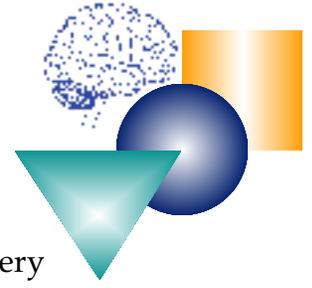


You've Got a Lot of Nerve: Parts of a Basic Neuron

Student Pages Activity 1D



Introduction:

Neurons are among the most fascinating of all cell types. They are made in very special ways because they have important jobs to do. They carry information to, from, and within the brain.

Background:

Neurons relay messages about what you're thinking, feeling, or doing. Neurons transmit and receive nervous impulses (messages) between the brain and body and within the brain and spinal cord. There are three main types of neurons: *motor*, *sensory*, and *interneurons* (also called association neurons). *Motor neurons* carry impulses from the brain to the body. *Sensory neurons* carry impulses from the body to the brain. *Interneurons* carry information within the brain and spinal cord.

ANATOMY OF A BASIC NEURON: Neurons have three major parts – *Dendrites*, *Cell Body*, and *Axons*. Most neurons have branches called dendrites. They look something like small tree branches. *Dendrites* extend out from the cell body. These dendrites come very close to other neurons, but never actually touch them. Thus, there are small gaps between neurons – these gaps are called *synapses*. Dendrites *receive messages* from other neurons. The *synapse* (which is the space between neurons) contains chemicals called *neurotransmitters*. These neurotransmitters carry messages across synapses from one neuron to another.

All neurons have a *cell body*. The cell body is the central part of the neuron. It contains the cell nucleus, but does not include the axon or dendrite.

The neurons carry signals away from the cell body by long fibers called *axons*. Some axons are insulated with a *myelin sheath, often compared to the insulation around an electrical wire*. This insulation allows electrical messages to travel faster through the neurons. Axons have tiny branches at the end that form *synapses* to other neurons. Some axons are short and are only about a millimeter in length. Other axons in the spinal cord can range up to a meter or more in length.

Neurons have two ways to send signals; electrical and chemical. Electrical signals are sent rapidly through the neurons. Chemical messages travel between the axons of one neuron and the dendrites of another at the synapses. Neurons send messages at different speeds ranging from as slow as 0.5 meters/second to as fast as 120 meters/ second (equivalent to 268 miles/hour.)

Materials:

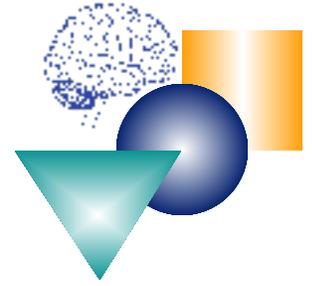
- 1 copy *Student Pages*
- Glue or tape
- Scissors
- Blank paper
- Ruler



LESSON 1
ACTIVITY 1D

Instructions:

You've already read background information describing neuron parts and their functions. Working alone or with a partner, review information about each part of the neuron. Each of you will assemble a scrambled neuron picture onto a blank sheet of paper. On your paper use a ruler to make lines on which to write the name and function of each part.



Anatomy of a Neuron Puzzle Activity

