

Somatosensory Examination and Evaluation Study Guide

The perception of somatosensation requires that all components of the anatomical sensory pathway are intact. The primary anatomical considerations are:

- Sensory Receptors respond to a specific type of stimulation
 - Cutaneous and deep mechanoreceptors respond to touch, pressure, stretch and vibration.
 - Chemoreceptors respond to chemicals released by cells secondary to inflammation, injury, or infection
 - Thermoreceptors respond to changes in temperature
- Afferent nerve fibers from sensory receptors
- Sensory cell body located in the dorsal root ganglia
- Spinal cord or brainstem synapses
- Sensory pathways or tracts
 - Spinothalamic tracts
 - Anterolateral spinothalamic tracts (ALSpTh)
 - Nociceptive, thermal, and crude touch.
 - Fibers cross to opposite side of spinal cord within a few segments
 - Dorsal Columns/Medial Lemniscus system (DC/ML)
 - Discriminatory touch.
 - Stereognosis
 - Barognosis
 - Graphesthesia
 - Texture recognition
 - Two-point discrimination
 - Pressure
 - Kinesthesia
 - Proprioception
 - Vibration
 - Fibers remain uncrossed until the level of the medulla
 - Spinocerebellar tracts (SC)
 - Unconscious sensation for motor control
 - Primary synaptic connections within the brain
 - Thalamus, Somatosensory cortex. Reticular formation, Cerebellum and Vestibular cortex