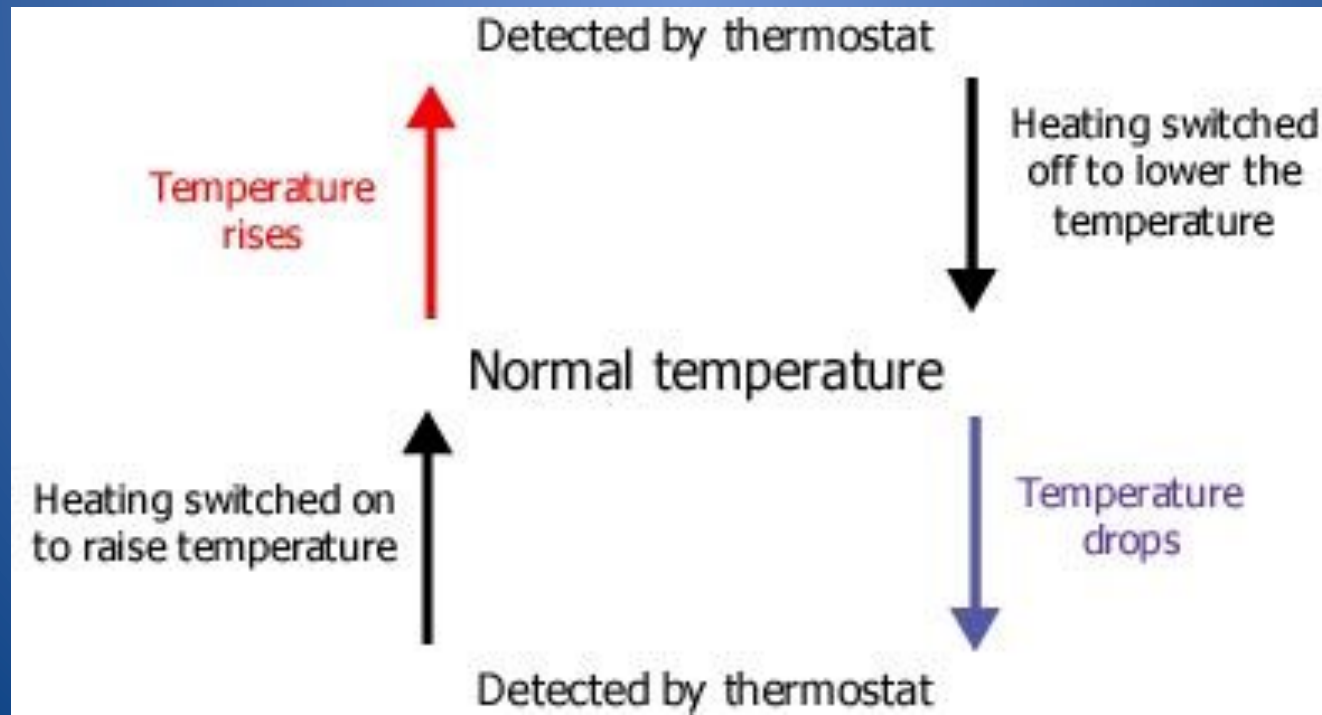


Chapter 35-1/35-2

Essential Question:

- How does the human body maintain *homeostasis*?
- What is the function of the nervous system?
- How is a nerve impulse transmitted?

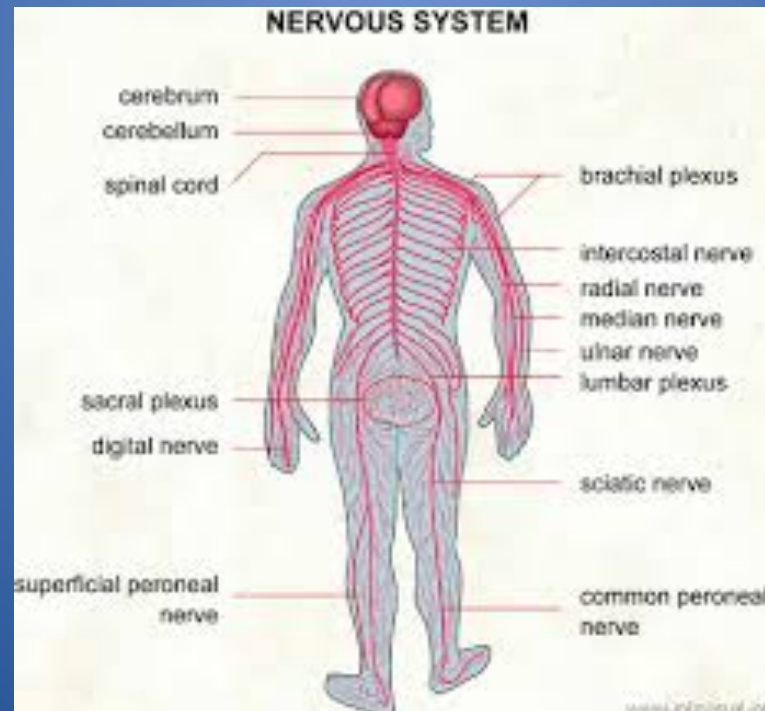
- Homeostasis
 - Process where organisms maintain relatively stable internal environment
- Feedback inhibition
 - To maintain homeostasis
 - Process: product of a system shuts down or limits operation



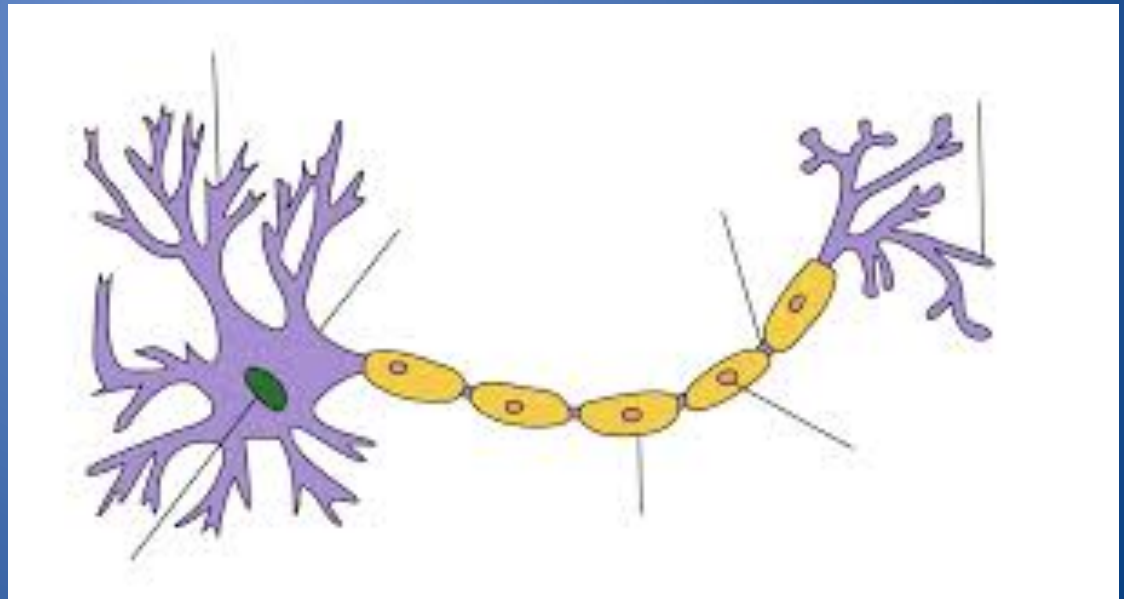
Chapter 35-2: The Nervous System

Essential questions:

- What is the function of the nervous system?
- How is a nerve impulse transmitted?

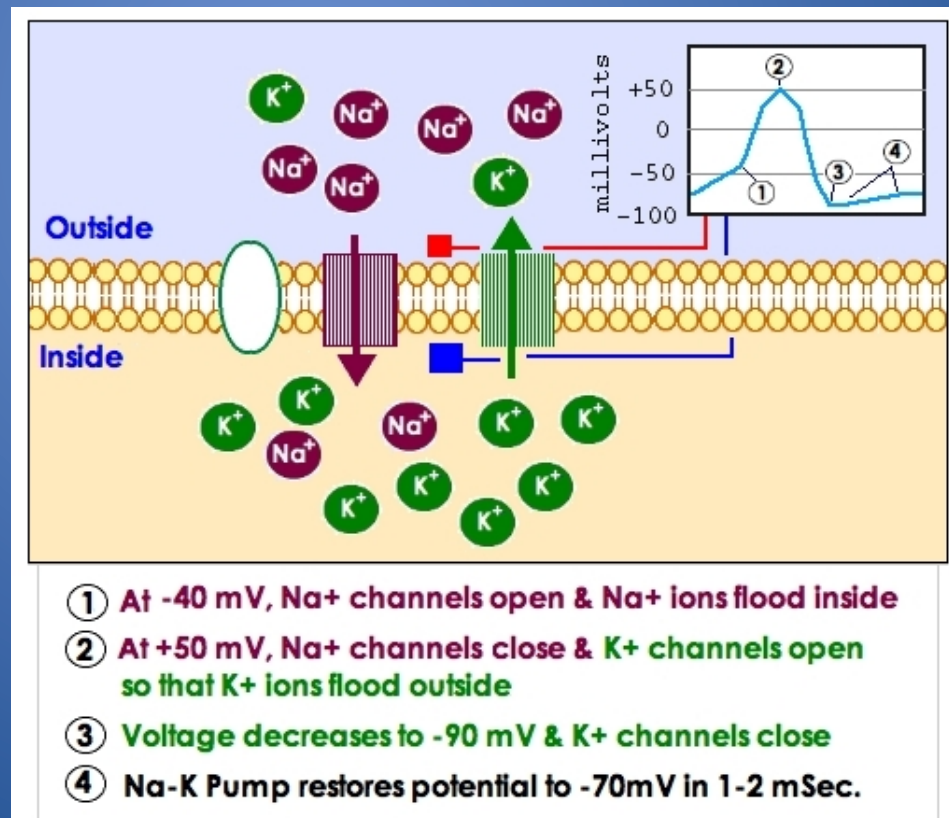


- Function of Nervous System:
 - control and coordinate functions of body & respond to external & internal stimuli
- Neurons
 - Cells that transmit electrical signals (impulses)
 - Anatomy:
 - Cell body
 - Dendrites
 - Axon
 - Myelin sheath



Nerve Impulse

- Resting potential
 - Negative charge builds inside cell, positive outside
 - This difference across membrane is *resting potential*

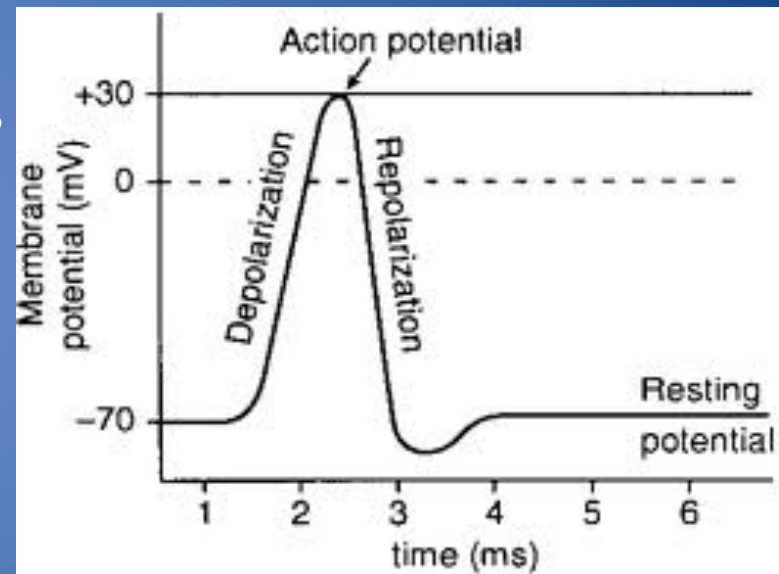


- Action potential

- Nerve impulse: neuron is stimulated by another neuron or environment

- *Reverses* electrical charge across membrane:
action potential

- Cascades through nerve cells



- Threshold: minimum level of stimulus needed to activate a neuron

- Strength of impulse always the same

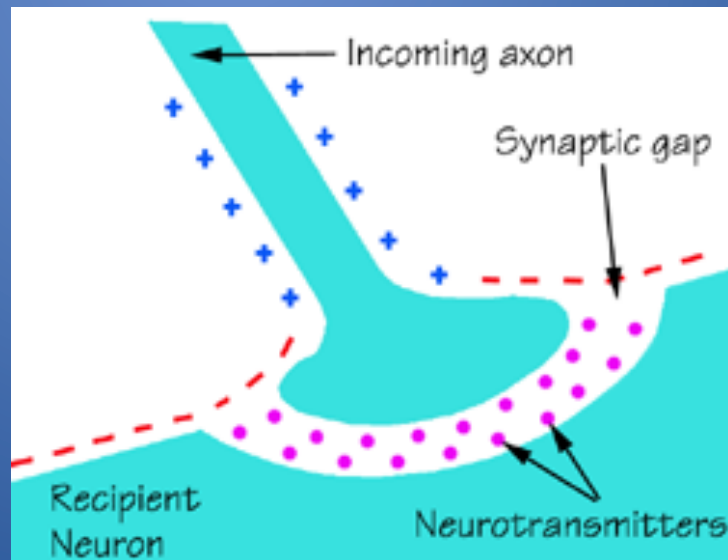
- “all or nothing” principle

- Synapse

- Location where a neuron can transfer an impulse to another cell
- Between axon terminal of 1 cell and dendrites of another cell

- Neurotransmitters

- Chemicals used to transmit impulse across a synapse



Chapter 35-3

- What are the functions of the Central Nervous System?
- What are the divisions of the Peripheral Nervous System?



- Central Nervous System (CNS): relays messages, processes & analyzes information
 - Brain and spinal cord

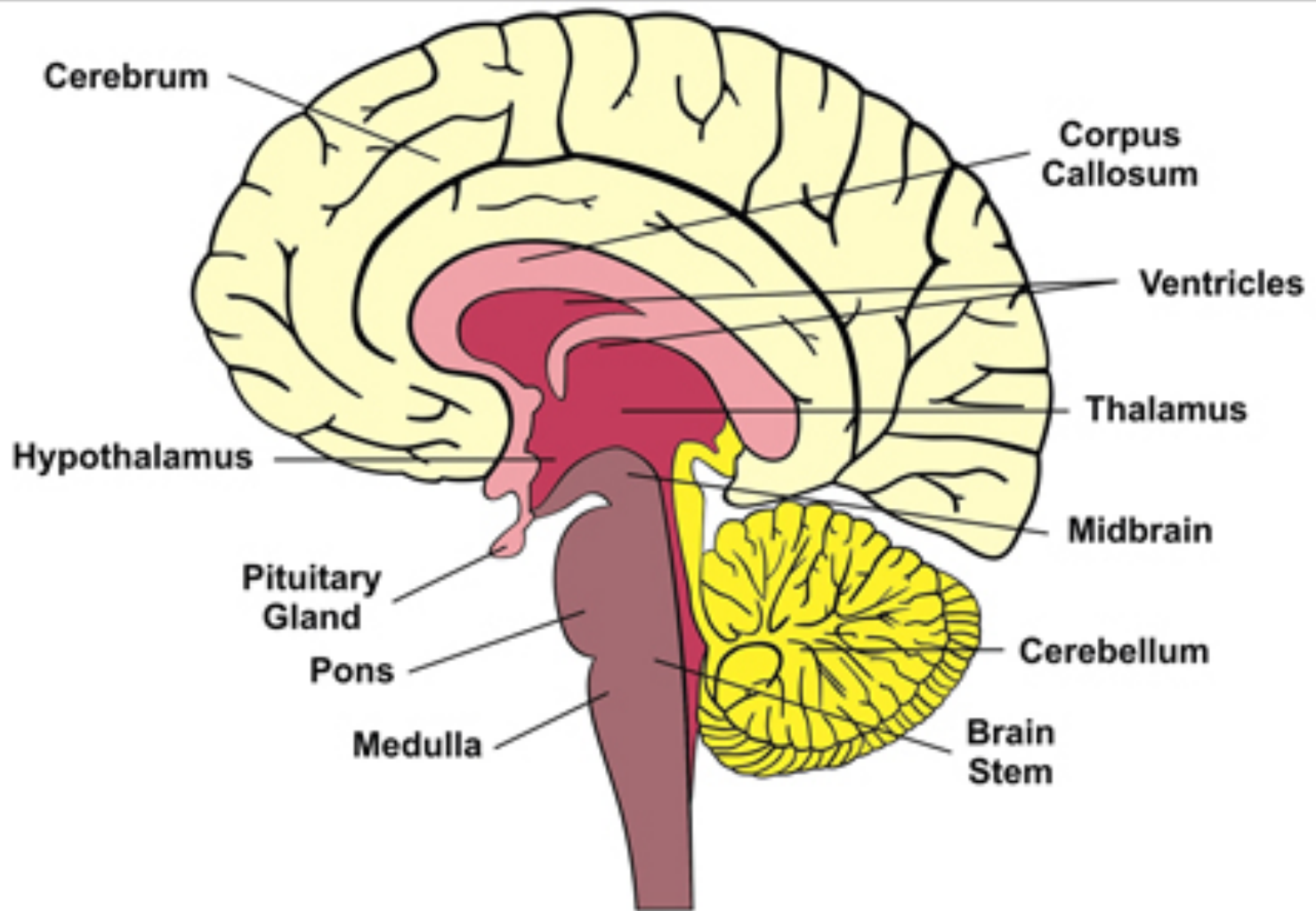


- Spinal cord: Link between brain and body
 - Reflex: quick auto-response processed directly by spinal cord



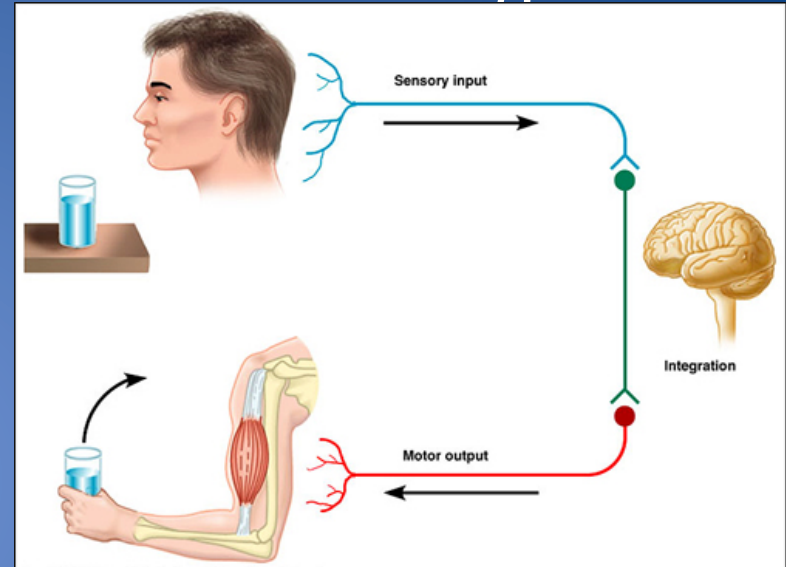
Brain Parts by Size

1. Cerebrum: voluntary, conscious activities
2. Cerebellum: coordinates muscles
3. Thalamus: gets messages from sense organs
4. Hypothalamus: hunger, thirst, fatigue, anger, body temp.



Peripheral Nervous System

- **Sensory Division:** transmits from sense organs to CNS



- **Motor Division:** transmits from CNS to muscles and glands
 - Somatic Division: Conscious control + reflexes
 - Autonomic Division: Involuntary
 - Sympathetic Division: Increases function
 - Parasympathetic Division: Decreases function