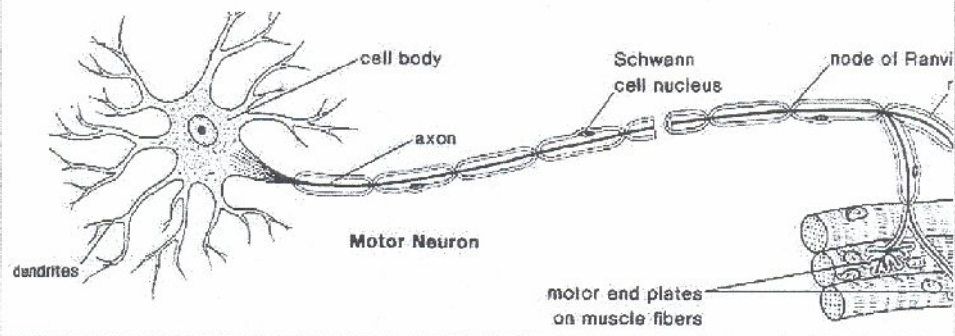


# Nerve Cells

The nervous system composed of nerve cells, or **neurones**:

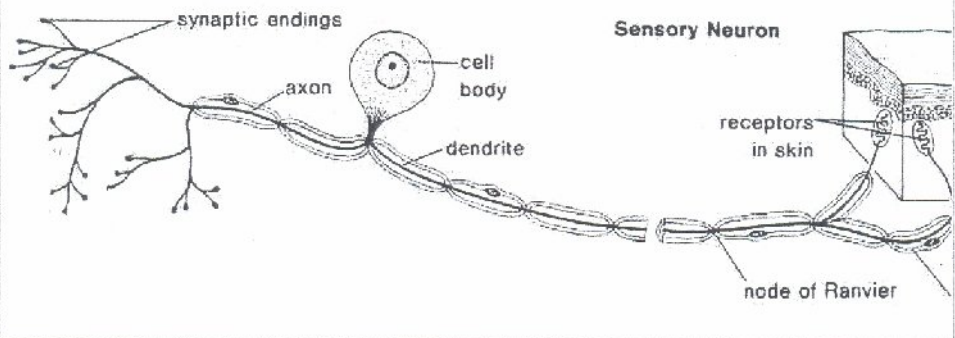
## Motor Neurone:

- Efferent Neuron – Moving toward a central organ or point
- Relays messages from the brain or spinal cord to the muscles and organs



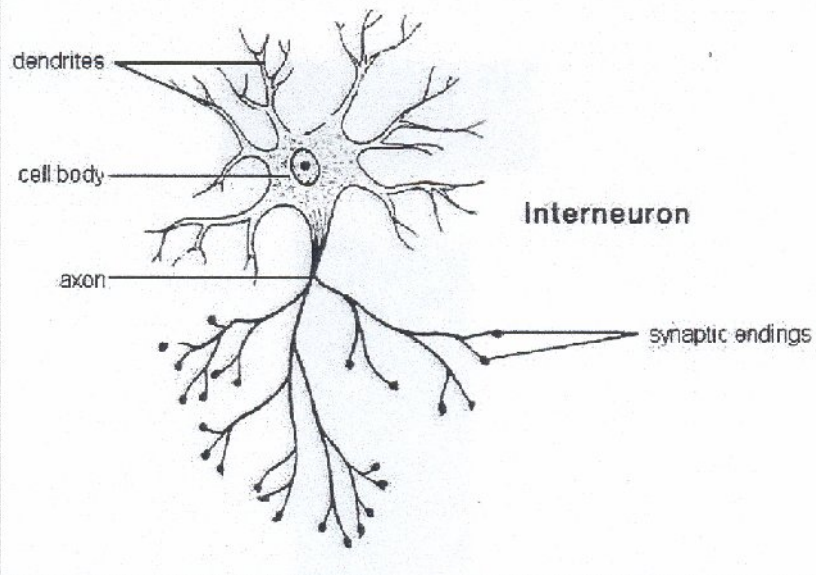
## Sensory Neurone:

- Afferent Neuron – Moving away from a central organ or point
- Relays messages from receptors to the brain or spinal cord

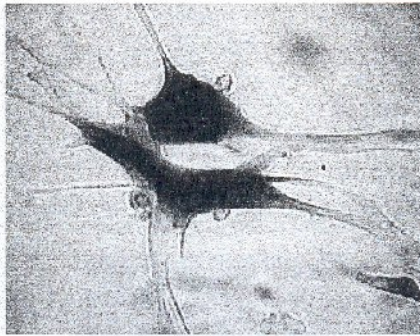


**Interneuron (relay neurone):**

- Relays message from sensory neurone to motor neurone
- Make up the brain and spinal cord

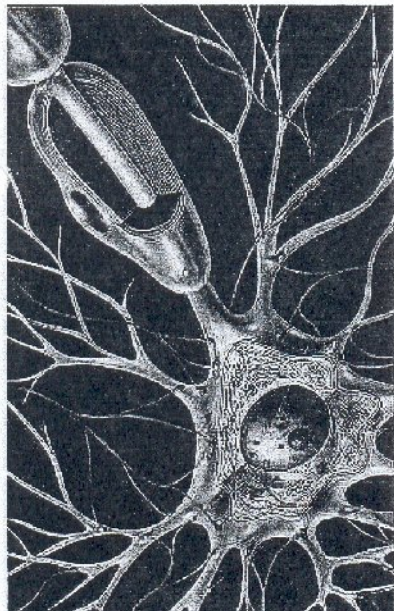


	Sensory neuron	Interneuron	Motor Neuron
Length of Fibers	Long dendrites and short axon	Short dendrites and short or long axon	Short dendrites and long axons
Location	Cell body and dendrite are outside of the spinal cord; the cell body is located in a dorsal root ganglion	Entirely within the spinal cord or CNS	Dendrites and the cell body are located in the spinal cord; the axon is outside of the spinal cord
Function	Conduct impulse to the spinal cord	Interconnect the sensory neuron with appropriate motor neuron	Conduct impulse to an effector (muscle or gland)



There are several differences between axons and dendrites:

Axons	Dendrites
<ul style="list-style-type: none"> <li>• Take information away from the cell body</li> <li>• Smooth Surface</li> <li>• Generally only 1 axon per cell</li> <li>• No ribosomes</li> <li>• Can have myelin</li> <li>• Branch further from the cell body</li> </ul>	<ul style="list-style-type: none"> <li>• Bring information to the cell body</li> <li>• Rough Surface (dendritic spines)</li> <li>• Usually many dendrites per cell</li> <li>• Have ribosomes</li> <li>• No myelin insulation</li> <li>• Branch near the cell body</li> </ul>



**Neurons are similar to other cells in the body because:**

1. Neurons are surrounded by a cell membrane.
2. Neurons have a nucleus that contains genes.
3. Neurons contain cytoplasm, mitochondria and other organelles.
4. Neurons carry out basic cellular processes such as protein synthesis and energy production.

**Neurons differ from other cells in the body because:**

1. Neurons have specialised extensions called dendrites and axons. Dendrites bring information to the cell body and axons take information away from the cell body.
2. Neurons communicate with each other through an electrochemical process.
3. Neurons contain some specialized structures (for example, synapses) and chemicals (for example, neurotransmitters).