

The Nervous System: Structure, Function and Control

Central concept: **Nervous System**

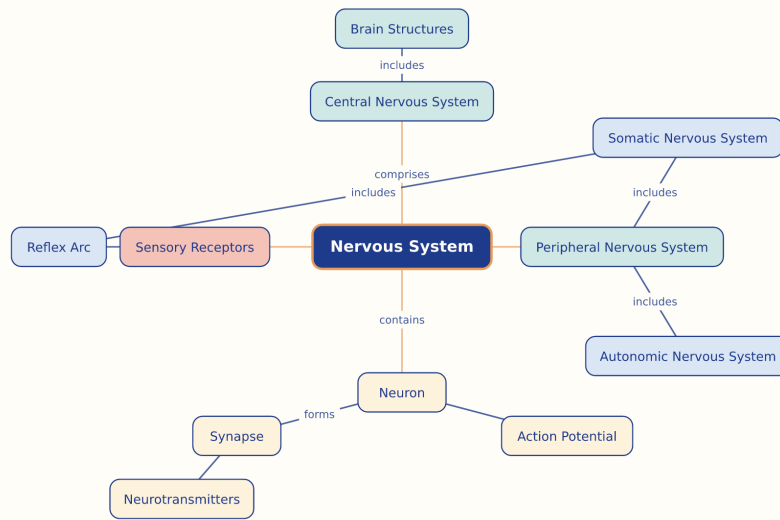
Connections

- Nervous System (comprises) -> Central Nervous System
- Nervous System (comprises) -> Peripheral Nervous System
- Nervous System (contains) -> Neuron
- Nervous System (uses) -> Sensory Receptors
- Central Nervous System (includes) -> Brain Structures
- Peripheral Nervous System (includes) -> Somatic Nervous System
- Peripheral Nervous System (includes) -> Autonomic Nervous System
- Neuron (transmits) -> Action Potential
- Neuron (forms) -> Synapse
- Synapse (uses) -> Neurotransmitters
- Reflex arcs can occur in both the somatic nervous system (e.g., patellar reflex) and the autonomic nervous system (e.g., pupillary reflex).
- Sensory Receptors (initiates) -> Reflex Arc

Notes

- **Nervous System:** Biological system that controls physiological processes and maintains homeostasis through response to stimuli [Topic](#), [Topic](#)
- **Central Nervous System:** Brain and spinal cord; processes information and coordinates responses [Outcome](#), [Outcome](#)
- **Peripheral Nervous System:** Nerves connecting CNS to body; transmits sensory and motor signals [Outcome](#), [Outcome](#)
- **Somatic Nervous System:** Voluntary control of skeletal muscles and sensory perception [Outcome](#), [Outcome](#)
- **Autonomic Nervous System:** Involuntary control of internal organs and glands [Outcome](#), [Outcome](#)
- **Neuron:** Basic functional unit; transmits electrical and chemical signals [Outcome](#), [Outcome](#)
- **Action Potential:** Electrical signal transmission along neuron; follows all-or-none response [Outcome](#), [Outcome](#)
- **Synapse:** Junction between neurons; uses neurotransmitters for signal transmission [Outcome](#), [Outcome](#)
- **Neurotransmitters:** Chemical messengers such as acetylcholine and norepinephrine; cholinesterase is the enzyme that breaks down acetylcholine after transmission. [Outcome](#), [Outcome](#)
- **Reflex Arc:** Rapid involuntary response pathway; examples include patellar and pupillary reflexes [Outcome](#)
- **Sensory Receptors:** Detect environmental stimuli; include olfactory, taste, proprioceptors, and skin receptors [Outcome](#)
- **Brain Structures:** Cerebral hemispheres, lobes, cerebellum, pons, medulla, hypothalamus regulate functions [Outcome](#), [Outcome](#)

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■ Central concept ■ Structure ■ Function ■ Cellular ■ Sensation

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