
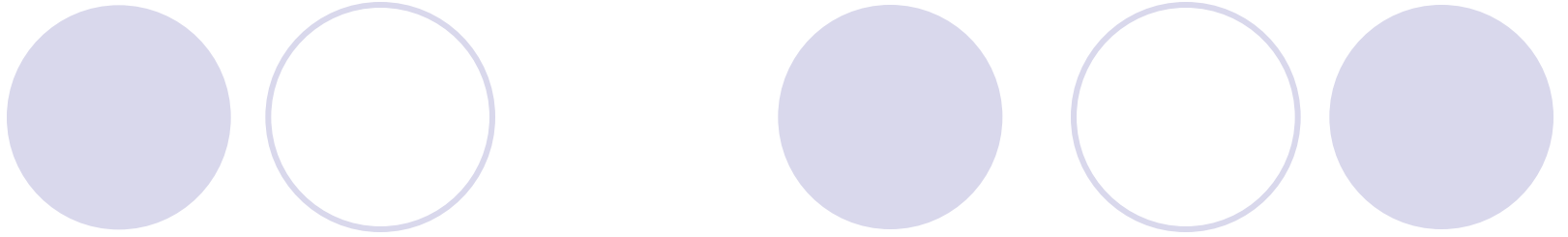




CENTRAL NERVOUS SYSTEM



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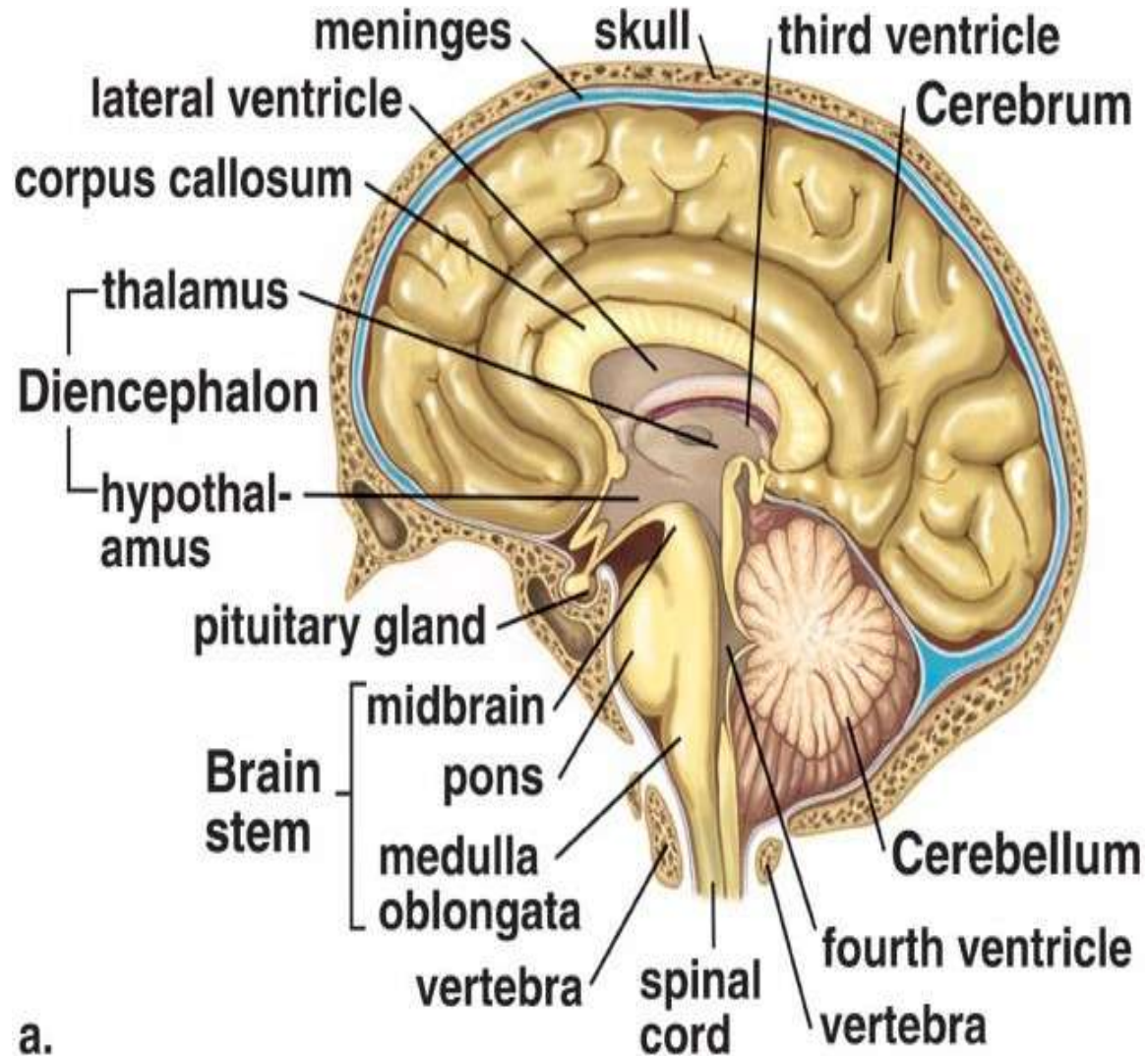
The portion of nervous system that occupies the central position in the body is known as Central Nervous System (CNS). It consists of :

A. BRAIN

B. SPINAL CORD

BRAIN

Brain interprets and stores information and sends orders to muscles, glands and organs.



a.



Structural parts of brain

Brain is divided into three parts:

1. FORE BRAIN
2. MID BRAIN
3. HIND BRAIN

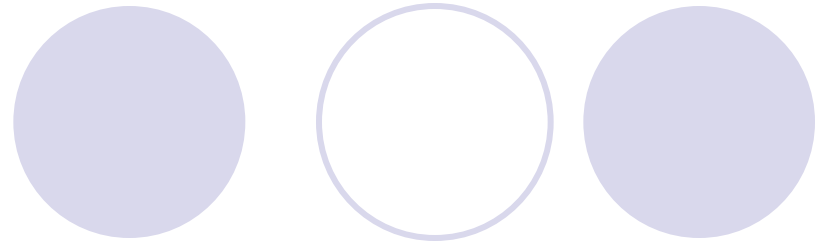
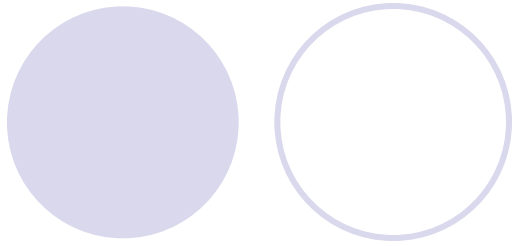


FORE BRAIN

The main structures of fore brain are:

a. **Thalamus:**

A structure deep within the brain that receives sensory input from other portion of the nervous system and then transmits this information to the cerebral hemispheres and other parts of the brain. Therefore, it is also known as Relay station.



b. Hypothalamus:

A small structure deep within the brain that play a key role in the regulation of the autonomic nervous system and of several forms of motivated behaviour such as eating and aggression.



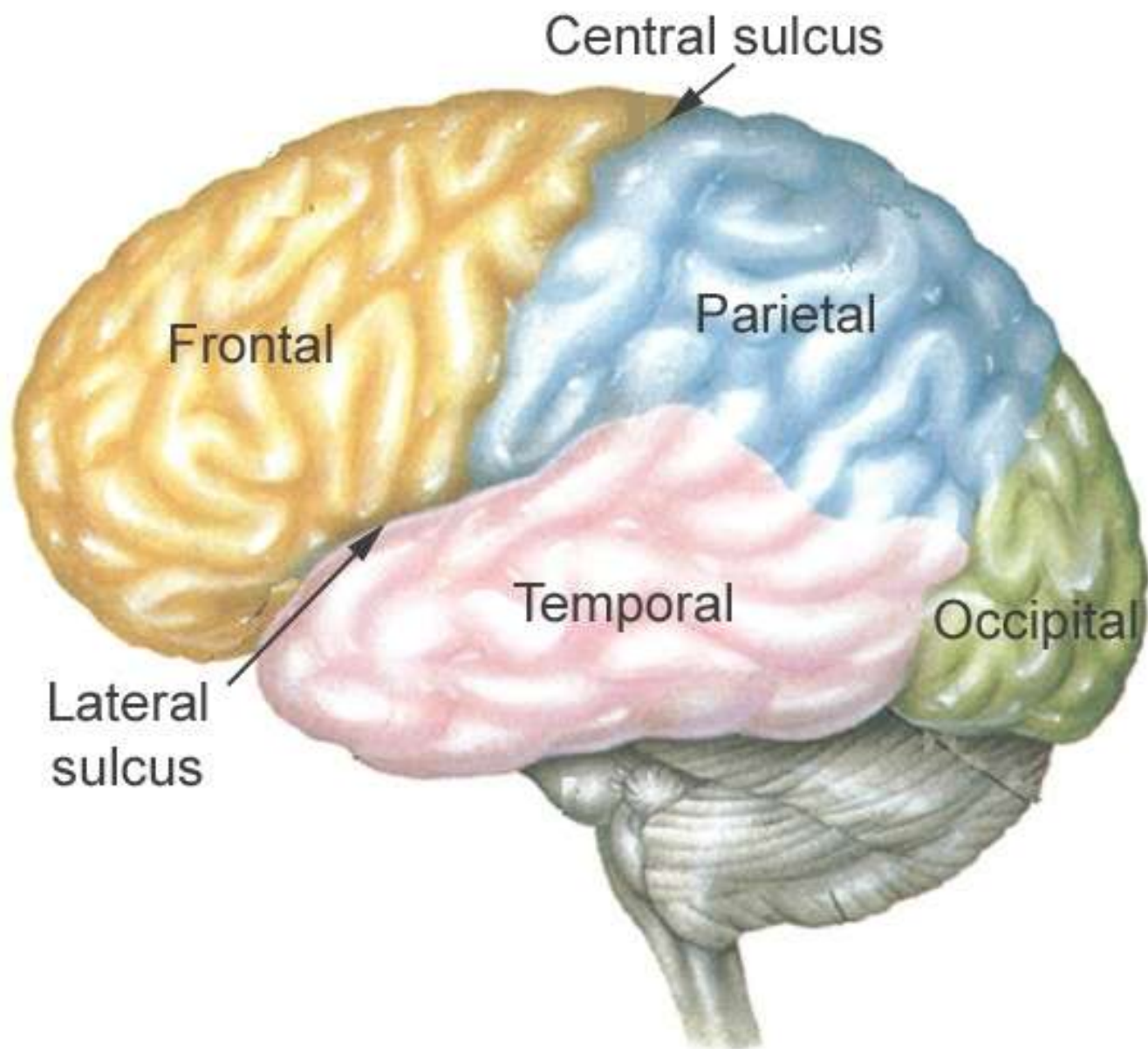
c. Cerebrum:

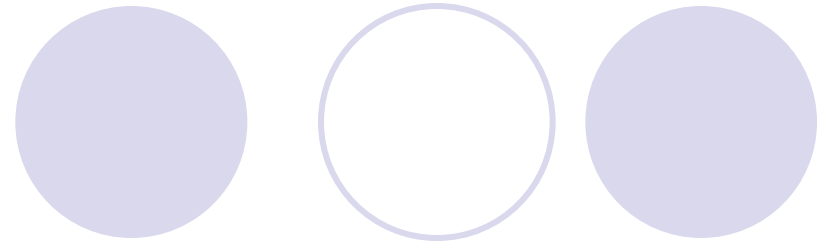
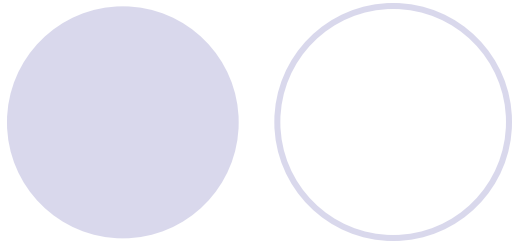
Cerebrum is that part of brain (fore brain) that is responsible for learning, memory, thinking, reasoning, imagination and all higher mental processes. The outer layer of cerebrum is covered by a thick layer of billions of neurons known as Cerebral cortex. Cerebral cortex is divided into two symmetrical halves known as Cerebral hemispheres.

CEREBRAL HEMISPHERE

Cerebral hemispheres are folded into many ridges and grooves or fissures. On the basis of largest fissures, each cerebral hemisphere is divided into four lobes i.e.

- a. The frontal lobe
- b. The parietal lobe
- c. The occipital lobe
- d. The temporal lobe





d. *Limbic system:*

Several structures of forebrain deep within the brain that play a role in emotional reactions and behaviour. The main structures of limbic system are:

- Hippocampus (certain types of memories)
- Amygdala (emotional control and formation of emotional memories)
- Olfactory bulb (sense of smell)



MID BRAIN

- It lies at the end of brain system.
- It contains an extension of the Ascending Reticular Activating System (ARAS).
- It is concerned with primitive centres for vision and hearing:
 - The Superior colliculi (vision) and
 - The Inferior colliculi (hearing)



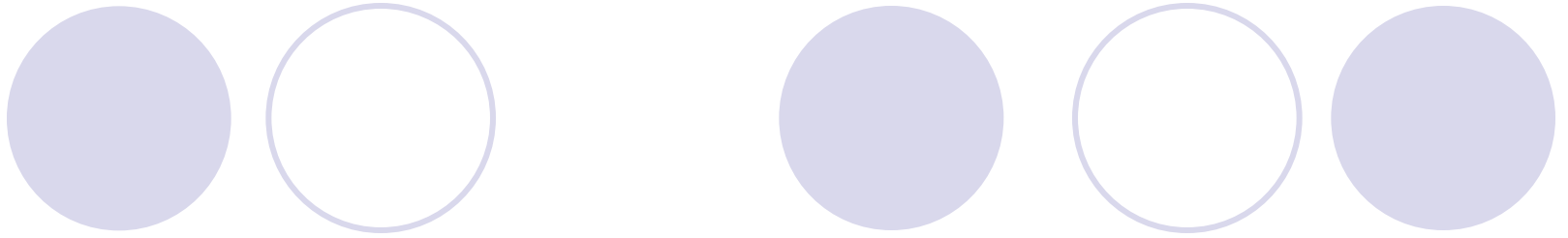
HIND BRAIN

The portion of brain that begins above the spinal cord and continues into the centre.

The main structure of hind brain are:

1. **Pons**:

A portion of the hind brain through which sensory and motor information passes and which contains structures relating to sleep , arousal and the regulation of muscle tone and cardiac reflexes.



2. **Medulla:**

A structure in the hind brain concerned with the regulation of vital bodily functions such as breathing and heartbeat.

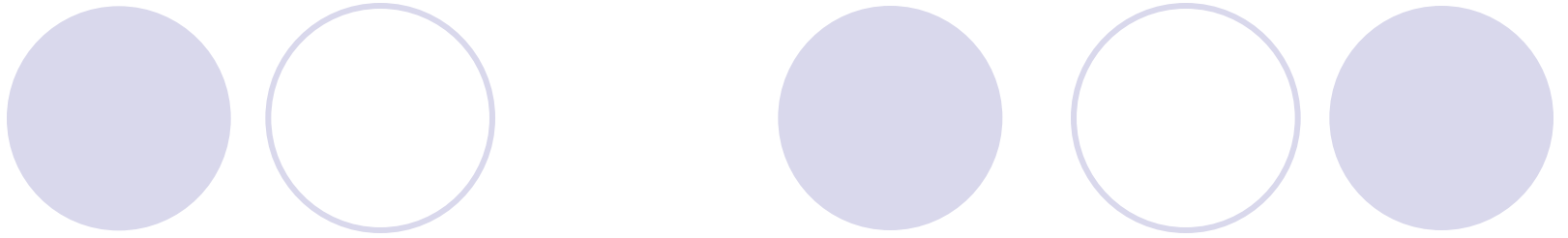
3. **Cerebellum:**

A part of the hind brain concerned with the regulation of basic motor activities.



SPINAL CORD

- ❖ Spinal cord runs through the middle of a bony column of hollow bones known as vertebrae.
- ❖ It is the pathway connecting brain and the peripheral nervous system.
- ❖ It has two major functions:
 - a. It carries sensory information via afferent (sensory) nerve fibres from receptors of the body to the brain and it conducts information via efferent (motor) nerve fibres from brain to muscles and glands.



b. It plays very important role in various reflexes through an arc known as Reflex Arc or Spinal Arc.