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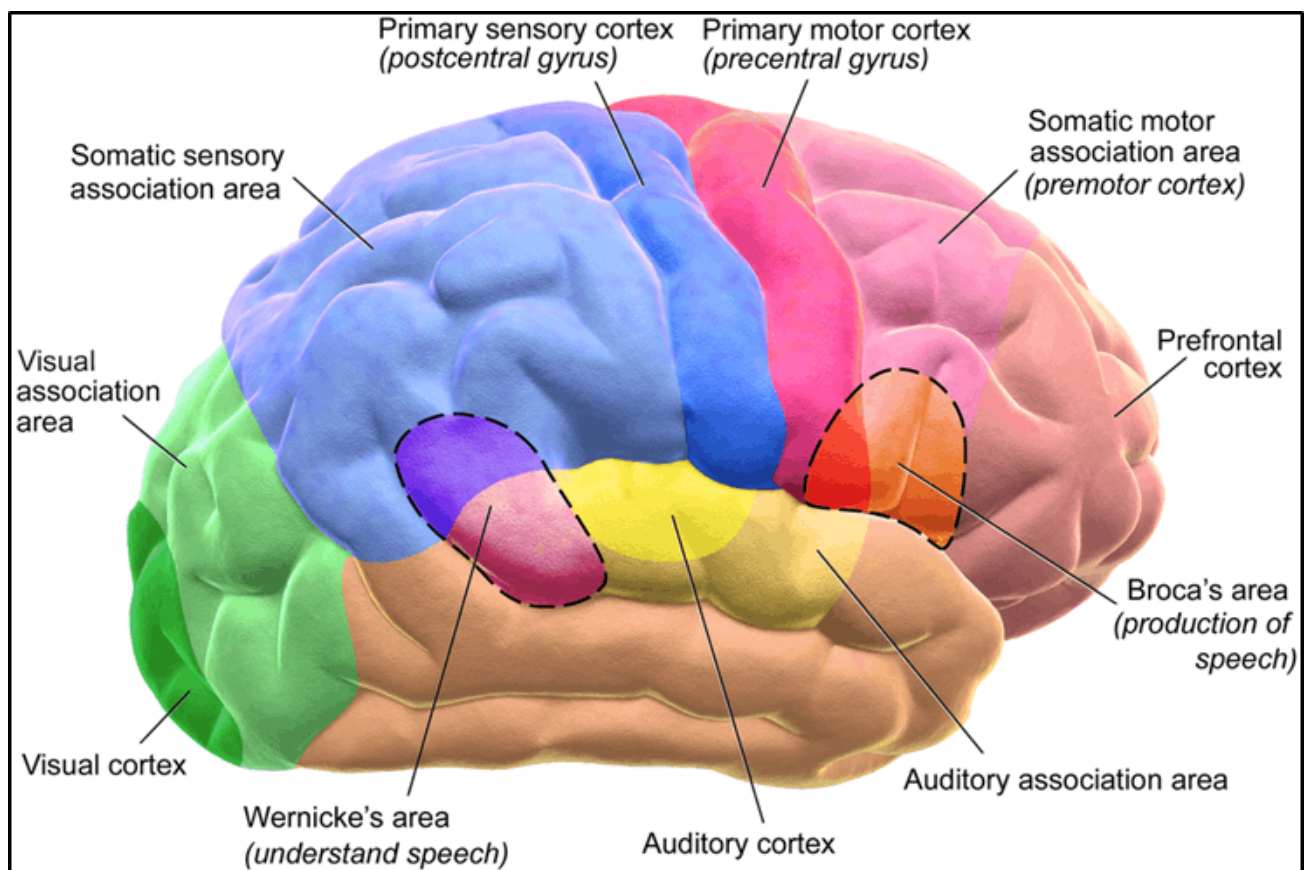
## Human Brain: Introduction to Human Brain, Functional Areas of the Brain

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### Introduction to Human Brain

- The Human Brain acts as the central organ of the human nervous system.
- The spinal cord makes up the central nervous system.
- The skull bones are responsible for protecting the brain.
- Physiological functions to cognitive abilities are controlled by the brain.
- Signals are sent and received via neurons to different parts of the body.
- An adult brain weighs between 1.0 kg – 1.5 kg on an average.
  - Composed of neurons – the fundamental unit of the brain.
  - The nervous system.
- Brain is also responsible for thoughts, interpretation, and origin of control for body movements.

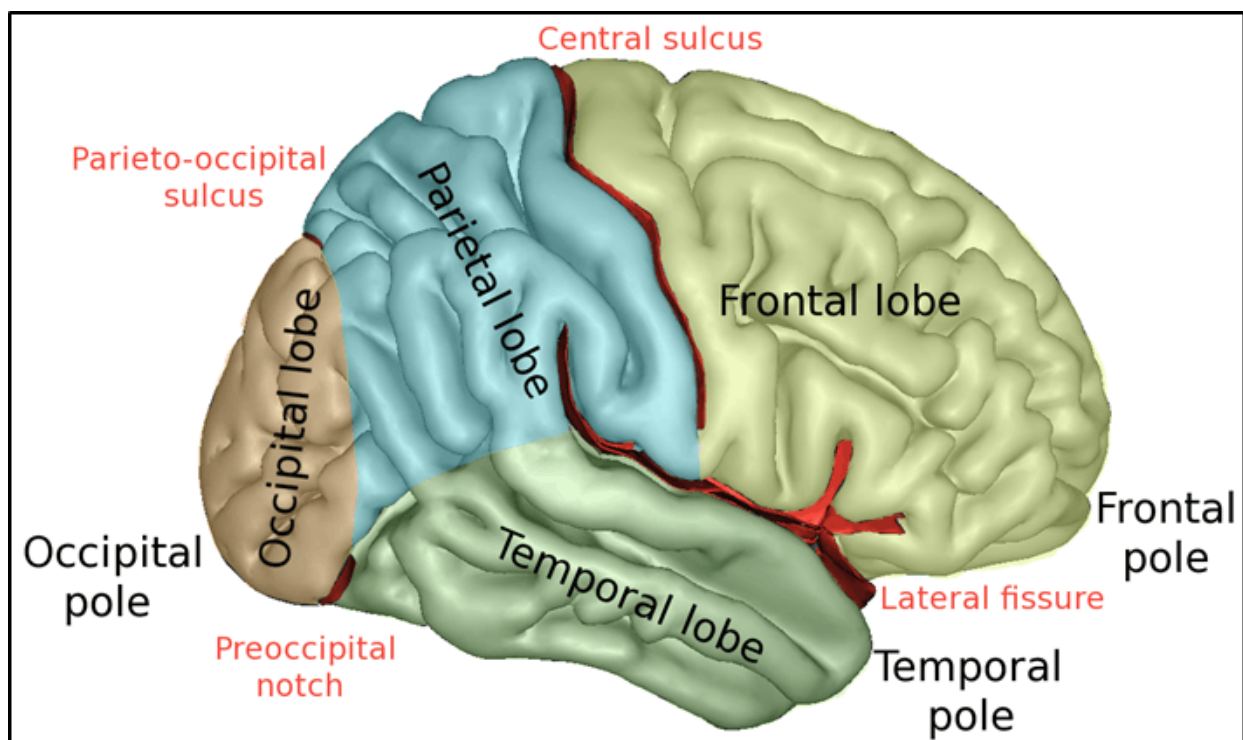
### Functional Areas of the Human Brain



### Different Lobes of the Human Brain

- Parietal Lobe
- Occipital Lobe
- Cerebellum
- Spinal Cord

- Temporal Lobe
- Frontal Lobe



## Parts of the Human Brain

### Forebrain

- It is the largest part of the brain.
- It is also the anterior part of the brain.
- The forebrain includes Cerebrum, Hypothalamus, Thalamus.
- This part of the brain is responsible for controlling the reproductive functions, body temperature, emotions, hunger, and sleep.

- Cerebrum is the largest among the forebrain parts also the largest part of all vertebrate brains.

### Midbrain

- It is the smallest and the central part of the brain.
- It consists of Tectum, Tegmentum.

### Hindbrain

- It is the lower part of the brain.
- It consists of Cerebellum, Medulla, Pons.
- The hindbrain coordinates functions that are fundamental to survival, including respiratory rhythm, motor activity, sleep, etc.

## Structure of the Human Brain

### Cerebrum

- It is the uppermost part of the brain.
- It contains two hemispheres split by a central fissure.
- It contains major lobes of the brain.
- It is also responsible for receiving and giving meaning to information from the sense organs, as well as controlling the body.

### Cerebellum

- It is a major structure of the hindbrain.
- It is located near the brainstem.
- The voluntary movements are coordinated by this part of the brain only.
- Other functions:
  - Motor skills such as balance, coordination, and posture.
- Some of the main functions are:
  - It senses equilibrium.
  - It transfers information.
  - It coordinates eye movement.
  - It enables precision control of the voluntary body movements

### Medulla Oblongata

- It is a long stem-like structure which makes up part of the brainstem.
- It is anterior and partially inferior to the cerebellum.
- It is also responsible for autonomic (involuntary) functions ranging from vomiting to sneezing.
- The main functions are:
  - It controls sleep cycles.
  - It regulates the magnitude and frequency of the respiration.

- It transfers information between the cerebellum and motor cortex.

## Tectum

- It is a small portion of the brain.
- Specifically, the dorsal part of the midbrain.
- The reflex movements of the head, eye and neck muscles are controlled.
- A passage for the different neurons moving in and out of the cerebrum is provided.

## Tegmentum

- It is a complex structure and a region within the brainstem.
- This complex structure is involved in body movements, sleep, arousal, attention, and different necessary reflexes.
- A platform for the midbrain is formed connecting with the thalamus, cerebral cortex, and the spinal cord.

## Thalamus

- It is a small structure, located right above the brain stem.
- This part is also responsible for transmitting motor information for movement and coordination.
- It is found in the limbic system within the cerebrum.

## Hypothalamus

- It is a small and essential part of the brain.
- It is located precisely below the thalamus.
- It is also considered to be the primary region of the brain.
- Some of the important functions performed are:
  - It controls the sense of taste and smell.
  - It synthesizes the body's essential hormones.
  - It coordinates the messages from the autonomous nervous system.
  - It is also responsible for controlling moods and emotions.

## FAQs

Q 1. What are the three different parts of the Brain?

Answer:

The three different parts of the brain are:

- i) Forebrain
- ii) Midbrain
- iii) Hindbrain

Q 2. What are the different lobes of the Human Brain?

Answer:

Different lobes of the Human brain are:

- i) Parietal Lobe
- ii) Occipital Lobe
- iii) Cerebellum
- iv) Spinal Cord
- v) Temporal Lobe
- vi) Frontal Lobe

Q 3. Which complex structure is involved in body movements, sleep, arousal, attention, and different necessary reflexes?

Answer: Tegmentum is complex structure is involved in body movements, sleep, arousal, attention, and different necessary reflexes.

Q 4. Which part of the brain is the primary region of the brain and is located precisely below the thalamus?

Answer: Hypothalamus is the primary region of the brain that is located precisely below the thalamus.