

# *Cannabis, its Cannabinoids and Viscum album (European Mistletoe) for Protection of Immune Function and DNA Repair*

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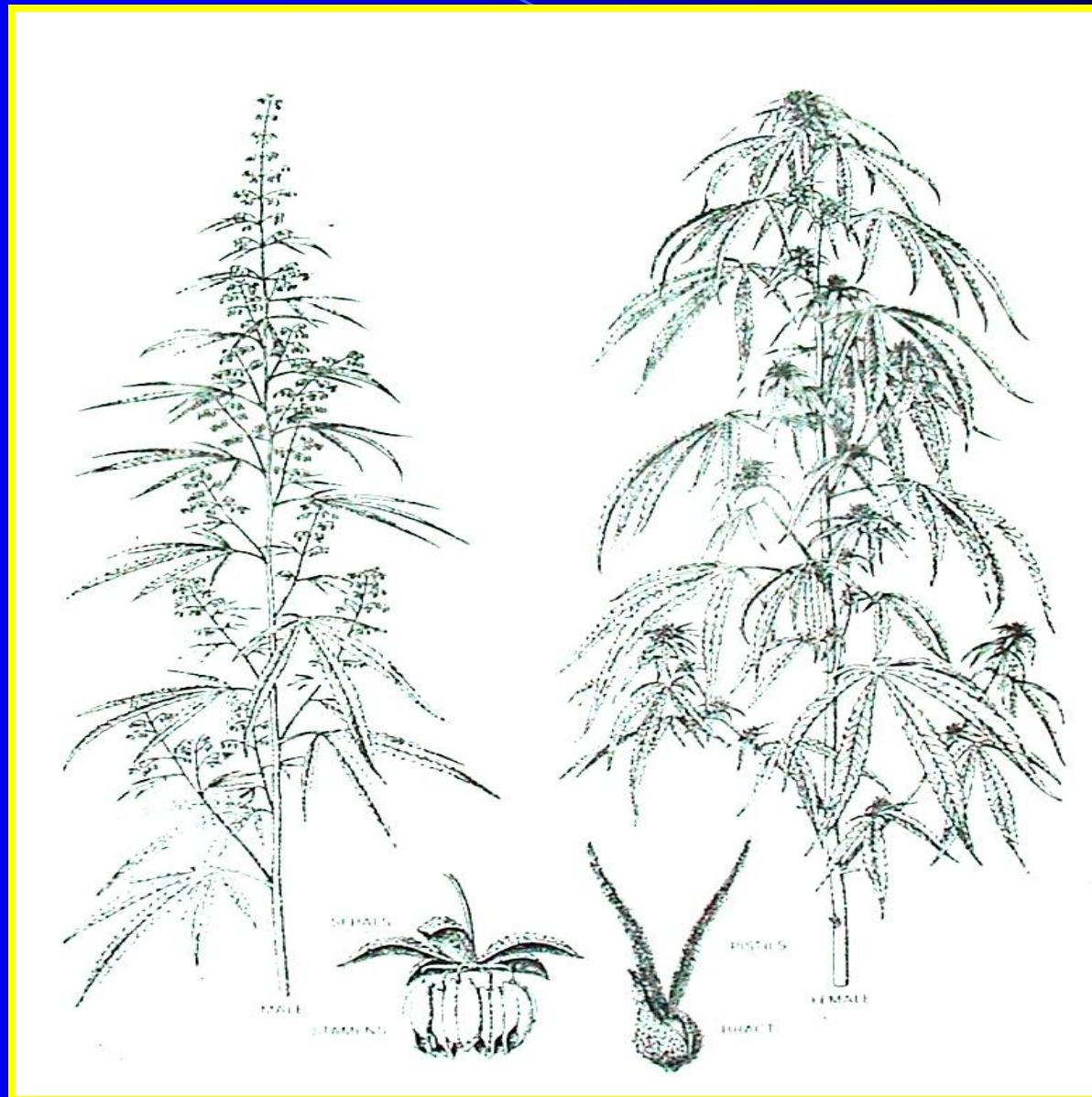
Director, European Institute for Oncologic and Immunologic Research (1993-2000)

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- June 28th, 2022

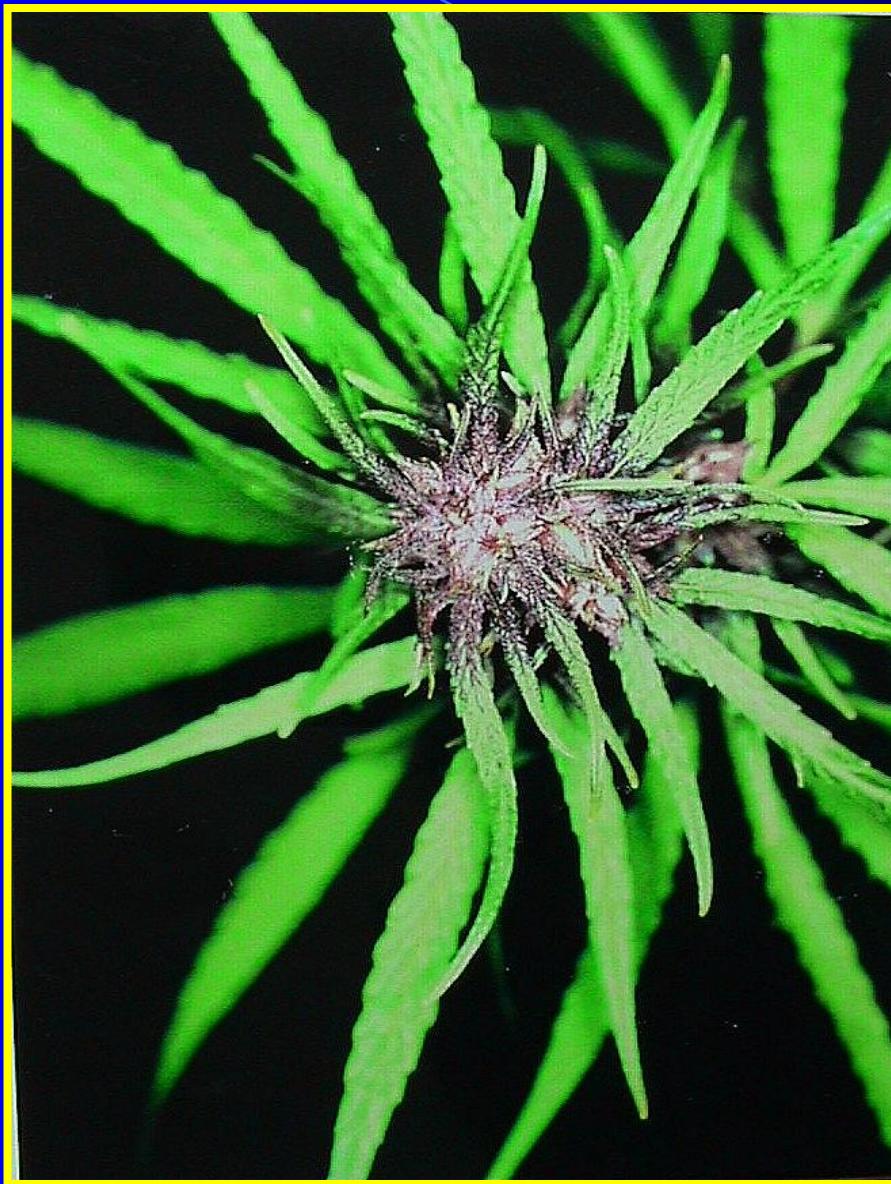
# *Cannabis sativa* is dioecious



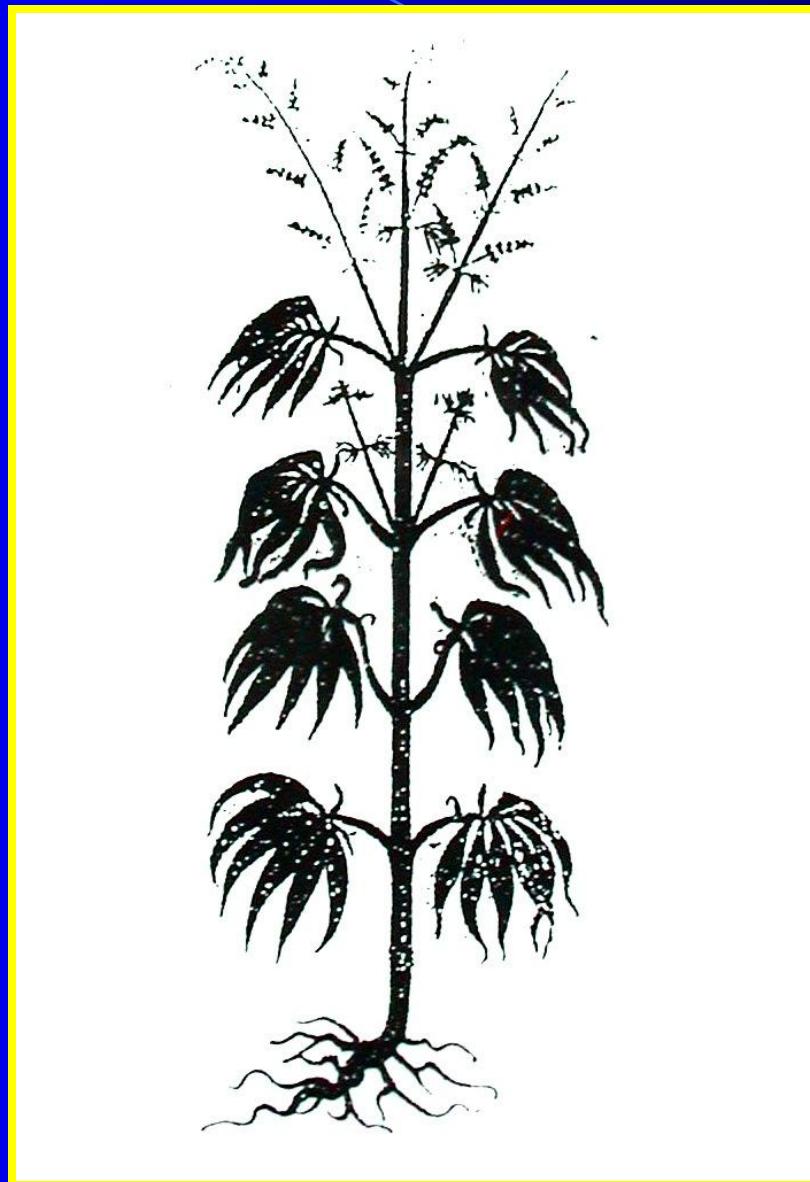
# Male Plant



# Female Plant



*Oldest known picture of Cannabis sativa in a  
Chinese Medical Book (ca. 100 AD)*



**Joseph Swan (l) created the first synthetic fiber. Nylon as a petrol polymer was first synthesized by Wallace Carothers at DuPont (r).**

**Manufactured by Dupont: Nylon (1931) Modacrylic (1949) Olefin (1949) Acrylic (1950) Polyester (1953)**



**1941: Cannabis plastic 4 x stronger and 40% lighter than aluminium in cars with engines running on Cannabis seed oil developed by Henry Ford**



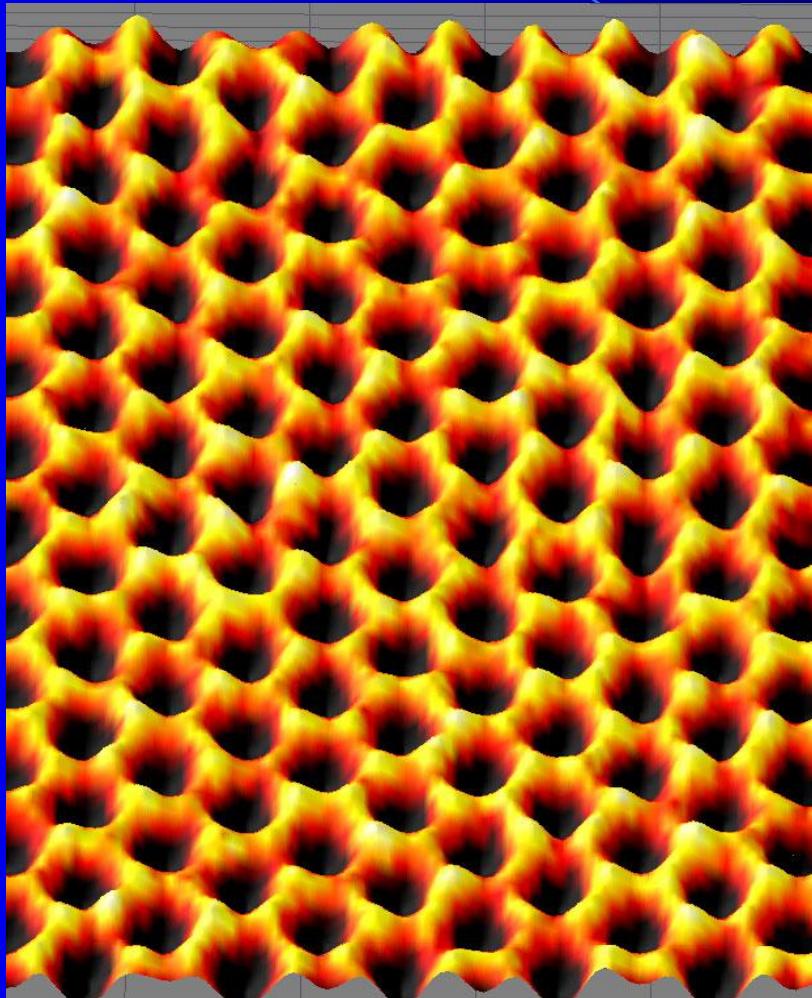
**Henry Ford and his Cannabis plastic auto (1941)  
with engine running on oil of its seeds**



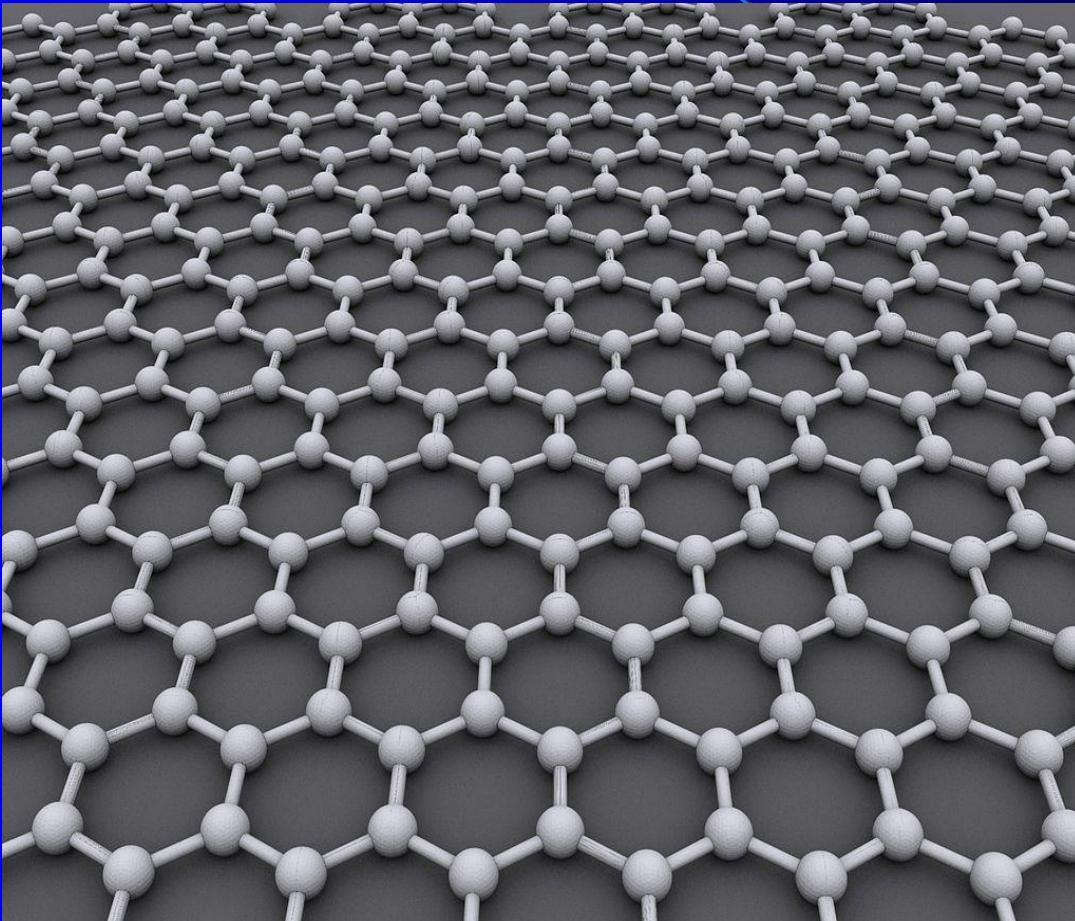
**BMW i300 Serie electric car with ca.  
+/-70% Cannabis products (including its batteries made from  
graphene)**



Graphene is a superconductor and one atoom thick  
(twee-dimensional structure) and 2x as hard as  
diamond and a sharp razor blade



**Graphene is an atomic-scale hexagonal lattice made of carbon atoms only; like diamond**



# Graphene

- In 2010, Geim and Novoselov were awarded the Nobel Prize in Physics for their "groundbreaking experiments regarding the two-dimensional material graphene". High-quality graphene proved to be surprisingly easy to isolate.
- Graphene has become a valuable and useful nano-material due to its exceptionally high tensile strength, electrical conductivity, transparency, and being the thinnest two-dimensional material in the world. One can consider graphene as extremely sharp raisor blades.
- The global market for graphene was \$9 million in 2012 and \$3 billion in 2021 en \$35 billion in 2023 with most of the demand from research and development in semiconductor, electronics, electric batteries, composites, tattoos and in medicine (vaccines).

# Andre Geim and Konstantin Novoselov at the Nobel Laureate press conference in 2010



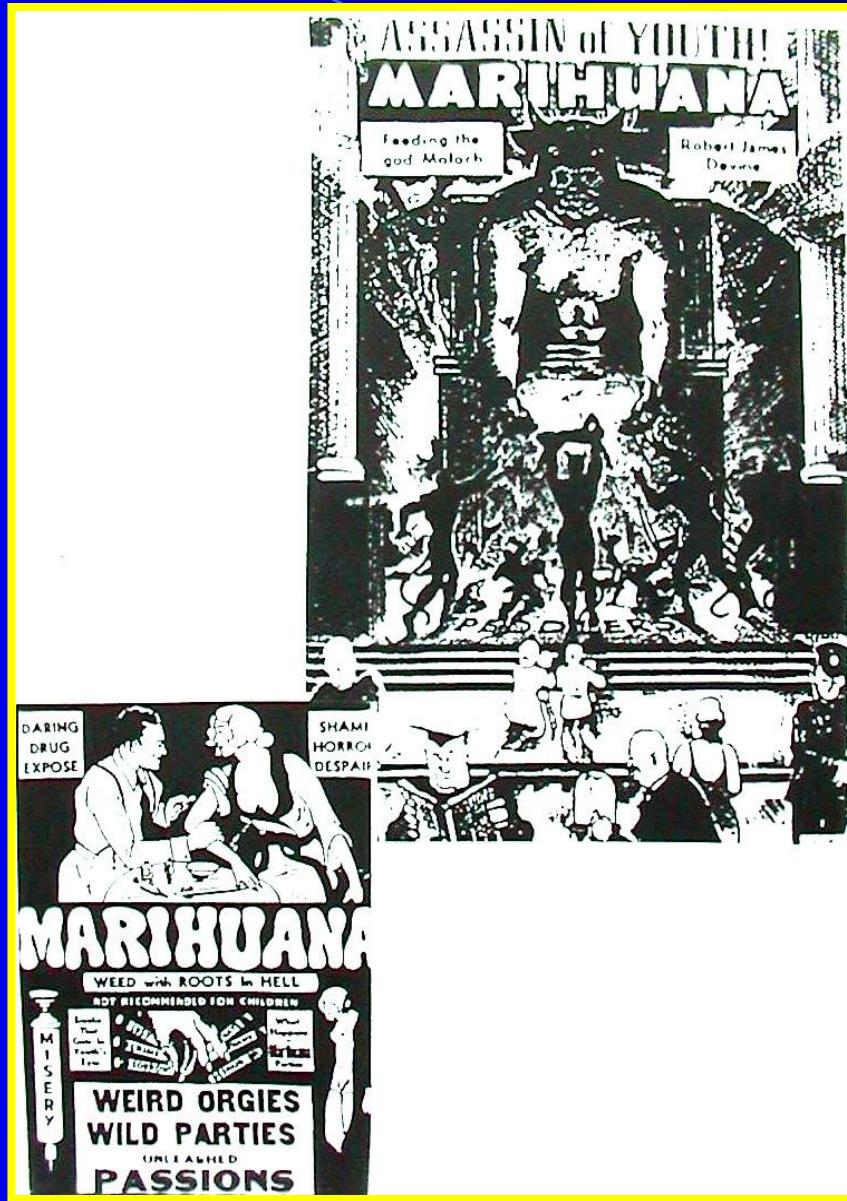
# Joesph Polutzer & William Randolph Hearst: Grondleggers van „Yellow Journalism“

„if it is printed it must be true“

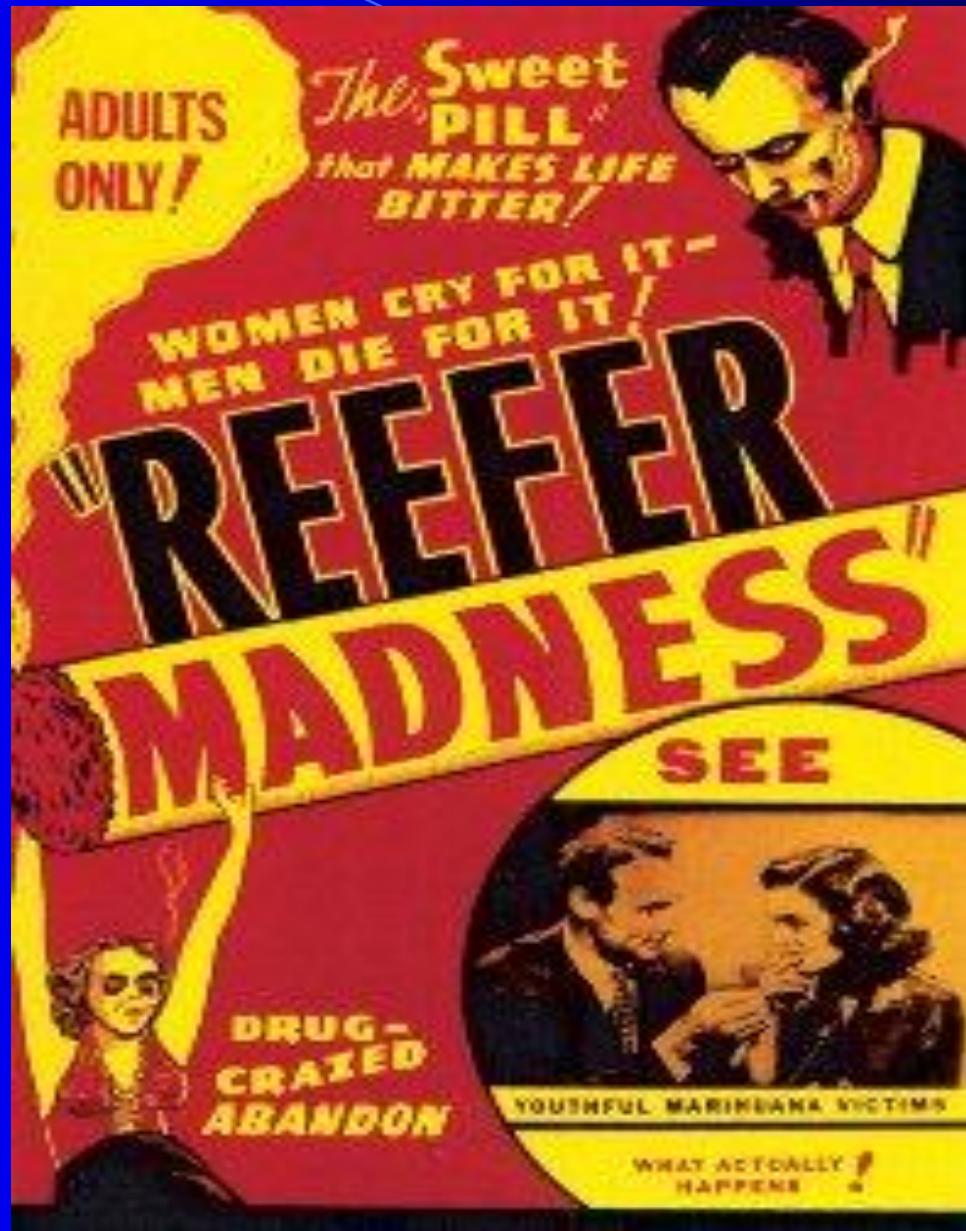


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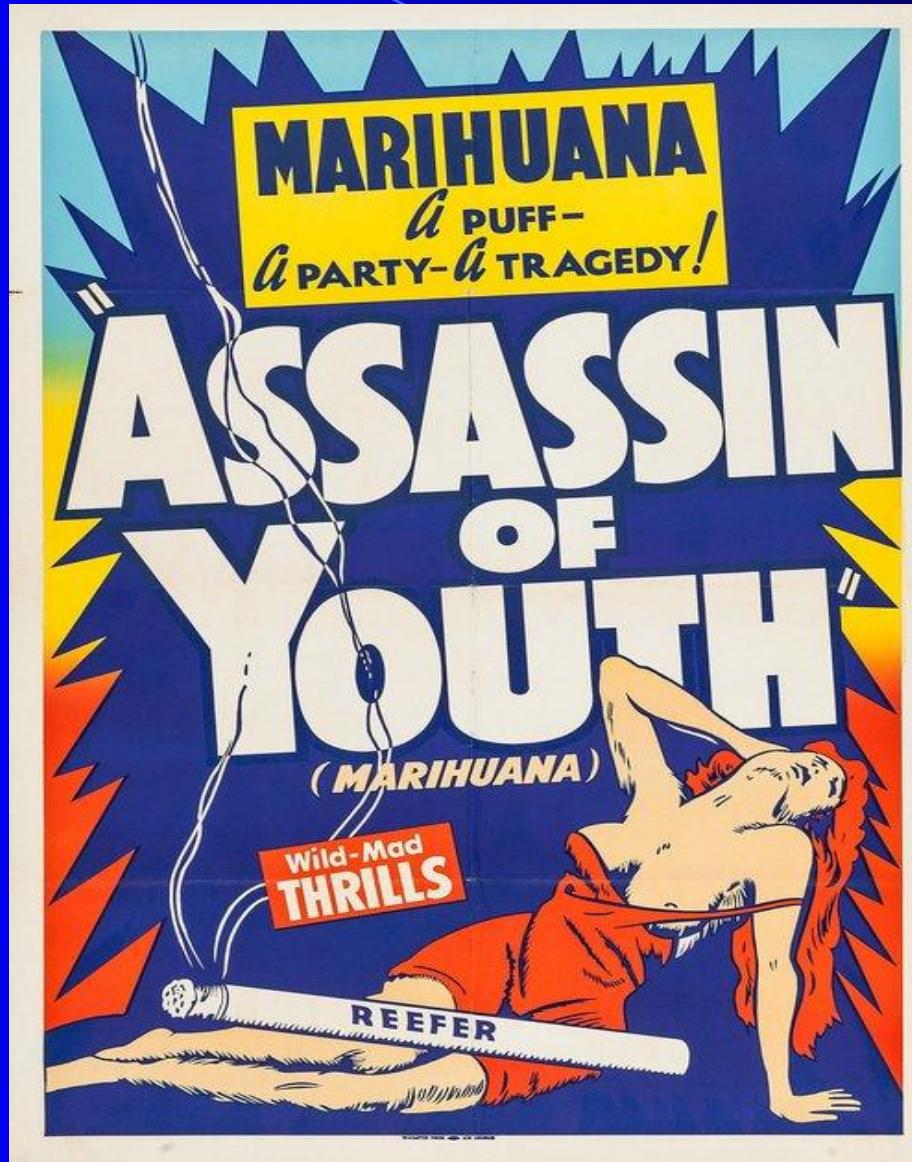
# Propaganda material by US authorities against Cannabis (early 1950's)



# Reefer Madness Poster-1



# Reefer Madness Poster-2



# Reefer Madness Poster-3



**Reefer Madness-4: "If you want a good smoke, try one of these."**

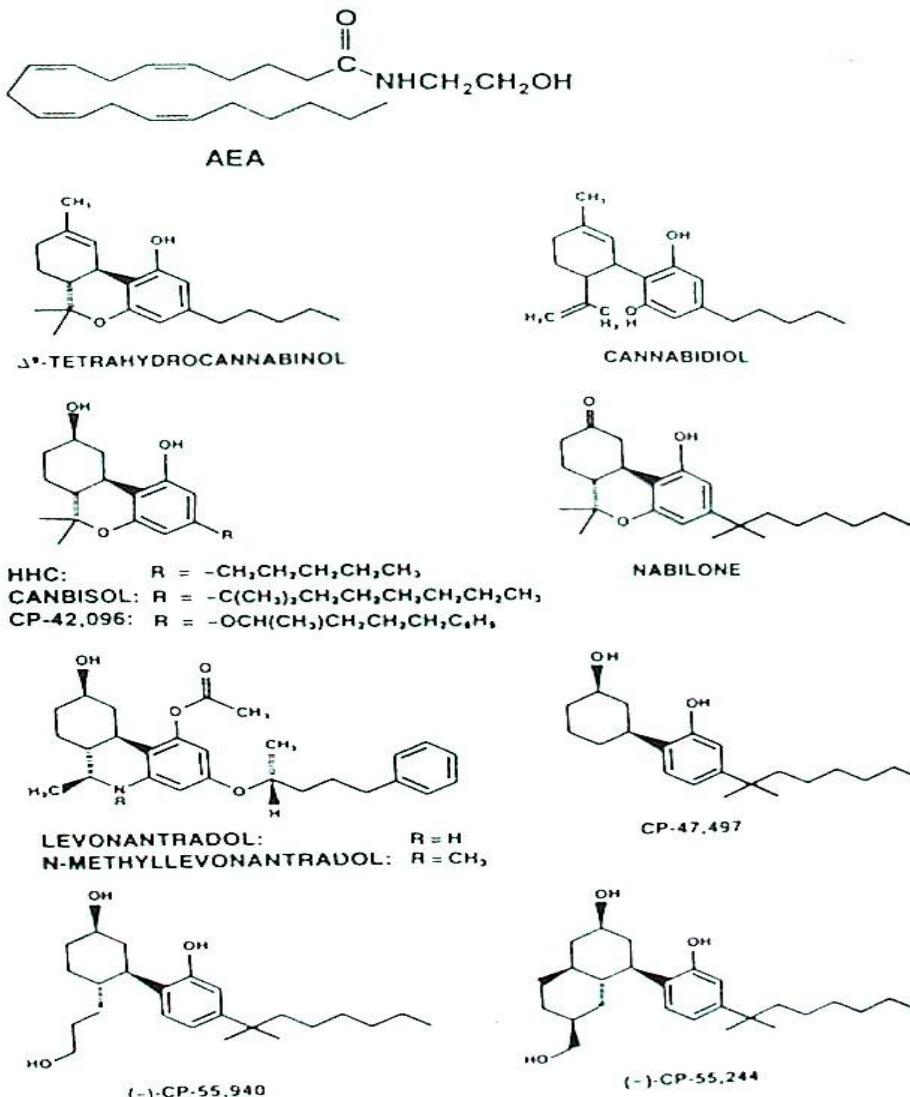




## Saint Hildegard von Bingen

**Hildegard von Bingen** (Latijn: Hildegardis Bingensis; (\*1098 – 17 September 1179) was a German Benedictine abdesh, author, composer, philosophie, mystic and prophet; Hildegard is considered to be the founder of modern medicine

# 116 identified Cannabinoids (2021)



# Pharmacologic Profile of most important Cannabinoids-1

Effect	Delta-9-THC	CBD	CBG	CBN	Delta-8-THC
Nausea / vomiting	↓				
appetite	↑				
spasticity-dystonia	↓	↓			
epilepsy	↓	↓		↓	↓
migraine-headaches	↓				
pains	↓	↓			↓
Glaucoma	↓	↓	↓	↓	↓
Broncho-dilatation	↑	→		→	
Bacterial growth	↓	↓	↓		

# Pharmacologic Profile of most important Cannabinoids-2

Effect	Delta-9-THC	CBD	CBG	CBN	Delta-8-THC
Inflammation	↓				
Fatigue / sleepiness	↑	↑	↑		↑
Urine excretion	↑				
Peristalthesis of the gut	↓	→		↓	
Temperature	↓	↑			
Coronary Blood Flow	↓	↑		→	
Pulse	↑	→		↓	
Skin Sensitivity	↑				
psychotropic effects	↑	↓		↑	↑

# Cannabinoid Pharmacology-3

- ⊕ Till 1987: „Lipophilic-Model.“ The mode of action of THC explained by change of permeability by strongly binding lipophilic characteristics of THC to cell membranes.
- ⊕ 1988 (Devane et al.): Identification of CB1-Cannabinoid-receptor.
- ⊕ From 1990 on: more precise localization of CB1-receptors in the brain.
- ⊕ Highest receptor density in the basal ganglia (sensomotoric qualities) and Cerebellum (motoric coordination)
- ⊕ CB1 (2 subtypes) is independent from species (in brain of rats, mice, blood hedgehogs) and their function is primarily for inhibition (affects ionen-channels, inhibits cAMP, changes Arachidonic oxygen metabolism, etc.)

# Pharmacology of Cannabinoids-5

- ⊕ 1992 (Devane et al.): first endogene ligant Anandamid (Ananda = heavenly bliss).
- ⊕ 1993 (Munro et al.): CB2-Receptor in spleen, on lymphocytes, monocytes, in tonsils, thymus, skin and heart muscle. Discovery of anandamide II and III
- ⊕ 1994/95: synthesized Cannabinoid-Receptor-Antagonisten
- ⊕ 1997: two more fysiologic ligands: first synthesized CB1-selective ligands.
- ⊕ 1998: the endo-cannabinoid system plays a crucial role in the coordination of movement, in the process of thinking and memory, emoties, immunmodulation, onstekingsrecaties (CBD as Perfect COX-2 pathway inhibitor), in pain management, and in various biologic rhythms (circadion rhythm, as an example).

# Two most important forms of Application of *Cannabis sativa*

	Inhalation	Oral
'Bio-Availability' of THC (%)	(10%) 15-25% (56%)	6-8% (10-20%)
Plasma Peak	3 Min.	20-60 Min.
(Psychotropic) Effects	10 Min	30-180 Min.
Duration of psychotropic effects	2-3 St.	bis 8 St.
effective metabolites	Delta-8-THC (75%) Delta-6a-THC (30%) 11-OH-Delta-9-THC (102%): 1/10 of Delta-9-THC	Delta-8-THC (75%) Delta-6a-THC (30%) 11-OH-Delta-9-THC (102%): 1/10 of Delta-9-THC

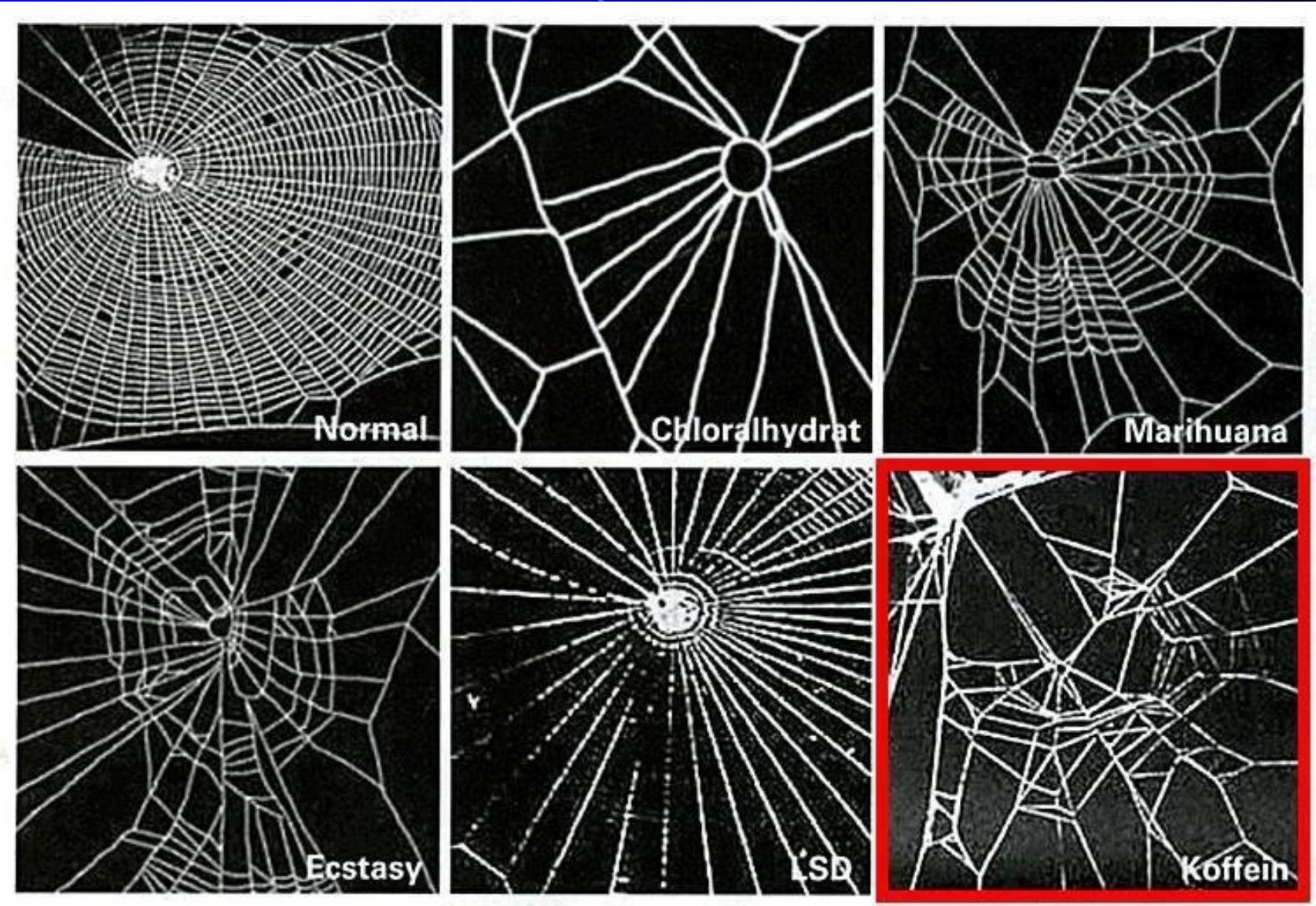
# Toxicity of *Cannabis Sativa*

## Comparison Toxicity of Delta-9-THC, with Barbiturates and Alcohol

	Therapeutic Dose	Lethal Dosie	Therapeutic Range
Secobarbital	100-300 mg	1000-5000 mg	3-50
Alcohol	0,05-0,1%	0,4-0,5%	4-10
THC	0,05 mg/kg (3,5mg/70kg)	2160 mg/kg* (151,2g/70kg)	43.200*
THC i.v.	0,05 mg/kg (3,5mg/70kg)	30 mg/kg (2100 mg/70kg)	600

- As there is no lethal dose of THC known in humans, these data have been extrapolated from animal models.
- Yearly in The Netherlands with 18 million inhabitants, approx. 28.000-30.000 people die due to excessive alcohol consumption (heart and liver disease, accidents, etc.). Although 3 tot 4 million Dutch citizens consume regularly *Cannabis*, no deaths due to their Cannabis comsumption has been documented ever.

# How Spiders weave their Webs under influence



# Indications for combination THC & CBD-1

- - Chronic-, Phantom- and Trigeminus pains
- - Muscle tensions and contractions (bij MS, Creutzfelt-Jakobs Syndrome and spinal cord lesions)
- - Nausea, anorexia, cachexia in cancer and HIV/AIDS patients
- - Hepatitis B&C, HIV/AIDS, Herpes, HPV, VAIDS
- - Therapy-resistant glaucoma
- - Duchenne Muscle Dystrophy (DMD)
- - Malignancies (tumoren)
- - Chronic inflammation  
Morbus Crohn
- - Colitis ulcerosa
- - Epilepsy
- - Itching/Eczema/Ectopic dermatitis
- - Anti-Aging



# Indications for combination of CBD & THC-2

- - ADHD
- - Rheumatoid arthritis
- - Parkinson's Disease
- - Insomnia
- - Menstruatiekrampen (dysmenorhea)
- - Astma
- - Alzheimer's Disease
- - Anxieties
- - Psychologic and psychiatric illnesses (including psychosis, schizophrenia, bipolar personalities)
- - Reactive depresssions
- - Significant improvement DNA repair
- - Migraine
- - Fibromyalgias / CFS
- - Diabetes mellitus

# CBD in Duchenne Muscle Dystrophy



# Indications for CBD & THC -4

CBD supports the positive effects of *Viscum album* (the European mistletoe) in the following conditions:

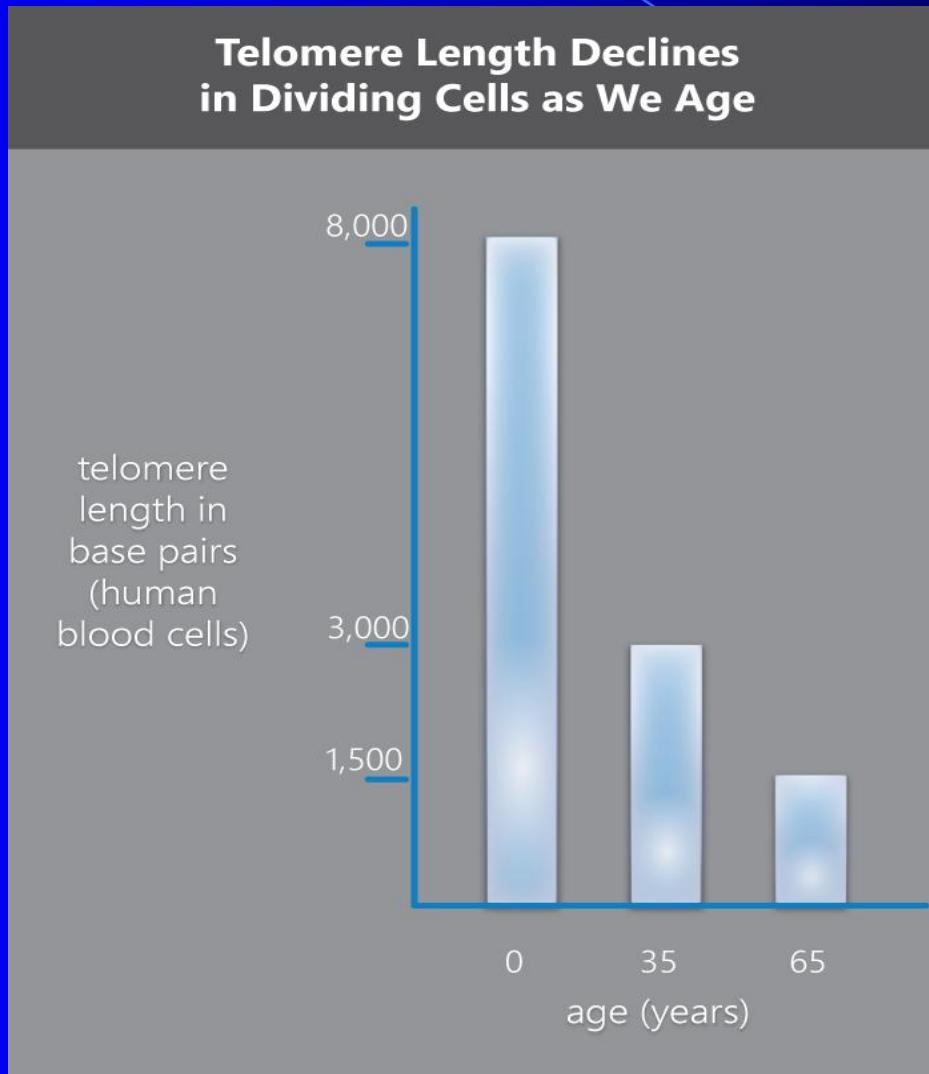
- 1) COX-2 inhibition
- 2) Restoration and improvement of DNA repair after radiation and chemotherapy in cancer patients; and in VAIDS. Also protection against electro smog (4G and 5 G) and nuclear radiation.
- 3) Increasing length and numbers of telomeres in cancer patients, and in healthy individuals as well (Anti-Aging).
- 4) Lengthening of telomeres in healthy individuals at all adult ages (documented in volunteers even older than 85 years).
- 5) Increase of muscle mass in sport professionals and inhibition of muscle-mass decline in the elderly (documented up to 85 years of age).
- 6) Significant improvement of functional capabilities at all age groups

# CBD and Anti-Aging

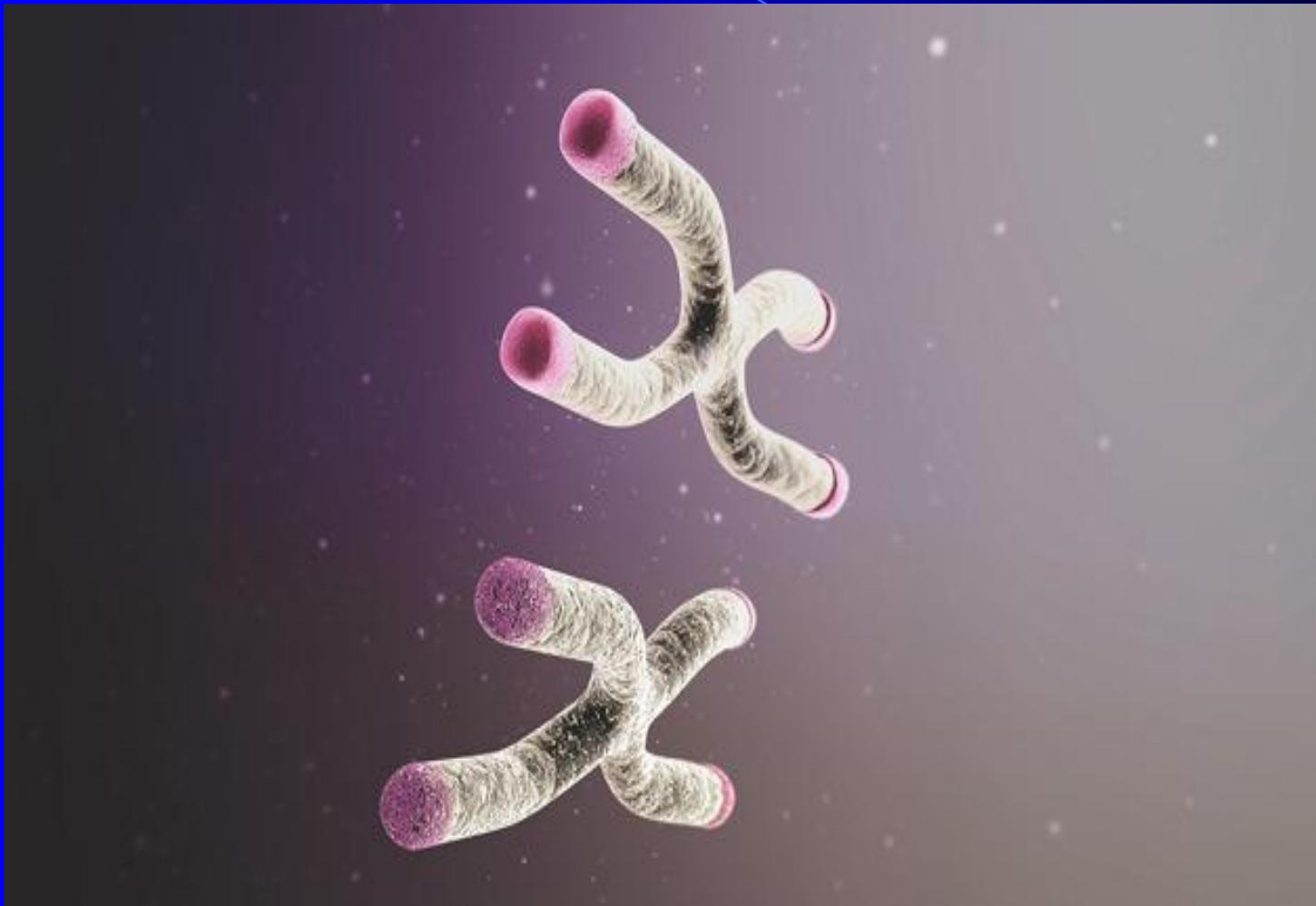
- At the University of Bonn in Germany, a combination of low doses of CBD+THC were administered to mice of various age groups and they were compared with much younger mice which, as a control group, did not receive CBD+THC. Researchers could document that after a few months, the treated much older mice had the same mental fitness and alertness (like significant improvement of solving problems and memory) back again. The conclusion was that CBD with minute amounts of THC brought back mental fitness and cognitive functions of the much older (aging) mice to the level of cognitive functioning of the young mice from the control group.
- Due to aging, the quality of one's endocannabinoid system declines slowly but surely. Therefore, one's cognitive functions are also negatively affected and many mental functions, like mood, adaptation and memory, solving problems, noticing pains and discomfort, and coordinated movements. By offering daily CBD (+ small amounts of THC), one can improve one's endocannabinoid system by substitution.

- (studies published in 2018)

# *Viscum album*, CBD and their effects on Telomeres-1



# *Viscum album*, CBD and their effects on Telomeres-2



# **Improved Anti-Aging and Anti-Cancer Mechanisms of *Viscum album* (European Mistletoe) in combination with CBD**

- The European mistletoe (*Viscum album*) and CBD exhibit synergism in following medical and physiologic properties:
- 1) Improvement and restoration of the DNA repair mechanisms after chemotherapy, radiation and mRNA experimental injections;
- 2) Extending telomeres in all adults (even documented in individuals older than 85 years of age);
- 4) Increase of muscle mass and strength in professional sportsmen and prevention or improvement of muscle decline at higher ages (even above 85);
- 5) Significant improvement of all functional and cognitive capacities in all age groups
- 6) Since the late 1970's, independent researchers have documented that *Viscum album* significantly improves / restores DNA repair and offers protection against electro smog and 4G & 5G
- 7) *Viscum album* prolongs and increases number of telomeres.

# Mobile Phones and Breast cancer



## Save the girls

Doctors warn that unusual  
breast cancers are occurring  
in women who stored  
cell phones in their bras.

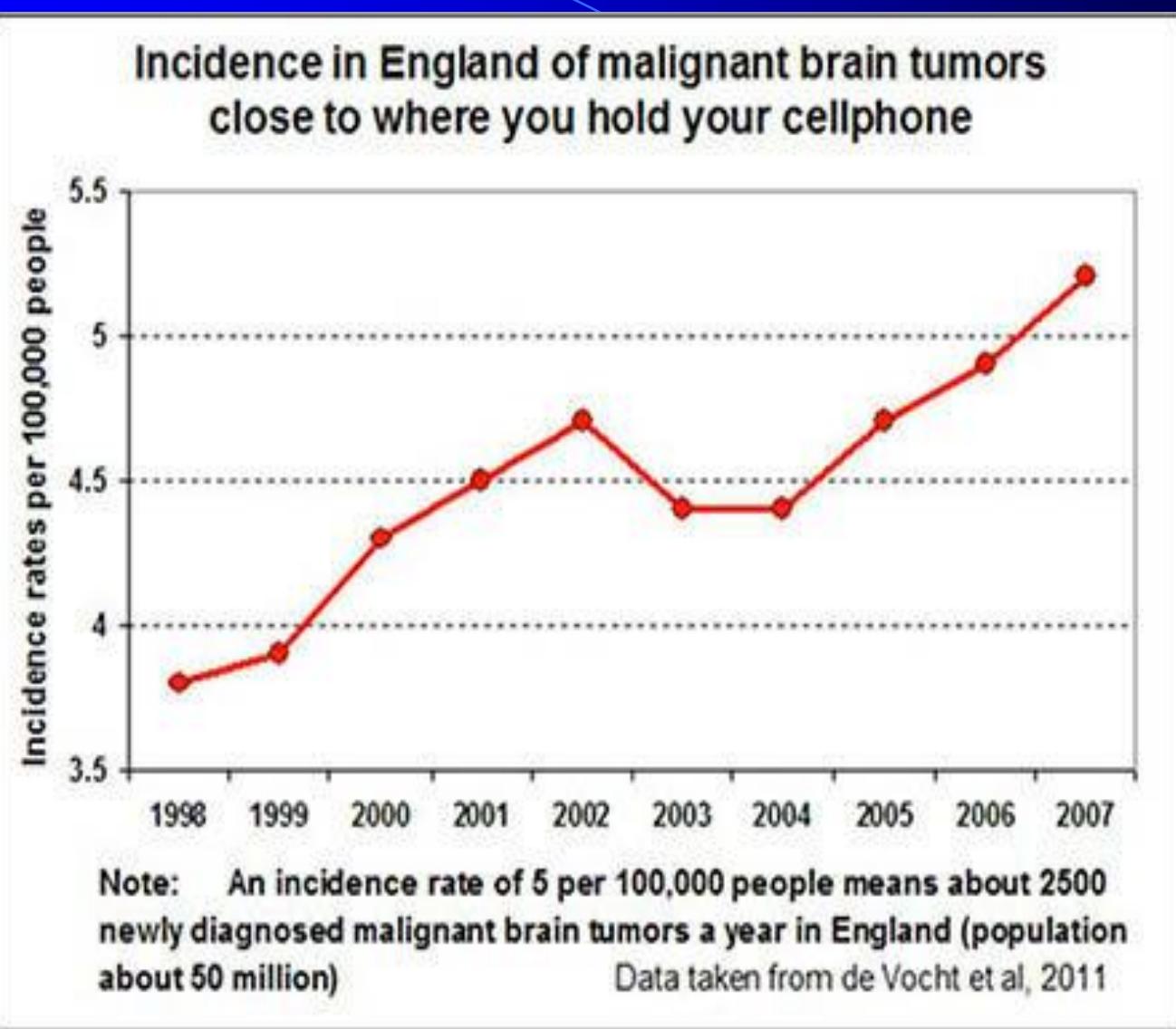


#SaveTheGirls

ENVIRONMENTAL  
HEALTH TRUST

[www.ehtrust.org](http://www.ehtrust.org)

# Brantumors (Glioblastomas) and Mobile Phones



# Medical use of *Cannabis sativa*: Conclusion

- Essentially all known medical properties of *Cannabis sativa* (CBD) can be summarized as follows:
- *Cannabis sativa* (CBD) is a strong COX-1 and COX-2 pathway inhibitor and therefore, indicated in all conditions where chronic inflammatory and destructive / degenerative processes play a (leading) role;
- CBD supports the above mentioned clinical effects of *Viscum album* (European mistletoe) which is one of the most potent natural immunomodulators and non-toxic, anti-cancer medications known to Man;
- In The Gorter Model, all cancer patients receive treatment with *Viscum album* in combination with CBD+THC since 2000 and the results are remarkable. As an example, the brain tumor Glioblastoma multiforme stage-4 (GBM) is a very fatal form of cancer and rarely anyone survives. Still 46% of all end-stage GBM patients treated according to The Gorter Model go into complete remission with survivors up to 21 years by now (spring 2024).

Thanks for your Attention;  
Any questions?

