

Lesson #2

Intro to Legal Substances & Their Effects

WISE Program led by Yerin Cho





Today's Agenda

- Intro to legal drugs
- Types and Examples of legal drugs
 - Alcohol
 - Marijuana
 - Caffeine
 - Tobacco / Cigarettes / Vapes



Alcohol – General Info

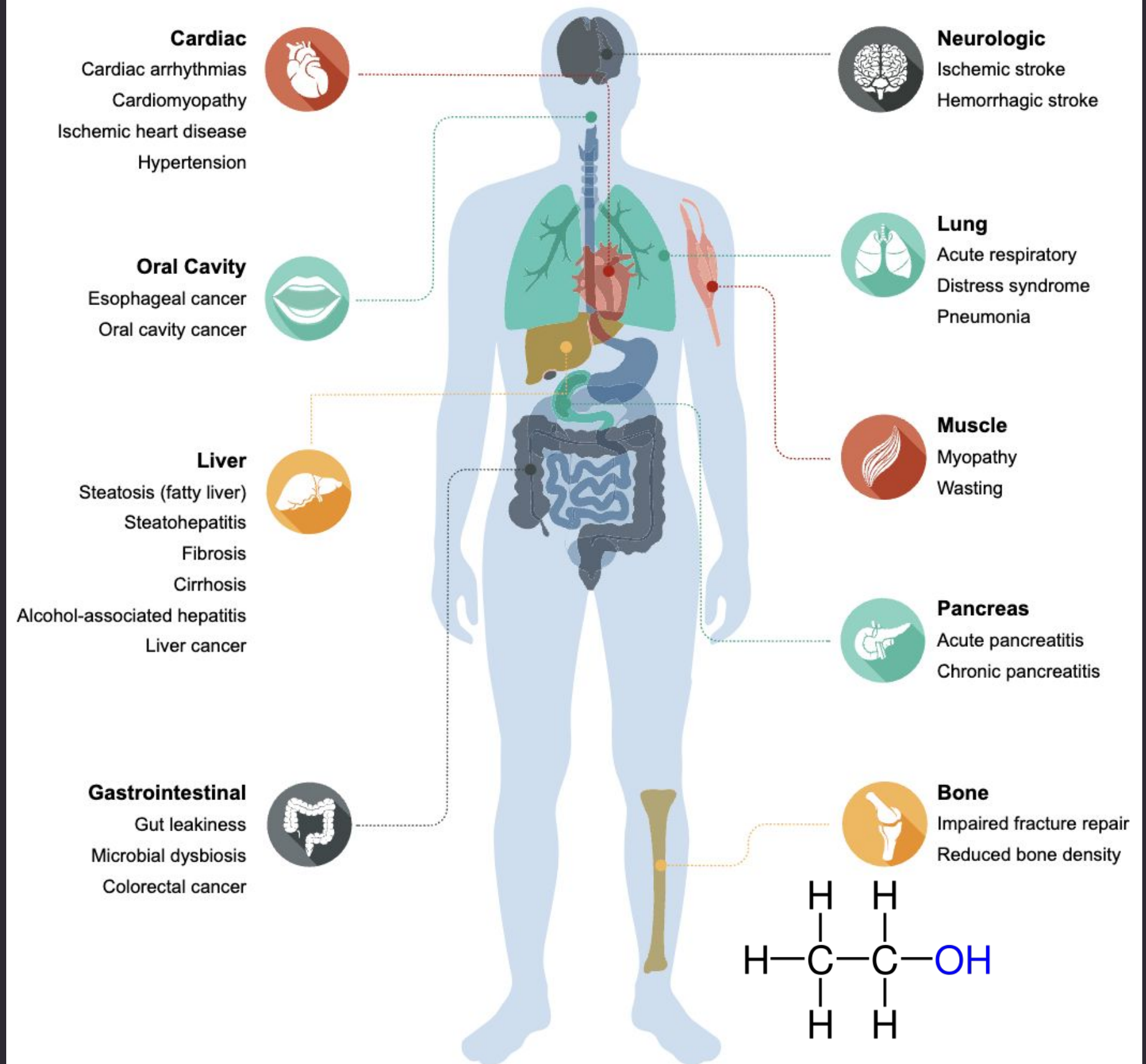
- Contains **ethanol**, a psychoactive & toxic substance / 21+ age restrictions
- Makes you feel down or aggressive
- Drunk: exaggerated happiness, sadness, or burst of emotions
- Prevalently adopted in cultural celebrations, parties, entertaining purposes, etc
- **Inevitable part of society**
- Globally, in 2019: 400M people aged 15+ have alcohol use disorder



Alcohol

- Suppressing effect on the brain
- When body breaks down alcohol, it produces **carcinogen** called **acetaldehyde** that damages DNA
- **Common misconceptions....**
- WHO: "**no amount of alcohol is healthy**"
- Essentially poses harm to the whole body

Alcohol-Associated Organ Damage



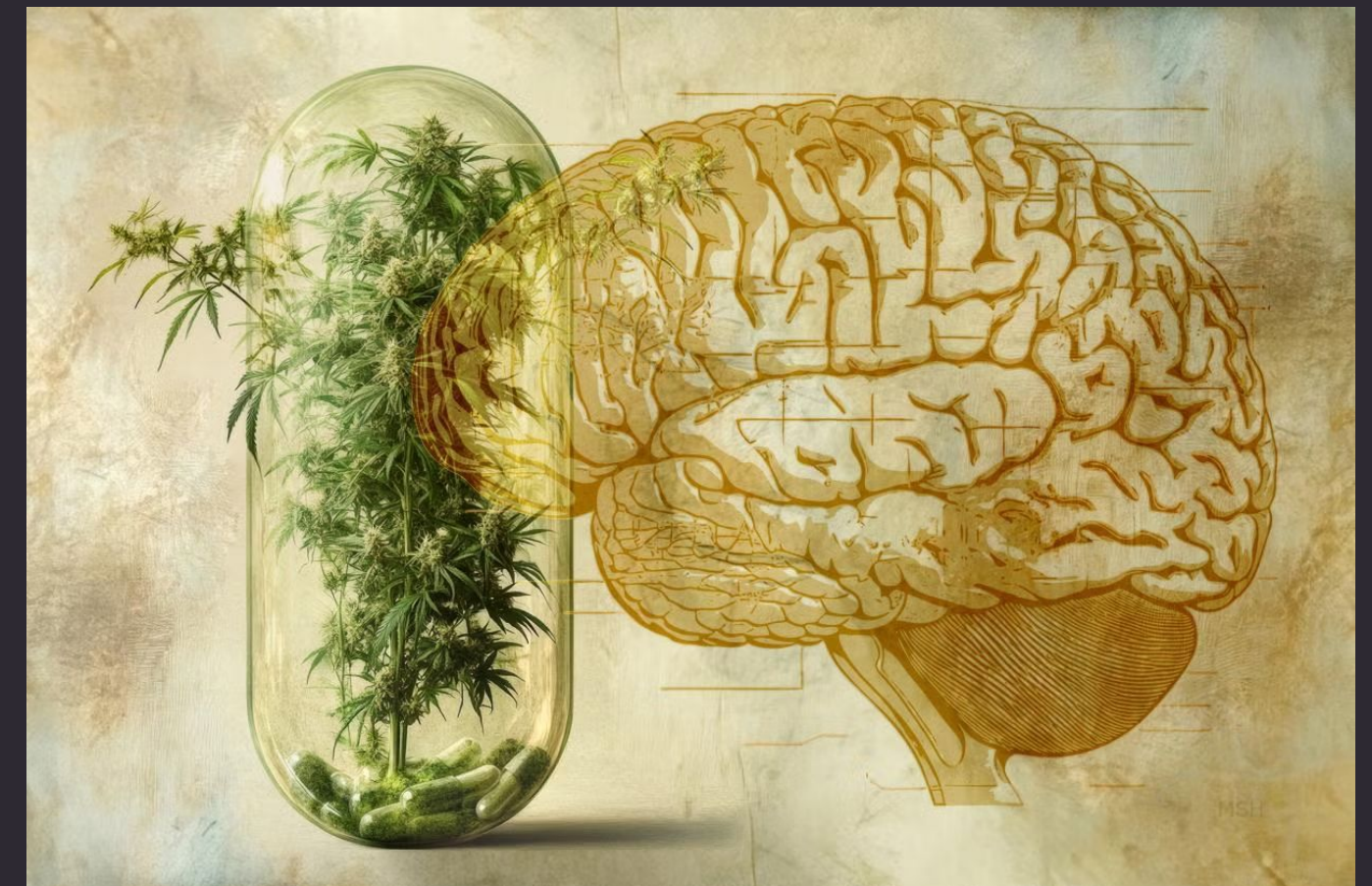
Marijuana – General Info

- Psychoactive drug from the cannabis plant
- **CBD** -> medical usage (~1996)
- **THC** -> psychoactive stimulant
- CA: 18+ / Other states: 21+ (~2012)
- Exaggerated happiness, changes in mood, altered perceptions of reality, etc
- Impaired cognitive function, concentration, memory
- May worsen anxiety, depression, etc

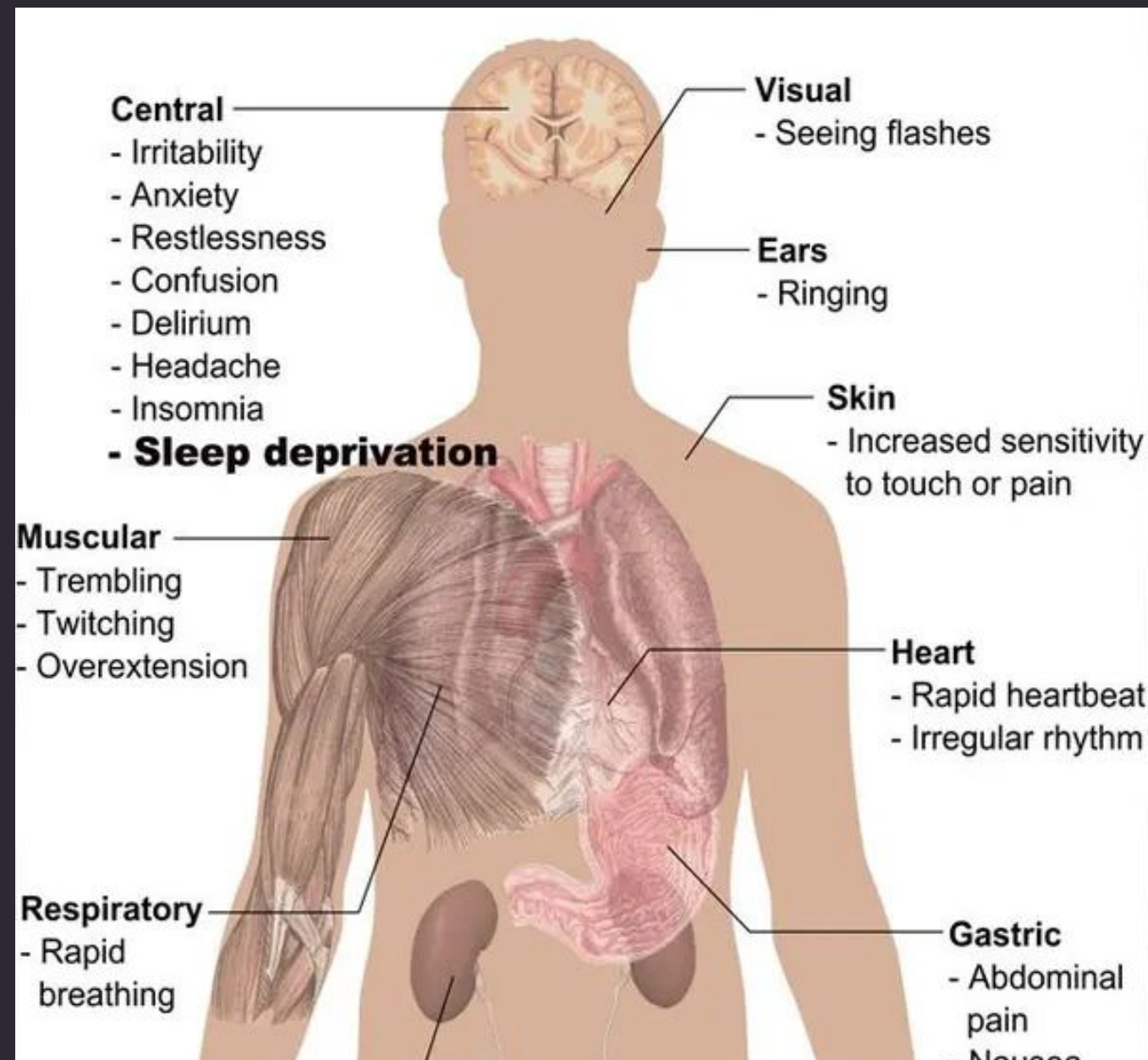


Marijuana

- Especially harmful for adolescents
- Poses risk to the developing brain
 - **Cognitive impairment**
 - **Alterations in brain structure**
- Smaller hippocampal volume → memory
- Smaller amygdala volume → emotions
- **Medical Benefits** VS **Addictive Usage**



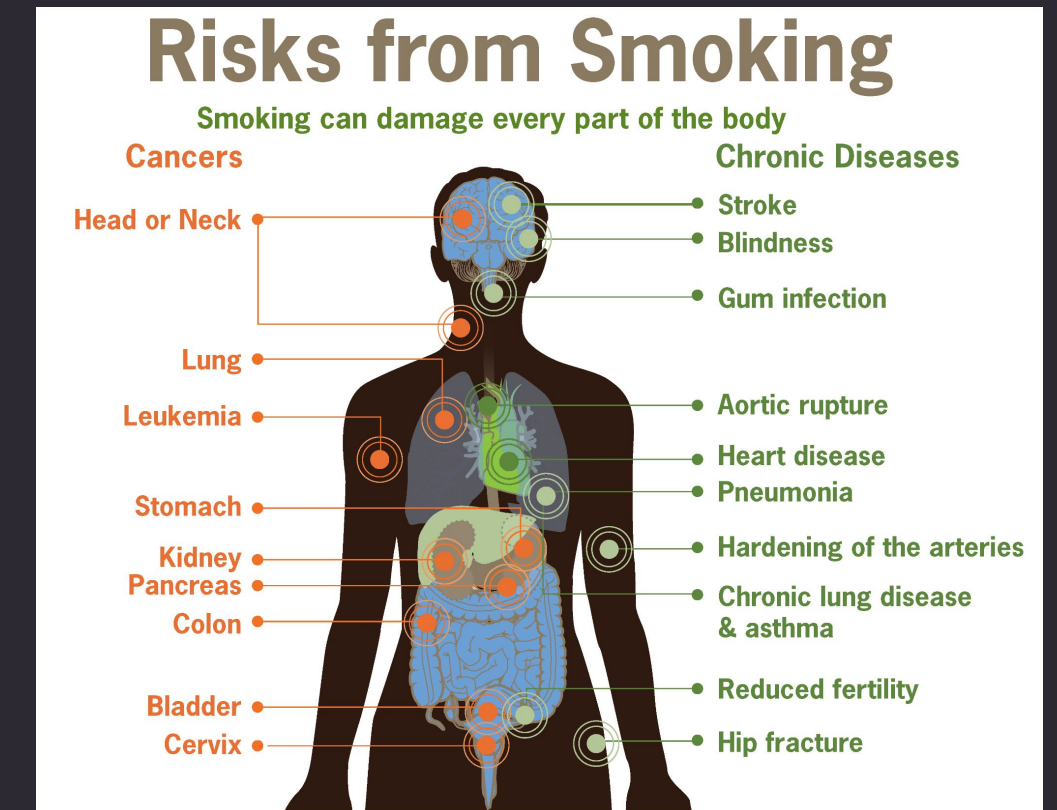
Caffeine



- Stimulant that provides short-term alertness & focus
- Is classified as a drug
- **Less recognized & heavily abused**
- Cardiovascular risks
- Accelerates blood pressure & rate
- Insomnia, heart problems, anxiety, shakings, etc
- **Should be aware of daily dosage & its health effects**

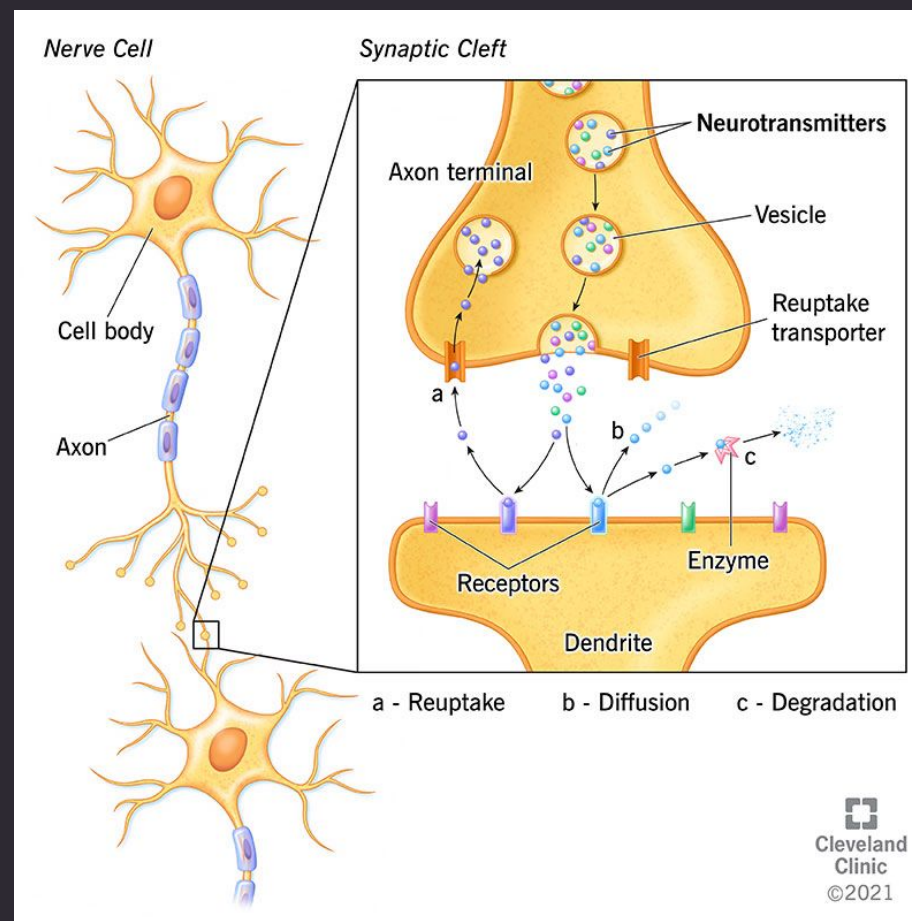
Tobacco / Cigarettes / Vapes

- A plant with leaves that have high levels of the **addictive** chemical **nicotine**
- Increased risk of cardiovascular, respiratory, gastrointestinal disorders
- Damages brain
- Not limited to cancer-causing chemicals
- **Vapes are NOT better than cigarettes**
- **Appealing to adolescents with sweet flavors, color, etc**



What's happening in your brain?

- Drugs affect the way neurons **send, receive, process** signals!
- Cause activation of neurons → large amounts of neurotransmitters
- Continuously send out signals
 - **Amplifies or disrupts the normal communication between neurons**
 - = **feeling of high, happiness, etc** → **NOT a good biological sign**



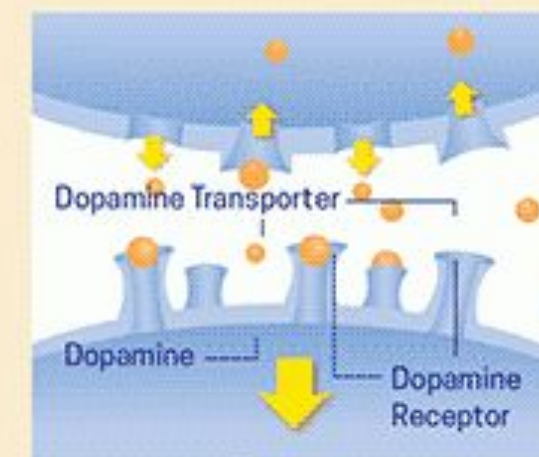
Some drugs target the brain's pleasure center

Brain reward (dopamine pathways)



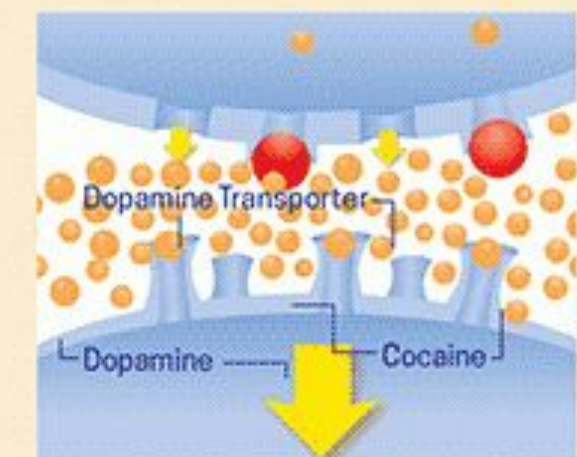
These brain circuits are important for natural rewards such as food, music, and sex.

How drugs can increase dopamine



While eating food

Typically, dopamine increases in response to natural rewards such as food. When cocaine is taken, dopamine increases are exaggerated, and communication is denied.



While using cocaine

Interactive Activity – Think, Pair, & Share

- What information was **most interesting**?
- What information was **new** to you?



**Thank you
for listening!**





Short Anonymous Google Survey!! ~5 mins

