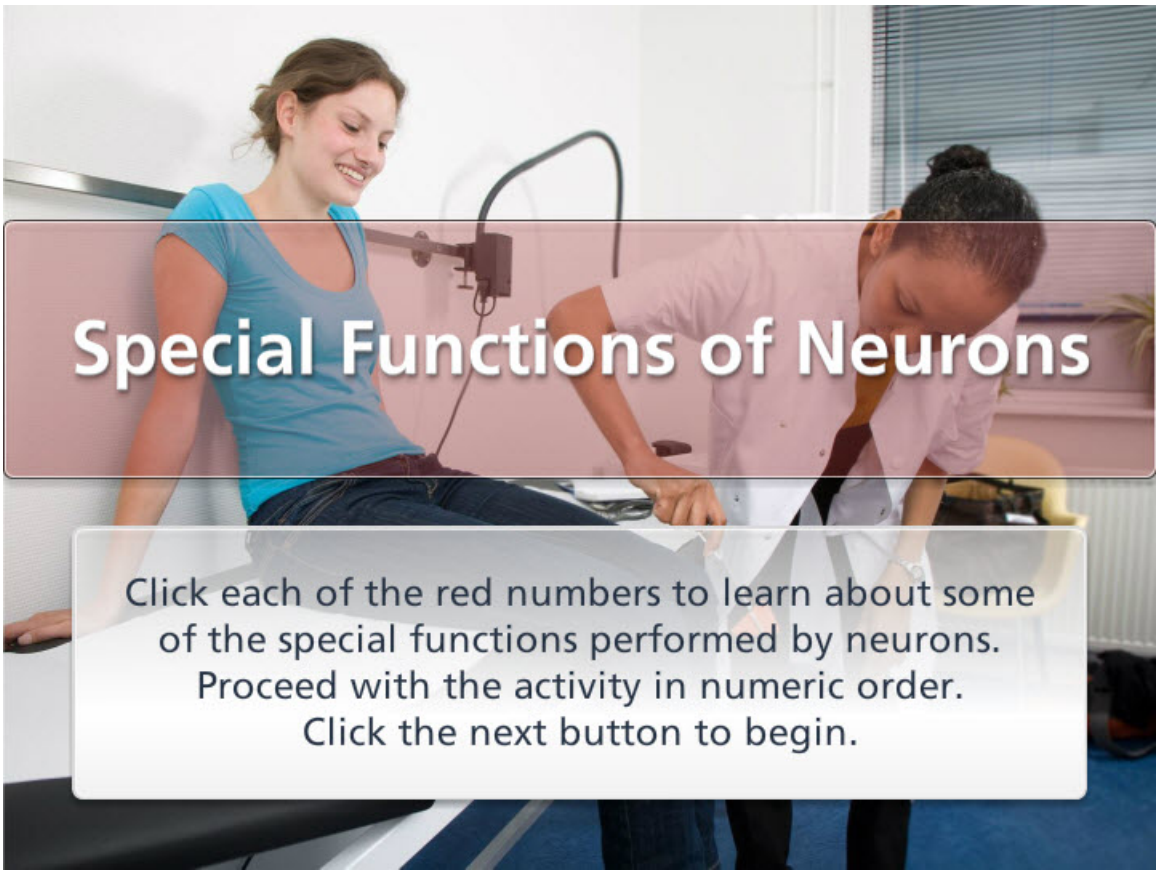
Module 2: Nervous and Endocrine Systems
Topic 2 Content: Specialized Functions of Neurons

Introduction



In this interactivity, click each of the red numbers to learn about some of the special functions performed by neurons. Proceed with the activity in numeric order. Click the next button to begin.

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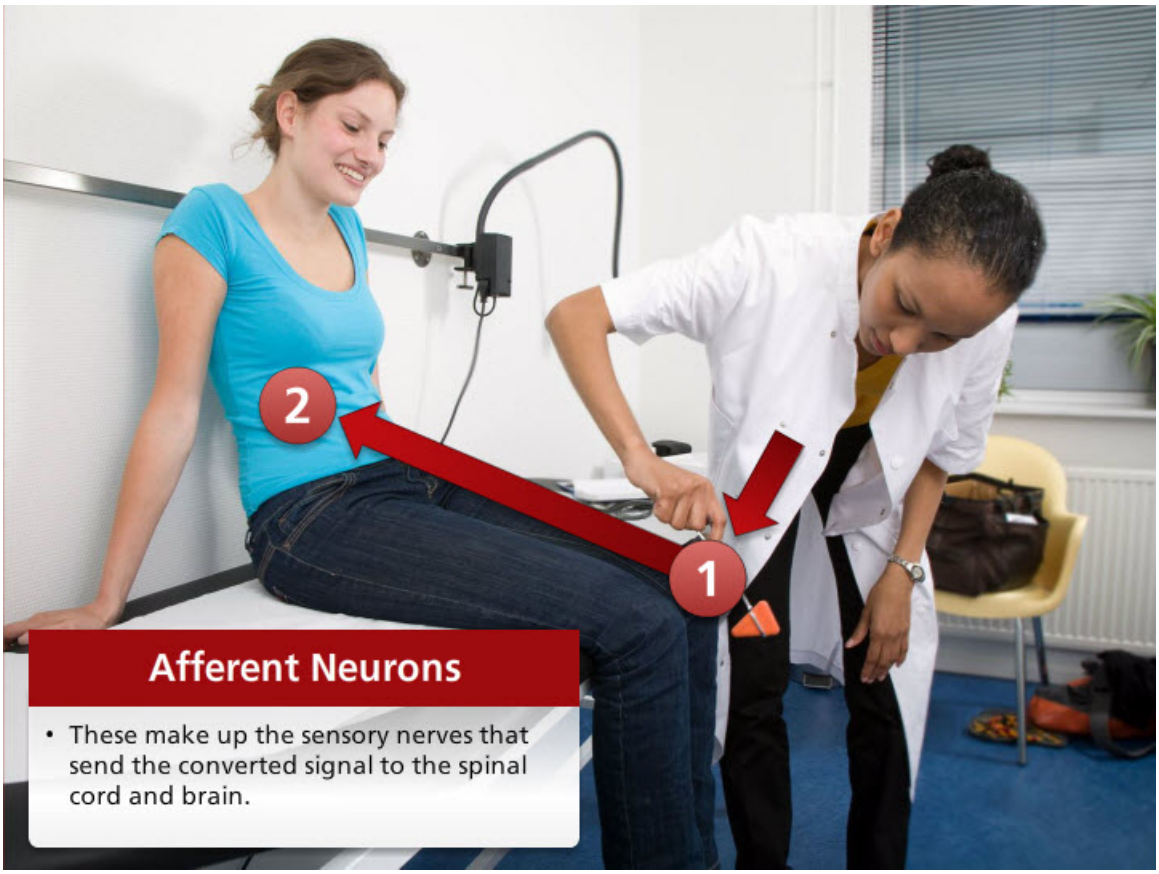
Receptor Cells

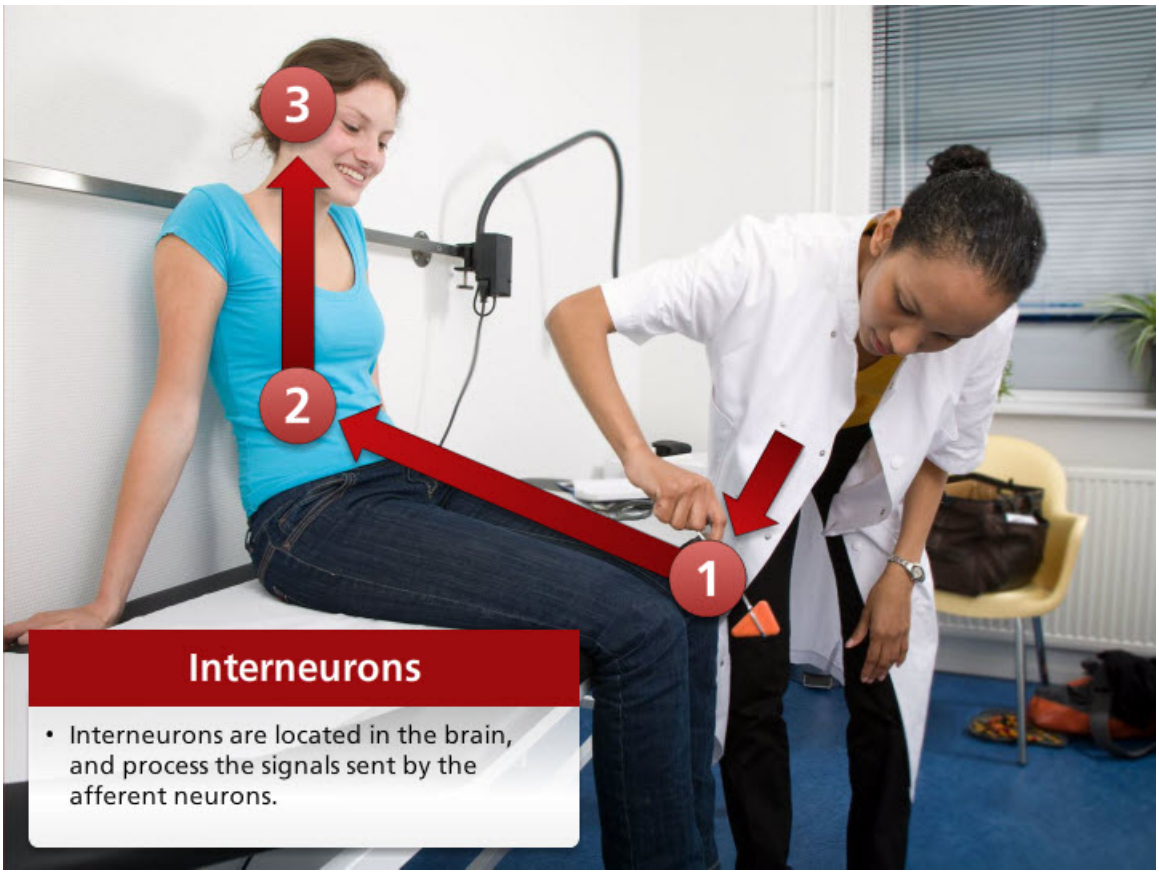
Some neurons are called receptor cells. These cells take energy from the surrounding environment - in the form of light, sound, heat, or pressure - and convert that energy into signals that can be sent to the spinal cord and brain through sensory nerves. When a doctor tests your reflexes by hitting a certain spot on your knee with a rubber mallet, your knee will kick out before you even realize what is happening. This is because receptor cells in your knee receive pressure from the mallet's blow and convert that energy into a signal that passes through your nerves.

Afferent Neurons



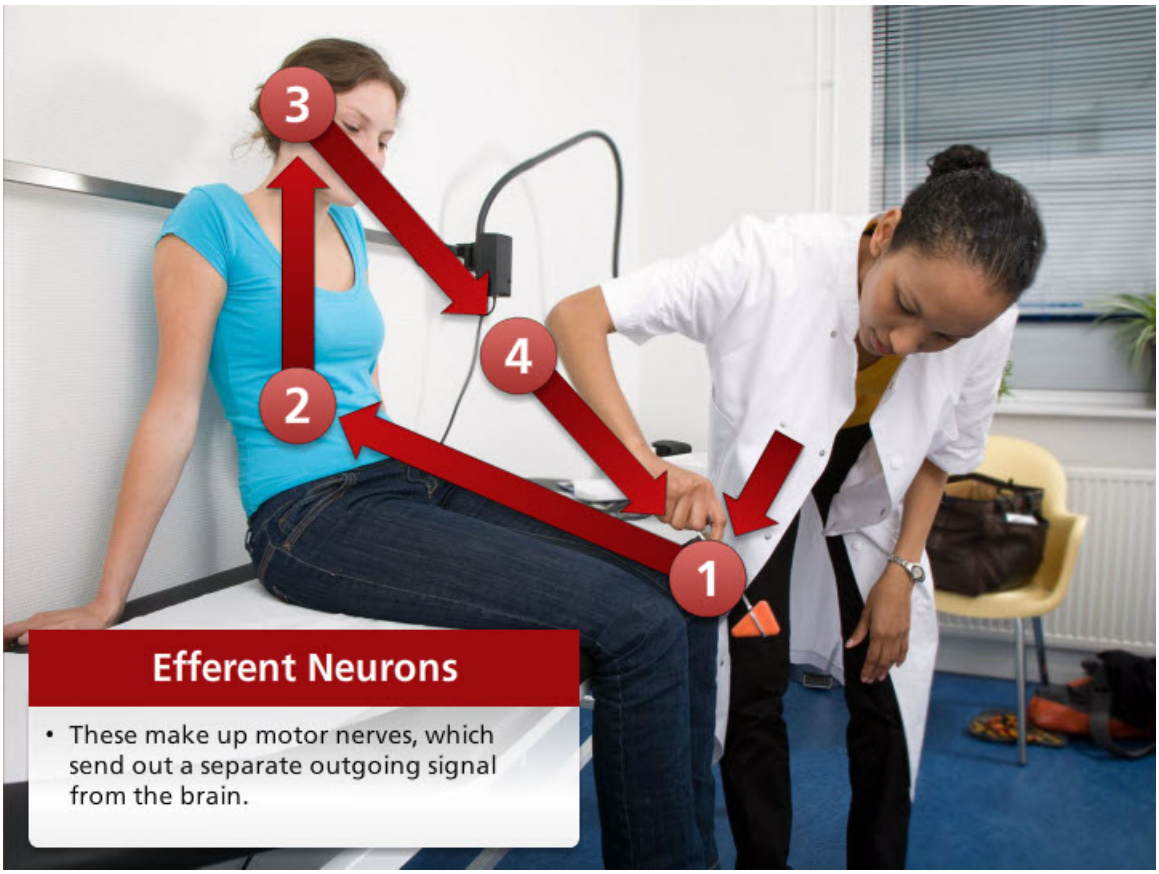
Sensory nerves are composed of afferent neurons. Once receptor cells have converted the energy from the surrounding environment, sensory nerves can then send signals to the spinal cord and brain.

Interneurons



After afferent neurons have sent incoming information to the spinal cord and brain, interneurons, which are located in the brain, process the signals.

Efferent Neurons



Once interneurons have processed the information and determined a response, motor nerves, which are made up of efferent neurons, send out a separate, outgoing signal.

At this point, your body interprets the sensation of being hit with a rubber mallet as important, and possibly dangerous. This is why the interneurons in your spinal cord send a message back to the muscles in your leg, causing your leg to extend. The extension locks and protects your knee.