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