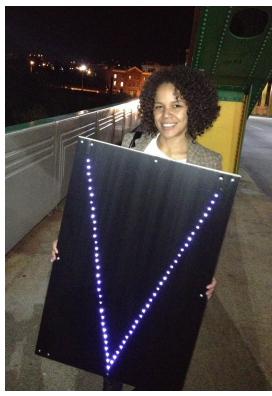


“I must remind you that starving a child is violence. Suppressing a culture is violence. Neglecting school children is violence. Punishing a mother and her family is violence. Discrimination against a working man is violence. Ghetto housing is violence. Ignoring medical need is violence. Contempt for poverty is violence.”

Coretta Scott King



Science is political.

From Occupying Wall St. to Occupying the Wall St. Journal...

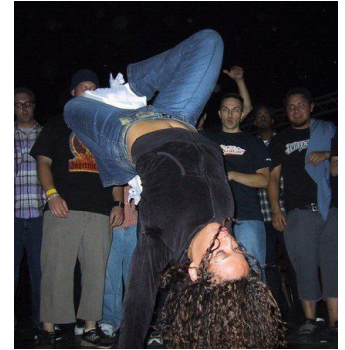
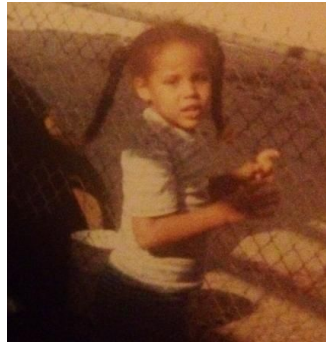
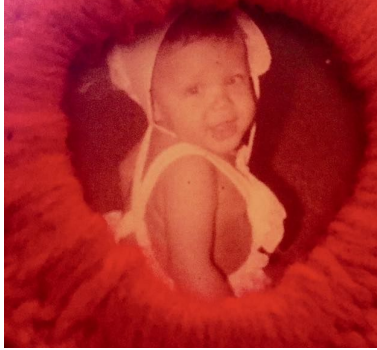


Who am I?

One individual with several intersectionalities...



California State University
Northridge



THE
PACEM FACERE BELLUM GERERE
POT
LAB
SERVICE. EDUCATION. RESEARCH.


Cannabis is illegal due to racism.

- There is no conclusive medical, scientific or metaphysical evidence that *Cannabis* use is harmful.
 - Studies showing brain cell death were done on brain cancer derived cell culture models.
 - Pregnant heavy users in Jamaica had normal to above normal intelligence children.
- Historical evidence of racist legislation
 - “Dagga” seeds came with African slaves
 - Native Americans (“Hispanics” he refers to) localized to Mexico were enslaved by Spain to grow Cannabis for sailcloth.
- African and Native history erased in modern legalization measures and legislation.
 - “**Social Equity**” used for furthering measures for the wealthy- becomes vanity term.
 - **No finances** allocated for assisting victims or paying reparations for the War on Drugs.

THE REAL REASON CANNABIS IS ILLEGAL:
MEET HARRY ANSLINGER, HEAD OF THE DEA FROM 1930-1962

"Most marijuana smokers are Negroes, Hispanics, jazz musicians, and entertainers. Their satanic music is driven by marijuana, and marijuana smoking by white women makes them want to seek sexual relations with Negroes, entertainers, and others. It is a drug that causes insanity, criminality, and death — the most violence-causing drug in the history of mankind."

Reefer makes darkies think they're as good as white men
- Harry J. Anslinger



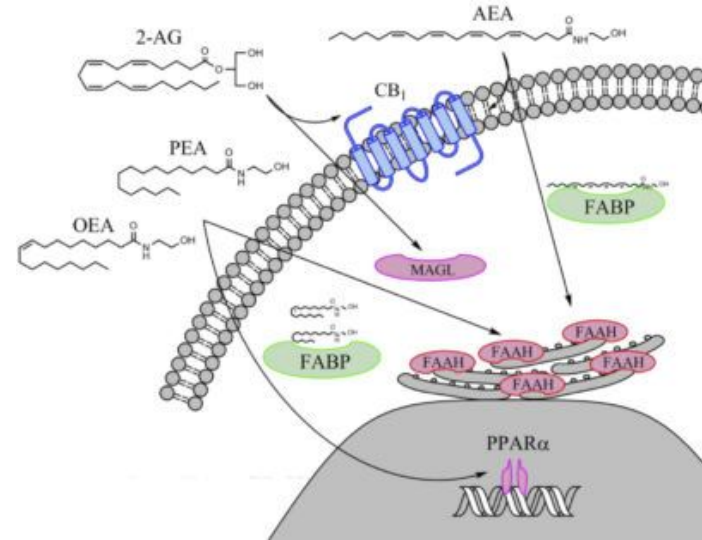
How does *Cannabis* work?

Exo-cannabinoids bind to receptors and Increase **Endo**cannabinoids

Endocannabinoids normally regulate sleep, appetite and many other bodily functions.

Endocannabinoid system can be overused, damaged or diseased, requiring outside help from “exocannabinoids” (from *Cannabis*)

In addition to binding CB receptors, THC and CBD can block the degradation of endocannabinoids in the nervous system.



Deutsch, et al., 2015
Journal of Biological Chemistry

Cannabinoids, *Cannabis* and Calcium: *Calcium Signaling*

- Calcium

- Non-degradable second messenger
- Relies on binding and/or transport for regulation
- Moves in the body (and cells) through a series of carefully regulated channels, pumps, exchangers and binding partners
- Responsible for every finite detail of life, itself.

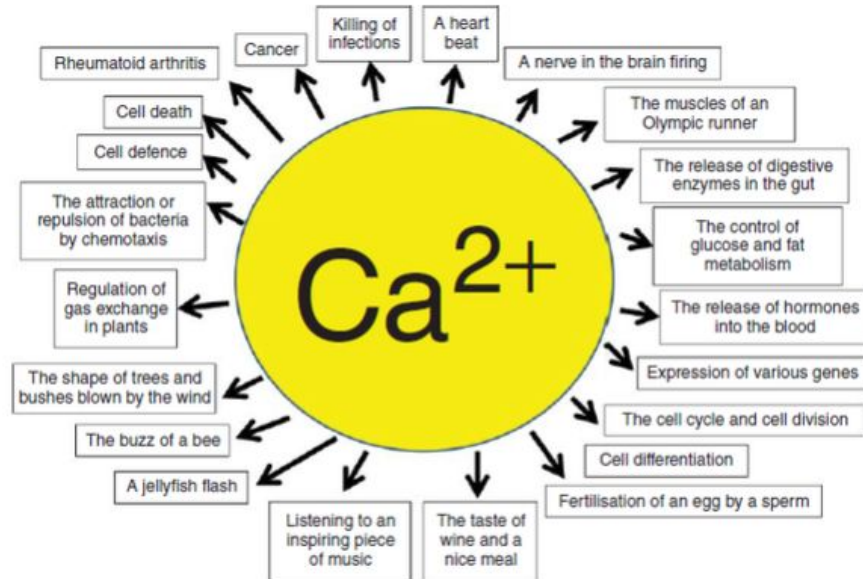


Figure 13.1 The diversity of cellular processes triggered by a rise in intracellular Ca^{2+} . Reproduced by permission of Welston Court Science Centre.

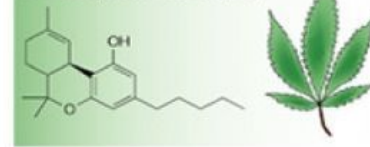
Cannabinoids, *Cannabis* and Calcium: *Physiology*

- **THC**

- Binds CB Receptors
 - Receptors recruit cell machinery
 - Increases/Decreases intracellular calcium
 - Blocks breakdown of endocannabinoids.
- Not all cannabinoids affect CB receptors.
- THC and CBD prevent the breakdown of endocannabinoids. (2011)
- Differential Ca^{2+} effects.

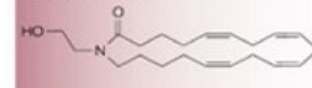
Plant-derived cannabinoid

Δ^9 -Tetrahydrocannabinol (THC)

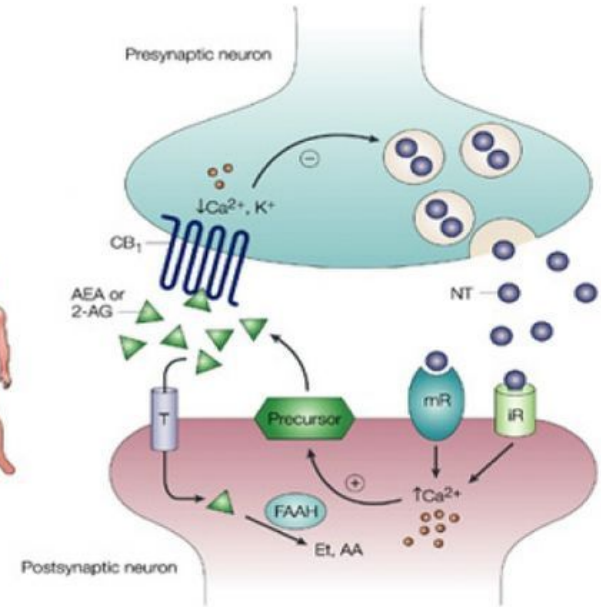


Endogenous cannabinoids

Anandamide (AEA)

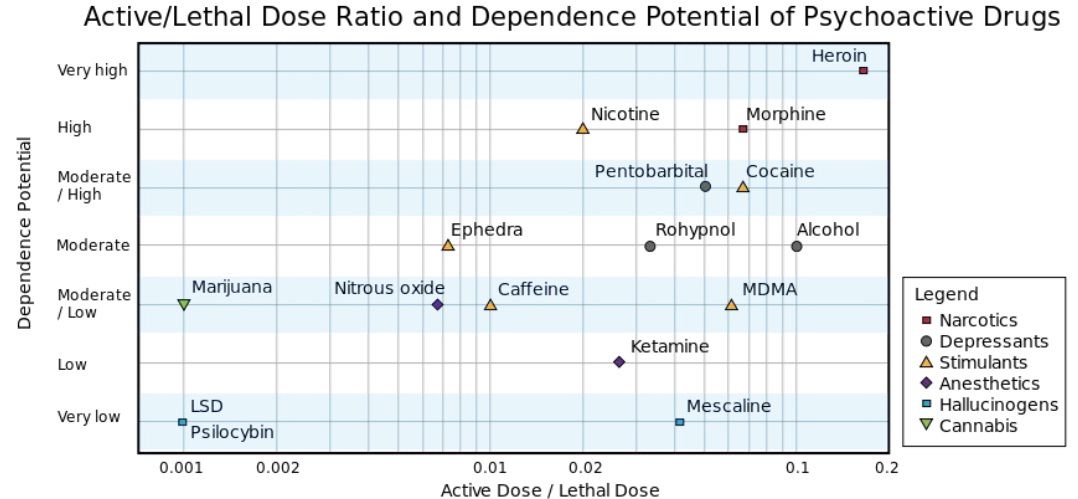


2-Arachidonoylglycerol (2-AG)



Cannabis is not toxic.

- *Cannabis*, also known as marijuana, contains over 500 natural compounds.
- Cannabinoids make up at least **85** of those compounds.
- While ONE cannabinoid (THC), is psychoactive, others are not.
- THC is psychotropic.
 - THC can *feel* toxic but is not even close to other means of pain relief.



Gable, R. S. (2006). Acute toxicity of drugs versus regulatory status. In J. M. Fish (Ed.), *Drugs and Society: U.S. Public Policy*, pp.149-162



What is *Cannabis*?

Its a *plant*!

Angiosperm

Order- Rosales

Family- Cannabaceae

Cannabis is a plant

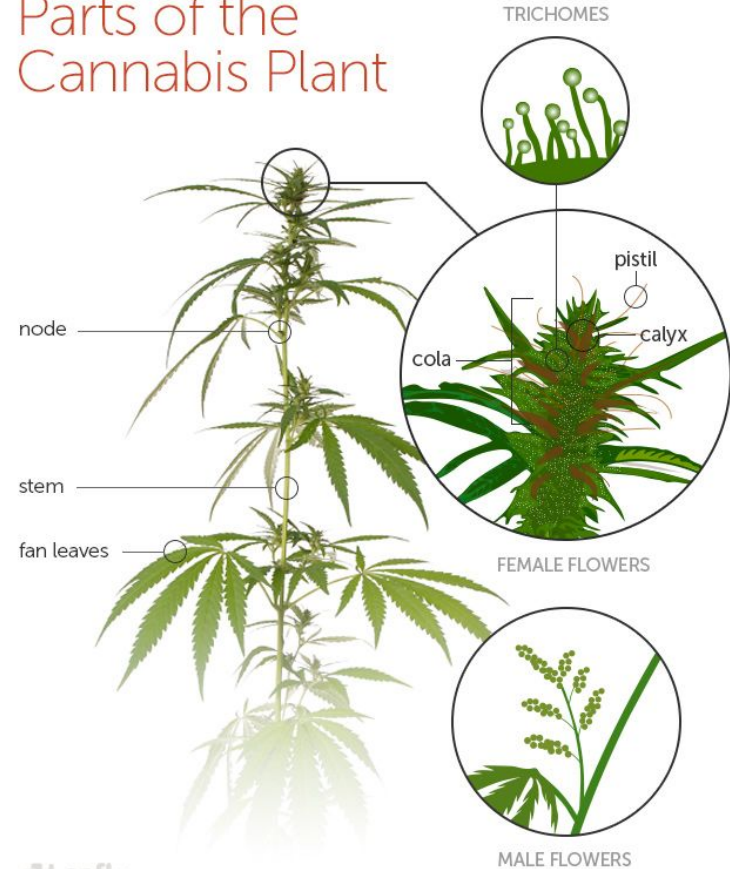
The anatomy of *Cannabis* is important to understanding potency and where active cannabinoids are found.

Highest Cannabinoid Potency

- Trichomes
- Female Flowers/Pistils
- Male Flowers
- “Sugar Leaves” (small)
- Fan/”Water” Leaves (large)

Least Cannabinoid Potency

Parts of the Cannabis Plant



Inside the Trichomes: *Tiny Terpenoid Factories*

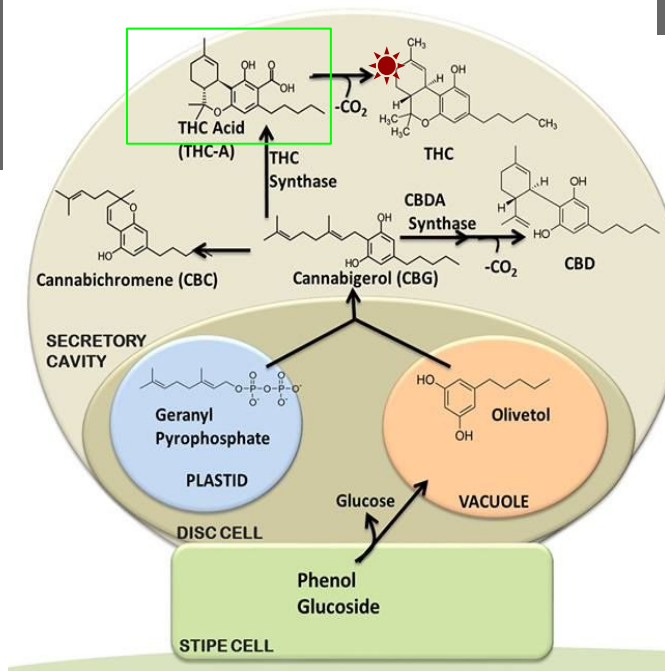
Cannabis makes over 70 cannabinoid-type compounds which are non-psychoactive, but possibly medically relevant.

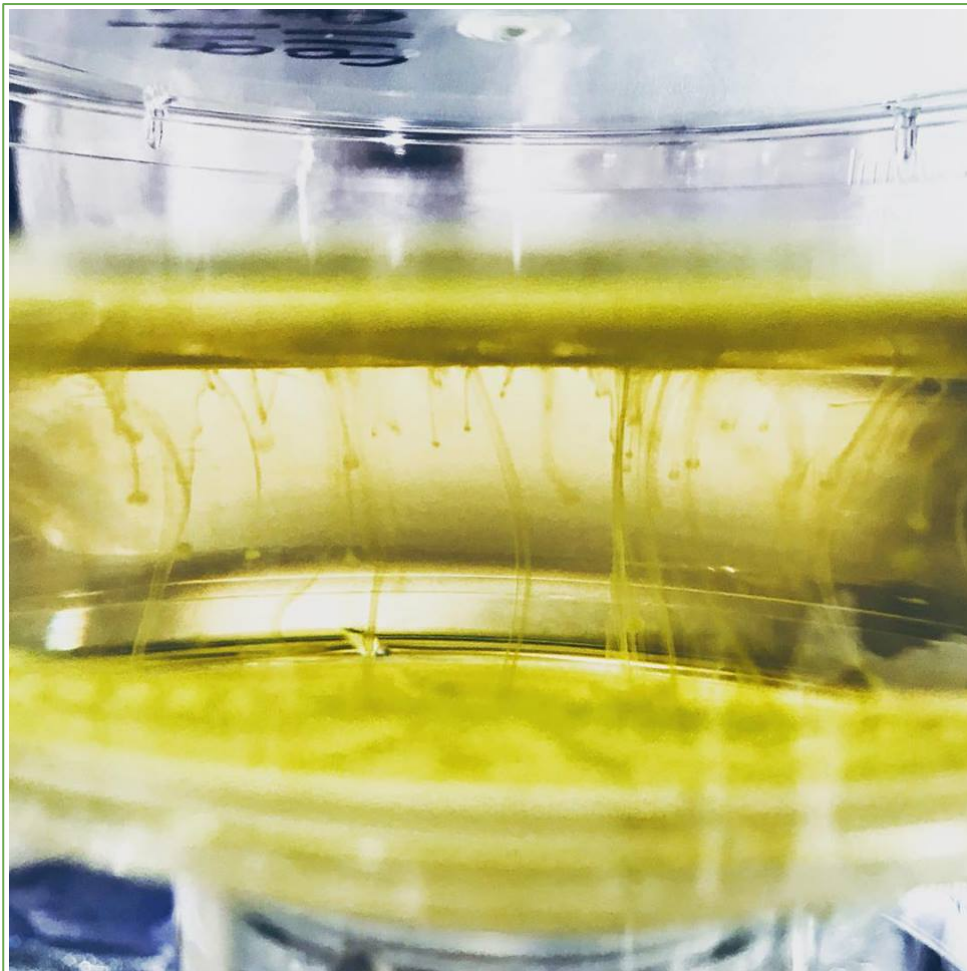
→ Disc cells provide the perfect environment to secrete **CBG** (cannabigerol)- the base cannabinoid, into the secretory cavity.

To produce THC, a substantial heat source must convert THCA → THC

Over 95% of cannabinoids are sequestered within the trichome.

←All cannabinoids are manufactured from **phenol glucoside** released from the Stipe Cell.





The 'A-list':

Raw *Cannabis* Oil Alleviates Symptoms of Multiple Conditions at Dietary Levels

Dr. Brandie M Cross, PhD

Founder, The Pot Lab

Chief Science Officer, Smart Pharm Research Group, LLC (SPRG)



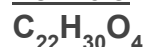
SMART PHARM
RESEARCH GROUP

What is THCA?

- Non-psychoactive cannabinoid in cold-pressed/extracted *Cannabis* strains
- Anti-inflammatory (Ruhaak, 2011)
- Neuroprotective (Moldzio, 2012)
- Antiemetic (anti-vomiting)(Rock, 2013)
- Anti-cancer (De Petrocellis, 2013)
- Low binding efficiency to CB1 & CB2 receptors
- Possible inhibition of cellular channels (TRP)
- NOT scheduled by the UN or federally due to its empirical formula and properties.

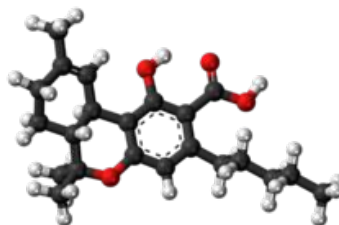
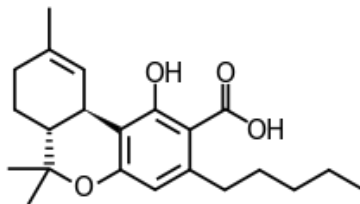
THCA

Formula



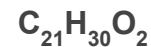
Molar mass

358.4733 g/mol



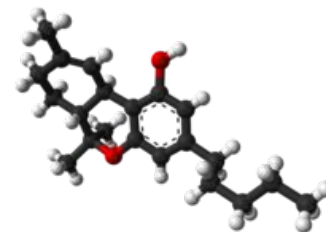
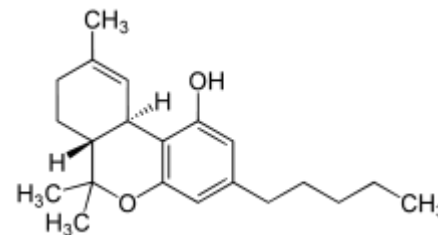
THC

Formula



Molar mass

314.469 g/mol



Summary of Golden Earth

[Hemp seed and MCT oil - stabilized suspension of 0.5% THCA (tetrahydrocannabinolic acid) & mint extract]

Composition and Processing:

- **Golden Earth** is processed by eco-sustainable techniques which are sustainable and non-toxic.
- Our extraction protocol uses **no petrol-derived chemicals** and all process are carried out in a energy efficient manner.
- Our process is **solvent-free** and there are **no added artificial flavorings or colorings**.

List of Ingredients:

- Hemp Seed Oil
- Coconut Mct
- Blended Mint* Oils
- 5 mg/ml THCA Hemp Extract (0.5% THCA)

GOLDEN EARTH



Proposed “Active” Ingredients

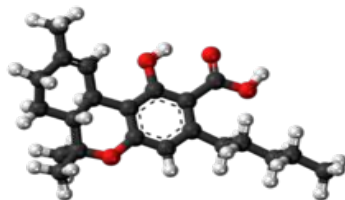


THCA

(*tetrahydrocannabinolic acid*) [0.5%]

Molecular Formula: $C_{22}H_{30}O_4$

Molecular Weight: 358.47 g/mol



- Found in cold-pressed *Cannabis*
- Non-psychoactive
- Anti-inflammatory (Ruhaak, 2011)
- Neuroprotective (Moldzio, 2012)
- Antiemetic (anti-vomiting)(Rock, 2013)
- Anti-cancer (De Petrocellis, 2013)

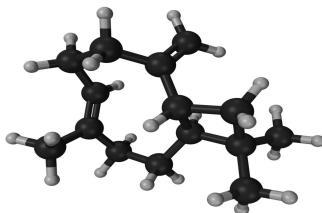


Beta-Caryophyllene

[0.1%]

Molecular Formula: $C_{15}H_{24}$

Molecular Weight: 204.36 g/mol



Fun Fact: While it is often associated with *Cannabis*, **beta-caryophyllene** (BCP) is one of more than 30,000 terpenes found in nature. BCP is a bicyclic sesquiterpene and is found in essential oils including basil, black caraway, oregano, lavender, rosemary, cinnamon, ylang-ylang.



Hemp Seed Oil [59.4%]

-Omega Fatty Acid-Rich



- Almost 85 percent essential fatty acids (EFAs)
- Richest, most balanced natural source of EFAs.
- Exhibits the highest total phenolic content and antioxidant activity compared to all other plant-based oils (exception of pumpkin seed oil).
- Known to play a key role in reducing the risk of cancer, relieving systemic inflammation, acting as a powerful antioxidant and promoting free radical elimination.

Community Inclusion: Demographics Reflect Diversity

Golden Earth Project: Community Demographics	
Individuals Reporting	
Sex	Percentage (%)
Female	60.4
Male	39.6
Under 18 yrs old	62.5
Over 18 yrs. old	37.5
Rare Genetic Disease	9.5
Average Dose	0.3 ml
Average Frequency	2-3 X per day
Average Daily THCA Intake	5.2 mg (+/- 0.05 mg/ml)
Total Respondents (n)	178

Inclusive Research Goals

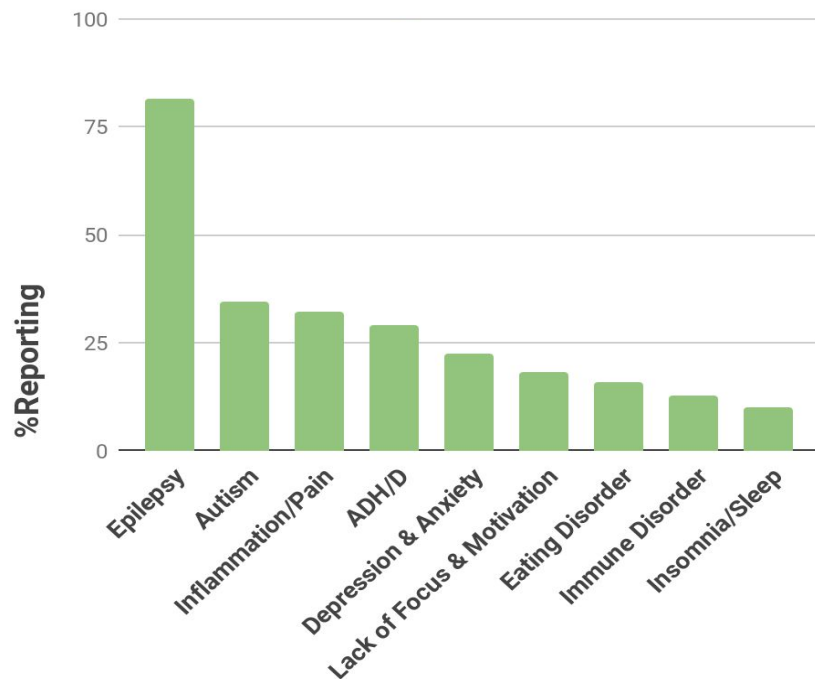
1. Facilitate participation from a diverse pool of symptoms and disease progression.
2. Facilitate relief for a wide range of ages, class, sex, gender, race and weight.
3. Creates localized support forums which feed the larger impact of the data.



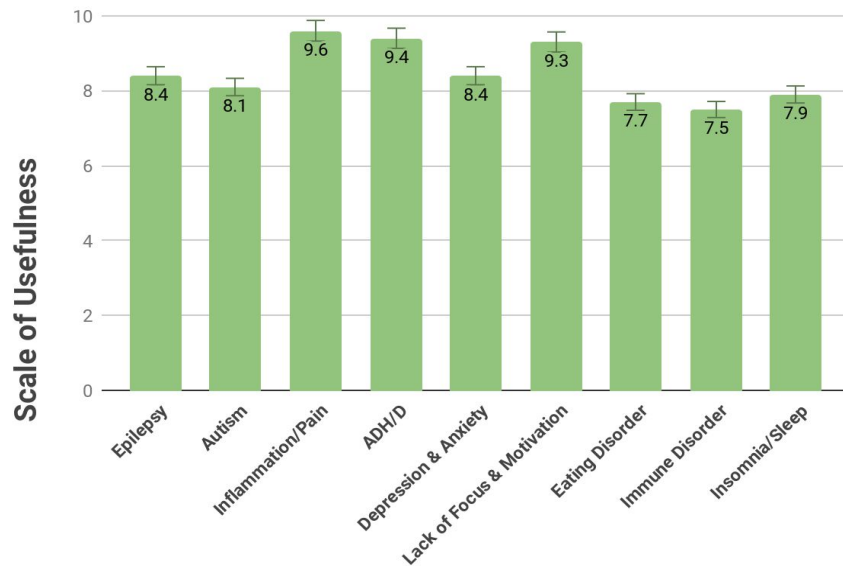
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How useful is Golden Earth?

Self- Reported Use & Usefulness

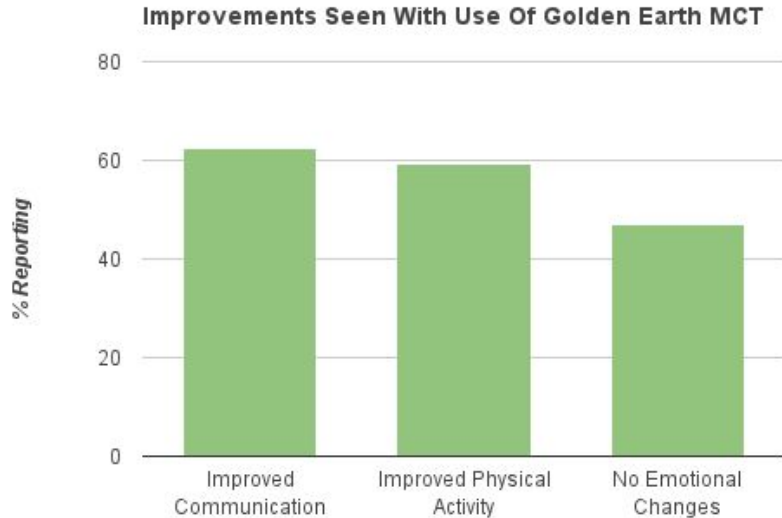


Usefulness for Specific Conditions [1-10 Scale; Averaged Response]

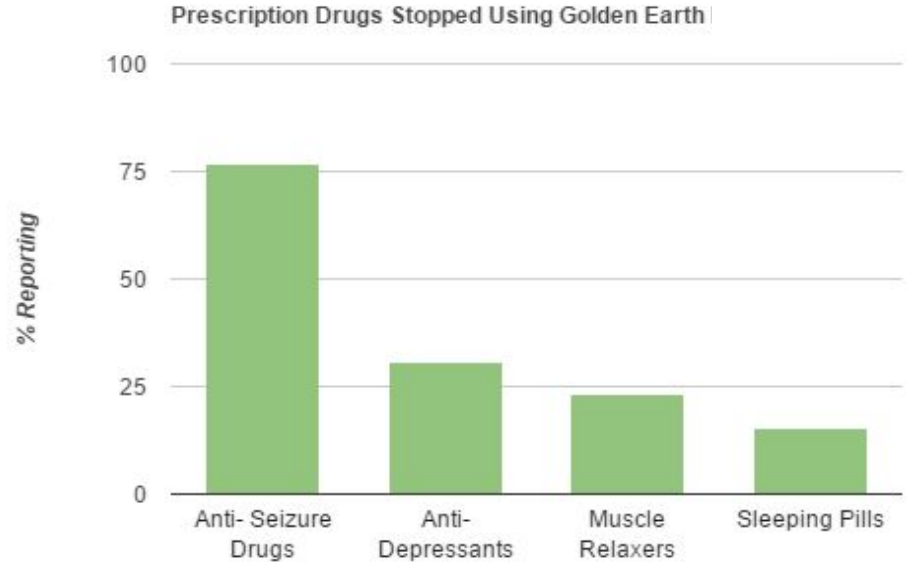


What improvements were experienced?

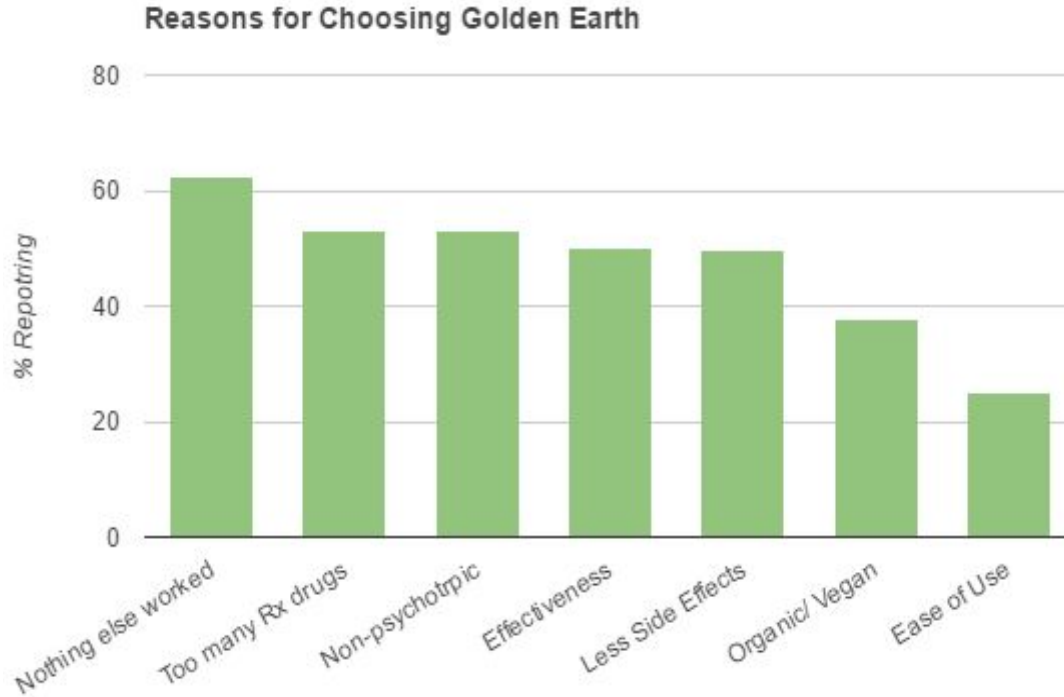
Lifestyle Improvements



Reduction in Medication Dependency

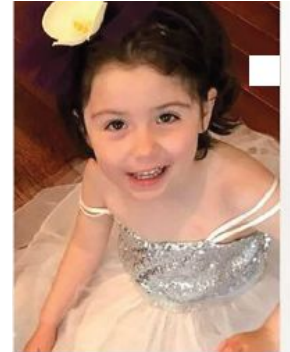


Leading Reasons for Participation



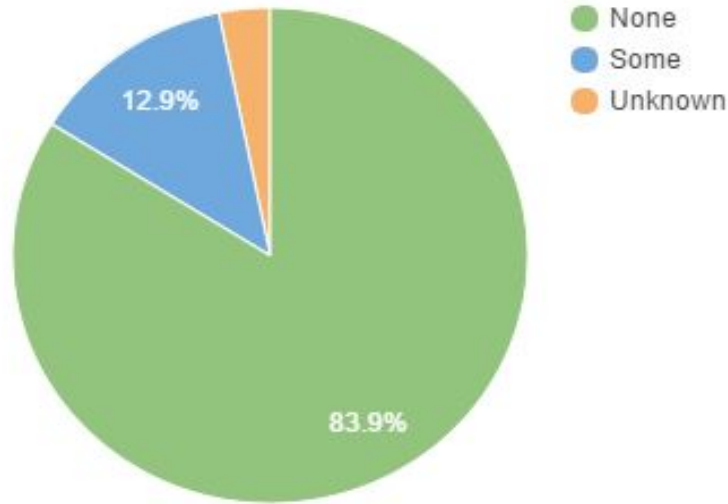
BEFORE

AFTER

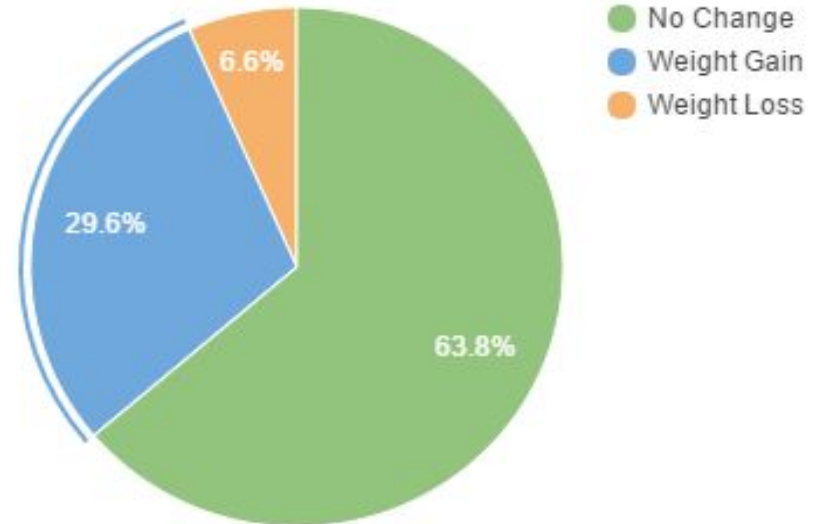


Side Effects: We all have them, even plants!

Sleepiness/Drowsiness Using Golden Earth



Weight Changes Using Golden Earth MCT



Beyond Numbers: Product Testimonials

"Golden Earth is the answer to our prayers. Thanks to this oil, my daughter is **seizure free** until we await for her second brain surgery. I will not stop giving it to her even after, due to the remarkable recovery she had on it last time, the neuroprotectant benefits and healing powers. This tonic is amazing!"

"My son is 7 years old and has **Myoclonic Epilepsy**. We have tried 7 different pharmaceutical drugs, the ketogenic diet, the VNS and various other natural treatments and this is the only treatment that has ever really helped him. No yucky side effects and he immediately went back to jumping on his trampoline and going down his slide. This medicine is a godsend for our family!!"

"Our son with **autism/adhd** now is sleeping through all night, it takes basically no time to make lessons, he is happy:) Glad we found this product"

"The blends in this collection are exceptional. I have applied to **arthritic** hips and back, and after a couple of applications, the **pain** is actually relieved."



Eat your Weedies: *Cannabis* is a Vegetable!

- Complex health conditions aided/alleviated by small amounts of raw THCA better than canonical cannabinoids.
- Trace amounts of THCA mostly relieved more than one condition.
- Synergy seen with mixture formulation.
- Lead for affordable, natural alternative to Topomax, Lexapro and other multi-symptom medicines.

Further Studies

- Golden Earth XL
 - 2X Concentration (10 mg/ml THCA)
 - ↑Age & Weight
 - ↑Use for Pain/Inflammation & Depression/Anxiety Symptoms
- Blue Planet (CBDA)
 - 10 mg/ml CBDA from Ruderalis ss.
 - Avocado Oil Base
- Estrogen Dominant Group
 - Cyclic Symptoms Mediated
 - Used alone or in addition to Golden Earth/XL



Discussion: Utility of Community Reports

- Collected & updated annually
- Processed into consumer information
- Facilitates community product development
- Creates statistical records of dosing
- Creates framework for product analysis.

- ★ **First ever documented recommendations for oral dosing of THCA**
- ★ **First known-list of possible side effects, interactions and cautionary use warnings provided to hemp/Cannabis patients.**
- ★ **First compounded, inert and non-smokeable THCA product.**

** Information collected and analyzed from our user reports. The FDA has not evaluated these claims ; this product is not intended to "diagnose, treat, cure or prevent any disease.*

Dosing & Administration Guidelines

Recommended Use*:

- **Infants & Toddlers** (up to 45 lbs/20 Kg):
0.2 ml morning | 0.2 ml afternoon
 - **Children** (45 lbs/20 Kg to 95 lbs/44 Kg):
Take 0.5 ml morning | 0.5 ml afternoon
 - **Adolescents** (over 95 lbs/ 44 Kg):
Take 1 ml morning | 1ml afternoon
 - **Adults** (Over 50 Kg):
Take 1 ml as needed, during the day.
- CAUTION:**
- Use half the recommended dose when using CBD orally.
 - THCA is a known COX2 inhibitor- limit additional COX2 inhibitors
 - Do not use with alcohol- will cause drowsiness.
 - May Cause hemp allergy- discontinue use & contact physician if rash or allergic reaction persists.

Future of **The Pot Lab**

- Agriculture Research
- cGMP Automation & Robotics
- Maximized Member Access & Support
- Institutional Collaborations
- Grant Applications
- Community Events



The event for the
disability community

February 22 - 24, 2019

Los Angeles Convention Center, West Hall A

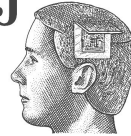
Fri. 11am-5pm | Sat. 11am-5pm | Sun 11am-4pm

AS
SEEN IN

dope[®]
MAGAZINE

Four DOPE Women in Cannabis:
The Bio-Hacker

WSJ



THE FUTURE
OF EVERYTHING

Not Everybody Must Get Stoned:
Pot's Non-Intoxicating Future

**SCIENTIFIC
AMERICAN**

**"Hungry for Jobs and for
Change, Scientists Join the
Occupy Movement"**

Newsweek

Rolling Stone

L.A. TACO

L.A. CANNABIS NEWS

Handpicked Topics

Acknowledgements

- Dr. Zavala & CSUN Marc/MBRS Program
- The Pot Lab Member Cooperative
- Smart Pharm Research Group
- Models Of Justice
- The City of Los Angeles
- Equity First Alliance
- UCLA-Deuterium Depletion Center
 - SiDMap
- Johns Hopkins School Of Medicine
- The Biophysical Society
- AAAS
- Fundación Loto Rojo, MX
- Activists:
 - Cage-Free Cannabis
 - Tree Femme Collective
 - TransLatina Coalition
 - Youth Justice L.A.
 - Occupy Wall St.
 - #BlackLivesMatter
 - #Not1More / #DefendDACA
 - #NoDAPL
 - Black Rose/ Rosa Negra
 - IWW



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Models Of Justice



Repairing the harms of the War on Drugs.



"If your success is defined as being well-adjusted to injustice and well-adapted to indifference, then we don't want successful leaders. **We want great leaders – who love the people enough and respect the people enough to be unbought, unbound, unafraid, and unintimidated to tell the truth.**"

– Dr. Cornel West

