



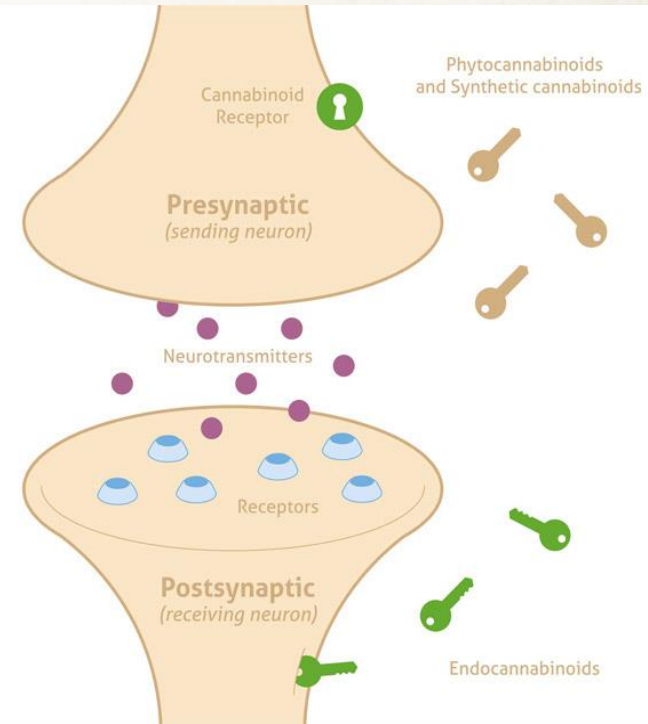
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# Your Health and The Endocannabinoid System

# Endocannabinoid System (ECS):

## Body's Primary Tool of Homeostasis

- Greatest Neurotransmitter System in the body
- **Regulates/Balances:**
  - Nerve Function
  - Stress Recovery
  - Inflammation Levels
  - Immune Function
  - Energy Intake and Storage
  - Cell life-cycles/Pre-Programmed Cell Death
  - Reproduction
  - Circulatory System
  - Bone Development



# Endogenous Cannabinoids

- In your body, you make ENDOcannabinoids
  - **2-AG** (2-arachidonoylglycerol)
  - **Anandamide** (N-arachidonylethanolamine or AEA)
- Fatty acid Neurotransmitters
- 2-AG is the most abundant endocannabinoid in the body.
- Regulates appetite, immune function, pain signals, energy storage



# Endogenous Cannabinoids – Anandamide

- “Ananda” = Sanskrit for “Bliss” or “Happiness”
- Pleasure, food intake, reproduction, sleep, pain relief
- Found in mother’s milk, chocolate, released during ovulation
- Produced during meditation, yoga, causes “runner’s high”
- Deficiency increases anxiety/stress ([Bluett, \*Transl Psych\* \(2014\) 4, e408](#))
- Part of the “Bridge” between mind and body
- Inhibits breast cancer cell growth
  - ([Proc Natl Acad Sci. 1998 Jul 7; 95\(14\): 8375-8380. De Petrocellus](#))



# Understanding the ECS

- Endocannabinoid levels can be inadequate
- **CECD**: Clinical Endocannabinoid Deficiency
- Implicated in many hard-to-treat disease states:
  - Fibromyalgia
  - Irritable Bowel Syndrome
  - Chronic Migraines
  - Depression/Anxiety
  - Many others

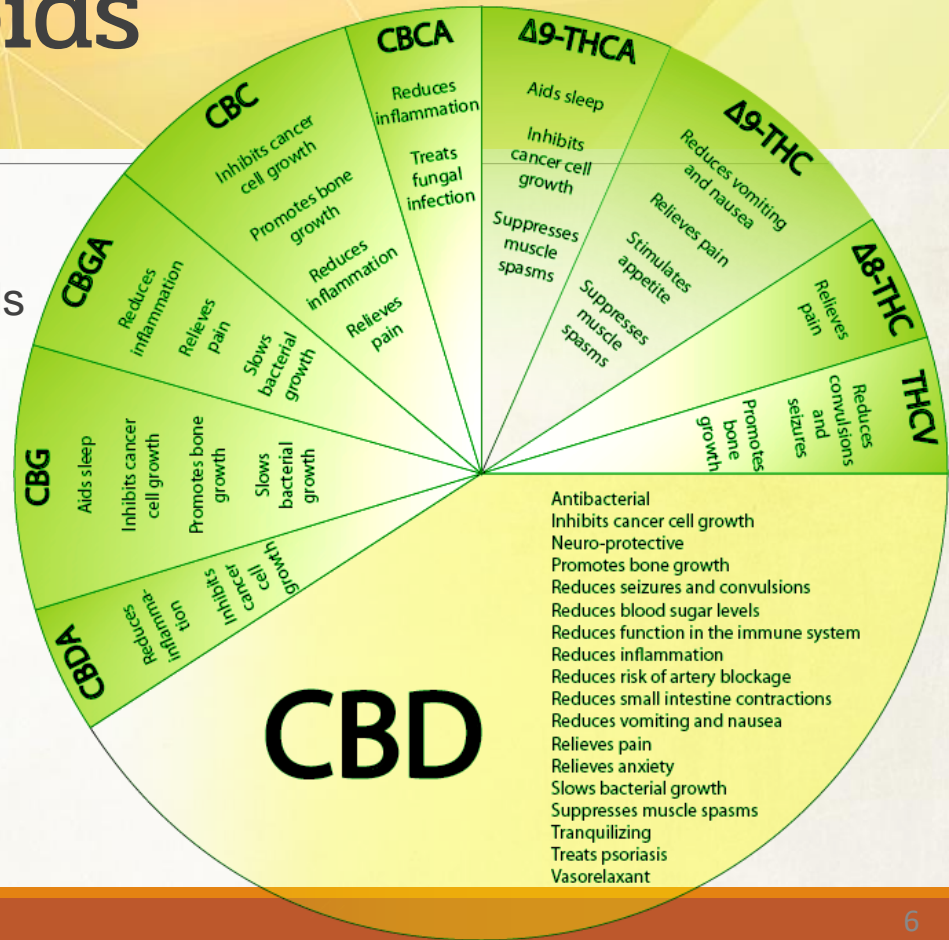


2008 April; 29 (2):192-200-Neuro End Lett – Russo EB



# Endocannabinoids

- You make ENDO-cannabinoids
- Hemp plant makes PHYTO-cannabinoids
- Interact well with human CB receptors
- **CBD** (cannabidiol)
- CBC
- CBDA
- CBL,
- CBG, CBN, etc...



# Full Spectrum Hemp Oil

## NOT just CBD...

- Cannabinoids
- Terpenes
- Flavonoids
- Fatty Acids
- Vitamins
- Minerals



# CBD and CV Health

Where as CBD recently shown to reduce blood pressure by about 6 mm Hg.

Also reduced the Blood Pressure increase that occurs in response to stress.

- [Jadoon, Journal of Clinical Investigation Insight, June 15, 2017](#)

## A single dose of cannabidiol reduces blood pressure in healthy volunteers in a randomized crossover study

Khalid A. Jadoon,<sup>1</sup> Garry D. Tan,<sup>2</sup> and Saoirse E. O'Sullivan<sup>1</sup>

First published June 15, 2017 - [More info](#)

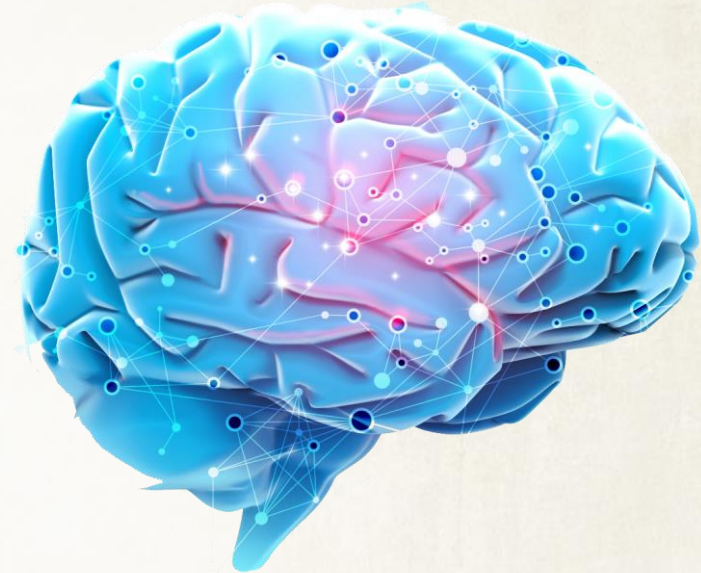
[–] Abstract

**BACKGROUND.** Cannabidiol (CBD) is a nonpsychoactive phytocannabinoid used in multiple sclerosis and intractable epilepsies. Preclinical studies show CBD has numerous cardiovascular benefits, including a reduced blood pressure (BP) response to stress. The aim of this study was to investigate if CBD reduces BP in humans.



# Brain Health

A recent study published in *The International Journal of Neuropharmacology* points to [cannabidiol \(CBD\)](#) as a cause of **neurogenesis** in the brain; specifically in the Hippocampus, an area typically associated with conscious memory and navigation.



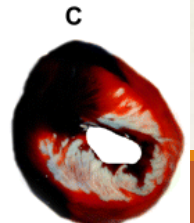
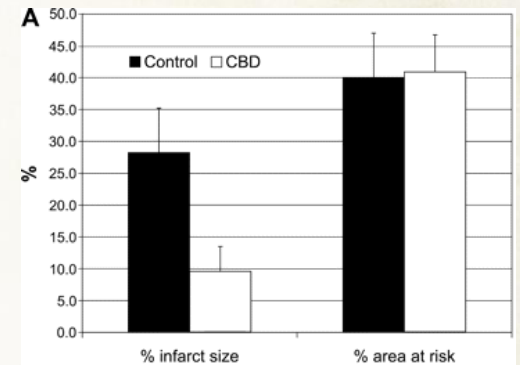
# Inflammation/Heart Facts

Marc Feldman at Imperial College, London, tested CBD on mice that had a version of **rheumatoid arthritis**. He found that CBD reduced the mice's inflammation by 50% at the right dosage.



Cardiologists working with the mice at Hebrew University have found that a dosage of CBD immediately following a **heart attack** can reduce infarct size by about 66%.

- [Durst, Am Jour Phys 1 Dec 2007; 293 \(6\); H3602-07.](#)



# Bioavailability Barrier

- **Commercial Hemp Oil:** Only **6%** of what is ingested actually gets into the blood stream (bioavailability).
- Over 90% is wasted: Problem for cost & regulations.
- **Micellized Hemp Oil:**
  - **85% Bioavailability!**
    - Makes it affordable and legal in all 50 states
    - Onset of action drops from 1-2 hours down to **5-15 minutes!**

