

English language and medical terminology

Nervous system



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OBJECTIVES

After completing this chapter and the exercises, the student should be able to:

1. Identify the organs of the nervous system.
2. List the functions of the nervous system.
3. Identify and define clinical disorders affecting the nervous system.
4. List and explain medical and surgical procedures used in diagnosing and treating nervous system disorders.
5. List and define psychiatric clinical disorders.
6. Create new medical terms using combining forms and give their meanings.
7. Correctly spell and pronounce new medical terms.



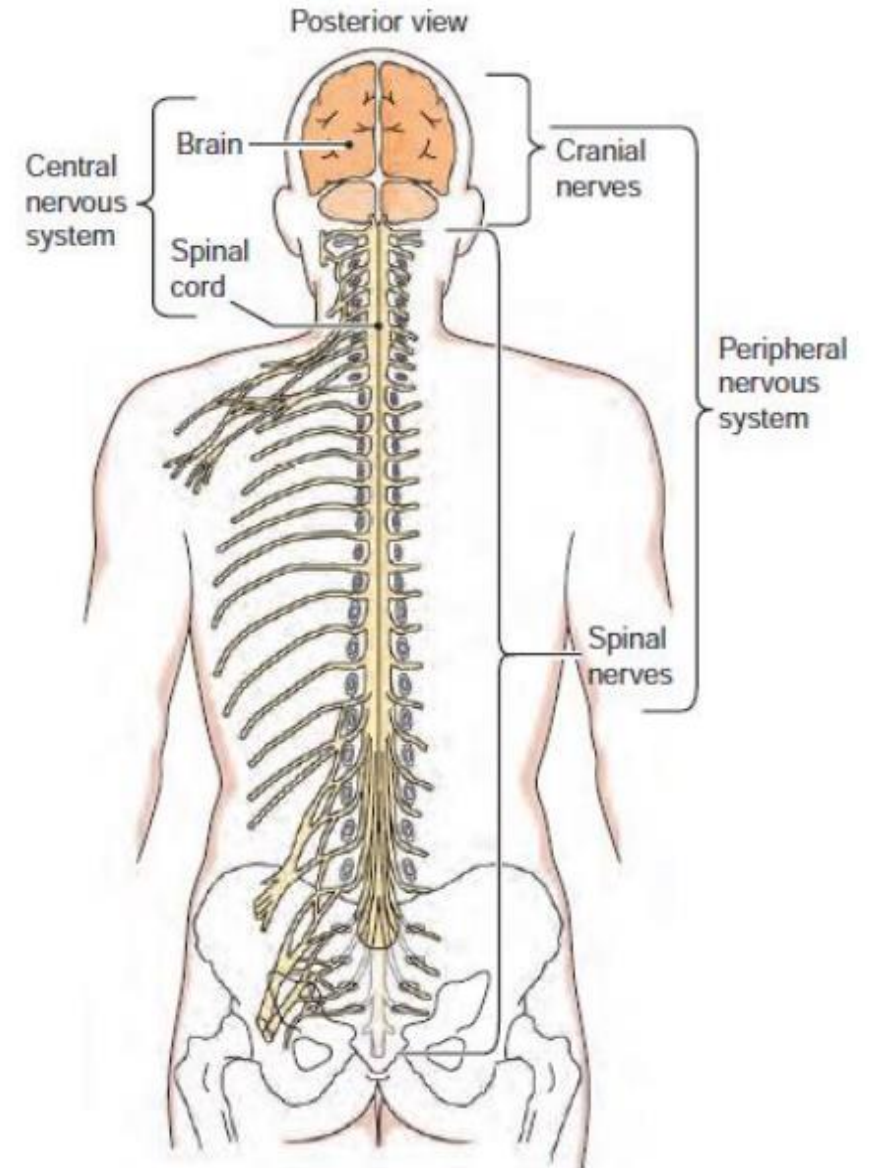
Nervous System

For study purposes, the nervous system may be divided **structurally** into two parts:

- The **central nervous system (CNS)**, consisting of the **brain** and **spinal cord**
- The **peripheral nervous system (PNS)**, consisting of all nervous tissue outside the brain and spinal cord

Functionally, the nervous system can be divided into the:

- **Somatic nervous system**, which controls skeletal muscles
- **Visceral or autonomic nervous system (ANS)**, which controls smooth muscle, cardiac muscle, and glands.



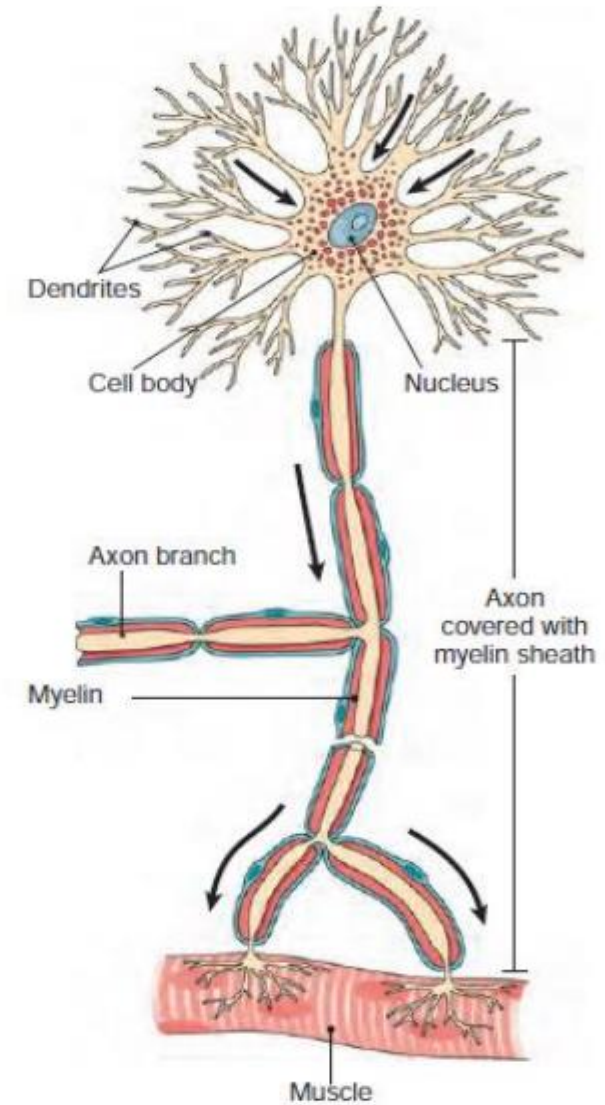
Neurons

The ANS regulates responses to stress and helps to maintain homeostasis.

Two types of cells are found in the nervous system. **Neurons**, or nerve cells, make up the conducting tissue of the nervous system. **Neuroglia** are the cells that support and protect nervous tissue.

The neuron is the nervous system's basic functional unit. Each neuron has two types of fibers extending from the cell body:

- The **dendrite** carries impulses toward the cell body.
- The **axon** carries impulses away from the cell body.

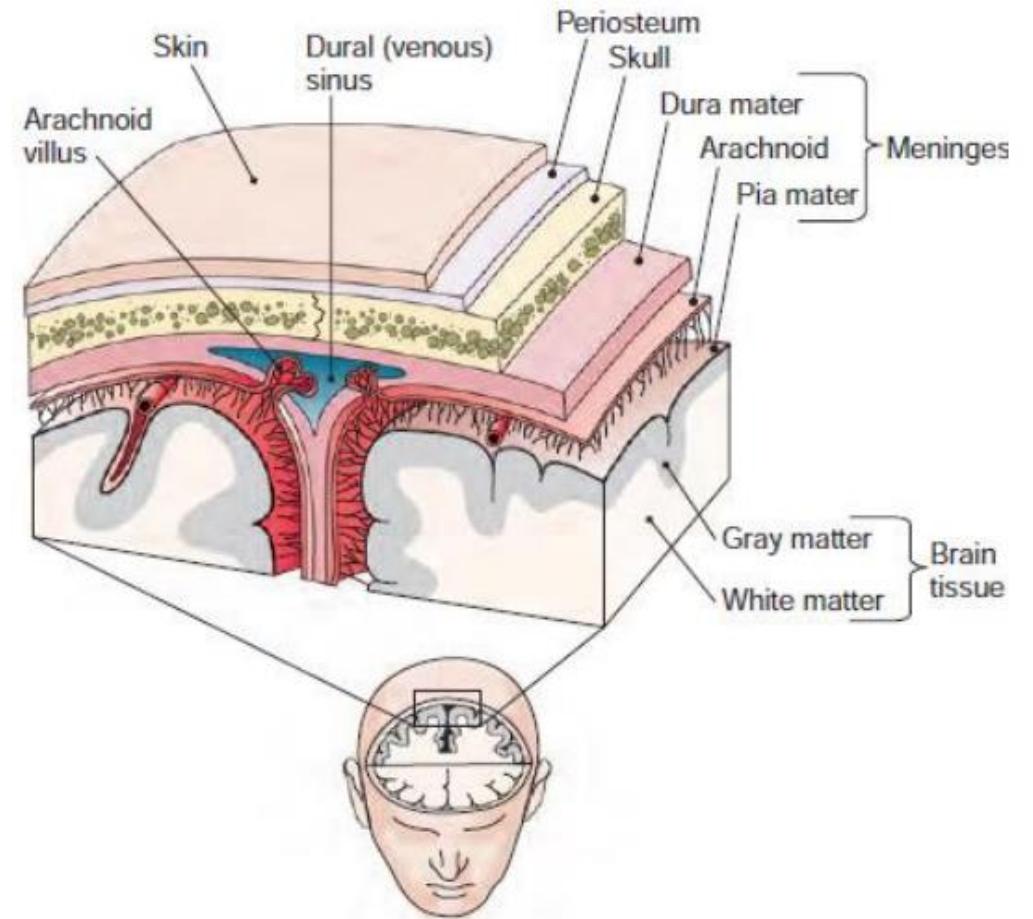


PROTECTING THE BRAIN

Within the brain are four **ventricles** (cavities) in which **cerebrospinal fluid (CSF)** is formed. This fluid circulates around the brain and spinal cord, acting as a protective cushion for these tissues.

Covering the brain and the spinal cord are three protective layers, together called the **meninges**. All are named with the Latin word *mater*, meaning “mother,” to indicate their protective function. They are the:

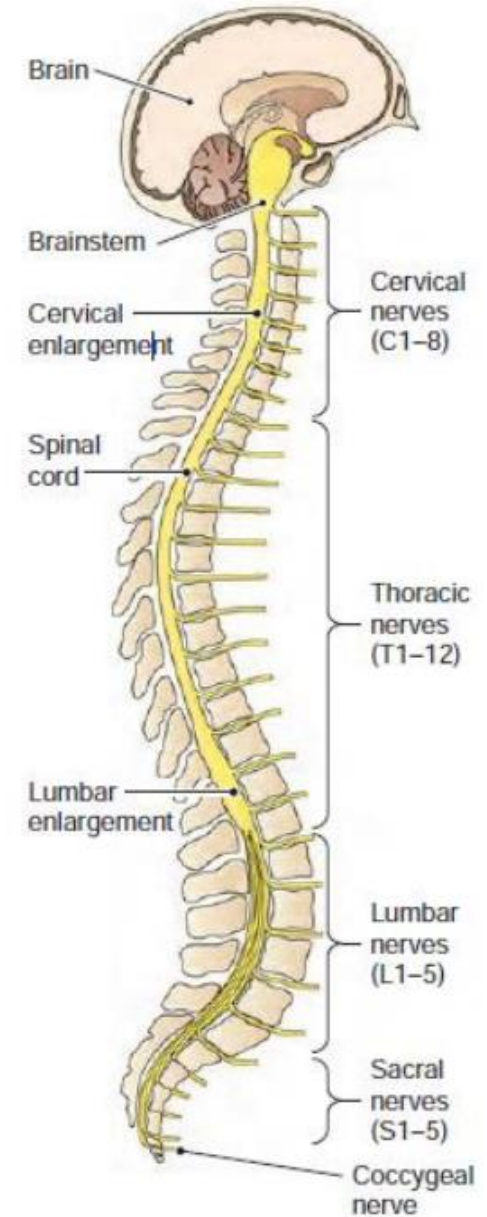
- **Dura mater**, the outermost and toughest of the three. *Dura* means “hard.”
- **Arachnoid mater**, the thin, web-like middle layer. It is named for the Latin word for spider, because it resembles a spider web.
- **Pia mater**, the thin, vascular inner layer, attached directly to the tissue of the brain and spinal cord. *Pia* means “tender.”



THE SPINAL NERVES

Thirty-one pairs of spinal nerves connect with the spinal Cord. These nerves are grouped in the segments of the cord as follows:

- Cervical: 8
- Thoracic: 12
- Lumbar: 5
- Sacral: 5
- Coccygeal: 1



The Cranial Nerves

NUMBER	NAME	FUNCTION
I	olfactory ol-FAK-tō-rē	carries impulses for the sense of smell
II	optic OP-tik	carries impulses for the sense of vision
III	oculomotor ok-ū-lō-MŌ-tor	controls movement of eye muscles
IV	trochlear TROK-lē-ar	controls a muscle of the eyeball
V	Trigeminal trī-JEM-i-nal	carries sensory impulses from the face; controls chewing muscles
VI	abducens ab-DŪ-sens	controls a muscle of the eyeball
VII	Facial FĀ-shal	controls muscles of facial expression, salivary glands, and tear glands; conducts some impulses for taste

Suffixes for the Nervous System

Suffix	Meaning	Example	Definition of Example
-phasia	speech	<i>heterophasia</i> <i>het-er-ō-FĀ-zē-a</i>	uttering words that are different from those intended
-lalia	speech, babble	<i>coprolalia</i> <i>kop-rō-LĀ-lē-a</i>	compulsive use of obscene words (copro- means “feces”)
-lexia	reading	<i>bradylexia</i> <i>brad-ē-LEK-sē-a</i>	slowness in reading
-plegia	paralysis	tetraplegia <i>tet-ra-PLĒ--jē-a</i>	paralysis of all four limbs
-paresis*	partial paralysis, weakness	hemiparesis <i>hem-i-pa-RĒ-sis</i>	partial paralysis of one side of the body
-lepsy	seizure	narcolepsy <i>NAR-kō-lep-sē</i>	condition marked by sudden episodes of sleep
-phobia*	persistent, irrational fear	agoraphobia <i>ag-o-ra-FŌ-bē-a</i>	fear of being in a public place (from Greek agora, meaning “marketplace”)
-mania*	excited state, obsession	megalomania <i>meg-a-lō-MĀ-nē-a</i>	exaggerated self-importance; “delusions of grandeur”



Thank you