

SPINAL TRACTS

1/28/86, 20 Jan 98, 18 Jan 00, 29 Jan 03, 26 Jan 05, 30Jan08, 31Jan11, 25Jan12
 Martini's 6th: 519-, 7th: 422-447, 9th: 502-513

SENSORY PATHWAYS: (p 504)

- first order neuron:** cell body in **dorsal root ganglion**
- second order:** cell body in **posterior grey horn** (or **medulla**), goes to thalamus
- third order:** cell body in **thalamus**, transmits to **cerebrum**, becomes conscious.

four types of *ascending* tracts: (p 504-505)

two in **posterior funiculus:**

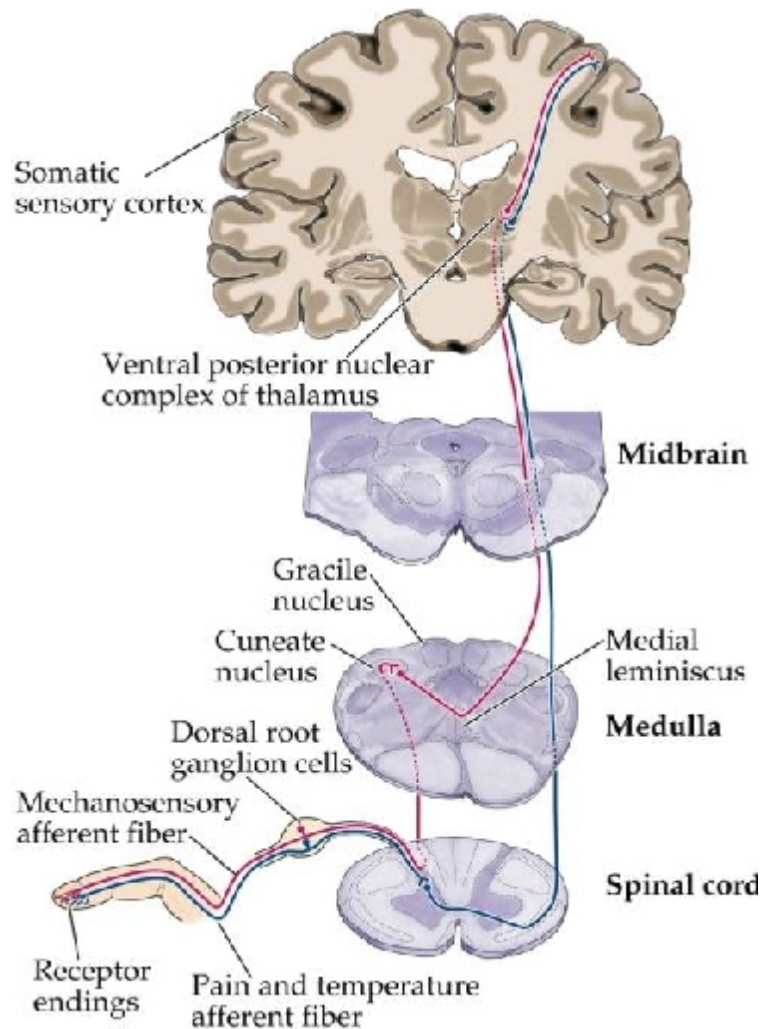
- 1 **fasciculus gracilis** (slender bundle) (p 503) muscle position
- 2 **fasciculus cuneatus** (wedge bundle) fine touch localization: upper limb and neck, upper trunk

a pair in the **lateral and anterior funiculus:**

- 3 **SPINOTHALAMIC TRACT:** (p 504) lateral: pain and temperature ventral: touch and pressure

one in the **lateral funiculus**

- 4 **SPINOCEREBELLAR:** (p 505) 2 dorsal and 2 ventral: **proprioceptors** to Purkinje cells in the cerebellum, do not reach cerebrum, therefore unconscious (p 486)



MOTOR PATHWAYS:

two *descending* tracts:

- PYRAMIDAL:** corticospinal tracts: two branches: lateral funiculus (p 509) ventral funiculus

EXTRAPYRAMIDAL: influence coordination, posture, balance, visual and auditory, stimulation, etc.

REFLEXES:

Monosynaptic patellar reflex (a postural reflex, helps maintain posture): (p 444)
 tap patellar ligament, stretches muscle spindle (p 442), generates sensory impulse
 Sensory neuron in DRG sends message to anterior horn cell
 Anterior horn cells transmits message to contract to quadriceps

polysynaptic withdrawal reflex (step on a tack): (p 445)
 pain from tack generates sensory impulse
 Sensory neuron in DRG sends message to internuncial cell (association)
 Internuncial cell sends messages to inhibitory and motor neurons
 Motor neuron (anterior horn cell) stimulates flexors
 Inhibitory neuron inhibits extensors

Babinski sign: infant fans toes when sole is stroked, adult curls (because of inhibitory impulses) (p 443)

Fanning in adults indicate lack of inhibitory impulses, damage to CNS.

