

## 2-Minute Neuroscience: Divisions of the Nervous System

(0:00 - 0:12)

Welcome to 2-Minute Neuroscience, where I simplistically explain neuroscience topics in 2 minutes or less. In this instalment, I will discuss the divisions of the nervous system. There are two major divisions of the nervous system.

(0:13 - 0:27)

The first is the central nervous system, which is made up of the brain and the spinal cord. The second is the peripheral nervous system, which consists of nerves that run throughout the body. The peripheral nervous system itself is made up of two subdivisions.

(0:27 - 0:49)

The first is the somatic nervous system, which contains nerves that carry sensory signals from the body to the central nervous system and nerves that carry motor signals from the central nervous system to the skeletal muscles. The somatic nervous system is associated with voluntary movement. When you clicked on this video to play it, the signal to depress your finger was sent from your brain to your finger via the somatic nervous system.

(0:50 - 1:06)

The second division of the peripheral nervous system is the autonomic nervous system. The autonomic nervous system is sometimes called the involuntary nervous system, and it is involved in regulating the internal environment of the body. It carries signals from internal organs to the central nervous system, and from the central nervous system to the internal organs.

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In this way, it is involved in regulating things like digestion and heartbeat, which are generally outside the realm of conscious control. The autonomic nervous system can be further subdivided into sympathetic and parasympathetic nerve fibres. The sympathetic nervous system plays a large role in stimulating and mobilising energy resources, while the parasympathetic nervous system acts to conserve energy.

(1:28 - 1:58)

For example, if you are in a frightening situation, the sympathetic nervous system will cause your heart rate to increase, your blood pressure to increase, and your sweat glands to be stimulated. If you are eating a meal, however, and are not frightened, your parasympathetic nervous system will stimulate digestion, increase salivation, and slow your heart rate. Due to these functions, the sympathetic nervous system is often described as being involved in fight-

or-flight responses, while the parasympathetic nervous system is described as being involved in rest-and-digest responses.