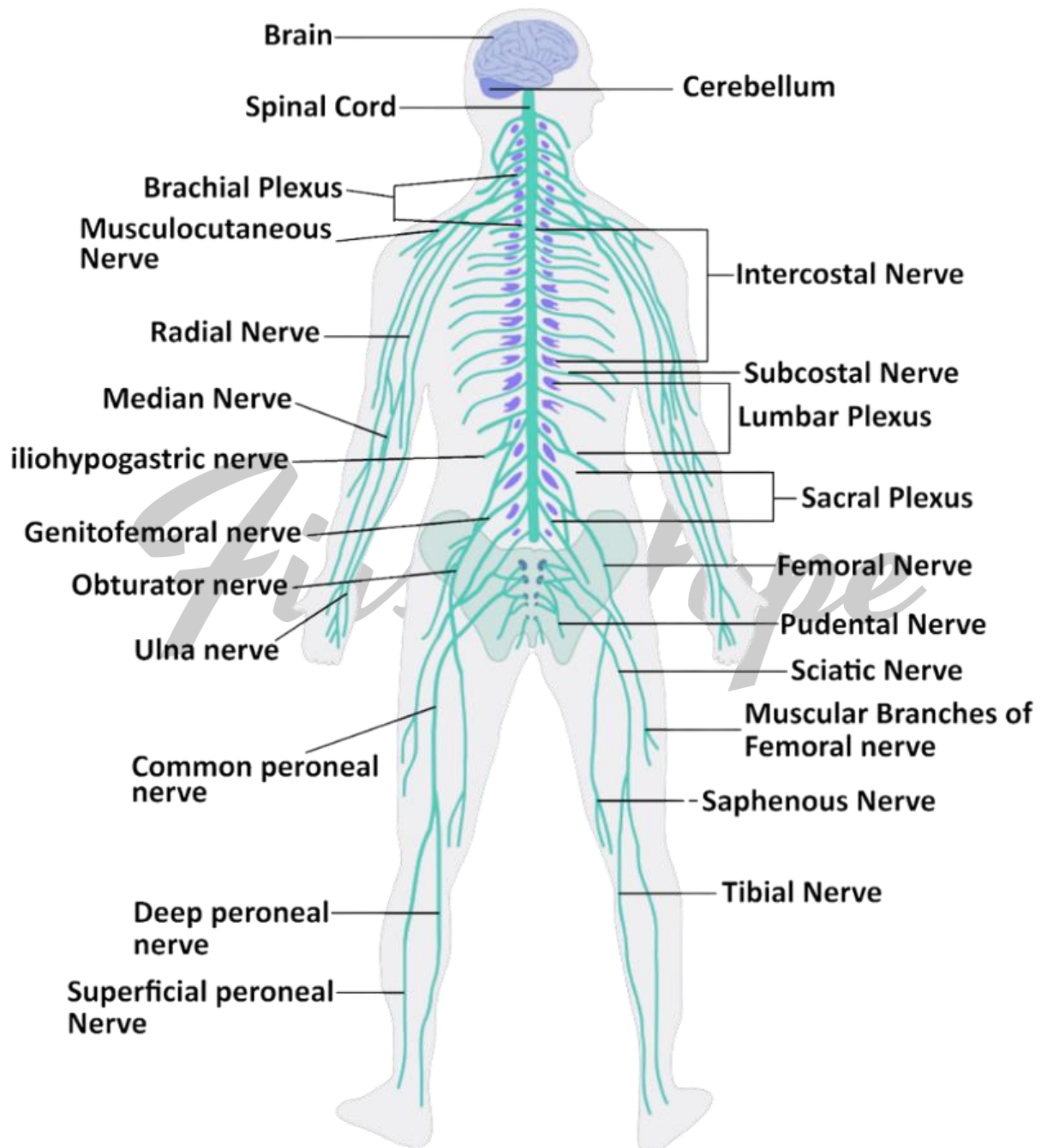


Nervous System

Introduction Of Nervous System

- The nervous system is a complex network of neurons that transmit signals throughout the body, coordinating and controlling a wide range of functions, from voluntary movements to involuntary processes like homeostasis and internal organ regula.



Main Divisions of the Nervous System:

1. Central Nervous System (CNS):

- Composed of the brain and spinal cord.
- Acts as the primary control center, processing sensory information, generating thoughts and emotions, and coordinating movements.

2. Peripheral Nervous System (PNS):

- Consists of all nerves outside the CNS, connecting it to the rest of the body.

- **Subdivisions:**

a) Somatic Nervous System:

- Controls **voluntary movements** and perceives **external sensations** (touch, pain, temperature).
- It includes **sensory neurons** (body to CNS) and **motor neurons** (CNS to muscles).

b) Autonomic Nervous System (ANS):

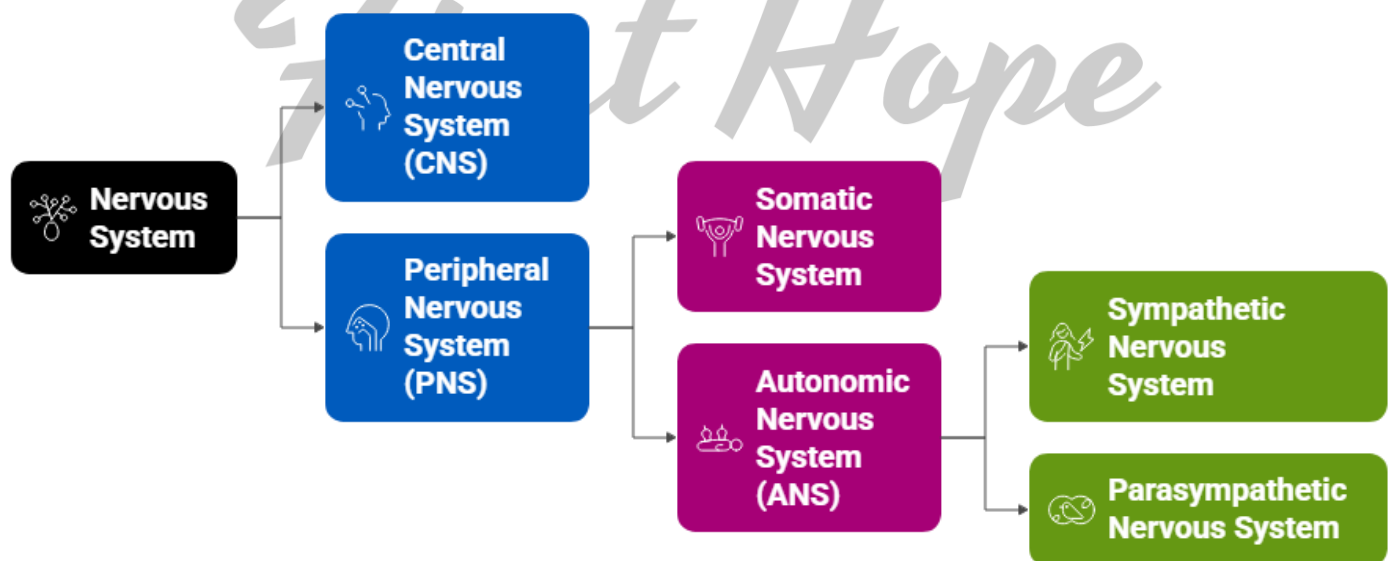
- Regulates involuntary processes and internal organ functions.
- It has two parts:

A. Sympathetic Nervous System:

- Activates the "fight or flight" response during stress.

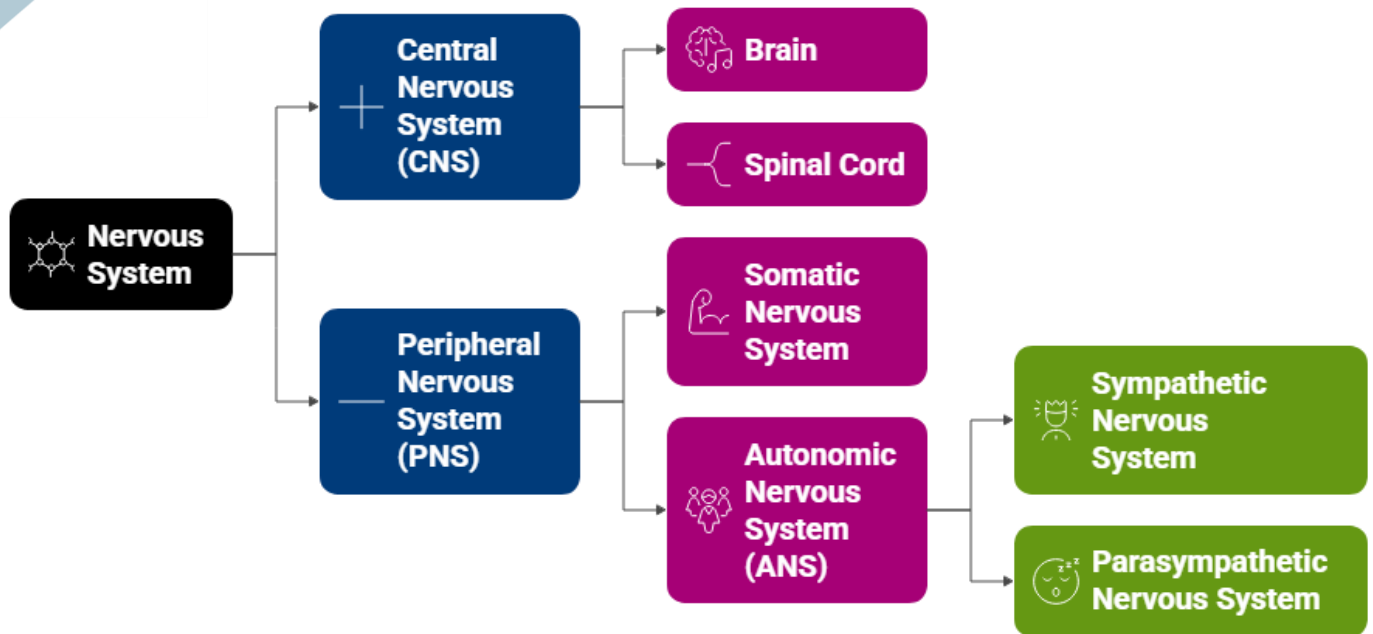
B. Parasympathetic Nervous System:

- Promotes the "rest and digest" state, helping the body relax and conserve energy.



Organization Of Nervous System

- The nervous system is organized into two main divisions: the Central Nervous System (CNS) and the Peripheral Nervous System (PNS).
- Each of these divisions has its own subdivisions and components, which work together to coordinate and control various functions in the body.



Central Nervous System (CNS):

A. Brain:

- The brain is the control center of the nervous system and is responsible for processing and integrating sensory information, generating thoughts and emotions, and coordinating voluntary and involuntary movements.
- It has several key parts, including the cerebrum, cerebellum, and brainstem.

B. Spinal Cord:

- The spinal cord is a long, cylindrical structure that extends from the base of the brain down the vertebral column.
- It serves as the primary communication pathway between the brain and the PNS, relaying sensory information to the brain and motor instructions from the brain to the rest of the body.

Peripheral Nervous System (PNS):

A. Somatic Nervous System:

- This subdivision of the PNS is responsible for voluntary movements and the perception of external sensations.
- It contains sensory neurons, which transmit information from the body to the CNS, and motor neurons, which carry instructions from the CNS to the skeletal muscles.

B. Autonomic Nervous System (ANS):

- This subdivision of the PNS regulates involuntary processes and the function of internal organs.
- The ANS has two further subdivisions:

a) Sympathetic Nervous System:



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