

Get to Know CBD Oil

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Disclosures

Wade Siefert, RPh, ABAAHP, FAARM “declare(s) no conflicts of interest, real or apparent, and no financial interests in any company, product, or service mentioned in this program, including grants, employment, gifts, stock holdings, and honoraria.”



The American College of Apothecaries is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education.



Learning Objectives

At the conclusion of this program, the participating pharmacist or technician will be able to:

- Recognize the biology behind CBD oil
- Identify the differences between CBD oil vs. Medical Marijuana
- Describe the CBD oil forms currently available on the market
- Educate practitioners and patients on the benefits of CBD oil

Biology – Get to know the different terms

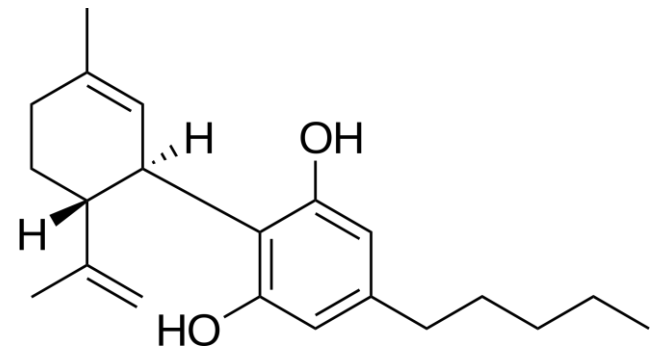
- **Cannabis Sativa L.**
 - Source of medical cannabis and agricultural hemp
 - Contains over 120 cannabinoids
 - Ex. CBD
- **Medical Cannabis – cannabis for medical purposes**
 - Marijuana (MJ) – cannabis for recreational purposes
- **Agricultural or Industrial Hemp**
 - Less than 0.3% THC by dry weight
 - Use of whole plant

History of Cannabis

- First reported as medicine > 8,000 years
- Introduced into Western medicine in 1840s by Dr. W.B. O'Shaughnessy
- Cannabis extracted from cannabis plants was the medicine of choice in the early 1900s
- It was promoted as analgesic, sedative, anti-inflammatory, antispasmodic and anticonvulsant properties
- In the mid 1900's we learned that we have our own Endocannabinoid system. Humans make our own endocannabinoids
- In the late 1990's we discovered that we have endocannabinoid receptors in every organ system of our bodies.

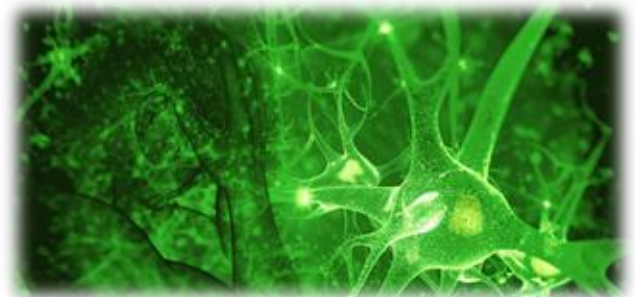
What is CBD?

- Chemical compound extracted from the Cannabis Sativa L. plant
- Belongs to a class of molecules called cannabinoids
- Legal dietary supplement
- Nutrient rich hemp contains excellent nutritional value and essential fatty acids
- Non-Psychotoxic
- Supports balance in the endocannabinoid system



Understanding the Endocannabinoid System

The Master Control System



Endocannabinoid System

- Master control system
- Group of endogenous cannabinoid receptors located in the mammalian brain and throughout the central & peripheral nervous systems
- Involved in the direct regulation of appetite, metabolic health, pain/inflammation, thermoregulation, intraocular pressure, sensation, muscle control, motivation/reward, mood and memory
- Involved in learning and synaptic plasticity
- Endocannabinoids are messengers that communicate via cannabinoid receptors
 - Anandamide and 2AG
 - Main Receptors: CB1 and CB2
 - Also, non-CB receptors

Endocannabinoid System Contd.

- Endocannabinoid System tone requires CB1 and CB2 balance
- Optimal CB1 activity decreases anxiety, reduces pain, decreases inflammation, controls sensory perception (how we respond to stress), memory and cognitive function
- Poor diet filled with processed foods, stress etc. overstimulates CB1 activity
- Overstimulation of CB1 has many negative side effects and could lead to anxiety, inflammation, insulin resistance, sleep, etc. in the body

How does CBD help balance CB1 and CB2?

CBD is able to balance the constant overstimulation of the CB1 receptor. It does this in three ways:

1. CBD acts as an antagonist to the CB1 receptor
2. It can gently stimulate CB2
3. CBD is able to stimulate receptors outside of endocannabinoid system which help to modulate pain, inflammation and decrease anxiety

*Cannabidiol or CBD helps balance the system that keeps you balanced!

Activities Associated with CBD to Date

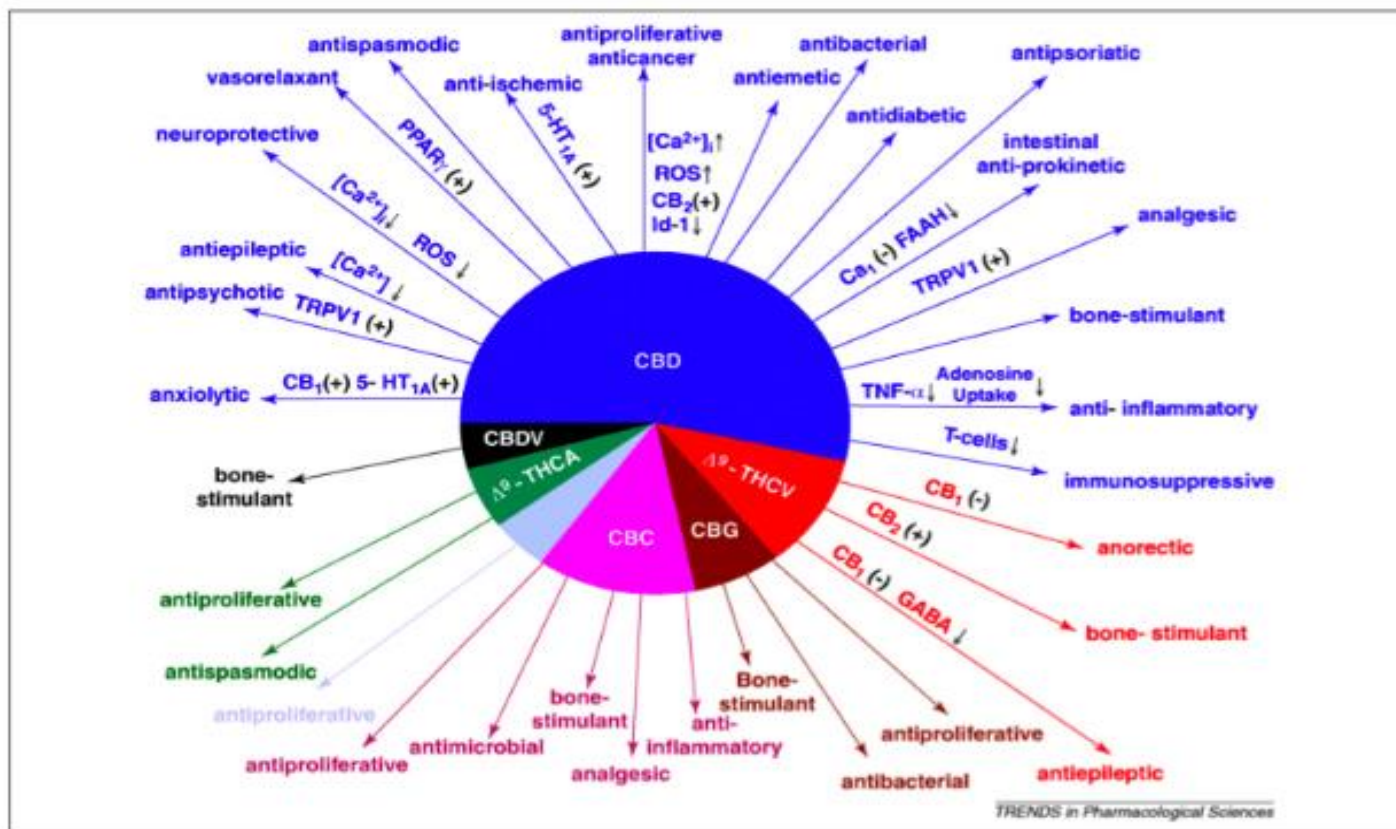


Figure 1. Pharmacological actions of non-psychotropic cannabinoids (with the indication of the proposed mechanisms of action).
 Abbreviations: Δ^2 -THC, Δ^2 -tetrahydrocannabinol; Δ^8 -THC, Δ^8 -tetrahydrocannabinol; CBN, cannabinoil; CBD, cannabidiol; Δ^2 -THCV, Δ^2 -tetrahydrocannabivarin; CBC, cannabichromene; CBG, cannabigerol; Δ^9 -THCA, Δ^9 -tetrahydrocannabinolic acid; CBDA, cannabidiolic acid; TRPV1, transient receptor potential vanilloid type 1; PPAR γ , peroxisome proliferator-activated receptor γ ; ROS, reactive oxygen species; 5-HT $_{1A}$, 5-hydroxytryptamine receptor subtype 1A; FAAH, fatty acid amide hydrolase. (+), direct or indirect activation; \uparrow , increase; \downarrow , decrease.

Safety Studies Regarding CBD

- Studies show CBD as non-toxic
- Does not include changes in food intake, does not induce catalepsy, does not affect physiological parameters (heart rate, blood pressure and body temperature)
- Does not affect gastrointestinal transit nor alter psychomotor or psychological functions
- Chronic use and high doses up to 1,500 mg/day of CBD are reportedly well tolerated in humans (High dose).

Conclusion: Based on recent advances in cannabinoid administration in humans, CBD shows safety in humans and animals

Why Don't We Have More Research?

- Cannabis is listed as a Schedule 1 drug, making it difficult to conduct research over certain limits
 - By definition, Schedule 1 means that there is no potential for medical benefit and highly addictive
 - When something is listed as Schedule 1 you are limited to the amount of research that you are able to do on humans
 - ***CBD is not directly scheduled, there is no reference of CBD in the Federal Acts***
- Hemp is not a controlled substance
 - Only allowed to be grown under research oversight and illegal to commercially grow and extract in US. Very limited.
- Good source material for phyto-cannabinoids is difficult to obtain
 - Issues with growing, selling and transporting across state lines
 - Can be imported

CBD vs. Medical Cannabis

Cannabis Sativa - CBD

- Non-psychoactive
- Does not result in feelings of euphoria
- Does not cause intoxication
- CBD contains trace amounts of THC only about 0.3%
- Legal

Medical Cannabis - Marijuana

- Associated with the feeling of being high
- Results in euphoria and psychoactivity
- Cannabis contains about 5-10% THC
- Illegal in most states without a Medical Marijuana Card

Legislative Regulation

- Hemp is not defined as “marijuana” under the Controlled Substances Act (CSA)
 - Expressly and intentionally excludes: mature stalks, fiber from stalks, oil, or cake made from seeds, any other compound, manufacture, salt, derivative, mixture or preparation of such mature stalks (except resin extracted therefrom), fiber, oil, or cake or the sterilized seed of such plant which is incapable of germination
 - Naturally occurring cannabinoids in agricultural hemp foods including oils, were never scheduled under the CSA
- Agricultural hemp fiber, stalk seed and oils can be lawfully imported into the United States and these portions of the hemp plant may enter into US commerce

CBD Oil Forms

CBD Oil Spray

2oz 500mg Spray

2-10 sprays = 3mg-15mg
CBD



In order to preserve freshness, store away from heat, light and humidity.

Supplement Facts

Serving Size: 2 sprays

Servings Per Container: about 160

Amount Per Serving	%DV
Hemp Oil (Aerial Plant Parts) 24 mg †	
(Cannabidiol (CBD) 3 mg)	

† Daily Value (DV) not established.

Vanilla



Other Ingredients: Glycerin (Kosher), Purified Water, Polysorbate 80 (Kosher), Sunflower Lecithin, Natural Vanilla Flavor, Stevia Leaf Extract, Potassium Sorbate

Peppermint



Other Ingredients: Glycerin (Kosher), Purified Water, Polysorbate 80 (Kosher), Sunflower Lecithin, Peppermint Oil (Mentha Piperita), Stevia Leaf Extract, Potassium Sorbate

Unflavored



Other Ingredients: Glycerin (Kosher), Purified Water, Polysorbate 80 (Kosher), Sunflower Lecithin, Stevia Leaf Extract, Potassium Sorbate

CBD Spray Titration Schedule

CBD-DOSING TITRATION SCHEDULE						
If improvement in symptoms is not seen during this initial trial of therapy, treatment should be stopped						
2 sprays = 3mg of CBD						
14 DAY CALENDAR						
Day		Number of milligrams of CBD in the morning (between waking and midday)		Number of milligrams of CBD in the evening (between 4pm & bedtime)		Total milligrams of CBD per day
1		0 sprays		2 sprays - 3 mg		2 sprays - 3 mg
2		0 sprays		2 sprays - 3 mg		2 sprays - 3 mg
3		0 sprays		4 sprays - 6 mg		4 sprays - 6 mg
4		0 sprays		4 sprays - 6 mg		4 sprays - 6 mg
5		2 sprays - 3 mg		4 sprays - 6 mg		6 sprays - 9 mg
6		2 sprays - 3 mg		6 sprays - 9 mg		8 sprays - 12 mg
7		2 sprays - 3 mg		8 sprays - 12 mg		10 sprays - 15 mg
8		4 sprays - 6 mg		8 sprays - 12 mg		12 sprays - 18 mg
9		4 sprays - 6 mg		10 sprays - 15 mg		14 sprays - 21 mg
10		6 sprays - 9 mg		10 sprays - 15 mg		16 sprays - 24 mg
11		6 sprays - 9 mg		12 sprays - 18 mg		18 sprays - 27 mg
12		8 sprays - 12 mg		12 sprays - 18 mg		20 sprays - 30 mg
13		8 sprays - 12 mg		14 sprays - 21 mg		22 sprays - 33 mg
14		10 sprays - 15 mg		14 sprays - 21 mg		24 sprays - 36 mg

CBD Oil Dropper

1oz 250mg
2oz 750mg Drops

Use: 15 drops or ½ dropper daily.

Peppermint



Unflavored



Supplement Facts	
Serving Size: 15 drops (½ dropper)	
Servings Per Container: about 80	
Amount Per Serving	%DV
Hemp Oil (Aerial Plant Parts) 13 mg †	
(Cannabidiol (CBD) 3 mg)	
† Daily Value (DV) not established.	

Supplement Facts	
Serving Size: 15 drops (½ dropper)	
Servings Per Container: about 160	
Amount Per Serving	%DV
Hemp Oil (Aerial Plant Parts) 19 mg †	
(Cannabidiol (CBD) 5 mg)	
† Daily Value (DV) not established.	

Other Ingredients: Olive Oil, Peppermint Oil, Monk Fruit, Silica, Monolaurin, Quillaja Saponaria, Ascrobyl Palmitate, Alpha Tocopherol, Water

Other Ingredients: Olive Oil, Monk Fruit, Silica, Monolaurin, Quillaja Saponaria, Ascrobyl Palmitate, Alpha Tocopherol, Water

CBD Oil Dropper Titration Schedule

CBD-DOSING TITRATION SCHEDULE

If improvement in symptoms is not seen during this initial trial of therapy, treatment should be stopped

1/2 dropper = 3 mg of CBD

Day	Number of milligrams of CBD in the morning (between waking and midday)	Number of milligrams of CBD in the evening (between 4pm & bedtime)	Total milligrams of CBD per day
1	0 dropper	1/2 dropper - 3 mg	1/2 dropper - 3 mg
2	0 dropper	1/2 dropper - 3 mg	1/2 dropper - 3 mg
3	0 dropper	1 dropper - 6 mg	1 dropper - 6 mg
4	0 dropper	1 dropper - 6 mg	1 dropper - 6 mg
5	1/2 dropper - 3 mg	1 dropper - 6 mg	1 1/2 dropper - 9 mg
6	1/2 dropper - 3 mg	1 1/2 dropper - 9 mg	2 dropper - 12 mg
7	1/2 dropper - 3 mg	2 dropper - 12 mg	2 1/2 dropper - 15 mg
8	1 dropper - 6 mg	2 dropper - 12 mg	3 dropper - 18 mg
9	1 dropper - 6 mg	2 1/2 dropper - 15 mg	3 1/2 dropper - 21 mg
10	1 1/2 dropper - 9 mg	2 1/2 dropper - 15 mg	4 dropper - 21 mg
11	1 1/2 dropper - 9 mg	3 dropper - 18 mg	4 1/2 dropper - 27 mg
12	2 dropper - 12 mg	3 dropper - 18 mg	5 dropper - 30 mg
13	2 dropper - 12 mg	3 1/2 dropper - 21 mg	5 1/2 dropper - 33 mg
14	2 1/2 dropper - 15 mg	3 1/2 dropper - 21 mg	6 dropper - 36 mg

CBD Capsules

10mg 30ct & 60ct Capsules

Use: 1-4 capsules daily.



Supplement Facts

Serving Size: 1 Capsule

Servings Per Container: 30

Amount Per Serving	%DV
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Hemp Oil (Aerial Plant Parts) 125 mg †	
(Cannabidiol (CBD) 10 mg)	

† Daily Value (DV) not established.

Other Ingredients: Food Starch - modified, Vegetable Cellulose, Silicon Dioxide, Vegetarian Capsule (Vegetable Cellulose, Water), Magnesium Stearate

Supplement Facts

Serving Size: 1 Capsule

Servings Per Container: 60

Amount Per Serving	%DV
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Hemp Oil (Aerial Plant Parts) 125 mg †	
(Cannabidiol (CBD) 10 mg)	

† Daily Value (DV) not established.

Other Ingredients: Food Starch - modified, Vegetable Cellulose, Silicon Dioxide, Vegetarian Capsule (Vegetable Cellulose, Water), Magnesium Stearate

Need More Information?

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