The human brain serves as the command and control center for the human nervous system. It is in charge of receiving signals from the body's sensory organs and transmitting information to the muscles. It weighs about 3 lbs (1.4 kg) and accounts for about 2% of a person's body weight. 85% of the brain's weight is made up of the cerebrum. The cerebrum is the major section located in the front area of the skull. The human brain is 60% fat and can produce 23 W of electrical power, which is enough to run a small lightbulb.

The human brain is more complicated or complex than any other known structure in the universe and contains about 86 billion neuronal cells (neurons) known as the brain's gray matter. The brain's gray matter receives and processes sensory information in the body. The brain also contains non-neuronal cells known as the brain's white matter. They provide communication between different gray matter areas and between the gray matter and the rest of the human body.

According to Northwestern Medicine in Illinois, male brains are approximately 10% larger than female brains on average. The typical male brain is about 78 cubic inches (1,274 cm^3) in size, while the average female brain is 69 cubic inches (1,131 cm^3). According to the Dent Neurologic Institute, the brain cannot multitask. Instead, it alternates between tasks, increasing errors and the time it takes to complete a task.

The human brain shares the same basic structure as other mammal brains, although it is larger in proportion to body size than the brains of many other mammals, including dolphins and whales. It triples in growth during the first year of life and reaches its maximum size at age 25. Without it, humans cannot breathe, play, love, or perform other activities. Humans won't be able to remember anything at all.

The Human Brain Anatomy

The cerebrum is the largest part of the brain, and it is divided into two hemispheres. Each hemisphere is then divided into four lobes: the frontal, temporal, parietal, and occipital lobes. The frontal lobes are positioned behind the forehead and are responsible for behavior, emotions, decision, thought, speech, body movement, and concentration. The parietal lobes in the middle of the brain interpret language and process sensory signals or information such as temperature, touch, and pain, including interpreting signals from hearing, vision, and memory. Behind the brain are the occipital lobes that deal with vision. Then finally, the temporal lobes located at the sides of the brain are important for hearing, memory, sequencing, and understanding language.

Beneath the cerebrum lies the cerebellum, the second largest part of the human brain. The cerebellum plays a vital role in movement and balance coordination.

Sitting in the core of the brain is the diencephalon, the third largest part of the brain. The diencephalon is a collection of structures roughly the size of an apricot, and its two main sections are the thalamus and hypothalamus. The thalamus serves as a transmission station

for incoming motor and sensory signals from around the body. These signals are then sent to the cerebral cortex for processing. The hypothalamus controls hormone productions from the pituitary gland, which govern growth and instinctual behaviors. The hypothalamus is also essential for maintaining important processes in the body like heart rate, blood pressure, temperature, hunger, and thirst.

Located at the base area of the brain is the brain stem that connects to the spinal cord and controls reflexes and involuntary actions such as heartbeat, respiration, blood pressure, and sleep. It also regulates consciousness and connects the cerebrum and cerebellum to the spinal cord.

The human brain has four interconnected cavities, called ventricles, which are positioned within the brain's parenchyma. Two of the ventricles are lateral ventricles and are located in the cerebral hemispheres (one in each hemisphere). The third ventricle is found in the diencephalon, while the fourth ventricle is positioned in the hindbrain. The ventricles are responsible for the constant production of the cerebrospinal fluid (CSF), which circulates the brain and spinal cord, and is eventually absorbed into the bloodstream. The fluid protects and maintains the central nervous system, cushioning it from injury. CSF also clears toxins and waste such as the amyloid A-b peptide from the brain. Several experiments carried out by scientists showed that cerebrospinal fluid is very active. However, studies suggest that the waste clearing process by the CSF happens mostly during sleep, which might be the reason why sleep is essential for the human body.

Encasing the highly sensitive and delicate human brain is the skull, and three tough membranes called meninges. Both the skull and meninges offer maximum protection. The crevices between the membranes are also filled with cerebrospinal fluid, which shields the brain and protects it from getting damaged by contact with the inside of the skull.

Facts

- It is incapable of multitasking. Instead, it alternates between tasks, increasing errors and lengthening the process.
- It triples in size during the first year of life and reaches complete maturity at age 25.

- Humans use their entire brain all of the time, not just 10% of it.
- It is composed of 60% fat.
- It can generate 23 watts of electrical power, which is enough to operate or power a small lightbulb.

The brain is a complicated organ that performs many functions. Apart from controlling emotion, touch, vision, breathing, temperature, movement, and other body signals, it also regulates the body. The human brain is so fast it sends, receives, processes, and interprets different body signals within a flash. This can be explained by the immediate sharp pain you feel when you hit your foot against something hard. It is unique, and its complexity and how it works can’t be understood within months or years. In fact, despite different studies and research works, scientists still don’t know very much about the brain or how it works.