

Almaaqal University
College of Health and Medical Techniques
Department of Medical Laboratory Techniques



Lectures in Histology laboratories
for 2nd year students

By

MSc. Samira Tariq Al-Ali

Lecture 6

Nervous System (Nervous tissue)

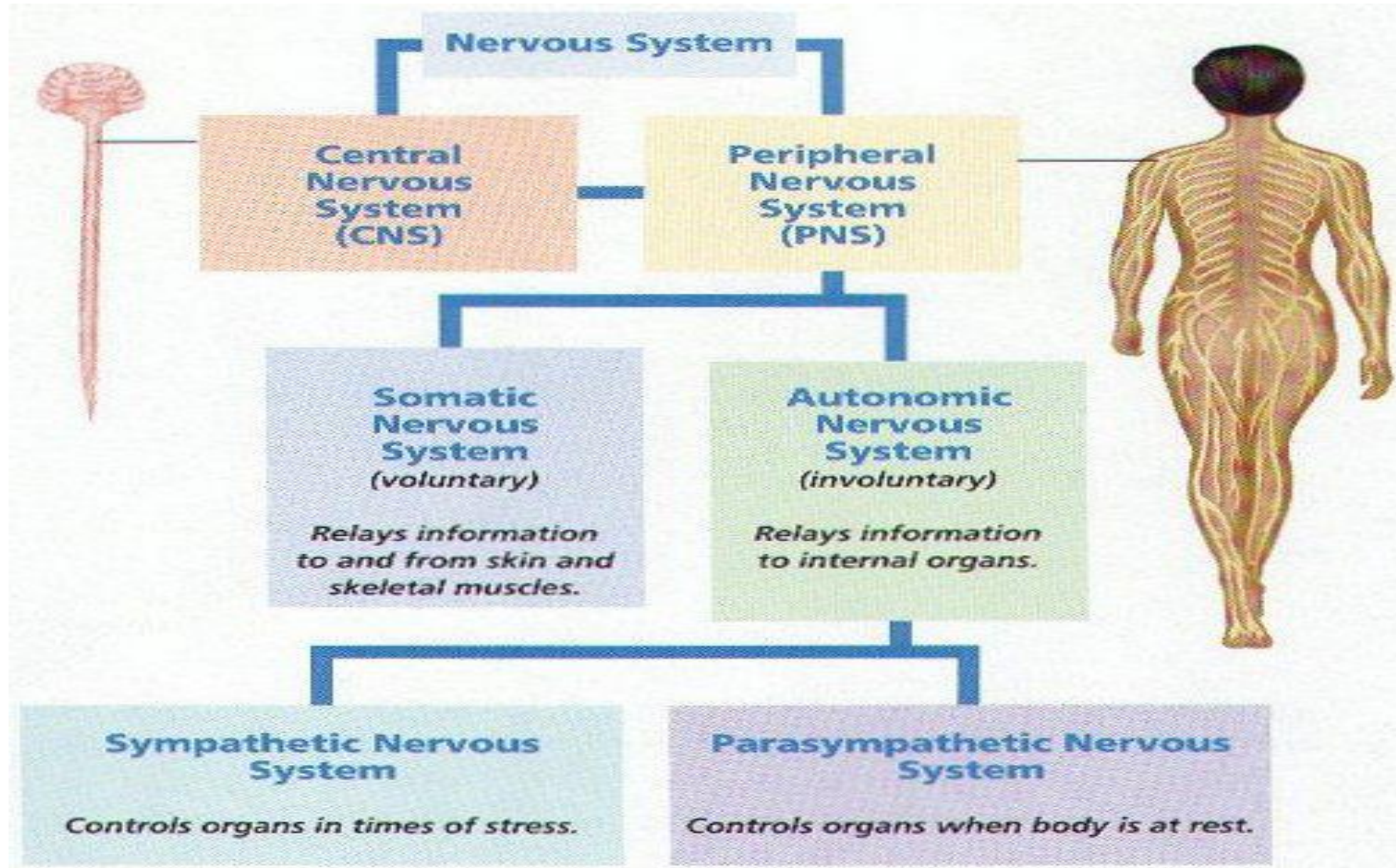
Nervous System

The brain and spinal cord are referred to as **the central nervous system (CNS)**, the nerves connected with the brain are the cranial nerves whilst the nerves connecting the spinal cord to the body are referred to as **the peripheral nervous system (PNS)**.

- **Functions of the Nervous System:**

- 1. Gathers information from both inside and outside the body - **Sensory Function**.
- 2. Transmits information to the processing areas of the brain and spine.
- 3. Processes the information in the brain and spine – **Integration Function**.
- 4. Sends information to the muscles, glands, and organs so they can respond appropriately – **Motor Function**.

- **Nervous System Divisions:**



•Nervous system:

Its consist of from :

- 1- nerve cell or neuron .
- 2- nerve.
- 3- spinal cord.

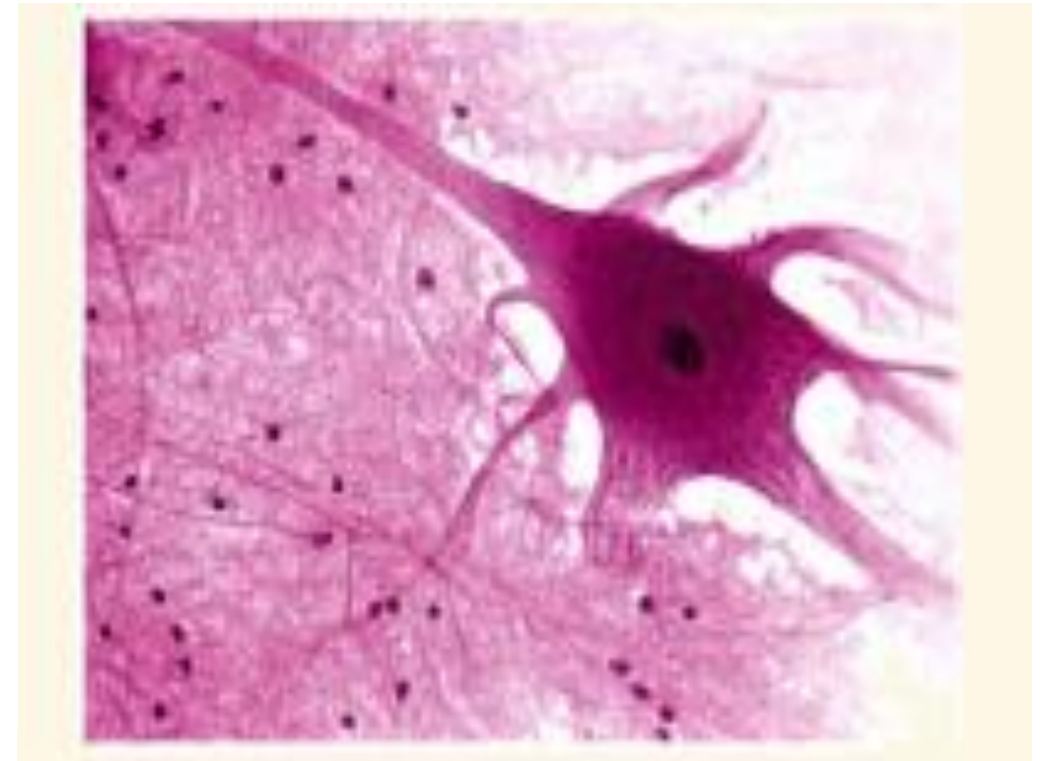
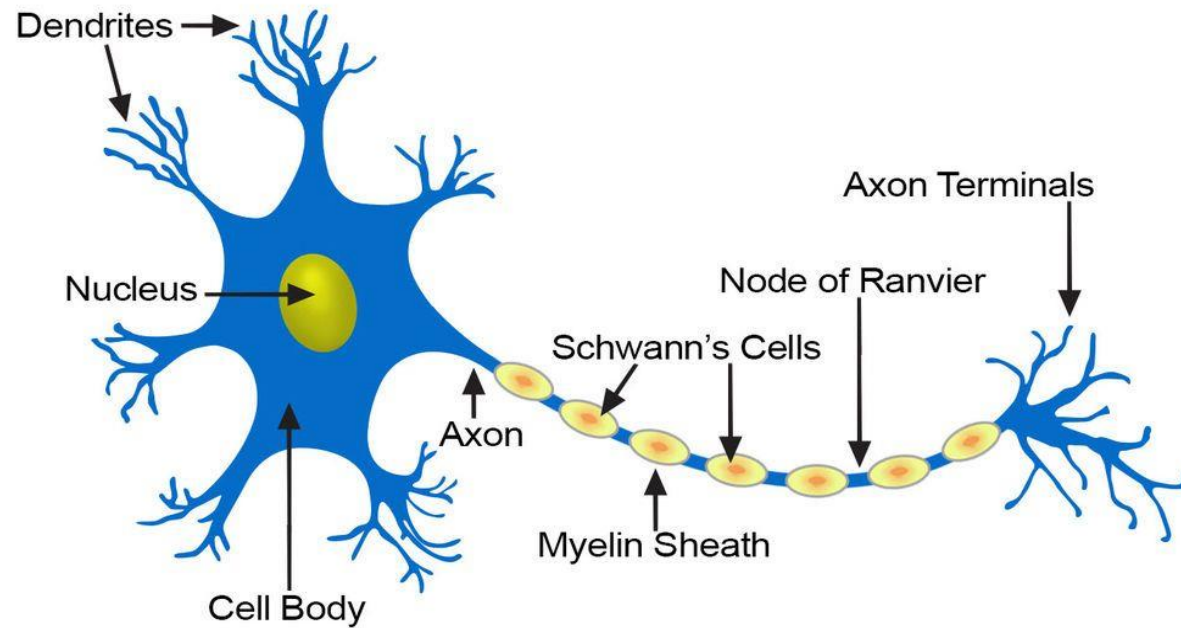
• **Parts of a Neuron**

1. **Dendrite** – receive stimulus and carries it impulses toward the cell body
2. **Cell Body with nucleus** – nucleus & most of cytoplasm
3. **Axon** – fiber which carries impulses away from cell body
4. **Schwann Cells-** cells which produce myelin or fat layer in the Peripheral Nervous System
5. **Myelin sheath** – dense lipid layer which insulates the axon – makes the axon look gray
6. **Node of Ranvier** – gaps

• Three types of Neurons

- 1- **Sensory neurons** – bring messages to CNS
- 2- **Motor neurons** - carry messages from CNS
- 3- **Interneurons** – between sensory & motor neurons in the CNS

Structure of a Typical Neuron



2.Nerve

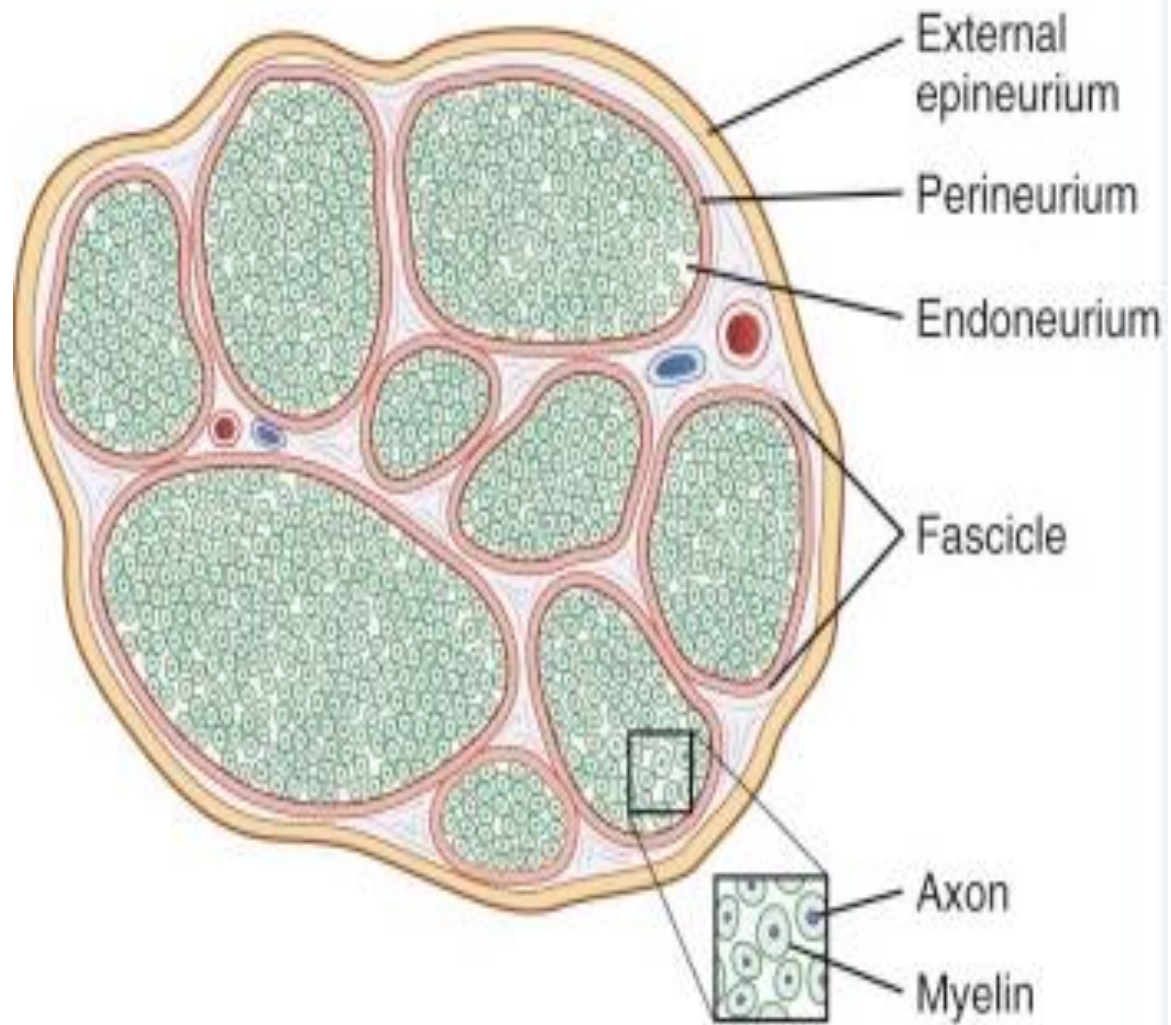
A **nerve** is an enclosed, **cable**-like bundle of nerve fibers called **axons**.

Within a nerve, each axon is **surrounded** by a layer of connective tissue **called the endoneurium**.

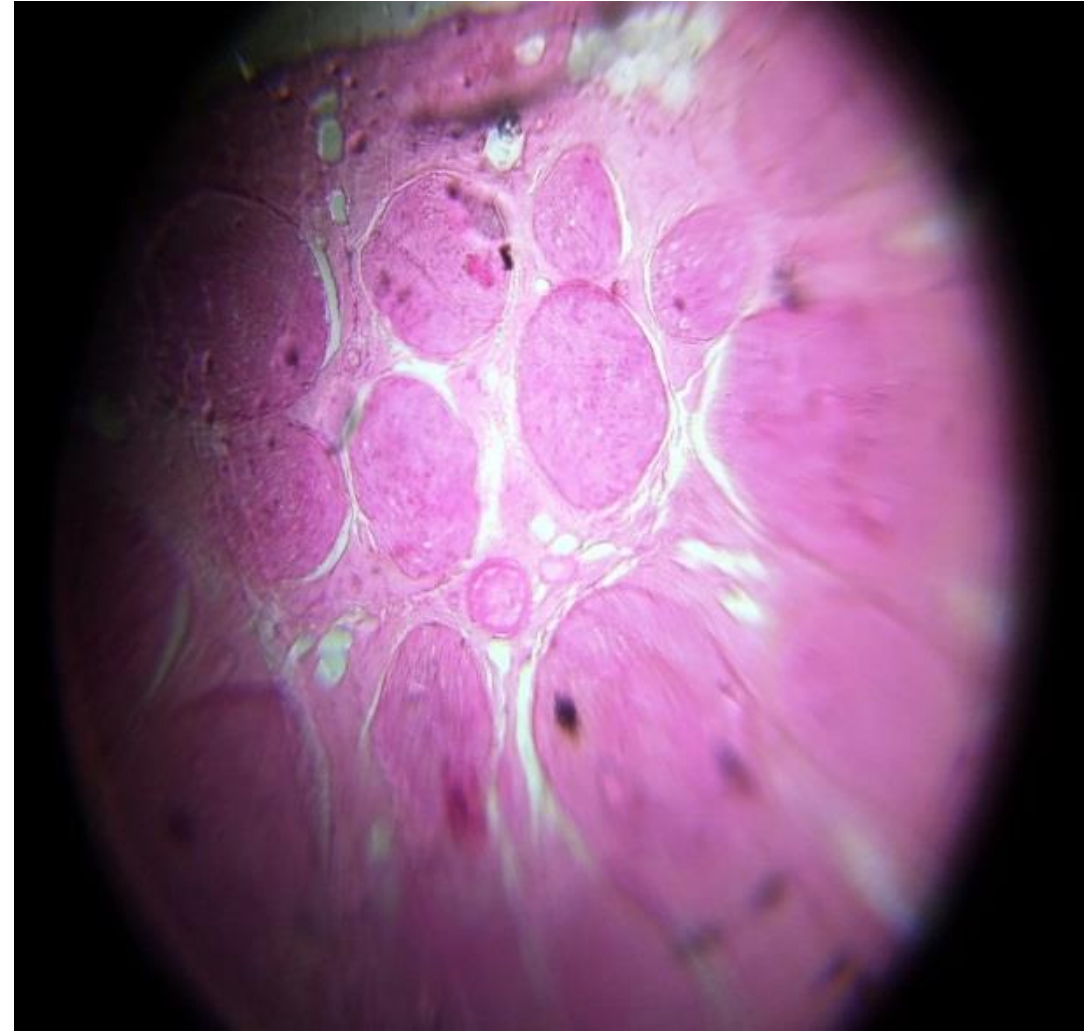
The axons are bundled together into groups **called fascicles**, and each fascicle is wrapped in a layer of connective tissue called **the perineurium**.

Finally, the entire nerve is wrapped in a layer of connective tissue **called the epineurium**. Nerve cells are called neurons.

•2- nerve



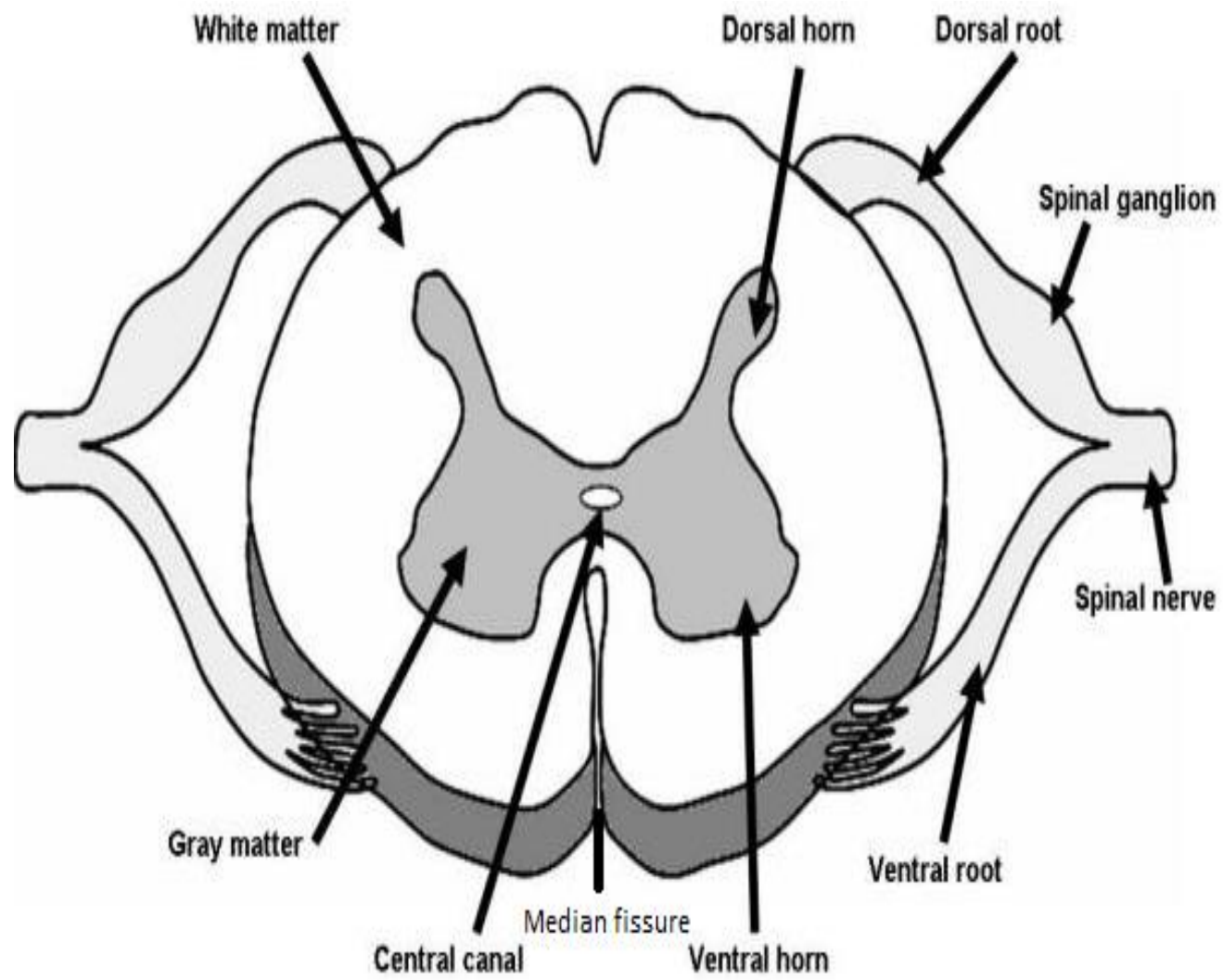
Normal nerve



3- Spinal cord.

The spinal cord connects the brain (central nervous system and peripheral nervous system).

**The spinal cord, is composed of:
gray and white matter in the shape H.**



*Thank
you*

