bombs. Topicals onset of action is within minutes, duration lasts 2-4 hours, so reapply as needed.





## SUBLINGUAL



The blood vessels in the mouth and under the tongue can directly absorb cannabinoids. Swish and hold the liquid cannabis tincture in the mouth for 60 seconds before swallowing. Tinctures, extracts, dissolvable strips, sublingual sprays, & lozenges enter the bloodstream within 15 minutes when held in the mouth this way. Duration is moderate at 4-6 hours. Dividing a hypothetical daily dose of 40mg into 2 doses of 20mg, or 4 doses of 10mg of CBD is the preferred way to mimic the ECS & achieve systemic benefits. Cumulative daily dosing is key to optimizing results.

Tinctures are ideal to achieve short acting effects & longer-term relief of symptoms of pain, nausea, spasms with a daily cumulative dose. Learning the CBD:THC ratios and your own response allows you to predictably medicate. Most people take higher CBD formulations in the day & higher levels of THC in the evening as needed for pain, anxiety & sleep.

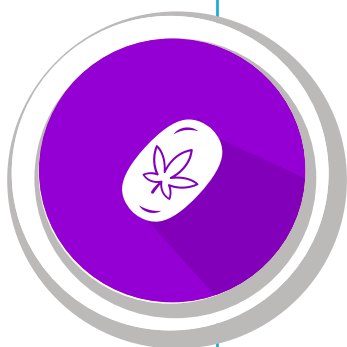
## ORAL

Onset may be felt in 30 minutes, with peak effects in 1-2 hours. Duration can last as long as 6-10 hours depending on presence and potency of THC. Dosage is measured in milligrams and intoxication or a “high” feeling from THC can start at 2-5mg. Start low and go slow. Take 2-5mg and wait at least 2 hours to learn how your body reacts. If the effect is what you desire, repeat every 4-6hrs as needed for long-acting relief.

If dosing was insufficient, use a little bit more the next time. Your metabolism affects the overall experience, so start with an empty stomach, and eat protein & lean fat within 15 minutes of taking the edible to aid absorption. CBD edibles of 2-10mg can be enjoyed a couple of times a day for relaxation, to lessen inflammation, and promote wellness. Since there are no intoxicating effects from CBD, it is easier to use than THC, but pay attention to the reduction in symptoms so you will know the sweet spot of dosing based.



## SUPPOSITORIES



Many women use vaginal suppositories for PMS pain and discomfort or to enhance sexual lubrication. Ladies with endometriosis often find true relief over many frustrating traditional therapies.

Suppositories can be used to ease pain, swelling, or other discomfort. Psychoactive effects are inhibited because this route bypasses the liver and first-pass metabolism. Ensure suppositories are molded for easy use and guard against infection perforation (tearing). Both CBD & THC are used in suppositories and a trial-and-error method must be used to determine efficacy for your specific conditions.



# Right Dosage

## SAFETY PRECAUTIONS & BEST PRACTICES

Success in dosing is achieved through varying the use of the selected products and recording what works and what doesn't in your journal. Time of day and quantity taken of each route of administration is important to learn how to optimize your dosing. Notice both physical and emotional effects, energy or fatigue, and what you liked, or what you don't want to repeat. Remember to start with a small dose, wait several hours, record your responses, and slowly increase the quantity or frequency if needed with each dose.

### Side effects are dose dependent & may occur as dosage increases

CBD medicines may cause dizziness, sedation, heightened energy, and dry mouth. Loose stools can be caused from the carrier oil of the tincture. Keep hydrated and rest as needed to get used to any of these products. Adjusting dosing every 3-7 days allows for measured control.

THC can trigger disorientation, short term memory impairment, and anxiety if dose is excessive. Paranoia with high dosed THC products can be extreme. Changes to balance and equilibrium may be noticed, especially with novice users. Red eyes, dry mouth, giggling, and increase in appetite is common. Bronchodilation and muscle relaxation occur with specific strains. Changes to sensations and perceptions of time can be pleasurable at low doses. Too much THC and those effects can become scary. Side effects are dose dependent, temporary, and wear off with time.

Dosing CBD and Cannabis medicine is not like a single molecule pharmaceutical and does not need the same precision as other medications. Administering at the same time each day will lend consistency and predictability.

Cannabis is lipophilic which means 'fat loving' and is best absorbed with food. Taking a tincture or edible 5-15 minutes prior to food will give the dose a bit of time to work on an empty stomach. Giving the body food with Cannabis will soften side effects and increase the bioavailability of the medicine.

Stay well hydrated when starting CBD and or Cannabis medicine. Dizziness can happen because cannabinoids relax the circulatory system and can lower blood pressure. This tends to fade in a week or two as the body acclimates to Cannabis, but improved BP can happen with daily use.

No one has ever directly died from taking CBD or Cannabis. There are no cannabinoid receptors in the brain stem which is why there is no lethal dose. If you feel uncomfortable after taking a dose of THC, rest, hydrate, and distract yourself or seek the calm in nature. The effects will dissipate in a few hours, so relax and only take ½ that dose next time you medicate.

### Contraindications

Psychosis & Pregnancy are generally considered to be contraindicated for Cannabis use. Because Cannabis can cause psychotic thinking, those already affected should abstain from using THC. Because pregnancy is excluded from the process of testing drugs to gauge safety, Cannabis has not been deemed safe for use by pregnant or nursing mothers.

# Pharmaceutical Interactions

Cannabis is metabolized and excreted through the same CYP 450 liver pathways as other drugs. If taking pharmaceuticals, take the CBD or Cannabis 1 - 2 hours after taking the other prescriptions. This will limit the potentiation effects as CBD may compete with other prescriptions being excreted from the body.

Generally, CBD potentiates, or makes the other drug a little stronger. Interactions are generally not an issue until doses of CBD exceed 100mg per day, but some people are highly sensitive and may notice interactions at lower doses. As symptoms are relieved through use of medical cannabis, you may be able to cut back on the pharmaceutical medications. It is important to speak with your prescribing doctor and be honest about using CBD or Cannabis medicines so they can adjust your Rx dosing accordingly.

Cannabinoids can increase or decrease the levels of other medications in the bloodstream. Drug interactions generally aren't common with low doses under 100mg/day, and with small doses like 20mgs at a time. To avoid drug interactions, it is always advisable to space the dosing by taking the pharmaceutical and the cannabis medicines 1-2 hours apart.

Drugs that have a high potential for interactions include Warfarin/Coumadin (a blood thinner), immunotherapies, CNS depressants (sedatives), SSRIs (antidepressants). Opioids are often too strong for patients with cannabinoids onboard, which is key to dosing reductions. Other drugs may be potentiated by cannabinoids, which means the drugs become stronger and don't clear or eliminate from the body the same. Some drugs may become weaker and don't work as well. Therefore, it is critical to discuss high doses of Cannabis with your doctor, so that they can adjust your pharmaceuticals to the lowest possible effective dose.

# Shopping for Cannabis

Become familiar with and learn about the laws and practices regarding growing, producing, and legally dispensing cannabis. [www.NORML.org](http://www.NORML.org) has state by state specifics based on what is allowed. Each medical or adult use dispensary will have policies, practices, a physical setting, and decorum that will influence your buying experience and confidence in the products you buy. Keep in mind that each state regulates cannabis differently.



## CERTIFICATE OF ANALYSIS

Prepared for:  
**BLOOM DISTRIBUTION**  
 12742 East Caley Ave Unit E  
 Centennial, CO 80111

### Lumir 1500mg Lotion

Batch ID or Lot Number:	Test:	Reported:	USDA License:	
221025-2	Potency	01Nov2022	N/A	
Metric:	Test ID:	Started:	Sampler ID:	
Unit	T000226015	29OCT2022	N/A	
Method(s):	Received:	Status:		
TM14(HPLC-DAD)	27OCT2022	N/A		
Cannabinoids	LOD (mg)	LOQ (mg)	Result (mg)	Result (mg/g)
Cannabichromene (CBC)	18.819	58.541	ND	ND
Cannabichromenic Acid (CBCA)	17.213	53.545	ND	ND
Cannabidiol (CBD)	53.357	170.243	1867.210	19.70
Cannabidiolic Acid (CBDA)	54.726	174.610	ND	ND
Cannabidivarin (CBDV)	12.820	40.264	<LOQ	<LOQ
Cannabidivarinic Acid (CBDVA)	22.829	72.838	ND	ND
Cannabigerol (CBG)	10.685	33.238	146.320	1.50
Cannabigerolic Acid (CBGA)	44.866	138.946	ND	ND
Cannabinol (CBN)	13.939	43.361	ND	ND
Cannabinolic Acid (CBNA)	30.474	94.799	ND	ND
Delta 8-Tetrahydrocannabinol (Delta 8-THC)	53.213	165.535	ND	ND
Delta 9-Tetrahydrocannabinol (Delta 9-THC)	48.327	150.336	<LOQ	<LOQ
Delta 9-Tetrahydrocannabinolic Acid (THCA-A)	42.818	133.197	ND	ND
Tetrahydrocannabivarin (THCV)	9.719	30.233	ND	ND
Tetrahydrocannabivarinic Acid (THCVA)	37.767	117.466	ND	ND
<b>Total Cannabinoids</b>			2013.530	21.20
Total Potential THC			0.000	0.00
Total Potential CBD			1867.210	19.70

#### Definitions

% = % (w/w) = Percent (weight of analyte / weight of product). ND = None Detected (defined by dynamic range of the method). Total Potential Delta 9-THC or CBD is calculated to take into account the loss of a carboxyl group during decarboxylation step, using the following formulas: Total Potential Delta 9-THC = Delta 9-THC + (Delta 9-THCA \* (0.877)) and Total CBD = CBD + (CBDA \* (0.877)).

Buy safe, reliable, consistent formulations of CBD & THC by shopping in the licensed supply chain. Medicines should have a COA or certificate of analysis, which details levels of cannabinoids, terpenes, potency & purity – and be free from pesticides, molds, heavy metals, residual solvents, and other contaminants. Dominant terpenes may be listed in the COA, which guide dosing strategies and timing the likely effects of desired outcomes.

Whole plant formulations, organic farming, and clean extraction matter. The bottle should list where it was grown (State / Country). Good producers have QR Codes to scan that identify batch test results of that specific oil. Click it and visit the website for the lab results.

THC ratio lines should have the total cannabinoid mg, and mg of each THC, CBD, THCA, CBDA, CBG, CBN, etc on the bottle. THC ratio lines range from 20:1 to 1:1 or even 1:10 CBD/THC and generally the CBD figure is listed first. Look for shops with a variety of ratios to support flexible dosing for daytime, nighttime, and in between.

CBD tinctures should list total milligrams of CBD, other cannabinoids like CBG, CBN, CBDA, THCA, & the carrier oil (olive oil, MCT, hempseed or grapeseed oil).

**300mg CBD in  
30ml of oil  
= 10mg/ml**



**1200mg CBD in  
30ml of oil  
= 40mg/ml**

Total mg in volume and mg/ml should be listed. 1,200mg of CBD oil in 30ml of olive oil would = 40mg/ml. If you want to start with 10mg, the dose will be ¼ dropper, or .25 ml. 300mg of CBD in 30ml of oil would = 10mg/ml. 10mg would be the full 1 ml dropper.

Federal regulations of the 2018 Farm Bill require hemp CBD to have less than 0.3% THC. Industrial hemp CBD is allowed to be sold online and distributed throughout all 50 states. Because it is not officially a nutraceutical or a dietary supplement as defined by the FDA, it remains unregulated. Consumers need to take caution to purchase from vendors that maintain the highest standards by finding a producer that adheres to GMP or Good Manufacturing Practices, as well as GRAS, or Generally Recognized as Safe certification. These are botanical & pharmaceutical grade settings apply to herbal medicines and supplements that are well made.

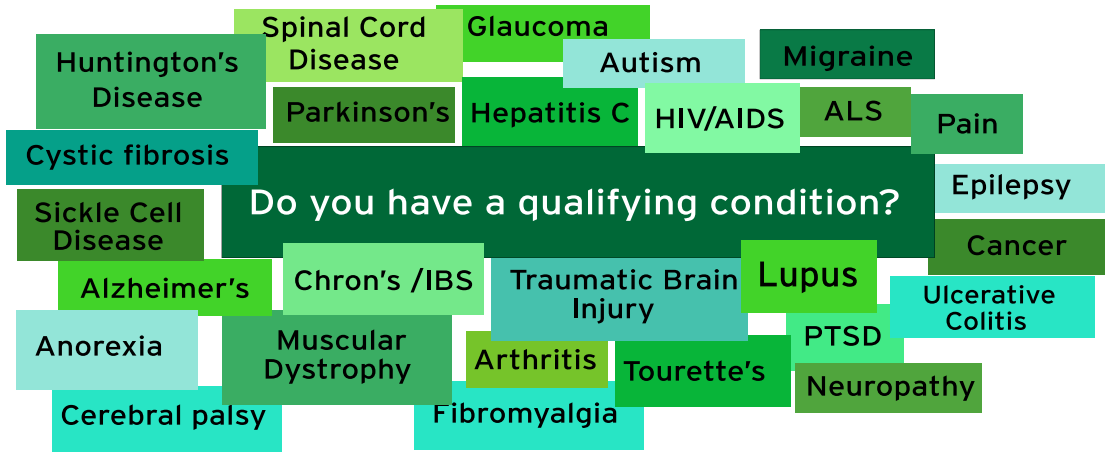
The list below is for you to consider as you're shopping for <0.3% THC or less hemp-based CBD. Hemp CBD may be hard to find in licensed cannabis dispensaries because it has a different taxation and regulation structure.

## Shopping Checklist

- |           |  |           |   |
|-----------|--|-----------|---|
| <b>01</b> | Know where it was grown-<br>choose USA   | <b>06</b> | Check extraction; ethanol or CO2?                                 |
| <b>02</b> | When was this batch tested?  | <b>07</b> | What terpenes are in this strain<br>or added by the batch?        |
| <b>03</b> | < 0.3% THC, and that it is third party lab<br>tested. Each state law will specify the<br>requirements for laboratory testing | <b>08</b> | Phone #, Address, Email, Website,<br>full transparency & customer |
| <b>04</b> | What is the expiration date?<br>(Generally used for the carrier oil)   | <b>09</b> | Free from false claims, distortions<br>& FDA violations           |
| <b>05</b> | Potency of CBD<br>10mg/ml or 100mg/ml?<br>300 - 3000mg in 1 ounce (30ml)   | <b>10</b> | Don't go cheap -<br>CBD is expensive to make                      |

# Legal Considerations

## PATIENT & PROVIDER CONSIDERATIONS



Access to Cannabis depends on where you live and navigating the legal landscape can be a burden. The patient experience in qualifying to legally consume Cannabis can be easy in legal adult use markets, but most still need to obtain a medical recommendation from a doctor. Organizations such as Americans for Safe Access and NORML advocate for patient rights, employment & housing protection, and federal policy to change the laws.

In medical states, people qualify based on what conditions they suffer from, and whether those are approved by the legislature where the patient resides. Once certified, the patient can shop in medical dispensaries, purchasing up to specific state limits of products. Understanding the processes is essential, and your Holistic Caring Cannabis Health Coach can help.

Education will end prohibition, and around the world global access points are improving. Because all humans have an ECS, and all disease can be linked to deficiency, it makes sense to broaden access so that one day soon, all humans will qualify to supplement with Cannabis.

## Helpful Legal Links

 <p><b>Cannabis Law Timeline</b></p>	 <p><b>Law, Policy &amp; Updates</b></p>	 <p><b>State Medical Cannabis Laws</b></p>
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# Personal Inventory

## Assessing Your Needs: Personal Inventory

**STEP ONE: ASSESSING YOUR PHYSICAL AND EMOTIONAL NEEDS**

**STEP TWO: SELECTING & PROPERLY USING CANNABIS PRODUCTS**

**STEP THREE: MONITORING YOUR RESPONSE & ADJUSTING YOUR CANNABIS PRODUCTS**

01

What are your goals for taking Medical Cannabis? (reduce pain, increase energy, reduce anxiety, better sleep, improve performance in sports?)

02

What pharmaceuticals and over-the-counter medications are you taking?  
What are they doing to help you?  
What are the short and long-term side effects of those drugs?

03

What cannabis products have you tried in the past year? What was your response?

04

How difficult is it for you to achieve adequate:  
· Sleep? · Appetite? · Energy levels? · Pain control? · Favorable mood?  
· Relief from anxiety? · Relief from depression?

05

Do you worry about drug testing for THC for your employment/living situation?

06

What is your day-to-day routine? Are you working full time during day hours?  
Identify down times when you could experiment.

Once you have determined your physical and emotional needs, reviewed your traditional pharmaceutical treatment plan, and list the medications you're taking, you are ready to start learning about alternatives through Cannabis to reduce symptoms and promote wellness.

Remember, Cannabis is also a medicine, and can be a potential replacement for some of the pharmaceuticals. Over time with cumulative dosing, you may find freedom with Cannabis from traditional medications. Many people are able to reduce dosing of other Rx with cannabinoids, which is also a win for the body - mind - spirit.

# Adjusting

Use your Medicinal Cannabis Use Log to track responses and adjust one variable at a time.

To begin dosing with a hemp CBD product, start here.

## BEGINNING TINCTURE DOSING - CBD

Conservative dosing will start with CBD @ 20 mg/day for 7 days.

Increase slowly to 40 mg/day for 7 days.

Use divided doses 2x day, or a full dose 1x daily.

As you increase the dose, increase the frequency by dividing the dosing, or breaking up the milligrams between 2 or 3 doses per day.

Increase as needed by 5 - 10 mg weekly until desired results are reached.

If sedated or fatigued, reduce dosing by 5mg & reassess.

Average dose range is 20mg- 100mg/day with a full spectrum CBD tincture.

### Beginning Dosing Guidelines

#### Start Low, Go Slow

	THC	CBD
1 <sup>st</sup> TIME /MICRODOSE	1mg - 5mg	5mg - 25mg
MODERATE DOSE	10g - 50mg	30mg - 100mg
HIGH DOSE	> 50mg	> 100mg



Dosing THC is best done in conjunction with CBD through ratios. CBD:THC tinctures may come in 20:1, 4:1, or 1:1 CBD:THC.

## BEGINNING TINCTURE DOSING - THC

- Begin THC in ratios or alone @ 2.5mg as needed. Increase to 5mg, then 7.5mg, & 10mg. Most people do not need more than 10mg of THC per dose.
- Space does 6 hours apart to avoid psychoactive effects or excess sedation.
- Tolerance will build over a 2-4 week period if high doses are needed to fight severe illnesses, injury, or pain. Average dose range is 20mg-100mg/day with a full spectrum CBD tincture.
- Micro doses are the most effective way to use cannabinoids, especially THC.
- Sublingual tinctures contain ratios of CBD & THC, such as 1:1, 4:1, 10:1, 20:1 CBD:THC. Product labels should identify the ratio and percentage. Effects of tinctures are mild, but start low, and go slow as you get used to the THC.
- Rotate ratios based on effects needed, increasing by 2.5mg per adjustment.
- 20:1, 4:1 = ideal daytime CBD. 1:1 or 1:10 CBD:THC = ideal evening CBD & THC.



# PSYCOACTIVE POTENTIAL

CBD:THC	RATIO	EFFECTS
THC	0:1	Euphoric, Psychoactive & Impairing at High
CBD:THC	1:2	Moderate Euphoria, Relaxed
CBD:THC	1:1	Mild Euphoria, Most Therapeutic Across All Categories
CBD:THC	2:1	Eliminates Euphoria, Relaxed, Nice Mood
CBD:THC	3:1	Relaxed, Nice Mood, Autoimmune Conditions
CBD:THC	20:1	Relaxed, Nice Mood, Neurological Conditions
CBD	1:0	Relaxed, Nice Mood

**Ratios**    **20:1**    **3:1**    **1:1**    **1:10**  
**CBD:THC**    **CBD:THC**    **CBD:THC**    **CBD:THC**

	20:1 CBD:THC	3:1 CBD:THC	1:1 CBD:THC	1:10 CBD:THC
Overview	<p>Starting point for most patients, good for daytime</p> <p>Chemotype 3 = High CBD</p>	<p>Mid-level, daytime, afternoon Midly psychoactive</p> <p>Chemotype 3/2 = Midly psychoactive</p>	<p>Mid-level, afternoon, evening Most therapeutic combination</p> <p>Chemotype 2 = balanced CBD:THC Mild to moderate</p>	<p>Acclimated to THC, afternoon, evening, bedtime</p> <p>Chemotype 1 = High THC</p>
Suitability	<ul style="list-style-type: none"> <li>• Anxiety</li> <li>• Inflammation</li> <li>• Depression</li> <li>• Neurological Disorders</li> <li>• THC Intolerance</li> </ul>	<ul style="list-style-type: none"> <li>• Pain • Nausea</li> <li>• Appetite</li> <li>• Muscle Spasms</li> <li>• Sleep • PTSD</li> </ul>	<ul style="list-style-type: none"> <li>• Inflammation</li> <li>• Pain • Anxiety</li> <li>• Nausea • Sleep</li> <li>• Digestive Disorders</li> <li>• Neurological Disorders</li> <li>• Neuropathy</li> </ul>	<ul style="list-style-type: none"> <li>• Inflammation</li> <li>• Pain • Nausea</li> <li>• Digestive Disorders</li> <li>• Sleep</li> <li>• Neuropathy</li> <li>• Appetite</li> <li>• Tremors</li> </ul>

# Tracking

When pain is excessive, raise the THC dose. If sedated and sleepy, lower the CBD or THC dose. CBD and Cannabis medicines have biphasic effects, which means that a low dose & high dose may have opposite results. Small doses generally stimulate, and larger doses can tend to sedate. If your dose makes you tired, take less the next dose, or take it later in the day. Over time specific needs / responses become clearer to manage.

## SUPPLEMENT OR BOOST



Supplement or boost the tincture dosing by adding in other routes; add vape puff every 4 hours as needed for pain, anxiety, or inflammation.

Another option is to add in a topical after showering, exercise, or before bed. A patch can be added for longer acting symptom management. Another option is the use of micro doses of an edible every 6-8 hours for stronger and longer effects of cannabis for pain management.

## INSIDE / OUTSIDE

A systemic tincture or oil is taken internally for routine dosing, along with a topical for external needs of localized pain or inflammation.

Vaping is added for short acting relief as an in-between dose or a rescue from anxiety or pain spikes. Always having a dose onboard in a systemic fashion helps prevent pain spikes and yields a better overall outcome.



## PLATEAU



A plateau may be reached after several months of dosing where there are less noticeable benefits. Sometimes that is an indication to reduce dosing as the body has healed enough and your own ECS has been repaired and is working.

This is a good time to cut back on CBD & THC and see how your body responds. Unlike traditional pharmaceuticals, cannabis medicine is more than a Band-Aid; it can repair the underlying cause and no longer be needed as much. Most people drop to a maintenance dose of 20mgs/day & hold.

# Addressing Cannabis Dependence

Used medically, cannabis is not abused as the patient is not using the medicine for a 'high'. Generally, addiction occurs as users chase high THC products through inhalation or "dabbing" very concentrated oils for a dopamine rush. Medical patients who use THC together with CBD for the purpose of healing or wellness do not struggle with issues of addiction.

Tolerance is the body's physical adaptation to a drug: greater amounts of the drug are required over time to achieve the initial effect as the body "gets used to" and adapts to the drug intake. With THC, a tolerance break is helpful to reset the receptor tone. THC tolerance may build up over time, meaning that you need more of it to get the same effect.

Having a reset is helpful every few months. After taking a few days off, THC can be added back in at  $\frac{1}{4}$  -  $\frac{1}{2}$  the dose with improved effects. Taking a break of 2-3 days every few months keeps the receptors actively engaged with the cannabinoids. In order to prevent mild withdrawal symptoms, we encourage ECS enhancing activities.

When stopping cannabis, mild withdrawal symptoms can be seen and may include depression, insomnia, pain, anxiety, and lack of appetite. When that happens, use ECS enhancing activities to boost the performance of the endogenous ECS. Activities that nourish the ECS include exercise, meditation, breathwork, being outdoors in nature, eating whole foods, healthy fresh organic fruits and vegetables, and dietary supplements such as Omega 3, and Vit D.

# Cannabis Log

## UTILIZING A MEDICAL CANNABIS USE LOG

Record notes on your 'gauges'; pain, anxiety, sleep, mood, focus, movement, energy, appetite & overall wellbeing. If the numbers are trending in a favorable way, take notes on what you're doing, and keep going. Watch for changes in the numbers and watch for plateaus. That is your clue to change it up and try new things.



Cannabis might affect blood pressure (BP) and blood glucose (BG) levels – especially for people who take those medications.

Cannabinoids help vasorelaxation – opening blood vessels which will lower BP. They are also anti-diabetic, improving insulin sensitivity which can lower BG. Tell your doctor and you may be able to lower dosing of your prescriptions.

Think about your body as if it has a series of gauges. Keeping a journal for your CBD journey will help you understand how best to supplement for your drive.

## Ask these questions relating to mode/product

**01**

From 1 – 10, what is the level of pain? Take the desired dose of CBD or Cannabis medicine and then reassess. Then ask yourself: what is the change to pain? After dosing, did the perception and annoyance of pain drop from an 8 to a 4? That can boost quality of life and mobility.

**02**

With respect to mood - how easy is it to smile today versus when this path began? Are you feeling less angst and more joy? Is your memory and mind getting sharper or fuzzier? What are the daily and weekly changes to sleep, focus, energy, mood?

**03**

Target the Minimum Effective Dose (MED) to lessen distress in each of these gauges, and DO NOT over medicate.

**04**

Ask these questions relating to mode/product type:

- What are the effects when you take a tincture every day for a month?
- How do you feel when you take a puff off the vape pen?
- If you tried an edible, how did that feel? Did you adjust the next dose?

**05**

Record notes on your ‘gauges’; pain, anxiety, sleep, mood, focus, movement, energy, appetite, and overall wellbeing. If the numbers are trending in a favorable way, take notes on what you’re doing, and keep going. Watch for changes in the numbers and watch for plateaus. That is your clue to change it up and try new things.

**06**

Cannabis might affect blood pressure (BP) and blood glucose (BG) levels – especially for people who take those medications. Cannabinoids help vasorelaxation – opening blood vessels which will lower BP. They are also anti-diabetic, improving insulin sensitivity which can lower BG. Tell your doctor and you may be able to lower dosing of your Rx.

# Medical Cannabis Use & Tracking log

Product Information (Brand): \_\_\_\_\_

INDICA
  SATIVA
  HYBRID

Mode/Product Type: \_\_\_\_\_

Ratio of CBD: \_\_\_\_\_ THC: \_\_\_\_\_

Dose (puffs, mL): \_\_\_\_\_

Time AM/PM: \_\_\_\_\_

Date	Pain Level	Anxiety	Memory & Focus	Joy/Mood	Energy	Hours of Sleep	BP or Glucose	Dose of Tincture
	1 (least) 10 (most)	1 (least) 10 (most)	1 (fuzzy) 10 (sharp)	1 (sad) 10 (happy)	1 (low) 10 (strong)	1 to 10	Example: 120/80	Example: 10 mgs/ 1ml

Desired Effects and Duration:

Unwanted Effects and Duration:

Symptoms:

Comments:

# Health Planning

## CONSUMER

### ENGAGEMENT & EMPOWERMENT

You are a critical part of the equation, and cannabis medicine gives more empowerment than traditional pharmaceuticals in 'self-care'. Learning how to 'read your smart body' helps one adjust the CBD or Cannabis medicine to find the minimum effective dose.

Knowing your own unique response from each mode of administration, products, and dosage gives you the ability to medicate predictively and find the products that will work best to accomplish your goals and objectives.

Never in medicine has self-care been so accessible & natural.

## Questions to determine proper products & understand your plan

- What is the name, route & potency of the product(s)?
  - How will this help me?
- How long will it take to work & how long should I take it?
  - When should I take it? How often?
  - Should I take it with meals?
  - What are the side effects to manage?
  - Are there interactions with other Rx?
    - What if I miss a dose?
- How do I best refill this product every month?



# Holistic health needs consistency. Stay with this path at least 90 days.

When someone decides to use cannabinoids, it is often to take a holistic approach to health. This can be boosted, or enhanced with lifestyle or functional medicine, and cannabis acts to facilitate greater health success. When your body doesn't hurt, you'll move more. When you can sleep better, you'll feel better all around. When your mind is free from anxiety, you'll feel more connected to those around you.

## Diet



**Anti-inflammatory is best. Add vegetables to every meal, do all you can to eliminate sugars, processed foods & drink plenty of water.**

## Movement



**Stretch & strengthen your body by adding light movements into your day. Motion is the lotion and helps us to release endorphins to keep us feeling good.**

## Joy



**Do what you can to re-engage in any purposeful activity you love...it's important to maintain that in any small way.**

## Connection



**Find ways to connect with others. It helps you feel alive, whole, and less alone.**

## Spirituality



**Time with Spirit or God / Source energy - daily nourishment of prayer, meditation, breathing and time in nature. Spirituality is the root of cannabis care as it brings Hope & Inspiration for Growth & Healing.**

**Lumir**  
CLINIC

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# Glossary

## 2-AG

(2-Arachidonoylglycerol) – an endocannabinoid, an endogenous agonist of the CB1 receptor and the primary endogenous ligand for activation of the CB2 receptor.

## ANANDAMIDE (AEA)

An endocannabinoid, an endogenous agonist of the CB1 receptor. Ananda is Sanskrit for bliss and describes the euphoric effects of CB1 activation. AEA is a fatty acid neurotransmitter derived from the non-oxidative metabolism of eicosatetraenoic acid (arachidonic acid), an essential omega-6 fatty acid.

## ANTIOXIDANTS

Antioxidants are substances that can prevent or slow damage to cells caused by free radicals, unstable molecules that the body produces as a reaction to environmental and other pressures. They are sometimes called “free-radical scavengers.” The sources of antioxidants can be natural or artificial.

## BIPHASIC EFFECT

Many compounds produce a biphasic effect, which means low and high doses can produce opposite effects.

## CANNABINOIDS

Cannabinoids are chemicals found in cannabis. The most notable cannabinoid is the phytocannabinoid THC or tetrahydrocannabinol, the primary psychoactive compound in cannabis. CBD or Cannabidiol is another major constituent of the plant. There are at least 144 different cannabinoids isolated from cannabis, exhibiting varied effects.

- CBD (cannabidiol) - a naturally occurring compound found in the resinous flower of cannabis
- THC (tetrahydrocannabinol) - a crystalline compound that is the main active ingredient of cannabis
- CBDA – the raw form of CBD
- THCA - a non-psychoactive, therapeutic cannabinoid found in raw and live cannabis
- CBG (cannabigerol) - the non-acidic form of cannabigerol acid, the parent molecule from which other cannabinoids are synthesized; a minor constituent of cannabis
- THCV (tetrahydrocannabivarin) - a 3-carbon molecular structure cannabinoid instead of a 5-carbon (THC), which may lead to significant differences when used
- CBN – (Cannabinol) a mildly psychoactive cannabinoid found only in trace amounts in Cannabis, and is mostly found in aged Cannabis

## CB1 RECEPTORS

Cannabinoid receptor type 1, also known as cannabinoid receptor 1, is a G protein-coupled cannabinoid receptor. The human CB<sub>1</sub> receptor is expressed in the peripheral nervous system and central nervous system.

## CB2 RECEPTORS

The cannabinoid receptor type 2, abbreviated as CB2, is a G protein-coupled receptor from the cannabinoid receptor. CB2 is a protein that is largely involved in the body's immune system, and plays an important role in fighting inflammation.

## CHEMOVAR

Chemovars, also known as chemotypes, refers to the breakdown of a plant species according to its chemical composition. Chemovar classification is pivotal for growers and breeders. Certain chemical characteristics determine, for example, whether a cannabis Indica plant has a greater CBD to THC ratio or vice versa. It may also determine the presence and bioavailability of certain terpenes.

## CO2 EXTRACTION

CO2 extraction is a process that uses pressurized carbon dioxide to pull the desired phytochemicals from a plant. In the world of cannabis, the process pulls all of the essential cannabinoids, terpene oils and waxes out of the plant material.

## CERTIFICATION OF ANALYSIS

A certificate of analysis (COA) is a document associated with cannabis derived products, attesting to its laboratory analysis for cannabinoids and in some cases adulterants, heavy metals and pesticides, mold, etc., and assures quality.

## ENDOCANNABINOID

Defined as the endogenous ligands (Anandamide & 2-AG) of the cannabinoid receptors (CB1 and CB2) that our body produces.

## ENDOCANNABINOID SYSTEM (ECS)

The endocannabinoid system is a biological system composed of endocannabinoids, which are endogenous lipid-based retrograde neurotransmitters that bind to cannabinoid receptors, and cannabinoid receptor proteins that are expressed throughout the vertebrate central nervous system and peripheral nervous system.

## ENTOURAGE EFFECT

The entourage effect is a proposed mechanism by which cannabis compounds other than tetrahydrocannabinol act synergistically with it to modulate the overall psychoactive effects of the plant. The synergistic results from whole plant formulations lend to greater overall efficacy than the sum of the individual parts.

## ETHANOL EXTRACTION

A process that can be conducted under warm or cold conditions that soaks the flower with 100% pure food grade ethanol to strip the cannabinoids and terpenes from the plant material, which then evaporates.

## FULL SPECTRUM

Full spectrum means that an oil or product contains all the cannabinoids that are naturally occurring in the cannabis plant. Quality full spectrum CBD products are typically high in CBD, with only trace amounts of minor cannabinoids, and very low in THC (less than 0.3%).

## HOMEOSTASIS

In biology, homeostasis is the state of steady internal, physical, and chemical conditions maintained by living systems. This is the condition of optimal functioning for the organism and includes many variables, such as body temperature and fluid balance, being kept within certain pre-set limits. We refer to it as the 'just right Goldilocks zone'.

## LIPHILIC

Lipophilic or ‘lipid-loving’ molecules are attracted to lipids. A substance is lipophilic if it is able to dissolve much more easily in lipid (a class of oily organic compounds) than in water. Cannabinoids are lipophilic and are not water soluble.

## MINIMAL EFFECTIVE

The smallest dose needed to achieve desired therapeutic effects, but not to trigger adverse effects or to build tolerance.

## NEUROPROTECTIVE

Protect nerve cells against damage, degeneration, or impairment of function.

## PERIPHERAL NEUROPATHY

Damage to the nerves outside of the brain and spinal cord (peripheral nerves) that often causes weakness, numbness and pain, usually in your hands and feet. It can be caused by diabetes, chemotherapy, or other toxic injuries.

## PHYTOCANNABINOIDS

Any cannabinoid produced in the trichomes of a cannabis plant. When extracted from the plant and consumed, phytocannabinoids interact with our body’s receptors to produce numerous psychotropic and therapeutic effects.

## POTENTIATES

Increase the power, effect, or likelihood of. CBD can potentiate other medications which makes them more effective or stronger.

## PSYCHOACTIVE

A psychoactive drug is a chemical substance that changes brain function and results in alterations in perception, mood, consciousness, cognition, or behavior.

## RETROGRADE SIGNALING

Retrograde signaling in biology is the process where a signal travels backwards from a target source to its original source. In neuroscience, retrograde signaling refers to the process by which a retrograde messenger, such as anandamide is released by a postsynaptic neuron and travels “backwards” across a synapse to bind to the presynaptic neuron.

## SYSTEMIC

The systemic circulation provides the blood supply to all body tissue. It carries oxygen and nutrients to the cells and picks up carbon dioxide and waste products.

## TOLERANCE BREAK

A deliberate, temporary cessation (4 - 28 days) of cannabis consumption for the purpose of resetting the body’s tolerance to THC.

## TERPENES

Secreted in the same glands that produce cannabinoids like THC and CBD, terpenes are aromatic oils that color cannabis varieties with distinctive flavors like citrus, berry, mint, and pine. Terpenes are synergistic to cannabinoids and have their own therapeutic properties in the body.

## MODES (ROUTES) OF ADMINISTRATION

- Inhale / vape / smoke / dabbing
- Oral / edibles / capsules / micro tabs
- Sublingual (under the tongue) tinctures / strips / sprays / thin films
- Suppository (rectal or vaginal)
- Topical (applied externally to the skin)

Balm / Salve / Lotion / Gels / Bath bomb / Transdermal patches

# Resources

## References used in this book:

- Cannabinoid Receptors and the Endocannabinoid System: [Signaling and Function in the Central Nervous System](#)
- National Academies - [Cannabis Report](#)

## Cannabis Medicine Medical Stories:

- Sanjay Gupta, MD, Weed, Weed 2, Weed 3, Weed 4, Weed 5
- Dr. Sanjay Gupta WEED 4: Pot Vs Pills WEED 4, [Chronic Pain](#)

## Scientists:

- Raphael Mechoulam, PhD, discovered THC & Endocannabinoid system, watch [The Scientist](#)
- Jazz (GW) Pharmaceuticals, Sativex & Epidiolex cannabidiol prescriptions; [Jazz Pharmaceuticals](#)

## Associations & Clinical Information:

- Patients Out of Time; [Patients Out of Time](#)
- The Realm of Caring Pediatric Dosing Guidelines
- [Project CBD](#)
- [CannaKeys](#), all of the studies on cannabis in the clinical and research setting.

## Good Reads:

- Cannabis For Health, Become a Coach, Elisabeth Mack RN BSN MBA
- Cannabis: A handbook for Nurses, Carey S. Clark
- Cannabis Pharmacy, Michael Backes
- Cannabis Handbook, Bonnie Goldstein, MD
- Cannabis Handbook for Clinicians, Dustin Sulak, DO
- The Pot Book, Julie Holland, MD
- Weed the People, Bruce Barcott
- Marijuana Growers Handbook, Ed Rosenthal

## Links:

- [LEAFLY](#)
- [WIKI](#)
- [GANJAPRENEUR](#)
- [420SCIENCE](#)