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-arachidonoylethanolamine 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
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…

![Diagram of Endocannabinoids]

- **CBD**
  - Helps sleep
  - Inhibits cancer cell growth
  - Promotes bone growth
  - Relieves pain
  - Reduces inflammation

- **CBC**
  - Promotes bone growth

- **CBCA**
  - Reduces inflammation
  - Treats fungal infections

- **Δ9-THCA**
  - Aids sleep
  - Inhibits cancer cell growth
  - Reduces vomiting and nausea

- **Δ9-THC**
  - Reduces small intestine contractions
  - Reduces risk of artery blockage
  - Reduces blood sugar levels
  - Reduces inflammation
  - Relieves pain and nausea

- **THCV**
  - Reduces seizures and convulsions
  - Relieves pain and anxiety
  - Stabilizes appetite
  - Suppresses muscle spasms
  - Treats psoriasis
  - Vasorelaxant

- **CBDA**
  - Reduces inflammation
  - Inhibits cancer cell growth
  - SCHIP inhibits bacterial growth
  - SCHIP inhibits viral growth

- **CBL**
  - Reduces inflammation

- **CBG**
  - Inhibits cancer cell growth
  - Promotes bone growth
  - Reduces blood sugar levels
  - Reduces inflammation
**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, Garry D. Tan, and Saoirse E. O’Sullivan

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.
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!**