Tracts

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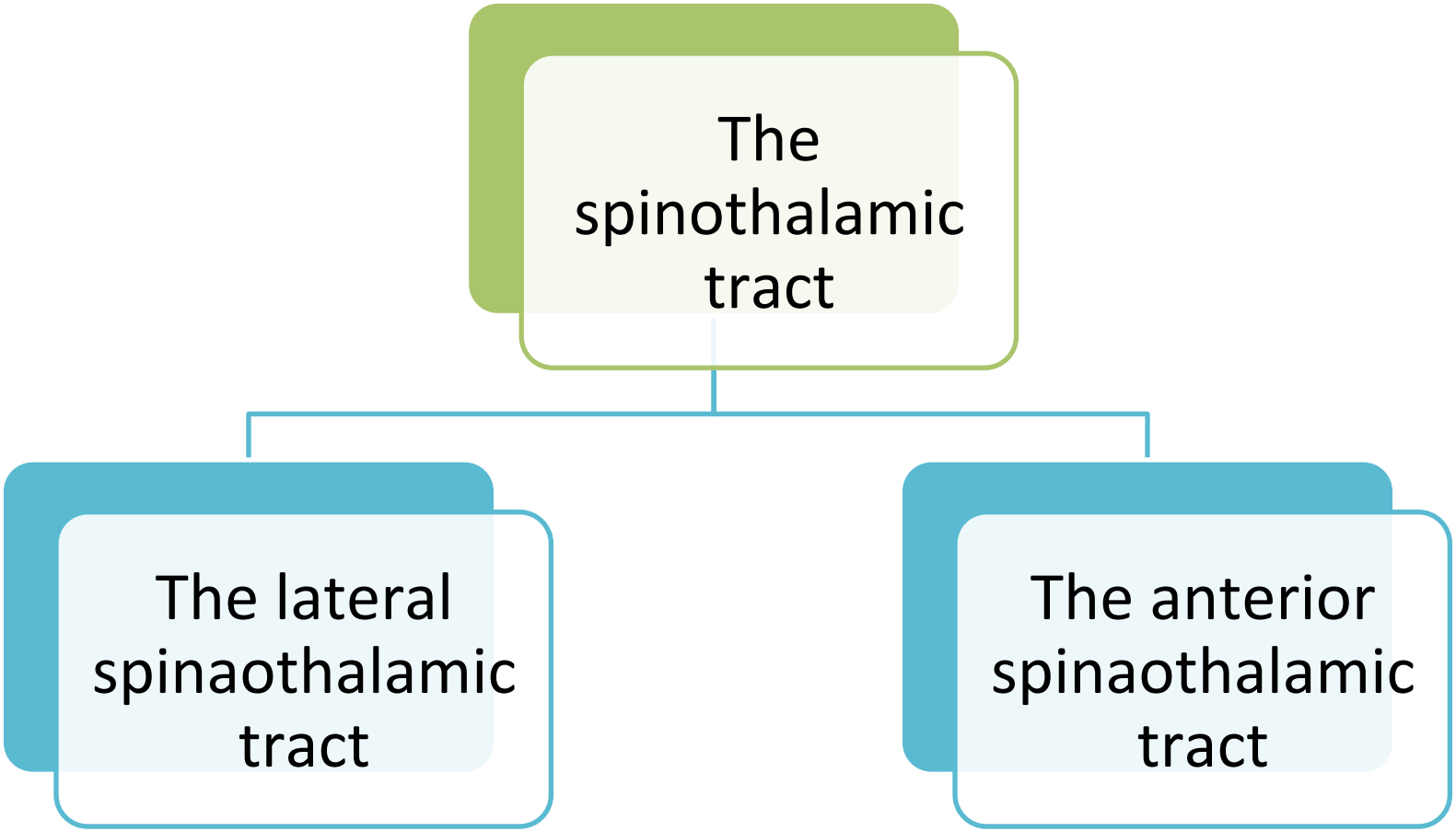

The spinothalamic tract
The lateral spinaothalamic tract
The anterior spinaothalamic tract

The spinothalamic tract

- Responsible for carrying the following information to the cortex:

  1. Non-discriminative touch.
  2. Pain.
  3. Temperature.

Properties of antero-lateral system

- All of the nerve fibers are relatively slowly conducting fibers: either lightly myelinated (Ad) fibers or unmyelinated (C)fibers.

- All of these fibers have free nerve endings in the periphery and do not have specialized sensory transduction organelles associated with them.

The lateral spinothalamalic tract

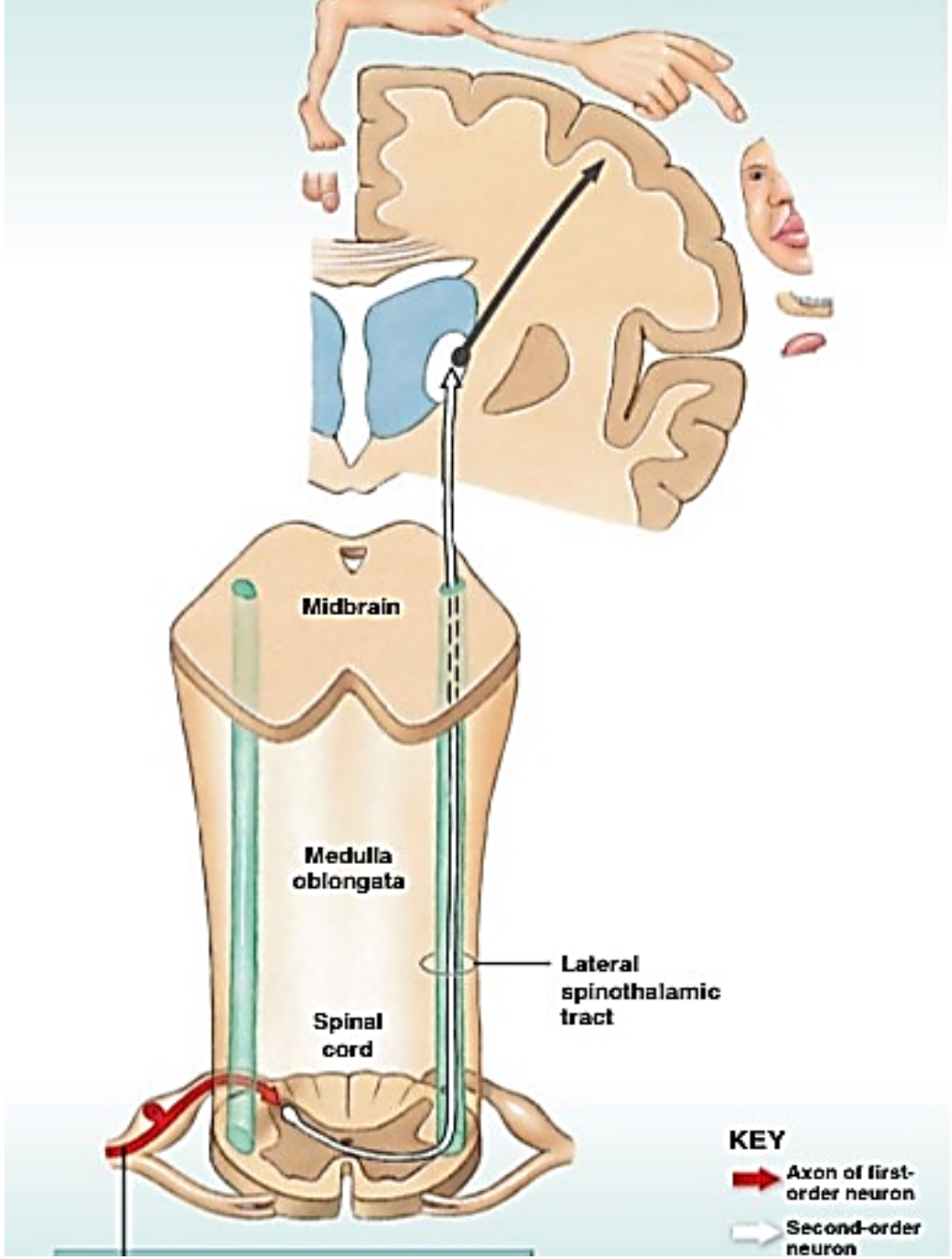
- It conveys the following sensations to the brain:

  1.Pain

  - ✓Fast pain (A Delta fibers)
  - ✓Slow pain (C fibers)

  2. Tempreture

  (A Delta fibers)

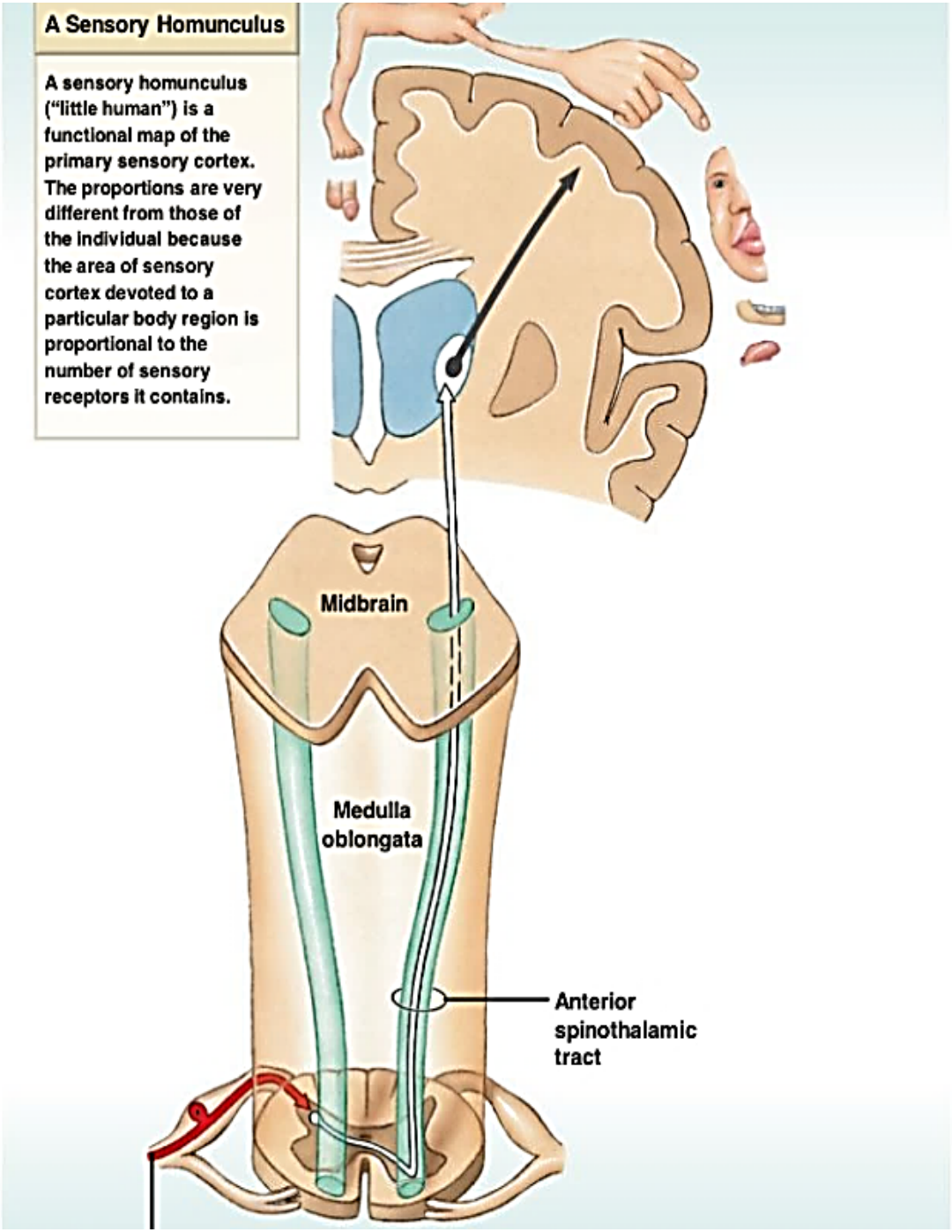

Midbrain
Medulla oblongata
Lateral spinothalamic tract
Spinal cord
KEY
Axon of first-order neuron
Second-order neuron

The anterior spinothalamalic tract

- It conveys the following sensations to the brain:
  1. Non-discriminative touch (crude touch).
  2. Pressure.

A Sensory Homunculus

A sensory homunculus ("little human") is a functional map of the primary sensory cortex. The proportions are very different from those of the individual because the area of sensory cortex devoted to a particular body region is proportional to the number of sensory receptors it contains.



Dorsal root ganglia

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Posterior gray horn

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Cross over to the anterior/lateral white columns and ascend in the contralateral white column as the anterior/ lateral spinothalamic tract

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In the medulla the anterior spinothalamic and the lateral spinothalamic tract join the spinotectal tract and together they form the spinal lemniscus which will then ascend through the pons

↓

In the midbrain it lies in the tegmentum lateral to the medial lemniscus

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Fibers from the spinal lemniscus synapse with the 3rd order neuron

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Ventro-postro-lateral nucleus of the thalamus

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They then enter the posterior limp of the internal capsule

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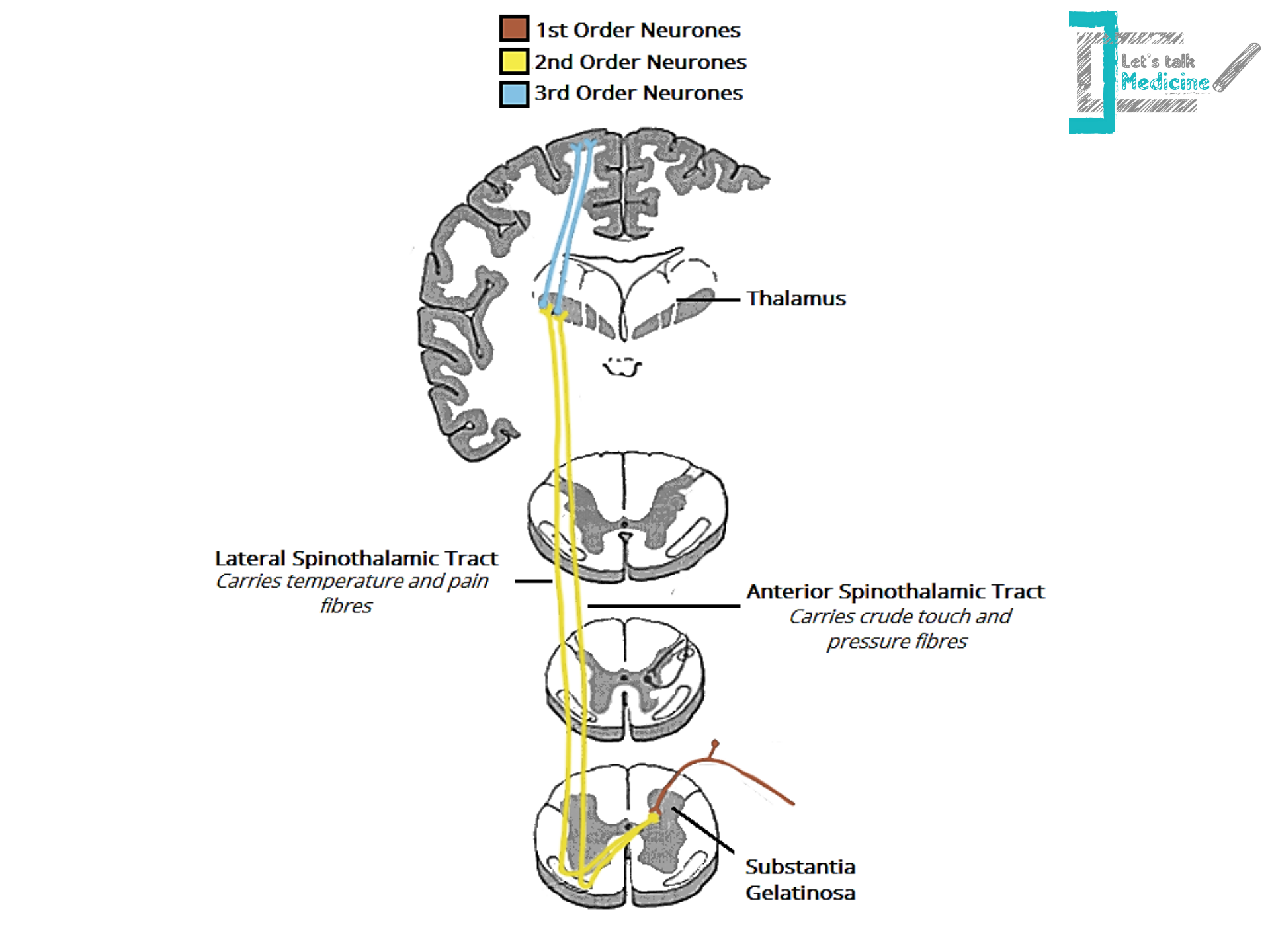
As cornoa radiata to the post central gyrus (the somato- sensory cortex of the parietal lobe)


1st Order Neurones
2nd Order Neurones
3rd Order Neurones
Let's talk Medicine
Thalamus
Lateral Spinothalamic Tract
Carries temperature and pain fibres
Anterior Spinothalamic Tract
Carries crude touch and pressure fibres
Substantia Gelatinosa

References

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- Dr. najeeb channel :Sensory systems and ascending tracts parts 1,2,3 and 4

For any questions or comments please contact us at:

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