

## Unit 10: Brain Power

**Narrator:** The brain is the most complex organ in the human body. As part of our nervous system, it coordinates all of the body's functions. An adult brain weighs about 1.4 kilograms.

It is divided into four main areas: the cerebrum, the cerebellum, the brain stem, and the diencephalon. The largest section is the cerebrum, which makes up over three quarters of the brain's volume. Made up of neurons and nerve fibers, it receives information from neurons all over the brain and body and controls higher functions such as learning, reasoning, and speech, plus senses like sight and hearing.

Under the cerebrum is the second largest part of the brain, the cerebellum, which is also made of nerve cells and nerve fibers. These fibers carry signals to other parts of the brain and spinal cord. The cerebellum is responsible for coordinating muscle movements, particularly those that control the body's balance.

The third area, the brain stem, lies in front of the cerebellum, and connects the brain to the spinal cord. It is made up of three parts. These help the brain process sensory information such as taste, control the body's movement, auditory, and visual processing, and create motor and sensory pathways between the brain and the spinal cord. Then, together, these three parts of the brainstem control functions like cardiac activity, respiration, digestion, and sleep.

The fourth area, the diencephalon, makes up the core of the brain. and the hypothalamus and pituitary gland, which help process sensory information and produce and regulate the brain's chemicals. These chemicals help to control our weight and behaviors like eating and drinking. Together, the brain's four main parts make sure our body functions correctly.

Through exercise and a balanced diet, we, in turn, can help keep our brain healthy so that it continues to keep our body working well for many years to come.