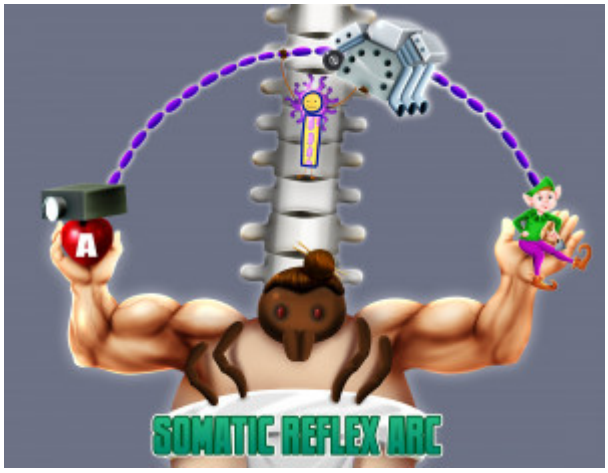
Somatic Reflex Arc

The somatic reflex arc is the neural pathway resulting in involuntary actions, also known as reflexes. An afferent sensory neuron receives some sort of sensory input or stimulus and transmits it toward the integration center. Interneurons integrate the signal (if there are multiple sensory inputs) and transmit the signal to the efferent motor neuron. In normal neural pathways, all input goes to the brain for processing. However, in reflexes, the input is processed in the interneurons instead, which allows for faster response. The efferent motor neuron stimulates muscle, or any effector target, into conducting the reflex action. The integration occurs in the spinal cord instead of the brain. Some reflexes have multiple interneurons, but simple reflex arcs only have one neuron separating the sensory neuron and effector neuron.



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Spinal Cord
Spinal Cord
The integration of reflex arcs happens in the spinal cord rather than in the brain, allowing reflexes to occur quickly and without conscious thought.

Sensory (Afferent) Neuron
(A) Apple with Sensor-camera
Afferent sensory neurons receive sensory input and transmit the signal on toward the integration center.

Interneurons Transmit
I-neuron-guy
The interneurons are located in the spinal cord and process the signal from the sensory neuron. They then pass the signal on to the effector side of the pathway without going to the brain for processing.

Motor (Efferent) Neuron
Motor Neuron
Efferent motor neurons receive the signal from the interneuron and transmit it to the effector target cells, often muscle cells. For example, in the patella-tendon reflex, the effector target cells are muscle cells located near the knee.

Effector Targets
Elf
The effector targets are the cells that act. They are often muscle cells, and are the terminal cells in reflex arcs.

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