



THE ENDOCANNABINOID SYSTEM'S INTERACTIONS WITH THC, CBN, & CBD

Budtender Fight Club

August 12, 2018

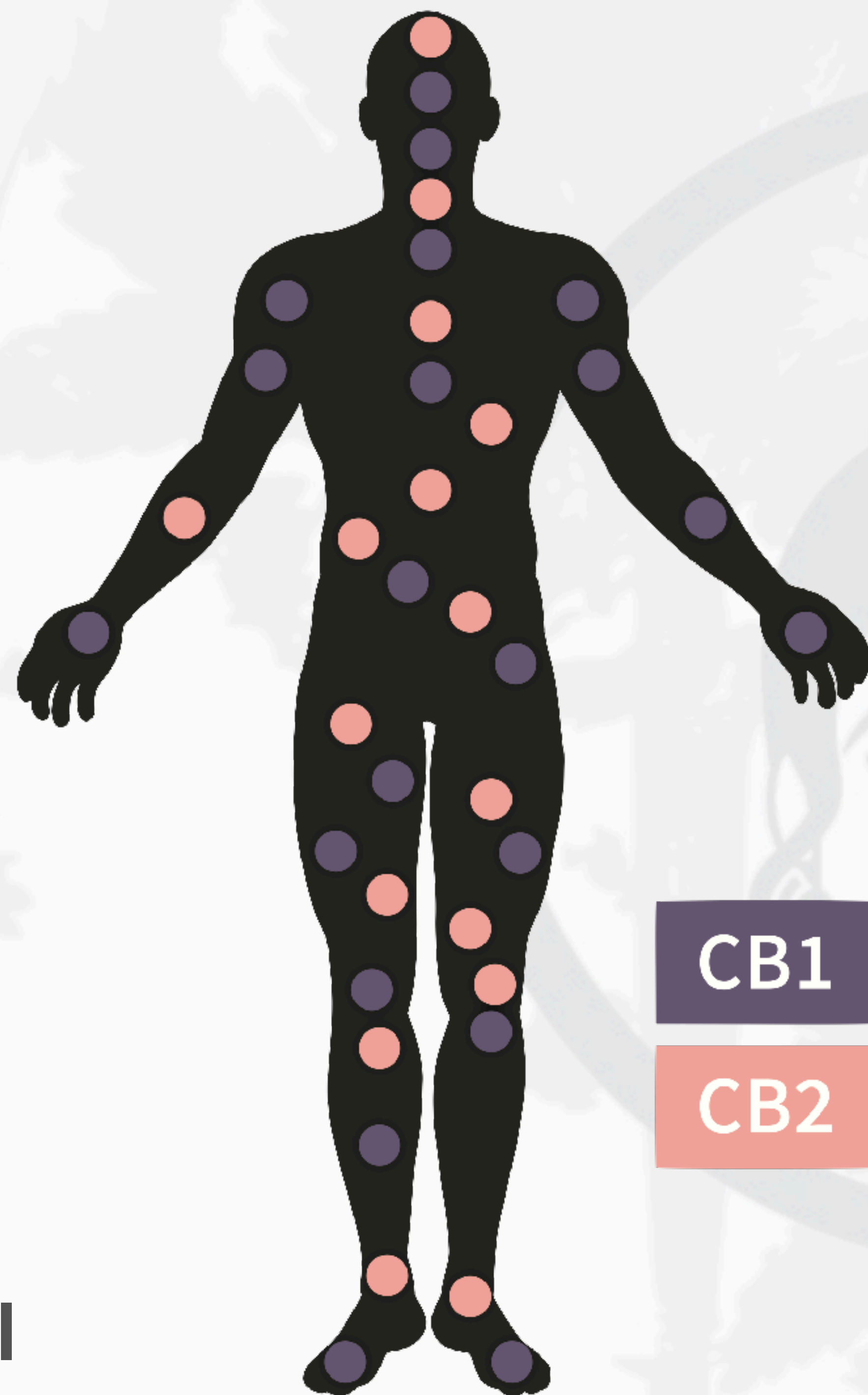
YOU'LL LEARN ABOUT

- The ECS & it's role in maintaining/achieving health
- Cannabinoid receptors
- The types of major cannabinoids & how they interact with cannabis
- Using the ECS to treat health conditions

WHAT IS THE ENDOCANNABINOID SYSTEM?

- Endocannabinoid System = ECS
- System of intercellular neurotransmitters - body's internal communication network
- Made up of cannabinoid receptors, ENDOcannabinoid molecules, & the metabolic enzymes that both produce & destroy them

- **Cannabinoid receptors**
 - **Example: CB1 & CB2 receptors (see fig. 1)**
- **Endocannabinoid molecules - “endo” means produced by the body (“phyto” means produced by plants)**
 - **Example: Anandamide (AEA) - “bliss molecule”, also causes apoptotic pathway in Chang liver cells (liver fibrosis)**
- **Metabolic enzymes**
 - **Example: Fatty Acid Amide Hydrolase (FAAH) enzyme - destroys Anandamide**



Embedded in the cell membrane of most cells - some cells have both receptors!

CB1

activated by THC

CB2

activated by CBN
decarboxylated, or heated up, form of THC

“The cannabinoid receptor is a typical member of the largest known family of receptors: the G protein-coupled receptors with their distinctive pattern in which the receptor molecule spans the cell membrane seven times. .”
–J <https://www.ncbi.nlm.nih.gov/books/NBK230721/>

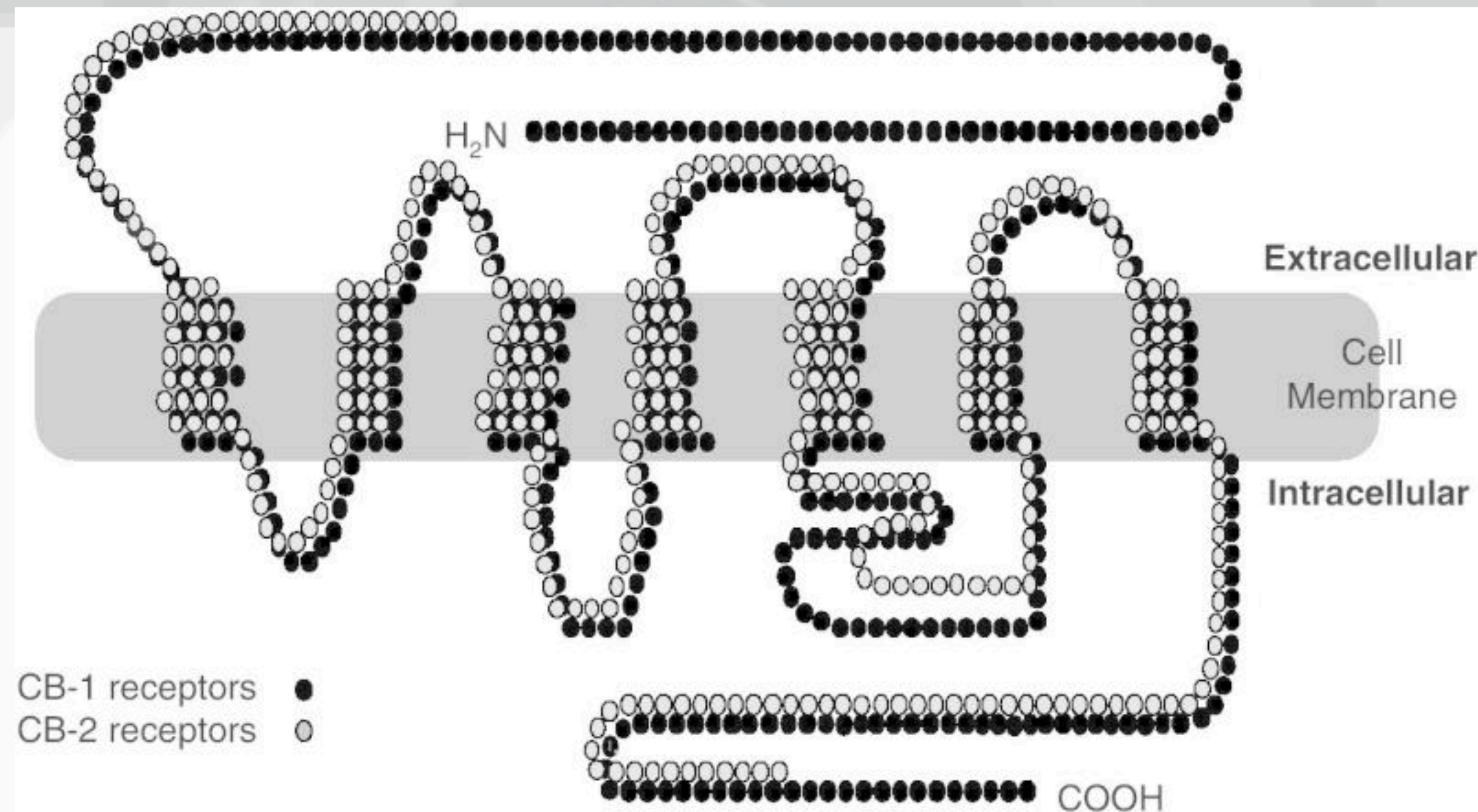


fig. 2

THE ECS'S ROLE IN ACHIEVING/MAINTAINING A HEALTHY SYSTEM

- **The ECS is responsible for maintaining balance or “a state of homeostasis”**
- **Symptoms are not present when functioning normally**



HOW DO THC, CBN, & CBD INTERACT WITH THE ECS?

THC

- **THC activates the CBI receptor**
- **CBI receptors are located throughout the central nervous system & concentrated in the brain**
- **Psychoactive**
- **STRONG driver for the rest of the medicine present**

***medicine refers to the remaining cannabinoids, terpenoids, & flavonoids present**

CBN

- CBN activates the CB2 receptor
- CB2 receptors are located throughout the system peripherally & concentrated in the organs, particularly, the spleen
- Non psychoactive
- Driver for the rest of the medicine present
- Sleep inducing

*medicine refers to the remaining cannabinoids, terpenoids, & flavonoids present

CBD

- Does NOT bind to either receptor - more globs on
- Inhibits the FAAH enzyme - increasing the production of anandamide
- Non psychoactive
- Gentle catalyst for the rest of the medicine present
- DOES bind to the TRP variant I
- BE CAREFUL DISPENSING CBD TO PATIENTS TAKING HEART MEDS!



- CBD is more powerful than grapefruit - potential for overdose w/heart meds

***medicine refers to the remaining cannabinoids, terpenoids, & flavonoids present**

Personal example:

- I was on a high dose CBD regimen, almost ran out so I stopped taking it in the evening.
- I woke up in an **EXTREMELY** depressed state the next morning.
- Administered some of the high dose tincture, within minutes the extreme depression & anxiety was gone.

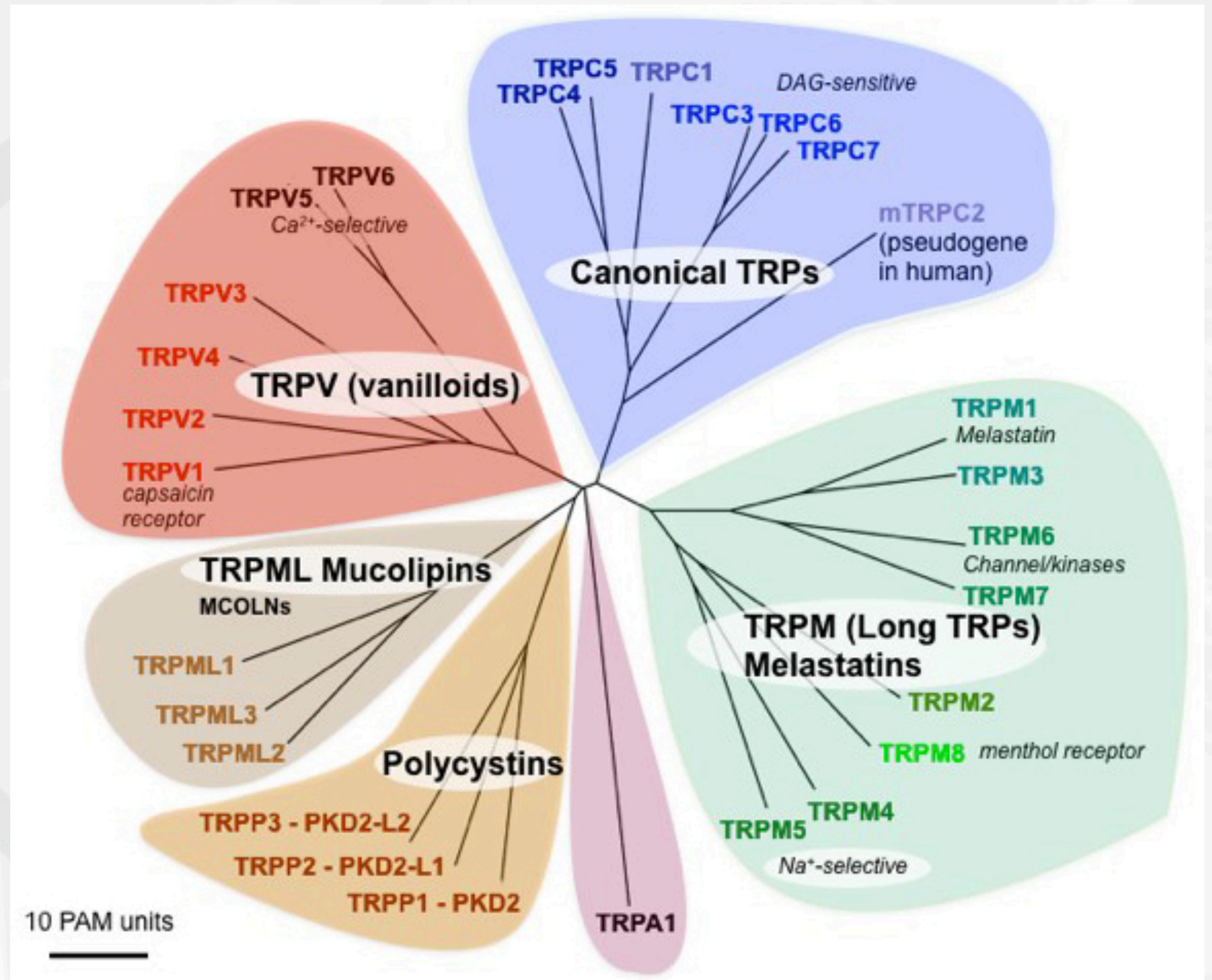
WHY DID THIS HAPPEN?

- After experiencing “the great crash” I **theorize** that I have an overactive FAAH enzyme
- By inhibiting the FAAH enzyme with the CBD tincture, my system flooded with anandamide, relieving the depression & anxiety

Transient Receptor Potential (TRP) Channel System

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Where terpenes
come to play...

Along with CB
receptors, we have a
specific TRP channel
system in most cells.



WHAT ROLE DO TERPENES PLAY?

- Responsible for the individual effects of strains (including for CBD dominant strains...)
- Cerebral versus body relaxing - look at the terpene profile
- Keep in mind we do not test for anywhere near the # of terpenes that exist (200+)
- β -caryophyllene - only terpene that is in every strain of cannabis



Without major cannabinoids
Missing the drivers/catalyst for the medicine



Without terpenes
Responsible for the nuances amongst strains



Everything working **synergistically together** creates a masterpiece.
-ENTOURAGE EFFECT-

Does it matter
where the
terpenes came
from in regards
to efficacy?

Epoxy



Superglue



Glue



Double-sided tape



Whole Plant

Cannabis Derived

Plant Derived

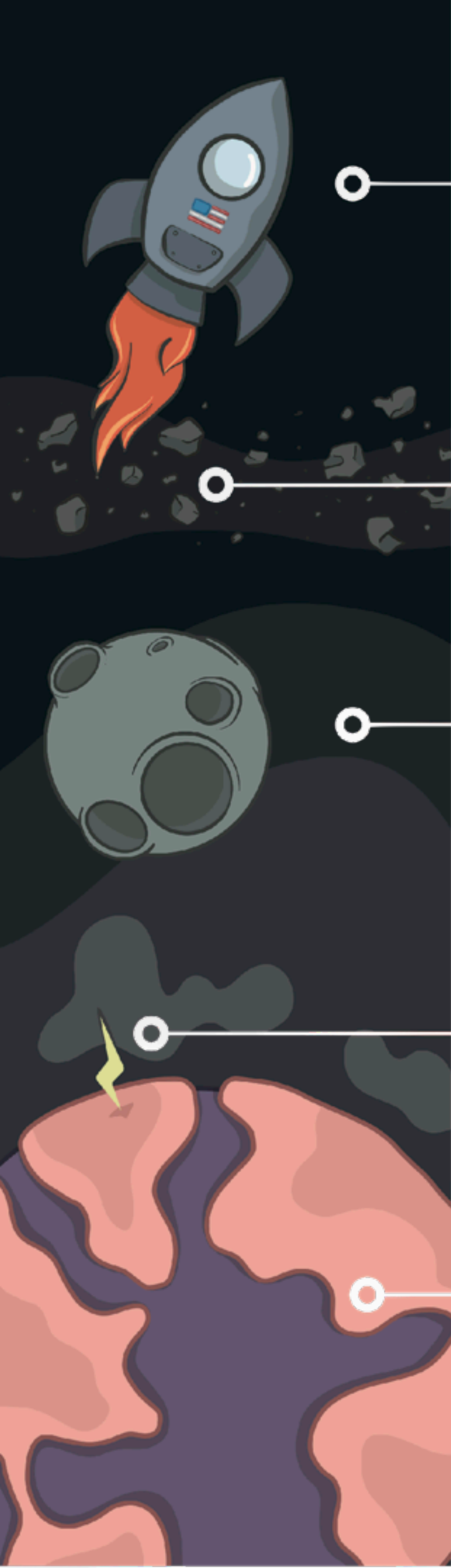
Synthetic



USING THE ECS TO TREAT CONDITIONS

RECOGNIZE WHICH RECEPTORS ARE INVOLVED

- **LISTEN** to the client and learn what condition(s) they are suffering from - everything plays a role in how their system responds
- The more conditions, the more precise the cannabinoid profile needs to be to be effective (this may mean using a number of strains to treat their symptoms)
- **Fun Fact:** the average human body contains over 37.2 trillion cells! That's a lot of receptors...



HIGH THC

Emergency Meds
conditions needing steroids, narcotics, etc

THC:CBD

More involved treatment
conditions involving the central nervous system

CBD:THC

Involved treatment
for conditions involving the nervous system

CBD
WHOLE PLANT

Standard treatment
for conditions not involving the nervous system

CBD ISOLATE

Excellent starting point
for preventative measures
&/or avoiding a drug test

LISTEN TO THE CLIENT'S NEEDS

- Listen to how the client **WANTS** to medicate, try to make it work for **them**
- Terpenes matter significantly for individual systems, urge them to journal to keep track of effects from various strains/medicaments

WHAT DID WE LEARN?

- The ECS is paramount to maintain/achieve a state of good health
- CB1 receptor is activated by THC, concentrated in brain & central nervous system
- CB2 receptor is activated by CBN
- THC, CBN, & CBD...
- Terpenes Matter!
- How to treat general conditions targeting the ECS
- LISTEN to the client, form their treatment regimen around their conditions, lifestyle, and specific needs &/or demands

It is extremely beneficial to learn about the endocannabinoid system helping people learn to heal themselves.

By taking advantage of a variety of applications, one is able to more comprehensively treat themselves.

Finally, the more symptoms - the more specific the cannabinoid profile needs to be.

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