

"Trochlear Nerve (Cranial Nerve IV)"

- Function: Entirely motor; controls the movement of the superior oblique muscle of the eye, allowing downward and lateral eye movement.

"Trochlear Nerve Nucleus"

- Location: In the anterior part of the gray matter surrounding the cerebral aqueduct of the midbrain, below the oculomotor nucleus at the level of the inferior colliculus.

» Fiber Connections:

- Corticonuclear fibers: From both cerebral hemispheres.
- Tectobulbar fibers: Connect the trochlear nucleus to the visual cortex through the superior colliculus.
- Medial longitudinal fasciculus: Links with the nuclei of the third, sixth, and eighth cranial nerves for coordinated eye movement.

"Course of the Trochlear Nerve"

- Emergence: It is the only cranial nerve to exit from the posterior surface of the brainstem.

» Pathway:

- After emerging from the midbrain, the trochlear nerve decussates (crosses over) with the nerve from the opposite side.
- It travels through the middle cranial fossa, along the lateral wall of the cavernous sinus.
- Enters the orbit through the superior orbital fissure.

"Muscle Supplied by the Trochlear Nerve"

- Superior Oblique Muscle: Facilitates the eye's downward and lateral movement.
- Overall Responsibility: Downward and outward movement of the eyeball, achieved through the action of the superior oblique muscle.