

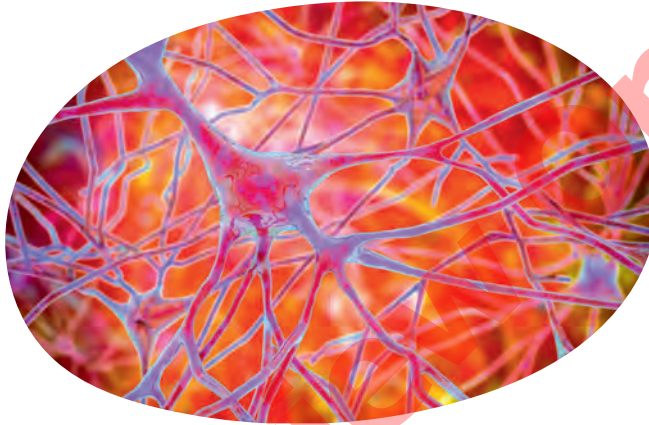
The Human Brain

Cameron Macintosh



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The Human Brain

What the Brain Does

The brain is one of the largest **organs** in the human body. It is a complex organ that controls a huge range of vital **functions** for every person. The brain allows people to observe and understand the world around them, and to interact with the world. It does this by gathering information through the five senses: sight, touch, hearing, smell and taste.



The brain allows us to gather information from our senses, such as our sense of smell.

When people consider the brain's functions, they often think of abilities such as thought and memory. The brain, however, is responsible for so much more than this. It controls many functions that people are unaware of, such as breathing, as well as physical **sensations**, like sensing temperature and feeling hunger. The brain also controls all the movements of the body.

The brain performs these functions partly through its role in the nervous system. This is a system which links the brain to the entire body through the **spinal cord**. An incredibly complex network of **nerves** spreads out from the spinal cord to every part of the body.

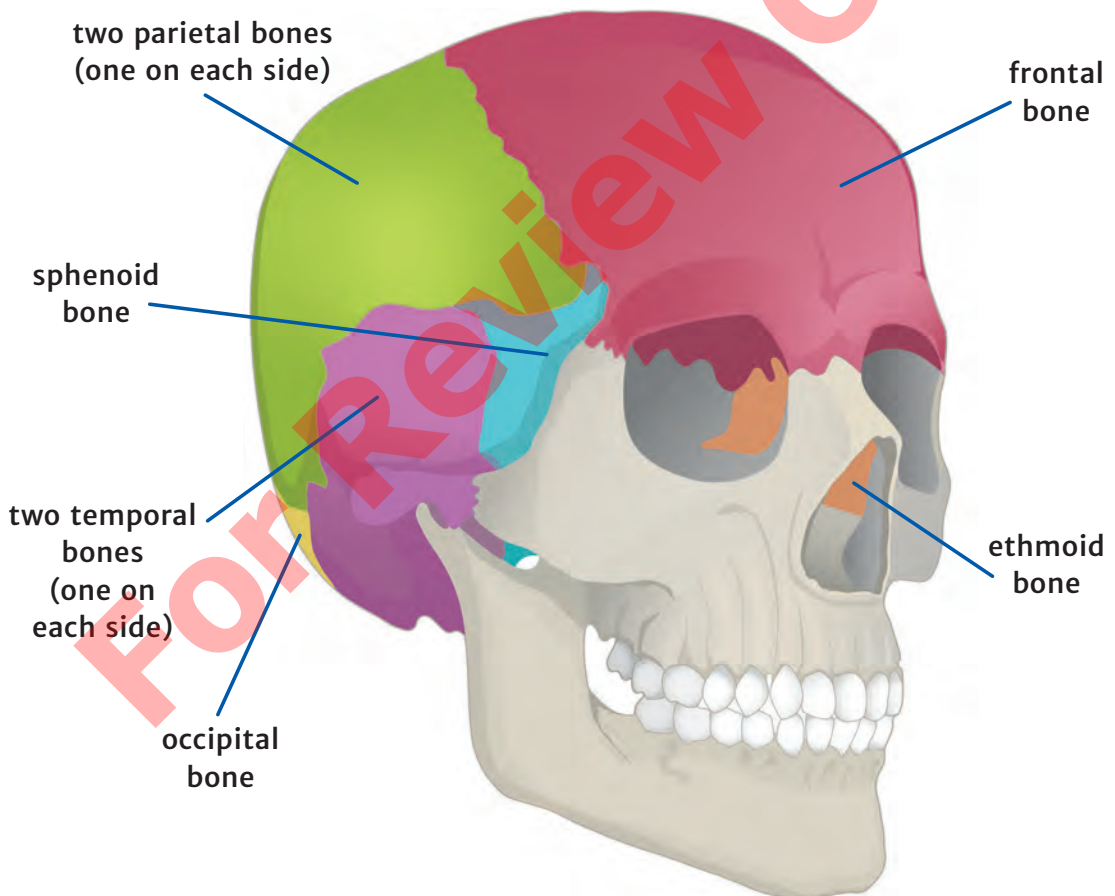
About three-quarters of the brain is made up of water. Drinking plenty of water helps the brain to function at its best.

The spinal cord is a network of nerves that sends messages from the brain to the rest of the body.

Inside the Cranium

The brain is located in the top part of the skull, which is called the cranium. The cranium is made up of eight bones that are joined together by thick bands of **tissue** called sutures (pronounced *soo-chers*). The cranium also contains special fluid and tissue that protects the brain. These are found between the brain and the inside of the skull.

The Cranial Bones

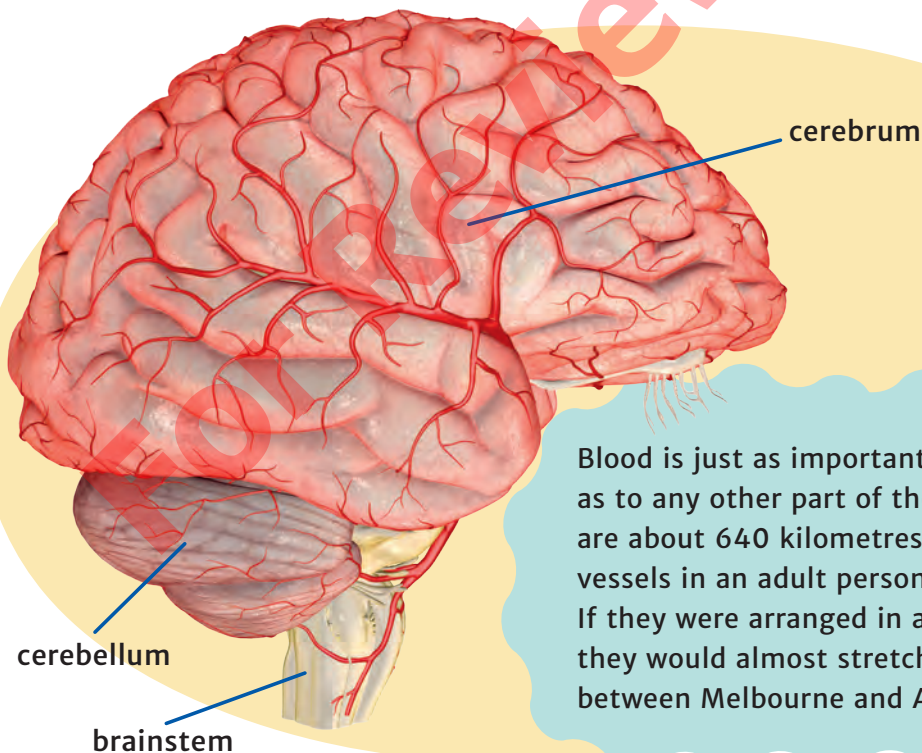


The brain itself has three main sections:

- the cerebrum (pronounced *suh-ree-brum*)
- the brainstem
- the cerebellum (pronounced *se-ruh-bell-um*)

The largest of these is the cerebrum.

These sections, particularly the cerebrum, are made up of smaller parts of different shapes and sizes. Each part performs specific functions, although the parts often work in cooperation with each other. Different parts of the brain can also contribute to the same function. For example, many parts of the brain contribute to people's ability to see.



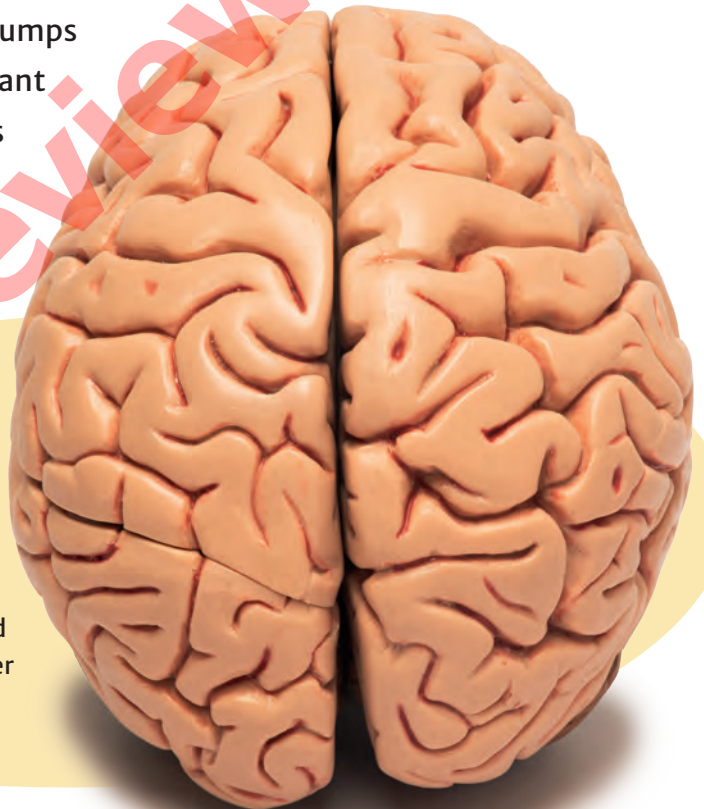
Blood is just as important to the brain as to any other part of the body. There are about 640 kilometres of blood vessels in an adult person's brain. If they were arranged in a straight line, they would almost stretch the distance between Melbourne and Adelaide!

The Cerebrum

The largest section of the brain, the cerebrum, is where people do their thinking. The cerebrum makes a vital contribution to people's ability to understand and use words, as well as to learn and to create memories. The cerebrum is also responsible for much of people's behaviour. This includes the movements they **consciously** choose to do, such as walking or picking up a pencil.

The outer layer of the cerebrum is known as the cerebral cortex. Much of the work done by the cerebrum takes place in this layer. The surface of the cerebral cortex is full of bumps and grooves. These bumps and grooves serve an important purpose – their shape allows more brain tissue to fit inside the cranium.

This model cerebrum shows how much folded tissue squeezes together to make the brain.



The cerebral cortex includes four main parts, known as **lobes**:

- the frontal lobe
- the parietal (pronounced *puh-rye-uh-tal*) lobe
- the temporal (pronounced *temp-or-al*) lobe
- the occipital (pronounced *ok-sip-it-al*) lobe.

Each lobe has its own special functions, but they constantly work together in a range of complex ways.

The Lobes of the Cerebrum

