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MATRIC NO: 19/MHS02/125

LEVEL: 200

DEPARTMENT: NURSING  
COURSE CODE: PHS 212

DISCUSS THE SOMATOSENSORY PATHWAYS

A somatosensory pathway typically consists of three neurons; primary, secondary and tertiary.

In the periphery, the primary neuron is the sensory receptor that detects sensory stimuli like touch or temperature. The cell body of the primary neuron is housed in the dorsal root ganglion of a spinal nerve or, if sensation is in the head or neck, the ganglia of the trigeminal or cranial nerves.

The secondary neuron acts as a relay and is located in either the spinal cord or the brainstem. This neuron’s ascending axons will cross, or decussate, to the opposite side of the spinal cord to the brain, where most will terminate in either the thalamus or the cerebellum.

Tertiary neurons have cell bodies in the thalamus and project to the postcentral gyrus of the parietal lobe, forming a sensory homunculus in the case of touch. Regarding posture, the tertiary neuron is locaed in the cerebellum.

The primary somatosensory area of the human cortex is locate in the postcentral gyrus of the parietal lobe. The postcentral gyrus is the location of the primary somatosensory area, the aarea of the cortex dedicated to the processing of touch information. At this location there is a map of sensory space referred to as a sensory homunculus.

A cortical homunculus is the brain’s physical representation of the human body; it is a neurological map of the anatomical divisions of the body. The surface area of cortex dedicated to a body part correlates with the amount of somatosensory input from that area.

The somatosensory system functions in the body’s periphery spinal cord, and the brain.