



# Multiple Sclerosis & Medical Cannabis

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# Medical Marijuana & Wellness Series

WEEKLY DISCUSSIONS WITH INDUSTRY EXPERTS

Medical Marijuana Awareness Webinars are a series of online education events held by Florida medical marijuana experts with a mission to educate the public on the complex medical abilities and uses of cannabis with beginner-friendly language.

YOU WILL RECEIVE AN eMAIL WITH A LINK TO

- A video of this webinar
- The Presentation
- Topic Resources
- Discounts for attending

A Survey to get your feedback on the MMWW Series!

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Check out our survey at [MarijuanaAware.com/feedback](https://MarijuanaAware.com/feedback) to let us know what you want to see in the next Series

Watch ANY past webinar, get presentation slides, view speaker info and FAQs, and contact our team at [MarijuanaAware.com](https://MarijuanaAware.com)

Our series host is joined by industry experts in a live broadcast every week, so it's a great time to ask questions from your computer or phone and get answers while you watch. **If you miss a broadcast, anyone can watch previous broadcasts on our YouTube channel!**

✦ MEDICAL MARIJUANA AWARENESS WEBINARS



## Medical Marijuana & Wellness Series

WEEKLY DISCUSSIONS WITH INDUSTRY EXPERTS



# ALERT

In light of recent attempts by third parties to sell tickets to MarijuanaAware events,

## PLEASE BE ADVISED

## Medical Marijuana & Wellness Webinars

are **FREE** online events held via Zoom and livestreamed on Facebook. To RSVP you may enter a **name** and **email** to be notified before the broadcast.

No account creation is required to view these webinars.

**At no point should attendees be asked for payment information, billing address, or passwords.** If an individual or form requests this information, please alert us at [Events@MarijuanaAware.com](mailto:Events@MarijuanaAware.com)



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**2021** Medical Marijuana & Wellness Series

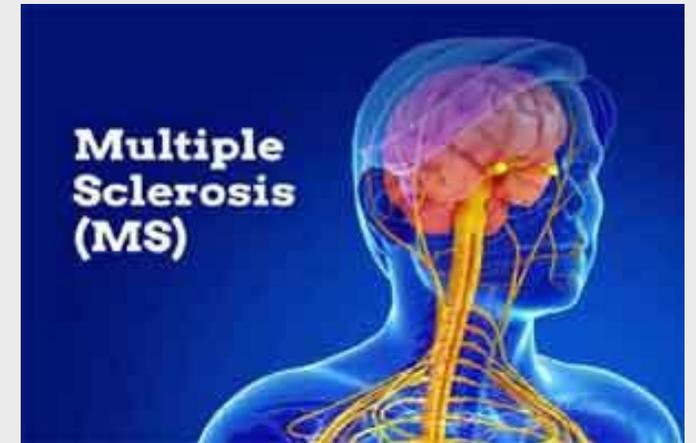
WEEKLY DISCUSSIONS WITH INDUSTRY EXPERTS

Please send 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 may see your question.**

# MULTIPLE SCLEROSIS & MEDICAL MARIJUANA

Multiple sclerosis (MS) is a disease that causes demyelination (disruption of the myelin that insulates and protects nerve cells) of spinal nerve and brain cells

- There are four types of MS
  - RRMS: Relapsing-remitting multiple sclerosis,
  - SPMS: Secondary-progressive multiple sclerosis, the most common type
  - SPMS: Primary-progressive multiple sclerosis
  - PRMS: Progressive-relapsing multiple sclerosis
- *There is currently no cure, but treatment may slow its progression*
- Marijuana may be useful for treating several symptoms for this condition

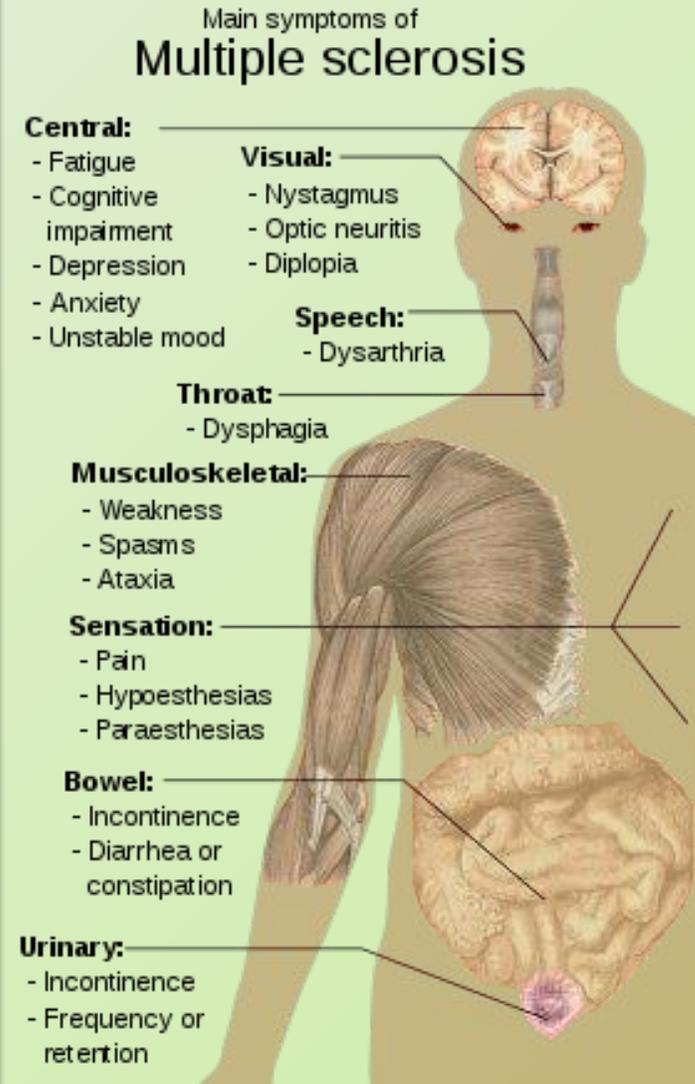


# MULTIPLE SCLEROSIS BREAKDOWN

It is the breakdown of the thin sheet that offers protection and insulation to the brain and spinal cord, known as myelin sheets.

Symptoms of MS can include:

- Visual changes including double vision or loss of vision
- Numbness
- Tingling or weakness (may range from mild to severe)
- Paralysis
- Vertigo or dizziness
- Erectile dysfunction (ED, impotence)
- Pregnancy problems
- Incontinence (or conversely, urinary retention)
- Muscle spasticity
- Incoordination of muscles
- Tremor
- Painful involuntary muscle contractions
- Slurred speech
- Fatigue

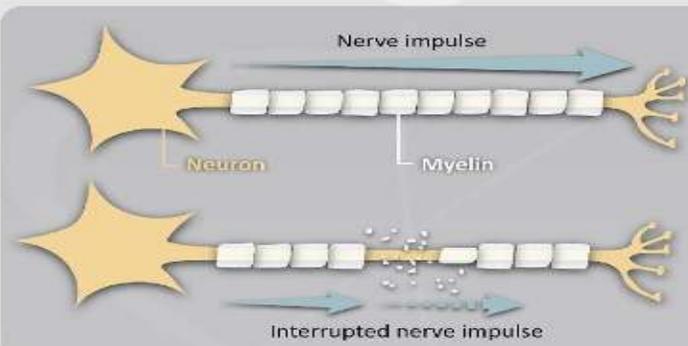


The marijuana plant, or Cannabis Sativa, has dozens of chemical that can affect your mind and body.

# CANNABIS & MULTIPLE SCLEROSIS



Multiple Sclerosis (MS) is a degenerative and chronic disease of the central nervous system, with an autoimmune component, that affects the brain and the spinal cord. Is the second cause of disability in young adults after car accidents.



In MS, the immune system attacks the protective sheath (**myelin**) that wraps the axons of the neurons in the brain and spinal cord, causing communication issues between the brain and other parts of the body. With the passing of time, it can cause the **permanent damage of the neurons**, provoking a permanent disability of different parts of the body.

**ratio 2:1**  
women vs men

Depending on the localization of the lesions and their magnitude, MS patients can experience long periods of time without symptoms, or lose their ability to walk. That's why MS is known as "the disease of a thousand faces"



There are different types of MS depending on the course of the disease: relapsing-remitting or chronic (primary, secondary).



## MULTIPLE SCLEROSIS treatments

MS **does not have a cure**. There are treatments that help to recover from the relapses, to control the symptoms, and to change the evolution of the disease:

- Treatment for the relapses:**  
Corticosteroids, Plasma exchange.
- Treatment to modify the evolution:**  
Beta Interferons, Glatiramer Acetate, Fingolimod, Dimethylfumarate, Ocrelizumab, Natalizumab, Alemtuzumab, Triflunomide, Siponimod, Mitoxantrone.



## MEDICINAL CANNABIS IN MULTIPLE SCLEROSIS

Evidence shows alterations in different parts of the endocannabinoid system in MS patients and its animal models:

Anandamide (AEA) was increased in the cerebrospinal fluid and plasma of MS patients in remission (Di Filippo et al., 2007).

Cannabinoid CB1R and CB2R receptors and FAAH enzyme of endocannabinoid degradation were augmented in nervous system lesions of MS patients (Benito et al., 2007).

A decrease in the enzyme FAAH was found in the blood of patients with secondary progressive MS (Jeah-Gilles et al., 2009).

Based on these data, medicinal treatment with *Cannabis* could diminish the neuroinflammation of this disease and, therefore, the damage.



**1981** Symptomatology improvement of MS patients consuming recreative *Cannabis* led to the first study of *Cannabis* and MS (Petro and Ellenberger, 1981). More studies were performed in the following years.

**2002** Several controlled clinical trials were performed, showing a limited evidence of cannabinoids effects (THC + CBD) in one of MS symptoms: spasticity (Zajicek et al., 2005).

**2011** Sativex® approval, the first cannabis based medicine (THC and CBD in 1:1 ratio) to be commercialized for spasticity treatment in MS.

## CANNABINOIDS IN ANIMAL MODELS OF MS

The administration of phytocannabinoids, endocannabinoids and synthetic cannabinoids in animal models of MS improves the motor symptomatology associated with the disease and its development (Chiurchiù et al., 2018).

### Decrease of neuroinflammation

Cannabinoids have a potent anti-inflammatory effect in MS. This effect is mediated by the activation of CB2 receptors in immune and glial cells, and in CB1R/CB2R of the blood brain barrier cells.

### Increase of endogenous reparative mechanism

Cannabinoids promote the regeneration of myelin sheaths in the nerve fibers, and protect from neuronal death. These effects are mediated by the activation of CB1 receptors in oligodendrocytes and neurons.

It is necessary to explore in depth the cannabinoid effects in order to develop therapies for MS patients, and diminish motor and cognitive decline associated to the disease.

## References

- World Health Organization [Multiple Sclerosis Atlas, 2013]. who.int
- Mayo Clinic: www.mayoclinic.org
- Benito C et al. J Neurosci. 2007.
- Chiurchiù V et al. Atherosclerosis. 2014.
- Di Filippo M et al. J Neurol Neurosurg. 2008.
- Petro DJ & Ellenberger C. J Clin Pharmacol. 1981.
- Zajicek JP et al. J Neurol Neurosurg Psychiatry. 2005.

An infographic by Glyph Illustration

EFFICACY	
1981	researchers found motivation in anecdotal accounts of MS patients who reported that inhaling cannabis gave relief from spasticity.... Combined with scientific discovery that THC is able to inhibit muscle spasms in animal studies, opened the door to a multitude of scientific inquires
1997	University of Arizona Health Sciences Center in Tucson studied 112 patients with MS by inhaling cannabis and found reduced spasticity, pain, tremors, depression, anxiety, and paresthesia
2003	The Office of Medical Bioethics & University of Calgary studied 420 patients with MS by inhaling cannabis and found a reduction in several symptoms: anxiety, depression, spasticity, and chronic pain.
2006	Hunters Moor Regional Neurological Rehabilitation Centre, UK replicated the study with Sativex, a cannabis synthetic, as an oromuscal spray delivering 2.7 mg THC and 2.5 mg CBD. And found a reduction in spasticity, neuropathic pain, and neuropathic pain of other etiologies. (Barnes, 2006)
2017	<p>The National Multiple Sclerosis Society published a Cannabis Summary regarding using cannabis for the treatment of MS and has stated their key points:</p> <ul style="list-style-type: none"> <li>• “People with MS experience symptoms that may not be adequately controlled with FDA approved medications. Some people with MS have tried cannabis products to relieve these symptoms.</li> <li>• ”Based on existing evidence, cannabis products are probably effective for treating patient reported symptoms of spasticity and pain. Cannabis is probably not effective for MS-related tremor or urinary incontinence.”</li> <li>• The potential adverse effects of cannabis products, including new or worsening cognitive symptoms, psychosis, tolerance and dependence, as well as drug to drug interaction.</li> </ul>
2019	77 patients diagnosed with MS found alleviation of symptoms "by way of cannabis usage“ seen most in pain (71%), spasticity (43%), and sleep (42%). In addition, 34% of patients were able to decrease and discontinue other medications including opioids, stimulants, and benzodiazepines

# THE EXPERTS SAY

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*The National MS Society* supports the ability of people living with MS to make informed choices about their treatments with their MS health care providers, including the use of medical cannabis “To date, the major active metabolites [identified] in medical marijuana are  $\Delta$ 9-tetrahydrocannabinol (THC) and cannabidiol (CBD), and these have been found to have benefits in individuals with MS, particularly regarding pain and spasticity.”

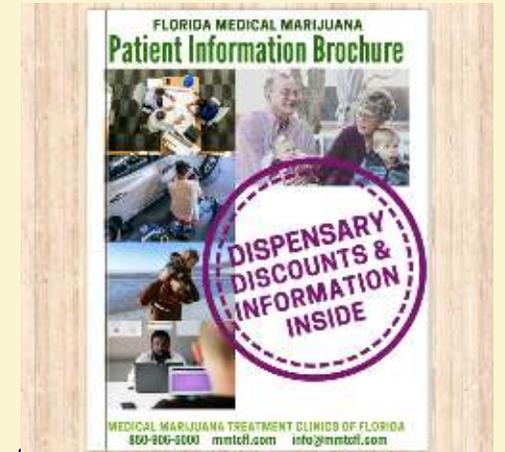
*Clyde E. Markowitz, MD, Director of Multiple Sclerosis Center at Penn Medical*

*“Reports of cannabinoids’ ability to reduce MS-related symptoms such as pain, spasticity, depression, fatigue and incontinence are plentiful in scientific literature.”*

*. . . NORML [National Organization for the Reform of Marijuana Laws]*

# THANK YOU: DISCOUNTS & RESOURCES

- *See this and past webinar recordings in this series, view slides and extended topic-specific resources, as well as sign up for future live presentations on [MarijuanaAware.com](https://www.MarijuanaAware.com)*
- Check out the **MMTC Patient Information Brochure**, a booklet about **medical marijuana in Florida** including a step-by-step guide to getting your medical marijuana card, information on applications with the Office of Medical Marijuana Use, exclusive dispensary discounts, and much more at [MMTCFL.com/PIB2020](https://www.MMTCFL.com/PIB2020)
- Get **10% off a medical marijuana card** with our recommended clinic group, Medical Marijuana Treatment Clinics of Florida by calling **850-906-5000** and use coupon code **MMAW10**
- Get a **10% discount on physician-approved hemp CBD products** at My Botanica Wellness by visiting [MyBotanicaWellness.com](https://www.MyBotanicaWellness.com) and using coupon code **MMAW10**



# 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 which serve distinct functions in

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

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peripheral organs especially cells associated with the immune system.

source: [www.the-hemp-solution.org](http://www.the-hemp-solution.org)

# HOW CANNABIS WORKS



Endocannabinoids  
(Brain-derived)

Foods: Omega 3's, Omega 6's  
Anandamide [AEA]



Phytocannabinoids  
(Plant-derived)  
Buds, Tinctures, Extracts  
THC, CBD, CBN, etc



Synthetic Cannabinoids  
(Pharmaceutical Labs)  
Patent Synthesized Compound  
THC Only - Marinol

Endocannabinoids  
(Brain receptors)  
CB1, CB2, etc

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

# CANNABIS HELPS YOUR BODY PRODUCE ITS OWN MEDICINE

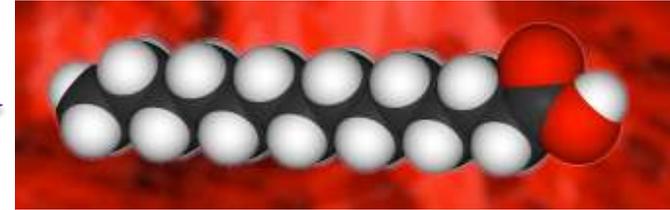
## Endocannabinoids



Endocannabinoids  
(brain-derived)



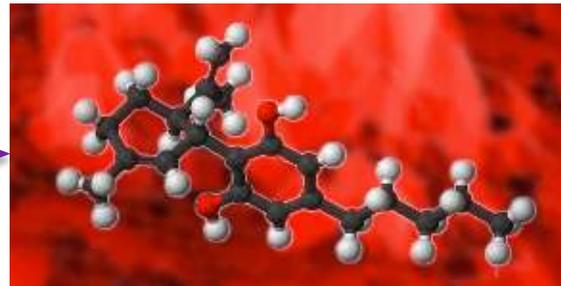
Phytocannabinoids  
(plant-derived)



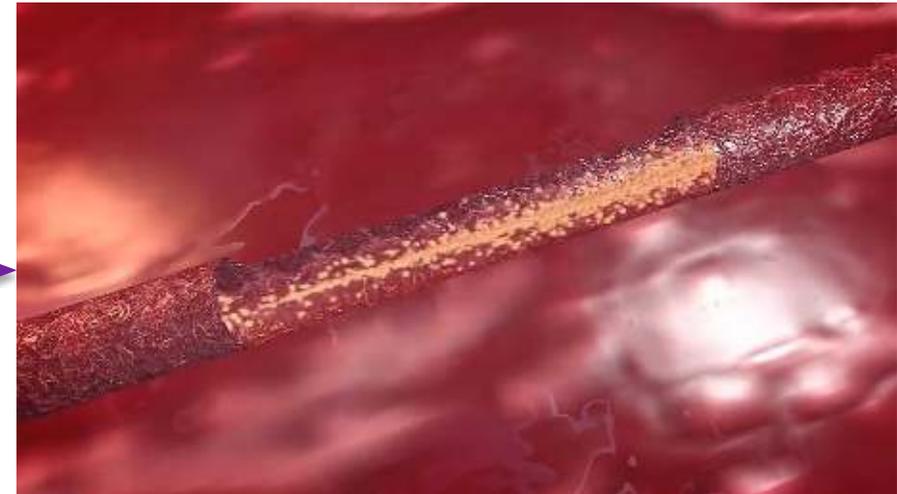
Fatty Acids



Neurons



Long Chain Fatty Acids



The body produces and distributes  
endocannabinoids

# WHAT IS MEDICAL CANNABIS/MARIJUANA ?

## CBD - Cannabidiol

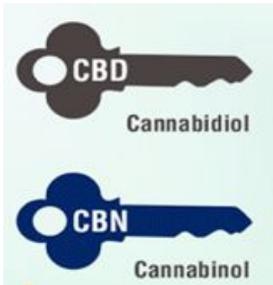
Non-Psychoactive cannabis component – Also found in Hemp

## THC – Tetrahydrocannabidiol

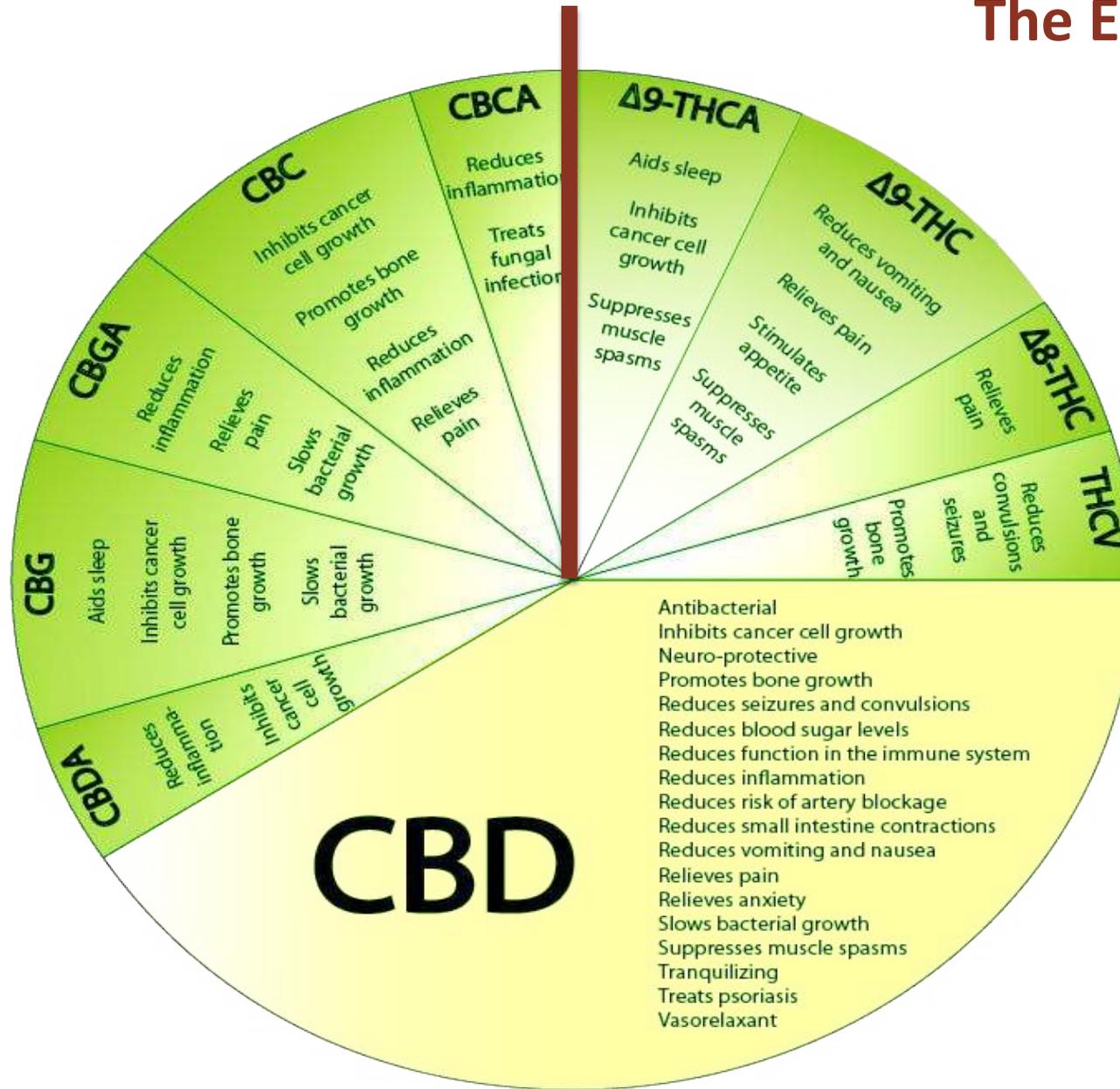
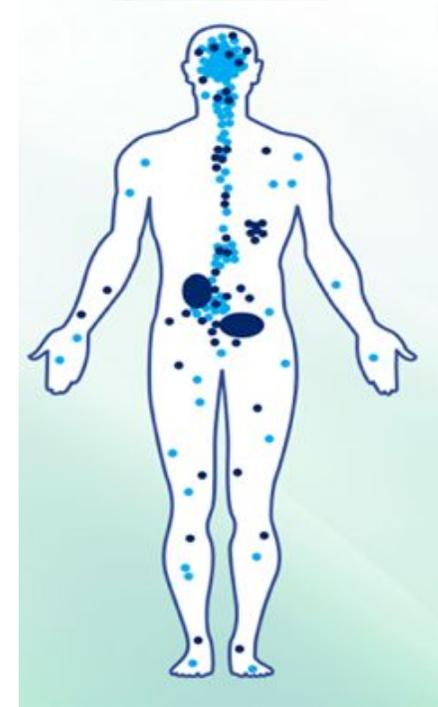
Psychoactive cannabis component



# CBD in Hemp & Cannabis



# The Entourage Effect



# THE PLANT - HEMP vs MARIJUANA

## 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*



### 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

# WHAT ARE TERPENES?

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

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

## Terpenes In Cannabis



### Alpha-Pinene

**Flavors:** herbal, woody, rosemary

**Effects:** bronchodilator, anti-inflammatory, topical antiseptic, memory-aid



### Caryophyllene

**Flavors:** pepper, spice, wood, cloves

**Effects:** antidepressant, analgesic, antibacterial, antifungal, antianxiety, gastroprotective



### Humulene

**Flavors:** earthy, woody, spicy, hops

**Effects:** anti-inflammatory, anticancer, antibacterial, appetite suppressant



### Limonene

**Flavors:** citrus fruit/rind (lemons, oranges)

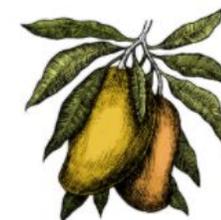
**Effects:** anti-depressant, anti-bacterial, anti-microbial, anti-carcinogenic, immunostimulant



### Linalool

**Flavors:** floral, citrus, orange, terpy, waxy, rose

**Effects:** bronchodilator, antianxiety, anti-inflammatory, analgesic, anticonvulsant



### Myrcene

**Flavors:** musky, balsam, cloves, earthy, minty, peppery

**Effects:** anti-inflammatory, anti-carcinogenic, sedation, antidepressant,



### Ocimene

**Flavors:** sweet, herbal, woody

**Effects:** antiviral, antifungal, antiseptic, decongestant, antibacterial, energetic



### Terpinolene

**Flavors:** herbal, fresh, woody, pine, citrus, sweet

**Effects:** anticancer, antibacterial, antifungal, sedative, antioxidant



## Limonene

**AROMA**  
fruity, citrus aroma

**SOURCE**  
fruit rinds

**EFFECTS**  
elevates mood  
relieves stress  
antifungal  
antibacterial  
relieves heartburn  
and gastric reflux  
improves absorption  
of terpenes/chemicals

Limonene is added to many everyday items like cosmetics and cleaning products



## Pinene

**AROMA**  
similar to pine needles

**SOURCE**  
conifer trees, orange peels, turpentine, and many herbs

**EFFECTS**  
analgesic (pain relief)  
anti-anxiety  
anti-inflammatory  
bronchodilator (helps open airways)  
improves short-term memory

most common terpene in the natural world



## Linalool

**AROMA**  
floral aroma

**SOURCE**  
flowers and spices including lavender and coriander

**EFFECTS**  
stress reduction  
anti-anxiety  
antidepressant  
sedative  
anti-inflammatory  
anti-epileptic  
analgesic (pain relief)

Anecdotal evidence suggests that eating a ripe mango prior to consuming cannabis may accentuate or extend the psychoactive effects of cannabis. This would be due to the fruit's concentrations of myrcene, which is naturally synergistic with THC and allows cannabinoids to more easily bridge the blood-brain barrier.



## Myrcene

**AROMA**  
fruity aroma

**SOURCE**  
fragrant plants & herbs including mangos, thyme, lemongrass, basil

**EFFECTS**  
antibiotic  
anti-inflammatory  
analgesic (pain relief)  
sedative  
antimutagenic

most common terpene found in cannabis



## Caryophyllene

**AROMA**  
spicy, peppery aroma

**SOURCE**  
spices like black pepper & cinnamon, and herbs like oregano & hops

**EFFECTS**  
anti-inflammatory  
analgesic (pain relief)  
reduction in alcohol-craving  
anti-anxiety  
antidepressant

common in topicals



## Eucalyptol AKA Cineol

**AROMA**  
fresh, minty aroma

**SOURCE**  
eucalyptus trees, bay leaves, cardamom, tea tree, and sage

**EFFECTS**  
antifungal  
analgesic (pain relief)  
anti-inflammatory  
may help with sinus infections  
decreases blood pressure

improves cognitive function for those with dementia



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# STANDARD DOSING FORMS

- Sublingual Drops/Tinctures
- Inhalation Vape Pens
- Capsules
- Topicals
- Sprays
- Edibles
- Flower
- Crumble & Shatter
- Suppositories



# MEDICAL MARIJUANA ROUTES OF ADMINISTRATION



500,000+ Floridians have improved their quality of life and everyday experience with medical marijuana.

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## SUBLINGUAL DROPS/ TINCTURES



When taking cannabis via liquid drops under your tongue, components are absorbed via the digestive system or blood vessels in the mouth.

TIME BEFORE ONSET OF EFFECT  
15-20 MINUTES  
FULL EFFECT AT 1.5-2 HOURS

DURATION OF EFFECT  
4-6 hours

## EDIBLES



Gummies, hard candies, brownies, and cookies are common forms for edibles.

Patients should pay special attention to dosage for a desired effect.

TIME BEFORE ONSET OF EFFECT  
15-20 MINUTES\*  
FULL EFFECT AT 1.5-2 HOURS

DURATION OF EFFECT  
4-10 hours

## CAPSULES



The content of oral capsules enters the bloodstream after digestion.

This method is especially beginner-friendly because of the pre-portioned doses.

TIME BEFORE ONSET OF EFFECT  
1.5-2 hours

DURATION OF EFFECT  
4-6 hr

## TOPICALS



A topical medication is applied directly to the skin at the site where the effect is needed.

This form is useful for its quick relief and ability to focus effect on a specific area.

TIME BEFORE ONSET OF EFFECT  
almost immediately

DURATION OF EFFECT  
1-2 hours

## INHALATION (VAPING)

Vaporization delivers inhaled cannabis into the lungs via water molecules, avoiding absorption of potentially harmful material produced by combustion.



TIME BEFORE ONSET OF EFFECT  
almost immediately

DURATION OF EFFECT  
2-6 hours

## TRANSDERMAL PATCHES



A patch is applied directly to skin so that a controlled release of medication is delivered through skin into the bloodstream.

This allows for a long-lasting effect.

TIME BEFORE ONSET OF EFFECT  
10 minutes - 1 hour

DURATION OF EFFECT  
8-72 hours

## FLOWER (SMOKABLE)

Dry flower, also called bud, can be ignited or vaporized and the smoke is inhaled into the lungs.



This product requires a state form

TIME BEFORE ONSET OF EFFECT  
almost immediately

DURATION OF EFFECT  
2-6 hours

## SPRAY



This form of medical marijuana is absorbed via blood vessels in the mucous membranes in the mouth.

Sprays are beginner-friendly with simple doses

TIME BEFORE ONSET OF EFFECT  
15-20 MINUTES  
FULL EFFECT AT 1.5-2 HOURS

DURATION OF EFFECT  
4-6 hours

## SUPPOSITORIES

A suppository lets the patient administer medication rectally or vaginally so that it is absorbed near the site where the effect is needed, such as the pelvis, legs, spine, and stomach.



TIME BEFORE ONSET OF EFFECT  
varies significantly by individual product; see packaging

DURATION OF EFFECT  
varies significantly by individual product; see packaging

## What are routes of administration?

Also called administration forms, these are the various ways that medical marijuana patients ingest medication.

For the best effects, speak to your medical marijuana doctor and dispensary staff about your tolerance and familiarity.

## Start low, go slow

Experts recommend starting with a low dosage and making note of how it affects your condition, then increasing your dose after several sessions to determine whether the effect is noticeably increased. The goal is to find the minimum dose that produces the maximum effect for your needs.

## Pay attention to packaging

When using any medical marijuana product, read dosing information carefully before administration. This can help you with details such as the placement of a patch, the best time to take your medication, and how to adjust dosing for the ideal effect.

## Choose the form for your needs

We often default to the familiar when it comes to medications, because it feels most safe. We encourage you to take the time to determine which form will best suit your individual condition.

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# TruNano Technology

**TruNano Ratio Tincture** is made with our nano-emulsion technology

Achieved through process of sonification

Quicker onset

The bioavailability of these products are over 90%

Acts like a water-soluble molecule

1:8, 8:1 CBD:THC \$55

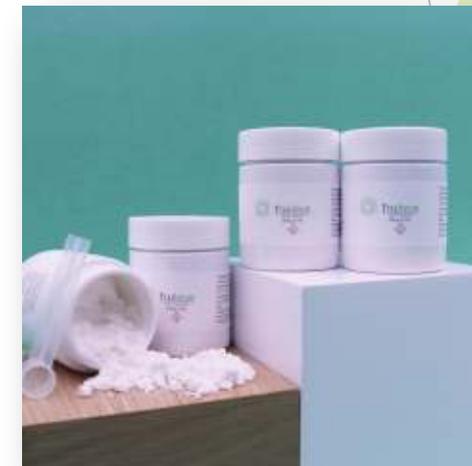
Trupowder 5mg scoop, 200mg total, \$50

TruNano Trugels

- 10 mg each, 10 pieces
- I, S, H
- \$30

TruTincture Drops

- 10mg each, 10 pieces
- 1:1, THC, and CBD options
- \$20



# Delta 8 Products



- **TruClear:** 1:1 Grape Inferno (Delta 8: Delta 9)
- **TruPods:** 1:1:1 Laughing Buddha (Delta 8: Delta 9: CBD),  
1:1 Pink Lemonade (CBD: Delta 8),  
**Smother/milder euphoria. Pain relief with less potency**



# Deliveries and Order Pick-Up

**Free** statewide **delivery** for all patients over age 65, or patients spending \$200 or more

**Online Order Received** → marked **In Progress** → a delivery date is scheduled  
→ Your order is completed!



## Order Pick-Up

The Online Order Received → order is completed → text when ready for pickup

Pick it up at the Trulieve locations

NOTE: Opt for **express check in** to avoid lobby wait times

Register at [trulieve.com](https://www.trulieve.com) to create an online account

# Discounts



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TRU DADELAND	TRU NFORTMYERS
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TRU DEERFIELD	TRU ORLANDO
TRU DESTIN	TRU PALMCOAST
TRU EDGEWATER	TRU PCB
TRU FERNANDINA	TRU PCOLA9MILE
TRU FLL	TRU PENSACOLA
TRU FWB	TRU PORTCHAR
TRU GVILLE	TRU SARASOTA
TRU JAX	TRU STAUG
TRU JAXBEACH	TRU STPETE
TRU KEYWEST	TRU STUART
TRU LADYLAKE	TRU TALLY
TRU LAKELAND	TRU TAMPA
TRU LARGO	TRU VENICE
	TRU VERO
	TRU WESLEYCHAPEL
	TRU WPB

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## PATIENT DISCOUNT PROGRAM

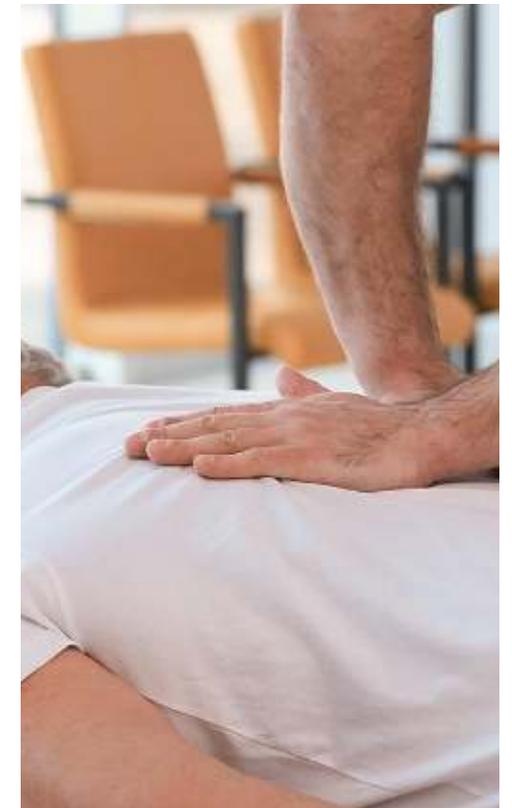
<b>TRULIEVER REWARDS</b> EARN POINTS ON EVERY PURCHASE FOR EVERY 500 TRULIEVER POINTS EARNED, <b>GET 10% OFF</b> YOUR NEXT ORDER!	<b>NEW PATIENT DISCOUNT</b> <b>15% OFF</b> YOUR FIRST ORDER \$75 OFF SECOND ORDER OF \$150+
<b>ID CARD RENEWAL</b> <b>\$75 OFF</b> ORDER OF \$150+	<b>FREE DELIVERY</b> <b>ORDERS \$200+</b> & PATIENTS AGES 65+
<b>BIRTHDAY DISCOUNT</b> <b>25% OFF ONE-TIME</b> DURING YOUR BIRTHDAY MONTH!	<b>VETERAN DISCOUNT</b> THANK YOU! <b>20% OFF</b> EVERY ORDER
<b>SNAP CARD HOLDERS</b> <b>10% OFF</b> EVERY ORDER	<b>SENIOR SUNDAY</b> PATIENTS 55+ <b>ENJOY 10% OFF</b>



# BALANCED LIVING A SENSE OF RESTORATION & CONTROL

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- Maintaining Emotional Wellbeing
  - Talk, Animal, Music, or Art Therapies
- Proper Diet, Exercise & Healthy Habits
- Balancing Spiritual Wellbeing
- Cognitive Health: Meditation or Tai Chi



# GROUP DISCUSSION

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# REFERENCES

- Al Mansouri, Ojha S., Al Maamari, Al Ameri M, Nurulain, S.M., & Bahi, A. (2014). The cannabinoid receptor 2 agonist,  $\beta$ -caryophyllene, reduced voluntary alcohol intake and attenuated ethanol-induced place preference and sensitivity in mice. *Pharmacology, Biochemistry and Behavior*, 260-8.
- Alpha-Pinene*. (n.d.). Retrieved from U.S. National Library of Medicine: <https://pubchem.ncbi.nlm.nih.gov/compound/alpha-pinene>
- Aristides Medeiros Leite, et al. (2007). Inhibitory effect of  $\beta$ -pinene,  $\alpha$ -pinene and eugenol on the growth of potential infectious endocarditis causing Gram-positive bacteria. *Brazilian Journal of Pharmaceutical Sciences*.
- Backes, M. W. (2017). *Cannabis Pharmacy: The practical guide to medical marijuana. Pgs 185-187.*
- Barnes, M. (2006). Sativex: Clinical efficacy and tolerability in the treatment of symptoms of multiple sclerosis and neuropathic pain. *Expert Opin Pharmacother*, 607-15.
- Cannabis and the Endocannabinoid System*. (2017). Retrieved from YouTube: <https://www.youtube.com/watch?v=Vtc11kRinf4>
- Cofield SS, et al. (2017). Perspectives on marijuana use and effectiveness: A survey of NARCOMS participants. *Neurol Clin Pract*, 333-343.
- Consroe, P. e. (1997). The perceived effects of smoking cannabis on patients with multiple sclerosis. *European Neurology*, 44-48.
- Gi-SangBaea, Kyoung-Chel, et al. . (n.d.). Protective effects of alpha-pinene in mice with cerulein-induced acute pancreatitis. *Science Direct*.
- Information, N. C. (n.d.). *Alpha-Pinene*. Retrieved from PubChem Database: <https://pubchem.ncbi.nlm.nih.gov/compound/alpha-Pinene>
- J. Manzanares, M. D. Julian, & A. Carrascosa. (2006). Role of the Cannabinoid System in Pain Control and Therapeutic Implications for the Management of Acute and Chronic Pain. *Current Neuropharmacology*, 239-257.
- Kaplan, J. (2018, April 23). *What Is Linalool & What Are the Effects of This Cannabis Terpene?* Retrieved from Leafly: <https://www.leafly.com/news/cannabis-101/linalool-cannabis-terpene-benefits>
- Klar, C. (n.d.). *Terpenes: The Essentials - Pinene*. Retrieved from Apothecarium: <https://apothecarium.com/blog/nevada/2018/2/22/terpenes-the-essentials-pinene>
- Kurt D. Ackerman, M. e. (2002). Stressful life events precede exacerbations of multiple sclerosis. *Psychosomatic Medicine*, 916-20.
- Leonard Leilow & Juliana Birnbaum. (2017). *CBD: A Patients Guide to Medical Cannabis*. Berkeley: North Atlantic Books.
- Michelle Cameron, MD, PT, MCR & Jessica Rice, MR. (n.d.). *Cannabis for Multiple Sclerosis Symptoms*. National Multiple Sclerosis Society.
- Miguel Angel Calleja, Jose María Vieites, et al. . (2013). The antioxidant effect of  $\beta$ -caryophyllene protects rat liver from carbon tetrachloride-induced fibrosis by inhibiting hepatic stellate cell activation. *British Journal of Nutrition*