

Drugs and Your Brain



UCLA

NS 192C

Spring 2015

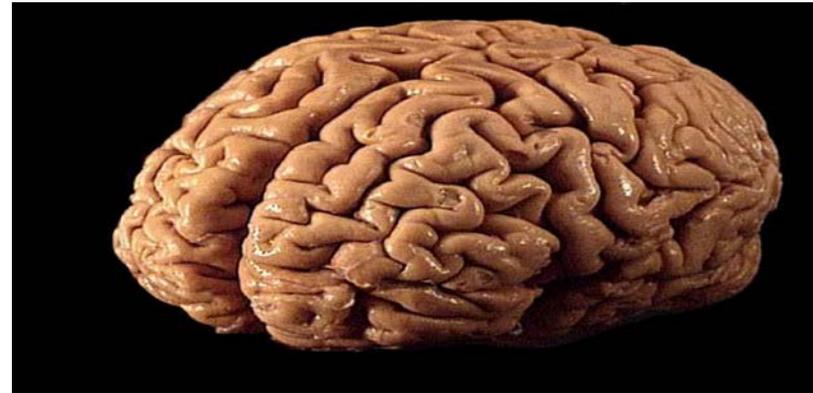
What is the Brain?



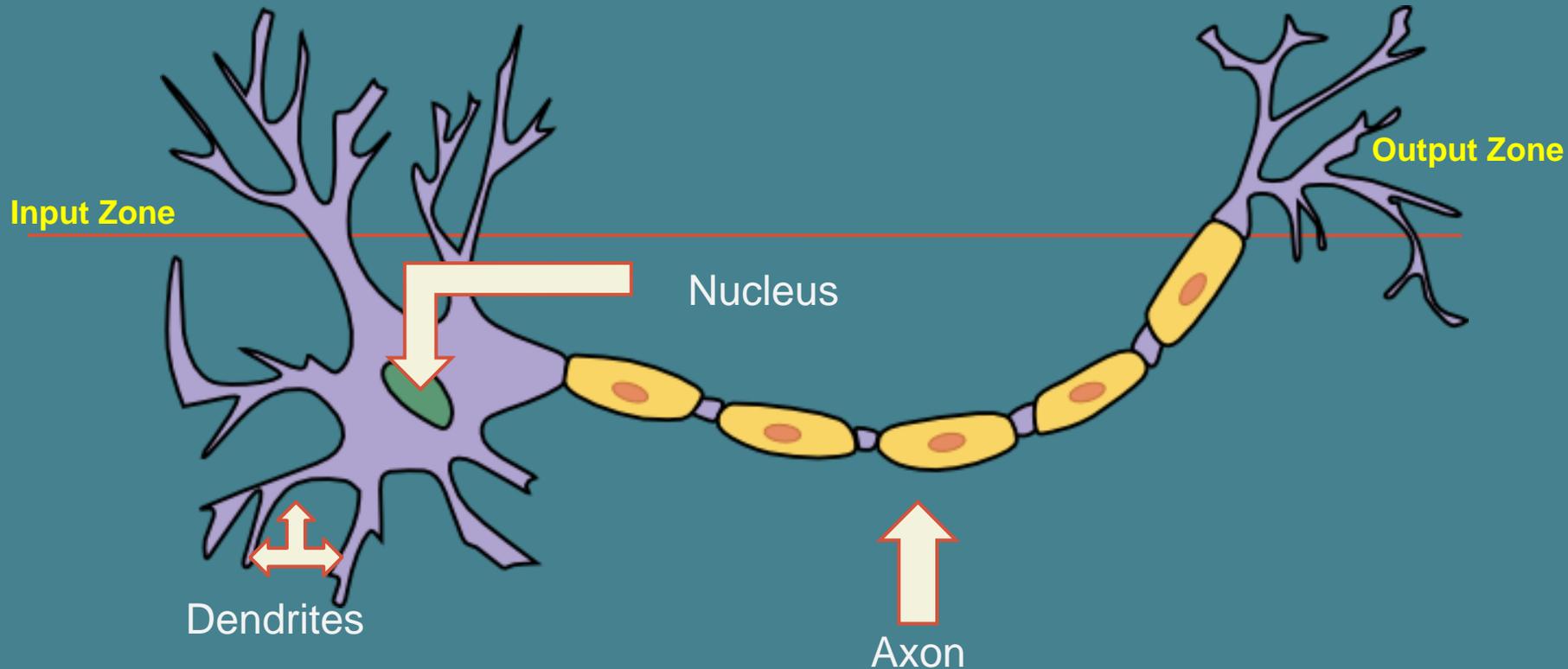
The Brain

- Contains 1 trillion cells
- One neuron can have up to 1500 synapses

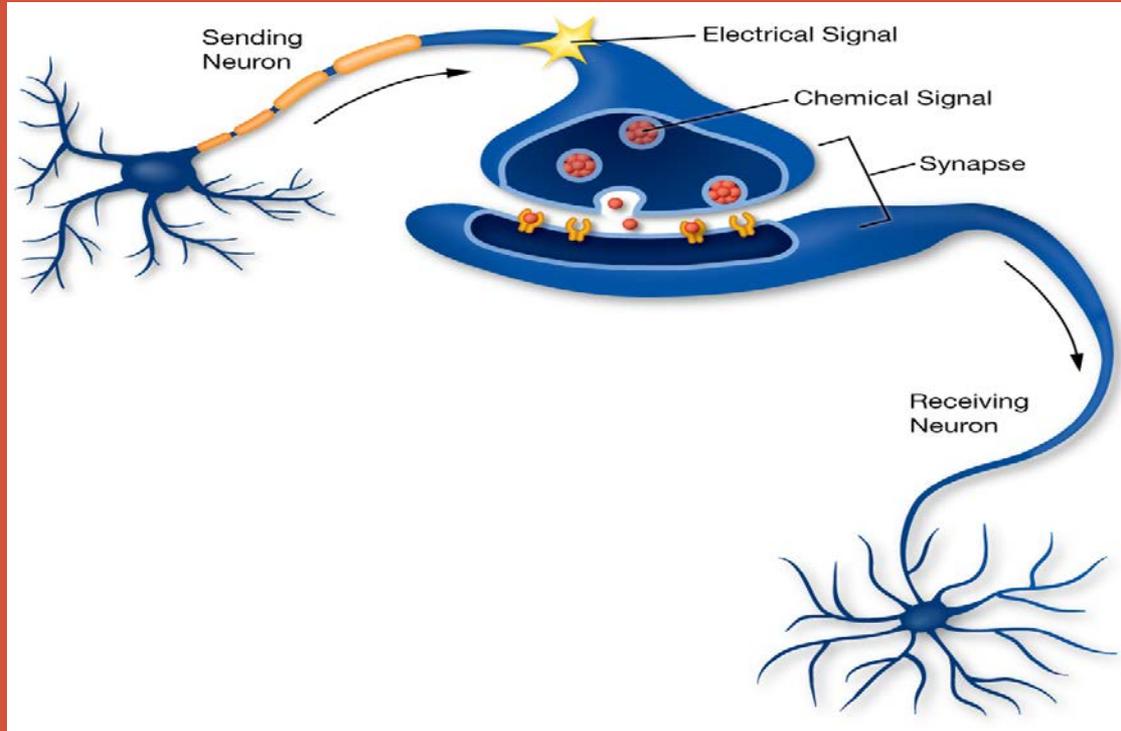
- Consistency of hard Jell-O
- When awake, your brain produces enough electricity to power a small light bulb



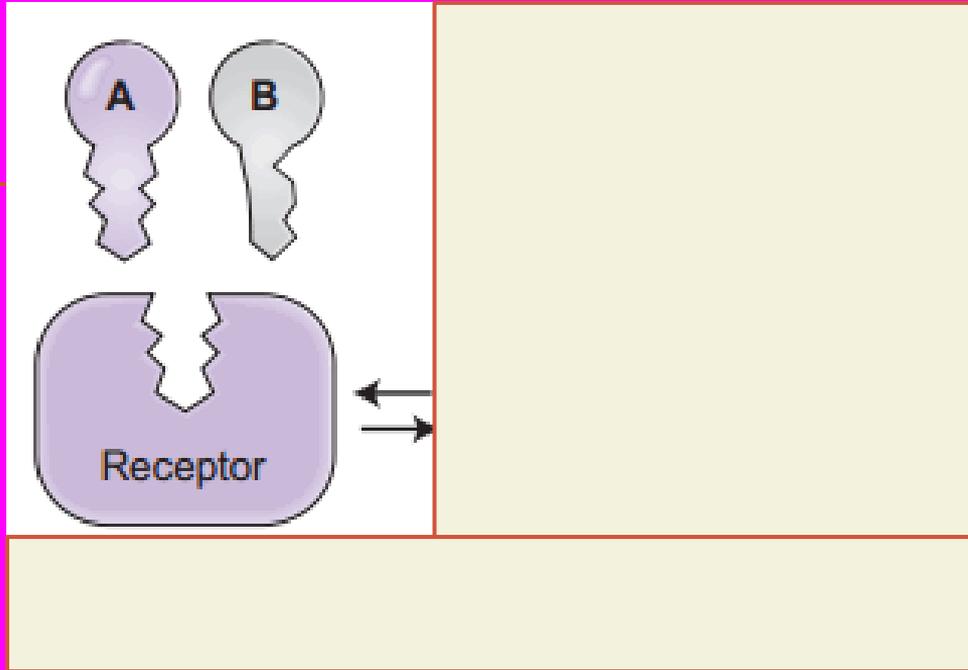
Structure of a Neuron



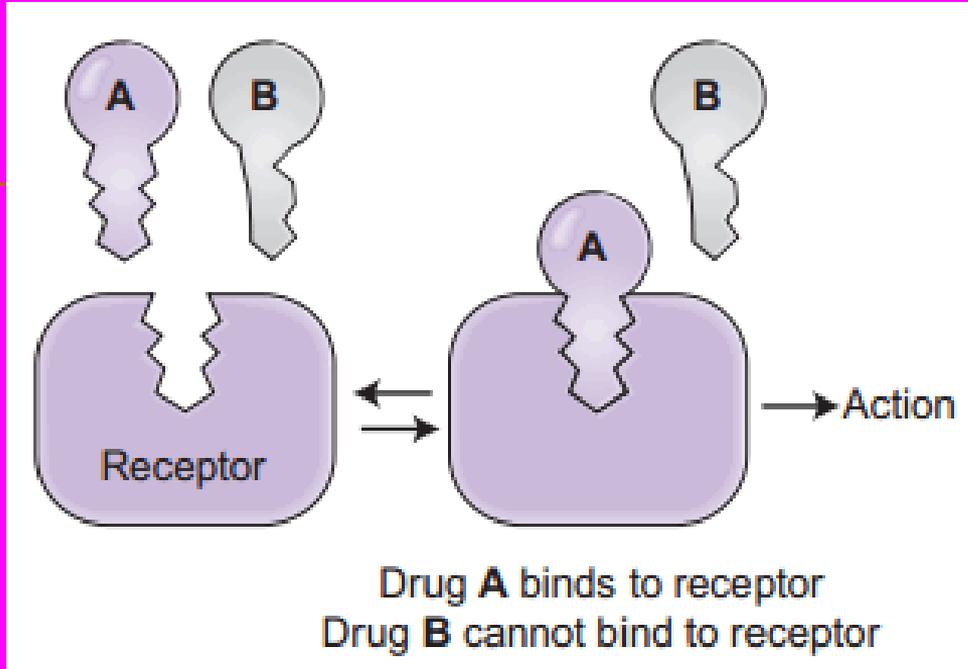
Synapses: How Neurons Communicate



Neurotransmitter-Receptor Binding: The Lock and Key



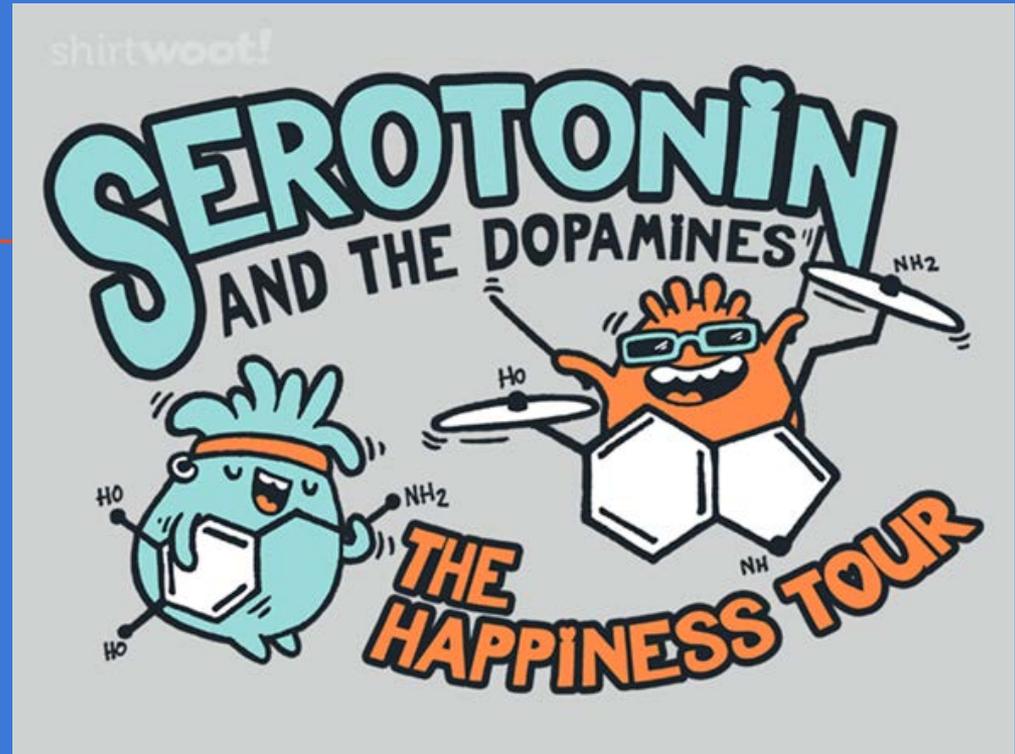
Neurotransmitter-Receptor Binding: The Lock and Key



Serotonin and Dopamine

Involved in:

- Reward
- Mood
- Pleasure/pain
- Learning & memory



Drug Use, Abuse, and Addiction



Drug Categories



1. Opiates
2. Hallucinogens
3. Stimulants
4. Depressants
5. Cannabinoids
6. Date rape drugs
7. Dissociatives
8. Prescription drugs
9. Inhalants

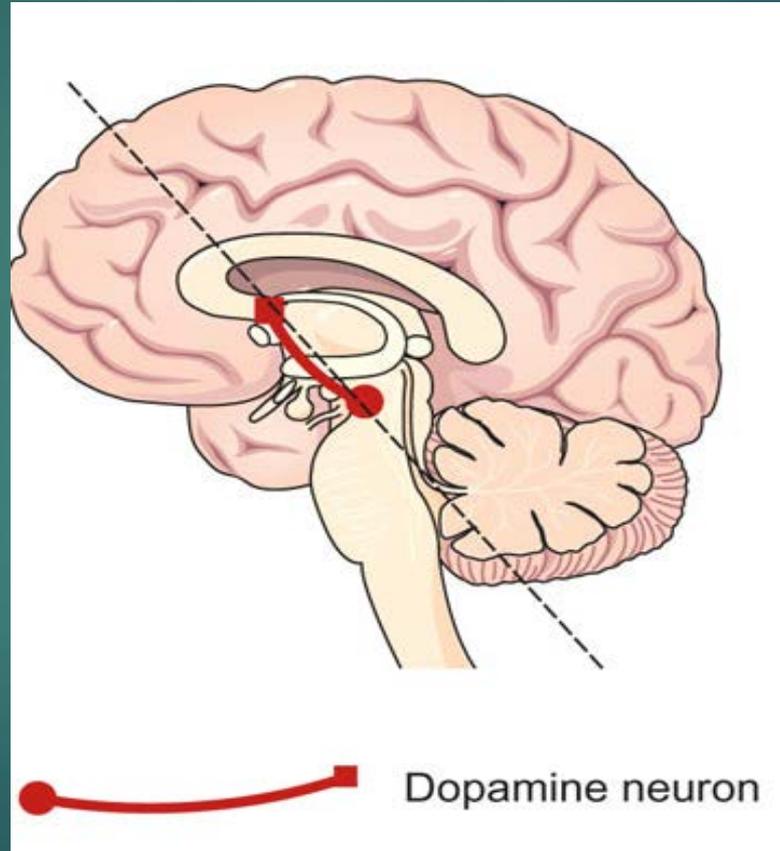
Why Do People Take Drugs?

Why Do People Take Drugs?

- “It feels good”
- To fit in
- Curiosity
- To escape reality
- Help with illness
- Relieve pain
- Enhance performance (academic, sports, etc)

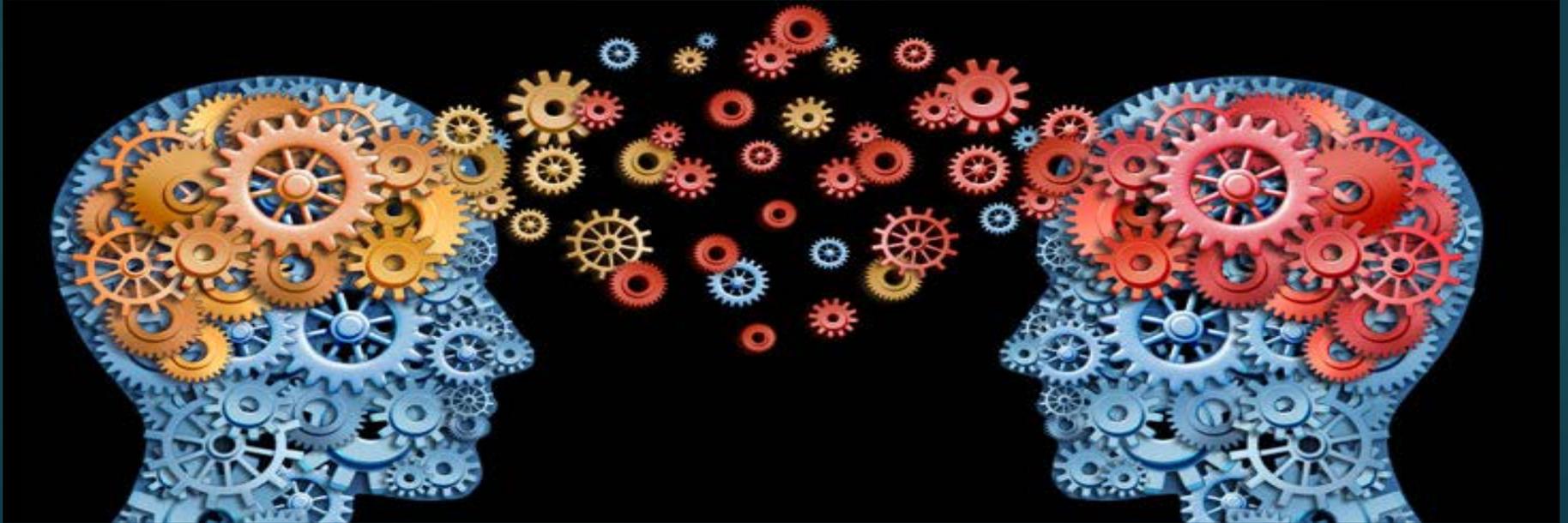


The reward pathway



Drugs Can Change Brain Circuitry

Drugs can “hijack” the brain’s natural connections and change them, which can cause a variety of consequences



Addiction



Pleasure & Pain

*You're no longer in control... The drug
controls you*