



Medical Marijuana
Awareness Webinar

CANNABIS & PARKINSON'S DISEASE

Danielle Lewis
Harvest



Marc Matoza
Marijuana Med Today



WELCOME!

- **Setting Boundaries & Disclaimers**

- The purpose of this group is to provide a safe, supportive and judgment free zone where we can advocate for and discuss medical cannabis, as well as local and state resources.
- It is best to always discuss with your physician before making any medical decisions about your health. The goal of this group is to engage with the community and to help educate Medical Cannabis through discussion.

No matter our background, we are all coming together as medical cannabis advocates, patients, students and researchers.

WHAT IS PARKINSON'S?

memory problems
stiffness bladder problems
speech problems slowness of movement
swallowing problems shaking falls
skin problems delusions tremor pain
tremor rigidity anxiety
restless legs syndrome eye problems
bowel problems freezing sleep problems
fatigue dizziness slowness
hallucinations

A neurodegenerative disease caused by the loss of neurons that produce dopamine which in turn affects your motor system.

Displays symptoms such as:

- Tremors and shaking
- Muscle rigidity and stiffness of limbs
- Bradykinesia, or slowness of movement
- Impaired balance and coordination loss





BEFORE



AFTER

IS MEDICAL CANNABIS SAFE FOR PD?

Cannabis may provide relief at diminishing

- Bradykinesia
 - Stiffness
 - Rigidity
 - Tremors
- According to the **Parkinson's Foundation** many are experiencing help sleeping, lowering anxiety, reduce tremors and more
 - The **Parkinson's Foundation** reports that some research has found cannabis to be neuroprotective, offering potential guard against damaging neurons
 - The **Michael J. Fox Foundation** notes “cannabinoids may protect brain cells through antioxidant and anti-inflammatory properties”

Marijuana has been shown to attenuate motor and non-motor signs and symptoms of PD

THE ENDOCANNABINOID SYSTEM



THE HUMAN ENDOCANNABINOID SYSTEM

CBD, CBN and THC fit like lock and key into existing human receptors. These receptors are part of the endocannabinoid system which impact physiological process 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.

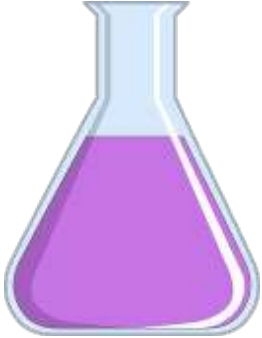
Receptors are found on cell surfaces

THE HUMAN ENDOCANNABINOID SYSTEM

CBD, CBN and THC fit like lock and key into existing human receptors. These receptors are part of the endocannabinoid system which impact physiological process 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.

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

HOW CANNABIS WORKS



Endocannabinoid's
[Brain derived]
Foods: Omega 3s - Omega 6s
Anandamide [AEA]

Phytoendocannabinoids
[Plant derived]
Buds, Tinctures, Extracts
THC, CBD, CBN, etc

Synthetic Cannabinoids
[Pharmaceutical Labs]
Patent Synthesized Compound
THC Only - Marinol



Endocannabinoid
[Brain receptors]
CB1, CB2, etc

The endocannabinoid system [ESC] regulates a variety of physiological processes including appetite, pain and pleasure sensation, immune system, mood and memory.

CANNABIS HELPS *YOUR* BODY PRODUCE IT'S OWN MEDICINE

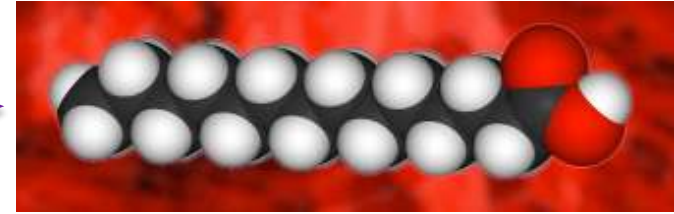
Endocannabinoids



Endocannabinoid's
brain derived



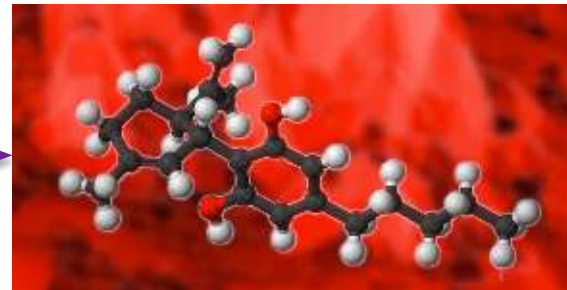
Phytocannabinoids
plant derived



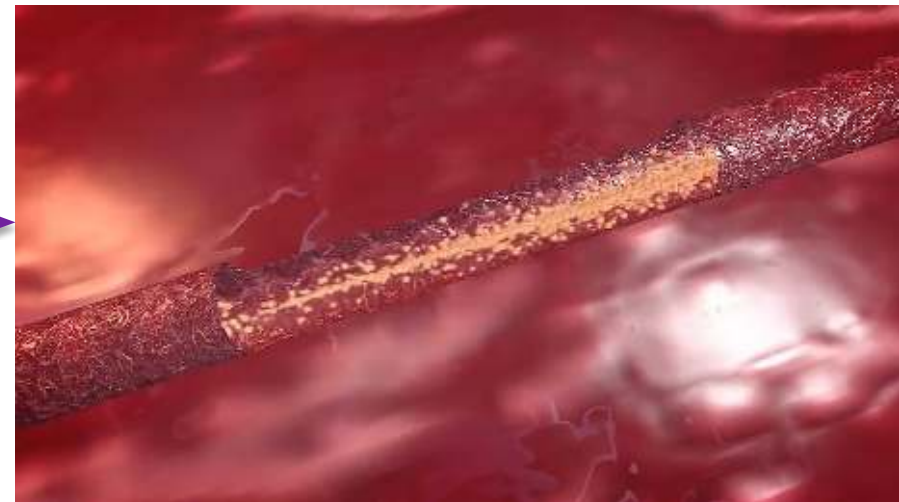
FATTY ACIDS



NEURONS



LONG CHAIN FATTY
ACIDS



THE BODY PRODUCING AND
DISTRIBUTING ENDOCANNABINOID'S



EFFICACY

2001: Cannabinoids Reduce Levodopa-induced Dyskinesia in Parkinson's Disease: A Pilot Study by K.A. Sieradzan, et al

2004: Survey on Cannabis Use in Parkinson's Disease: Subjective Improvement of Motor Symptoms

2004: Cannabis for dyskinesia in Parkinson disease: a randomized double-blind crossover study. *Neurology*, 63, 1245-50. By Carroll, C. B., et al.

2005: Levodopa-induced dyskinesia in Parkinson's disease. *J Neural Transm*, 112, 359-91
by Carroll, C. B., Bain, P. G., Teare, I., et al.

2013: Medical Marijuana (Cannabis) Treatment for Motor and Non-Motor Symptoms in Parkinson's Disease: An Open-Label Observational Study

2014: Cannabidiol can improve complex sleep-related behaviors associated with rapid eye movement sleep behavior disorder in Parkinson's disease patients: a case series. By Chagas, M. H., Eckeli, A. L., et al.

2015: Self-reported efficacy of cannabis and other complementary medicine modalities by Parkinson's disease patients in colorado. by Finseth, T. A., Hedeman, J. L., et al.

WHAT IS MEDICAL CANNABIS/MARIJUANA ?

CBD - Cannabidiol

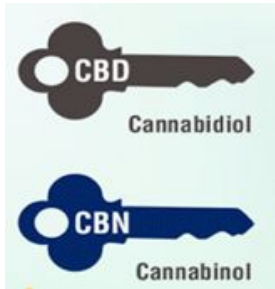
Non-Psychoactive cannabis component – Also found in Hemp

THC - Tetrahydrocannabinidiol

Psychoactive cannabis component

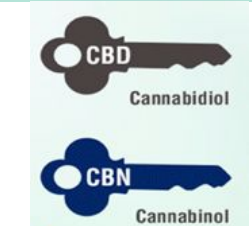
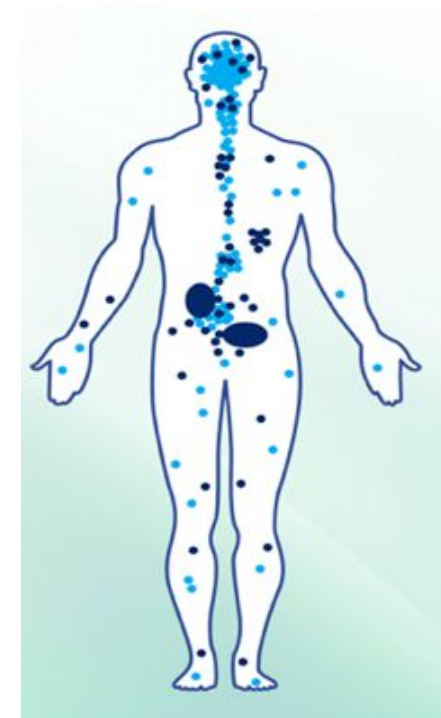
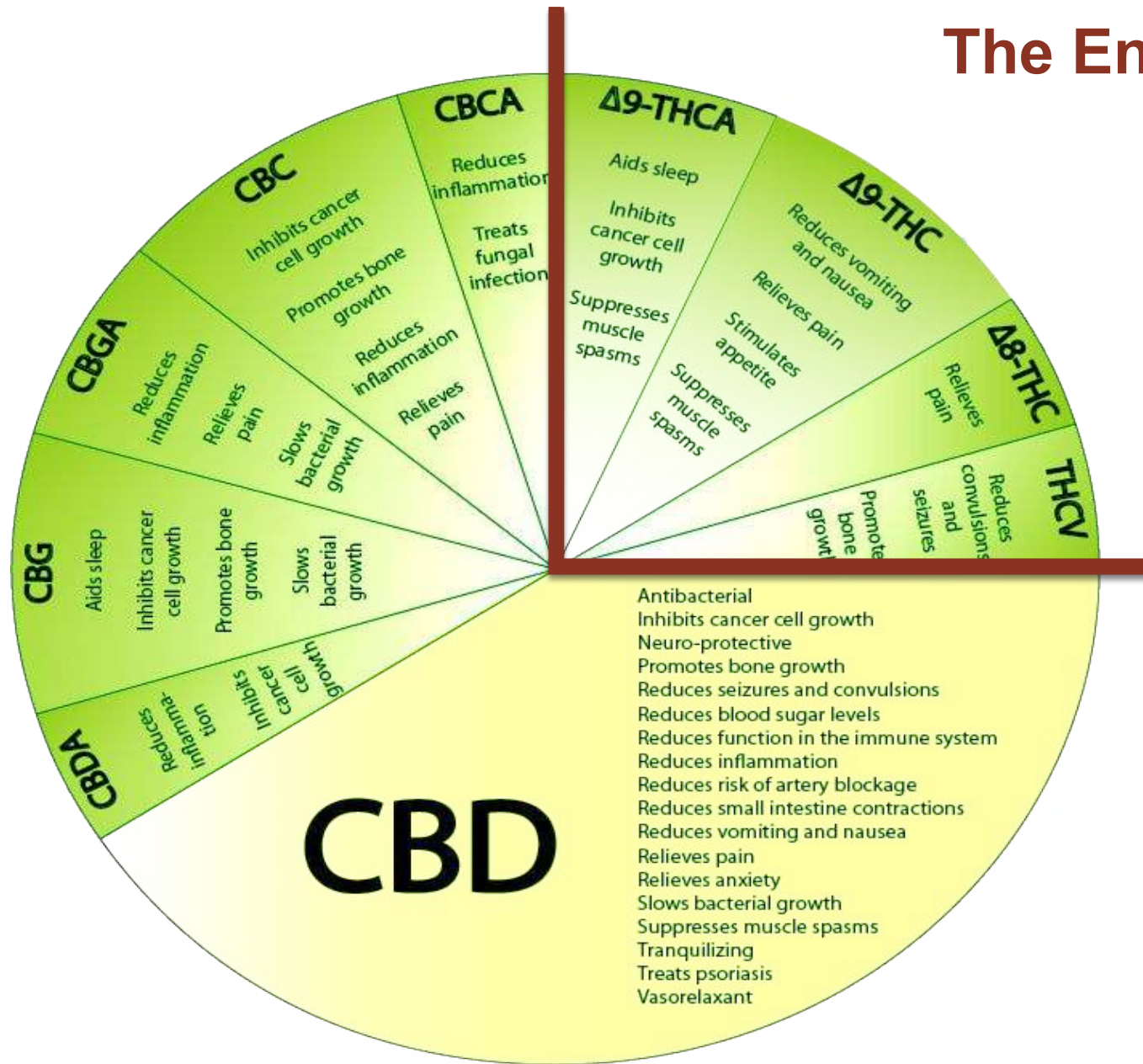


CBD in Hemp & Cannabis



The Entourage Effect

THC



HEMP vs MARIJUANA - *The Plant*

HEMP CANNABIS SATIVA



LEAVES

- Mulch & compost
- Biofuel
- Tea & juices*
- Animal fodder & bedding*

*not legal in Australia

STEM

- Textiles
- Building materials
- Paper

ROOTS

- Topical ointments
- Soil conditioner

SEEDS

- Foods
- Industrial products
- Body care products



MARIJUANA CANNABIS INDICA



Cola

Mature Bud/Cob

Pan Leaves

Stem

Pistils

Stalk

The plant is trimmed down into *buds*, which come together in a *cola* at the top of the stem.



Trichomes

are a blanket of *crystal resin* coating the cannabis plant.

They contain:

Terpenes

Essential oils giving plants a distinctive aroma and flavor



Cannabinoids

- Narrow leaves

Terpenes

- Better suited for colder climates

Your Biology, Dosing, Consumption Method

Sativa



WHAT ARE TERPENES?

- Terpenes are the most common plant chemicals in nature.
- Found in flowers, spices, fruits, vegetables and essential oils

- ➔ Endocannabinoid System - Highway
- ➔ Anandamide - Driver
- ➔ Cannabinoid - Passenger (CBD/THC)
- ➔ Terpenes navigate/shapes the Cannabinoid journey like a GPS

GUIDE TO TERPENES

	Aroma	Vaporizes at	Found in	Strains
PNE α-PINENE	Pine	311°F (155°C)	Pine Needles, Rosemary, Basil, Parsley, Dill	Pk (Purple Kush) Bay (Bay Dream) Ak (AK-47)
MYR MYRCENE	Cloves, Earthy, Herbal	332°F (167°C)	Mango, Lemongrass, Thyme, Hops	Gdp (Granddaddy Purple) Am (Amnesia) Tw (Tiramisu)
LME LIMONENE	Citrus	348°F (176°C)	Fruit Rinds, Rosemary, Juniper, Peppermint	Hk (Hindu Kush) Lmg (Lemon G) Stb (Strawberry Banana)
CYE CARYOPHYLLENE	Pepper Spicy, Woody, Cloves	266°F (130°C)	Black Pepper, Cloves, Cinnamon	Fog (Fog OG) Gg4 (GG4) Gsc (GSC)
LNL LINALOOL	Floral	388°F (198°C)	Lavender	Kos (Kosher Kush) Rom (Roman) Sk (Sour Kush)
HUM HUMULENE	Woody, Earthy	222°F (106°C)	Hops, Coriander, Cloves, Basil	Bcg (Black Cherry OG) Ds (Death Star) Gsc (GSC)
OCM OCIMENE	Sweet, Herbal, Woody	122°F (50°C)	Mint, Parsley, Pepper, Basil, Mangoes, Orchids, Kumquats	Sen (Sens Star) Dp (Durban Poison) Svb (Silver Bubbles)
TPE TERPINOLENE	Pine, Floral, Herbal	366°F (186°C)	Nutmeg, Tea Tree, Conifers, Apples, Cumin, Lilacs	Dt (Dutch Treat) Gth (Ghost Train Haze) Ago (Agent Orange)

CARYOPHYLLENE



AROMA

Pepper
Spicy
Woody
Cloves

VAPORIZES AT

266°F (130°C)

POTENTIAL EFFECTS

Stress Relief

POTENTIAL MEDICAL VALUE

Treatment of:

- Pain
- Anxiety
- Depression
- Ulcers

ALSO FOUND IN

Black Pepper
Cloves
Cinnamon



MYRCENE



🔔 AROMA
Cardamom
Cloves
Musky
Earthy
Herbal

🌡️ VAPORIZES AT
332°F (167°C)

🧠 POTENTIAL EFFECTS
Sedating
"Couchlock"
Relaxing

🧪 POTENTIAL MEDICAL VALUE
Antioxidant
Treatment of:
• Insomnia
• Pain
• Inflammation

+ ALSO FOUND IN
Mango
Lemongrass
Thyme
Hops

STANDARD DOSING FORMS

• Sublingual Drops/Tinctures

- Inhalation Vape Pens
- Capsules
- Topical's
- Sprays
- Edibles
- Flower
- Crumble & Shatter
- Suppositories



STANDARD DOSING

FORM	TIME TO WORK	EFFECTIVENESS	COMMENTS
SUBLINGUAL DROPS/TINCTURE	15-40 Min	4-6 Hours	Taking cannabis in through the mouth under your tongue, absorbs via the digestive system or blood vessels in the mucous membranes in the mouth.
VAPE PEN	Almost Immediately	2-4 Hours	Electronic vaporizing device Inhaling through the lungs
CAPSULES	30 min - 2 hours	5-8 Hours	When taking cannabis in through the mouth, it enters the bloodstream after being digested or broken down in the stomach and absorbed into the digestive system.
EDIBLES	15-40 Min	4-6 Hours	Gummies, brownies,dots, cookies, et al
TOPICALS	Almost immediately	1-2 Hours	A topical medicine is applied to the skin directly 'on top' of the place where it is needed.
TRANSDERMAL PATCH	10 min - 1 Hour	8 - 72 Hours	A topical medicine is applied to the skin directly 'on top' near the neck, inside of legs, top of hands/feet, back of neck
SPRAY	Almost Immediately	2-4 Hours	Absorbs via the digestive system or blood vessels in the mucous membranes in the mouth.
FLOWER	Almost Immediately	1-5 Hours	REQUIRES A FL STATE FORM Inhaling through the lungs 2.5oz/35 days: 4oz in possession
CRUMBLE SHATTER	Almost Immediately	1-6 Hours	Inhaling through the lungs

HARVEST





FLORIDA'S GIFT
MODERN FLOWER
 Hybrid

EFFECTS: soothing, relaxing, calming
FLAVORS: earthy, fruity, pine

Florida's Gift is a high-THC hybrid strain bred from Florida's Gift and Red do Purple. This strain has an earthy and sweet aroma. This strain is a full-body celebration.

MODERN FLOWER **HARVEST**



Roll One Pre Rolls \$9
 Locally Grown in Florida

HARVEST




WHITE CHRISTMAS
MODERN FLOWER
 Hybrid

EFFECTS: uplifting, relaxing, soothing
FLAVORS: citrus, earth, peapony

White Christmas is a high-THC hybrid strain bred from Florida's Gift and Red do Purple. This strain has a sweet and earthy aroma. This strain is a full-body celebration.

MODERN FLOWER **HARVEST**



STAR STOMPER
ROLLONE - GROWN LOCALLY RIGHT HERE IN FLORIDA
 Hybrid

EFFECTS: relaxing, euphoric, uplifting
FLAVORS: sour grass, alcohol

Star Stomper is a high-THC hybrid strain bred from Florida's Gift and Red do Purple. This strain has a sweet and earthy aroma. This strain is a full-body celebration.

Roll One **HARVEST**

BALANCED LIVING: A SENSE OF RESTORATION & CONTROL



GROUP DISCUSSION

RESOURCES

Backes, M. Weil, A. McCue, J.D. (2017). Cannabis Pharmacy: The practical guide to medical marijuana. Pg 251-253

Christophe G. Goetz, "The History of Parkinson's Disease: Early Clinical Descriptions and Neurological Therapies," *Cold Spring Harbor Perspectives in Medicine* 1, no. 1(2011), doi:10.1101/cshperspect.a008862

Goetz C. G. (2011). The history of Parkinson's disease: early clinical descriptions and neurological therapies. *Cold Spring Harbor perspectives in medicine*, 1(1), a008862. doi:10.1101/cshperspect.a008862

Modern Health Concepts (2016). The Medical Use of Cannabis in Parkinson's Disease.

W.R Gowers, "Paralysis Agitans," in *A System of Medicine*, ed. A. Allbutt and T. Rolleston (London: Macmillan, 1899): 156-178

[Anandamide Definition \(n.d.\). Dictionary. Retrieved from: Dictionary.com](#)

Hill, K.P., Palastro, M.D., Johnson B., & Ditre, J. (2017). Cannabis and Pain: A Clinical Review. *Cannabis and Cannabinoid Research*. Vol 2.1, DOI: 10.1089/can.2017.0017

Leinow, L. & Birnbaum, J. (2017). CBD *A Patients Guide to Medical Cannabis: Healing without the High*. Pg. 148-151

Blesching, U. (2015). The Cannabis Health Index. Pgs. 371-374, pgs. 383-386

Complimentary Therapies for Parkinson's Disease (2017). European Parkinson's Disease Association. Retrieved from

<https://www.epda.eu.com/living-well/therapies/complementary-therapies/>

Kumar, D. R., Aslinia, F., Yale, S. H., & Mazza, J. J. (2011). Jean-Martin Charcot: the father of neurology. *Clinical medicine & research*, 9(1), 46-49. doi:10.3121/cmr.2009.883

"Cannabinoids Reduce Levodopa-Induced Dyskinesia in Parkinson's Disease: A Pilot Study," *Neurology* 2001; 57:2108-21111 by K.A. Sieradzan, et al

Katerina Venderova, Evzen Ruzicka, Viktor Vojtisek and Peter Vesnynsky / *Stroke* 2014; 45:1000-1005
Please send your questions using the Q&A button at the bottom center of your screen. The speakers will answer after the presentation. The Q&A feature is public. Both panelists and attendees will see your question.

