

The Nervous System

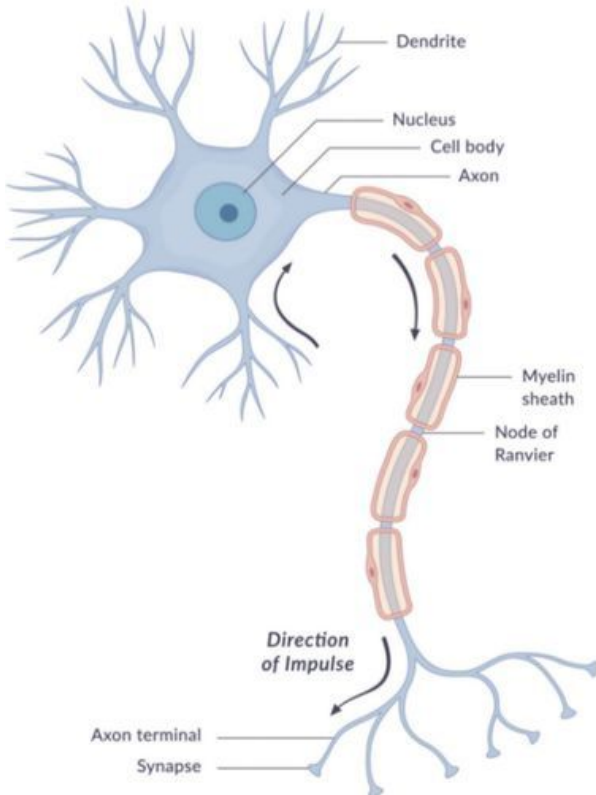
- Sense environments
- Responses
- Control movements
- Regulate body functions
- Collect, interpret, and respond to information

Types of Nerves

1. Sensory Neurons: carry info to CNS and inform of outside world:
 2. Motor Neurons: from CNS to body - voluntary movement
 3. Interneurons: connect sense + motor neurons, make up the CNS
- basic unit is the neuron makes nerve tissue and carries information - do not regenerate

Sense Receptors

- connect outer world to brain
- specific parts have specific functions
- ie. eye, ear, mouth, nose



Dendrite: nerve ending, receive information

Axon: thin fibre, transmitter, carry away

Myelin: fat to encase axon, protect, block disturbances

Nerve: bundle of neurons

Node: speed is increased by jumps in myelin

Synapse: transfer electric activity (information) from one cell to another

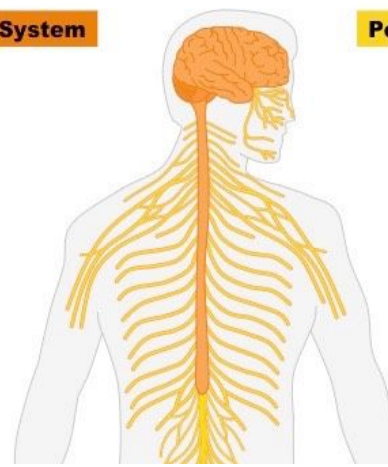
Central Nervous System

Composed of:

- Brain
- Spinal cord

Contains:

- Relay neurons (interneurons)



Peripheral Nervous System

Composed of:

- Cranial nerves
- Spinal nerves
- Peripheral nerves

Contains:

- Sensory neurons
- Motor neurons

Central (CNS)	Peripheral (PNS)
<ul style="list-style-type: none"> • command system • brain and spinal cord • thoughts, senses, and voluntary movement • protected by bones and cerebrospinal fluid • Brain: controls, analysis • Spinal Cord: transmits nerve impulses 	<ul style="list-style-type: none"> • nerves carry messages from CNS to body • neurons transmit in one direction <ol style="list-style-type: none"> 1. Nerves that control voluntary movements 2. Nerves from sensory organs 3. Nerves that regulate involuntary functions

Electric Transmission

- ↓ Dendrites (info from senses)
- ↓ Nerve Body (chemical neurotransmitter)
- ↓ Axon (transfer impulse)
- ↓ Synapse (fire impulse to next dendrite)
- ↓ Continues until it reaches the CNS

Diseases

- Multiple sclerosis: myelin sheaths of neurons are destroyed by immune cells - results in loss of nerve function
- Mechanical force to the spinal cord can result in paralysis
- CT and MRIs can be used to diagnose these disorders

The nervous system can be described as the control center of the entire body. The **brain** can be seen as the leader, and the **spinal cord** as a highway, while **nerves** are side streets, and **electrical impulses** are cars that can travel at **100m/s**.