AHG Advanced Webinar Intensives Presents:

# "Cannabis: Ancient Medicine, Modern Marvel"

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Hosted by Michele Marlow

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# Cannabis Application

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BAKER BOTANICA

WHEN ENERGY FLOWS, WELLNESS GROWS

# Webinar 4: Cannabis Application Outline

I. Endocannabinoid System Review
II. Application Methods
III. Inhalation
IV. Ingestion
V. Topical
VI. Suppository
VII. Review
VIII. References

# I. Endocannabinoid System Review

# Endocannabinoid System

- **The ECS is essential for regulating**:

- Mood
- Memory
- Appetite
- Pain
- Reward
- Neurogenesis
- Mitochondrial activity (ATP production, regulate cellular metabolism)

- Some of the functions have been described as ***Relax, Eat, Sleep, Forget, Protect*** (Di Marzo et al, 1998)

# Cannabinoid Receptors

- **Cannabinoid receptors** are neuro-modulating receptors that modulate neurotransmitter release upon binding with an endocannabinoid.
- **CB1 receptors are psychoactive**
- Most CB1 receptors are found in basil ganglia, cerebellum, cerebral cortex, spinal cord, and peripheral nervous system
- They are also present in some **endocrine glands, leukocytes, spleen, heart, and parts of the reproductive, urinary, and gastrointestinal tracts** (Pertwee, RG, 1997)
- The distribution of CB1 receptors in specific regions of the brain signify the importance of the cannabinoid system for motor control, memory processing, and pain modulation

# Cannabinoid Receptors

- **CB2 receptors are non-psychoactive**
- CB2 receptors found in immune tissues such as **leukocytes, the spleen, and tonsils, and in the heart, bones, and muscles**.
- One of the functions of CB2 receptors in immune tissues is the modulation of cytokine release (systemic inflammatory response).
- They are expressed in the brain when injury or disease occurs, such as multiple sclerosis.
- CB2 receptors are important in reducing pain, spasticity, and inflammation.
- CB2 agonist drugs have also been shown to be effective for hepatic fibrosis and other fibrotic conditions.

# Cannabinoid Receptor Sites

**CB1 Receptor Sites**

Brain

Liver

Lungs

Pancreas

GI Tract

Muscles

Reproductive Organs

Circulatory System

Skin

**CB2 Receptor Sites**

Bones

Liver

Spleen

Pancreas

Skin

# Terpenoid & Cannabinoid Potential Synergy

| Effect | Terpenoids | Cannabinoids |
|---|---|---|
| Sedative | Nerolidol, B-Myrcene, Linalool, Terpinolene | CBN |
| Antidepressant | Limonene, B-Pinene | CBG, CBC |
| Anti-anxiety | Limonene, Linalool | CBD |
| Anti-inflammatory | Geraniol, B-myrcene, a-Humulene, B-Caryophyllene, Linalyl acetate, Paracymene, Sabinene, Ocimene | CBC, THC |
| Bronchodilator | a-Pinene | THC |
| Muscle relaxant | Linalool, B-myrcene | THC |
| Addiction | B-Caryophyllene | CBD |
| Analgesic | Linalool, B-myrcene, Linalyl acetate, a-Pinene | CBD, CBG, THC |
| Alertness | Limonene, a-Pinene | |
| Anticonvulsant | Linalool | CBD, CBDV, THCV |
| Neuroprotective | a-Pinene | CBD, THC |

# II. Application Methods

# How to Partake

**Inhalation**
- a. Smoke
- b. Vape
- c. Dab
- d. Diffuse

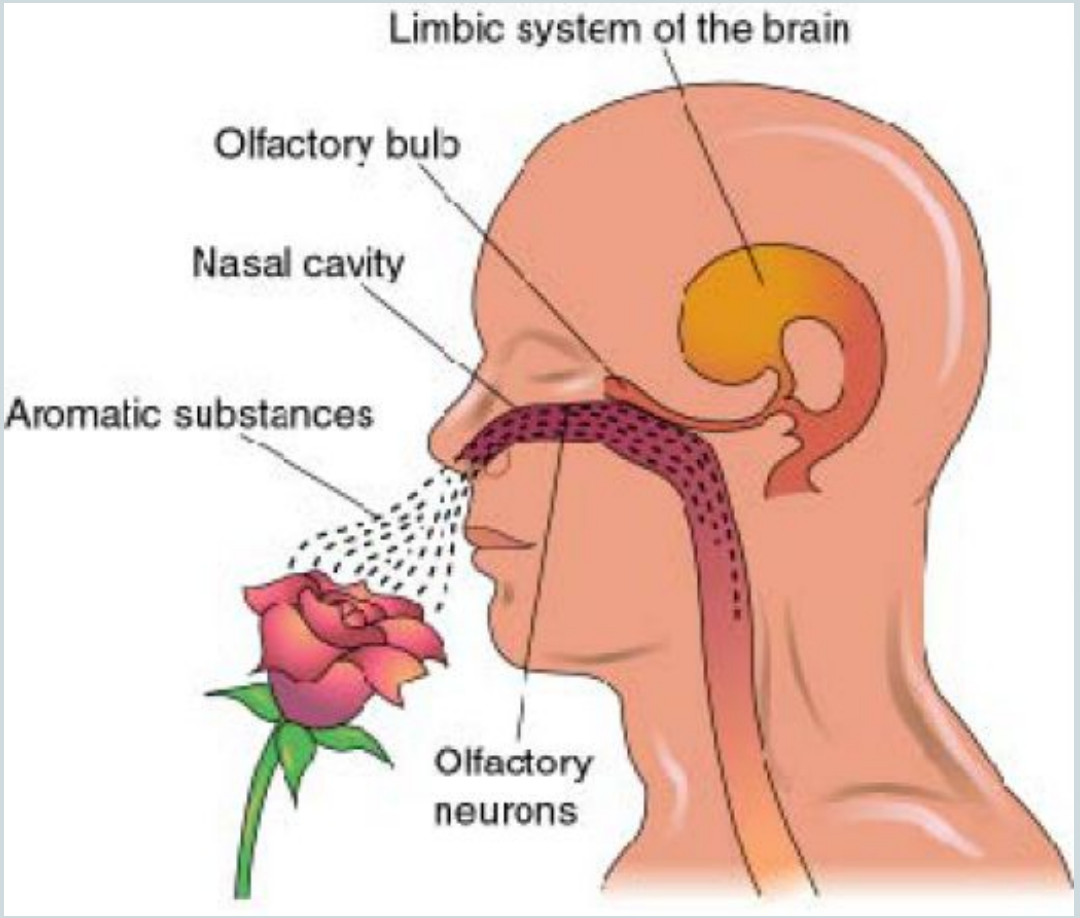
**Ingestion**
- a. Edibles
- b. Drinks
- c. Sublingual
- d. Nasal Spray

**Topical**
- a. Oils
- b. Creams
- c. Patches

**Suppository**

# III. Inhalation

# Inhale, Exhale



# Inhalation Methods

- Smoke- joint, bong, bowl
- Vape Pens
- Dab
- Diffuse

# Smoking Cannabis

# Pros & Cons of Smoking

| PROS | CONS |
| --- | --- |
| Immediate effect | Immediate effect (THC) |
| Smell | Smell |
| Bronchodilator (THC) | Potential irritant |
| Easy application | Smoking Stigma |

- Cannabis smoke has not been linked to cancer.
- Tobacco contains TSNAs (tobacco-specific nitrosamines- preservative added during curing process that causes cancer) and CTPVs (coal tar pitch volatiles – causes emphysema)
- Tobacco attacks P53 gene- gene that protects against disease
- These compounds and effects are not found in cannabis smoke!

- Second hand smoke/contact high has not been proven to affect physiology; cannabinoids do not show up in urine in realistic passive exposure to cannabis smoke (Mule, et al, 1998)

# Vape Pens

# Pros & Cons of Vape Pens

| PROS | CONS |
| --- | --- |
| Immediate effect | Euphoric effect not as strong |
| Smell fades quickly | |
| Bronchodilator (THC) | Potential irritant |
| Less stigma than smoking | Cheap metals, fillers |

- Many vape pens are made with cheap metal heating elements. Metal makes it easier to dial in a specific temperature than ceramic, but there is some concern with inhaling chemicals from metal.
- Cannabis concentrates used in vape pens are usually butane or CO2 extracted. Potential for solvent residue and low quality cannabis used for extraction
- Propylene glycol or vegetable glycerine commonly added to cannabis concentrate to make it more liquid

# Dabbing Cannabis

# Pros & Cons of Dabs

| PROS | CONS |
| --- | --- |
| Immediate effect | Immediate effect |
| Small amount effective | Can be too strong (THC) |
| Bronchodilator (THC) | Potential irritant |
| | Looks “druggy” |

Vape Pens and Dabs are two inhalation methods that require a cannabis extract. The most common extractions are butane and $CO_2$.

# Diffusing Cannabis

# Pros & Cons of Diffusion

| PROS | CONS |
| --- | --- |
| No cannabis consumed | No cannabis consumed |
| No smoke | Need to purchase a diffuser |
| Direct effect on limbic and ECS | |

- Therapeutic properties of cannabis diffusion established through aromatherapy research
- Scythian Vapor baths option

# IV. Ingestion

# Ingestion Methods

- Edibles
- Drinks
- Sublingual
- Nasal Spray

# Cannabis Edibles

# Pros & Cons of Cannabis Edibles

| PROS | CONS |
| --- | --- |
| No smoking, vaping or dabbing | No immediate effect |
| No immediate effect- sustained | Slow, erratic absorption |
| Easy application | Many made with butane extracts |
| | Unhealthy food choices |

- Maximum plasma concentration between 60-120 minutes (Ohlsson et al, 1980; Wall et al, 1993; Timpone et al, 1997)
- Some studies showed peak to be 4 (Law et al 1984) or 6 hours (Ohlsson et al, 1980; Hollister et al, 1981)
- State laws are required 10 mg doses; product maximum 100 mg for recreational/adult use sales, 200 mg for medical sales

# Cannabis Drinks

# Pros & Cons of Cannabis Drinks

| PROS | CONS |
| --- | --- |
| Easier to absorb than some edibles | Can contain sugar and color additives |
| No smoking, vaping, or dabbing | Effect depends on metabolism |
| Easy application | May be made with butane extracted cannabis |

- Cannabis is not hydrophilic so most products are made with solvent (butane, $CO_2$, ethanol) extracted cannabis

# Sublingual Cannabis


Available in 5 CBD:THC ratios

# Pros & Cons of Sublingual Cannabis

| PROS | CONS |
| --- | --- |
| Relatively fast absorption | May be made with butane extracted cannabis |
| No smoking, vaping, dabbing | Potential rancidity of carrier oil |
| Easy application | |
| Avoids first pass metabolism in liver | |

- *Sativex* from GW Pharmaceuticals- oromucosal spray of THC and CBD used to reduce muscle spasms and nerve pain that occur with MS
- Uses in Canada also include  moderate to severe pain in advanced cancer

# Cannabis Nasal Spray

# Pros & Cons of Nasal Spray

| PROS | CONS |
| --- | --- |
| Immediate effect | Immediate effect (high) |
| No concern of vape or smoke | Rebound congestion or dependency if nasal spray contains a decongestant |
| Easy application | May be made with butane extracted cannabis |

- Cannabis nasal sprays are being sold on the internet for seizures despite FDA warnings of not making medical claims on products

# V. Topical

# Topical Application

- Infused Oil
- Creams
- Patches

# Cannabis Oil

# Different Cannabis Oils

- Infused Oil- cannabis flowers, leaves and possibly other biomass infused in carrier oil through decarboxylation
- Homogenization- cannabis concentrate, distillate, or isolate blended in carrier oil *most common on market
- Cold pressed- hemp seed oil

# Pros & Cons of Cannabis Oils

| PROS | CONS |
| --- | --- |
| Highly nutritious (Hemp seed pressed Oil) | Misunderstanding in advertising |
| Controlled dosage with distillates or isolates | Butane extract most common oil on the market |
| No smoking, vaping, dabbing | Can be messy or oily when applied |
| Easy application | |

- Oils may be taken internally or applied topically

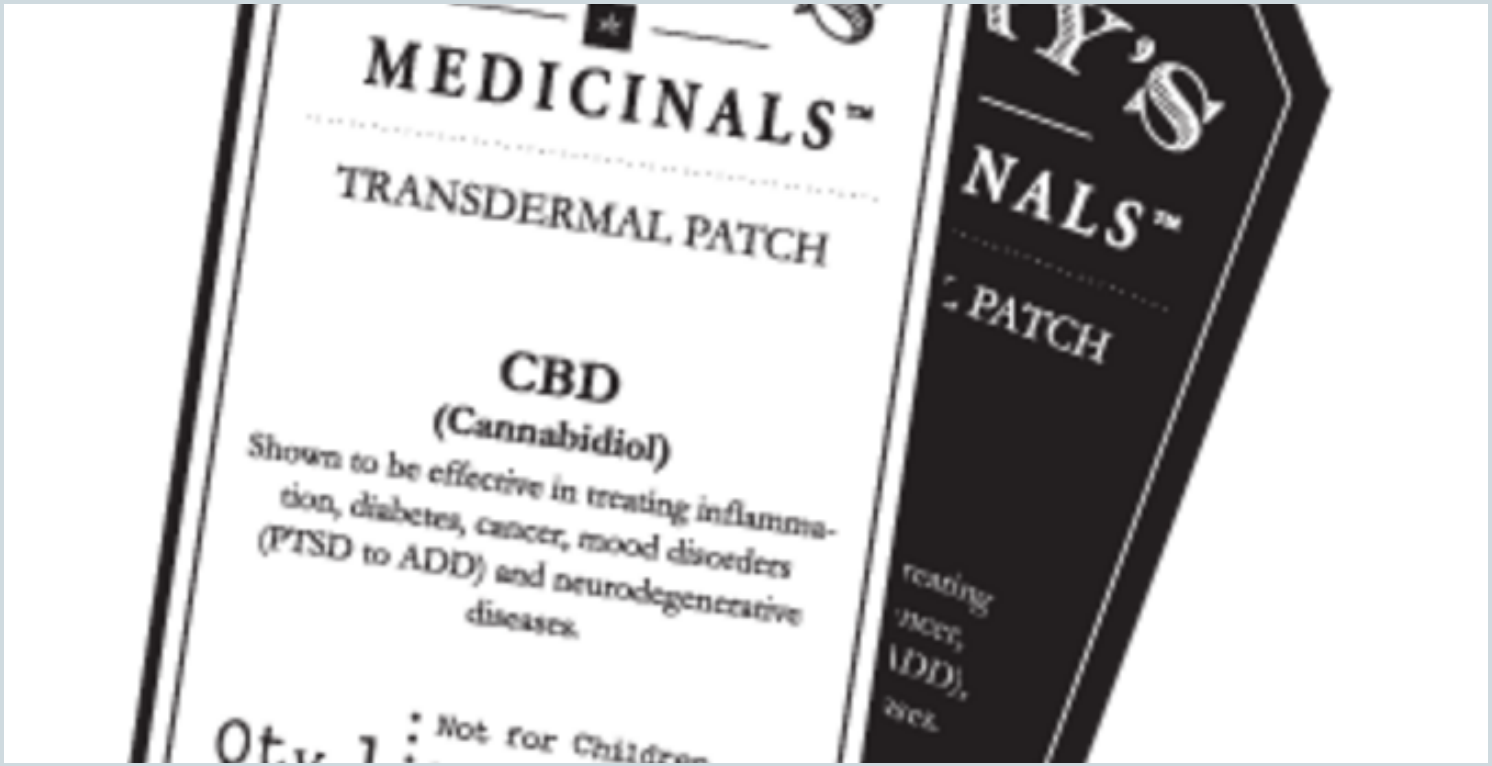
# Cannabis Creams

# Pros & Cons of Cannabis Creams

| PROS | CONS |
| --- | --- |
| No smoking, vaping, dabbing | Butane extract most commonly used in cream |
| Properties of other ingredients | Uneducated guesses in product formulation |
| Easy application | |

- Creams are less oily than using an oil topically
- Popular method- used to applying lotion on body

# Transdermal Patches



# Pros & Cons of Transdermal Patches

| PROS | CONS |
| --- | --- |
| No smoking, vaping, dabbing | Dubious products on the market |
| Easy application | |
| Avoids first-pass metabolism | |

- Permeability of CBD and CBN found to be 10-fold higher than for delta-8 THC (Hammel, et al, 2004)

# VI. Suppository

# Cannabis Suppository

# Pros & Cons of Cannabis Suppository

| PROS | CONS |
| --- | --- |
| Rectal or vaginal insertion | Rectal or vaginal insertion |
| Higher rate of bioavailability | |
| No smoking, vaping, dabbing | |

- Bioavailability of Marinol used rectally is approximately twice that of oral route due to higher absorption and lower first-pass metabolism (Brenneisen, et al, 1996)

# VII. Review

# Methods of Application

**Inhalation**
- a. Smoke
- b. Vape
- c. Dab
- d. Diffuse

**Ingestion**
- a. Edibles
- b. Drinks
- c. Sublingual
- d. Nasal Spray

**Topical**
- a. Oils
- b. Creams
- c. Patches

**Suppository**

# The Future of Cannabis

- We are just beginning to understand the important role cannabis has played in human and cultural evolution.
- More studies reflect therapeutic properties of cannabinoids and terpenoids
- Sum of the parts is greater than individual constituents
- Use common sense and reverence as you would with all herbal medicine

# References

# References


- *Cannabis and Cannabinoids, Pharmacology, Toxicology, and Therapeutic Potential*, edited by Franjo Grotenhermen, MD and Ethan Russo, MD
- *Handbook of Cannabis Therapeutics*, edited by Ethan Russo, MD and Franjo Grotenhermen, MD
- *Taming THC: potential cannabis synergy and phytocannabinoid-terpenoid entourage effects,* Ethan Russo, MD, 2011
- *Human Cannabinoid Pharmacokinetics*, Marilyn A. Huestis, Chem Biodiversity Aug 4, 2007, 1770-1804
- *Aromatherapy for Health Professionals 3rd edition*, edited by Shirley Price & Len Price

# Stay in Touch!

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- Podcast: *The Herb Walk with Jessica Baker*
- Book: *Plant Songs: Reflections on Herbal Medicine* Available through Amazon or Balboa Press
- Seasonal Solutions *5 Element Essential Oil Blends* are now available through my website, www.bakerbotanica.com