

Das Entourage effekt und ECS-Wohlgefühl

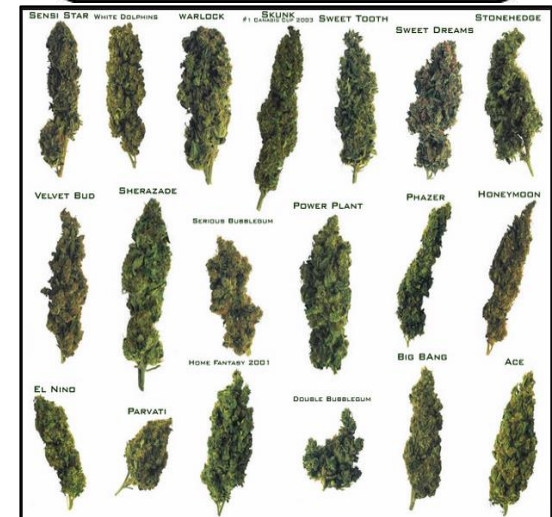
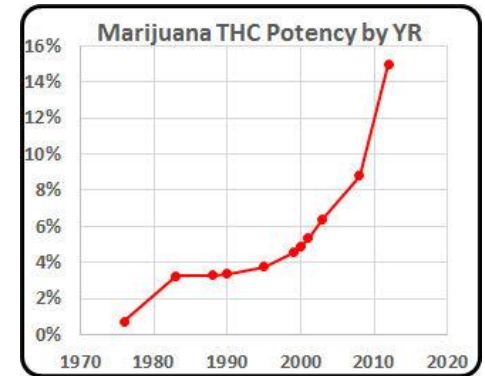


Cannabinoide Lehrgang
09-10.07.2021

doc. dr. Tanja Bagar
Institut ICANNA

Cannabis sativa L.

- Hanf, Cannabis, Marihuana, Gras, Haschisch, Joint, Grünes, Kraut, Mary Jane, Weed, Bhang, Ganja....
- Hauptgattungen ➡ chemoware



<http://www.pbs.org/newshour/updates/pot-getting-potent/>

Cannabis sativa L.

Ženska rastlina s semeni • Female seed-bearing plant

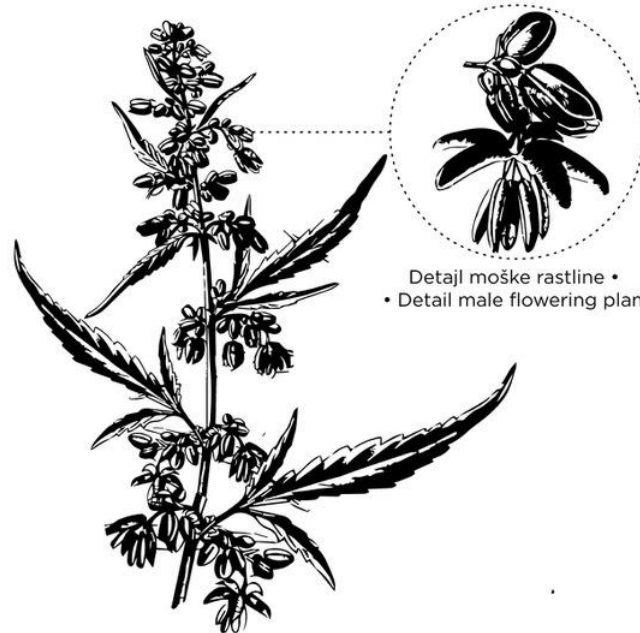


Prašniki • Pollen sac



Ženska roža
• Female flower

Cvetoča moška rastlina • Male flowering plant



Detajl moške rastline •
• Detail male flowering plant

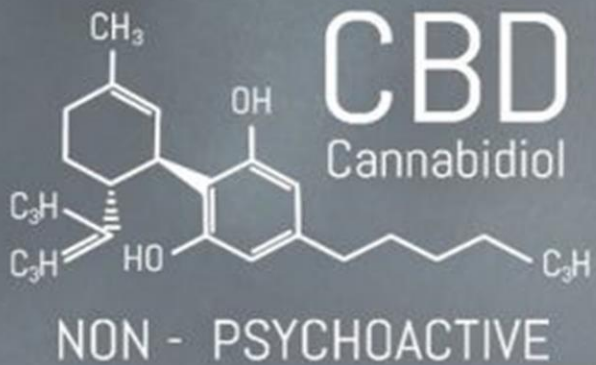
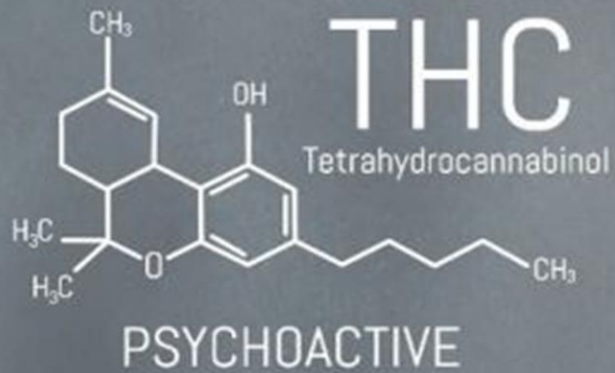


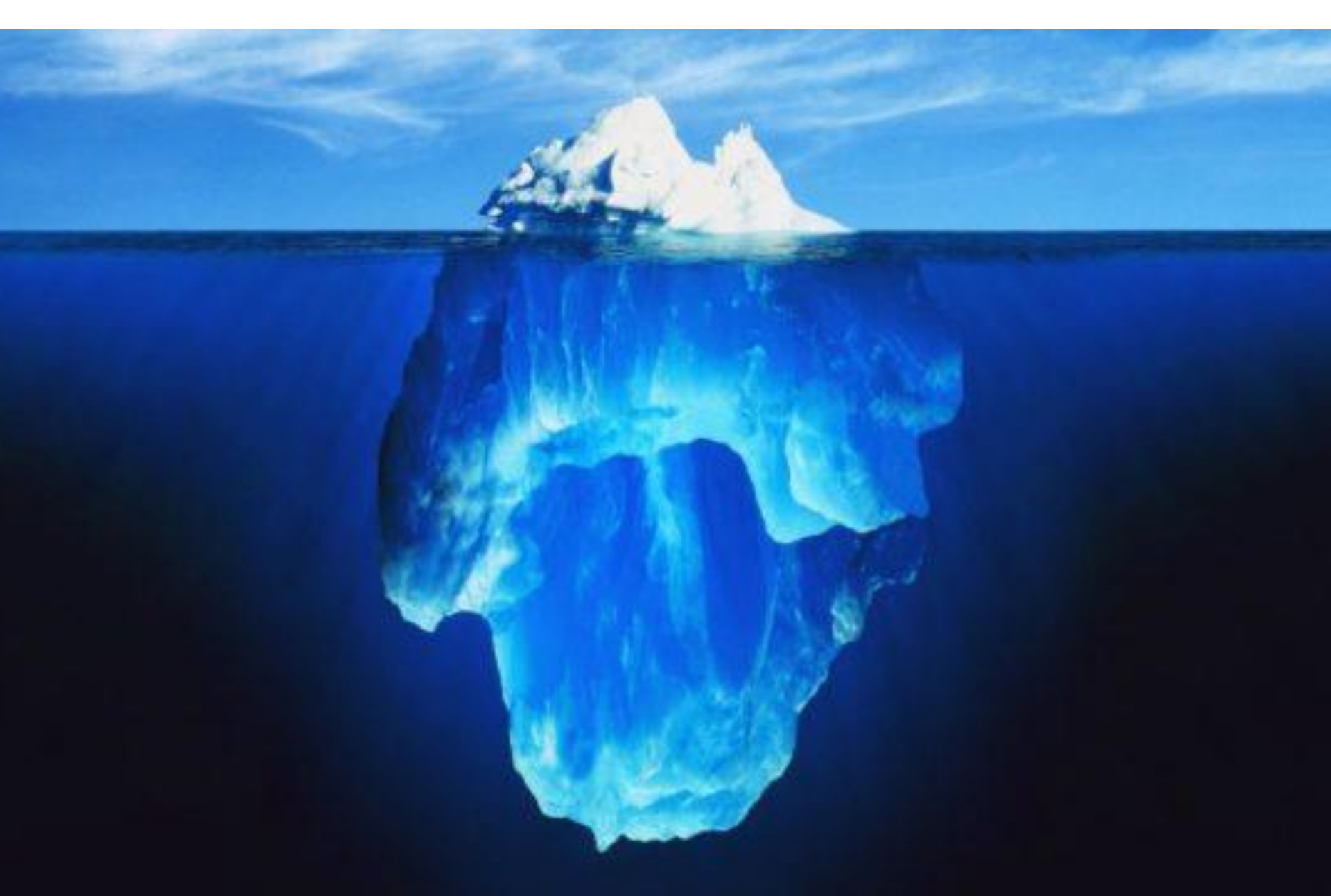
Sadež
• Fruit



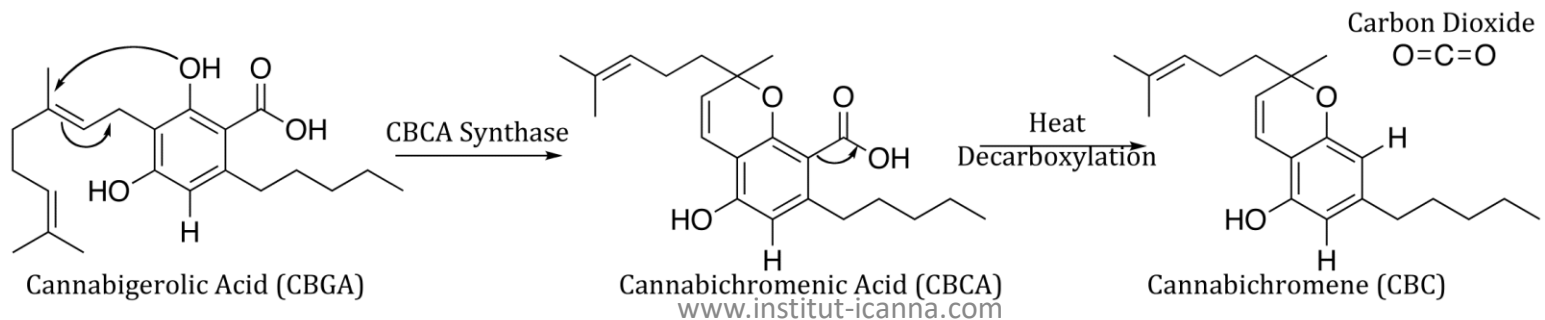
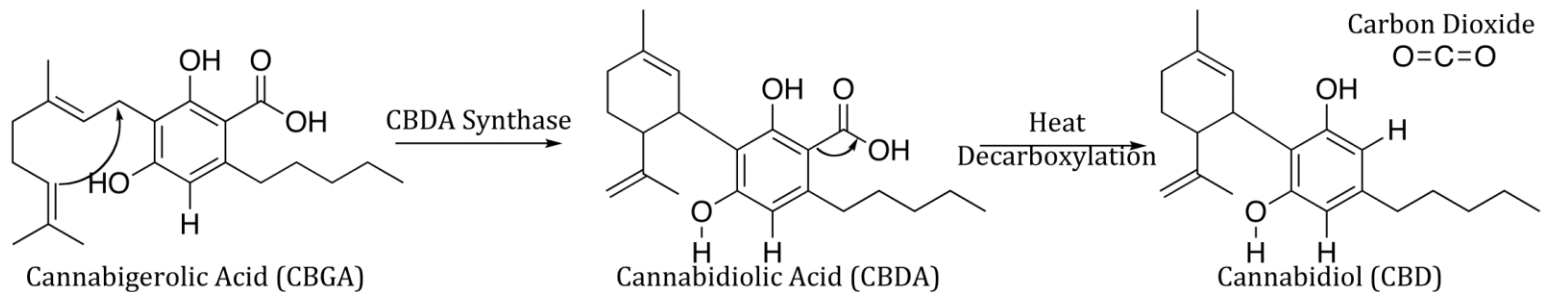
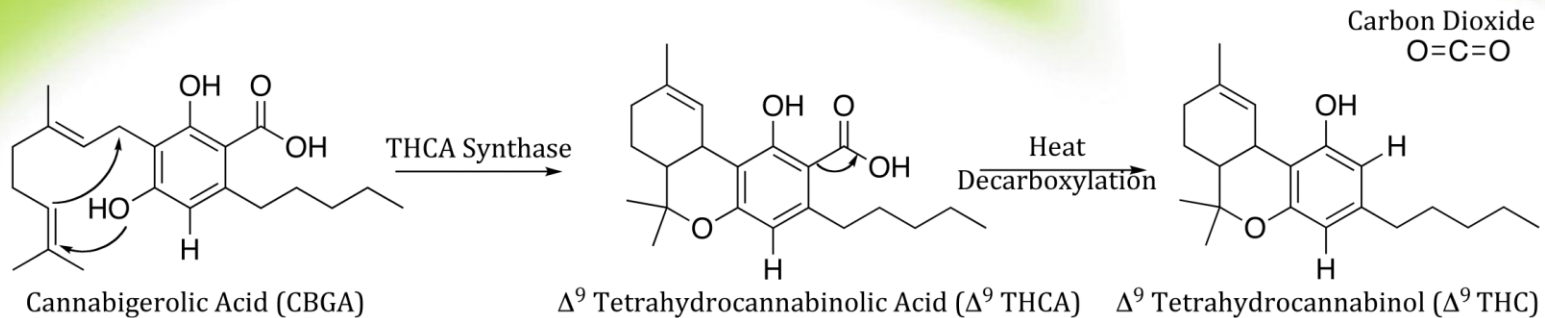
Seme brez zaščitnega ovoja
• Seed without hull

1064 Substanzen



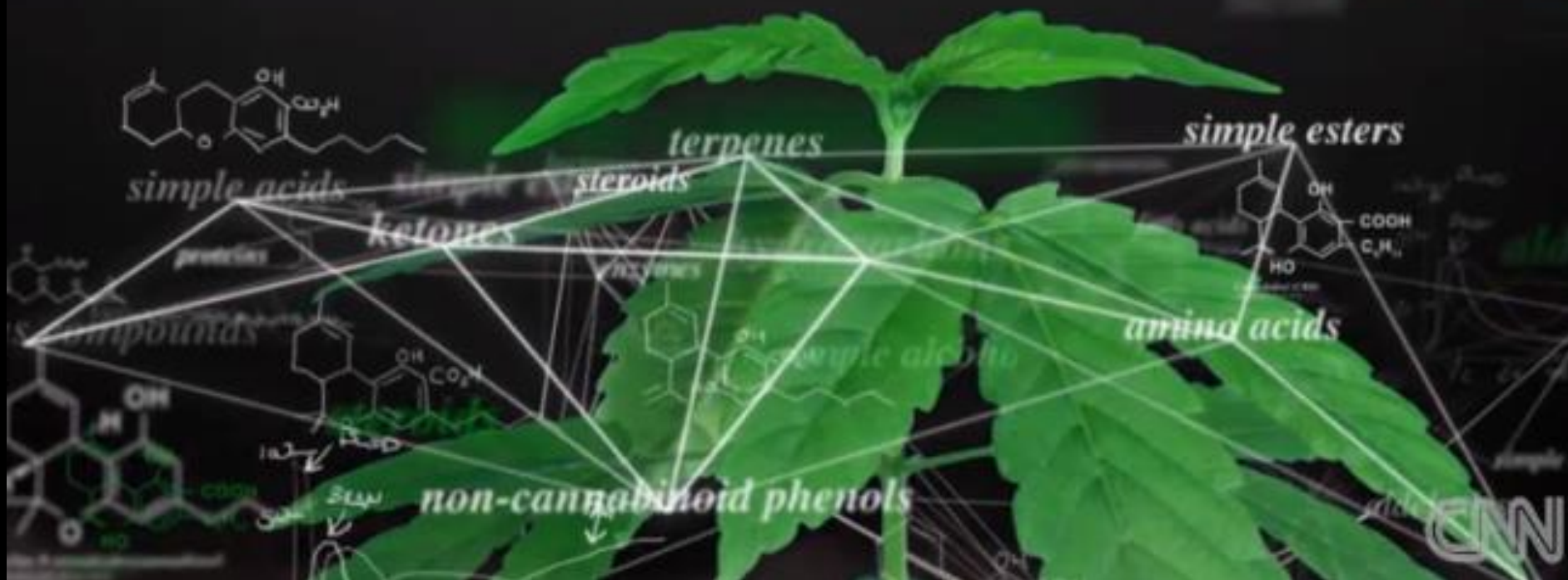


Cannabinoiden Säure



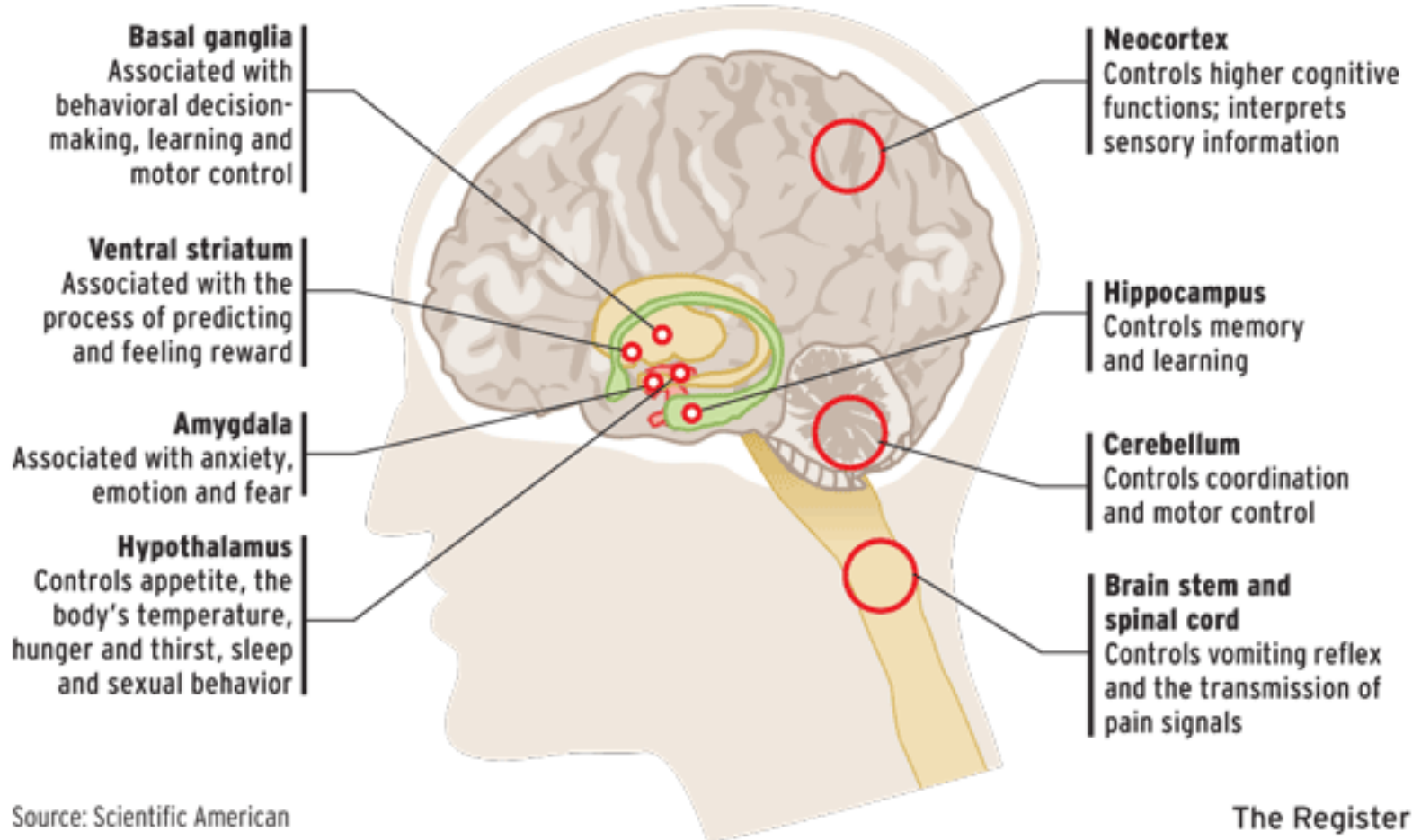
entourage effect

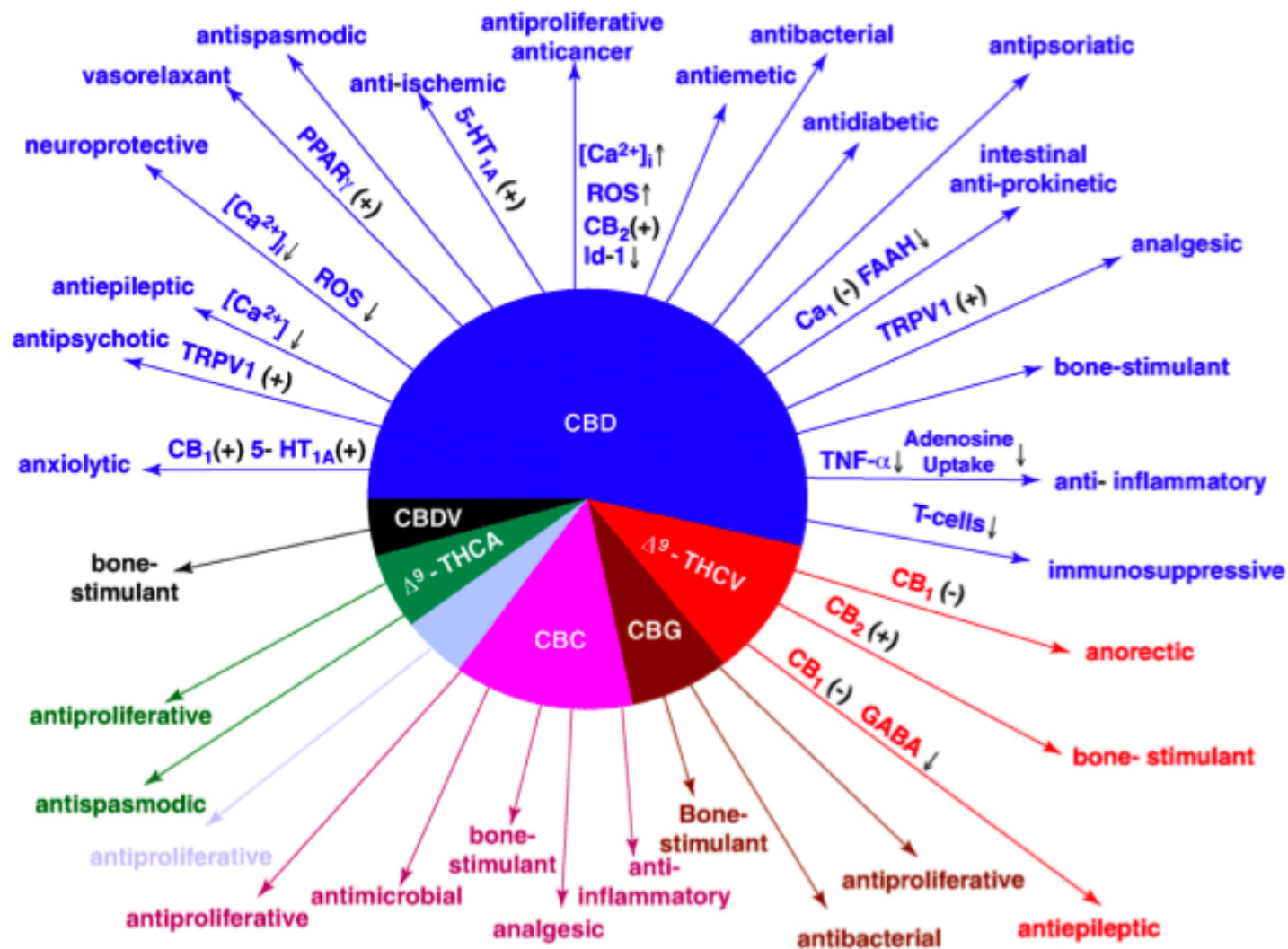
entourage (ahn-see-rah) n.
a group of attendants or associates, as of a person of rank or importance:
The opera singer traveled with an entourage.



THC and the brain

Tetrahydrocannabinol (THC), the psychoactive substance found in cannabis, produces its effects on the body when marijuana is smoked or otherwise ingested. Found throughout the body, cannabinoid receptors are found in greatest quantity in the brain, particularly in areas that govern coordination, judgment, learning and memory. Some of the areas THC affects:

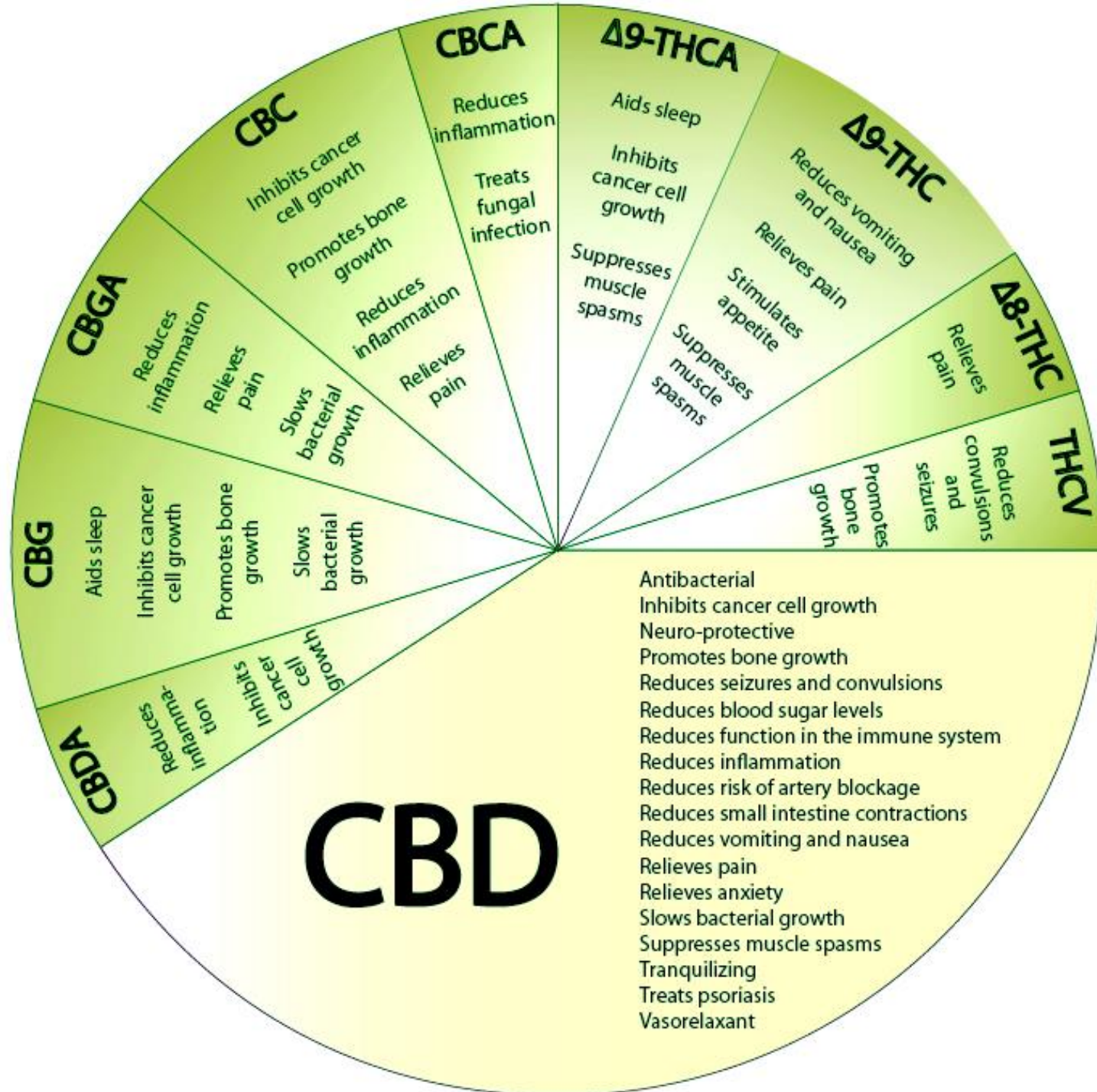




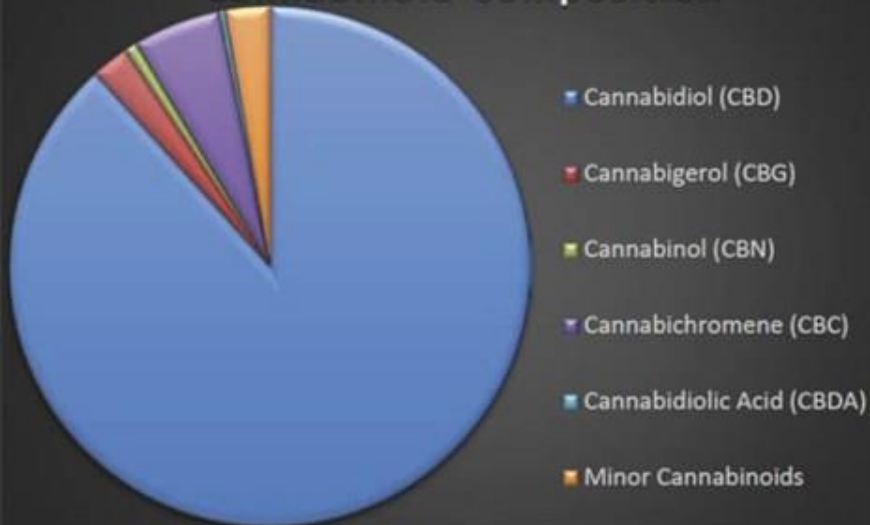
TRENDS in Pharmacological Sciences

Figure 1. Pharmacological actions of non-psychotropic cannabinoids (with the indication of the proposed mechanisms of action).

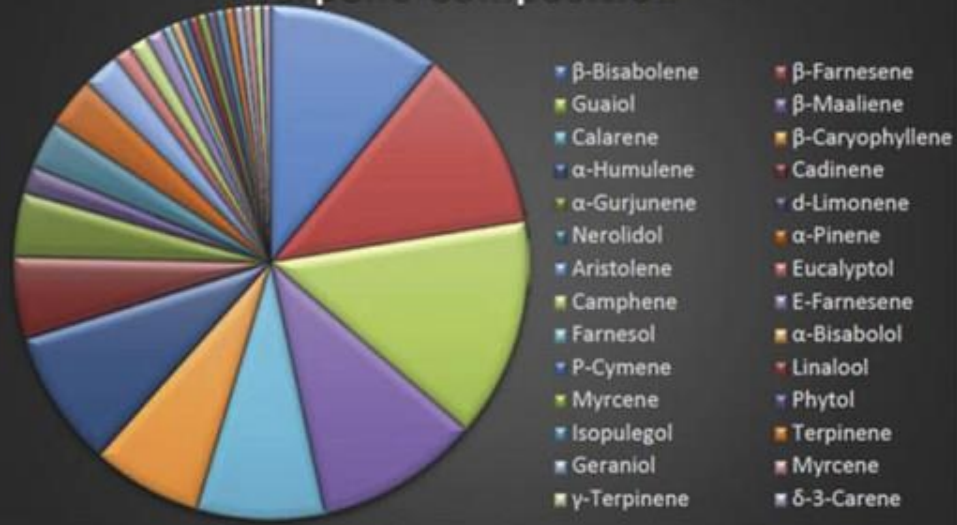
Abbreviations: Δ^9 -THC, Δ^9 -tetrahydrocannabinol; Δ^8 -THC, Δ^8 -tetrahydrocannabinol; CBN, cannabiniol; CBD, cannabidiol; Δ^9 -THCV, Δ^9 -tetrahydrocannabivarin; CBC, cannabichromene; CBG, cannabigerol; Δ^9 -THCA, Δ^9 -tetrahydrocannabinolic acid; CBDA, cannabidiolic acid; TRPV1, transient receptor potential vanilloid type 1; PPAR γ , peroxisome proliferator-activated receptor γ ; ROS, reactive oxygen species; 5-HT_{1A}, 5-hydroxytryptamine receptor subtype 1A; FAAH, fatty acid amide hydrolase. (+), direct or indirect activation; \uparrow , increase; \downarrow , decrease.



Cannabinoid Composition



Terpene Composition



Die Terpene

A-PINENE

ANTI-INFLAMMATORY
BRONCHODILATOR
AIDS MEMORY
ANTI-BACTERIAL

also found in
pine needles



LINALOOL

ANESTHETIC
ANTI-CONVULSANT
ANALGESIC
ANTI-ANXIETY

also found in
lavender



BETA CARYOPHYLLENE

ANTI-INFLAMMATORY
ANALGESIC
PROTECTS CELLS LINING THE
DIGESTIVE TRACT

also found in
black pepper



MYRCENE

CONTRIBUTES TO
SEDATIVE EFFECT OF
STRONG INDICAS
SLEEP AID
MUSCLE RELAXANT

also found in
hops

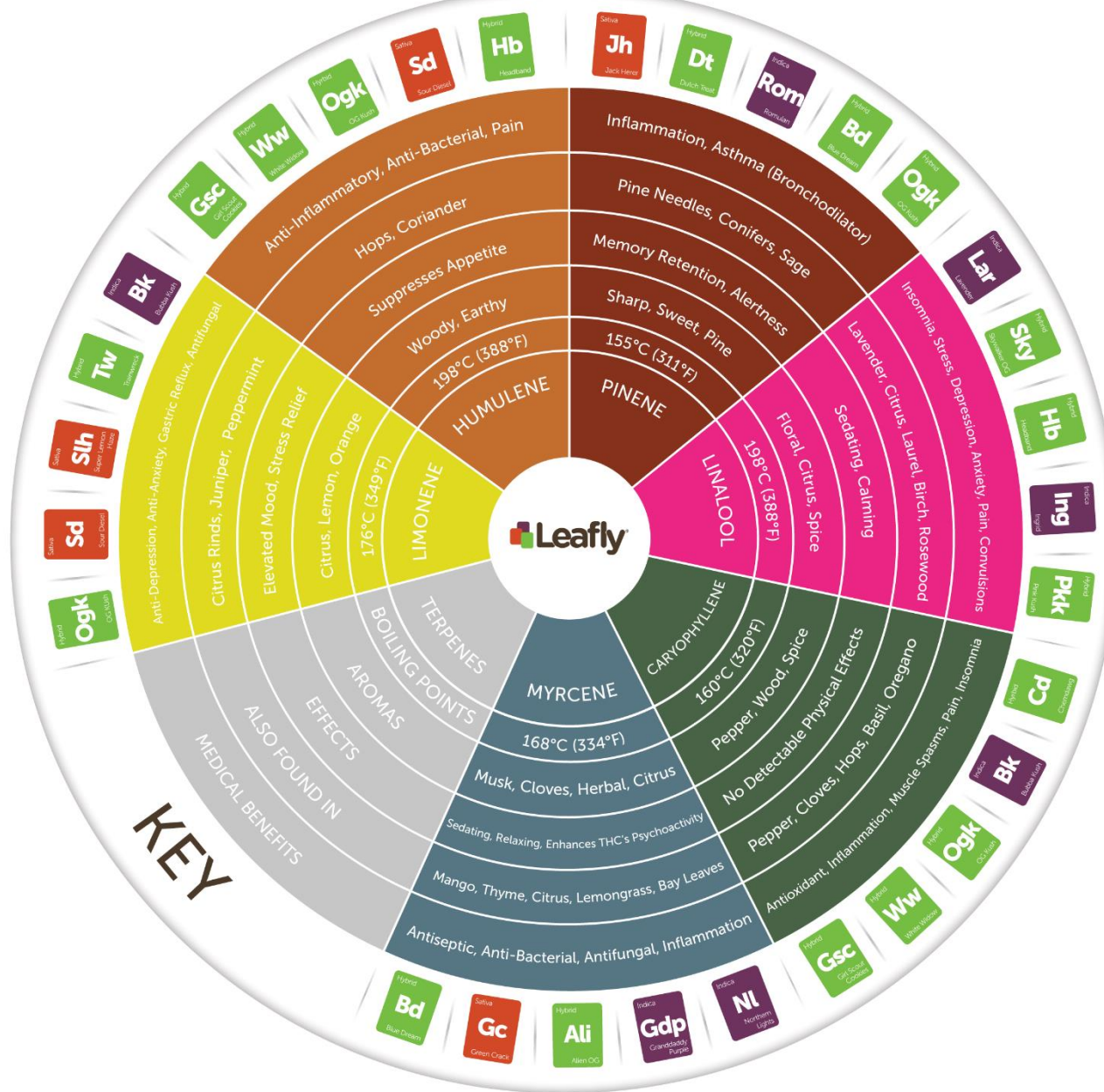


LIMONENE

TREATS ACID REFLUX
ANTI-ANXIETY
ANTIDEPRESSANT

also found in
citrus





References

<http://steephill.com/resources/cannabinoid-and-terpenoid-reference-guide/>
<http://sclabs.com/learn/terpenes.html>

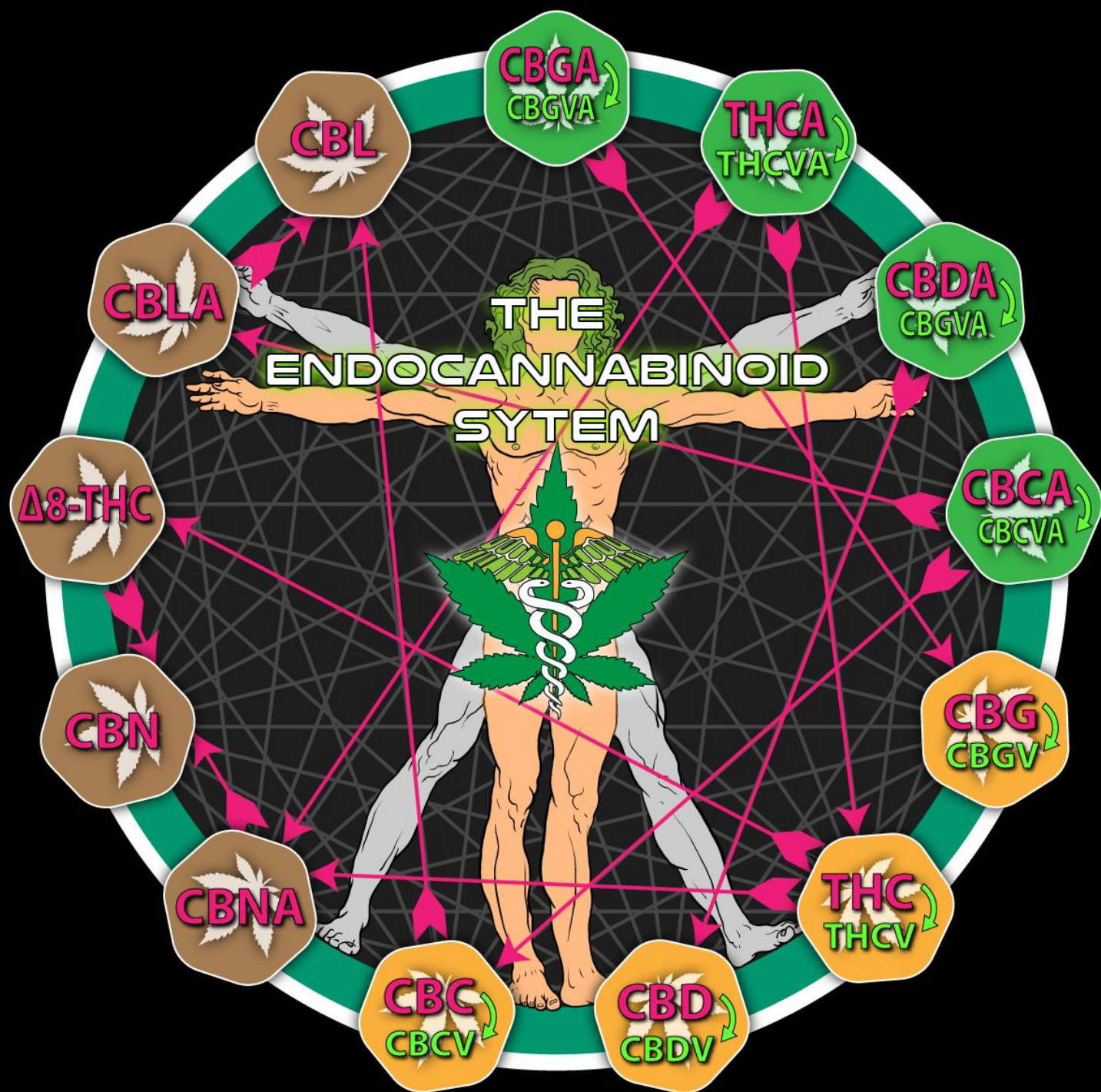


Izolierte cannabinoide

VS



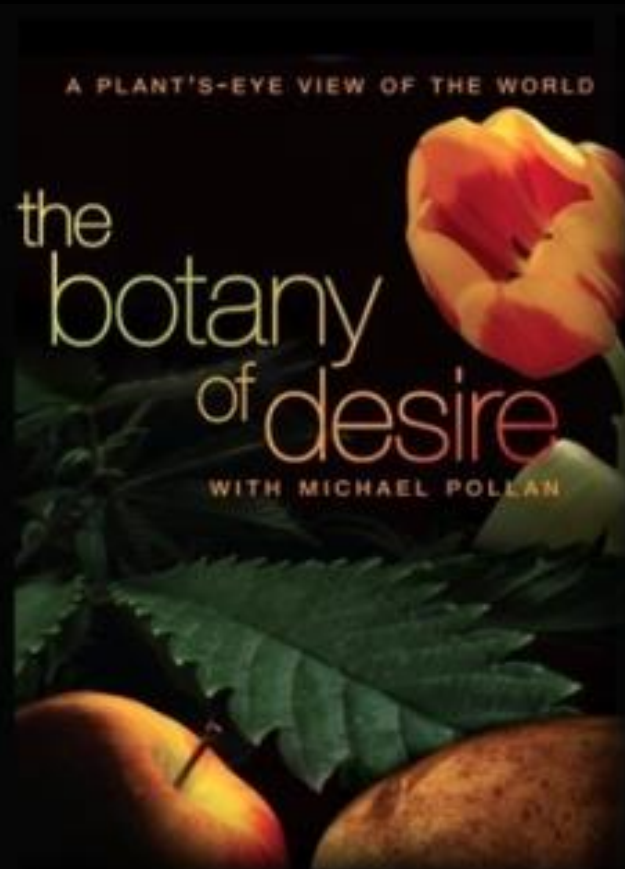
Ganzpflanzen extract



PHYTOCANNABINOIDOME

the sum of plant cannabinoids and their molecular targets





Desire: Sweetness
Plant: The Apple



Desire: Beauty
Plant: The Tulip



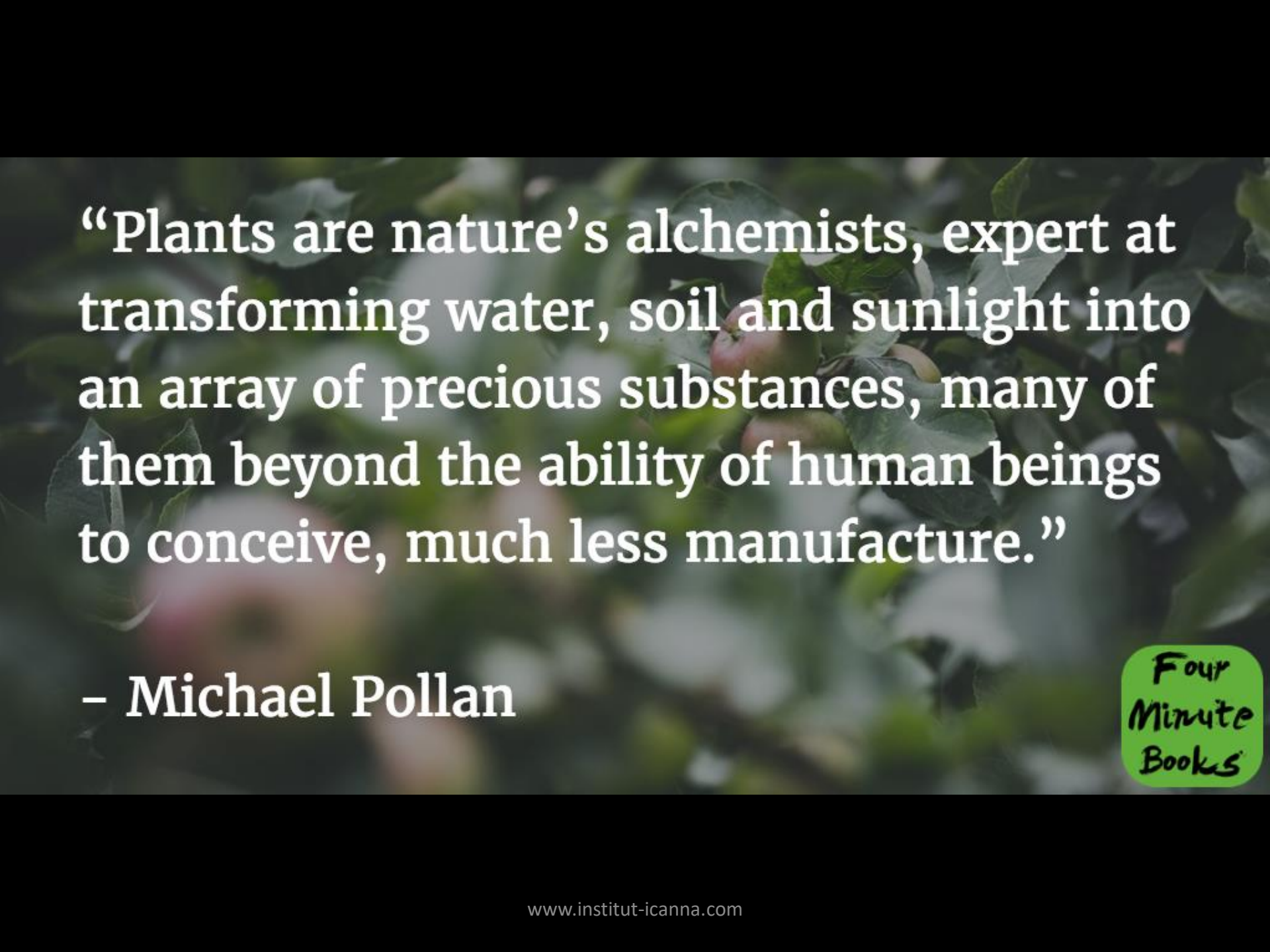
Desire: Intoxication
Plant: Marijuana



Desire: Control
Plant: The Potato



dr. Mechoulam:
**“I sincerely believe
that the plant
cannabinoids are a
neglected
pharmacological
treasure trove.”**



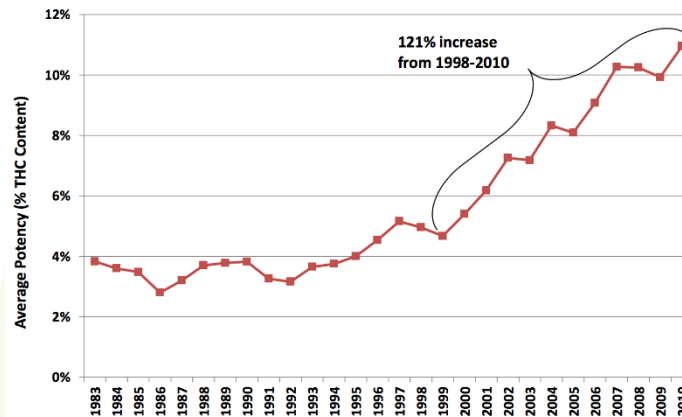
“Plants are nature’s alchemists, expert at transforming water, soil and sunlight into an array of precious substances, many of them beyond the ability of human beings to conceive, much less manufacture.”

– Michael Pollan

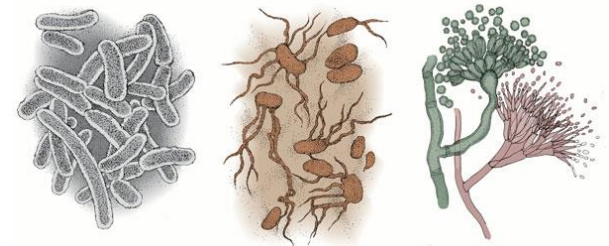
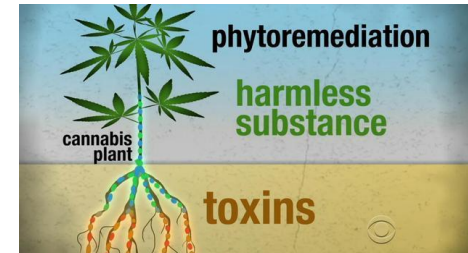
Four
Minute
Books

Qualitat von cannabis

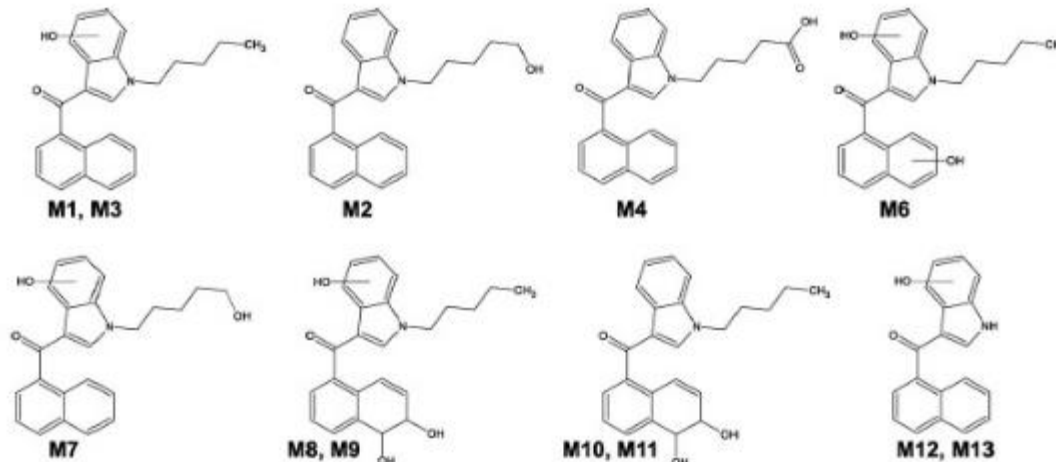
Potency of Seized Marijuana in the U.S.



Source: University of Mississippi, National Center for Natural Products Research, Potency Monitoring Project Quarterly Report 115 (December 2011)



Synthetische cannabinoide



*The
Pursuit
of
Happiness*

"We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness."

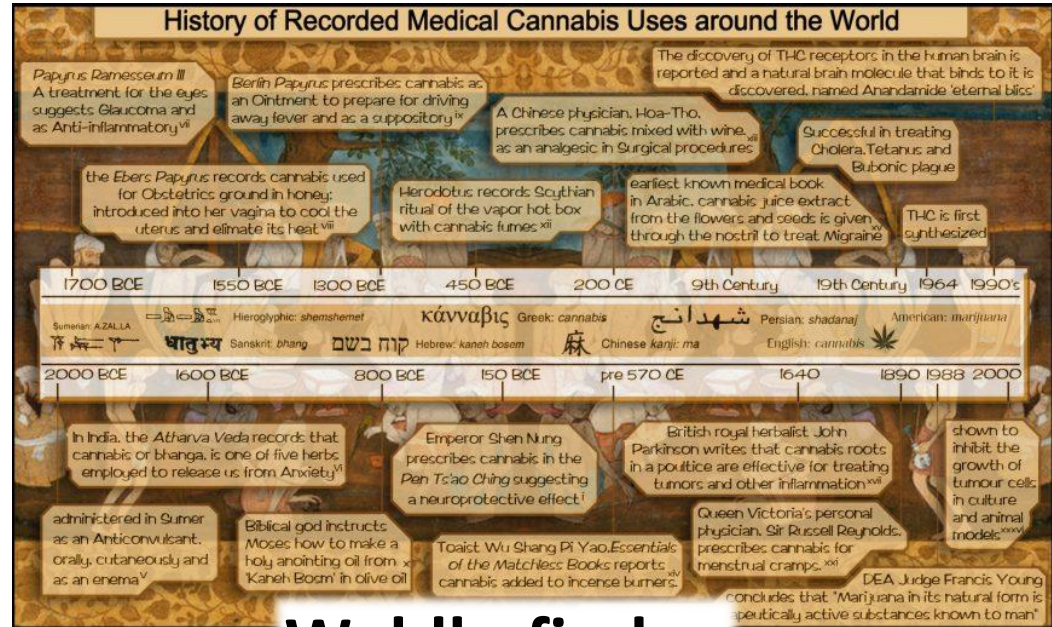
- The Declaration
of Independence
July 4, 1776

Thomas Jefferson



Historische Verwendung von Cannabis

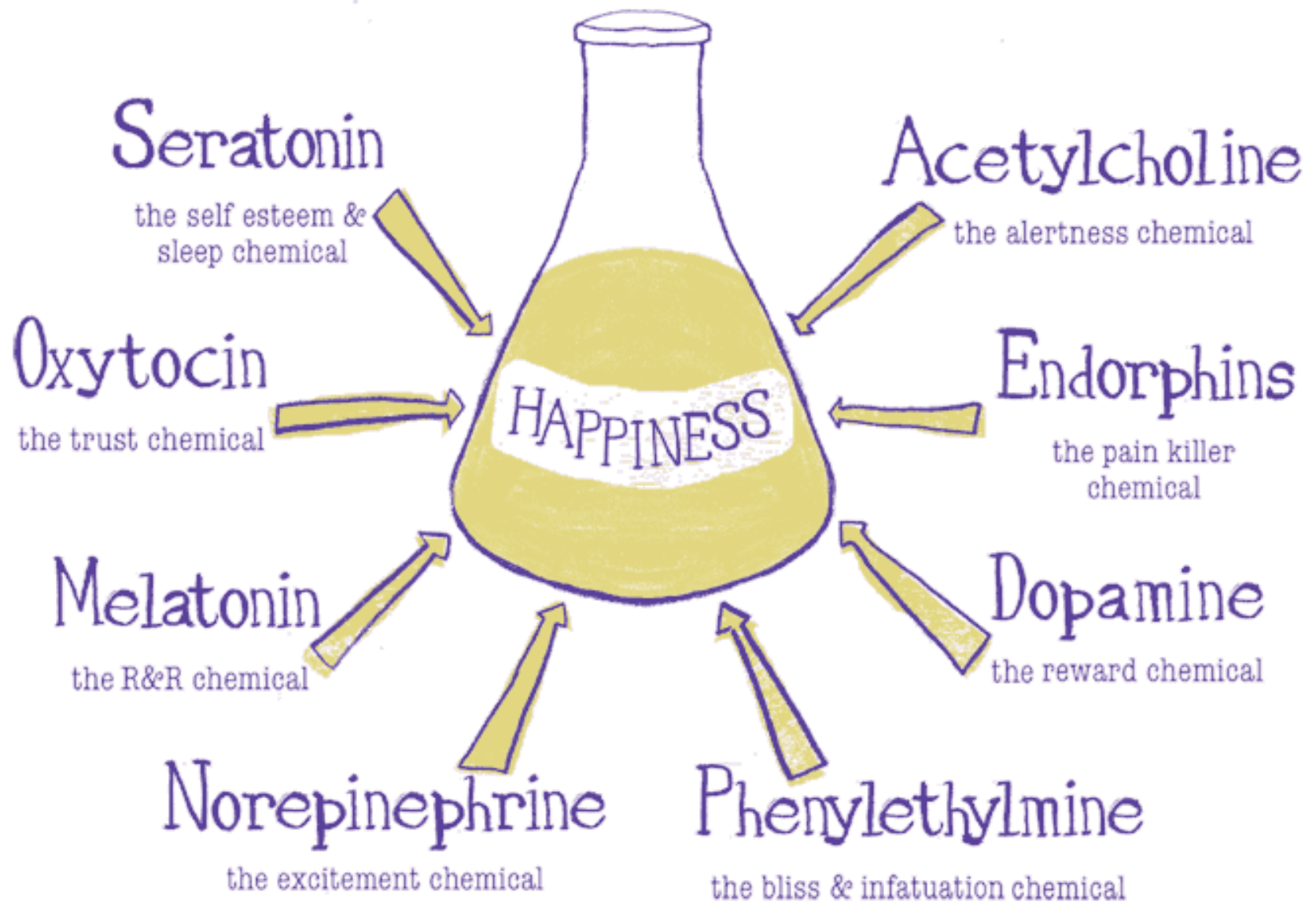
Medizinische Zwecke

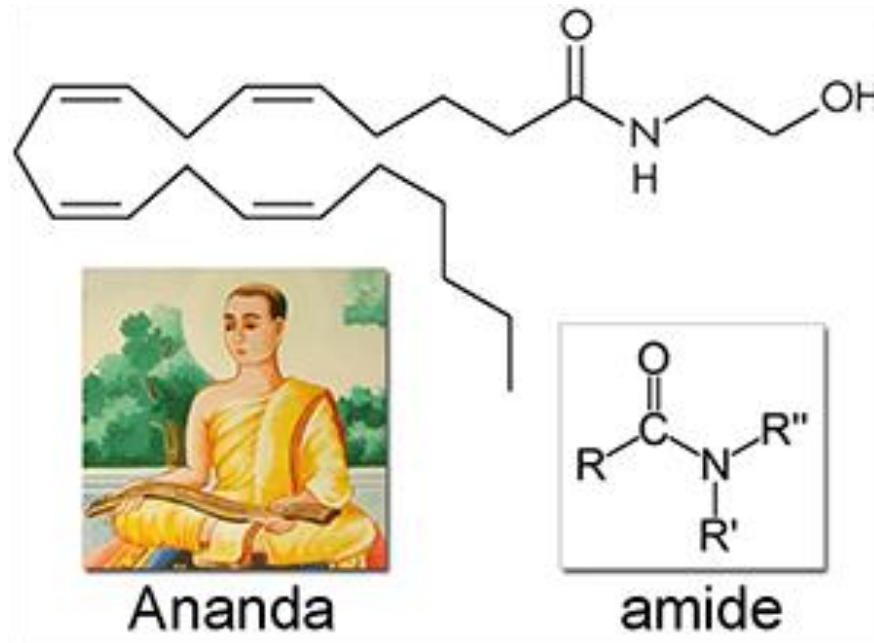


Wohlbefinden

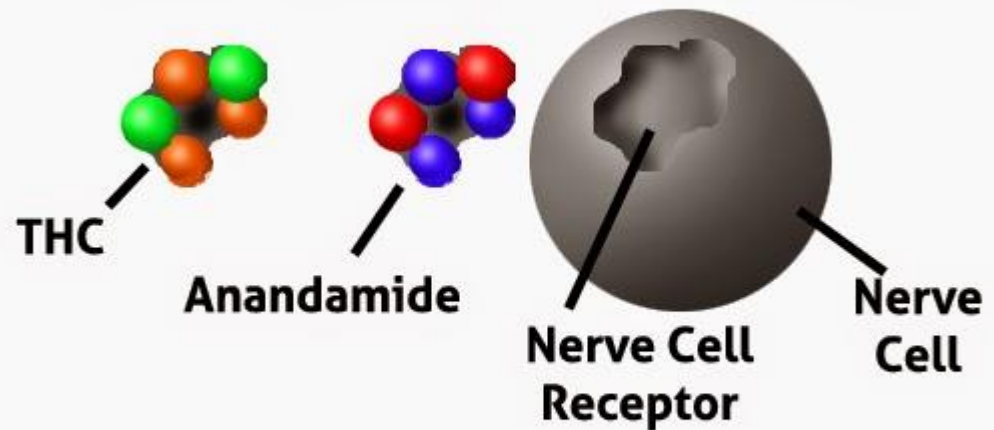
Rituale und Spirituelle Zwecke







THC Mimic's Anandamide



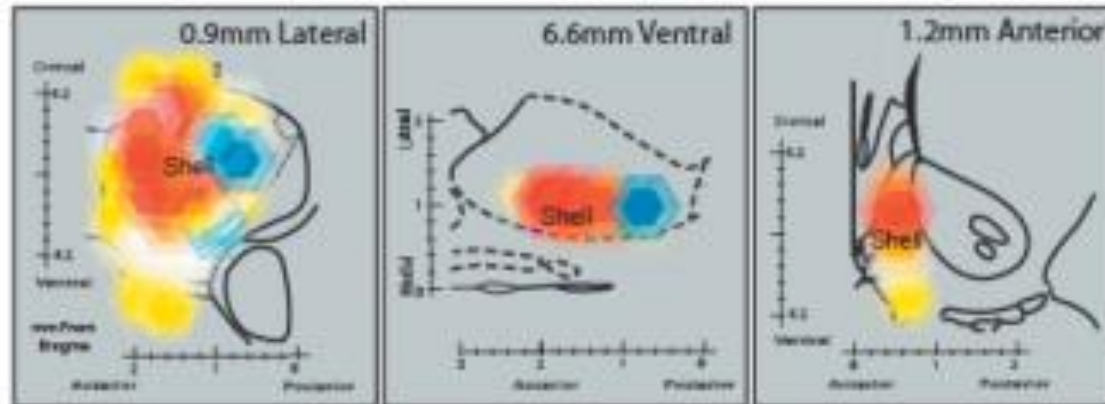
Anandamide and THC molecular structures are similar. This allows for THC to mimic anandamide by connecting to the nerve cell receptor in its place.

Hedonic brain hot spots

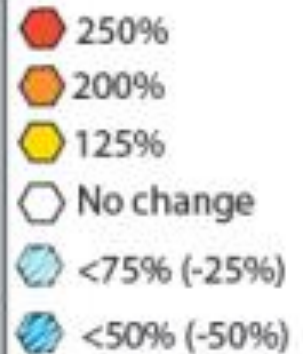
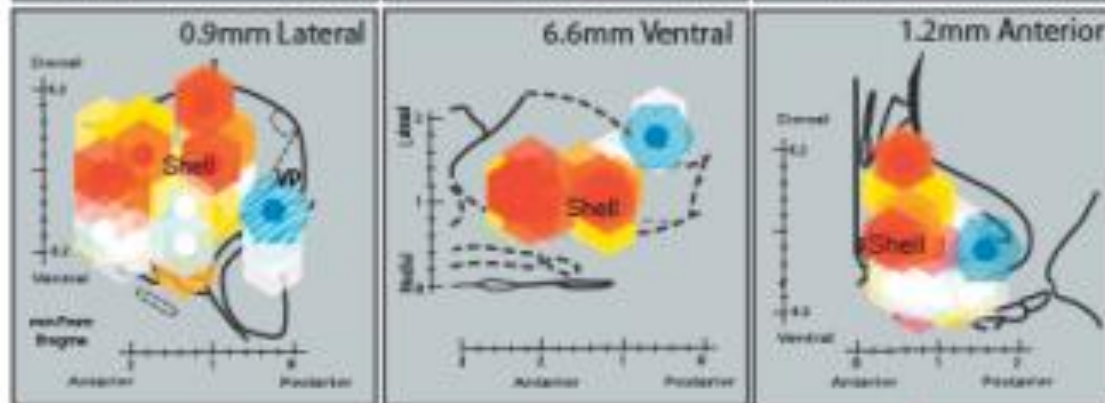
Nucleus Accumbens Hedonic Hotspots

Sagittal  Horizontal  Coronal 

Opioid
Hotspot

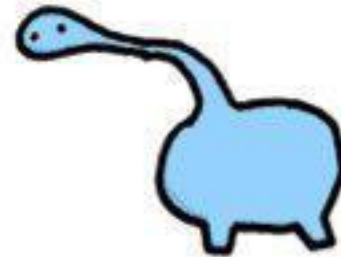
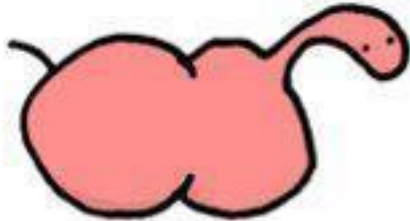


Endocannabinoid
Hotspot



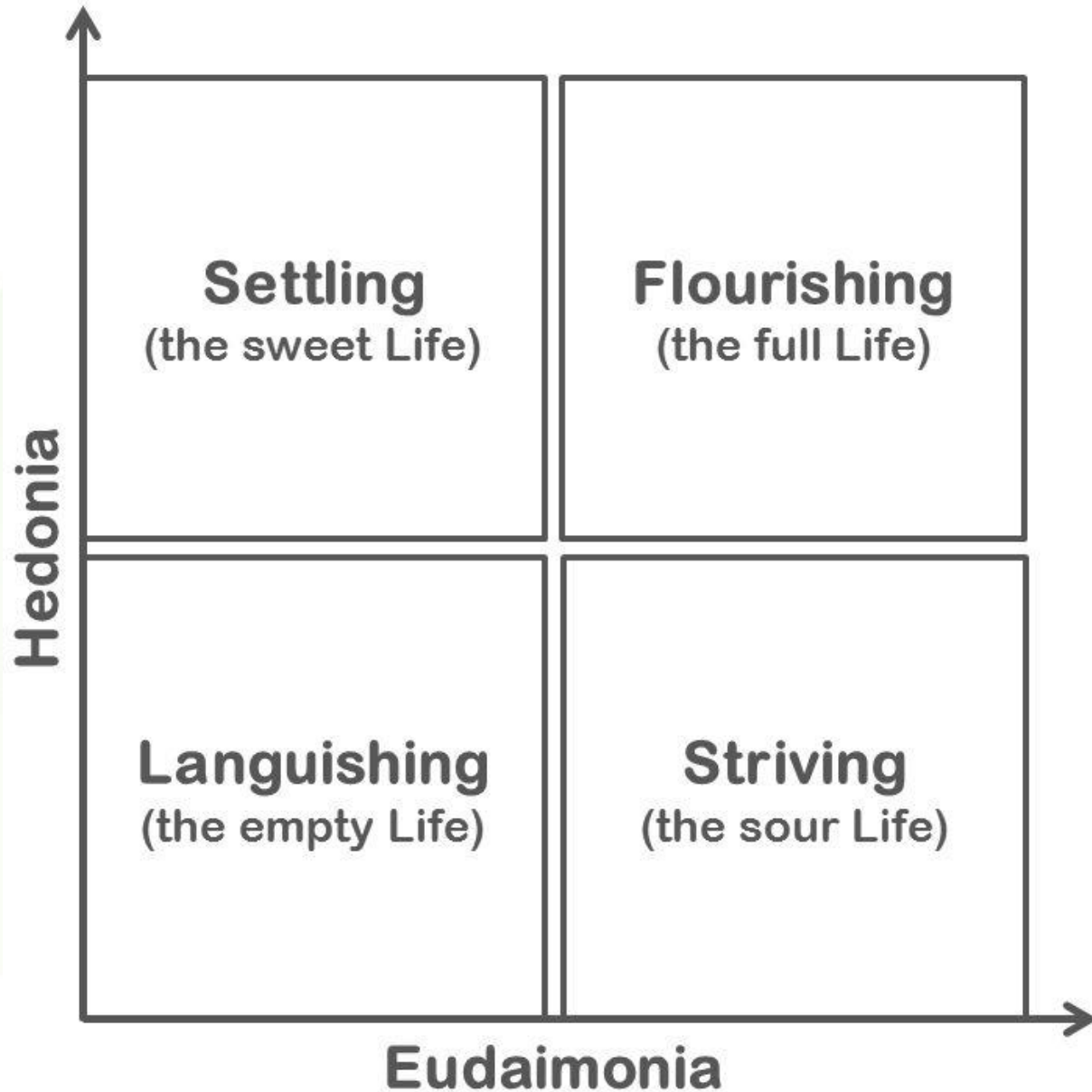
ECS

SEROTONIN & DOPAMINE

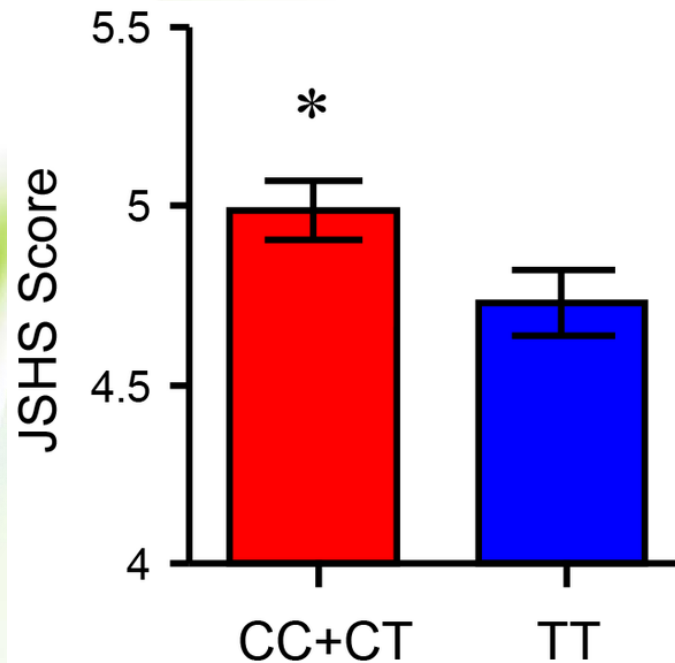


Technically, the only two things
you enjoy

Hedonia / eudaimonia

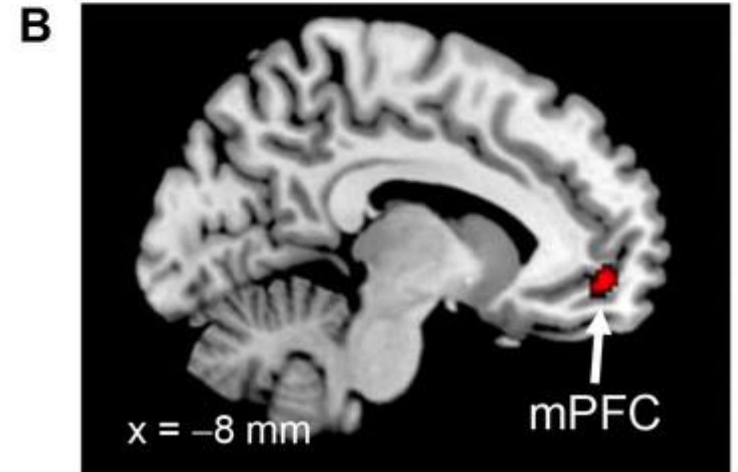
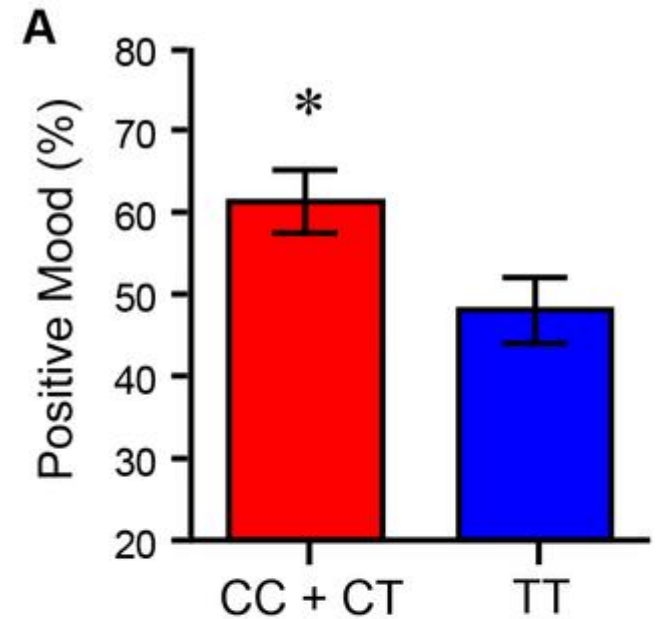


Gluckliche gene?



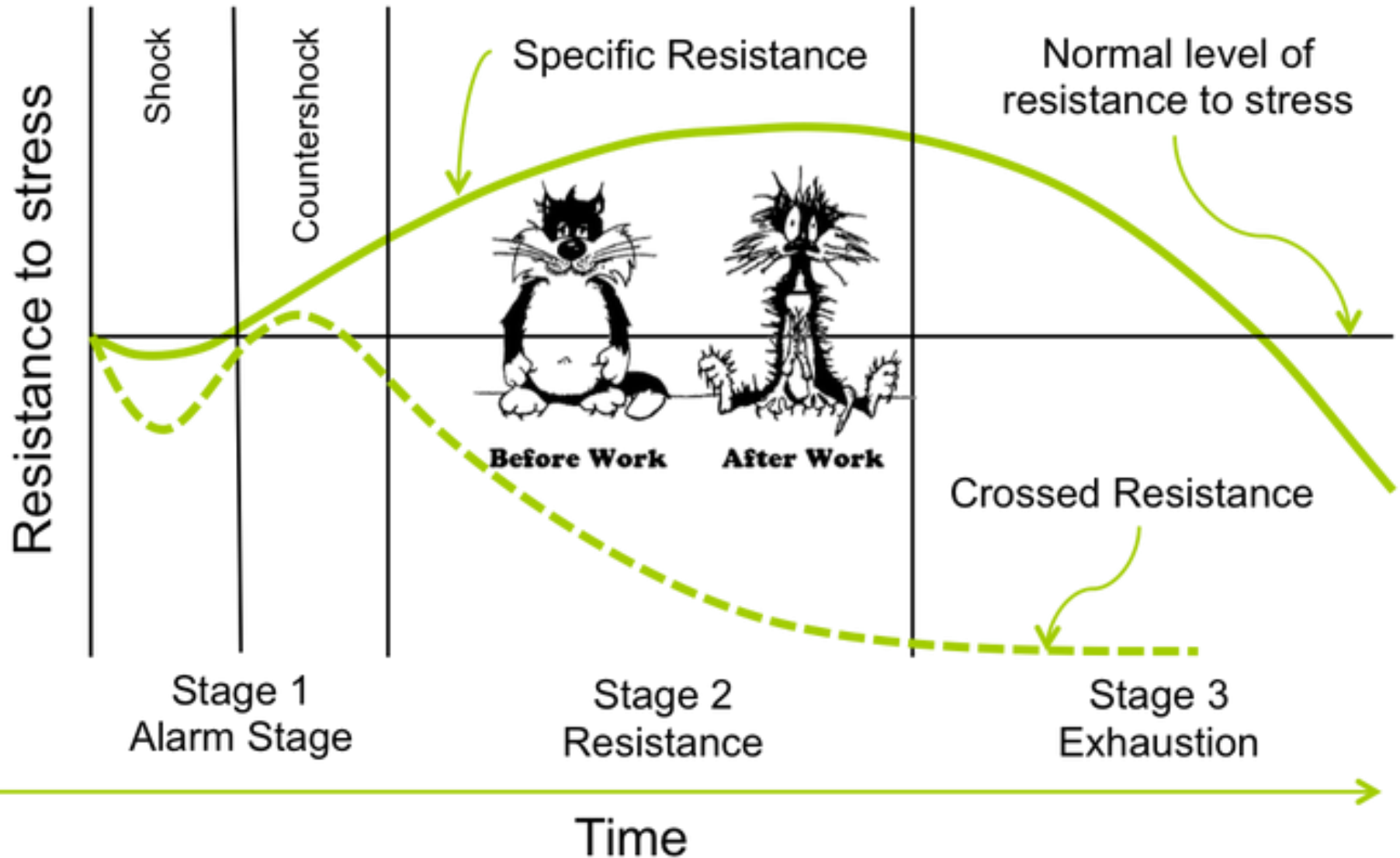
Subjective happiness scale

(Matsanga et. al., 2014)

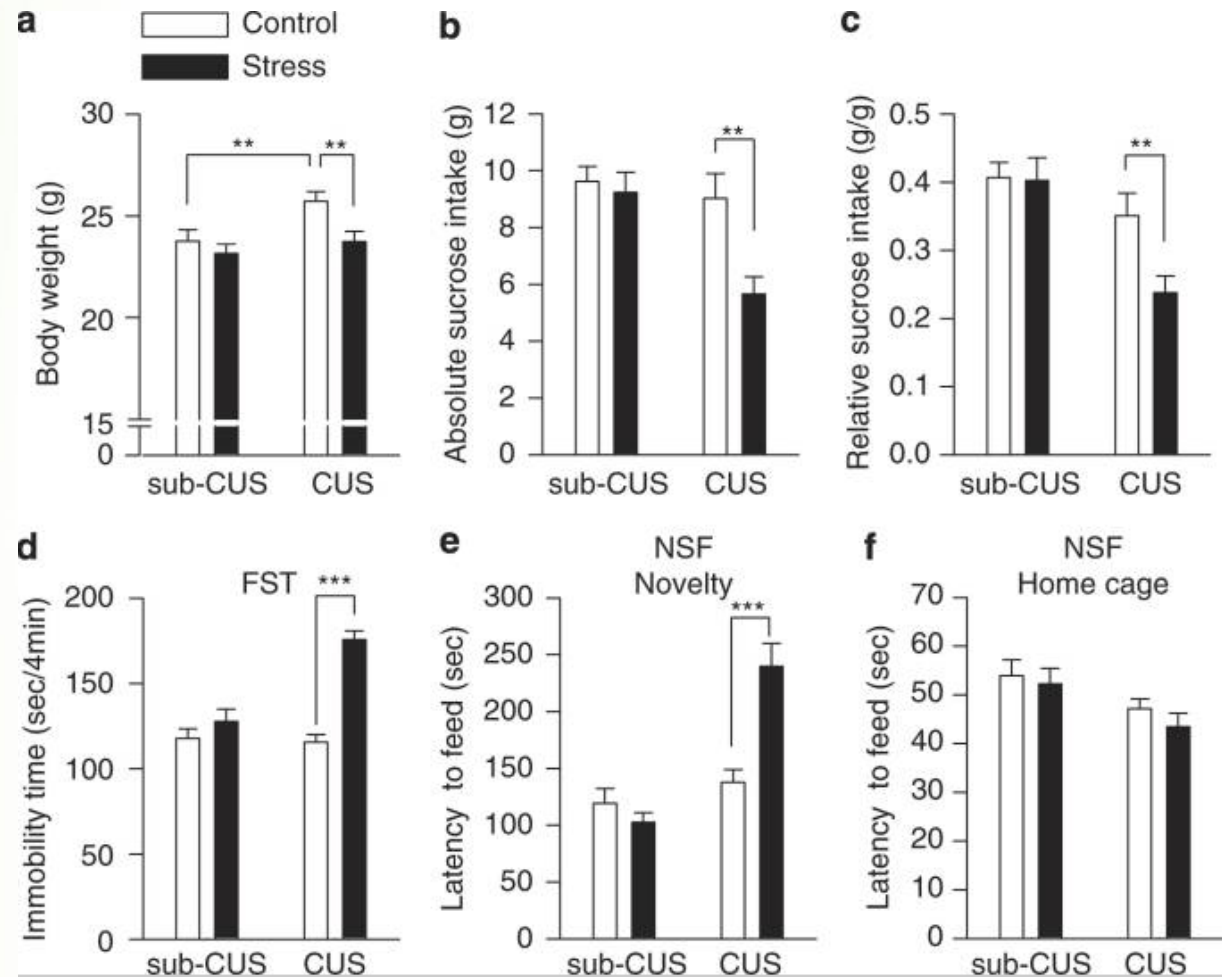


Response to positive stimuli

GENERAL ADAPTATION SYNDROME



Cannabinoids and stress response



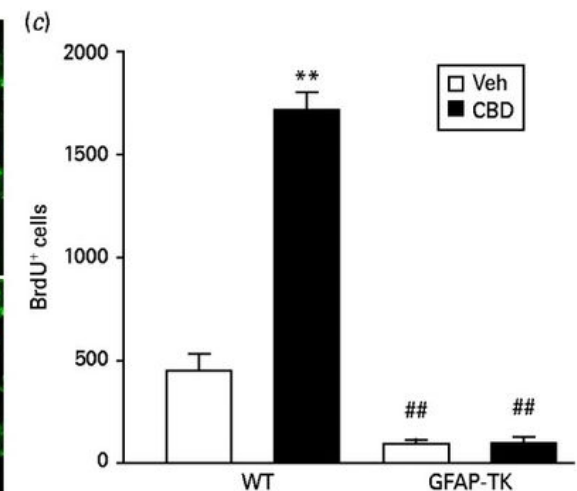
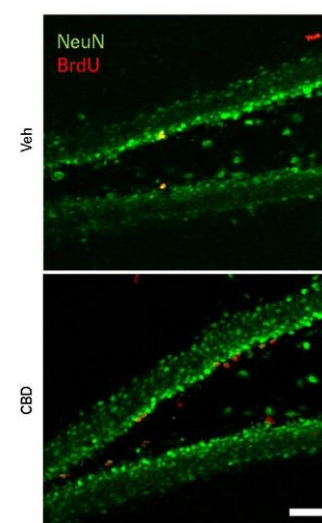
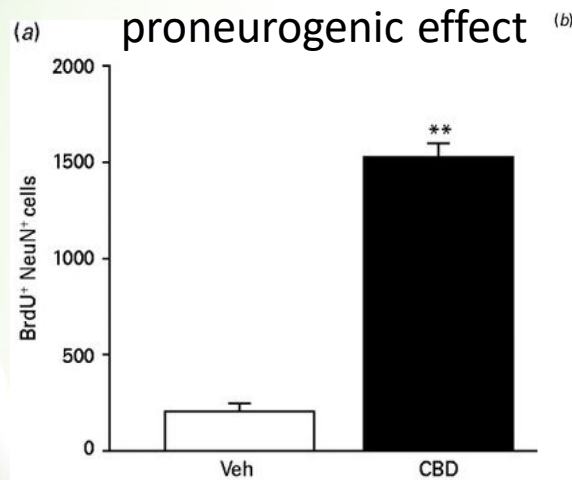
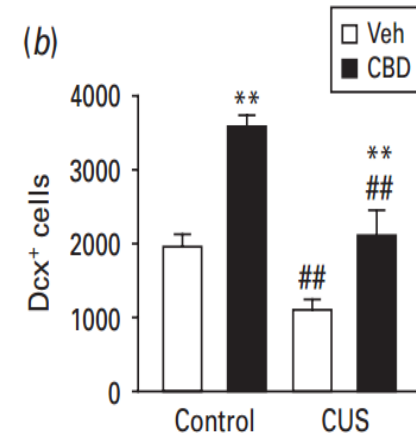
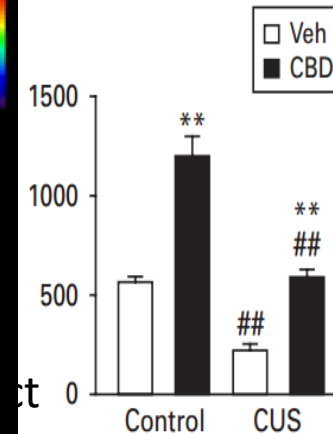
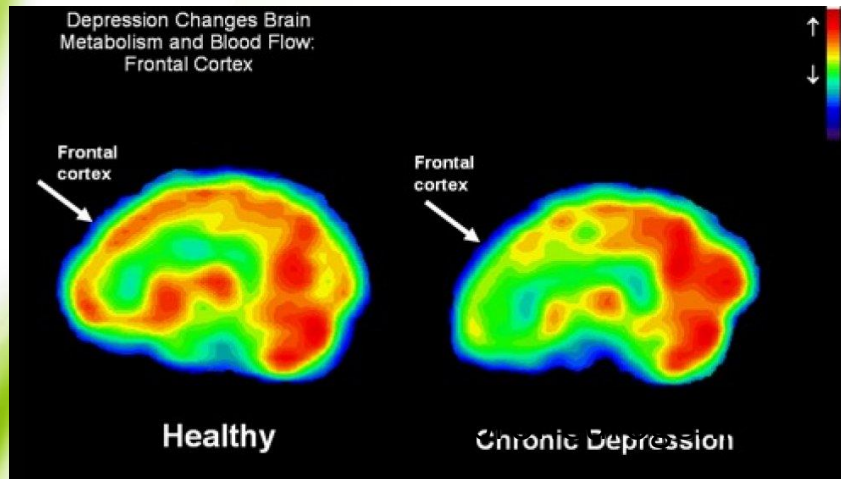
(Wang et.al, 2010)

[illegible]

www.institut-icanna.com

CUS \longrightarrow depression Symptomatik

hippocampal neurogenesis





Reward Pathway in the Brain

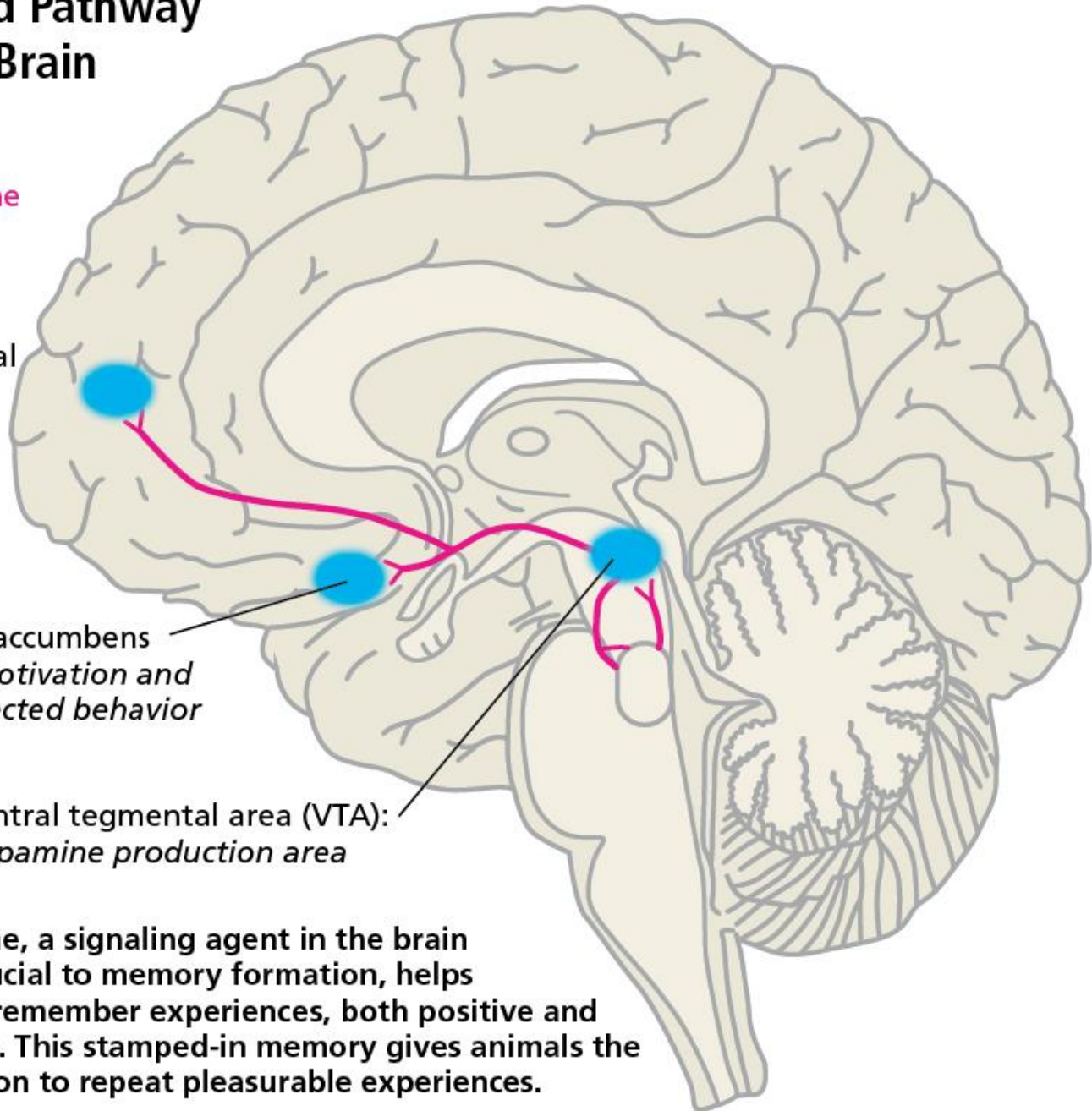
Dopamine
pathway

Prefrontal
cortex

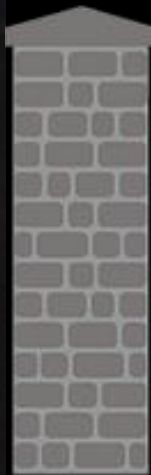
Nucleus accumbens
(NAc): *Motivation and
goal-directed behavior*

Ventral tegmental area (VTA):
Dopamine production area

Dopamine, a signaling agent in the brain that's crucial to memory formation, helps animals remember experiences, both positive and negative. This stamped-in memory gives animals the motivation to repeat pleasurable experiences.



Cannabis THE GATEWAY DRUG?



GATE WAY DRUG

“Marijuana is an Exit Drug”

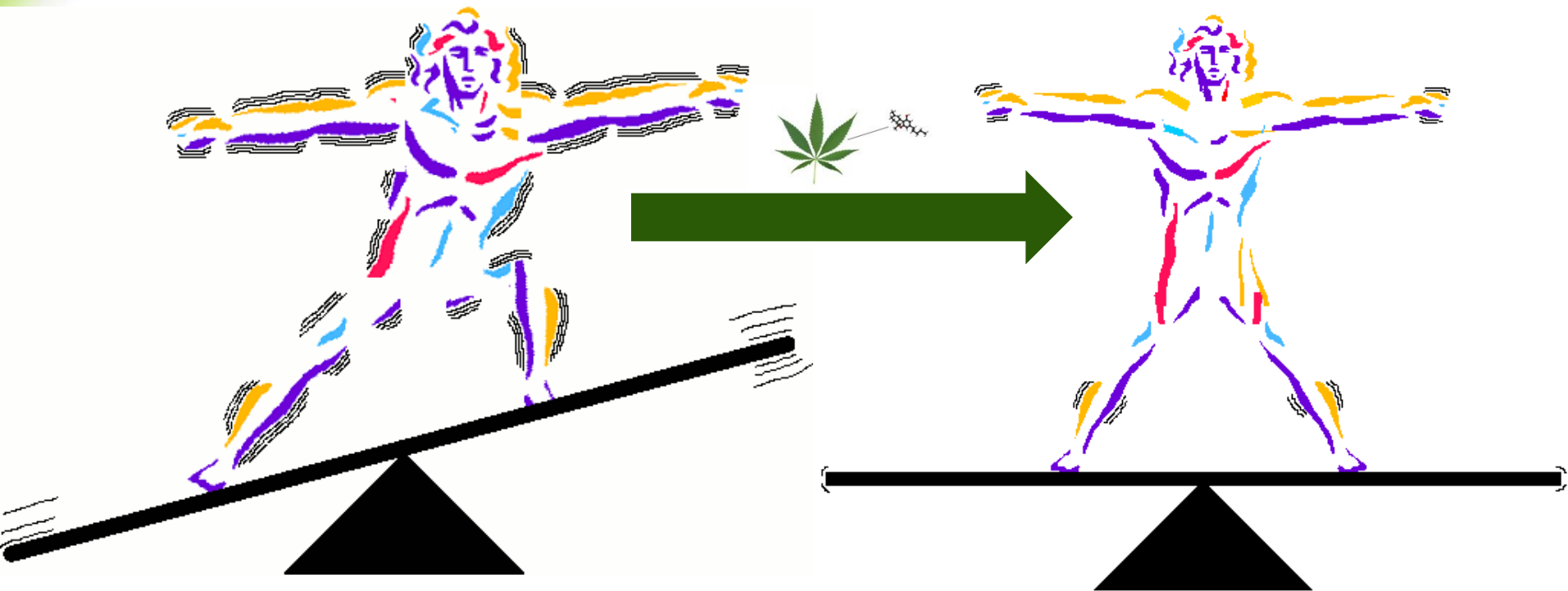
Quote by Daniel Villanueva
testifying that cannabis helped
him stop using alcohol,
prescription pain killers and
hard street drugs to manage
his PTSD.

mychronicrelief.com

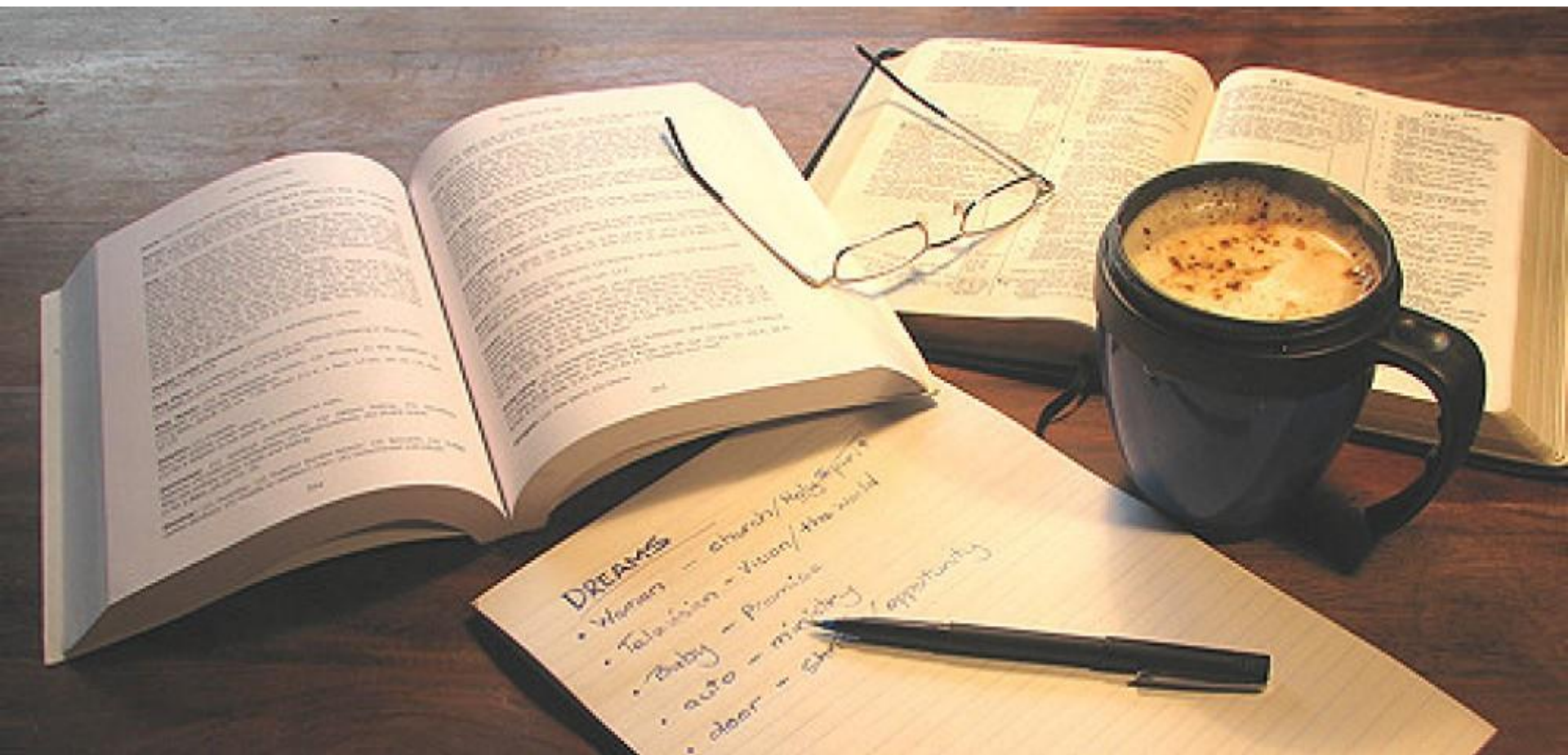


Homeostasis

cells, tissue, organs, body, emotions, life







DREAMS

- Vision - church/kingdom
- Talents - vision/idea
- Baby - promise
- auto - ministry
- door - step/opportunity







A photograph of a field of wildflowers at sunset. The sun is low on the horizon, creating a warm, golden glow and lens flare. The flowers are in the foreground, some in focus and some blurred. The text "i'm on the pursuit of happiness" is overlaid in a white, sans-serif font.

i'm on the pursuit
of happiness

FURTHERBOUND.COM



Ignorance is Bliss

Bliss is not the problem ~ ignorance is.



ICANNA

International Institute for Cannabinoids

**VIELEN DANK FÜR IHRE
AUFMERKSAMKEIT**

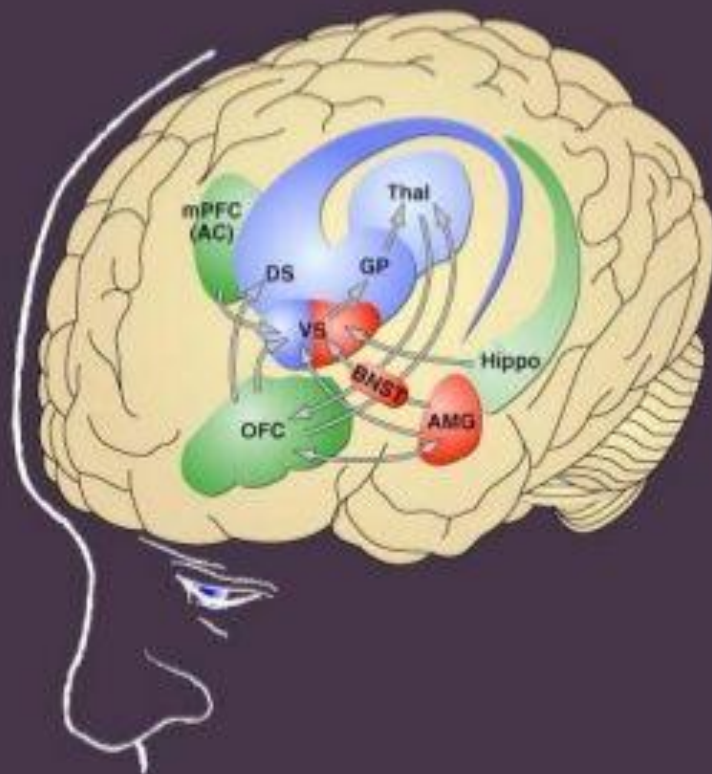


Dependence Rates

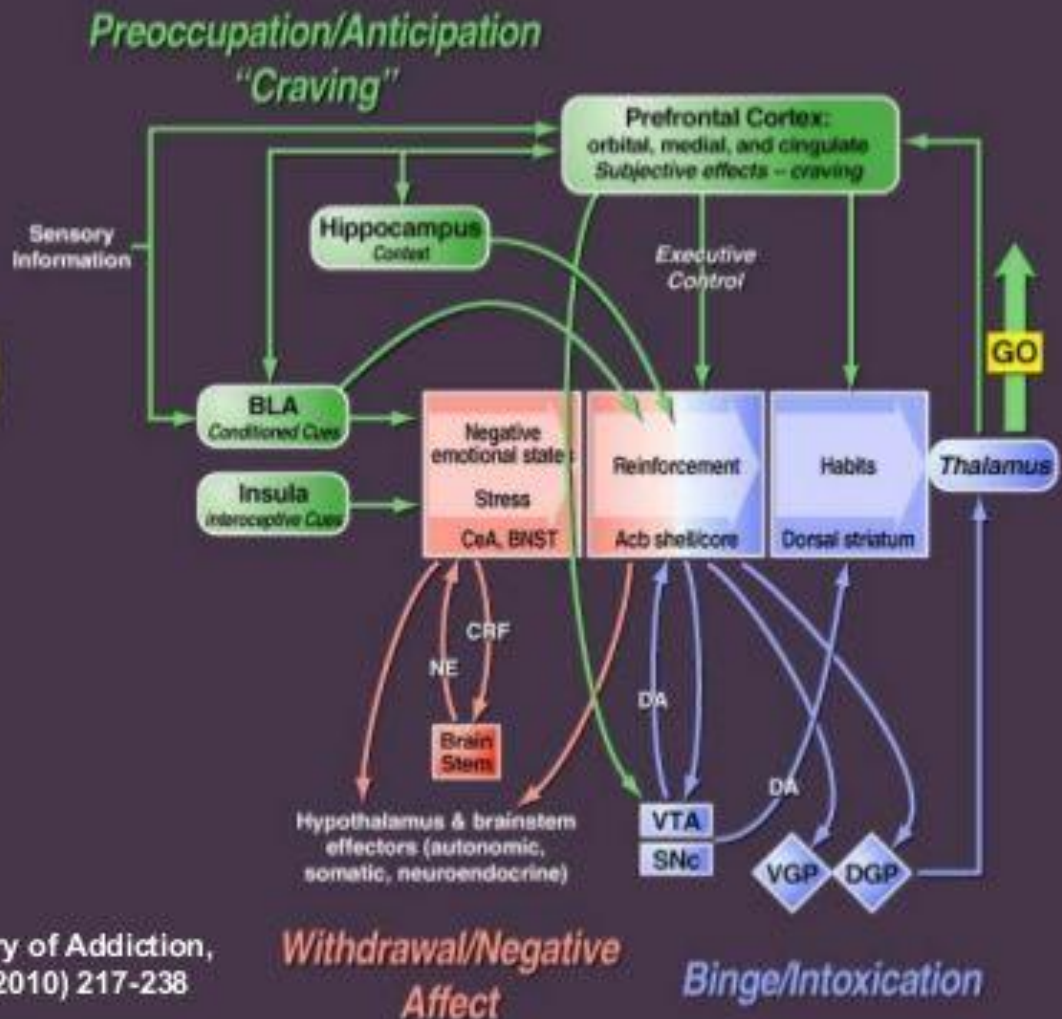
National Institute on Drug Abuse



Neurobiology of Addiction



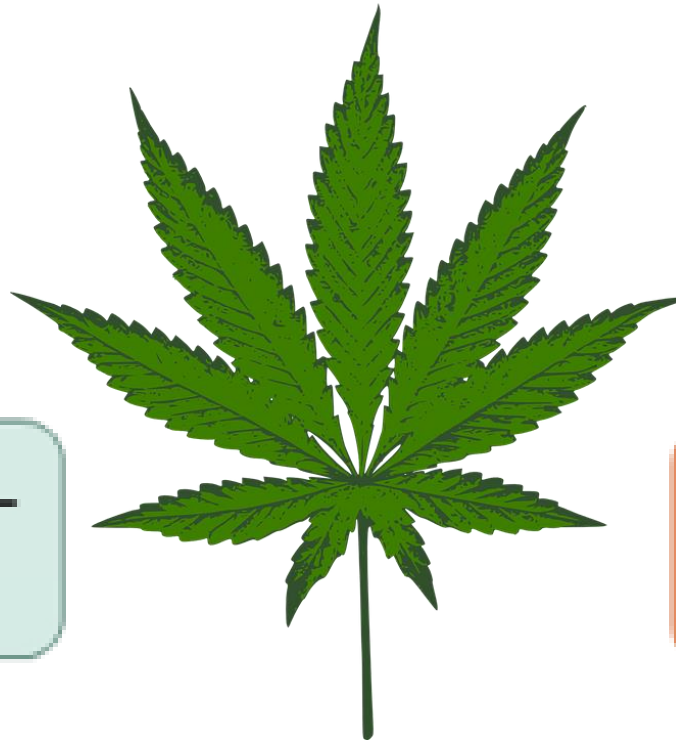
Koob, G. F. and Volkow, N. D. Neurocircuitry of Addiction, Neuropsychopharmacology reviews 35 (2010) 217-238



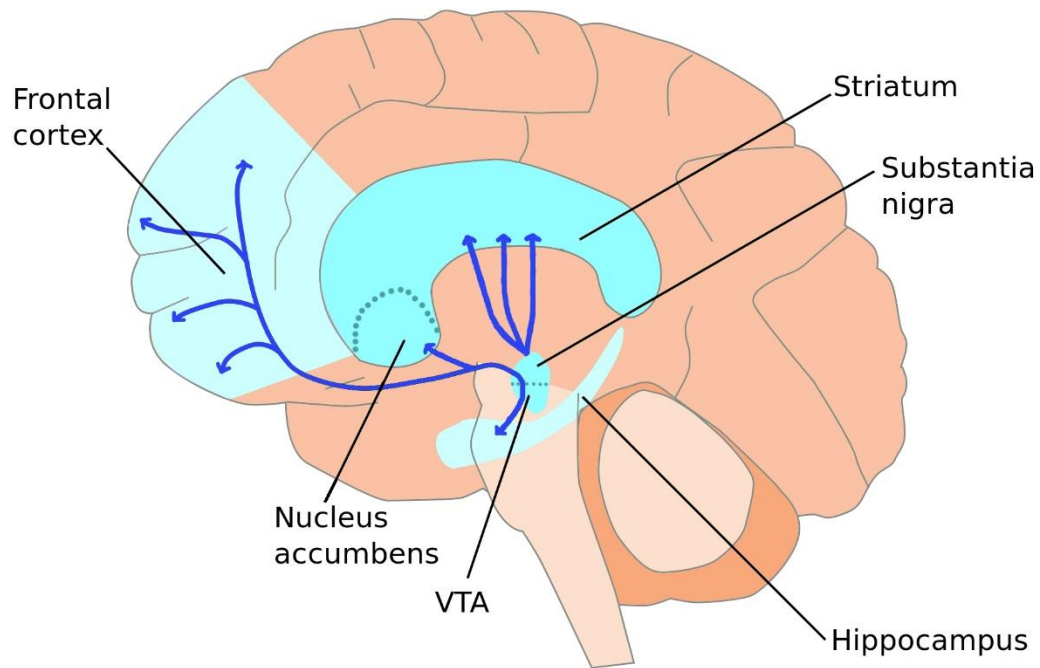
Binge-
Intoxication

Withdrawal-
Negative Affect

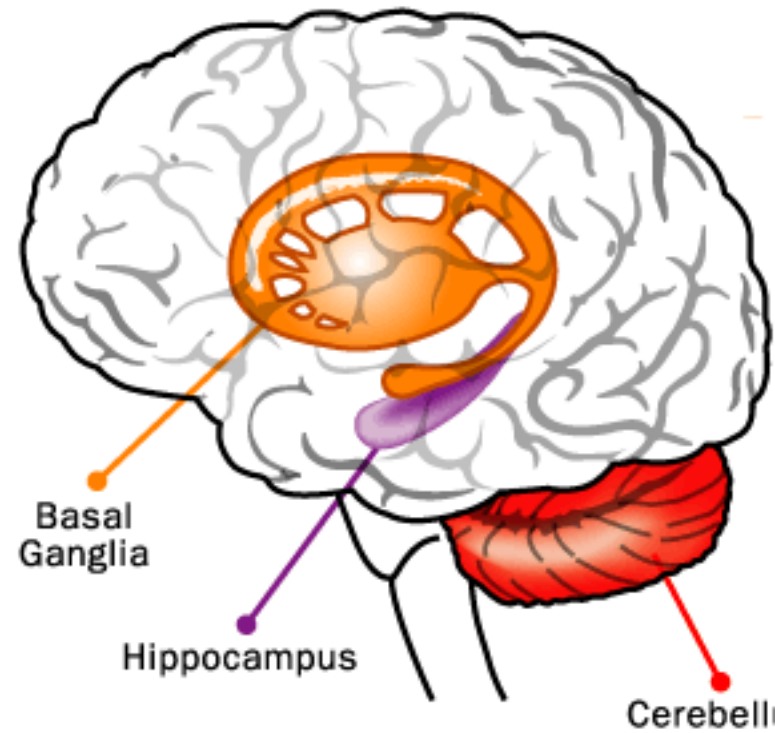
Preoccupation-
Anticipation



reward circuit



Cannabinoid Receptor Sites



SHORT-TERM EFFECTS

- **Cardiovascular:** tachycardia and increased blood pressure
- **Respiratory:** increased airway inflammation and destruction of lung tissues
- **Cognition:** impairment on measures of memory, attention, impulsivity, inhibition, and executive function
- **Mental Health:** increased anxiety or decrease anxiety depending on strain
- **Public Health:** increased drugged driving

LONG-TERM EFFECTS

- **Cardiovascular:** bradycardia and hypotension
- **Respiratory:** increased risk for chronic bronchitis, emphysema, and chronic respiratory inflammation
- **Cognition:** mixed findings
- **Mental Health:** mixed findings
- **Public Health:** increased risk of addiction and dependence, and poor physical and neurodevelopmental outcomes among babies born to mothers who smoked

- Cognition**
- Among *healthy adult non-heavy users* is little evidence of persistent cognitive deficits.
 - The risk of long-term cognitive effects appears to increase with:
 - Earlier age of first use
 - Frequency of use
 - Duration of use
 - Increased potency

- Mental Health**
- Among *healthy adult non-heavy users* is little evidence of persistent mental health deficits.
 - Chronic use may trigger psychosis and schizophrenia in individuals with a genetic susceptibility to mental illness

VULNERABLE POPULATIONS

- Individuals with pre-existing cardiovascular conditions
- Individuals with pre-existing respiratory conditions

- Pregnant women
- Individuals with a history of substance use disorders

- Adolescents
- Individuals with a history of mental illness or genetic susceptibility

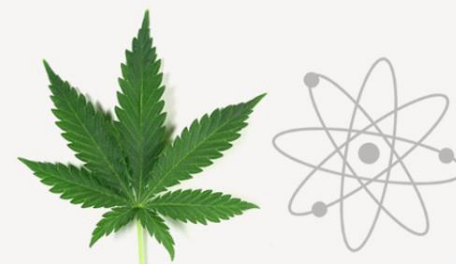
CBGA	Cannabigerolic Acid
CBGVA	Cannabigerivarinic Acid
CBG	Cannabigerol
CBGV	Cannabigerivarin
THCA	Tetrahydrocannabinolic Acid
THCVA	Tetrahydrocannabivarinic Acid
THC (Δ9)	Δ9-tetrahydrocannabinol
THCV	Tetrahydrocannabivarin
CBNA	Cannabinolic Acid
THC (Δ8)	Δ8-tetrahydrocannabinol
CBN	Cannabinol
CBDA	Cannabidiolic Acid
CBDVA	Cannabidivarinic Acid
CBD	Cannabidiol
CBDV	Cannabidivarin
CBCA	Cannabichromic Acid
CBCVA	Cannabichromivarinic Acid
CBC	Cannabichromene
CBCV	Cannabichromivarin
CBLA	Cannabicyclol Acid
CBL	Cannabicyclol

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***Cannabis sativa* L.**

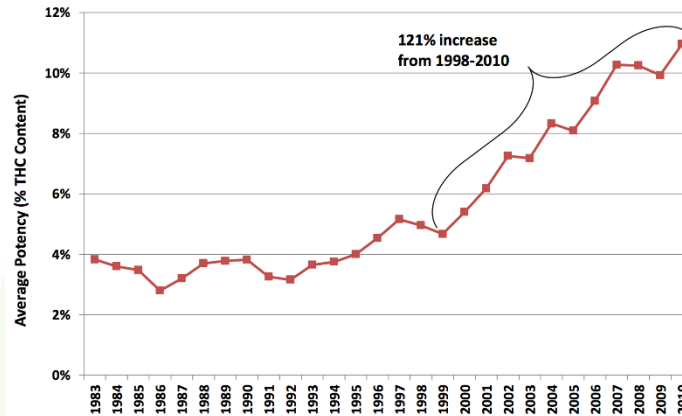
1064 substances

entourage effect

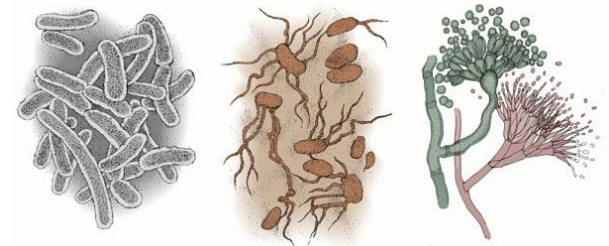
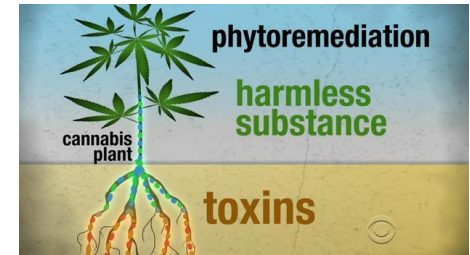


Qualitat von cannabis

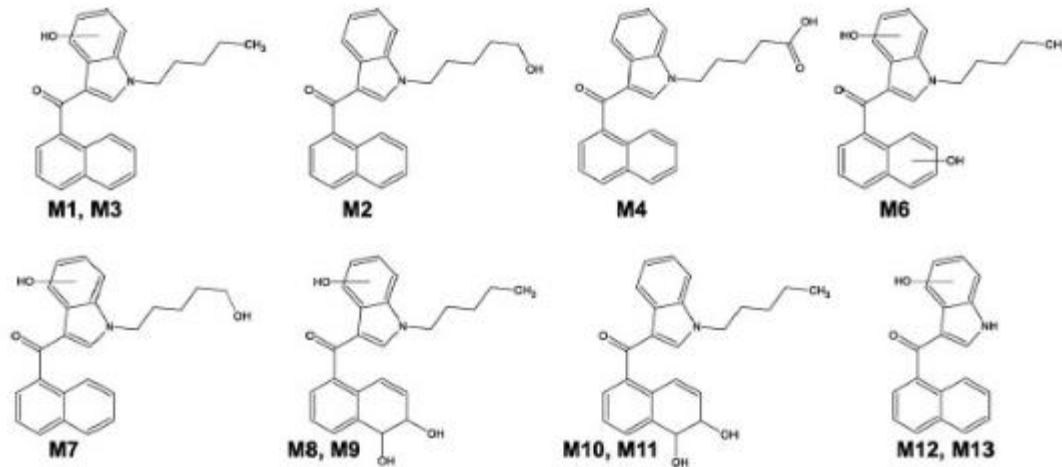
Potency of Seized Marijuana in the U.S.



Source: University of Mississippi, National Center for Natural Products Research, Potency Monitoring Project Quarterly Report 115 (December 2011)



Synthetische cannabinoide



The endocannabinoid system as a target for addiction treatment: Trials and tribulations

Matthew E. Sloan, Joshua L. Gowin, Vijay A. Ramchandani, Yasmin L. Hurd, Bernard Le Foll

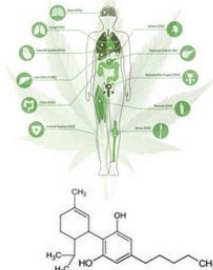


Cannabidiol disrupts the reconsolidation of contextual drug-associated memories in Wistar rats.

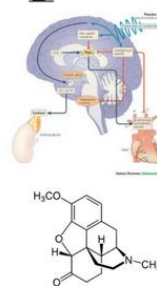
de Carvalho CR¹, Takahashi RN¹.

Addict Biol. 2017 May;22(3):742-751. doi: 10.1111/adb.12366. Epub 2016 Feb 1.

CBD



Opioids

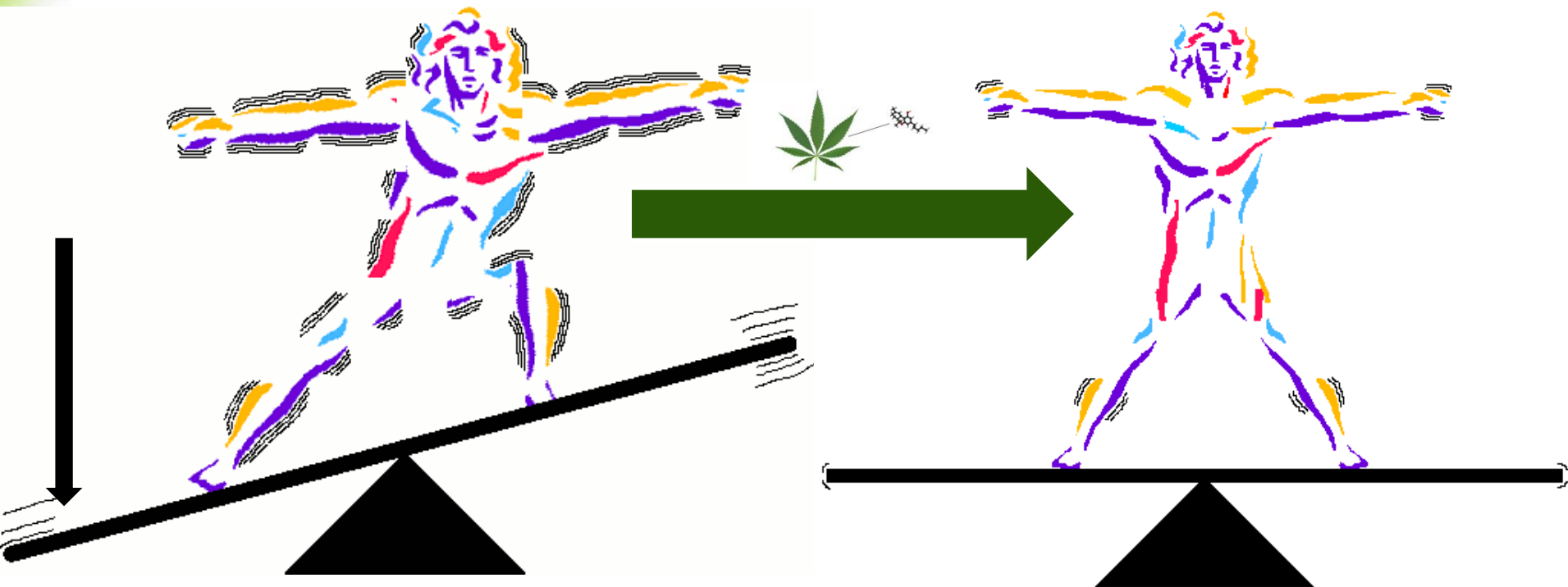


Rimonabant – nikotin

CB1 modulation - alkohol

Homeostasis

zellen, gewebe, organe, korper, emotionen,
leben





Bliss is not the problem ~ ignorance is.