

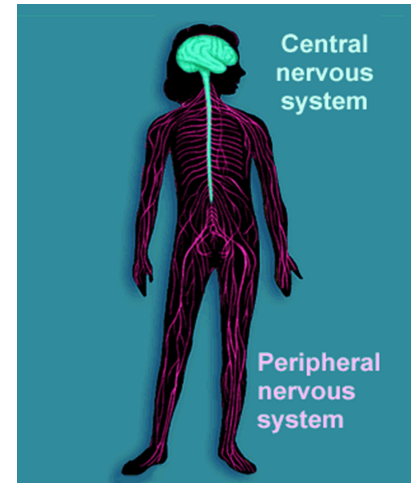
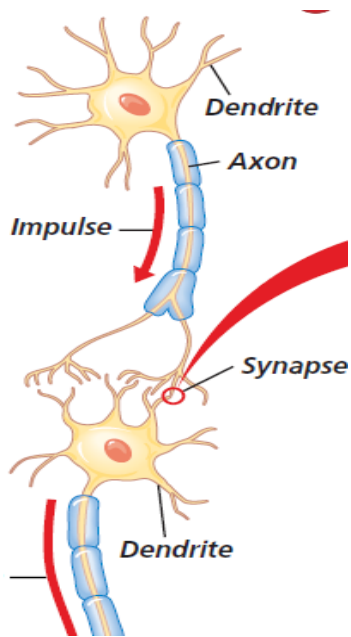
Warm Up (5/7-5/8)

1. Take out your **nervous system fill-in-the-blank notes**
2. Take out your laptop and log in to **Google Classroom**
3. Discuss the most difficult questions you had for homework and **turn it in!**

Agenda

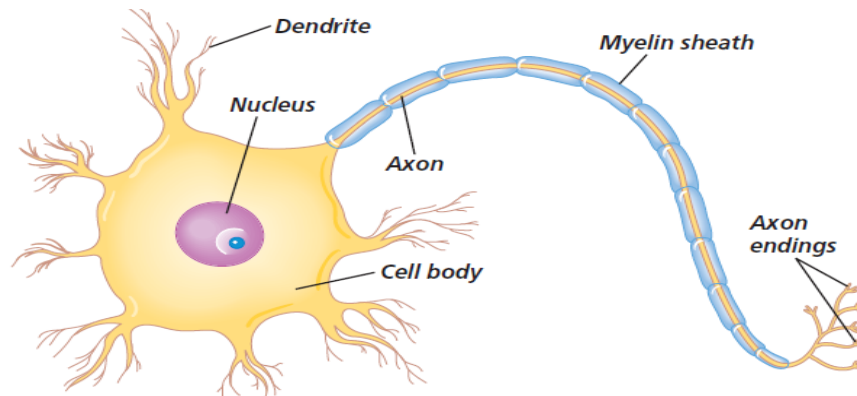
- Chapter 36 Notes: The Nervous System
- Chapter 36 Quizlet Live
- Human body posters (DUE MON/TUES)

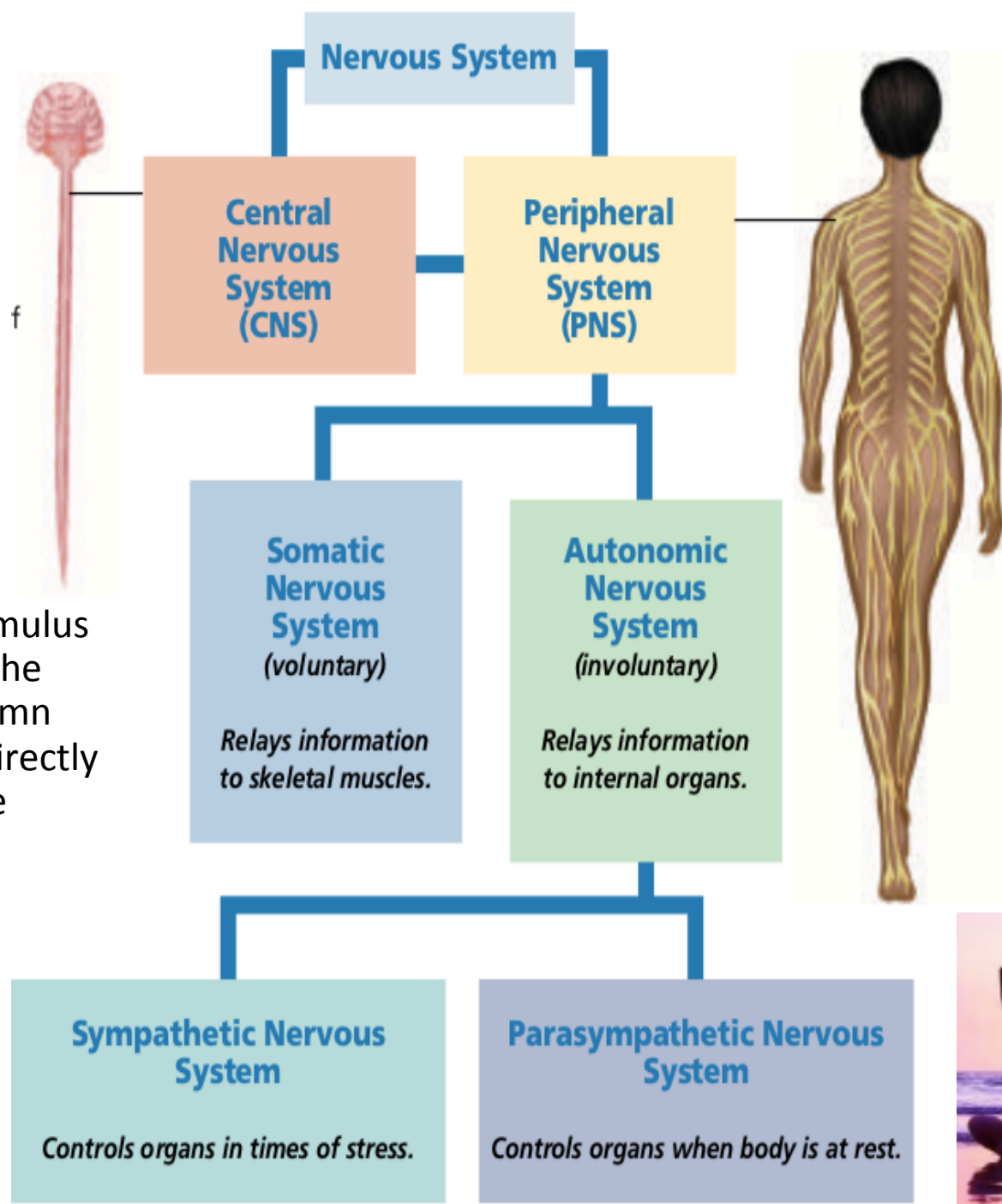
**Homework: 36.1 Sections Assessment (pg 950
#1-5) DUE FRIDAY**



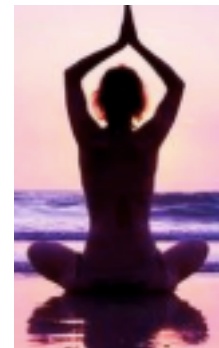
Chapter 36 Notes

The Nervous System





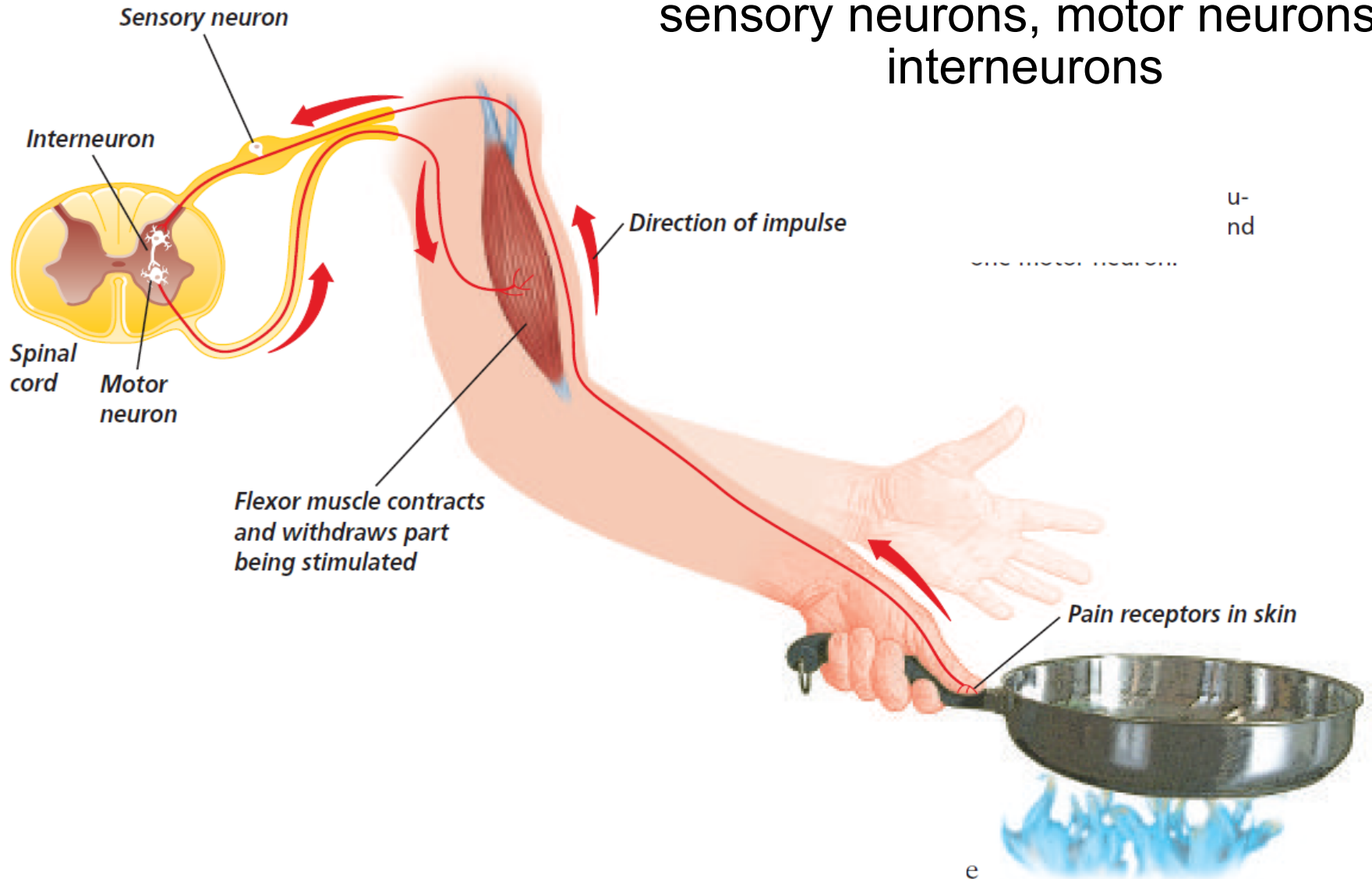
- **Reflex**- stimulus travels to the spinal column and sent directly back to the muscle



Organ	Sympathetic Effect	Parasympathetic Effect
Pupil	dilation	constriction
Lens	Far focus (lower curvature)	Near focus (increased curvature)
Salivary Gland secretion	High in viscosity	serous
Heart	Increased rate and pressure	Lower rate and pressure
Lungs	Dilation of respiratory passages	Constriction of respiratory passages
Gastrointestinal	Decreased motility	Increased motility
Kidneys	Decreased filtration rate	Increased filtration rate
Vascular smooth muscle	Variable depending on the neurotransmitter	Relaxation
Sweat glands	Increased activity	No innervation
Arteries to skeletal muscle	dilation	No innervation
Veins	Variable depending on the neurotransmitter	No innervation

The 3 types of neurons:

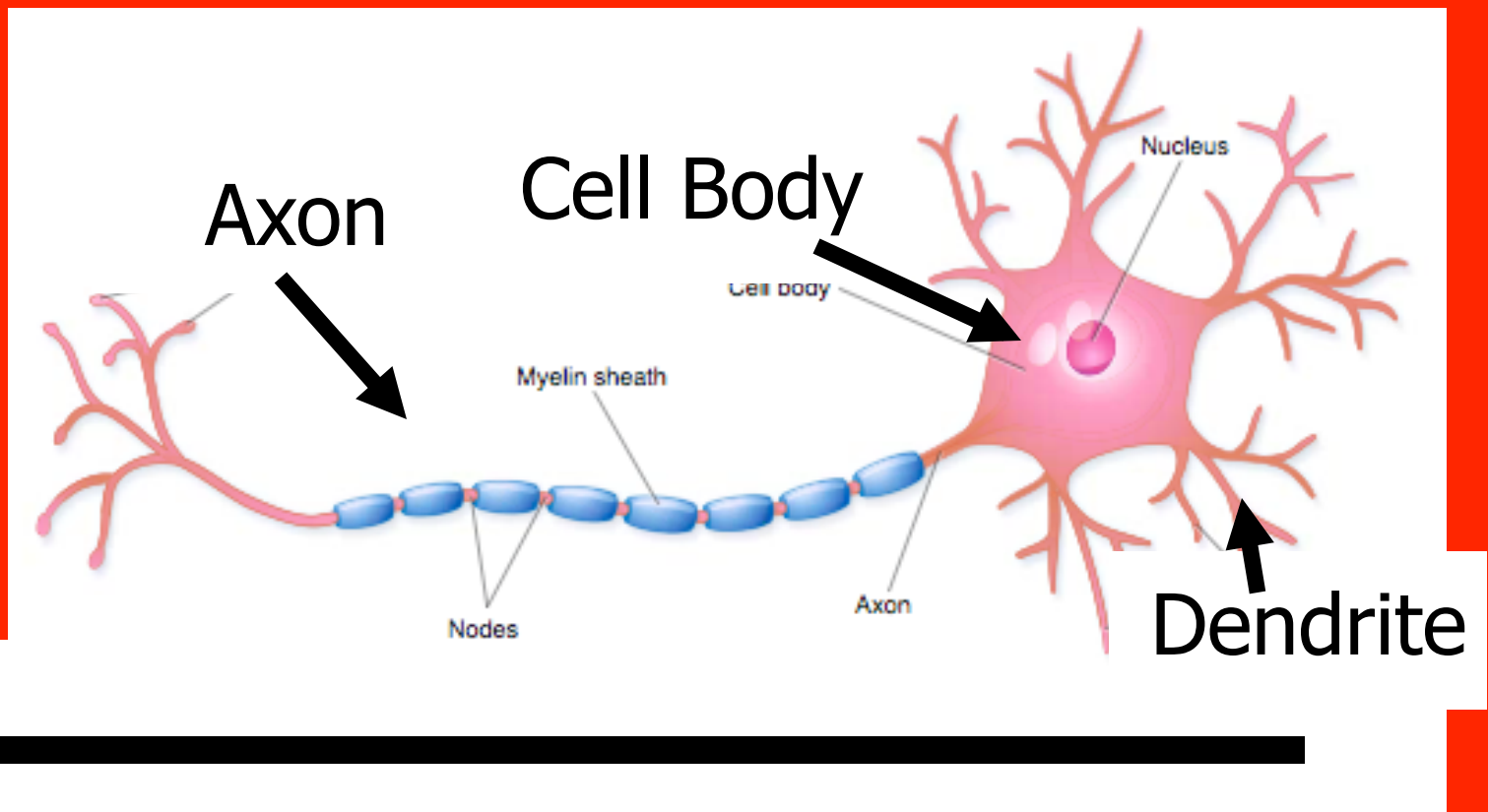
sensory neurons, motor neurons,
interneurons



Neuron- basic unit of the nervous system

- Neurons carry information through the nervous system in the form of impulses.
- Impulses travel from dendrite to cell body to axon of a neuron

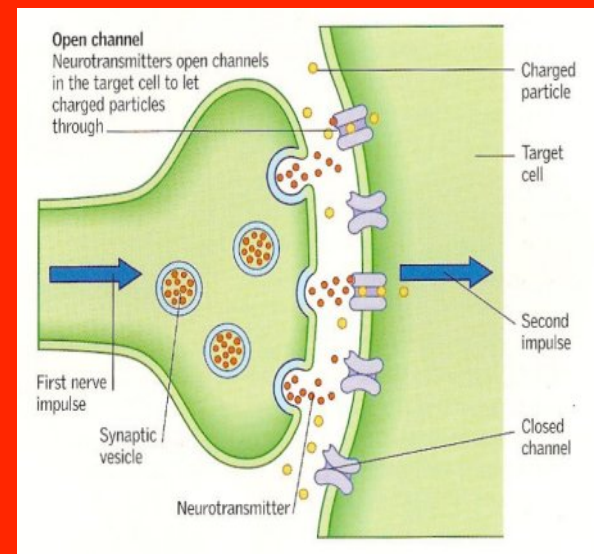
https://youtu.be/uU_4uA6-zcE



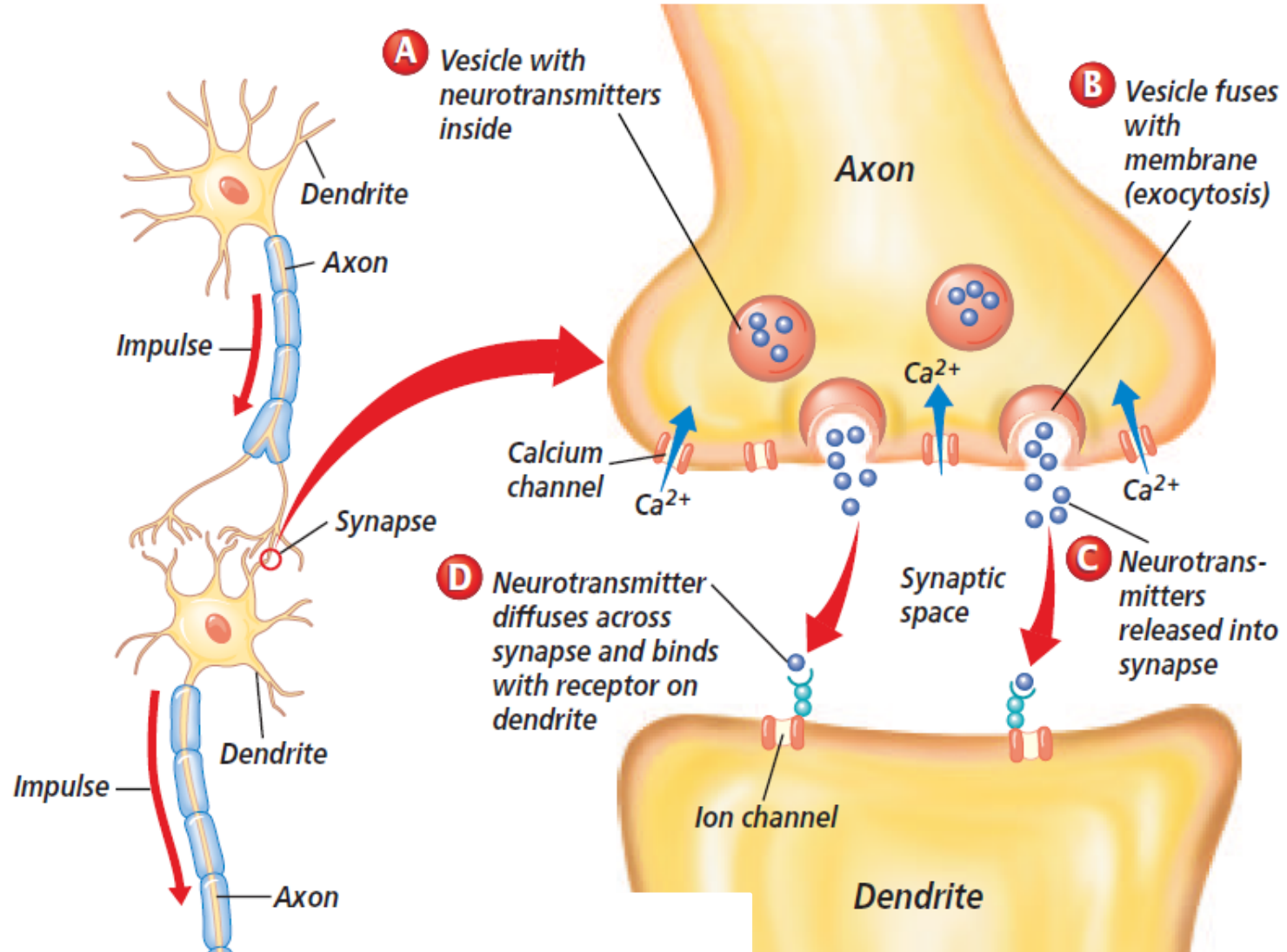
Communication Between Neurons

- Synapse: Tiny gap between neurons
- Neurotransmitters are released after electrical impulses have reached the axon terminals. Either “inhibits” or “excites” depending how many neurotransmitters are released.
- Neurotransmitters: chemicals that generate “action potential” if threshold has been reached.

Examples: dopamine, serotonin



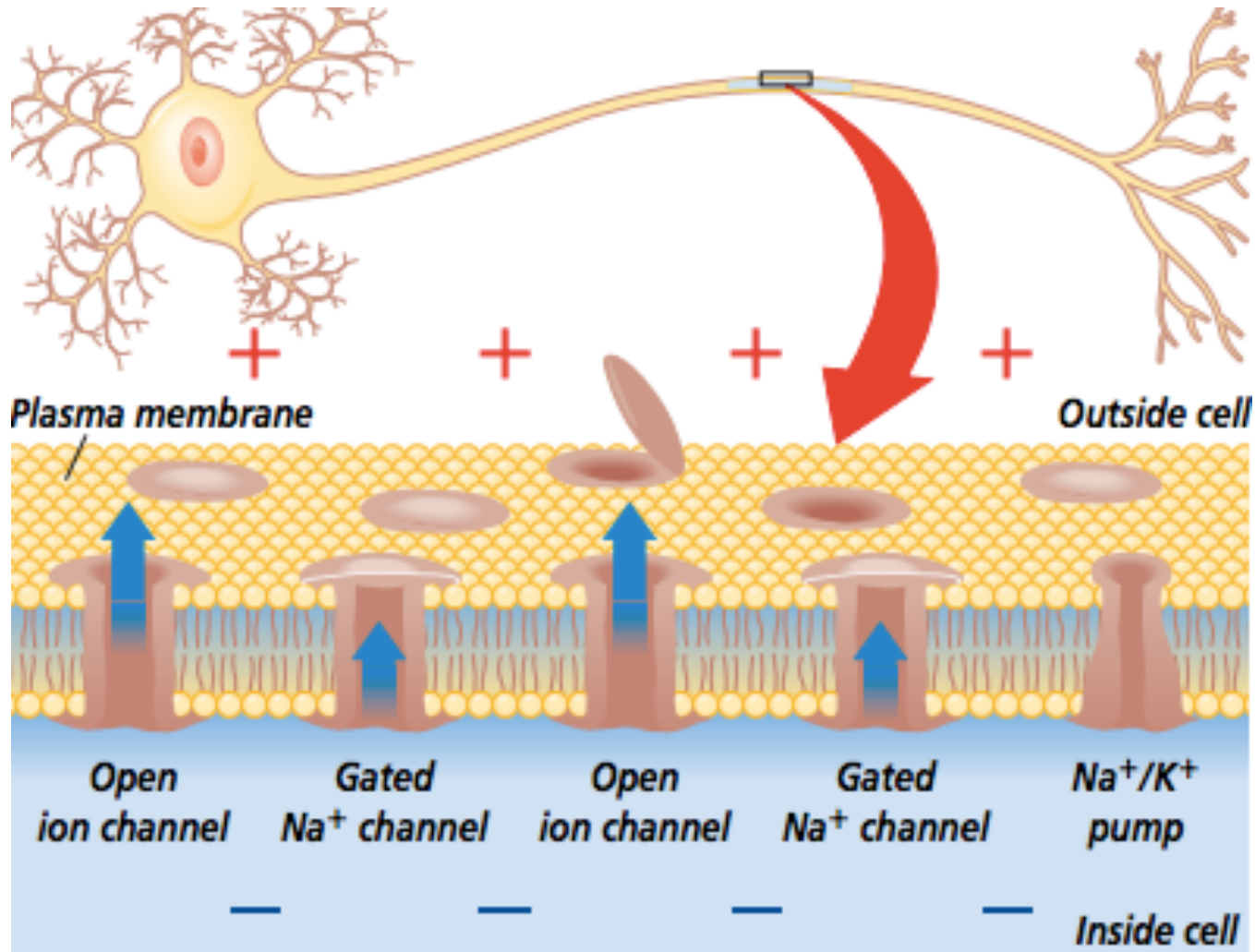
How do impulses get across the synapse?



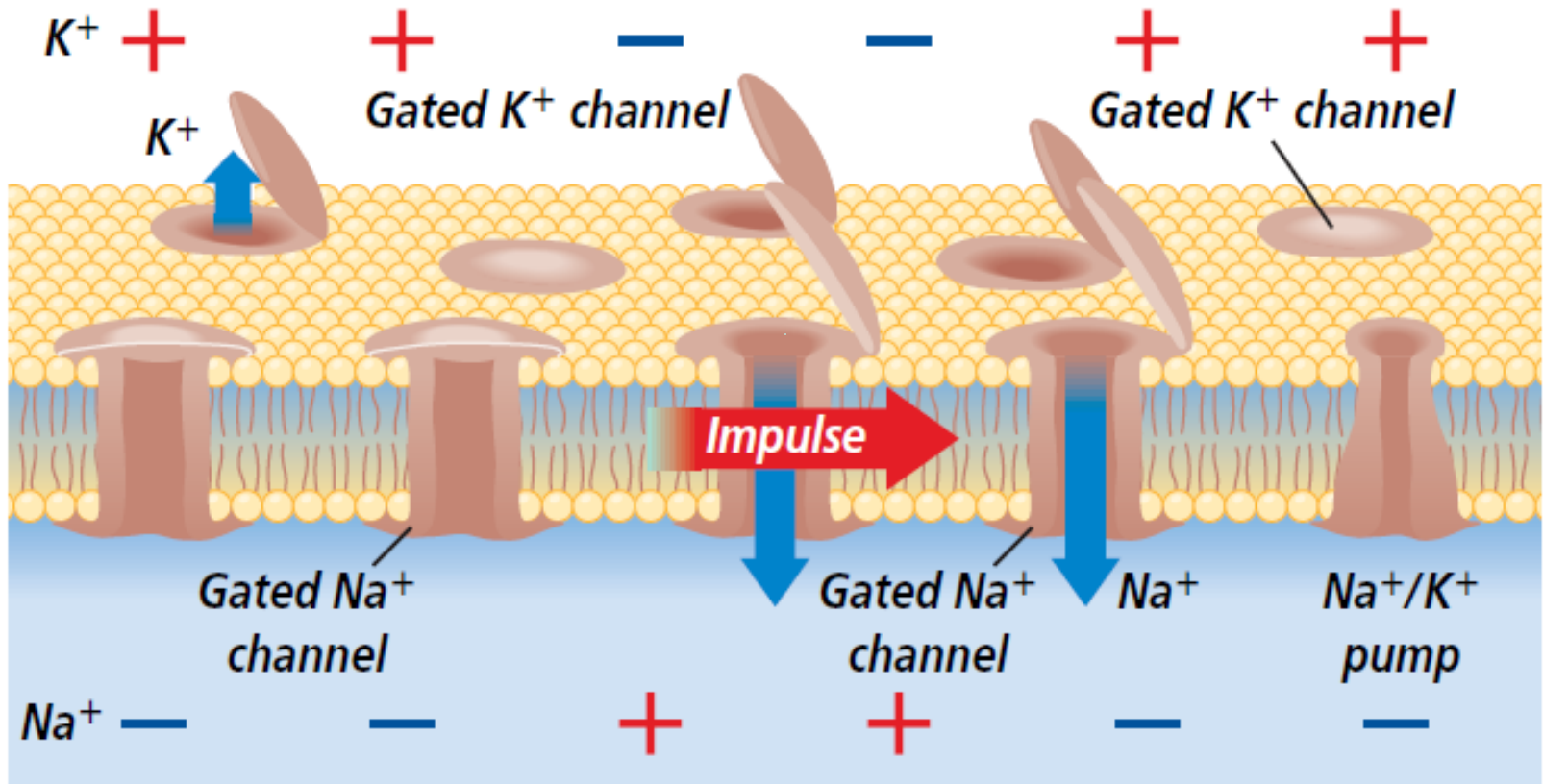
How do these “messages” get sent to the brain?

- **Resting potential**- inside of cell more negatively charged than the outside
 - plasma membrane is “polarized”
 - has the *potential* to transmit an impulse
- **Action potential**- inside of cell more positively charged than the outside
 - change in charge= “depolarization”
 - sodium channels open for sodium ions to rush in
 - moves down the axon if stimulation is strong enough to communicate with more neurons

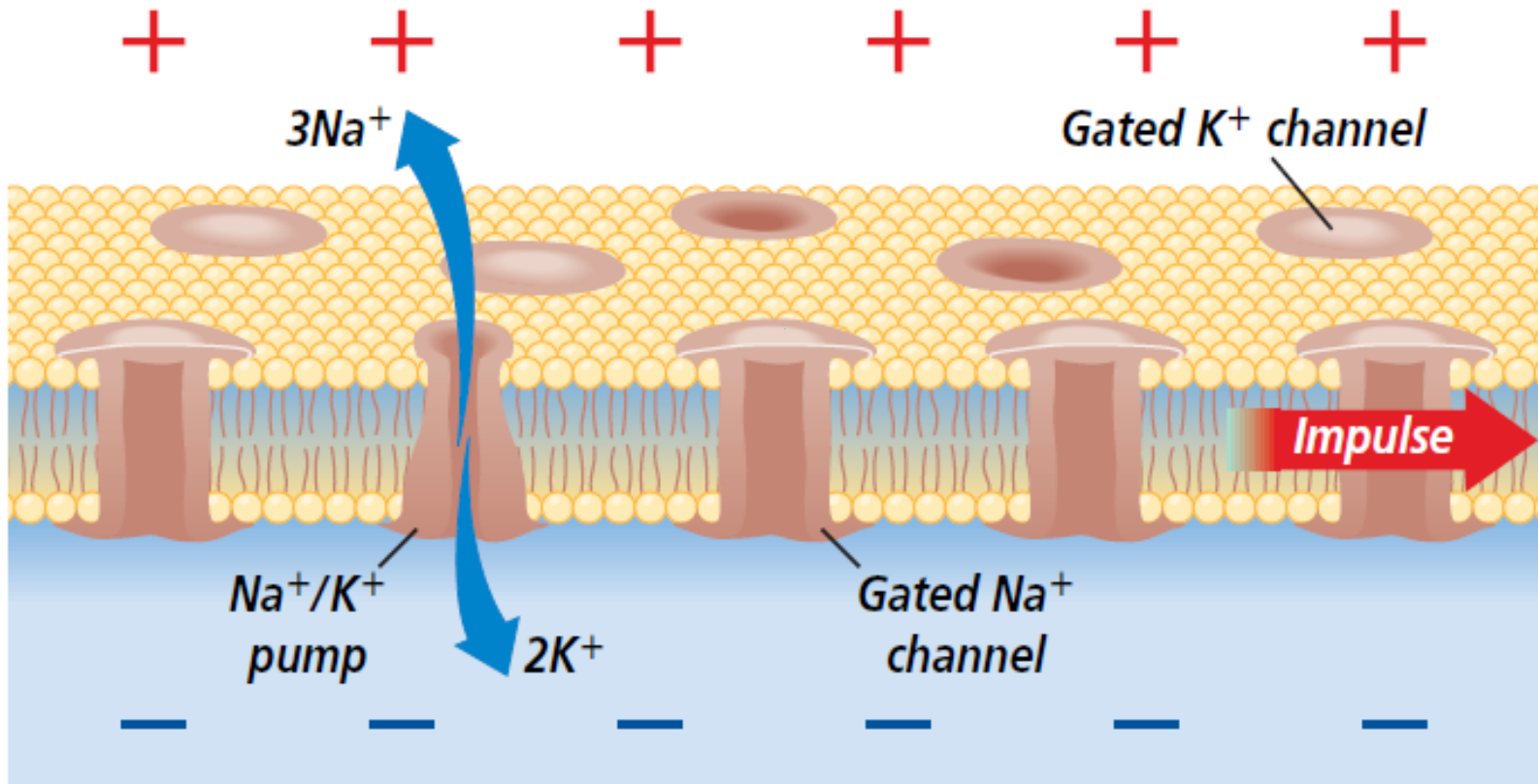
Resting Potential



Action Potential



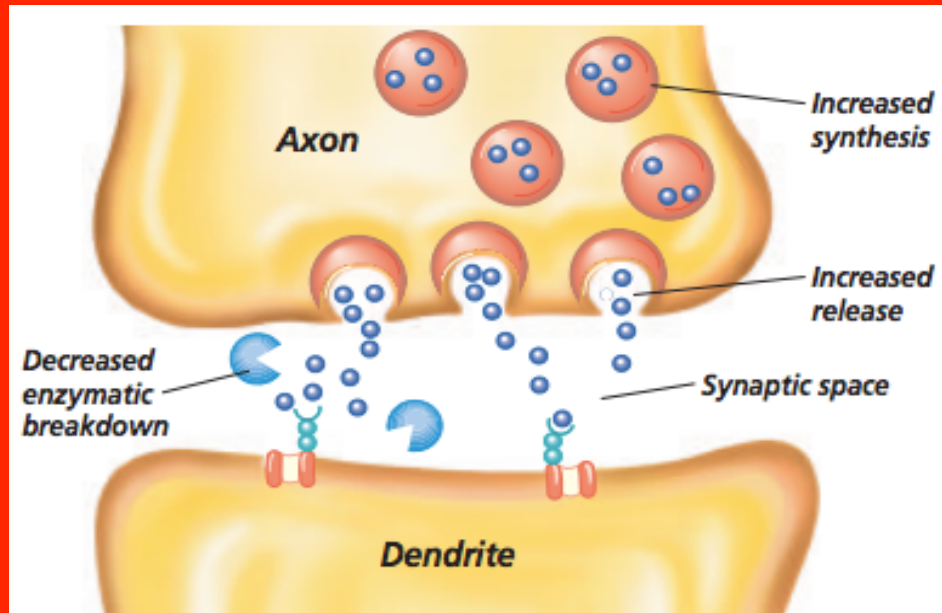
Action Potential



<https://youtu.be/fHRC8SILcH0>

What is a Drug?

- chemical that affects the body's functions
 - affect levels of **neurotransmitters** in synapses
 - bind with receptors on neighboring dendrites
 - excitatory vs. inhibitory affect on neurons



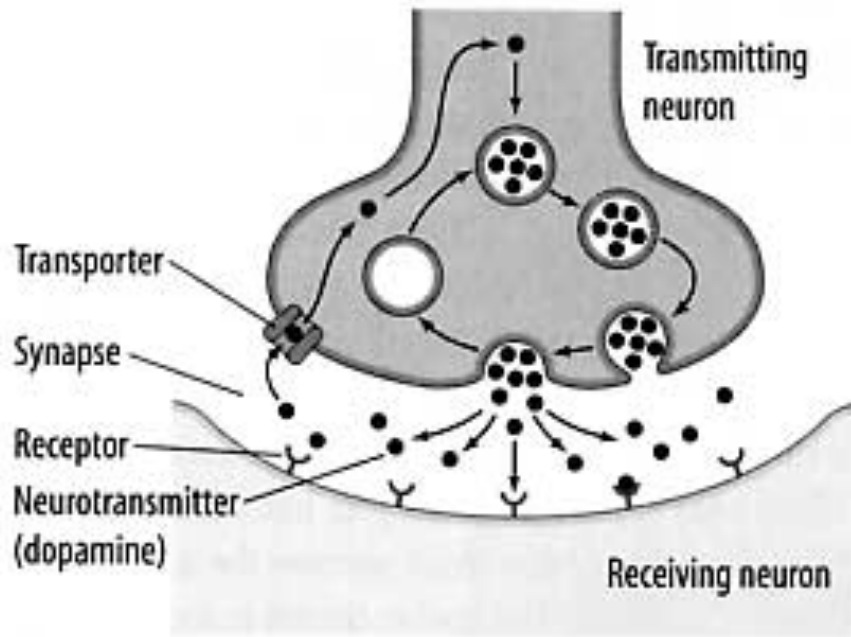
- Commonly abused drugs:
 - **stimulants**: increase output of CNS neurotransmitters **EX: cocaine, caffeine, nicotine**
<https://youtu.be/foLf5Bi9qXs>
 - **depressants**: slows down activity of nervous system
EX: alcohol
 - **narcotics**: bind to pain receptors in brain, decreasing pain
 - **hallucinogens**: over stimulates CNS with serotonin
 - **anabolic steroids**

Table 36.1 Commonly Abused Drugs

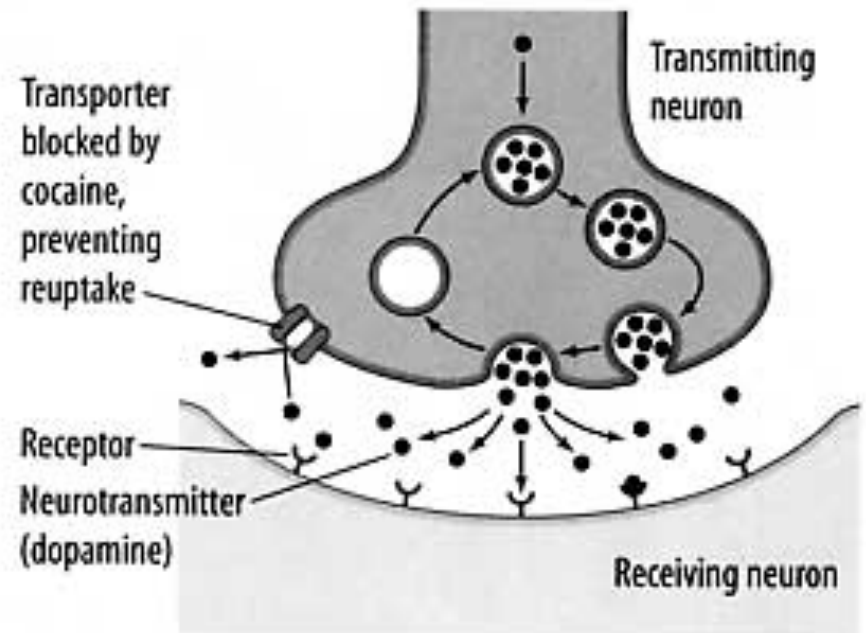
Category • Substance	Commercial or Street Name	Potential Health Hazards
Cannabinoid <ul style="list-style-type: none">• Marijuana	<ul style="list-style-type: none">• Grass, joints, pot, reefer, weed	Respiratory problems, impaired learning
Stimulants <ul style="list-style-type: none">• Cocaine• Methylphenidate• Nicotine• Methamphetamine• MDMA	<ul style="list-style-type: none">• Blow, coke, crack, rock• Ritalin, Skippy, vitamin R• Chew, cigarettes, cigars• Ice, speed, glass• Ecstasy, Eve	Increased heart rate and blood pressure, irregular heart beat, heart failure, and weight loss
Depressants <ul style="list-style-type: none">• Benzodiazepines• Barbiturates	<ul style="list-style-type: none">• Librium, Valium, Xanax, downers, sleeping pills• Barbs, red birds, yellows	Respiratory depression and arrest, lowered blood pressure, poor concentration
Hallucinogens <ul style="list-style-type: none">• LSD	<ul style="list-style-type: none">• Cubes, microdot	Chronic mental disorders, nausea, flashbacks
Opioids <ul style="list-style-type: none">• Heroin	<ul style="list-style-type: none">• H, junk, skag, smack	Respiratory depression and arrest, collapsed veins
Other <ul style="list-style-type: none">• Inhalants• Anabolic steroids• Ketamine	<ul style="list-style-type: none">• Paint thinners, gasoline, butane, nitrates, laughing gas• Juice• Special K, vitamin K	Headache, nausea, vomiting, unconsciousness, sudden death Liver and kidney cancer, acne, high blood pressure Respiratory depression and arrest, nausea, vomiting

Mechanism

Normal reuptake



Cocaine blocking reuptake



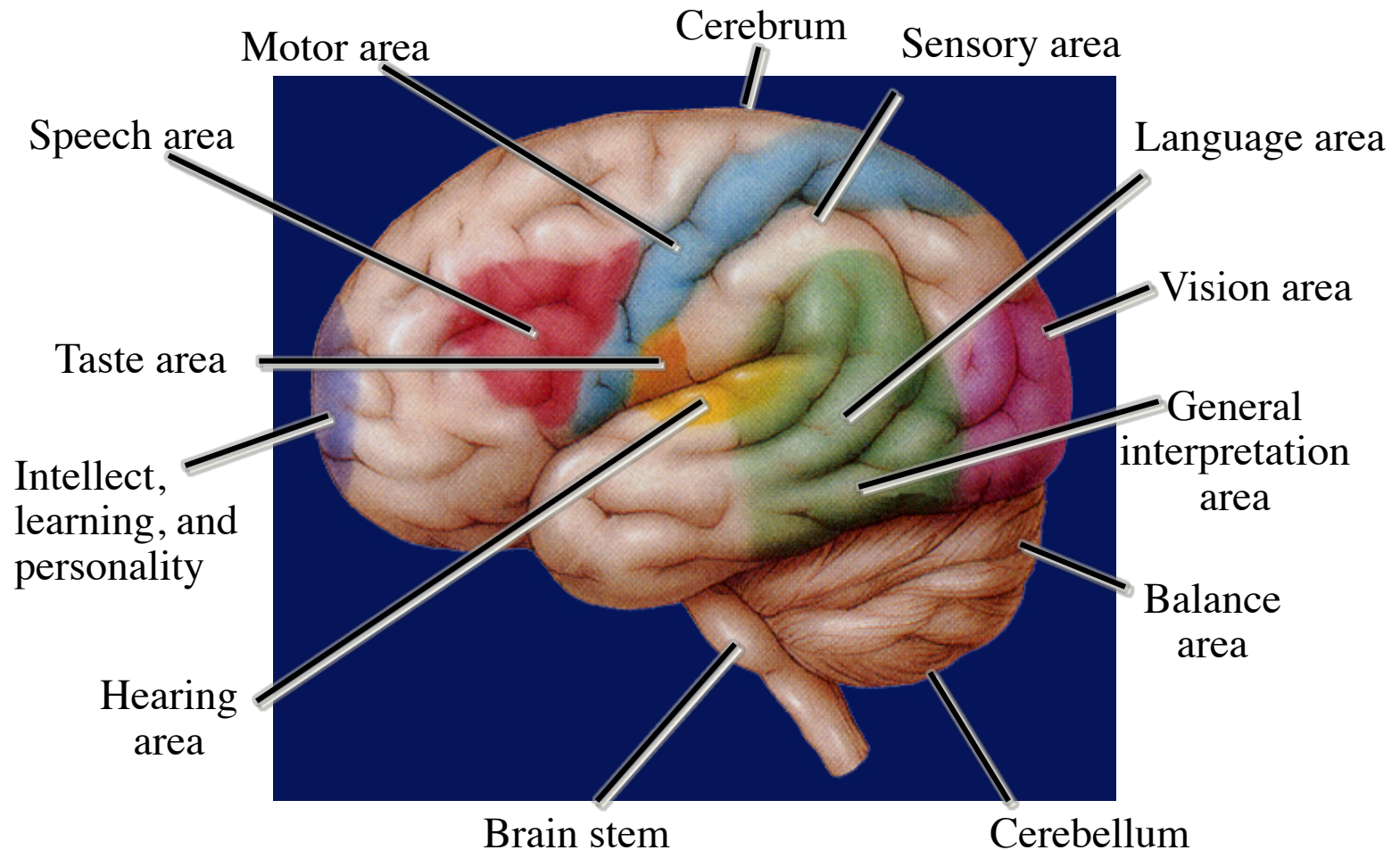
Drug Abuse

- Addiction
 - person needs drug to function normally
- Tolerance and withdrawal
 - person needs more of drug to achieve same effect
 - person becomes ill when they stop taking the drug



The Brain

The brain is the control center of the entire nervous system.



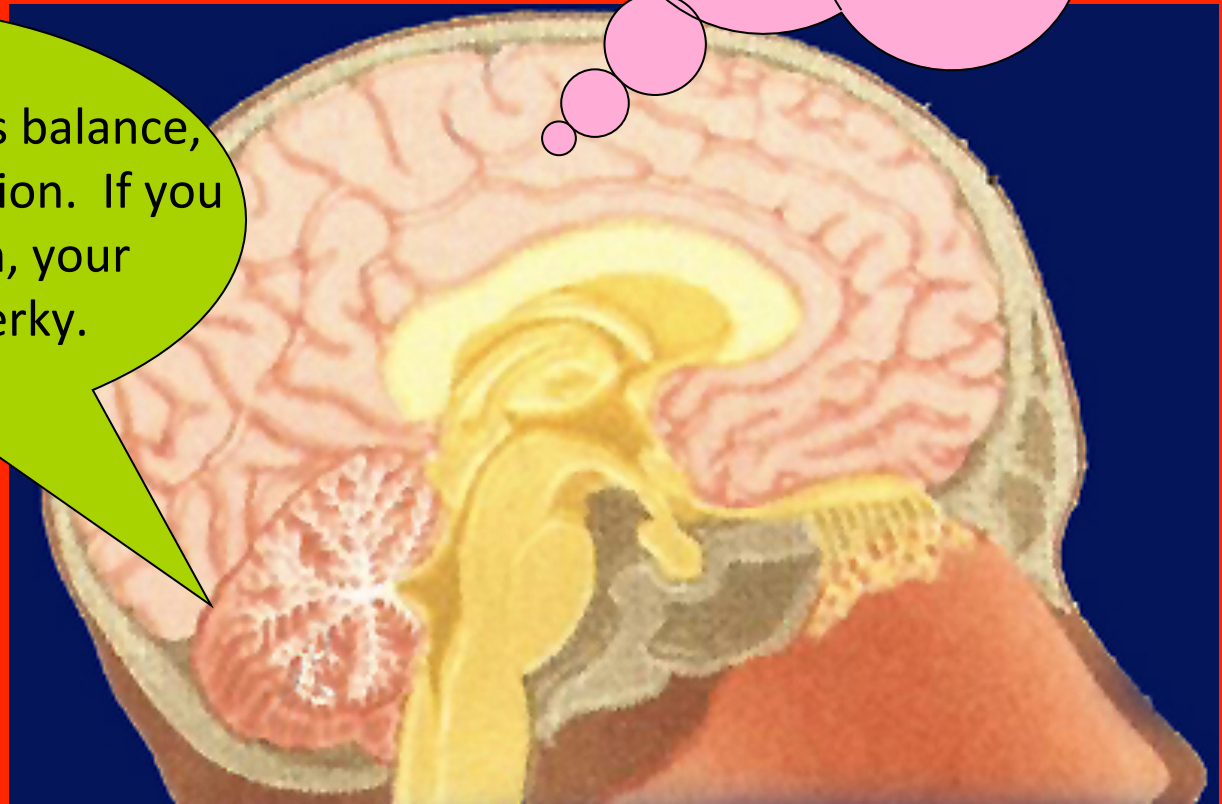
<https://www.youtube.com/watch?v=mwDFR5FFBa0>

Anatomy of the brain

-There are 3 major parts of the brain.

1. Cerebrum-controls your conscious activities including intelligence, memory, language, skeletal muscle movements and your senses.

2. Cerebellum-controls balance, posture and coordination. If you injure your cerebellum, your movements become jerky.



Anatomy of the brain

3. Brainstem

Made up of three parts:

- **Medulla oblongata**- controls breathing and heart rate
- **Pons** and **Midbrain**- control pathways in your brain

