

Neur World

Discover the System That Controls It All

Why do we rapidly move our hands when we accidentally touch something hot?

Why do we feel miserable when failing an exam?

How do we have the ability to move, breathe, smell or even think?

We are capable of all these actions because of one thing,

“The Nervous System”

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Nervous System

1. Definition

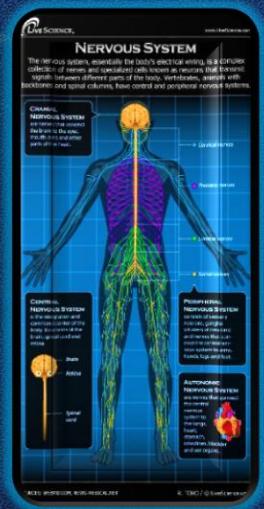
A **Nervous System** is a very sophisticated network, it co-ordinates the actions and sensory information in the body by sending signals from many different areas.

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Structure

1. Description

The system contains many crucial organs such as the **Brain** and the **Spinal Cord** which make up the center of the entire system and the **Nerves** which make up the peripheral Nervous system.



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2. Details



1. Brain

I) Definition

A **Complex organ** that controls the thoughts, emotions and memory of the body and regulates essential functions like breathing and heart rate.

II) Appearance

The brain's **Appearance** is soft, with many layers of pink and grey tissues folded many times repeatedly

III) Structure

The brain consists of a (**Cerebrum, Cerebellum and a Brainstem**)

IV) Cerebrum

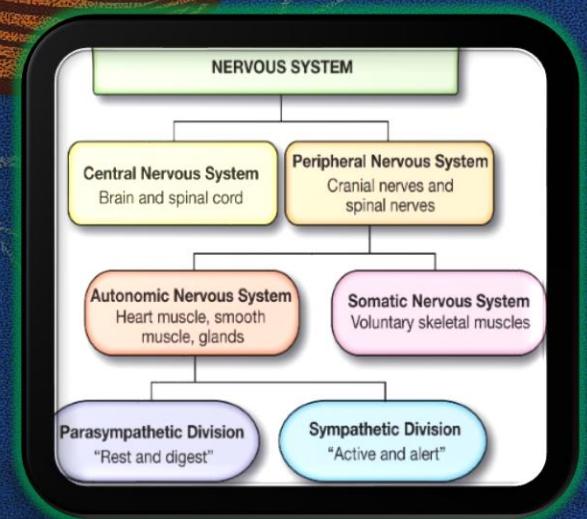
The Cerebrum is the largest part of the brain, it's divided into 2 hemispheres, and each hemisphere is divided into 4 lobes. The lobes are each associated with a specific job.

The Frontal lobe: controls the executive functions of the body such as (planning, problem-solving and movement)

Parietal lobe: processes sensory information like (touch, taste and temperature change)

Temporal lobe: in charge of memory, language comprehension and visual recognition, which helps interpret complex stimuli

Occipital lobe: primarily responsible for vision



v) Cerebellum

The **Cerebellum** is smaller than the **Cerebrum** and is located at the back of the brain right beneath it

Function: the **Cerebellum** co-ordinates the muscle memory and maintains balance (if it is struck the person cannot be in equilibrium at all)

vi) Brain stem

The base of the brain that connects the Cerebrum to the **Spinal cord**

Structure: consists of midbrain, pons and medulla oblongata

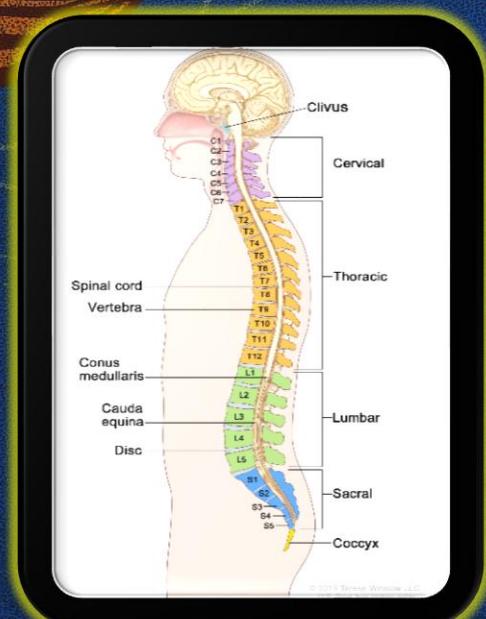
Functions: regulates essential automatic functions such as breathing, blood rate and sleep cycles

2. Spinal Cord

i) Definition

A long essential column made up of several nerve tissues, extending from the **Brain stem** all the way down to the hip bone

Function: Central communication pathway between the **Brain** and the rest of the body





3. Nerves

I) Definition

Bundles of fibers that transmit **Electrical signals** from the **Brain** and throughout the whole body and back

Structure: Cable-like structure made of Nerve fibers known as axons

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Protection

1. Description

As a very **sensitive system** it is only natural that each organ has a very complex line of **protection** for its organs.

Brain: protected by the **Skull**

Spinal cords: protected by the **Vertebra** in the spine

Brain stem: protected by the **Bone Membranes** and **Fluid**

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Diseases

1. Description

The **Nervous system** is a very sensitive system and like every other system it is prone to various types of **Diseases**



2. Examples

I) **Headaches:** many people tend to get headaches for many different reasons some of which are:

1. Causes:



1: Stress and emotional factors: physical or mental stress or even depression can be the main cause of tension headaches

2: Sleep disturbance: being deprived of sleep or getting woken up in the middle of your nap can act like triggers for common headaches

3: Poor physical dilemmas: poor posture, eye strain or muscle tension cause the muscles in the neck to contract and tighten which causes headaches

II) Muscle tension and strain:

It strains the muscles and restricts blood flow to the affected areas; the muscles release inflammatory mediators which activates pain sensitive nerve endings

III) Nerve Irritation:

The irritation and compression of these nerves cause referred pain that radiates into the head, that pain is perceived as a headache often starting in the neck and spreads upwards



IV) Alzheimer

Alzheimer's disease is a very critical condition where the victims of the disease tend to have memory loss or forget certain things such as people's names, important dates or other types of crucial information

1. Causes:

1: Age: the factor with the highest risk rate of getting Alzheimer is age it is most common in individuals that are over the age of 65

2: Genetics: family history increases the risk and there are very specific genes that are major. Rare, deterministic gene mutations cause early Alzheimer

3: Lifestyle and environment: physical inactivity, an unhealthy diet, smoking or excessive alcohol use also play a role in causing the disease

2. Symptoms:

- . Forgetting recent conversations, events or objects
- . Misplacing items in unusual places
- . Difficulty with planning or organizing something



v) Brain Damage:

Brain damage is a very critical and traumatic injuries involving the human brains it is rare but mostly found in people who have had

Falls: it is the most common cause of brain damage especially in older adults

There are also other reasons behind brain damage such as medical or internal factors

Stroke: occurs when blood flow to the brain is interrupted by a clot in the blood or by bleeding



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