Nerve impulse

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Humans have a complex nervous system that helps them in responding to different stimuli. The system links different parts of the body through the nerves and nerve cells.Nerves constitute the nervous system of humans. A nerve can be considered as a bundle of nerve cells that carry messages in the form of neurons(*Neurons or nerve cells - Structure-function and types of neurons | Human Anatomy | 3D Biology*, 2013). A neuron has a specific shape and structure that makes it suitable to conduct messages. It has three parts; the cell body, dendrites and axon. The cell body has a nucleus and organelles. Dendrites have a function of receivingnerve impulsesfrom other cells. Moreover, the axon is responsible for passing the nerve impulse to other cells.

Neurons are highly specific for the dispensation and conduction of cellular signals. These are classified by their structure or function. Thus, these have mainly two types; sensory neurons and motor neurons(*Neurons or nerve cells - Structure-function and types of neurons | Human Anatomy | 3D Biology*, 2013). Themessages that these neurons carry are known as nerve impulses. Nerve impulses can travel at a very fast speed through the network of nerves inside the body.

There are neuronal circuits in the body that consists of neurons that can either stimulate or inhibit activity. In the case of strong stimulus, a nerve impulse is generated as a result of electrical and chemical changes in the neuron. There are different ions on either side of the cell membrane that determine the permeability of the cell membrane. A nerve impulse after its generation changes the permeability of the cell membrane.

At the resting potential, inside of the neuron is negatively charged comparatively to the outside.This is due to the difference in potassium ions versus sodium ions. During the stages of the action potential, a stimulus depolarizes a cell membrane and sends an “all or nothing” signal.

References

*Neurons or nerve cells - Structure-function and types of neurons | Human Anatomy | 3D Biology*. (2013). Retrieved from https://www.youtube.com/watch?v=cUGuWh2UeMk