	Conscious proprioception Discriminative touch Vibration	Pain Temp	Simple touch pressure	Unconscious proprioception
Receptors	a) Proprioception: muscle and tendon spindles. b) Discriminative touch: Meissner's corpuscles. c) Vibration: Pacinian corpuscles.	Free nerve endings	a) Touch: free nerve endings, Merkel's disc and Meissner's corpuscles. b) Pressure: Pacinian corpuscles.	Muscle spindles, tendon spindles and joint receptors. ✓ **Function:** Coordination of movement maintenance of muscle tone
Tract	Gracile → below T6 Cuneate → above T6	**lateral spinothalamic tract** (Lissauer's Tract)	1. Ventral spinothalamic tract. 2. Gracile and cuneate tracts	1. Dorsal spinocerebellar tract (Clarke's → ICP) 2. Ventral spinocerebellar (spinal border cells → SCP) 3. Cuneo-cerebellar tract (accessory cuneate nucleus → ICP)
1st order Neuron	**DRG**			------
2nd order Neuron	Gracile and Cuneate nuclei (then form **Medial lemniscus**)	laminae I to IV of Rexed (SGR)	Lamina III, IV (Nucleus proprius)	------
3rd order Neuron	**VPLNT** → upper 2/3 of general sensory area in postcentral gyrus (3,1,2)			------
Lesion	a) Before 2nd order (Dorsal funiculus) → **ipsi**lateral loss b) After 2nd order (Med lemniscus) → **contra**lateral loss	Contralateral 2 segments below	Not detected clinically	**Ataxia** (loss of muscle coordination).

Sensations from the body Ascending tracts of spinal cord		
➢ **Tracts in posterior column (Dorsal fasciculus)**	➢ **Tracts in the lateral funiculus**	➢ **Tracts in the ventral funiculus (Ant fasciculus)**
1. **Gracile tract**: Medial in position and conveys sensations from below T6 segment. 2. **Cuneate tract**: Lateral in position and conveys sensations from above T6 segment. ↓ They convey the following sensations from the same side of the body: ✓ Conscious proprioception (sense of position and sense of movement). ✓ Discriminative touch (localization, 2 point-discrimination, stereognosis) ✓ Sense of Vibration.	1. **Posterior (dorsal) spinocerebellar tract**. 2. **Anterior (ventral) spinocerebellar tract**. 3. **Lateral spinothalamic tract**: conveys Pain and Temperature sensations from opposite side of the body to thalamus. 4. **Spino-olivary tract**: The 3 tracts convey unconscious proprioception from muscles to cerebellum for coordination of movements of limbs. 5. **Spino-tectal tract**: conveys information to superior colliculus for Spino-visual reflexes. 6. **Spino-reticular**: convey dull aching" slow pain" to RAS then thalamus that activates Cerebral cortex. 6. **Lissauer's tract**: is a short tract at the tip of the dorsal horn.	**Anterior (ventral) spinothalamic tract** ↓ Mediates Simple Touch and Pressure sensations from the opposite side of the body to the thalamus.