

# Brain or the Heart — most important organ of the body??

If it was possible to speak to the brain and the heart asking which was the most important organ in the human body, what would they say?? The heart felt that it was the most important because without the heart beating, the body wouldn't receive the blood that is needed to keep the cells alive. However, the brain claimed to be the most important organ because without the brain, the heart would not know when to beat or how fast to beat to send the blood containing oxygen and essential nutrients throughout the circulatory system to keep the cells alive.

**How the Brain Works** - The brain is a complex organ that sends and receives chemical and electrical signals throughout the body controlling almost every function of the human body to enable:

- Thoughts and decisions, actions, and reactions including fight or flight response
- Motor function: movement with balance and coordination
- Regulates organ function: breathing, heart rate, hormones, and body temperature
- Speech and emotion: language and feelings
- Sensory information from the 5 senses: sight, sound, smell, taste, and touch
- Contains nerves: facial and head
- Receives input including pain and vibration
- Connects the brain stem to the spinal cord through the Central Nervous System (CNS) making it able to communicate with the rest of the body and send information back to the brain.

# Gray and White Matter in the Brain and Central Nervous System (CNS)

There are 2 substances in the brain that make up the central nervous system, the gray matter and white matter. The gray matter is in the darker outmost layer and controls the day-to-day function by interpreting and processing information. The white matter is deeper in the brain and contains the nerve fibers that help the brain send electric nerve signals in a quick and efficient way. The white matter connects brain cells and travels from the brainstem to the spinal cord communicating with the nervous system.

The brain communicates messages throughout your body. Some messages are kept in the brain while other move to the body's extremities via the CNS where the signals are processed and the information from the body can travel back to the brain. The brain contains two types of cells: **neurons (nerve cells)** that send and receive electric nerve signals and **glial cells** to help maintain the brain, form a fatty protective substance in the white matter, and provide nutrition. Scientists found that in order to do this, the brain has about 100 billion nerve cells (neurons) and the spinal cord has about 13.5 million neurons processing the electrical signals.

The average adult's brain weighs about 3 pounds and is about 60% fat with the rest comprised of water, protein, carbohydrates, and salts. The brain continues to develop throughout your 20's and reaches it's peak by middle age.

# Everyone has two parts of the nervous system: the **Central Nervous System** and the **Peripheral Nervous System**.

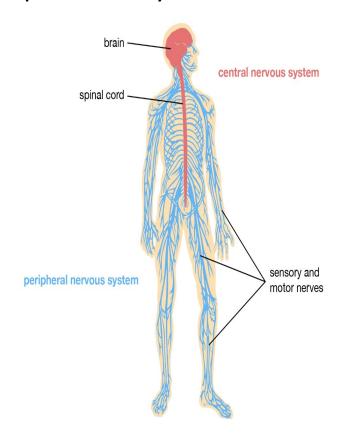
#### The Central Nervous System (CNS)

The central nervous system is composed of the brain and the spinal cord. The brain and spinal cord are "central" to the body's main communication system responsible for receiving, processing, and responding to both voluntary movement like walking, etc. and involuntary movements like breathing, etc. It consists of a network of nerve cells called neurons.

The spinal cord is a long flexible tube that sits inside the bony channel formed by the spine. The spinal cord also provides the link between the brain and the network of nerves that extend to the rest of the body. There are 31 pairs of nerves attached to the spinal cord.

## The Peripheral Nervous System (PNS)

The peripheral nervous system involves all the nerves outside the brain and spinal cord that carries messages to the CNS. The PNS contains nerves that run throughout the body stretching all the way down to the tips of your toes. There are three types of nerves that are based on their functions:



**Sensory:** these nerves carry information from the brain to the spinal cord to the five senses.

**Motor:** these nerves take commands from the brain to various part of the body such as muscle movement.

**Autonomic:** these nerves help organs such as the heart and various systems in the body function by moving information back and forth to the brain.

## Finding and Treating the Source of Pain

The central nervous system and peripheral nervous system works together to help the body feel the source of pain and determines how the body reacts. The nervous system activates the signal and pain is felt. Finding the physical root cause of the pain or site of body's injury resulting in acute, chronic, or (long-term) intractable pain can be a very complex medical process. Treating the pain can also be very difficult.

Since ancient times, bioelectricity and electrotherapy used targeted electrical energy waves to stimulate nerve cells and disrupt the signal of pain through the central nervous system to the brain. Because our bodies are electrically charged, electric therapeutic energy waves work in accordance with our body's natural circuitry communicating with the brain and nervous system. Today's RST-SANEXAS neoGEN® device uses advanced and highly innovative Electric cell-Signaling Technology (EcST) to effectively deliver targeted electric and electromagnetic energy waves deep into to the affected nerve area of the body helping to facilitate the recovery processes. These therapeutic pulsed energy waves delivered into the body speaks the language of cells used to successfully manage all type of acute, chronic and intractable pain. The RST-SANEXAS neoGEN® is a safe, non-invasive, non-pharmaceutical, and effective treatment to help manage pain, increase circulation, and improve muscular rehabilitation.

Electric cell-Signaling Treatment using the RST-SANEXAS neoGEN® will produce more significant patient outcomes giving your patient's restored HOPE for a better, healthier life. You are the heart and soul to their recovery process.