

Vestibulospinal Tract

The **vestibulospinal tract** is a descending motor pathway involved in the regulation of **posture**, **balance**, and **extensor muscle tone**. It originates in the **vestibular nuclei** of the brainstem and projects ipsilaterally to the spinal cord.

Origin

- Lateral and medial **vestibular nuclei** in the pons and medulla (especially Deiters' nucleus).

Course

- **Lateral vestibulospinal tract (LVST)** descends **uncrossed** through the ventral funiculus of the spinal cord. - **Medial vestibulospinal tract (MVST)** descends **bilaterally**, primarily within the **medial longitudinal fasciculus (MLF)**, but terminates mostly in **cervical spinal cord**.

Termination

- Synapses mainly in **laminae VII and VIII** of the spinal cord. - Influences **alpha and gamma motor neurons** that innervate **axial and proximal limb extensor muscles**.

Function

- Facilitates **extensor tone**, particularly for **anti-gravity muscles**. - Critical in **maintaining balance** and **upright posture**. - Coordinates **head and eye movements** in conjunction with visual and proprioceptive input.

Clinical relevance

- Lesions result in **loss of postural reflexes** and **balance impairment**. - May be overactive in **decerebrate rigidity**. - Involved in **vestibular rehabilitation** after stroke or labyrinthine injury.

Related tracts

- [Lateral Corticospinal Tract](#)
- [Reticulospinal Tract](#)
- [Medial Longitudinal Fasciculus](#)

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