

Cannabis 2020



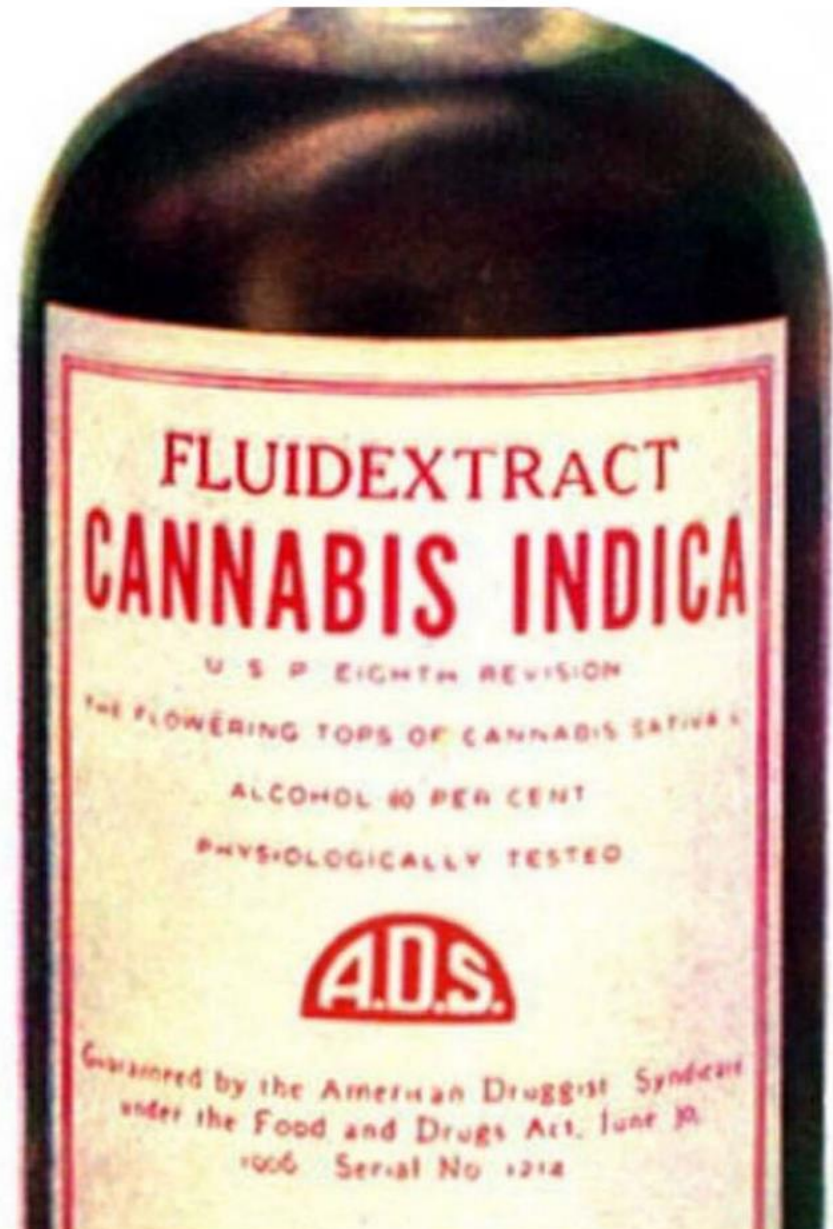
Cannabis History

Cannabis was used as medicine for millennia.

- Egyptians used it over 2,700 years ago
- Used in India between 2000-1400 B.C. for nausea, vomiting, epilepsy, inflammation, pain and fever

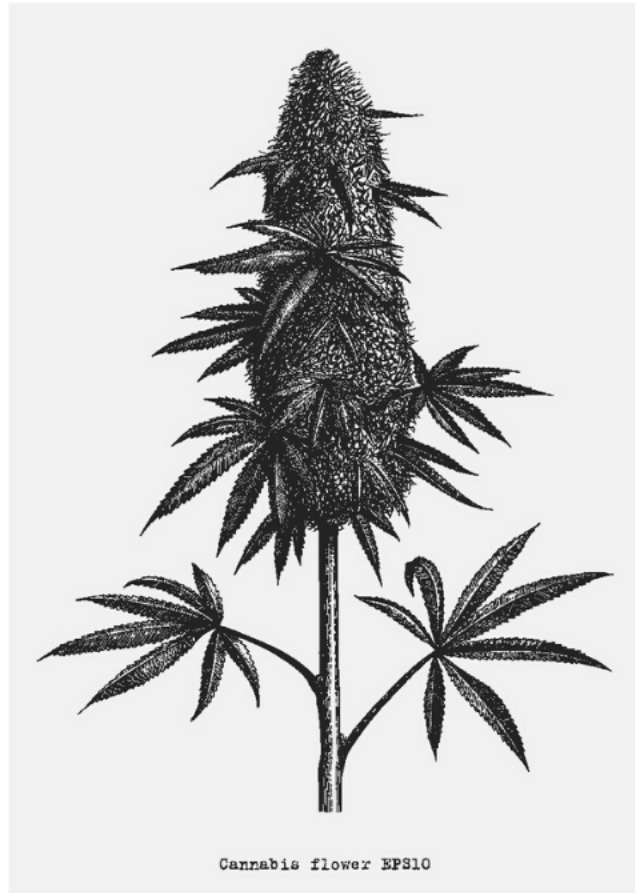
Introduced in Western medicine by the 1800's for diseases and many conditions

- Listed in the 1854 Pharmacopoeia
- Recommended by Physicians in the AMA



Cannabis History

U.S. TIMELINE



1776

Declaration of Independence drafted on hemp paper

1796

U.S.S. Constitution uses hemp sails and rigging

1790'S

Washington, Jefferson and Adams all grow hemp

1840'S

Lincoln uses hemp oil to light his household lamps

Cannabis History

U.S. TIMELINE



1937: MARIJUANA TAX ACT

- Effectively stopped production and placed penalties on uses and growers
- Opposed by the AMA as tax impacted Doctors and Pharmacists
- Tax act supported by Hearst, Mellon & DuPonts as hemp could cripple their paper or synthetic fiber businesses

1942: MANUFACTURING USE

- Henry Ford builds a car made comprised of 70 % hemp
- USDA asks Americans to grow hemp for WWII for rope and sails

1970: SCHEDULE 1 DRUG

- Not accepted for medical use; high potential for abuse
- Same category as Heroin, MDMA, LSD

Cannabis History

Physicians and researchers continued to study cannabis

- Very difficult to get plant material for research
- No money available to research positive effects

Raphael Mechoulam (Israeli physician) first isolated the THC molecule in 1964

- 20 years later the Endocannabinoid System (ECS) was discovered, a group of endogenous cannabinoid receptors located in the mammalian brain and throughout the central and peripheral nervous systems



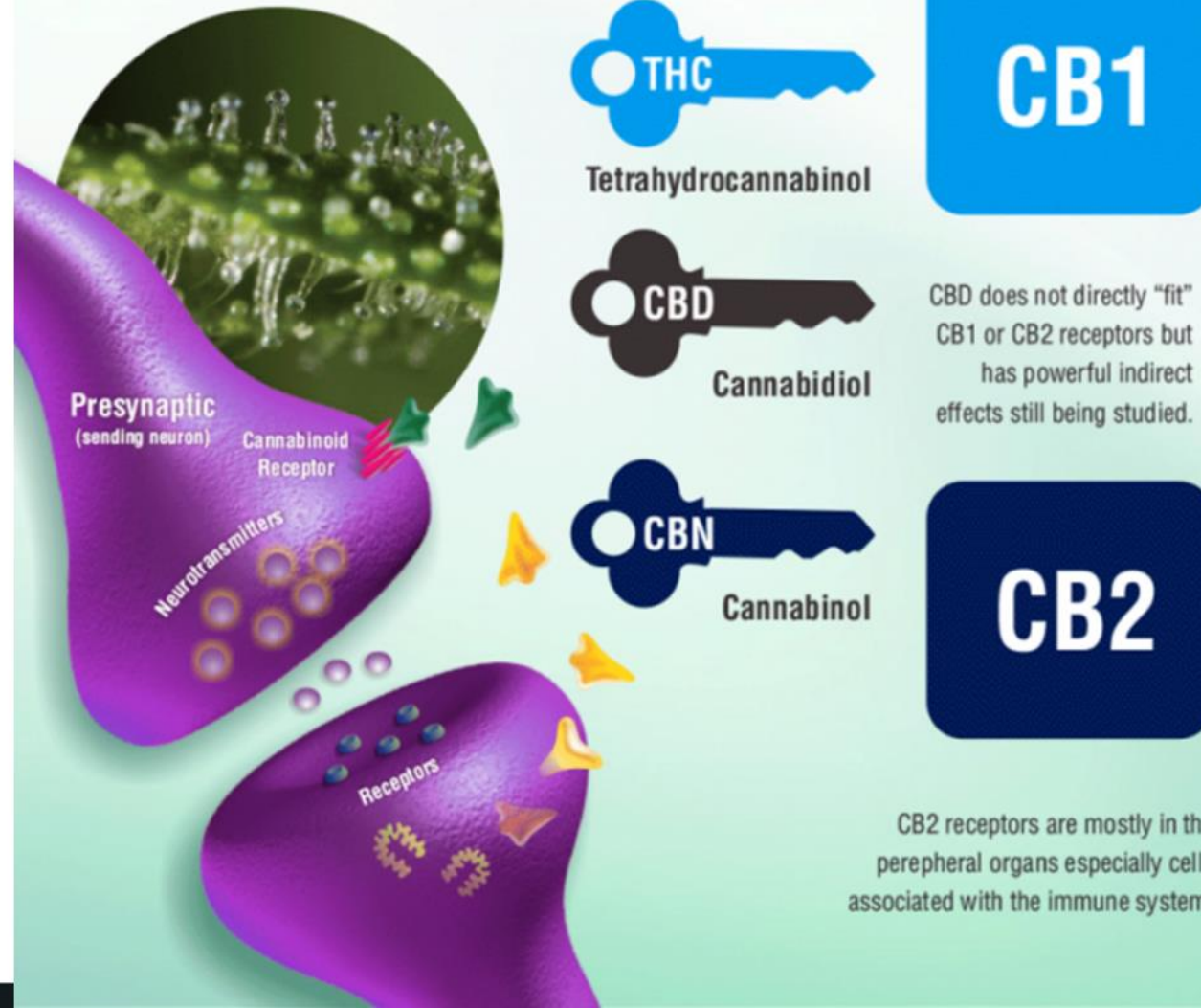
CB Receptors

The Human Endocannabinoid System

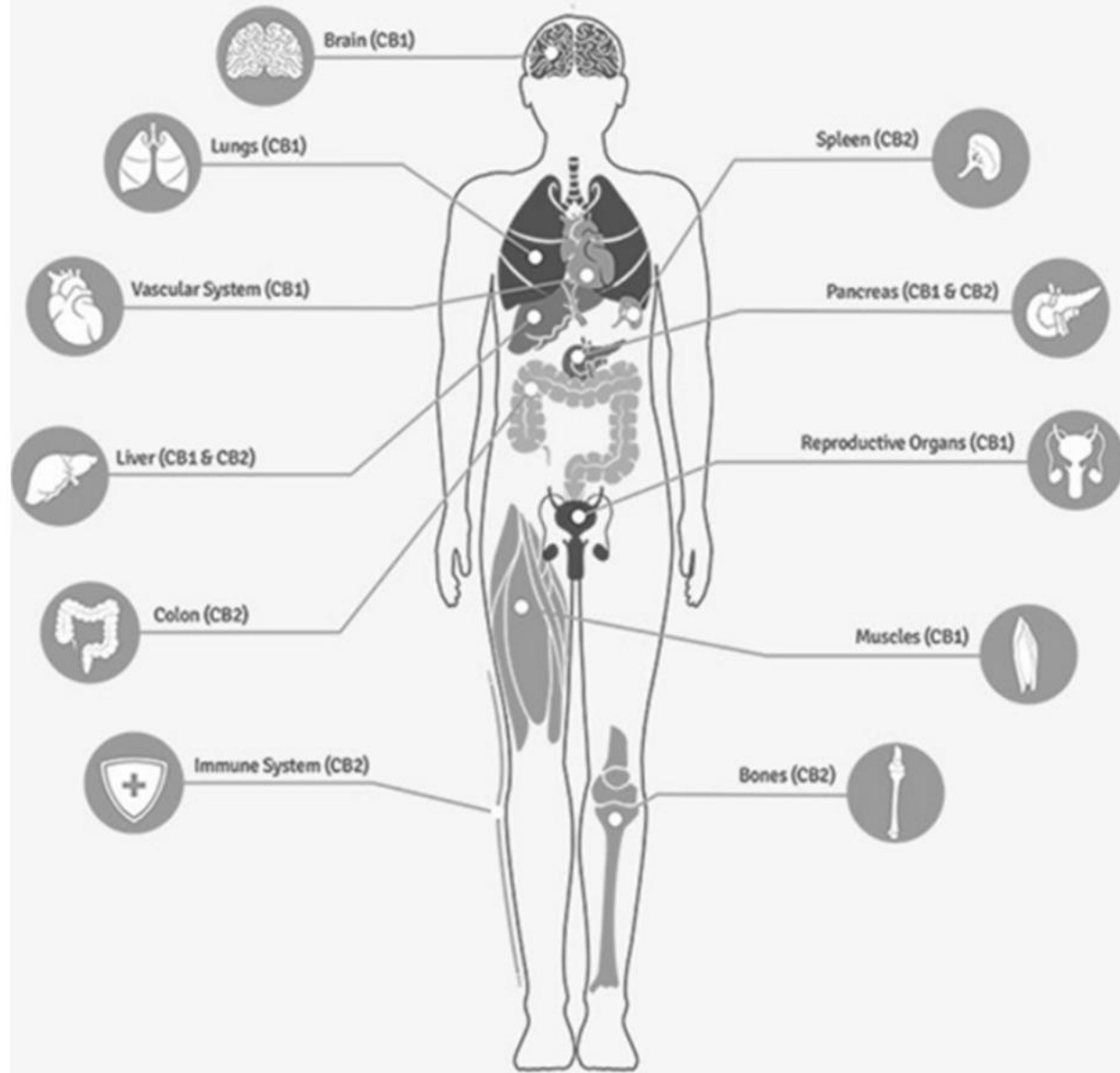
CBD, CBN and THC fit like a lock and key into existing human receptors. These receptors are part of the endocannabinoid system which impact physiological processes affecting pain modulation, memory, and appetite plus anti-inflammatory effects and other immune system responses. The endocannabinoid system comprises two types of receptors, CB1 and CB2, which serve distinct functions in human health and well-being.

CB1 receptors are primarily found in the brain and central nervous system, and to a lesser extent in other tissues.

Receptors are found on cell surfaces



THE BODY'S ENDOCANNABINOID SYSTEM



How does it work?

Cannabinoids act directly and indirectly on our CB Receptors

- Some act as agonists - activating certain receptors
- Some act as antagonists- essentially deactivating receptors

If the endocannabinoid system is not functioning properly, the right combination of phyto-cannabinoids can help supplement the system for balance (more of this signal, less of that signal)

Your body is a symphony and the ECS is the conductor

United States Patent: US 6,630,501 B1



US06630507B1



US006630507B1

US 6,630,507 B1

Oct. 7, 2003

(12) **United States Patent**
Hampson et al.

(10) **Patent No.:** **US 6,630,507 B1**
(45) **Date of Patent:** **Oct. 7, 2003**

(54) **CANNABINOIDS AS ANTIOXIDANTS AND NEUROPROTECTANTS**

(75) **Inventors:** **Aidan J. Hampson**, Irvine, CA (US);
Julius Axelrod, Rockville, MD (US);
Maurizio Grimaldi, Bethesda, MD (US)

(73) **Assignee:** **The United States of America as represented by the Department of Health and Human Services**, Washington, DC (US)

(57) **ABSTRACT**

Cannabinoids have been found to have antioxidant properties, unrelated to NMDA receptor antagonism. This new found property makes cannabinoids useful in the treatment and prophylaxis of wide variety of oxidation associated diseases, such as ischemic, age-related, inflammatory and autoimmune diseases. The cannabinoids are found to have particular application as neuroprotectants, for example in limiting neurological damage following ischemic insults, such as stroke and trauma, or in the treatment of neurodegenerative diseases, such as Alzheimer's disease, Parkinson's disease and HIV dementia. Nonpsychoactive

Cannabinoids have been found to have antioxidant properties, ... This new found property makes cannabinoids useful in the treatment... of oxidation associated diseases, such as ischemic, age-related, **inflammatory** and **autoimmune diseases**. The cannabinoids are found to have particular **application as neuroprotectants**, for example in **limiting neurological damage** following ischemic insults, such as **stroke and trauma**, or in the **treatment of neurodegenerative diseases**, such as Alzheimer's disease, Parkinson's disease and HIV dementia. Nonpsychoactive cannabinoids... are particularly advantageous to use because they avoid toxicity...

Cannabis vs. Hemp

HEMP

Cannabis Sativa with genetics that express very low levels of THC (0.3 % or less). It can be used for seed, fiber, or CBD production (flower).



CANNABIS

Cannabis Sativa with genetics that express higher levels of THC (1-30 %). Marijuana is a made up term for Cannabis Sativa.



Policy Lanes

OVER THE COUNTER

Recreational marijuana found at dispensaries. Must be 21 to purchase.

PHARMACEUTICAL

Requires a prescription or recommendation from a doctor.

HEALTH PRODUCTS

Wellness and food products. Found in grocery stores. Contain little to no THC.

INDUSTRIAL

Agricultural commodity used for plastics, fuels, textiles, electronics and building materials. More than 25,000 uses

Over the Counter Recreational Marijuana

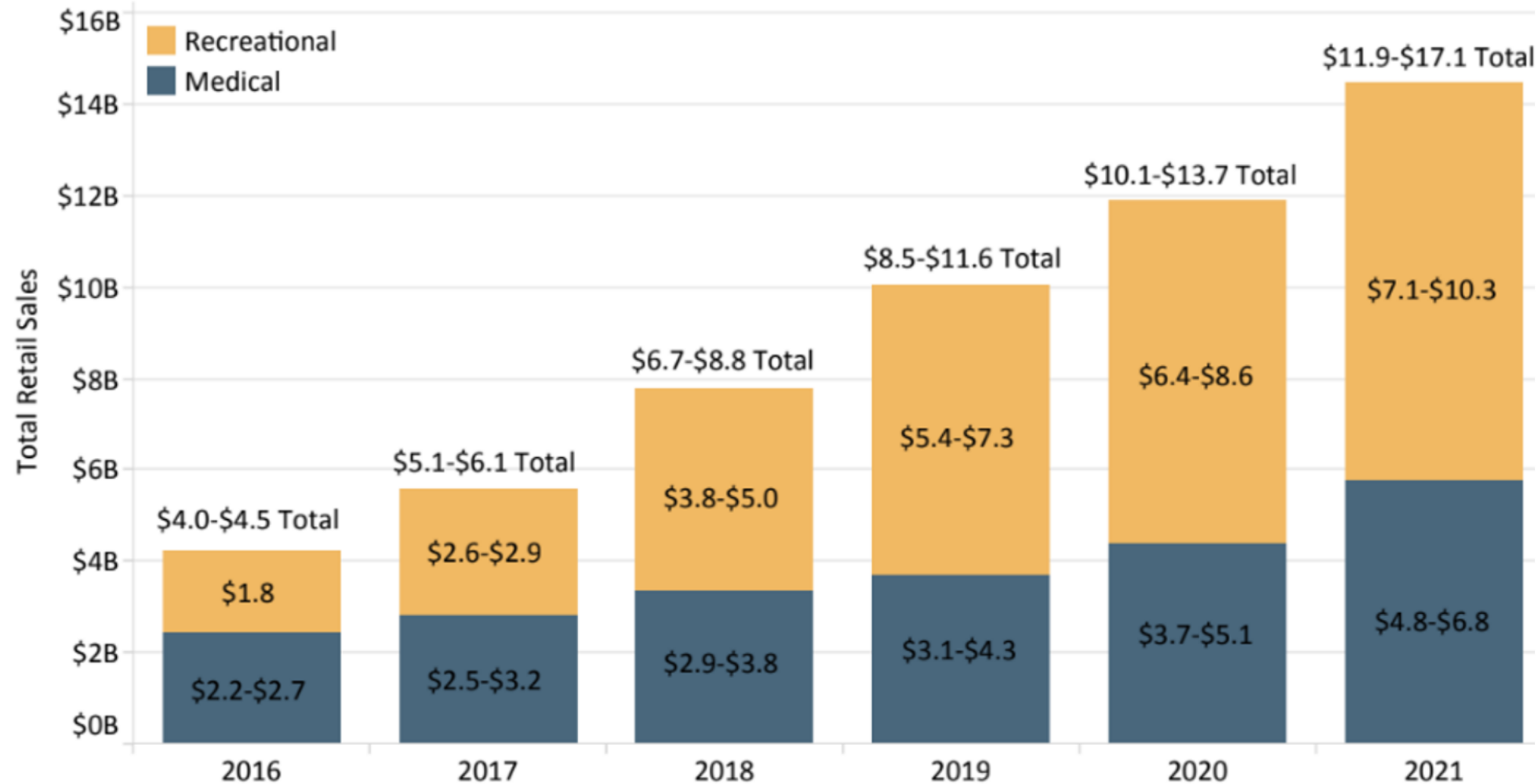
Legal in 12 states as of January 2020.
Illinois is the 12th state.



Nature's Care • Rolling Meadows, IL

U.S. Cannabis Retail Sales Estimates

(In Billions of U.S. Dollars)



Pharmaceutical Medical Marijuana



Prescription CBD



Prescription THC

Wellness and Food Products





Industrial

Planted as a row crop, male and female plants mostly for fiber.

The **MANY** **USES** of **Hemp**

Hemp is the strongest natural fibre in the world, known to have over 50,000 different uses!

TEXTILES

- Clothing
- Diapers
- Handbags
- Denim
- Shoes
- Fine fabrics

PAPER

- Printing
- Newsprint
- Cardboard
- Packaging

Stalk

INDUSTRIAL TEXTILES

- Rope
- Canvas
- Tarps
- Carpeting
- Netting
- Caulking
- Moulded parts

BUILDING MATERIALS

- Fibreboard
- Insulation
- Acrylics
- Fibreglass substitute

Seeds

INDUSTRIAL PRODUCTS

- Oil paints
- Varnishes
- Printing inks
- Fuel
- Solvents
- Coatings

FOODS

- Hemp Seed Hearts
- Hemp Seed Oil
- Hemp Protein Powder
- EFA Food Supplements

BODY CARE

- Soaps
- Shampoos
- Lotions
- Balms
- Cosmetics

Leaves

- Very absorbant and good for animal bedding
- Mulch and compost

Roots

- Organic compost and nutrients
- Remedy for conditions such as arthritis or joint pain, fibromyalgia, and eczema.

THE BENEFITS OF CULTIVATING HEMP

Hemp can yield 3-8 dry tons of fibre per acre. That's four times what an average forest can yield. Hemp cultivation requires no chemicals, pesticides or herbicides.

Uses of Industrial Hemp

What is the value of a hemp crop?

	INPUT COST/ACRE	REVENUE/ACRE
SEED	\$400/ACRE	\$600/ACRE
HEMP OIL FROM SEED	\$550/ACRE	\$800/ACRE
FIBER	\$400/ACRE	\$800/ACRE
CBD OIL	\$12,000-20,000/ACRE	\$15,000-35,000/ACRE

Where to Start



■ TRADE ASSOCIATIONS

Join your state's trade association.

■ CO-OPS

Contact the Dept. of Agriculture in your state to see if there are Co-ops forming.

■ ONLINE

Research online.

■ CHOOSE A LANE

Decide how you want to participate in the market.



Find the best source of seeds or clones.

Test your soil for heavy metals or presence of pesticides.

Be cognizant of agricultural fields nearby.

Know your purchaser before you plant.

Make application with your State DOA.

Getting Started

Getting Started Recreational

Study the requirements and costs to get a license.

Very limited number of cultivation licences available.

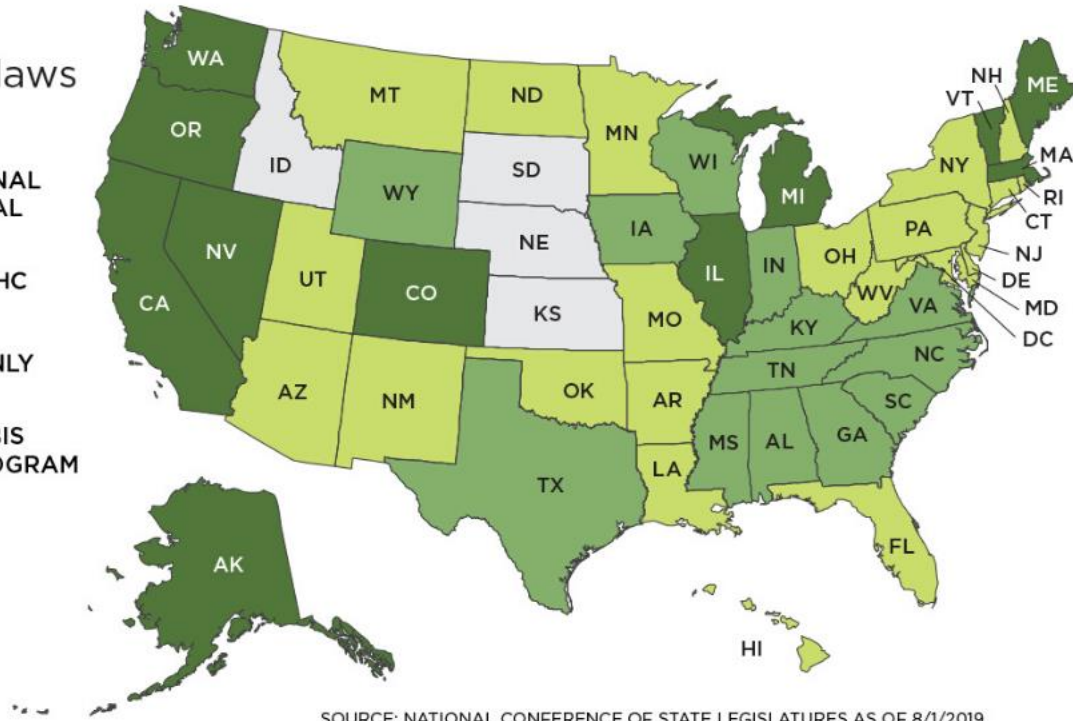
Dispensary licenses may be a potential.

Employ a consultant and good legal team.

Bring Your Wallet!



Current marijuana laws by state



SOURCE: NATIONAL CONFERENCE OF STATE LEGISLATURES AS OF 8/1/2019

Cannabis and hemp have been illegal for virtually 83 years.

It is being restored state-by-state for the last 20 years.

24 states now have some form of legal cannabis- with 11 of those having completely legal (adult use).

CBD and hemp is now legal in all 50 states.

IT IS HERE TO STAY!!

Summary