

Cannabis Medicines for the Treatment of Cancer

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About Me

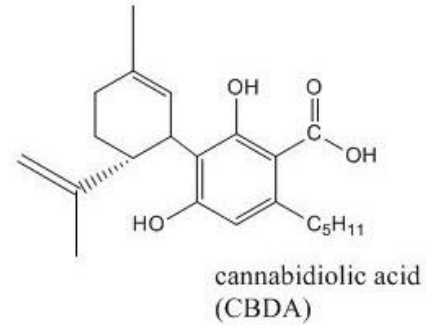
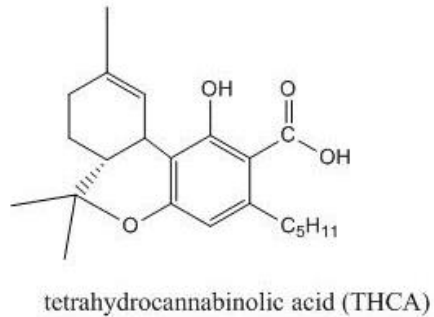
- ▶ Dr. Allan I. Frankel
- ▶ 38 years as a practicing Internal Medical Doctor, specializing in the use of dosed cannabis medicines for the past 11 years
- ▶ Recommended dosed cannabis medicines to over 10,000 patients during this time
- ▶ Graduate of the UCLA School of Medicine
- ▶ Presented multiple CME accredited Grand Round Lectures on Internal Medicine and Therapies in Medical Cannabis. Participated in round table discussions on the topic of future therapies and research for Medical Cannabis sponsored by the California Medical Association and the Los Angeles County Medical Association
- ▶ Clinical Professor for 12 years for the University of California Los Angeles School of Medicine
- ▶ Developed the Chartscape medical software program used by the UCLA Bowyer Cancer and the eScript medical software utilized by Kaiser Permanente Health System

How I Discovered Cannabis Medicine

- ▶ Following a severe medical condition, I searched for alternatives to traditional medicines
- ▶ I researched cannabis and found it to have the potential to relieve the symptoms of multiple chronic and serious illnesses
- ▶ Cannabis is significantly less addictive and has less side effects than many pharmaceuticals used to treat illness
- ▶ What was lacking in cannabis medicine was true dosing

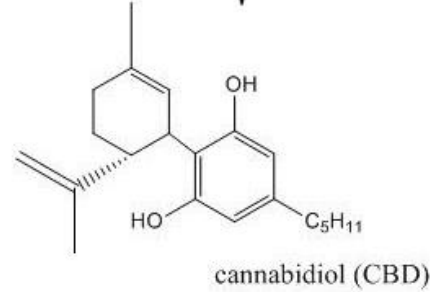
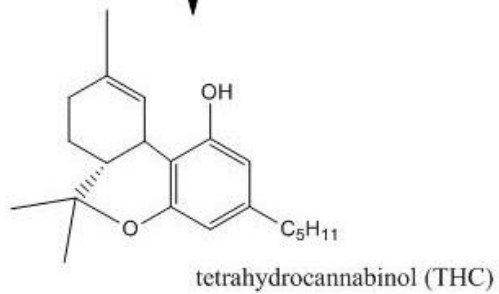
The Key Players:

Plant Derived Cannabinoids

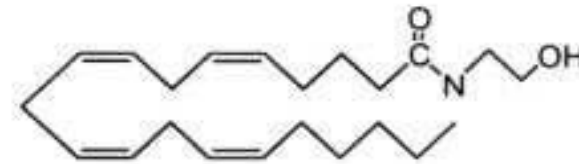


-CO₂ (decarboxylation)

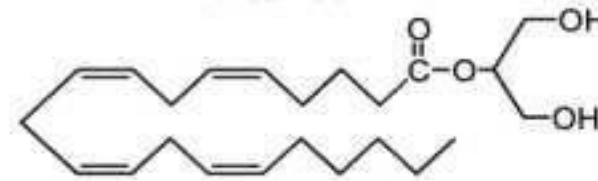
-CO₂ (decarboxylation)



Endogenous Cannabinoids



Anandamide



2-Arachidonylglycerol (2-AG)

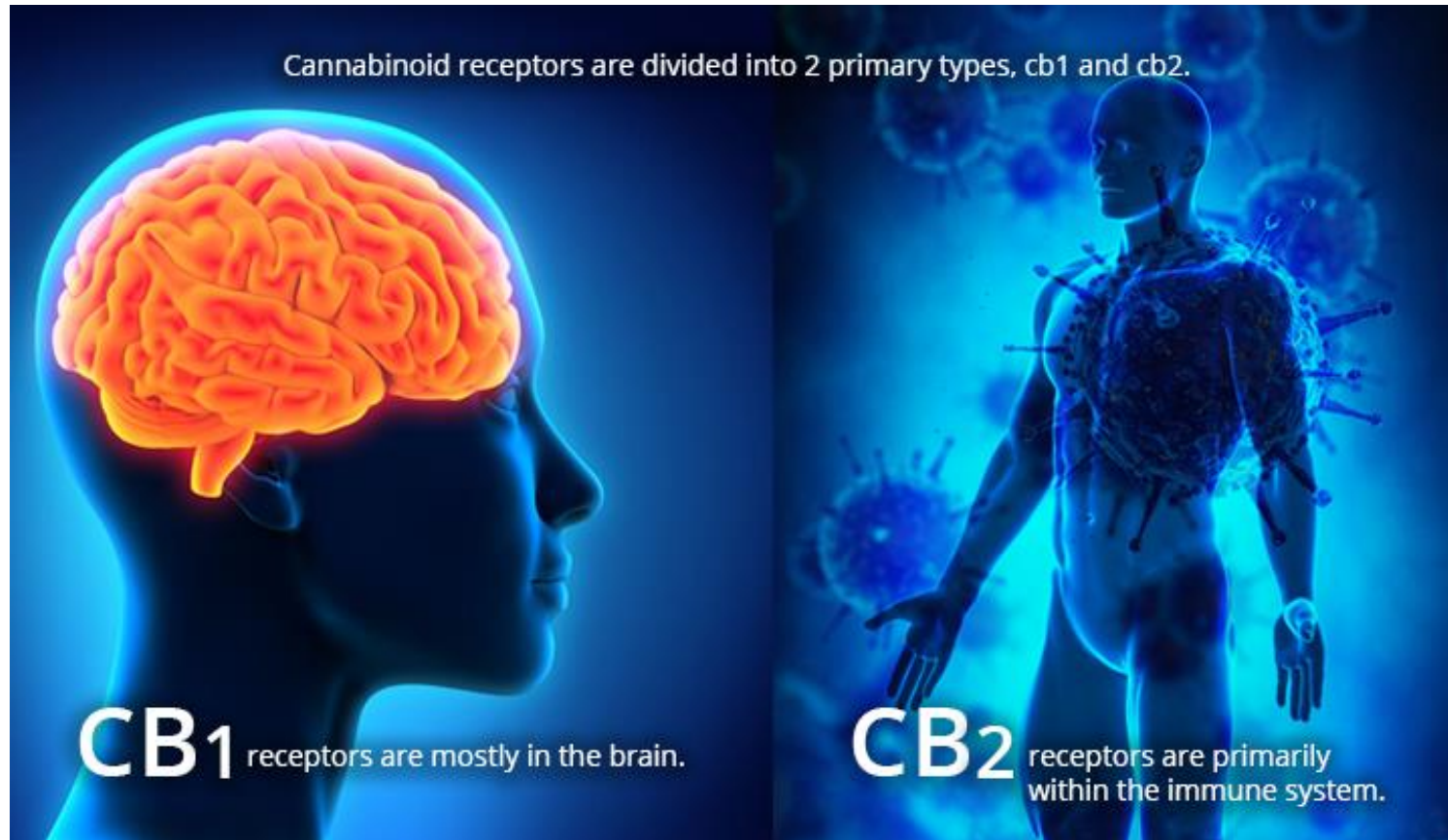
The Major Cannabinoids

- ▶ THC
- ▶ CBD
- ▶ THCA
- ▶ CBDA
- ▶ CBG
- ▶ CBC
- ▶ THCV
- ▶ CBDV

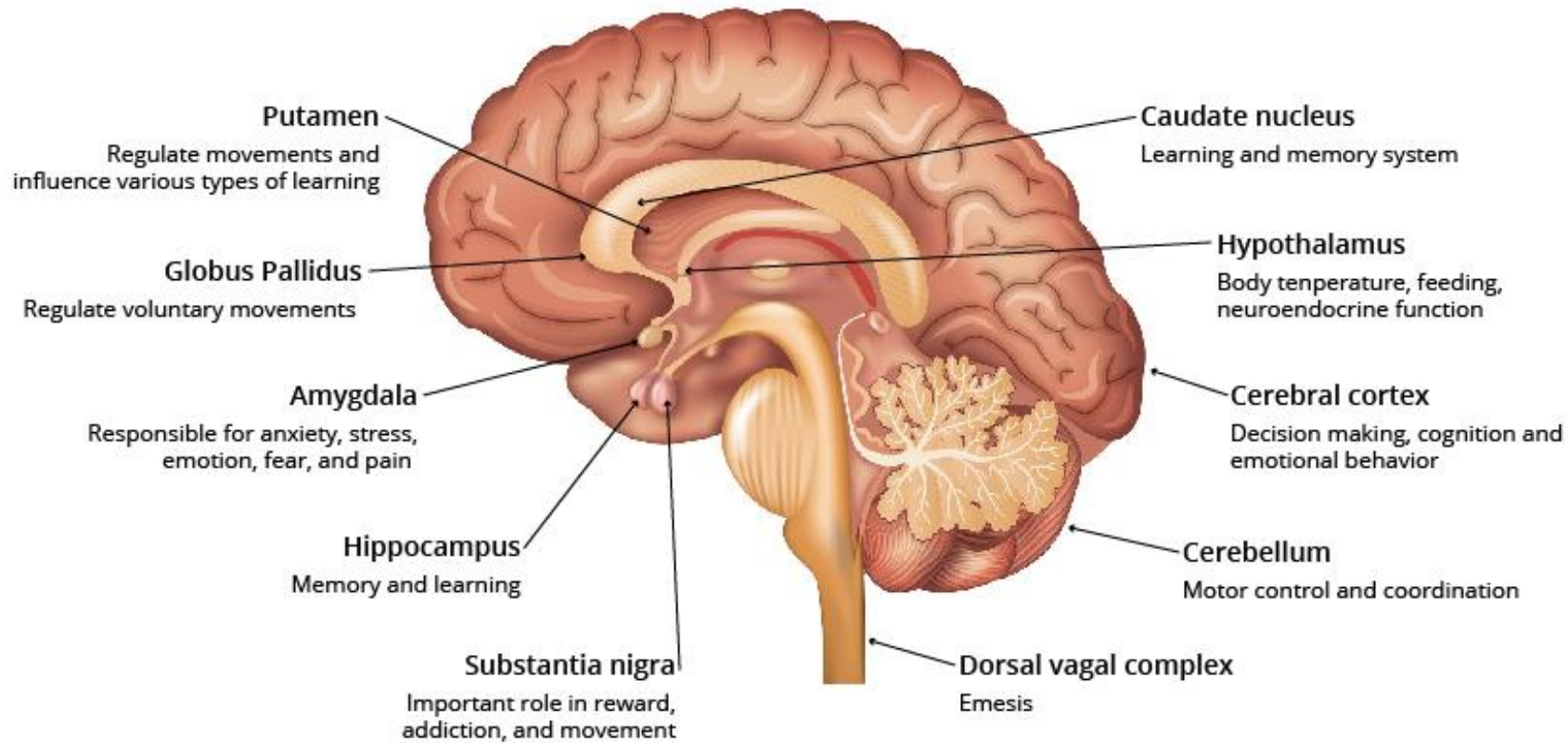
Benefits of the Major Cannabinoids

- ▶ Analgesic
- ▶ Anorectic
- ▶ Anti-inflammatory
- ▶ Anti-ischemic
- ▶ Antibacterial
- ▶ Antidiabetic
- ▶ Antiemetic
- ▶ Antiepileptic
- ▶ Antimicrobial
- ▶ Antiproliferative
- ▶ Antipsoriatic
- ▶ Antipsychotic
- ▶ Antispasmodic
- ▶ Anxiolytic
- ▶ Bone stimulant
- ▶ Immunosuppressive
- ▶ Intestinal anti-prokinetic
- ▶ Neuroprotective
- ▶ Vasorelaxant

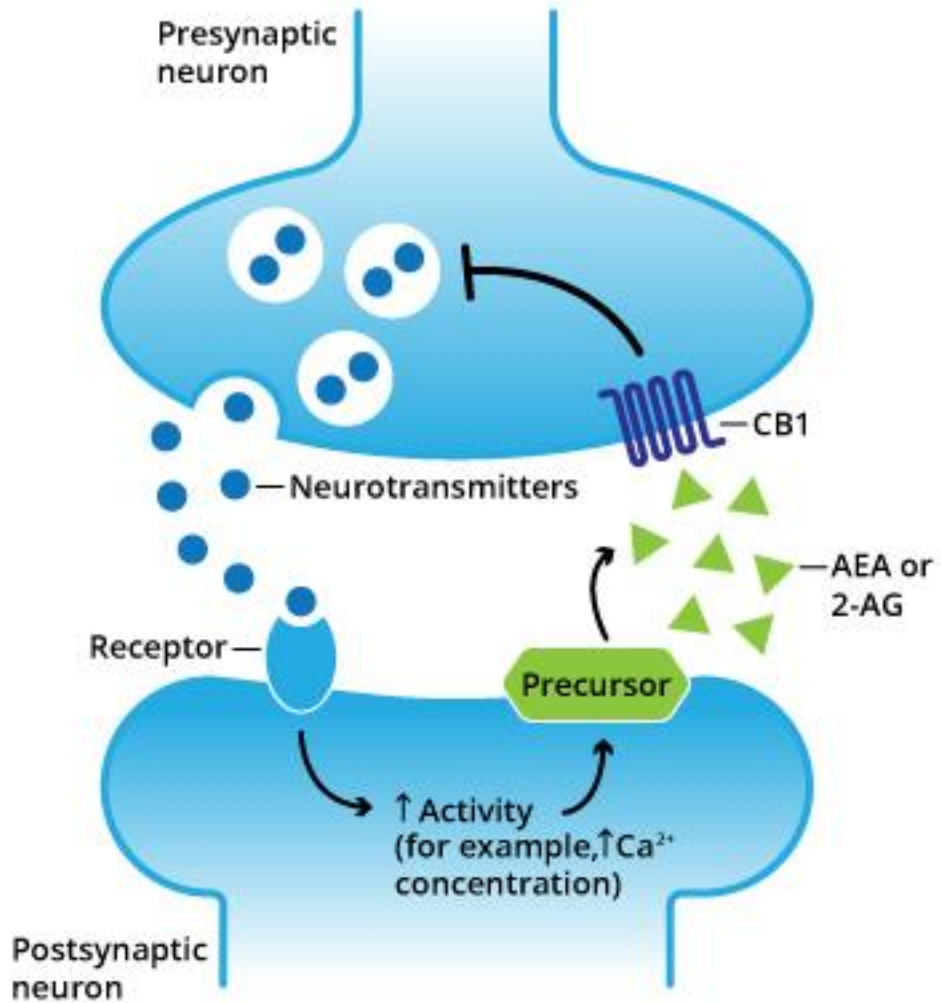
Cannabinoid Receptors



Cannabinoid Receptors



Neurotransmission



The Entourage Effect

- ▶ In addition to the primary cannabinoids, cannabis medicines deliver:
 - ▶ Other Major Cannabinoids
 - ▶ Minor cannabinoids
 - ▶ Terpenes
 - ▶ Flavonoids
 - ▶ Waxes

Cannabinoids as Essential Nutrition

- ▶ Endocannabinoid Role in Maintaining Your Body's Homeostasis
- ▶ Clinical Endocannabinoid Deficiency Syndrome
 - ▶ Fibromyalgia
 - ▶ Migraine
 - ▶ Irritable Bowel Syndrome
- ▶ Endocannabinoid "Tone"
- ▶ Cannabis as a supplement

Systemic Effects of Cannabis

- ▶ Anti-inflammatory
- ▶ Anti-spasmodic
- ▶ Mitochondrial Modulation
- ▶ Immune System Modulation

Cannabis and the P-450 System

- ▶ The interaction of Cannabis medicine with Cytochrome P-450
- ▶ The effect of different Pathways of Cannabis administration
- ▶ The effects of THC and CBD on Cytochrome P-450
- ▶ Effect of changes in Cytochrome P-450 on other therapies
 - ▶ Cancer
 - ▶ Seizure Conditions

CBD Medicines

Cannabis vs. Hemp vs. Synthetic

- ▶ There are three types of CBD available to patients. The first is from the Cannabis plant, the second is from the Hemp plant and the third is made in a laboratory
 - ▶ Terpenes
- ▶ CBD from the Cannabis plant is extracted from the flower and leaves of the plant and contains hundreds of minor cannabinoids, terpenes and flavonoids
- ▶ CBD from the Hemp plant does not have as robust a profile of minor cannabinoids, terpenes and flavonoids
- ▶ Synthetic CBD, which is created in a laboratory, has only a CBD molecule and does not contain any other compounds
- ▶ In my clinical experience, CBD from the Cannabis plant is much more effective in relieving patient complaints at lower dosages than Hemp or Molecular CBD

Specific Cancer Related Therapies

Palliation

- ▶ Pain - General
- ▶ Pain - Neuropathic
- ▶ Nausea
- ▶ Mood
- ▶ Insomnia

Preventive

- ▶ Chemotherapy induced neuropathy
 - ▶ Use CBD to prevent
 - ▶ Use CBD and THC-V to treat

Anti-Proliferative, Anti-Cancer

- ▶ Various cannabis regimens will be shown to be effective
- ▶ Multiple cannabis agents probably better than one in very high dose
- ▶ References:
 - ▶ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4791148/>
 - ▶ <https://www.ncbi.nlm.nih.gov/pubmed/25916739>
 - ▶ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3366283/>

The Medical Cannabis Visit

Patient Primary Complaint

- ▶ Cancer and the effects of therapies may result in multiple medical issues including:
 - ▶ Anxiety
 - ▶ Depression
 - ▶ General Pain
 - ▶ Lack of Appetite/ Wasting
 - ▶ Insomnia
 - ▶ Nausea
 - ▶ Neuropathic Pain

Expected/ Desired Outcome

THC Experience - Very Important

Any Contraindications/ Drug Interactions

Start Low - Go Slow
(Most of the time)

Consistent Accurate Dosage Products

Determine Condition Appropriate Medication

Adjust Medication Based on Patient Reaction

Cancer Case History

- ▶ 51 year old female
- ▶ Diagnosed with Stage 4 mammary invasive ductal carcinoma, metastatic to the liver, in August 2014.
- ▶ Cancer type was estrogen and progesterone positive and HER-2 negative.

Cancer Case - Continued

- ▶ Had a left breast mastectomy in October 2014 and started chemotherapy in November 2014. She had four rounds of Adriamycin and Cyclophosphamide, one round every two weeks. She chose not to do radiation.
- ▶ Started Tamoxifen in January 2015 and her oncologist said he wanted to monitor the lesion on her liver. He advised her the Tamoxifen would keep the cancer “at bay” for a few years and if/when it the lesion started to get larger or spread he would switch medications.

Cancer Case - Continued

- ▶ I first met the patient in May 2015 and recommended she start taking combinations of CBD and THC twice daily.
- ▶ After three months the lesion on her liver started getting smaller and side effects of Tamoxifen began to subside.
- ▶ In April 2016, 11 months after starting cannabis therapies, there was no evidence of disease in her liver and she was **diagnosed cancer free.**
- ▶ Cannabis medicines also relieved her anxiety, depression, periodic nausea, muscle aches and joint pain and eased her hot flashes.

For Additional Information Contact Allan I. Frankel, M.D.

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