

Cannabis Education

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Disclaimers:

Cannabis-Related Activities are Illegal Under U.S. Federal Laws

- The U.S. Federal Controlled Substances Act classifies “marijuana” as a Schedule 1 drug. Accordingly, cannabis-related activities, including without limitation, the cultivation, manufacture, importation, possession, use or distribution of cannabis products are illegal under U.S. federal law.

DISCLAIMER:

- This presentation is for informational purposes only and does not reflect the views, opinion, or endorsement of Carroll County Government

General:

- The topics discussed today are not to be taken as medical advice; they are instead a compilation of resources and input collected from years of working with patients. Please consult with a physician before deciding to use cannabis as a replacement (or addition to) pharmaceuticals.

Pregnancy and Breastfeeding:

- There’s no known safe amount of marijuana use during pregnancy or while breastfeeding.
- Marijuana is now legal for adults over 21+ , but this doesn't mean it's safe for pregnant or breastfeeding moms.
- You should consult with a physician before using marijuana while you're pregnant.
- Talk to your doctor if you're pregnant or breastfeeding and need help to stop using marijuana. Or call 1-800-CHILDREN for help.
- Breathing marijuana smoke is bad for you and your baby.
- Don't allow anyone to smoke in your home or around your baby.

Children and Cannabis:

- While there are adolescents under the age of 18 who have a medical cannabis card, this does not mean anyone under the age of 18 should be consuming cannabis.
- The brain is not fully developed until around the age of 25, and for that reason, we suggest abstaining from cannabis use until that age unless it is recommended by your physician for medical purposes.

A Snapshot of the MD Medical Cannabis Program

A Snapshot of the MD Medical Cannabis Program

Maryland's Medical Cannabis laws were initially approved in 2014.

The first medical cannabis dispensary became operational in December of 2017.

There are 9 qualifying conditions.

As of January 2021:

- There were more than 125,355 patients and 7,817 caregivers
- There are 102 dispensaries
- There are 2090 registered medical providers

Registered Medical Providers:

MD's, DO's, Nurse Practitioners, Podiatrist, Dentist and Certified Mid-wives

Qualifying Conditions In the State of Maryland



Qualify Conditions for a Medical Cannabis Card

- Cachexia (weakness and wasting of the body)
- Anorexia
- Wasting Syndrome (involuntary loss of body weight and muscle mass)
- Severe or Chronic Pain
- Severe Nausea
- Seizures
- Severe or Persistent Muscle Spasms
- Glaucoma
- Post-Traumatic Stress Disorder
- *Or another chronic medical condition which is severe and for which other treatments have failed*

What You Need:

Step One:

- (18+): Register as a patient with the MMCC by completing an online application.
- For Minor Patient: Parent/Guardian must register as a Caregiver with the Commission prior to the minor registering.

Step Two:

- Obtain a written certification from a provider registered with the MMCC
- When both the patient and provider are registered with the MMCC, the provider will need the patient's MMCC issued Patient ID Number to issue the certification through the MMCC's online application.

Step Three:

- Visit a licensed Maryland dispensary
- Be sure to bring your MMCC ID card and a valid government ID.

Important Dates and Information

Card is Valid For:	Card Cost	Physician Visit:	Must Recertify Annually	Home Grow	Your Allotment	Bring to the Dispensary
3 Years	• \$50	\$60-200	See Your Doctor Every Year!	Not Currently Legal	The amount of cannabis you may purchase is decided by your physician! Standard 120g Flower/36g THC	Your MMCC Card, Your Government ID, Your Certification

The Caregiver Program



Once your patient application has been approved, you have the option of logging onto the Patient Registry to access your account and designate a caregiver.



Before designation, caregiver must have applied and received MMCC approval.



There is no fee to apply as a caregiver!



This allows you to go to the dispensary and purchase medicine for the patient you are caring for, should they not be able to make it into the facility.



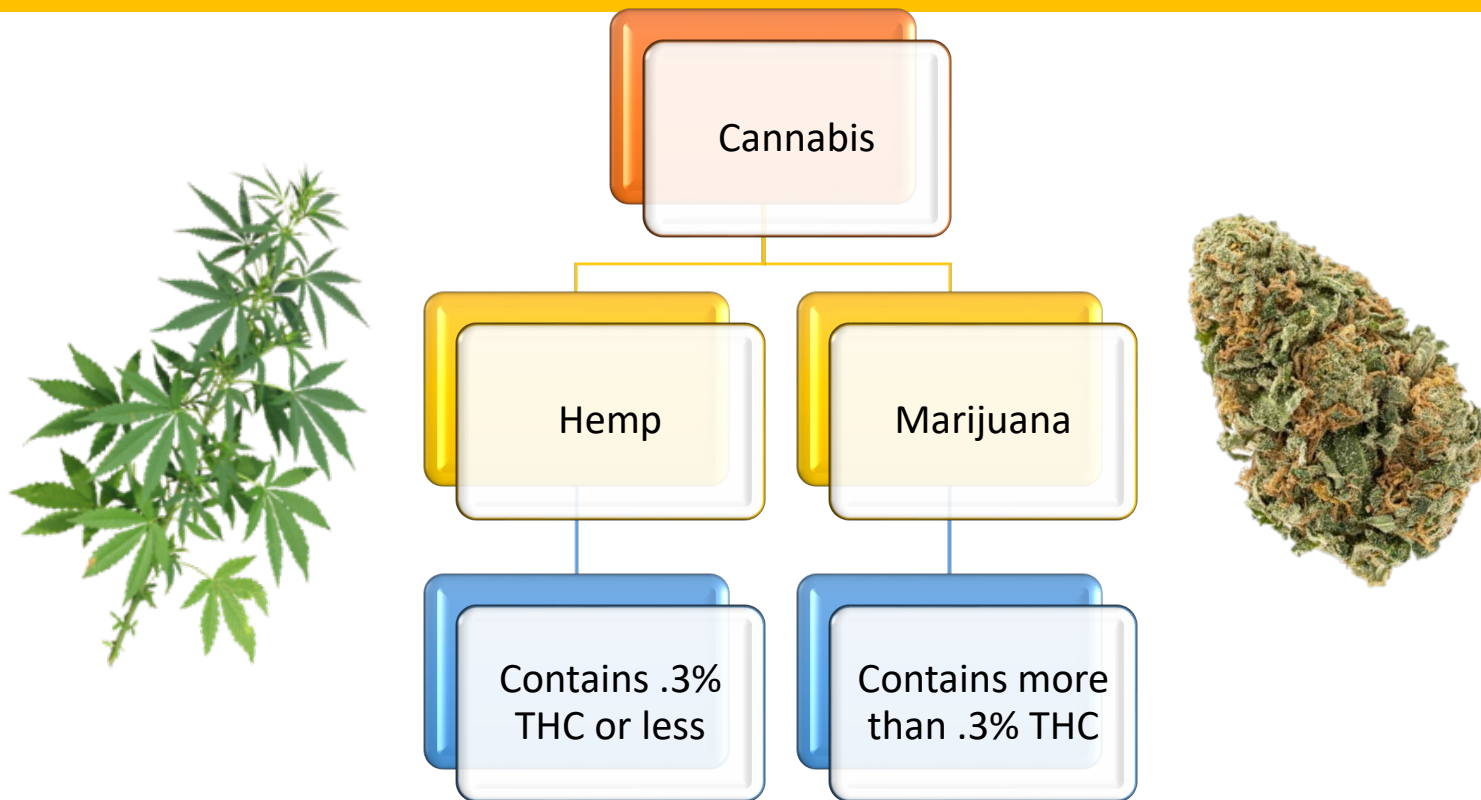
Registration patient's and caregivers available at MMCC's Onestop portal.

[Onetop.md.gov](https://onetop.md.gov)

Search "Caregiver Registration" or "Patient Registration"

Cannabis 101 – The Basics

Hemp Versus Medical Marijuana



Fun Fact:

Some "hemp" contains a large amount of CBD, some contains barely any CBD, but all hemp contains .3% THC or less!

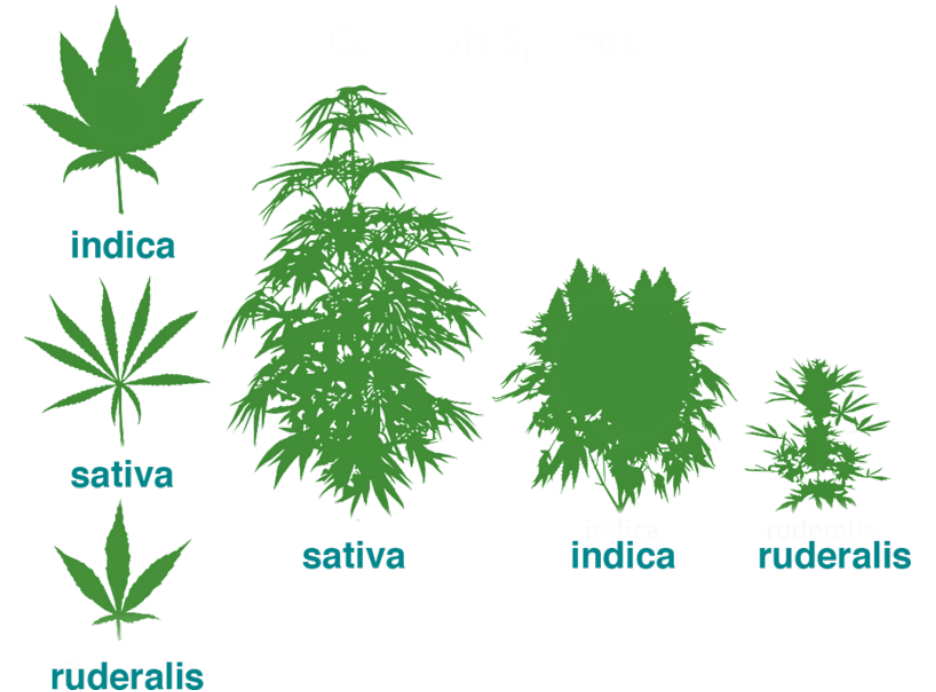
Hemp Versus Medical Marijuana

- Hemp is grown in populations of male and female plants.
- Medical Cannabis is grown in populations of female only plants.
 - Males are removed because their pollination leads to seed production stunting the growth of female plants.
 - Eliminating male plants and pollen sacks increases resin production in female plants.
- Hemp is grown for its seeds, fiber, and CBD cannabinoid content.
- Medical cannabis is grown for the medicinal resins of the female flowers.



Medical Cannabis

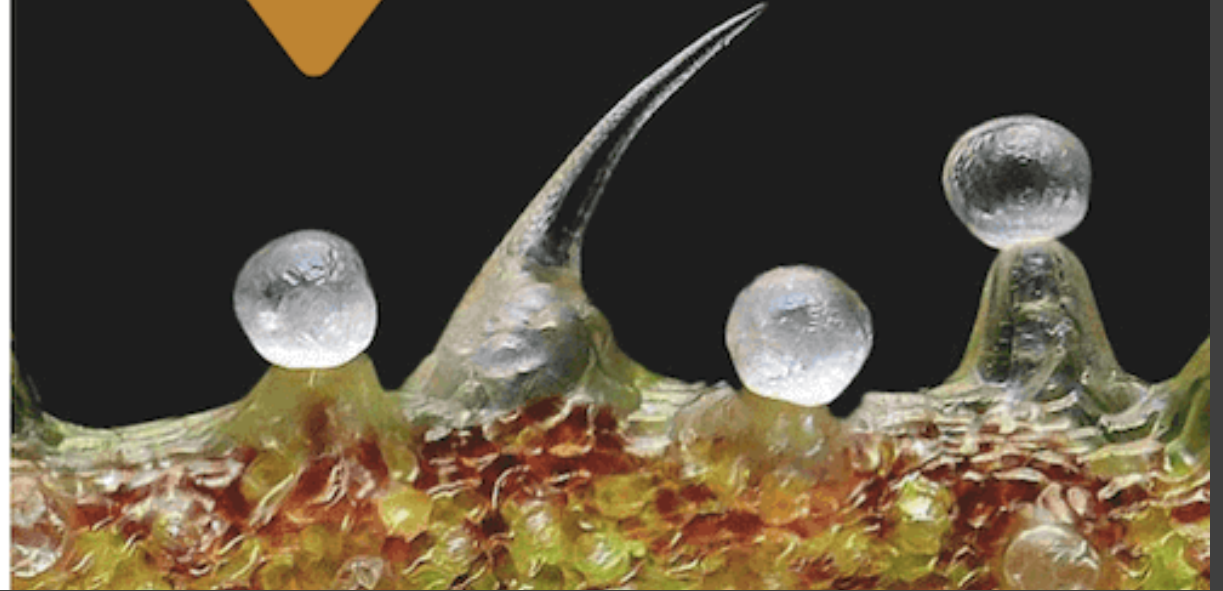
- Cannabis is a genus of flowering plants that include multiple subspecies
 - Cannabis Sativa
 - Cannabis Indica
 - Cannabis Ruderalis
- Over 400 chemical compounds produced by the cannabis plant have been identified
- Over 60 of these compounds are unique to the cannabis plant



Cannabis 102 – Cannabinoids



Magnified Resin Gland
Showing Trichomes containing
Cannabis Terpenes.



Cannabinoids, the active compounds in cannabis, are found in the trichomes.

Trichomes

The primary medicinal properties of Cannabis are found within the plant's resin glands, called trichomes.

Pharmacodynamics

- Pharmacodynamics – The branch of pharmacology concerned with the effects of drugs and the mechanism of their action
- ASSOCIATED EFFECTS

THC

- Antinociception (Pain relief)
- Anti-Nausea
- Reduced locomotor activity
- Endocrine system modulation
- Decreased intraocular pressure

CBD

- Anti-epileptic
- Anti-inflammatory
- Anti-Anxiety
- Anti-emetic

THC + CBD

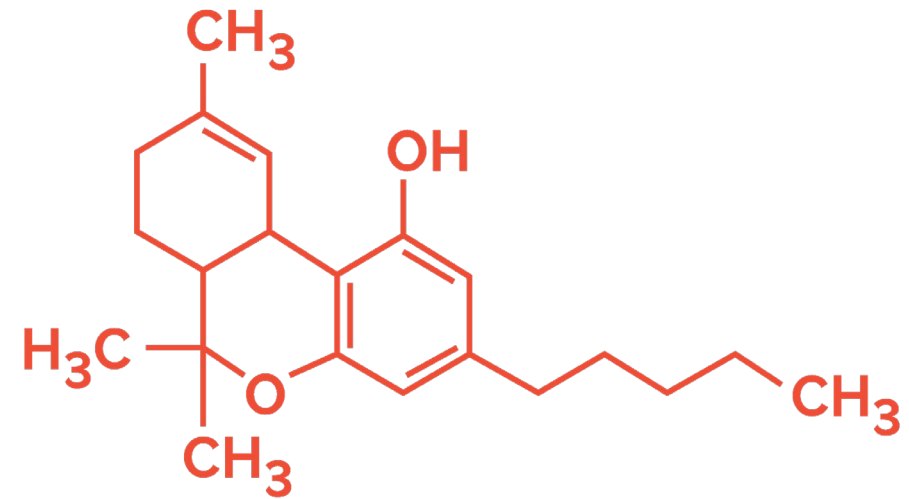
- Inhibit memory interruption associated with high amounts of THC
- Reduce anxiety associated with high THC chemovars

Raw, Heated, and Aged Cannabinoids

- Believe it or not, raw cannabis does not have psychoactive effects.
- There are three main ways to find your cannabis:
 - Raw (acidic form)
 - Raw cannabis is what you consume when you drink juiced cannabis, use a raw cannabis tincture, or otherwise consume cannabis that has not been heated in any way.
 - Activated (Usually done with heat)
 - Once heated, your cannabis goes from being acidic to being “activated”. This is what gives cannabis containing THC the euphoric effects.
 - Aged
 - When cannabis ages, the THC degrades over time into another cannabinoid called CBN.

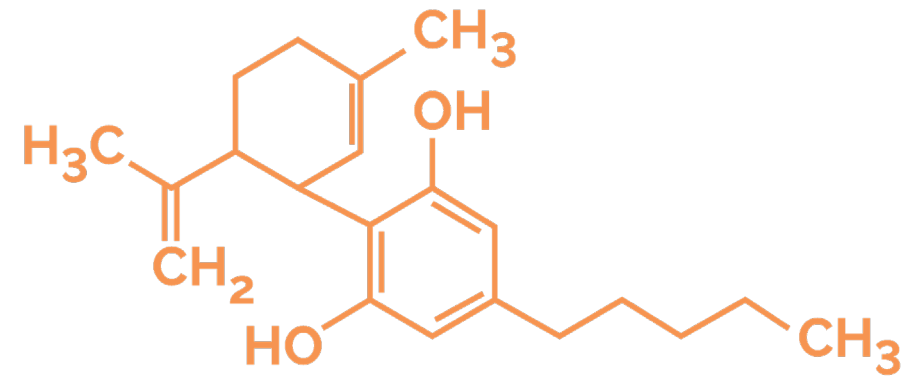
THC - Tetrahydrocannabinol

- This cannabinoid, once activated (heated) is psychotropic and will likely result in a euphoric feeling.
- Before heating THC, it is THC-a and has little-to-no euphoria.
- Active THC binds to cannabinoid receptors in the CNS and the periphery resulting in its associated effects
- Patient's **report** using THC to assist with some of the symptoms of their qualifying condition, including (but not limited to):
 - Inflammation
 - Analgesia
 - Insomnia
 - Cachexia
 - Nausea & Vomiting



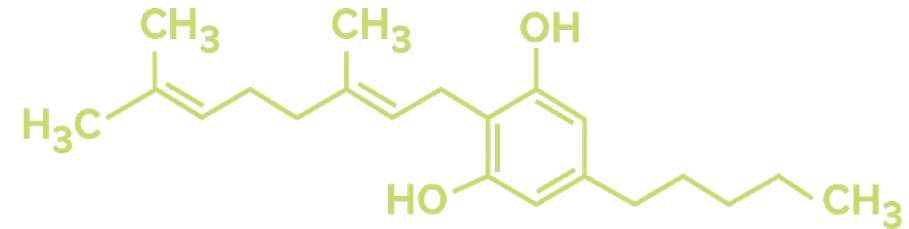
CBD - Cannabidiol

- This cannabinoid (whether raw or heated) is unlikely to cause any sort of euphoria*
 - There are a **very** small amount of cannabis consumers who report feeling a light euphoria from using CBD. This is most likely due to the hi levels of Myrcene produced by most of the cultivators
- Patient's report using CBD when they've overconsumed THC as a way of lessening the euphoria.
- Patients who use CBD **report** using it to assist with symptoms of qualifying conditions, including (but not limited to):
 - Anxiety
 - Analgesia
 - Spasms
 - Convulsions



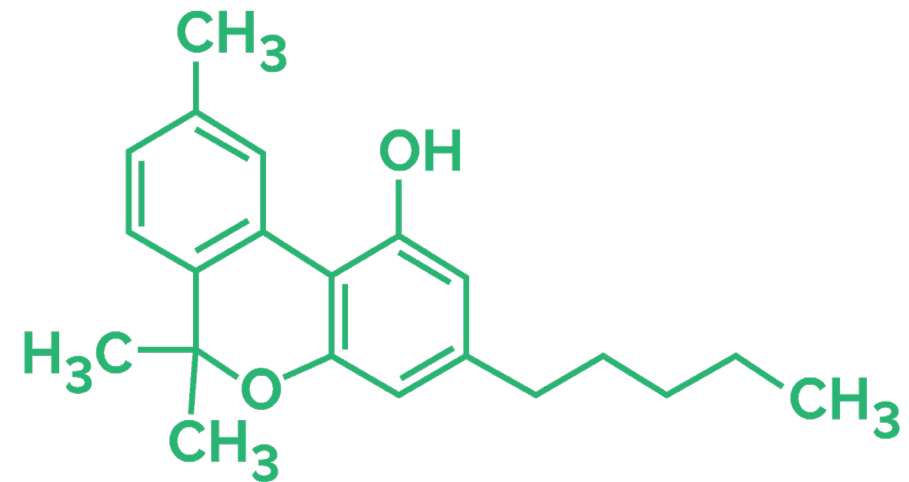
CBG - Cannabigerol

- This cannabinoid occurs in very low quantities in the cannabis plant.
 - High levels = above 1%
- Patients **report** most frequently using this cannabinoid to assist with symptoms of qualifying conditions (including, but not limited to):
 - Irritable Bowel Disease
 - Crohn's and Colitis
 - Spasm disorders
 - MS



CBN - Cannabinol

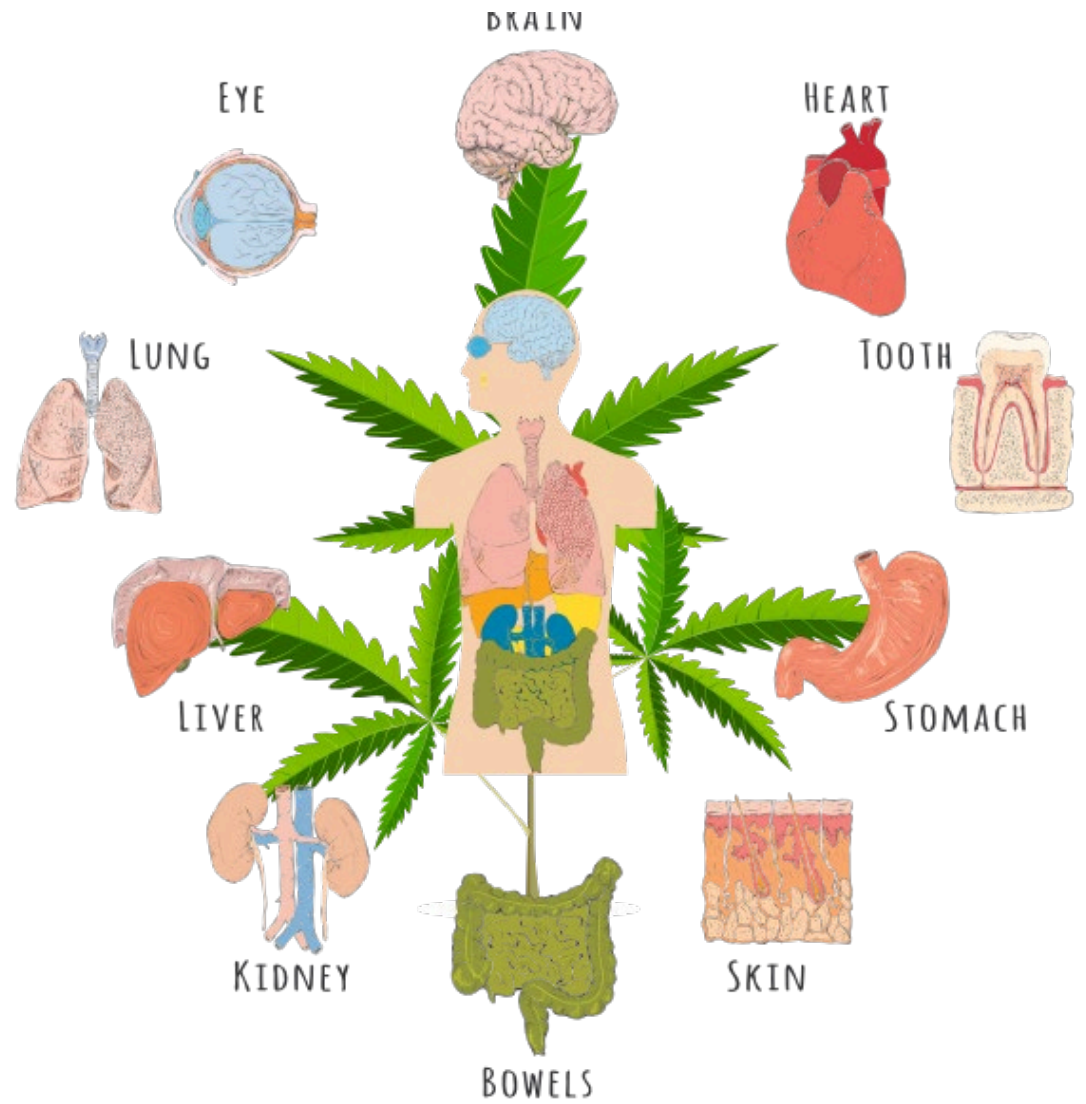
- This cannabinoid is not found in fresh plant material; it is only found in aged cannabis.
- THC degrades into CBN over time.
- It is reported to be mildly euphoric.
- Patients **report** using this cannabinoid to assist with symptoms of qualifying conditions (including, but not limited to):
 - Insomnia



The Endocannabinoid System

The Endocannabinoid System (The ECS)

- We are all born with an Endocannabinoid System. The goal of your ECS is to promote homeostasis; optimal balance in the body.
- The sole purpose of this system is to receive and react to endocannabinoids and phytocannabinoids; with endocannabinoids being those made by our bodies (like Anandamide and 2-AG) and phytocannabinoids referring to those made by cannabis plants (like THC and CBD).
- Endocannabinoids and their receptors (CB-1 and CB-2) are found throughout the body; in the brain, organs, connective tissues, glands, and immune cells.



Precautions/Adverse Events

Precautions

The most seen side effects/adverse reactions from Cannabis occur within 3 systems of the human body

Cardiovascular System – Tachycardia, palpitations, hypertension

Respiratory System – Coughing, wheezing, sputum production, increased susceptibility to upper respiratory issues

Central Nervous System – Lethargy, Sedation, slowed reaction time, impaired coordination, memory loss, visual disturbances

The most common adverse effects of cannabis – Dysphoria, Nausea, Dizziness, Syncope, Ataxia, Dry Mouth and Bronchitis

*Tachycardia is a condition that caused the heart to beat more than 100 times per minute

Side Effects

Side Effects are impacted by:

- Dose – Amount of Cannabis used
- Method of Administration – Method by which cannabis is used
- Tolerance – Based on body composition, prior use and social context
- Chemovar – Chemovar with high levels of THC may have more psychoactive properties while cannabidiol (CBD) can have a moderating effects.

“Overconsumption” – Cannabis Toxicity

- Overconsumption from cannabis is generally associated with ingesting high levels of THC. This often happens when ingestible products are poorly labeled or when there is a slower onset of action than expected
- Lack of cannabinoid receptors in respiratory centers in the brain stem, results in Low LD rate
- Signs of overconsumption:
 - Rapid Heart Rate
 - Hallucinations
 - Panic Attacks
- In the event of an emergency do not hesitate to contact Poison Control: 1-800-222-1222

Drug Interactions



Potential Drug Interactions

- **Drug-Drug Interactions - Cannabinoids can affect the efficacy of other medications (Vice Verse)**
 - Cannabinoids as well as many terpenes are metabolized by enzymes in the liver
 - The majority of prescription/OTC medications are metabolized by enzymes in the liver
 - Cannabinoids/Other medications can increase/decrease the activity of the enzymes they interact with
- **It is important patients be aware of these potential interactions**
 - Establish honest and open relationships with patients
 - Talk to a qualified professional
 - Dosing/monitoring can be adjusted to avoid adverse events
- **Potential Drug-Disease State Interactions**
 - Cannabis may exacerbate a patient's condition
 - Patients taking medications that act on the CNS along with cannabis

Methods of Administration

Inhalation

- Smoking or vaporizing
- Fast acting making it easy to dose
- Onset in about 20 minutes
- Duration 1-2 hours
- Vaporizing is a more alternative method than smoking



Edible and Oral Administration

Edible(digestive tract)

- Slow onset: 30-90 minutes or more
- Long lasting effects: 6-8 hours or more
- Start LOW and go SLOW!

Oral

- Sublingual/oral mucosal (under the tongue)
 - Fast acting, onset: 15-45 minutes
 - Short duration: 1-2 hours
- No Cannabis Odor



Topical

- Localized relief delivered through the skin
- Not an option for all ailments
- Non-psychoactive on most parts of the body
- Does not typically cross the blood-brain barrier



Sources

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Questions?

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