

# اسم المادة و الكورس

## MEDICAL TERMINOLOGY NERVOUS SYSTEM



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..... 2 Stage

جامعة ساوة الاهلية

كلية التقنيات الصحية والطبية

قسم تقنيات التخدير

المرحلة الثانية .

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Lecture No. ....

نظري

Theoretical

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# OBJECTIVE



- structure of nervous system
- types of cell
- function of N . S

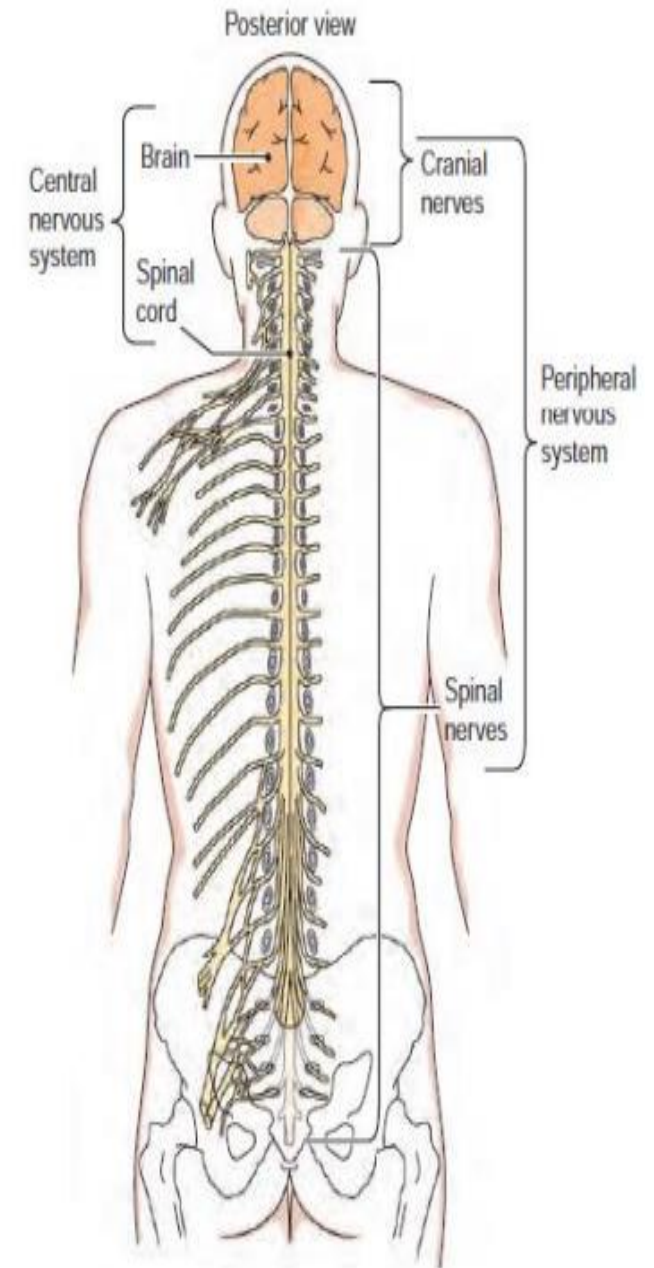
# Nervous System

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.



**Nerve tissue** is composed of 2 main types of cells in both central and periphera.

1 nerve tissue: 

**1. Nerve cells or neurons,** responsible for conduction, propagation, and reception of nervous impulses. Processes called axons or dendrites extend from these cells.

**2. Glial cells,** which have short processes, support and protect neurons, and participate in many neural activities, neural nutrition, and defense of cells in the CNS.

## Functions of Nervous System

- 1- Coordinates and controls body function
- 2- Receives sensory input   3- Makes decisions.   4- Orders body response.

**Neurons:** nerves that carry impulses from and to the tissues

**Afferent:** carry impulses toward a central structure

**Efferent:** carry impulses away from a central structure  
**Polyneuritis:** inflammation of many nerves

**Neurosurgery:** treating nervous system disease by surgical means

**Paresthesia :** Sensation of numbness or tingling.

**Cerebr:** cerebrum

**Cerebral palsy :** paralysis that affects movement, speech and learning ability due to brain trauma during birth

**Cephal:** head

**Hydrocephalus:** Accumulation of fluid in the brain, causing increased intracranial pressure (ICP).

**Encephalitis:** brain inflammation

**Encephalocele** means herniation or protrusion of portions of the brain and meninges through a bony midline defect in the skull

**Meninges:** membranes surrounding the brain and spinal cord (Dura, arachnoid and Pia matter)

**Meningioma:** tumor of meninges

**Myel:** spinal cord

**Myeloma:** tumor of spinal cord

**Poliomyelitis:** inflammation of the gray matter of the spinal cord

**Lumber puncture (spinal puncture):** Needle puncture of the spinal cavity to extract spinal fluid or to introduce anesthetic agents

**Blood brain barrier (BBB):** Protective mechanism that blocks substances found in the bloodstream from entering the brain

**Cerebrovascular accident (CVA):** infarct due to loss of blood supply to brain; commonly called a stroke

**Transient ischemic attack (TIA):** temporary interference with blood supply to brain; may lead to a CVA



Bell palsy: Facial paralysis caused by disorder of the seventh cranial nerve

Paraplegia: 

Panplegia:

**Synalgia:** pain experienced in a part of the body other than the place of pathology. right shoulder pain is commonly associated with gallstones.

**Epilepsy:** uncontrolled electrical activity of brain causes seizures and loss of consciousness

**Tremors:** involuntary repetitive alternating movements

**Convulsion (seizures):** Any sudden and violent contraction of muscles

**Hypnotics:** Depress central nervous system (CNS) functions promote sedation and sleep

**Lethargy:** Abnormal inactivity or lack of response to normal stimuli

**Migraine:** specific type of headache with severe pain, light sensitivity, dizziness, and nausea

**Autism**: Developmental disorder characterized by extreme withdrawal and inability to communicate even on a basic level. A person may engage in repetitive behavior, such as repeating words

**Alzheimer's disease**: disorder characterized by progressive dementia, disorientation and apathy

**Parkinson's disease**: chronic disorder of brain with tremors, weakness and muscle rigidity **Electromyography**: Recording of electrical signals of muscles

**Electroencephalography**: Recording of electrical activity in the brain

**Echoencephalography**: Ultrasound technique used to study intracranial structures of the brain

|                          |                                                                                                                        |
|--------------------------|------------------------------------------------------------------------------------------------------------------------|
| <b>Dementia</b>          | impaired intellectual function                                                                                         |
| <b>Dysphasia</b>         | impaired speech                                                                                                        |
| <b>encephalitis</b>      | inflammation of the brain                                                                                              |
| <b>Epilepsy</b>          | CNS disorder often characterized by seizures                                                                           |
| <b>meningioma</b>        | tumor of the meninges                                                                                                  |
| <b>Meningitis</b>        | inflamed meninges                                                                                                      |
| <b>Myelitis</b>          | inflammation of the spinal cord                                                                                        |
| <b>Neuralgia</b>         | pain in a nerve                                                                                                        |
| <b>neuropathy</b>        | a disease involving the cranial, central, or autonomic nervous systems                                                 |
| <b>paresthesia</b>       | Numbness                                                                                                               |
| <b>Parkinson disease</b> | disease of the nerves in the brain due to an imbalance of dopamine                                                     |
| <b>poliomyelitis</b>     | inflamed gray matter of the spinal cord                                                                                |
| <b>schizophrenia</b>     | a severe mental illness characterized by auditory hallucinations, and an inability to distinguish reality from fiction |
| <b>Vertigo</b>           | Dizziness                                                                                                              |

## Endocrine System:

The endocrine system (end/o means “**within**”; crin/o means “**secrete**”) consists of glands that produce special chemicals called hormones. This system is responsible for maintaining homeostasis, a balance or stable condition within the body.

Unlike the nervous system, the endocrine system responds more slowly to internal changes in the body. Its release of hormones is regulated by the nervous system.

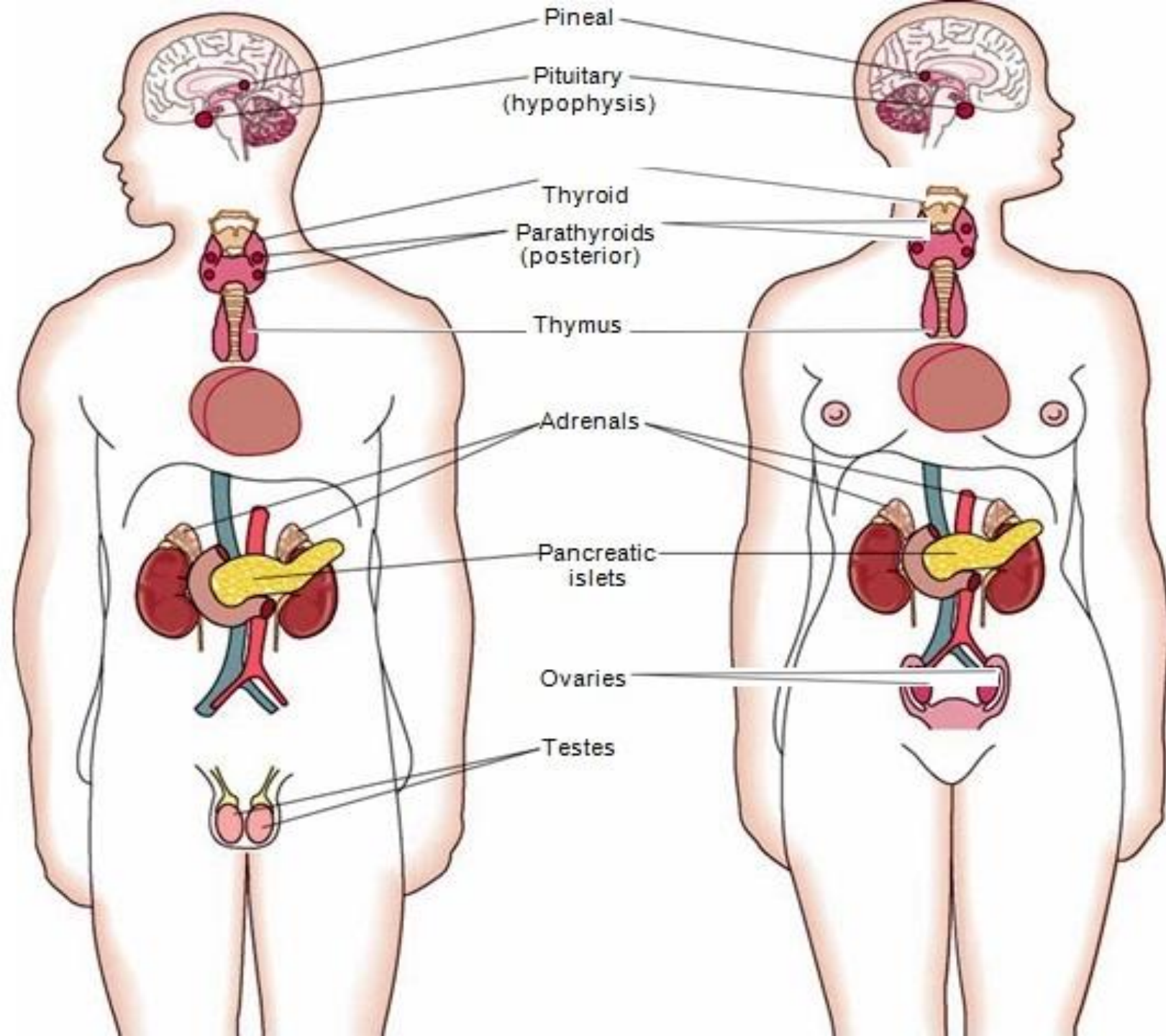
**Endocrinology** is the medical practice of treating endocrine and hormonal disorders. The practitioner, the **endocrinologist** specializes in caring for patients with endocrine diseases and hormonal dysfunctions that may involve sexual development, body growth, or other body functions.

**The functions are:** • To regulate the metabolic functions of the body.

- To regulate the rate of chemical reactions in various cells.
- To influence the ability of substances to transport themselves through cell membranes.

**Glands** Discharge hormones directly into the bloodstream. They have built in feedback mechanisms that maintain a proper balance of hormones, and prevent excess hormone secretion. Low concentrations of a hormone will often trigger the gland to secrete. Once the concentrations of the hormone in the blood rise this may cause the gland to stop secreting, until once again hormone concentrations fall. This feedback mechanism causes a cycle of hormone secretions.

**Hormones** are secreted from the glands of the endocrine system, they are specific in each hormone causes a response in a specific target organ or group of cells. Exocrine hormones are secreted via a duct into the blood and usually effect a distant organ or tissue. Endocrine hormones are secreted within the tissue and enter the blood stream via capillaries.



| Term                               | Meaning                                                                                                                          |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>adenogenous</b>                 | originating in a gland                                                                                                           |
| <b>adrenal glands</b>              | two glands, one located at the top of each kidney;<br>adrenal cortex is the outer portion, adrenal medulla is the inner portion. |
| <b>adrenaline</b>                  | Synonym for epinephrine, secreted from the adrenal medulla.                                                                      |
| <b>Adrenocorticotrophic (ACTH)</b> | pituitary secretion that stimulates the adrenal glands.                                                                          |
| <b>calcitonin</b>                  | hormone secreted by the thyroid gland to prevent too much calcium from absorbing into the bones                                  |
| <b>cortisol</b>                    | steroid produced by the cortices of the adrenal glands                                                                           |
| <b>endocrine</b>                   | adjective describing a gland that delivers its secretions directly into blood stream.                                            |
| <b>epinephrine</b>                 | Synonym for adrenaline, secreted from the adrenal medulla.                                                                       |
| <b>estrogen</b>                    | one of two hormones secreted by the ovaries.                                                                                     |



|                                             |                                                                                                                    |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| <b>exocrine</b>                             | adjective describing a gland that delivers its secretions through a duct onto the skin or other epithelial surface |
| <b>glucagon</b>                             | hormone secreted by the pancreas                                                                                   |
| <b>insulin</b>                              | one of two hormones produced in the pancreas                                                                       |
| <b>islets of Langerhans</b>                 | clusters of specialized cells in the pancreas that secrete insulin                                                 |
| <b>melanocyte-stimulating hormone (MSH)</b> | hormone secreted from the anterior pituitary gland                                                                 |
| <b>melatonin</b>                            | hormone secreted by the pineal gland                                                                               |
| <b>oxytocin</b>                             | hormone secreted by the posterior pituitary gland.                                                                 |
| <b>progesterone</b>                         | one of two female hormones secreted by the ovary                                                                   |
| <b>prolactin (PRL)</b>                      | a secretion of the anterior pituitary gland                                                                        |
| <b>testosterone</b>                         | male hormone secreted by the testes                                                                                |
| <b>thyroxine (T4)</b>                       | a secretion of the thyroid gland                                                                                   |

|                                  |                                                                                                                          |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>triiodothyronine (T3)</b>     | another secretion of the thyroid gland                                                                                   |
| <b>acromegaly</b>                | enlargement of the extremities (mostly hand and feet) caused by excessive secretion of the growth hormone after puberty. |
| <b>adenitis</b>                  | inflammation of a gland                                                                                                  |
| <b>adrenalitis</b>               | inflammation of an adrenal gland                                                                                         |
| <b>adrenalopathy</b>             | any disease of the adrenal glands                                                                                        |
| <b>adrenomegaly</b>              | enlargement of the adrenal glands                                                                                        |
| <b>diabetes mellitus, Type 1</b> | condition brought about by insufficient production of insulin in the pancreas                                            |
| <b>gigantism</b>                 | abnormal overgrowth of the body due to excessive secretion of the growth hormone before puberty                          |
| <b>glycosuria</b>                | sugar in the urine                                                                                                       |
| <b>goiter</b>                    | chronic enlargement of the thyroid gland                                                                                 |
| <b>hyperpituitarism</b>          | excessive hormone secretion by the pituitary gland                                                                       |
| <b>hyperthyroidism</b>           | condition caused by an overactive thyroid                                                                                |
| <b>pituitarism</b>               | any pituitary dysfunction                                                                                                |
| <b>thyroiditis</b>               | inflammation of the thyroid gland                                                                                        |