

Al-Mustaqbal University College
Department of Pharmacy
First Stage
Medical Terminology
Lecture: 7



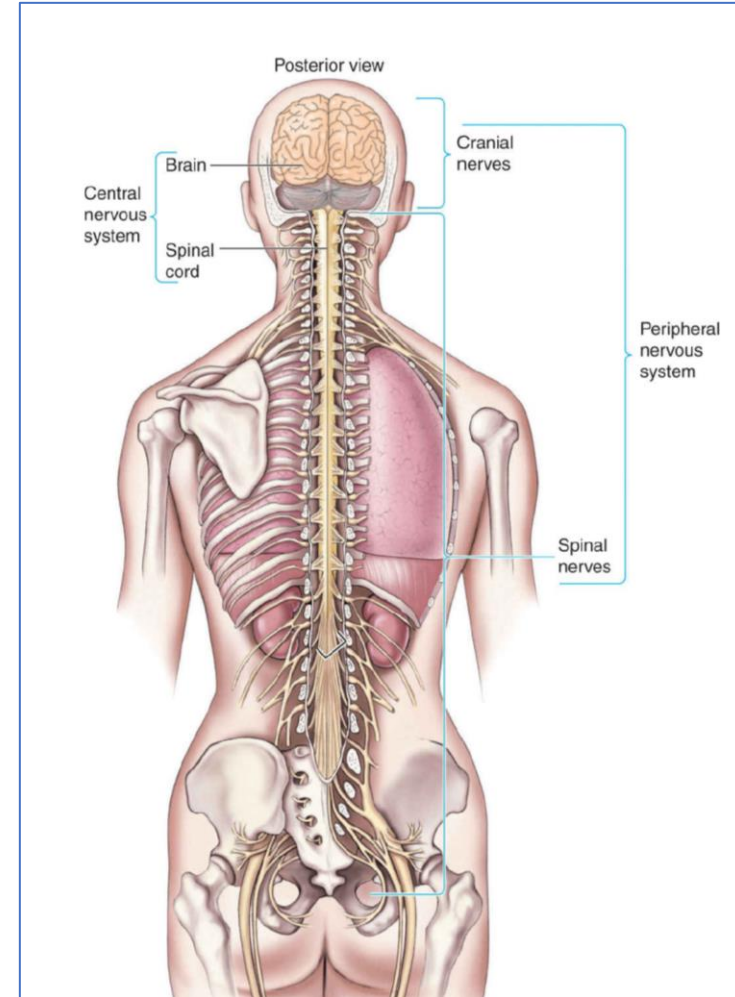
NERVOUS SYSTEM

Dr. Qassim A Zigam

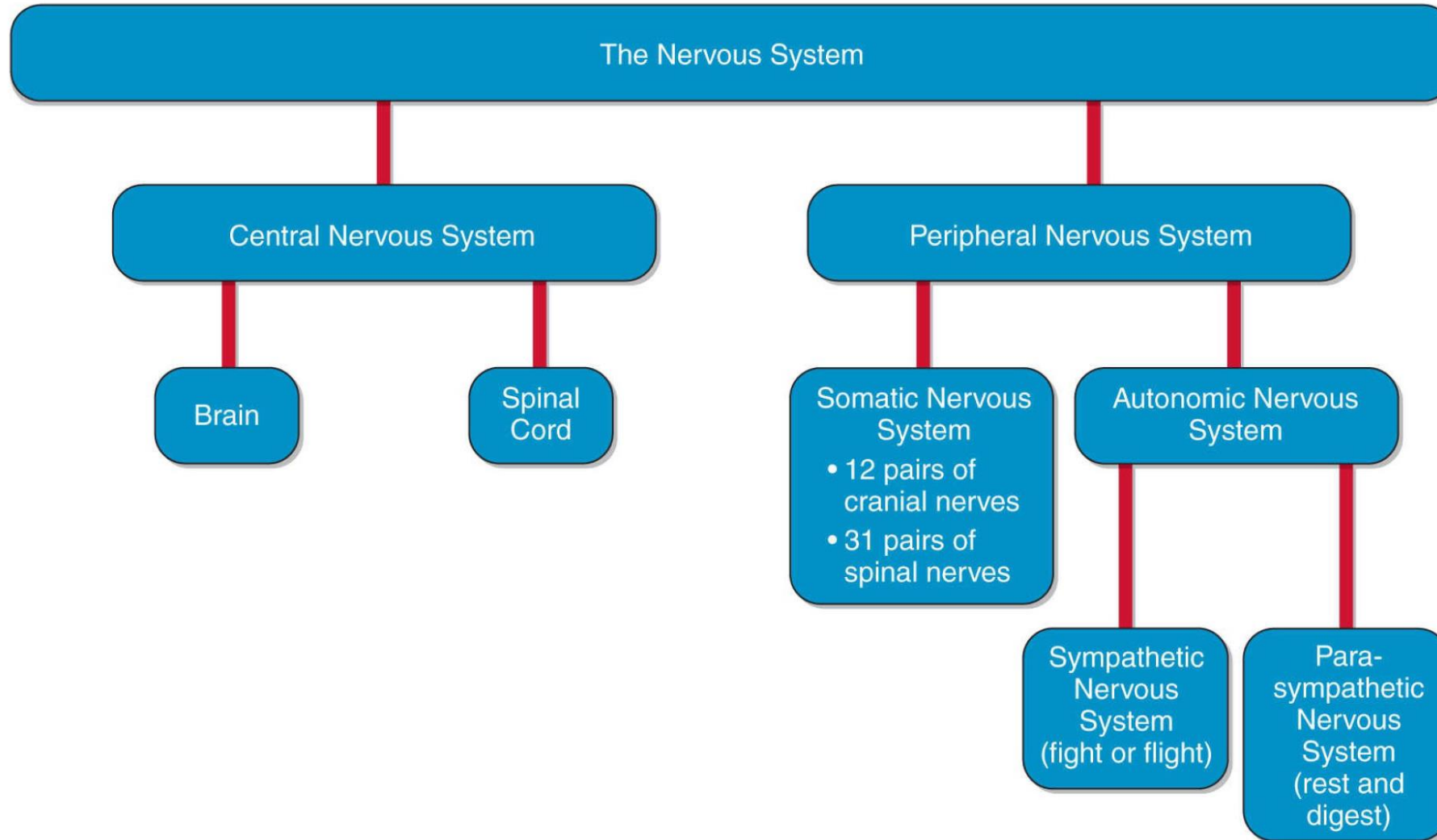
Dr. Weam J Abbas

NERVOUS SYSTEM

- The nervous system, one of the most **complex** systems in the body, **coordinates** the body's **involuntary** and **voluntary** actions.
- It works in **conjunction** with the **endocrine** system to maintain **homeostasis**, a term that means “a state of **equilibrium**.”
- The nervous system also works together with the **muscular** system to control the body's voluntary and involuntary **muscles**.

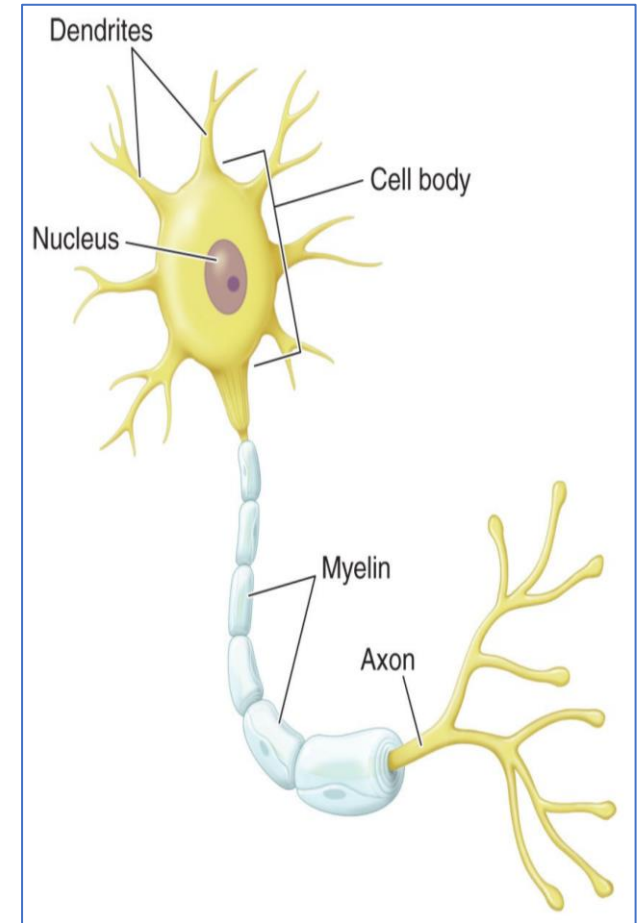


NERVOUS SYSTEM



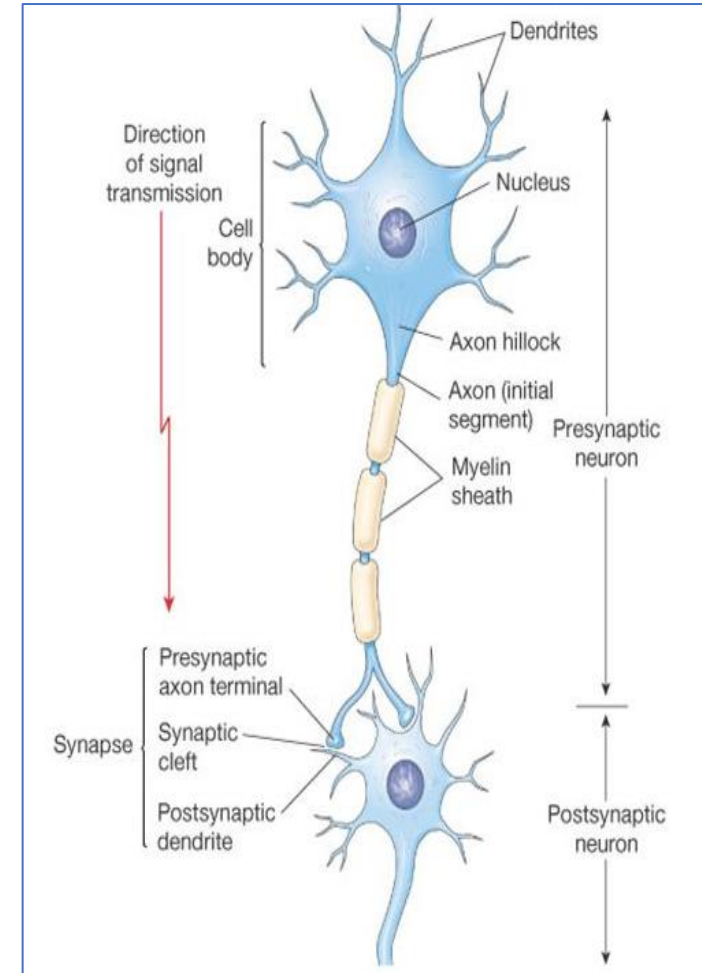
NERVOUS SYSTEM

- Nerve tissue is composed of fundamental units called **neurons** (nerve cells), which are separated, supported, and protected by specialized cells called **neuroglia**.
- The **three** main parts of a neuron cell are its **cell body**, **dendrites**, and **axon**.
- The **cell body** contains the **nucleus** and receives nerve impulses (action potentials) from other cells through the dendrites.
- The **dendrites**, which **project** outward from the cell body, act as **antennae** that receive and transmit messages between the neuron and muscles, skin, other neurons, or glands.



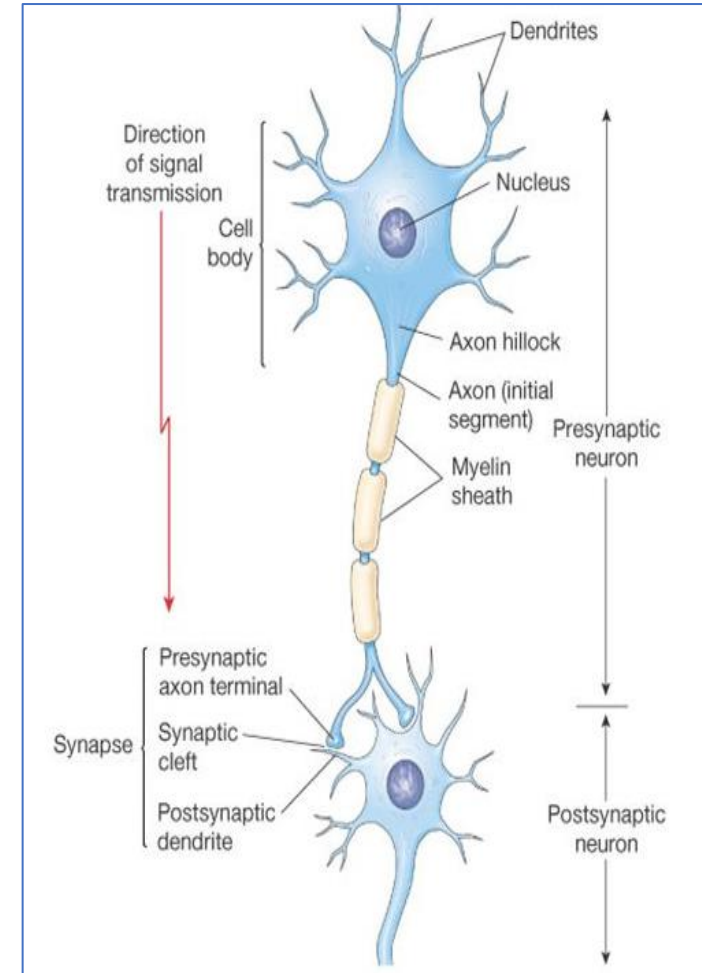
NERVOUS SYSTEM

- The **cell body** passes these messages to the **axon**, which conducts nerve impulses away from the cell body.
- **Axons** are **covered by myelin**, a white fatty material that provides protection and insulation.
- The **connecting points** for these message transfers are called **synapses**.
- The stimulus between the two cells is usually a chemical called a **neurotransmitter**.



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NERVOUS SYSTEM

cephal/o	head
cerebell/o	cerebellum
cerebr/o	cerebrum; also, the brain in general
cortic/o	outer layer or covering
crani/o	cranium, skull
encephal/o	brain
gangli/o	swelling or knot
ganglion/o	swelling or knot
hydr/o	water
-mania	morbid attraction to or impulse toward
meningi/o	membrane
ment/o	referring to the mind

NERVOUS SYSTEM

-mnesia	memory
neur/o	nerve, nerve tissue
-oid	resembling
-paresis	slight paralysis
-phobia	fear
-plegia	paralysis
psych/o	mind
schiz/o	to split
spin/o	spine

DISORDERS RELATED TO THE NERVOUS SYSTEM

A. Trauma:

- **Head injuries** can produce skull fractures, hemorrhage, swelling, and direct damage to the brain itself.
- It may be relatively **mild**, involving bruises to brain tissues, or it can be **severe**, causing tissue destruction and massive swelling, it may include:

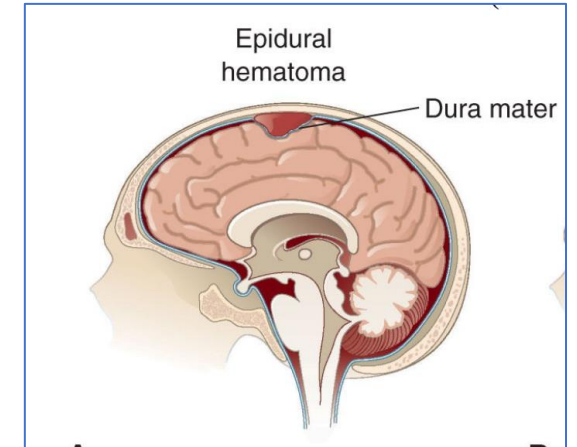
1. Concussion:

- It is an **injury to the brain** resulting from **violent shaking** or a **hit to the head**.
- A concussion may cause **temporary** loss of consciousness followed by a **short period** of amnesia (loss of memory).

DISORDERS RELATED TO THE NERVOUS SYSTEM

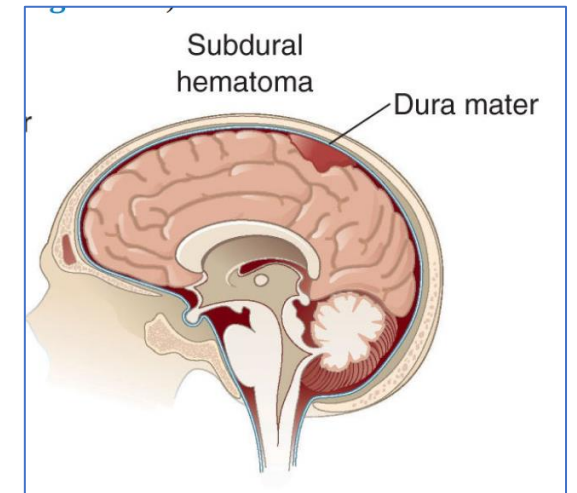
2. Epidural hematoma:

- It occurs when **blood collects** between the dura mater and the skull.
- It may cause **pressure** on the blood vessels and **interrupting** blood flow to the **brain**.



3. Subdural hematoma:

- It is a **collection of blood** trapped in the **subdural space**, the area beneath the dura mater.
- It may result from a hit to the front or back of the head.



DISORDERS RELATED TO THE NERVOUS SYSTEM

B. Vascular Insults:

- A vascular insult is an injury to the **blood vessels**, and may include:

1. Cerebrovascular accident (CVA):

- Also known as a **stroke**, a CVA results from an **interruption of oxygen** caused by blood vessel blockage or rupture, causing hemorrhage (bleeding).

2. Transient ischemic attack (TIA):

- A TIA is a **temporary interruption** in the blood supply to the brain. This is sometimes called a “**ministroke**,” but can indicate serious problems and be a forewarning of a stroke.

3. Cerebral aneurysm:

- An aneurysm is a **localized dilation** (widening) of an **artery** caused by weakness in the vessel wall.

DISORDERS RELATED TO THE NERVOUS SYSTEM

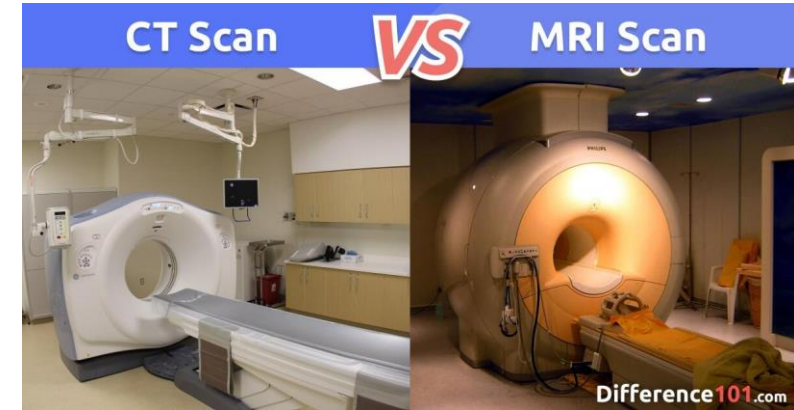
C. Tumors:

- Tumors are **lesions** (regions in an organ that are damaged) or **neoplasms** that may cause localized **dysfunction**, producing an **increase** in intracranial pressure (**ICP**).
- Tumors may be **benign or malignant**.
- An **astrocytoma** is a tumor derived from a star-shaped type of **neuroglia** called an astrocyte.
- A **meningioma** is a tumor derived from the **meninges** surrounding the brain and spinal cord.

TESTS, TREATMENTS, AND SURGICAL PROCEDURES

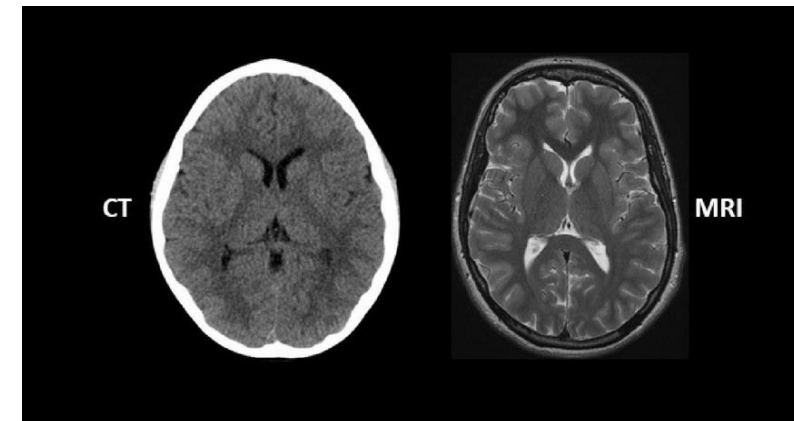
1. Computed tomography (CT):

- It is a **noninvasive radiologic** test that uses a computer to produce **cross-sectional** images of the soft-tissue structures of the **brain and spinal cord**.



2. Magnetic resonance imaging (MRI):

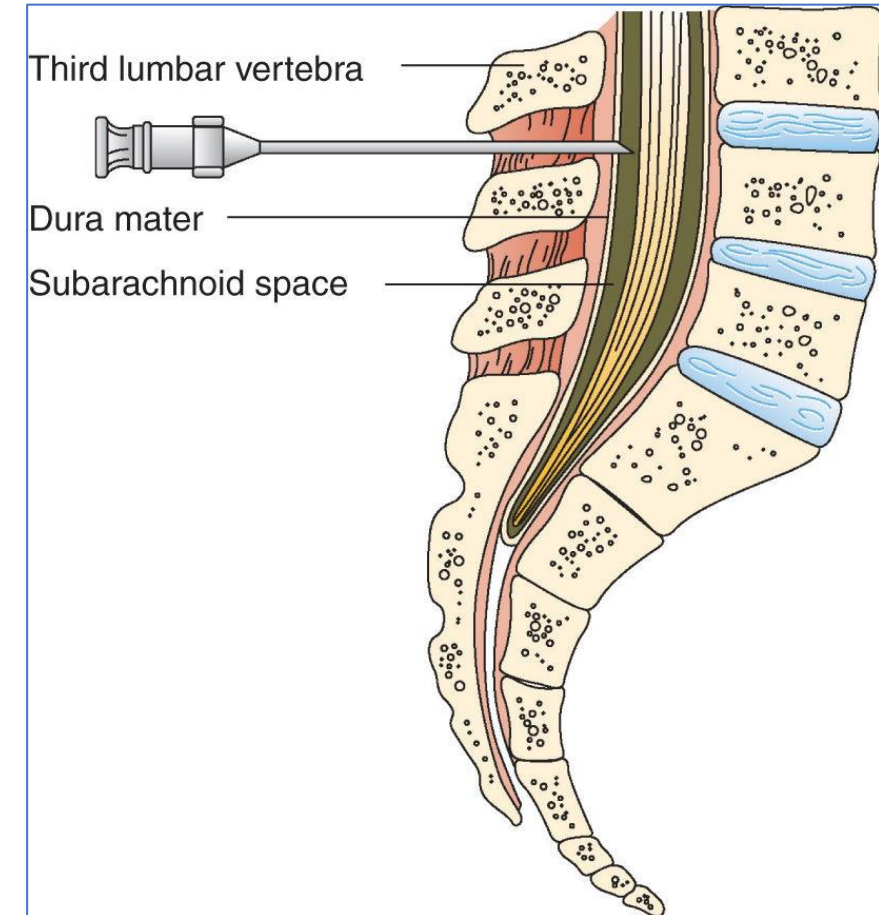
- It uses **radio waves** and a very strong **magnetic field** to produce images of the **neural soft tissues**.
- It is used to **visualize disease-related changes** in the brain or spinal cord that conventional **X-ray** procedures **cannot detect**.



TESTS, TREATMENTS, AND SURGICAL PROCEDURES

3. Lumbar puncture (LP):

- It requires the **insertion** of a **needle** into the **subarachnoid space** (the area between the arachnoid mater and pia mater) between the **third and fourth** or **fourth and fifth** lumbar vertebrae to **withdraw CSF** for analysis.



PRACTICE AND PRACTITIONERS

1. **Neurologists** are medical specialists trained in the diagnosis and treatment of **neuromuscular disorders**.
2. **Neurosurgeons** are physicians specialized in **operations** on the brain, spinal cord, spinal column, and peripheral nerves.
3. **Psychiatrists** are physicians who treat **behavioral and mental** health disorders.
4. The healthcare professional with an **advanced academic degree** who treats **mental and behavioral** disorders is a **psychologist**.



**THANK YOU FOR
YOUR ATTENTION**

