

Nervous System

Nervous System

1. **Definition:** The nervous system is a complex network of nerves and cells that transmit signals between different parts of the body. It is divided into two main parts: the central nervous system (CNS) and the peripheral nervous system (PNS).
2. **Central Nervous System (CNS):**
 - Consists of the brain and spinal cord.
 - Responsible for processing information received from the sensory organs and sending out instructions to the rest of the body.
 - Controls thoughts, movements, and basic bodily functions.
3. **Peripheral Nervous System (PNS):**
 - Comprises all the nerves outside the CNS.
 - Divided into the somatic nervous system (voluntary movements) and the autonomic nervous system (involuntary functions like heart rate and digestion).
4. **Neurons:**
 - Basic building blocks of the nervous system.
 - Specialized cells that transmit information through electrical and chemical signals.
 - Consist of a cell body, dendrites (receive signals), and axon (transmits signals).
5. **Types of Neurons:**
 - Sensory neurons: Transmit sensory information to the CNS.
 - Motor neurons: Send signals from the CNS to muscles and glands.
 - Interneurons: Process information within the CNS.
6. **Functions of the Nervous System:**
 - Sensory function: Receives information from the environment through sensory receptors.
 - Integrative function: Processes and interprets sensory information.

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- Motor function: Responds to stimuli by initiating action through muscle contractions or glandular secretion.

7. Protection of the Nervous System:

- The brain is protected by the skull, and the spinal cord is protected by the vertebrae and cerebrospinal fluid.
- Meninges, a protective membrane, cover the brain and spinal cord.

8. Disorders of the Nervous System:

- Neurological disorders like Alzheimer's, Parkinson's, epilepsy.
- Traumatic brain injuries, strokes, and spinal cord injuries.

9. Maintaining a Healthy Nervous System:

- Adequate nutrition, regular exercise, sufficient sleep, and stress management are essential for a healthy nervous system.
- Avoiding substances that can harm the nervous system, such as drugs and excessive alcohol.

Understanding the structure and function of the nervous system is crucial for comprehending how our body interacts with the environment and responds to various stimuli.