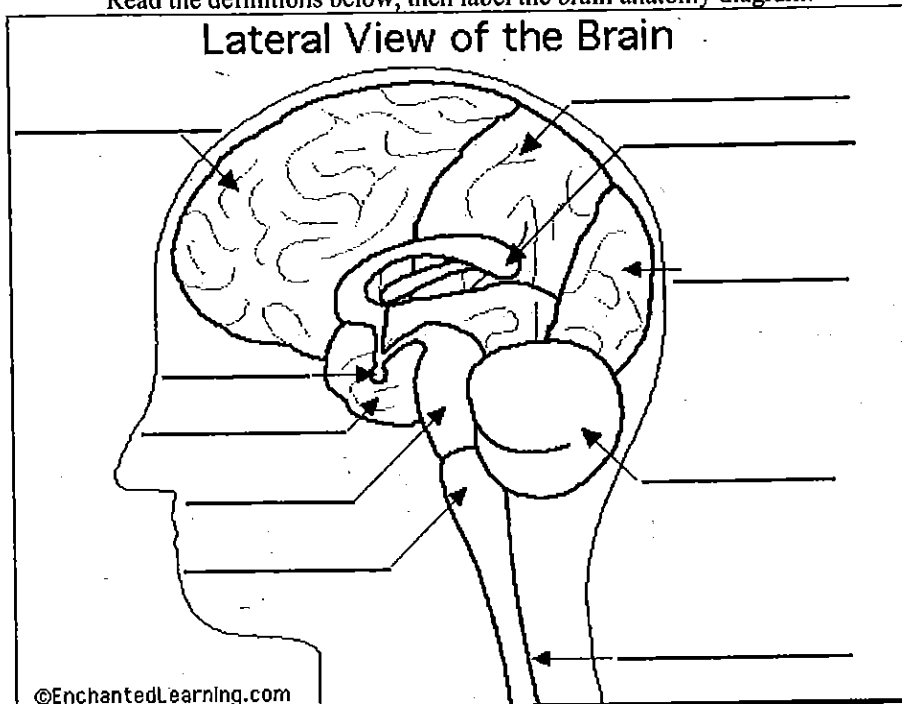


# Label the Brain Anatomy Diagram

Read the definitions below, then label the brain anatomy diagram.



**Cerebellum** - the part of the brain below the back of the cerebrum. It regulates balance, posture, movement, and muscle coordination.

**Corpus Callosum** - a large bundle of nerve fibers that connect the left and right cerebral hemispheres. In the lateral section, it looks a bit like a "C" on its side.

**Frontal Lobe of the Cerebrum** - the top, front regions of each of the cerebral hemispheres. They are used for reasoning, emotions, judgment, and voluntary movement.

**Medulla Oblongata** - the lowest section of the brainstem (at the top end of the spinal cord); it controls automatic functions including heartbeat, breathing, etc.

**Occipital Lobe of the Cerebrum** - the region at the back of each cerebral hemisphere that contains the centers of vision and reading ability (located at the back of the head).

**Parietal Lobe of the Cerebrum** - the middle lobe of each cerebral hemisphere between the frontal and occipital lobes; it contains important sensory centers (located at the upper rear of the head).

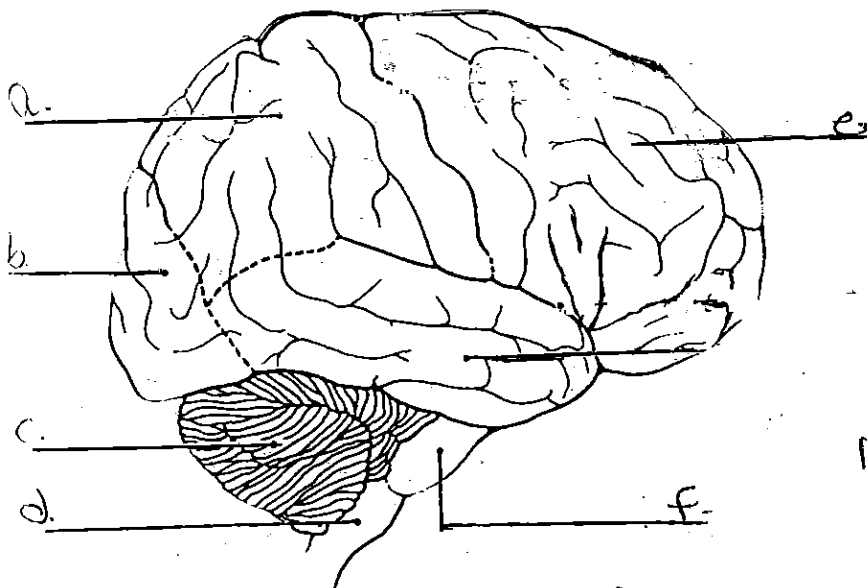
**Pituitary Gland** - a gland attached to the base of the brain (located between the Pons and the Corpus Callosum) that secretes hormones.

**Pons** - the part of the brainstem that joins the hemispheres of the cerebellum and connects the cerebrum with the cerebellum.

It is located just above the Medulla Oblongata.

**Spinal Cord** - a thick bundle of nerve fibers that runs from the base of the brain to the hip area, running through the spine (vertebrae).

**Temporal Lobe of the Cerebrum** - the region at the lower side of each cerebral hemisphere; contains centers of hearing and memory (located at the sides of the head).



## Color Code:

- Cerebellum = red
- temporal lobe of cerebrum = yellow
- occipital lobe of cerebrum = blue
- parietal lobe of cerebrum = pink
- frontal lobe of cerebrum = orange
- pons of brain stem = green
- Medulla of brain stem = brown

## THE FUNCTIONS OF THE BRAIN

The human brain is a complex organ that allows us to think, move, feel, see, hear, taste, and smell. It controls our body, receives information, analyzes information, and stores information (our memories).

The brain produces electrical signals, which, together with chemical reactions, let the parts of the body communicate. Nerves send these signals throughout the body.

## SIZE OF THE HUMAN BRAIN



The average human brain weighs about 3 pounds (1300-1400 g).

At birth, the human brain weighs less than a pound (0.78-0.88 pounds or 350-400 g). As a child grows, the number of cell remains relatively stable, but the cells grow in size and the number of connections increases. The human brain reaches its full size at about 6 years of age.

## COMPOSITION OF THE BRAIN

The brain consists of gray matter (40%) and white matter (60%) contained within the skull. Brain cells include neurons and glial cells.

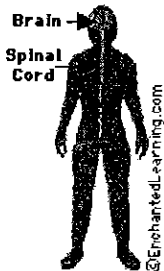
The brain has three main parts: the cerebrum, the cerebellum, and the brain stem (medulla).

## NOURISHMENT OF THE BRAIN

Although the brain is only 2% of the body's weight, it uses 20% of the oxygen supply and gets 20% of the blood flow. Blood vessels (arteries, capillaries, and veins) supply the brain with oxygen and nourishment, and take away wastes. If brain cells do not get oxygen for 3 to 5 minutes, they begin to die.

Cerebrospinal fluid (CSF) surrounds the brain.

## THE NERVOUS SYSTEM



The brain and spinal cord make up the central nervous system (CNS). The brain is connected to the spinal cord, which runs from the neck to the hip area. The spinal cord carries nerve messages between the brain and the body.

The nerves that connect the CNS to the rest of the body are called the peripheral nervous system.

The autonomic nervous system controls our life support systems that we don't consciously control, like breathing, digesting food, blood circulation, etc.

## PROTECTION

The cells of the nervous system are quite fragile and need extensive protection from being crushed, being infected by disease organisms, and other harm. The brain and spinal cord are covered by a tough, translucent membrane, called the dura mater. Cerebrospinal fluid (CSF) is a clear, watery liquid that surrounds the brain and spinal cord, and is also found throughout the ventricle (brain cavities and tunnels). CSF cushions the brain and spinal cord from jolts.

The cranium (the top of the skull) surrounds and protects the brain. The spinal cord is surrounded by vertebrae (hollow spinal bones). Also, some muscles serve to pad and support the spine.

More subtly, the blood-brain barrier protects the brain from chemical intrusion from the rest of the body. Blood flowing into the brain is filtered so that many harmful chemicals cannot enter the brain.

