

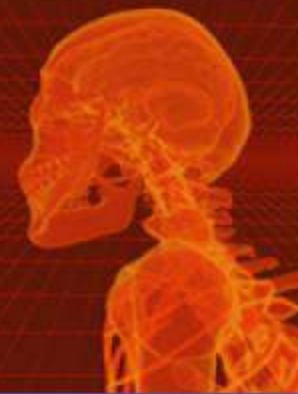
MEDICAL TERMINOLOGY

FOR HEALTH PROFESSIONS

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Sixth Edition



Chapter 10

The Nervous System



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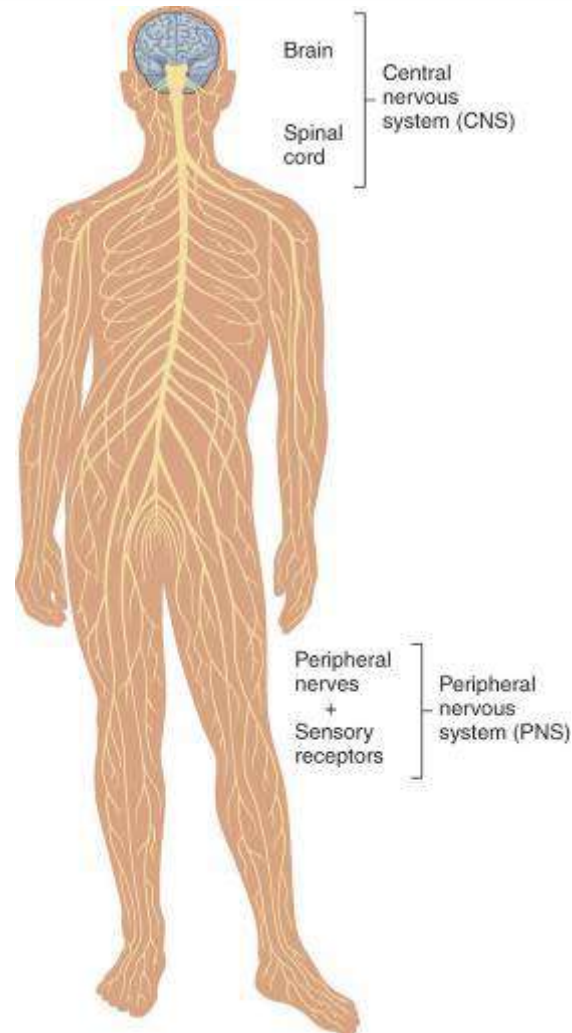
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Function

- A fast, complex communication system that regulates thoughts, emotions, movements, impressions, reasoning, learning, memory, and choices



Central and Peripheral Nervous Systems



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Nervous System

- **Neurotransmitters**- chemical messengers to transmit impulses between the neurons
- **Stimulus** – activates nerve, causes impulse
- **Impulse** – wave of excitation
- **Nerves**- bundles of neurons connecting the brain & spinal cord with other body parts.
- **Myelin**- protective covering of the nerve cells
- **Ganglion/ganglia** – knot like mass of nerve cell bodies located outside the CNS



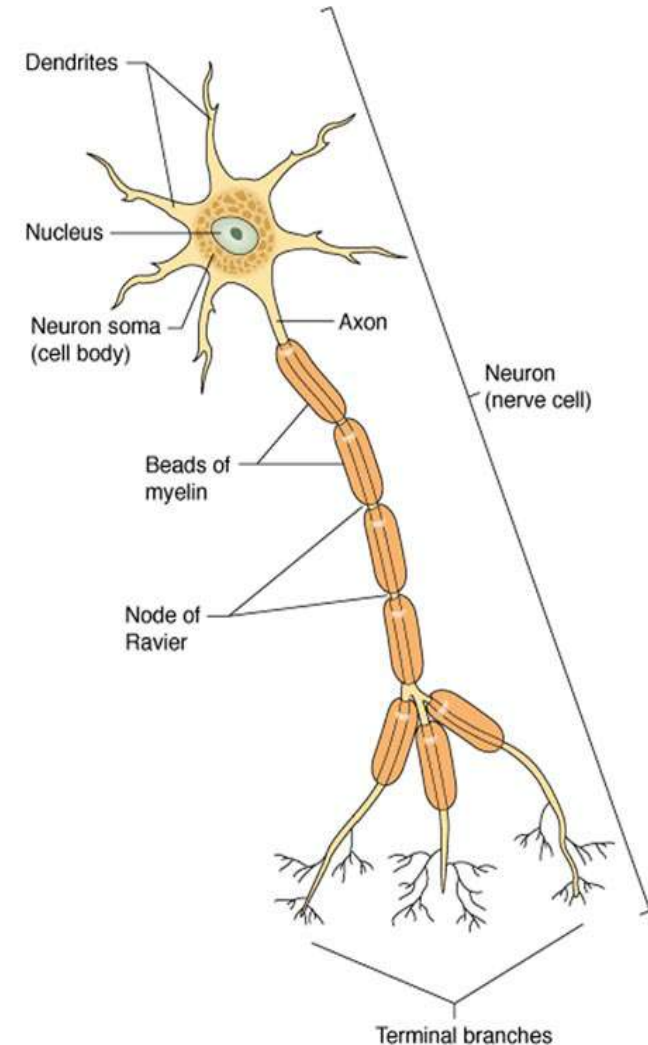
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Structure

- Neurons- basic cell of the nervous system
 - 3 main parts-
 - Dendrites- receive impulses and conduct to the cell body
 - Axon- conducts the impulse away from the cell
 - Terminal fibers- lead the impulse away from the axon into the synapse.



Brain

- Primary Functions
 - Coordinates all activities of the body by receiving and transmitting messages throughout the body.
- Related Combining Form
 - encephal/o



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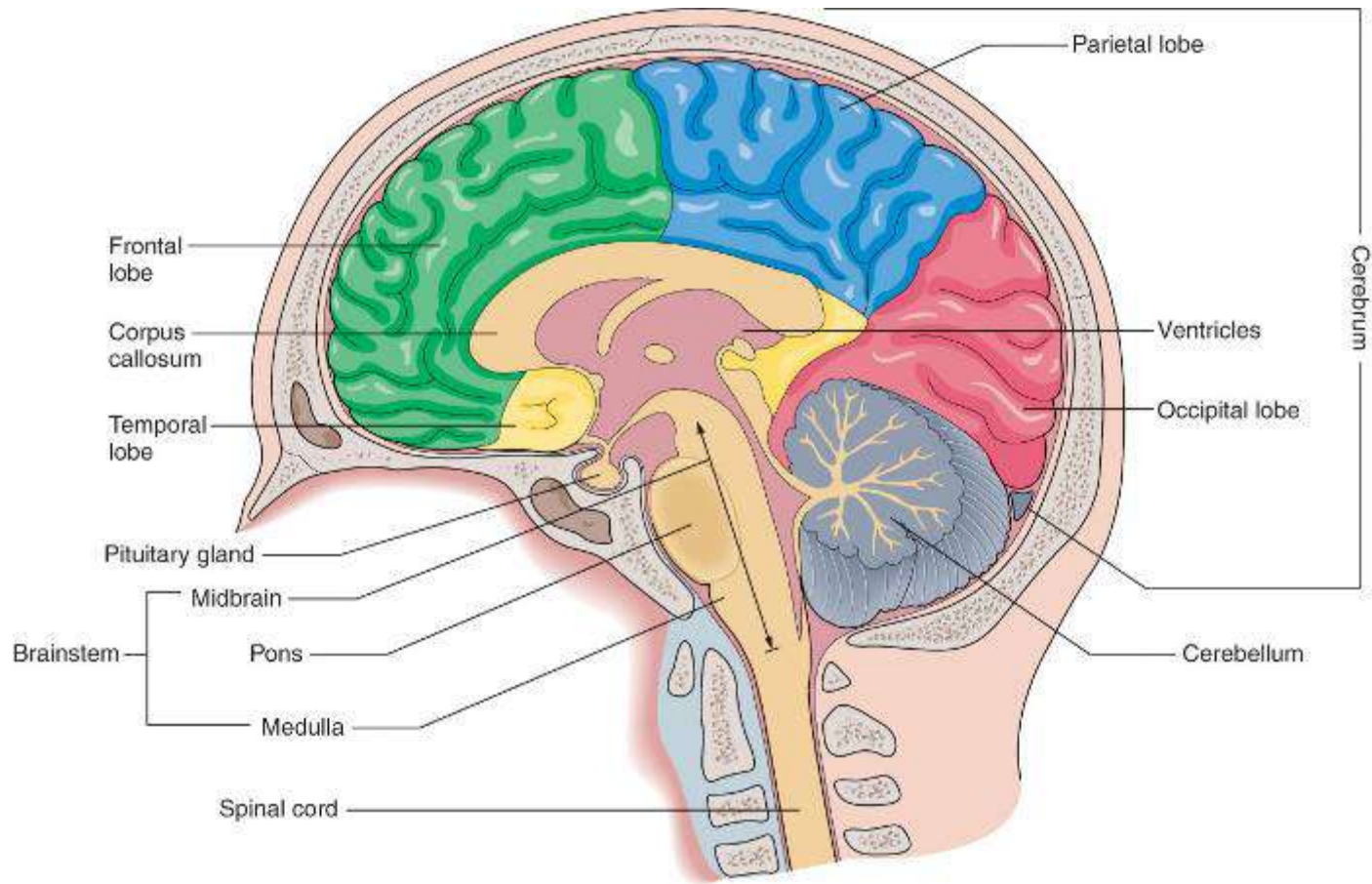
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Brain

- The meninges- 3 layers of connective tissue that enclose the brain & spinal cord.
 - Dura mater
 - Arachnoid
 - Pia mater
 - CSF: Cerebrospinal Fluid-
 - Function: fluid which flows throughout brain & spinal cord. It is produced within the ventricles of the brain.
- Nourish, cushion and cool the brain and spinal cord



Major Parts of the Brain



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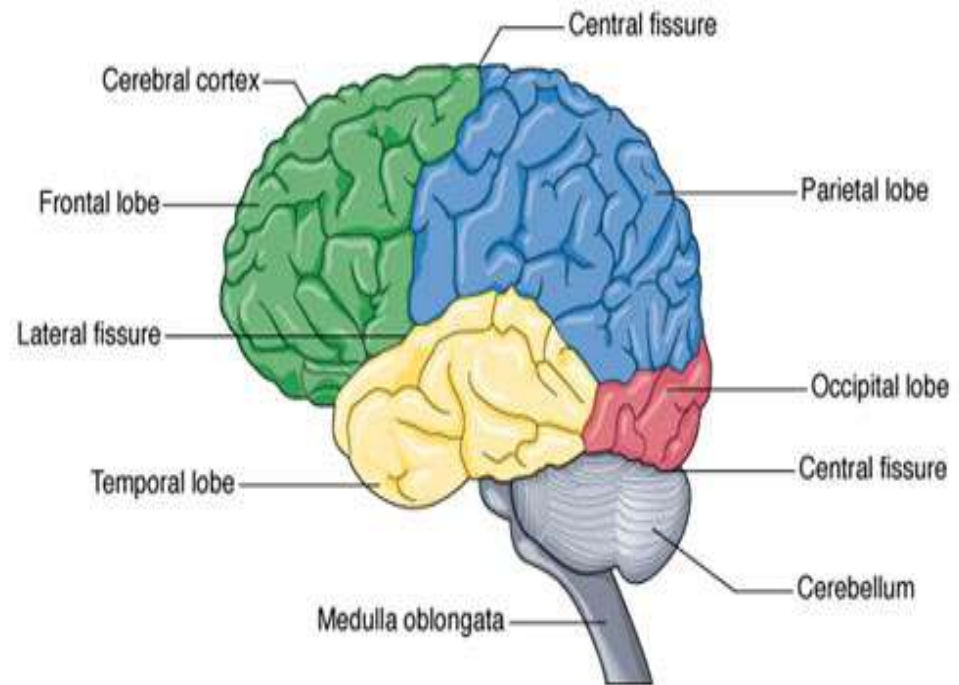
Parts of the brain

- **Cerebrum**- judgment, memory, association & critical thinking, highest levels of thought
- **Thalamus**- sensation
- **Hypothalamus**- Vital body functions—hunger, thirst, sleep, emotion
- **Cerebellum**- muscle movement
- **Pons**- where the nerves cross over
- **Medulla Oblongata**- vital functions (respiration and circulation)



Lobes of the Brain

- Occipital
- Temporal
- Frontal
- Parietal



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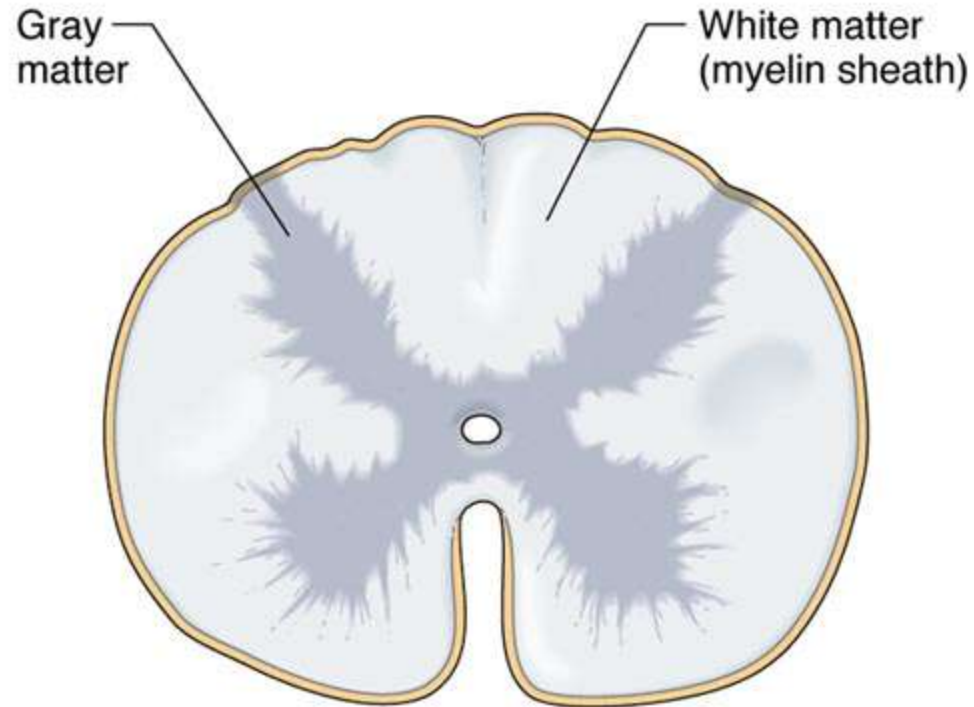
Spinal Cord

- Primary Functions

- Transmits nerve impulses between the brain, limbs, and lower part of the body.

- Related Combining

- myel/o



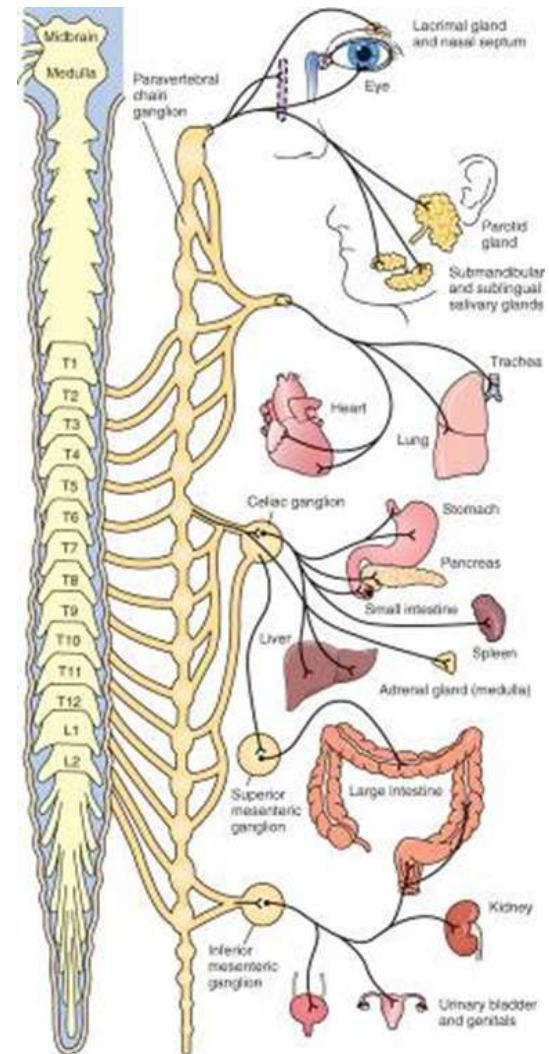
Nerves

- Primary Functions
 - Receive and transmit messages to and from all parts of the body.
- Related Combining Forms
 - neur/i, neur/o



Peripheral Nervous System

- Cranial nerves (12 pairs) & spinal nerves (31 pairs)
- Each nerve of the pair serves one side of the body



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The Autonomic Nervous System

- 2 divisions: Sympathetic-fight or flight
Parasympathetic-normal state



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Sensory Organs and Receptors

- Primary Functions

- Receive external stimulation and transmit these stimuli to the sensory neurons.
 - Eyes (sight)
 - Ears (hearing)
 - Nose (smell)
 - Skin (touch)
 - Tongue (taste)

Careers

- Anesthesiologist
- Nurse anesthetist
- Neurologist
- Neurosurgeon
- Psychiatrist
- Psychologist



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