Anatomical organisation of ascending sensory pathway
Posterior column
Posterior column (medial lemniscus) tracts
Lateral spinothalamic tract
Lateral spinothalamic tract
Anterior spinothalamic tract
Anterior spinothalamic tracts
Cuneo-cerebellar tract
Spinocerebellar tracts

- Superior cerebellar peduncle
- Inferior cerebellar peduncle
- Posterior spinocerebellar tract in posterolateral white column of spinal cord
- Anterior spinocerebellar tract in lateral white column of spinal cord
- Nucleus dorsalis (Clark's column)
- Unconscious muscle joint sense

Cerebellum
Other ascending tracts
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