

Module 1:Human Nervous System

Lecture 5:Spinal cord

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Spinal Cord

The second important constituent of the central nervous system is the spinal cord. In fact, it is a bundle of axons covering full length of the body. Its primary function is to facilitate reflex movements. The animation given below demonstrates the mechanism of reflex action.

[See video on web](#)

The sensory neuron carries the prick sensation from the painful stimulus. Through the association neurons this message is relayed to the motor neuron which in turn carries them to the muscles to cause the withdrawal reflex. Concurrently the message is conveyed to the brain. Our nervous system has three types of neurons— afferent neurons, efferent neurons and association neurons. Sensory neurons are also known as afferent neurons or receptor neurons. They carry impulses from sense organs to the brain. Motor neurons are also called efferent neurons. They carry the nerve impulse from the brain to muscles or glands. Association neurons are also called relay neuron or interneuron. They connect two neurons, thus facilitating smooth conduction of impulses.

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Peripheral Nervous System

In the previous section we saw that the neurons of the brain and spinal cord are centrally located in the body. Contrary to this, the neurons of peripheral nervous system are spread in the other zones of the body. This system comprises of the autonomic nervous system and the somatic nervous system. All voluntary movements involving skeletal muscles are controlled by the somatic nervous system. As the name clearly reflects autonomic nervous system coordinates the involuntary functions of the body such as heart beat, respiration, digestion, etc. It is basically a unit comprising two subsystems working in a complementary manner— the sympathetic and the parasympathetic divisions. The complementary functioning of these two systems helps us achieve health and equilibrium. The sympathetic division is crucial in regulating behaviour in stressful conditions as it releases energy when action is needed. The parasympathetic division, on the contrary, is involved with the conservation of energy and is hence concerned with the monitoring of routine functions of the body.

See video on web

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