ASCENDING TRACTS
Anatomical organisation of ascending sensory pathway
Posterior column

Figure 4-12 Discriminative touch, vibratory sense, and conscious muscle joint sense pathways.
Posterior column
(medial lemniscus) tracts
Lateral spinothalamic tract
Lateral spinothalamic tract
Anterior spinothalamic tract
Anterior spinothalamic tracts
Cuneo-cerebellar tract
Spinocerebellar tracts
Other ascending tracts

- Superior colliculus
- Midbrain
- Pons
- Spinoreticular tract passing to reticular formation
- Inferior cerebellar peduncle
- Medulla oblongata
- Inferior olivary nucleus
- Spinoreticular tract in lateral white column of spinal cord
- Spinotectal tract in anterolateral white column of spinal cord
- Spino-olivary tract in anterolateral white column of spinal cord
- Afferent information for spinovisual reflexes
- From cutaneous and proprioceptive organs
- Afferent information that influences consciousness
DESCENDING TRACTS
Descending motor pathway

Figure 4-15 Simple form of the descending motor pathway from the cerebral cortex to the skeletal muscle. Note the three neurons involved.
Corticospinal tract
Corticospinal tract
Reticulospinal tract
Tectospinal tract
Rubrospinal tract
Vestibulospinal tract
Olivospinal tract
Applied anatomy

• **Upper motor neuron disease:**
  if lesion is above pyramid, effect is contralateral; if below pyramid – ipsilateral
  Sudden: flaccid hemiplegia
  spastic hemiparesis involving loss of tendon reflex, muscle tone.
  After effects: Muscle tone increases progressively
  Spasticity (hyperflexia)
  Absence of abdominal reflexes

• **Lower motor neuron disease:**
  Weakness
  Wasting
  Loss of tendon reflex
  Fasciculation
  Fibrillations