

Central Nervous System

Introduction -

Nervous System is a complex network of neurons that regulates bodily processes and is ultimately responsible for all aspects of conscious experience.

It is divided into the Central Nervous System and Peripheral Nervous System.

The peripheral Nervous System communicates with Central Nervous System to allow for interaction with the environment.

NERVOUS SYSTEM

PERIPHERAL NERVOUS SYSTEM

CENTRAL NERVOUS SYSTEM

AUTOMATIC

SOMATIC

BRAIN

SPINAL CORD

SYMPATHETIC

PARASYMPATHETIC

Central Nervous System.

The Central Nervous System (CNS) is made up of the brain and the Spinal Cord - a long, thin collection of nerves fibres attached to the brain's base and which makes its way to the end of the backbone, trailing off in what is called the horse's tail (cauda equina) because of its appearance.

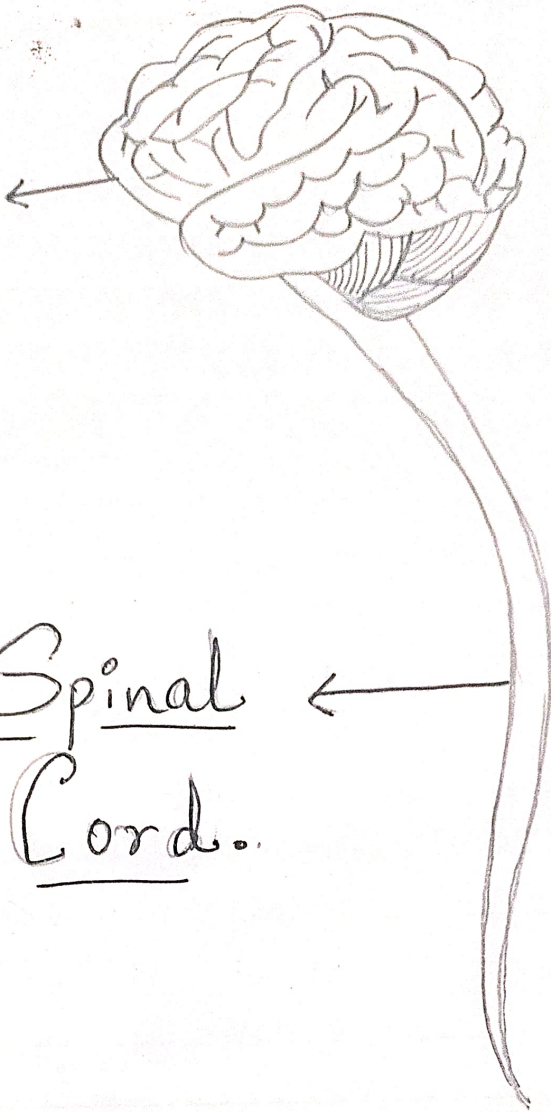
The spinal cord contains nerve cells that control simple reflexes - such as withdrawal from pain - and messages are sent via the spinal cord to the brain.

The brain controls the activities of the body and responds to events outside it. It does this through communication with nerves - bundles of nerve fibres - attached to the spinal cord.

* This network of nerve fibre is called the peripheral nervous system.

Further brain and spinal cord includes substructure.

Brain



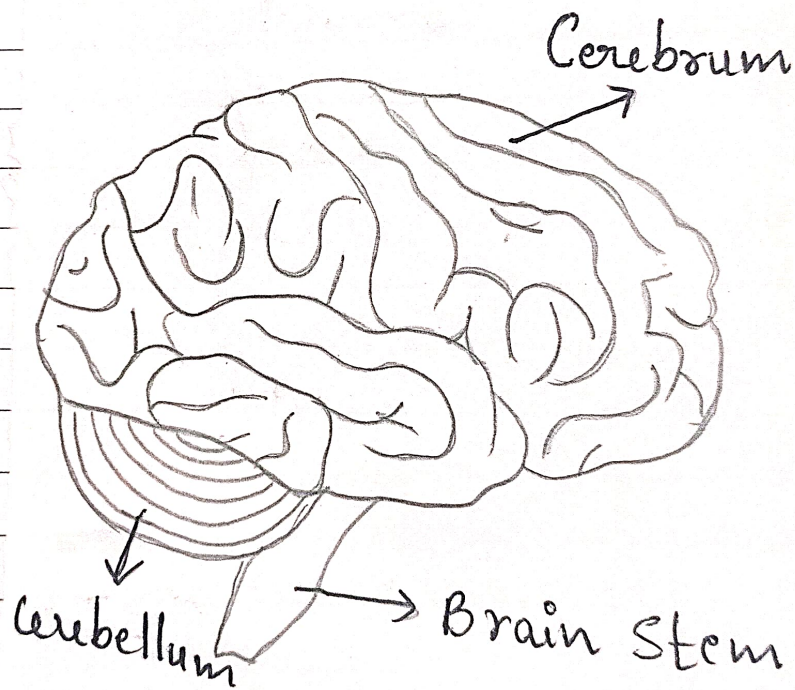
Spinal
Cord.

Central Nervous System.

BRAIN.

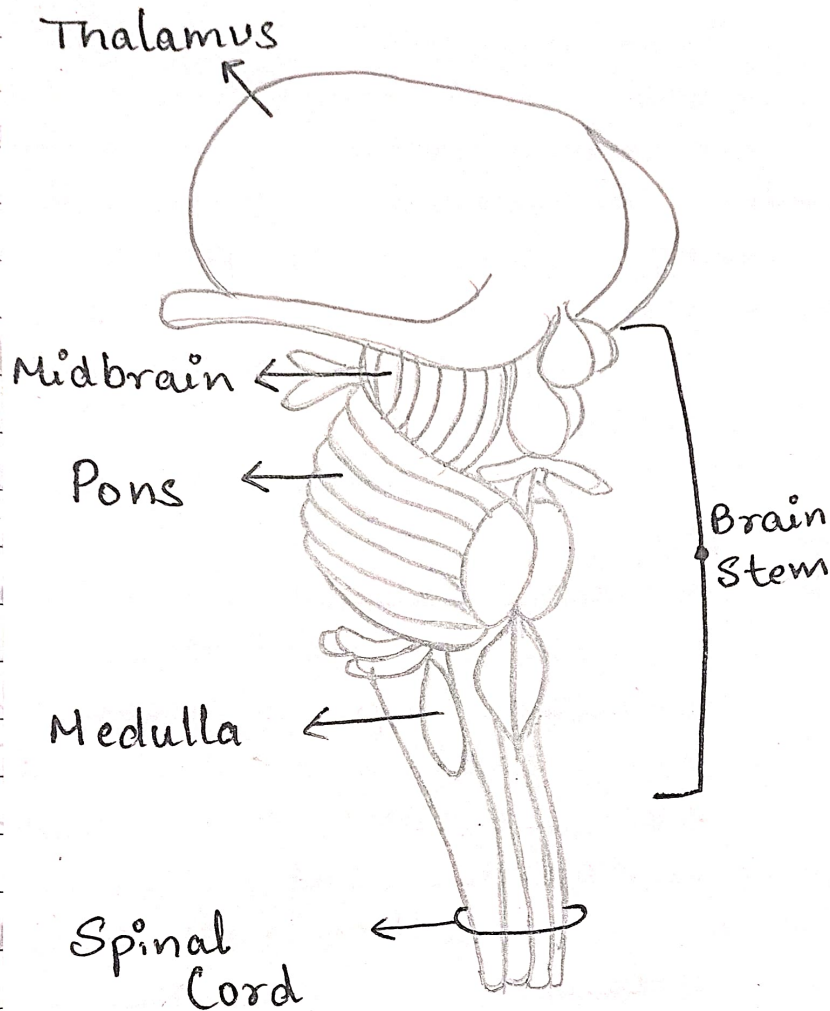
The brain has three quite distinctive physical structures. From bottom to top, these are the brain stem, cerebellum and cerebral hemispheres. The brain stem is attached to the top of the spinal cord and the base of the brain and is the most primitive part

of the brain. The cerebellum is attached to the base of the brain just to the side of the brain stem - looks like a miniature brain itself and the word literally means "little brain". The cerebral hemisphere are viewed as being the most sophisticated part of the brain.



Brain -

Brain Stem



The brain stem represents the upward (rostral, cranial) continuation of spinal cord. It consists of several parts: the lowermost part (caudal) part of brain stem is structurally similar to the spinal cord. The uppermost parts subdivisions are medulla (medulla Oblongata), pons (bridge), and

midbrain (mesencephalon) and
between-brain (diencephalon).

Medulla Oblongata controls fairly
basic, sometimes involuntary,
'internal' behaviours such as heart-
rate, blood pressure and
respiration.

The medulla oblongata
extends into the pons (bridge), a
structure that contains cells that
send projections to the cerebellum.
It also controls facial movements.

The mesencephalon is the next
clear region up from the pons
and is quite short. It contains
four small, rounded 'bumps' called
colliculi. There are 2 pairs - inferior
and superior colliculi and they
are involved in the relay of
auditory and visual information
respectively.

In the core of brain stem, there
is a mass of neurons called
reticular formation, an interesting
collection of fibers. Some part
of it is involved in sleep
others in respiration.
It also helps you stay alert
and attentive to your
surroundings.

There are few symptoms of brain stem damage

- Balance problem
- Dizziness
- Inability to gag or cough
- Insomnia
- Nausea or vomiting.
- Slurred speech
- Stroke symptoms
- Difficulty swallowing, drinking or eating.