



Center for Mind Body Medicine

The New^{ish} Kid on the Block: Cannabis

November 15, 2018





Today's Objectives

- Explore cannabis terminology
- Review the history of cannabis as medicine (brief!)
- Discuss the endocannabinoid system + cannabinoids
- Assess the integration of cannabis with holistic medicine
- Examine ways to upregulate the endocannabinoid system for women's health

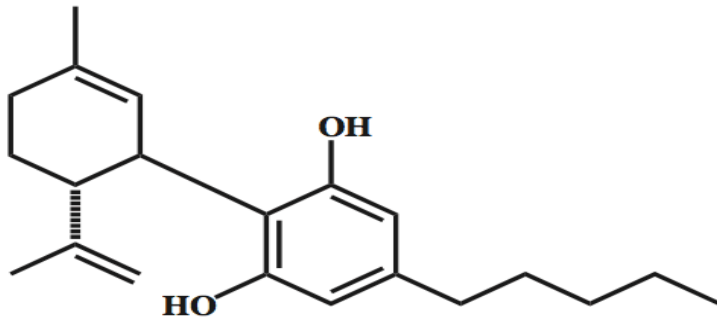


Cannabis & Hemp & CBD – Oh My!

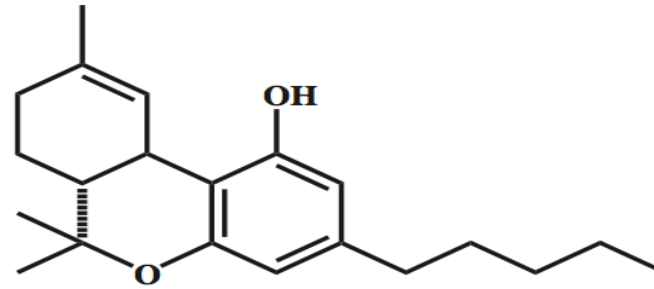
- Marijuana & hemp are both cannabis!
- THC & CBD are cannabinoids
- THC is tetrahydrocannabinol
- CBD is cannabidiol
- Marijuana contains over 0.3% THC
- Hemp contains less than 0.3% THC
- Hemp-derived *CBD—caveat emptor*



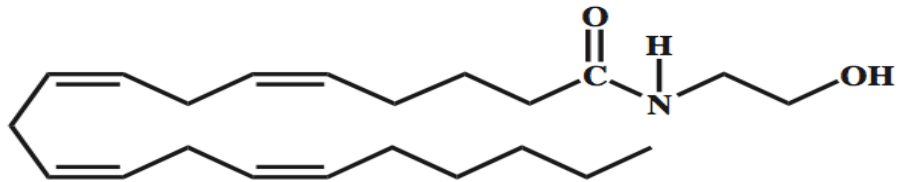
Chemical Structures



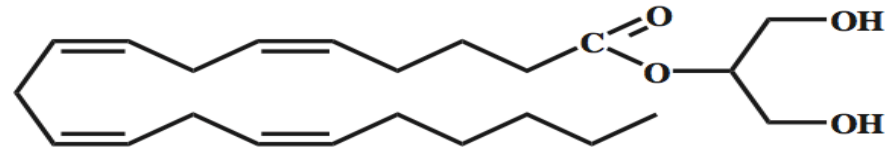
Cannabidiol (CBD)



Δ⁹-tetrahydrocannabinol (Δ⁹-THC)



Arachidonoyl ethanolamide (anandamide)



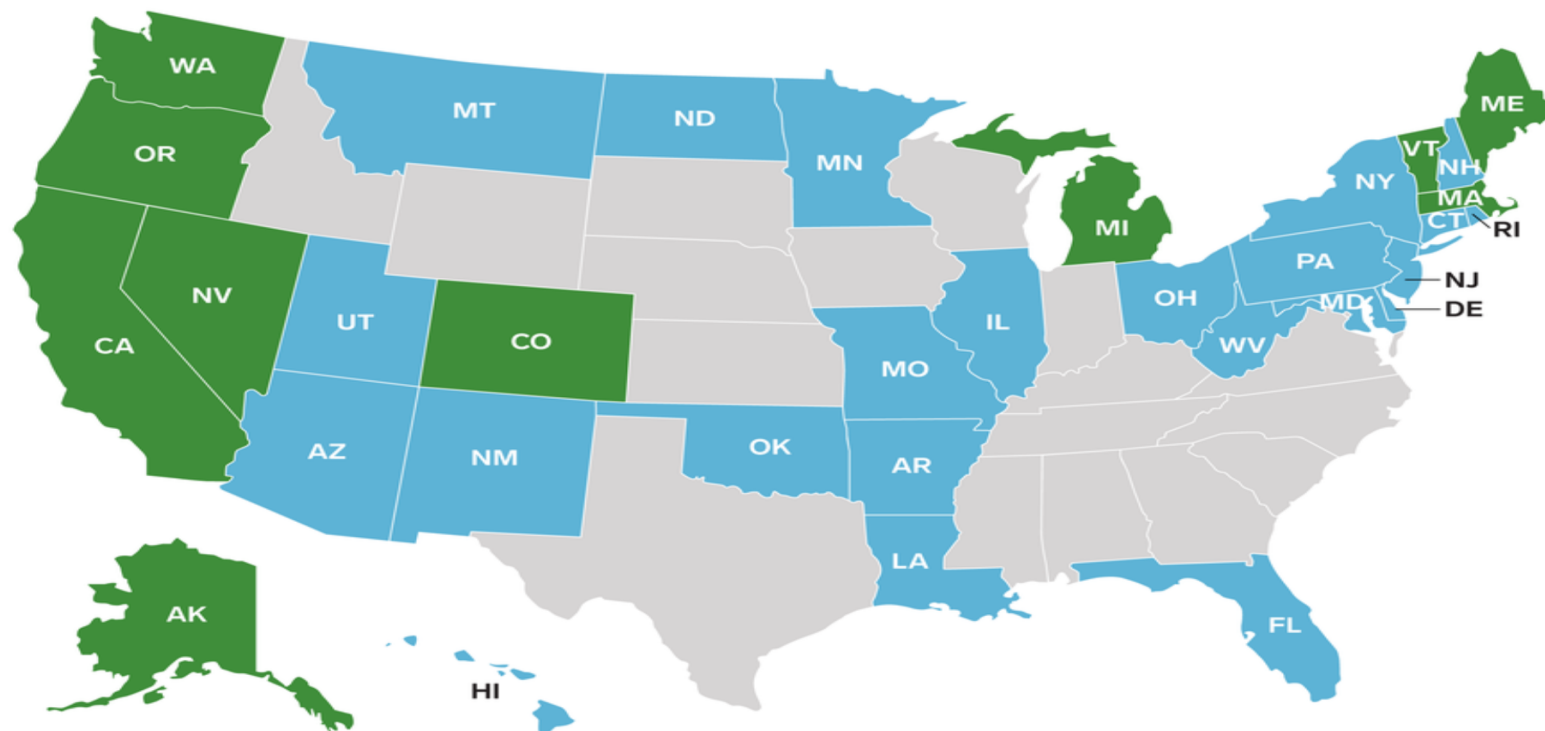
2-arachidonoyl glycerol (2-AG)



Marijuana Legislative Landscape

States where marijuana is legal

■ Legalized recreational and medical marijuana ■ Legalized medical marijuana



Insider Inc.

<https://www.businessinsider.com/legal-marijuana-states-2018-1>



DEA Schedule 1 Listing

- Controlled Substances Act
- Listed as a schedule 1 drug with heroin, cocaine, MDMA, LSD
- Contradicts states with medical marijuana regulations





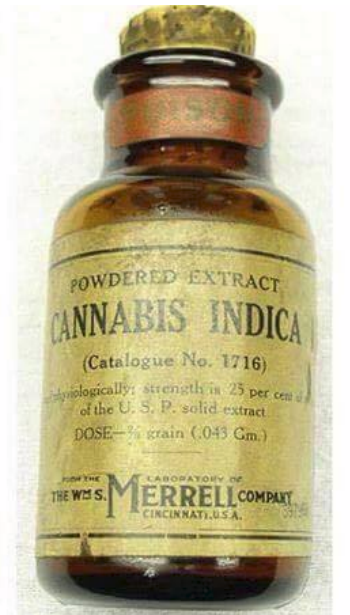
Cannabis Is a Plant!





Cannabis as Medicine History

- Cannabis as medicine for thousands of years, only illegal in US for about 80 years
- US Pharmacopeia listing
- Ancestors used mother nature's medicines—plants—to heal







A Brief Backwards History of Cannabis

1. Medical marijuana approvals begin
2. Adult use marijuana approvals begin
3. Hemp-derived CBD hits the market big time
4. Marijuana growers turn to hemp



Fear of Cannabis (Yes, Hemp) Persists!

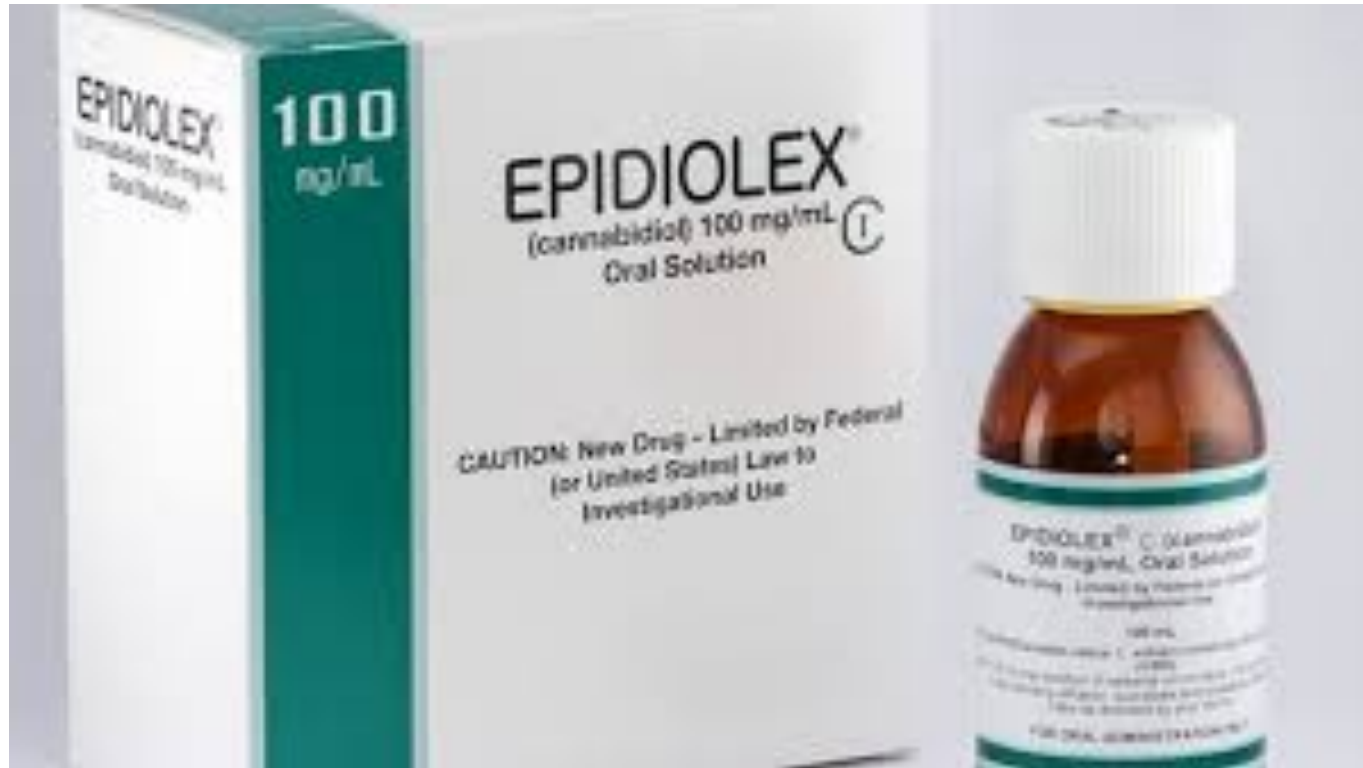


“What’s Up with Fear of Marijuana” in *Huffington Post*

http://www.huffingtonpost.com/laura-lagano/post_11378_b_9558388.html



Big Change on the Horizon





CBD Is Not Just for Seizures!

CBD is a potent anti-inflammatory.

Inflammation underlies the vast majority of
CHRONIC DISEASE.





FUN FACT

Cannabis is 1 of the 50 "fundamental" herbs in traditional Chinese medicine.

Already in Taiwan 10,000 years ago, cannabis was recommended for many ailments, including constipation, gout, rheumatism, and absent-mindedness.



Why Should You Care?

- Medical marijuana is legal in 32 states
- Healthcare paradigm is shifting—driven by demand
- CBD is available everywhere—*caveat emptor*
- Cannabis integrates with various holistic modalities including mind-body medicine + nutrition
- Ancient plant medicine works!
- It's like the Wild, Wild West



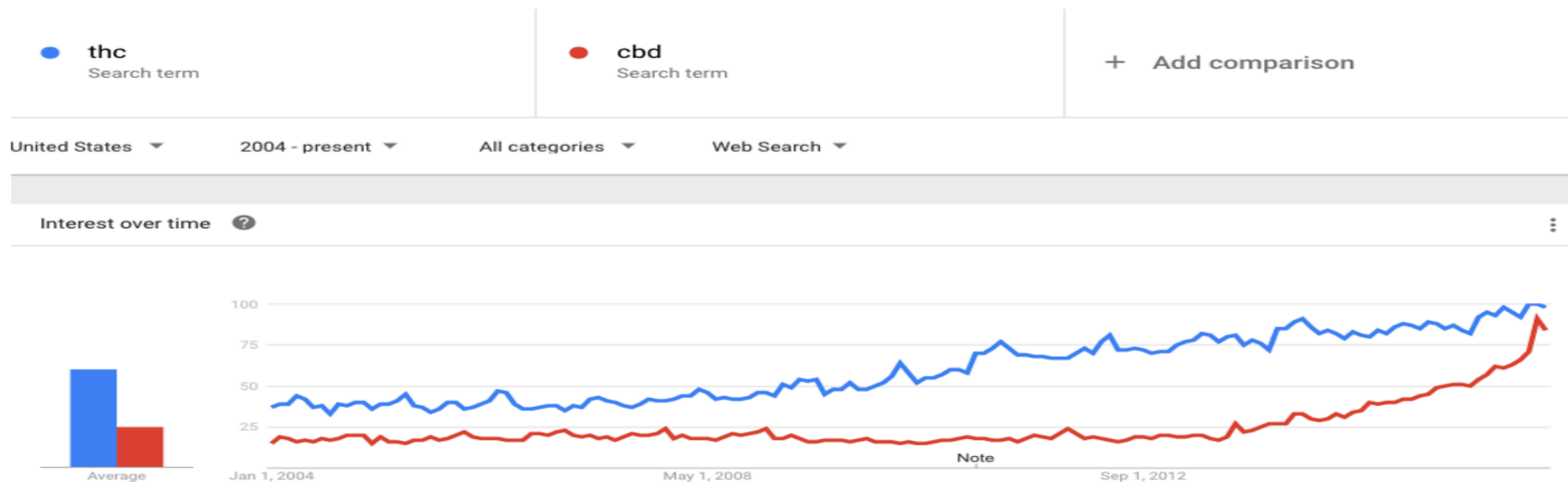
Consumer Interest in CBD + THC



BUSINESS INSIDER

SCIENCE

People are increasingly interested in CBD, even if THC still gets more searches. CBD is a non-psychoactive part of pot shown to have some health benefits. THC is psychoactive and also has some health benefits.



Google



Integrating Cannabis Holistically





Ancient Plant Medicine Works!

- ADHD
- Alzheimer's Disease
- Anxiety
- Autism Spectrum Disorder
- Cancer
- Depression
- Eating Disorders
- Epilepsy
- Fertility
- Fibromyalgia
- Gut Issues
- Inflammation
- Insomnia
- Menopause
- Migraine
- Multiple Sclerosis
- Osteoporosis
- Pain
- PMS
- PTSD
- Skin Disorders
- Stress
- Weight Management



Wild, Wild West

Cannabis and Cannabinoid Research
Volume 1.1, 2016
DOI: 10.1089/can.2016.0024

**Cannabis and
Cannabinoid Research**

Mary Ann Liebert, Inc.  publishers

ORIGINAL RESEARCH

Open Access

Training and Practices of Cannabis Dispensary Staff

Nancy A. Haug,^{1,2,*} Dustin Kieschnick,¹ James E. Sottile,³ Kimberly A. Babson,⁴
Ryan Vandrey,⁵ and Marcel O. Bonn-Miller^{4,6-8}

Abstract

Introduction: The proliferation of cannabis as a medical product has led to a demand for the legalization of cannabis as a medical product. Unfortunately, nothing is known about the characteristics of cannabis strains/concentrations for specific patient populations or the training and practices of cannabis dispensary staff.

Materials and Methods: Medical and nursing students completed an online survey assessing their knowledge of cannabis characteristics, formal training, and cannabis dispensary practices.

Results: Fifty-five percent of dispensary staff reported having received medical/scientific training. A majority (94%) of respondents reported that they had experience with cannabis strains, dispensary staff trended toward recommending strains for nightmares, and Tourette's syndrome. The most common recommendation for PTSD/trauma and depression was indica strains; hybrid strains were most often recommended for anxiety. For cannabinoid concentrations, dispensary staff were most likely to recommend high THC:cannabidiol (CBD) for patients suffering from conditions seeking appetite stimulation were most often recommended for arthritis and Alzheimer's disease and a high

“...some are recommending cannabis that has either not been shown effective for, or could exacerbate, a patient's condition. Findings underscore the importance of consistent, evidence-based, training of dispensary staff who provide specific recommendations for patient medical conditions.



Why Does Cannabis Work?

The endocannabinoid system!

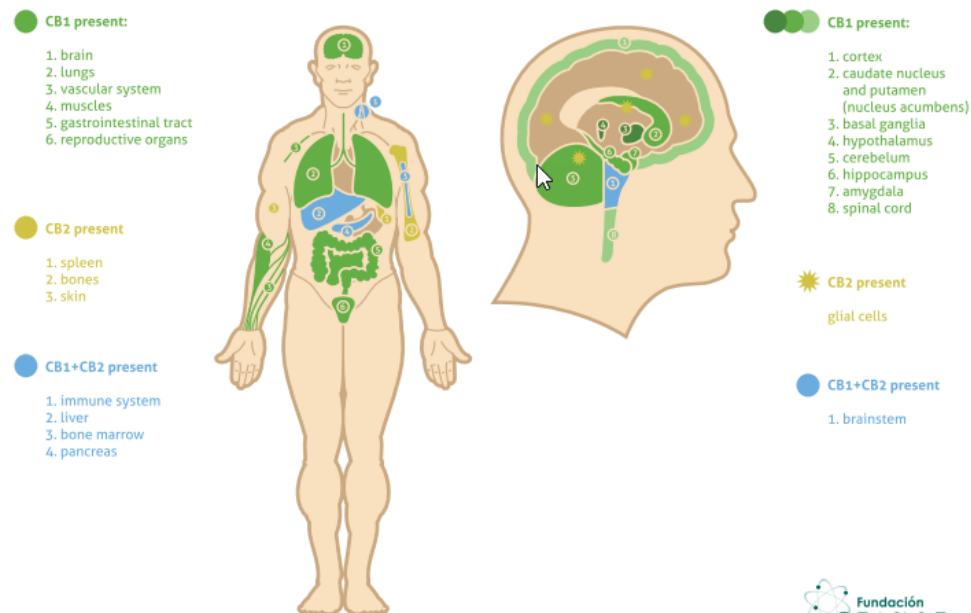


Image originally published in *The Endocannabinoid System Agents*, on Fundacion Canna



Endocannabinoid System (ECS)

- All living things with a spine produce endocannabinoids
- Collection of binding molecules
 - Ligands
 - Enzymes
 - Receptors
- Endocannabinoids – keys that open receptors
 - Anandamide + 2-AG, or 2-arachidonoylglycerol



Endocannabinoid System

- Key component of physiology of healing
- System of communication between cells
- Balance + homeostasis
- Basic components are receptors
- System similar to other receptor systems with lock + key mechanism
- Key = chemical compound





Endocannabinoid System

- Two key receptors discovered to date
 - CB1: CNS, adipose, heart, lung, GI, muscle, joints, skin
 - CB2: immune, bone, spleen
- Regulates physiological processes
 - Appetite
 - Pain
 - Mood
 - Memory
 - Sleep
 - Immune Function



Endocannabinoid: Anandamide

- Derived from ananda = Sanskrit for bliss
- Chronic anti-depressant/anti-psychotic meds elevate anandamide production
- Receptors eventually get desensitized to
- Deep breathing + meditation help maintain bliss levels

आनन्द



Why Modulate the ECS?



NIH Public Access

Author Manuscript

FEBS J. Author manuscript; available in PMC 2014 May 01.

Published in final edited form as:

FEBS J. 2013 May ; 280(9): 1918–1943. doi:10.1111/febs.12260.

Modulating the endocannabinoid system in human health and disease: successes and failures

Pál Pacher and George Kunos

Laboratory of Physiologic Studies, N
Institutes of Health, Bethesda, Mary

Abstract

The discovery of the endocannabinoid system (ECS), including CB1 and CB2 receptors, their endogenous ligands, and the enzymes responsible for their synthesis and metabolism, triggered a paradigm shift in understanding the role of the ECS in a growing number of physiological and pathological processes. Modulating ECS activity holds therapeutic potential in almost all diseases affecting humans, including obesity/metabolic syndrome, diabetes and diabetic complications, neurodegenerative, inflammatory, cardiovascular, liver, gastrointestinal, skin diseases, pain, psychiatric disorders, cachexia, cancer, chemotherapy-induced nausea and vomiting, among many others.

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Ancient Plant Medicine Works!

- ADHD
- Alzheimer's Disease
- Anxiety
- Autism Spectrum Disorder
- Cancer
- Depression
- Eating Disorders
- Epilepsy
- Fertility
- Fibromyalgia
- Gut Issues
- Inflammation
- Insomnia
- Menopause
- Migraine
- Multiple Sclerosis
- Osteoporosis
- Pain
- PMS
- PTSD
- Skin Disorders
- Stress
- Weight Management



Cannabis + Stress + Anxiety

Gut-Brain Axis





Cannabis + Chronic Pain

Two words:
Opioid Crisis





Cannabis + Women's Health

PMS

Fertility

Peri-Menopause

Menopause





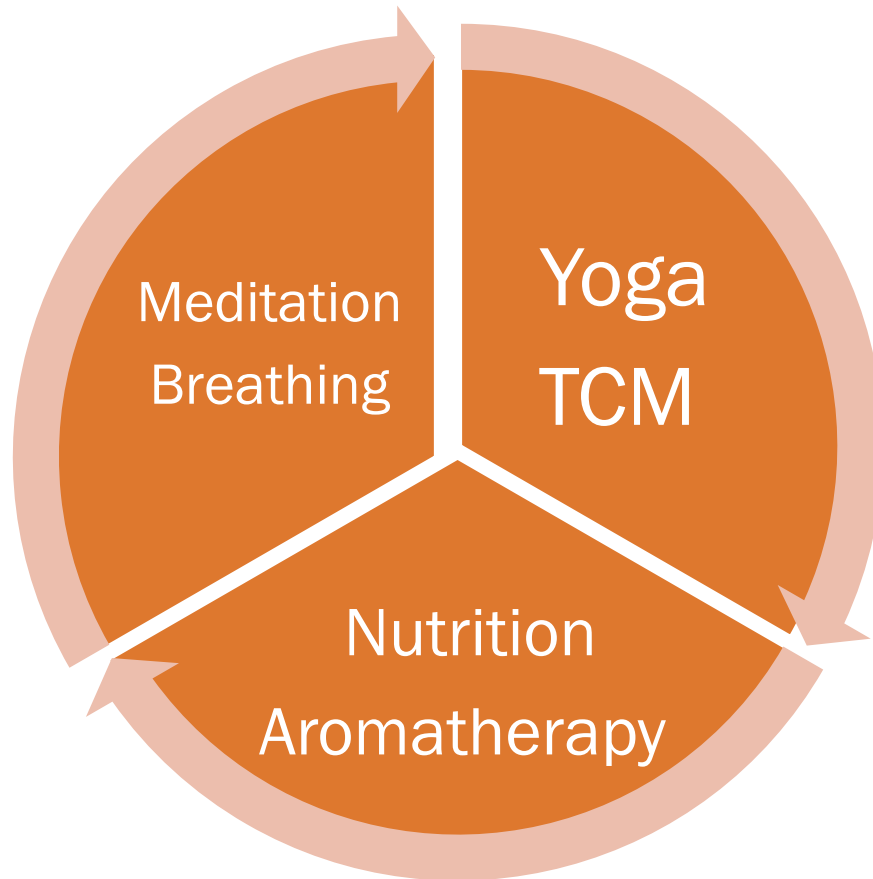
FUN FACT

Queen Victoria drank cannabis tea to relieve period pain, like many English women.

In 1928, the UK outlawed cannabis use as part of an obscure League of Nations treaty.



Intersection with Holistic Medicine



Mind-body medicine,
“soft belly” breathing,
nutrition, Ayurveda, yoga,
TCM, integrates with
cannabis



Aromatherapy as Intro to Cannabis

- Plant synergy provides the interaction between phytocannabinoids + terpenes
- Herbal steams of hemp oil with other oils
- Inhalation influences limbic system for healing benefits



Overlaying Aromatherapy

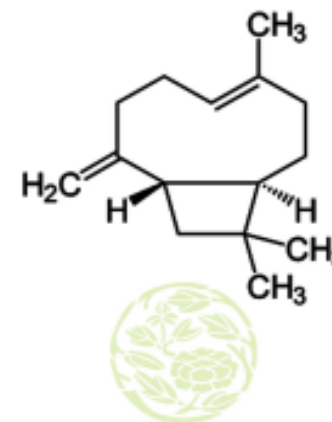


- Terpenes in many plants + main components of EOs
- Cytochrome P450 system manages terpenes
- Cannabis offers synergy with terpenes



What Are Terpenes?

- Unsaturated hydrocarbons found in plant essential oils
- Monoterpenes are most abundant
- Beta-caryophyllene is major terpene found in hemp seed oil





Functions of Terpenes

Beta-caryophyllene

- In carrot seed
- Anti-fungal
- Anti-malarial
- Protects gastric cells
- Skin protection





Functions of Terpenes

Limonene

- In citrus
- Immune stimulant
- Reduces anxiety
- Treats acne
- Fights breast cancer cells





Functions of Terpenes

Linalool

- In lavender
- Local anesthetic
- Reduces spasms
- Anticonvulsant
- May counteract psychoactivity





Functions of Terpenes

Myrcene

- In mango + thyme
- Analgesic
- Muscle relaxant
- Promotes digestive mobility





Functions of Terpenes

Pinene

- In pine
- Anti-inflammatory
- Helps arthritic pain
- Acetylcholinesterase inhibitor to aid memory

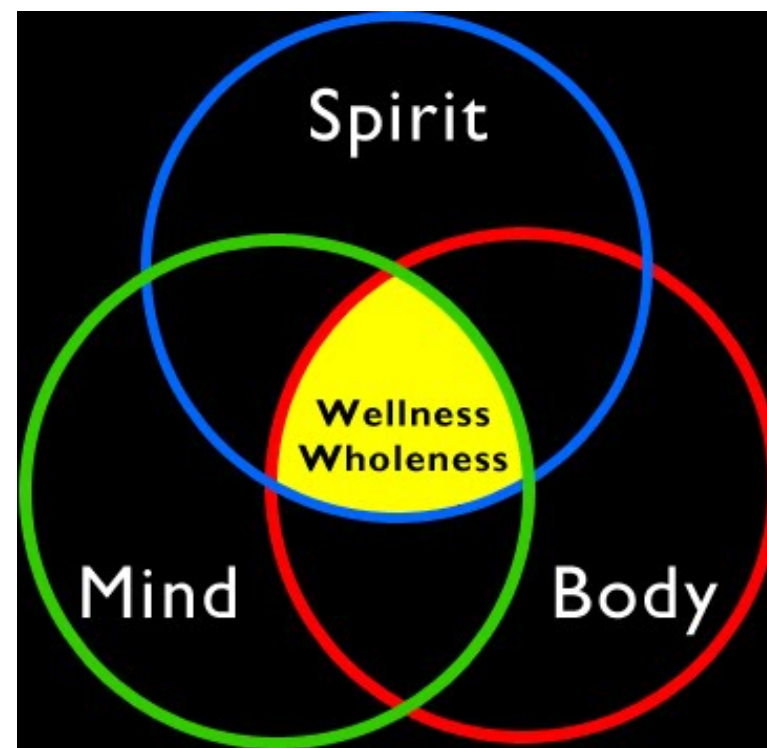




Cannabis + Meditation + Yoga

Cannabis facilitates

- Mindfulness
- Slowing down
- Decision making
- Empowerment
- Self-determination





Cannabis + Mind-Body Medicine

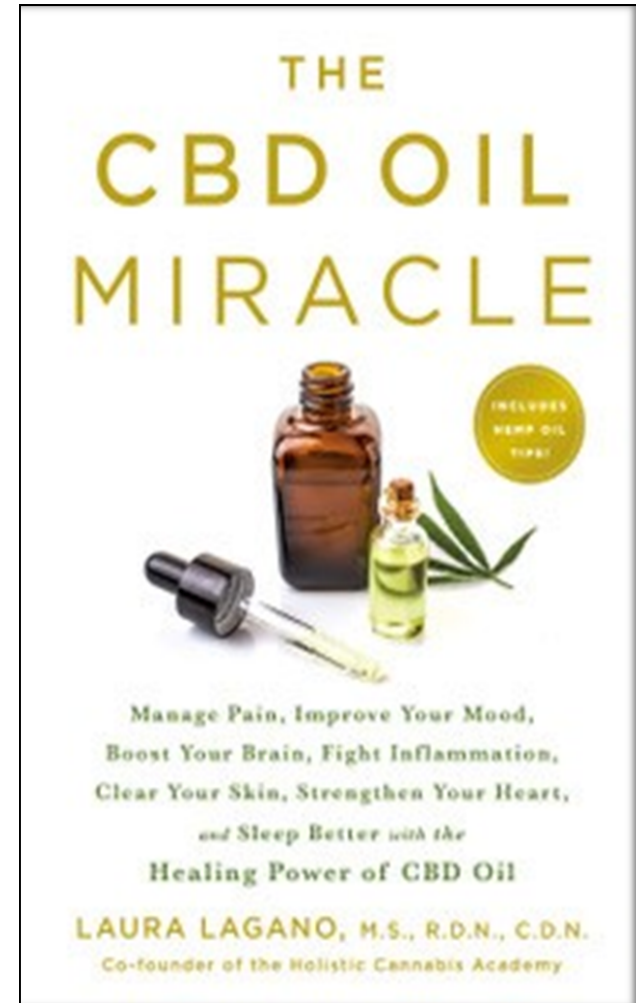
- An ancient healing herb is rediscovered.
- It's all about the endocannabinoid system!
- Women's health, mood disorders, gut health, insomnia, and pain are primary applications





A Helpful Resource Is on the Way

- Available March 2019
- Published by St. Martin's Press
- Written by an Integrative Nutrition & Cannabis Clinician





Get Certified as Holistic Cannabis Practitioner Now!

Register at holisticcanna.com
Use promo code: CMBM

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