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3/19/2019

# Function of the Spinal Cord

The body is controlled by electrical and chemical impulses, which is called the nervous system. The nervous system is made up of two sub-categories: The central nervous system, and the peripheral nervous system. The central nervous system consists of the brain and spinal cord, and the peripheral nervous system contains all other nerves in the body. The spinal cord connects the brain to the peripheral nervous system, and allows for impulses to be sent to and from each other. The spinal cord itself is broken into 4 sections: cervical, thoracic, lumbar, and sacral. Each section allows for you to control different parts of the body.

If you take a cross-section of the spinal cord, there are many different areas with many different functions. The cord itself is made up of two different categories: a “H” shaped gray matter surrounded by white matter. The orientation of the cord can be determined based on the locations of two grooves, called the posterior (back) median sulcus, and the anterior (front) median fissure. The posterior side of the cord controls all sensory function, and the anterior side controls the use of motor function. The white matter has three sections: the posterior white column (receives sensory signals), the lateral white column (receives sensory and motor signals), and the anterior white column (receives motor signals). The gray matter has four sections: somatic (voluntary)

sensory, visceral (involuntary) sensory, visceral (involuntary) motor, and somatic (voluntary) motor. In the center of the gray matter is a hollow canal, which is filled with cerebrospinal fluid, which helps move nutrients, oxygen, and wastes through the spinal cord. From the spinal cord extends a dorsal (back) root, and a ventral (front) root. The ventral root sends motor info from the central nervous system to the peripheral nervous system, and the dorsal root sends sensory info from the peripheral nervous system to the central nervous system. These two roots eventually connect to form a mixed nerve, which contains sensory and motor info.