

Nervous system: nervous and synapse

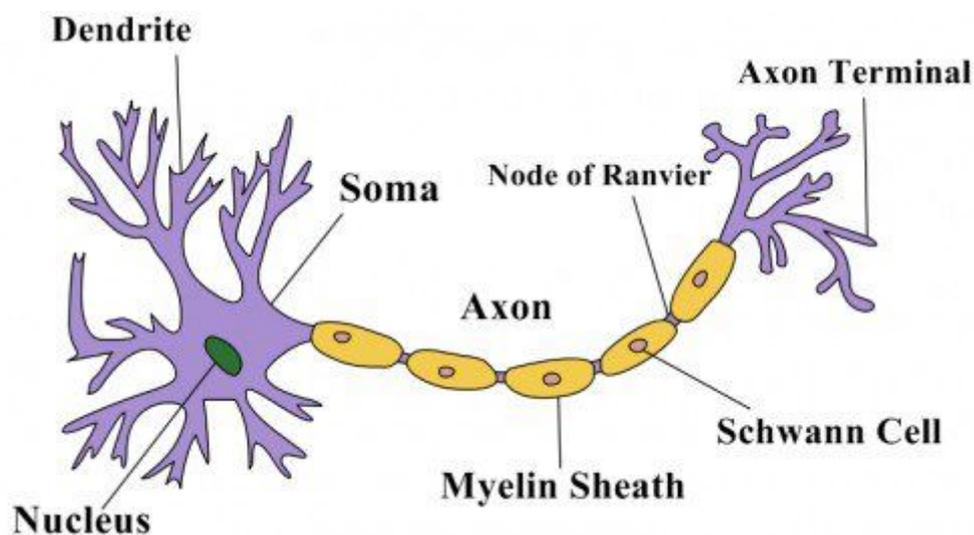
<http://mravagnan.cumbresblogs.com/2018/03/21/biology-virtual-period-nervous-system-neurons-and-synapse/>

All mammals have a CENTRAL NERVOUS SYSTEM and a PERIPHERAL NERVOUS SYSTEM. The CNS is made up of the brain and the spinal cord. The peripheral nervous system is made up of nerves and receptors.

The NEURONES are special cells which coordinate the messages travelling through the nervous system.

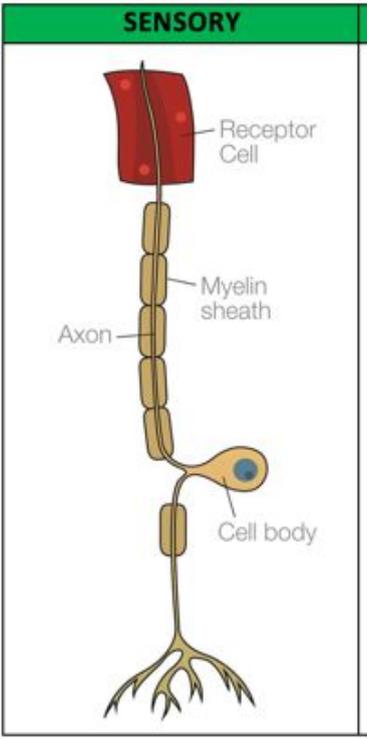
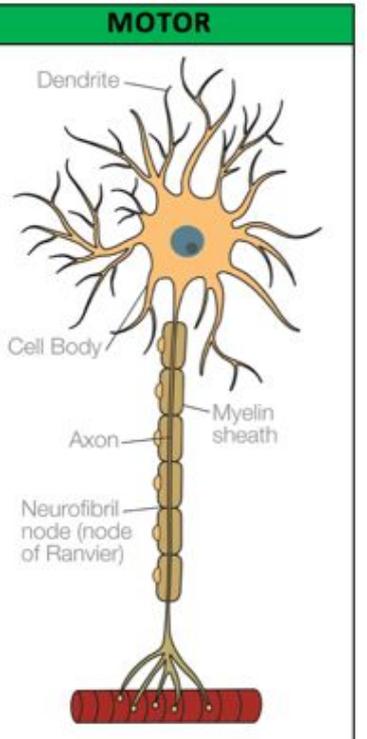
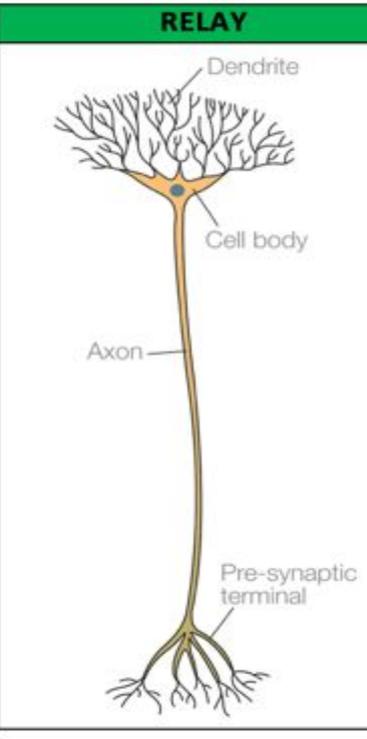
1. ANATOMY OF A NEURONE: Watch [THIS](#) video!
 - Act: State how the structure of a neurone is related to the function.

The structure of a neuron is related to its function of transmitting signals throughout the body, as its long extensions make possible sending signals far away from the neurone cell body. Both the dendrites (extension of neurons that receive signals and conduct them to the cell body) and the axons (extensions of neurons that conduct signals away from the cell body to other cells) can extend far away from the cell body and send signals to and from other cells.



2. TYPES OF NEURONES: Read “overview of neurone structure and function” from [HERE](#) .

- Act: Make a labelled drawing of each of the three types of neurones, motor, sensory and relay, and state their functions.

Sensory neurons	Motor neurons	Interneurons
<p>get information about what's going on inside and outside of the body and bring that information into the CNS so it can be processed</p> <p>example: if you picked up a hot coal, sensory neurons with endings in your fingertips would convey the information to your CNS that it was really hot.</p>	<p>Motor neurons get information from other neurons and convey commands to your muscles, organs and glands</p> <p>example: if you picked up a hot coal, it motor neurons innervating the muscles in your fingers would cause your hand to let go.</p>	<p>which are found only in the CNS, connect one neuron to another. They receive information from other neurons (either sensory neurons or interneurons) and transmit information to other neurons (either motor neurons or interneurons).</p> <p>example: it would transmit the signal up the spinal cord to neurons in the brain, where it would be perceived as pain.</p>
<p style="text-align: center;">SENSORY</p> 	<p style="text-align: center;">MOTOR</p> 	<p style="text-align: center;">RELAY</p> 

3. SYNAPSE:

- Act: Post a short video explaining synapse.
- Act: Describe in your own words how nerve impulses are transmitted from neurone to neurone.

Video: [synapse video 1](#) - [Synapse video 2](#)

- The synapse is the place that connects two different neurons from the end of one neuron axon (presynaptic neuron) to the dendrite of another neuron (postsynaptic neuron). The axon terminal is filled with vesicles (small proteins called “snare proteins) containing neurotransmitters which are used to stimulate the postsynaptic neuron. These snare proteins bind to other snare proteins on the cell membrane so that when the axon receives an electrical signal, positive ions calcium can bind to the proteins and cause them to put the vesicle closer to the phospholipid bilayer membrane. This will cause exocytosis as the vesicles release the neurotransmitters out to the synaptic cleft (the space between the two neurons), and then they will bind to receptors on the postsynaptic neuron.