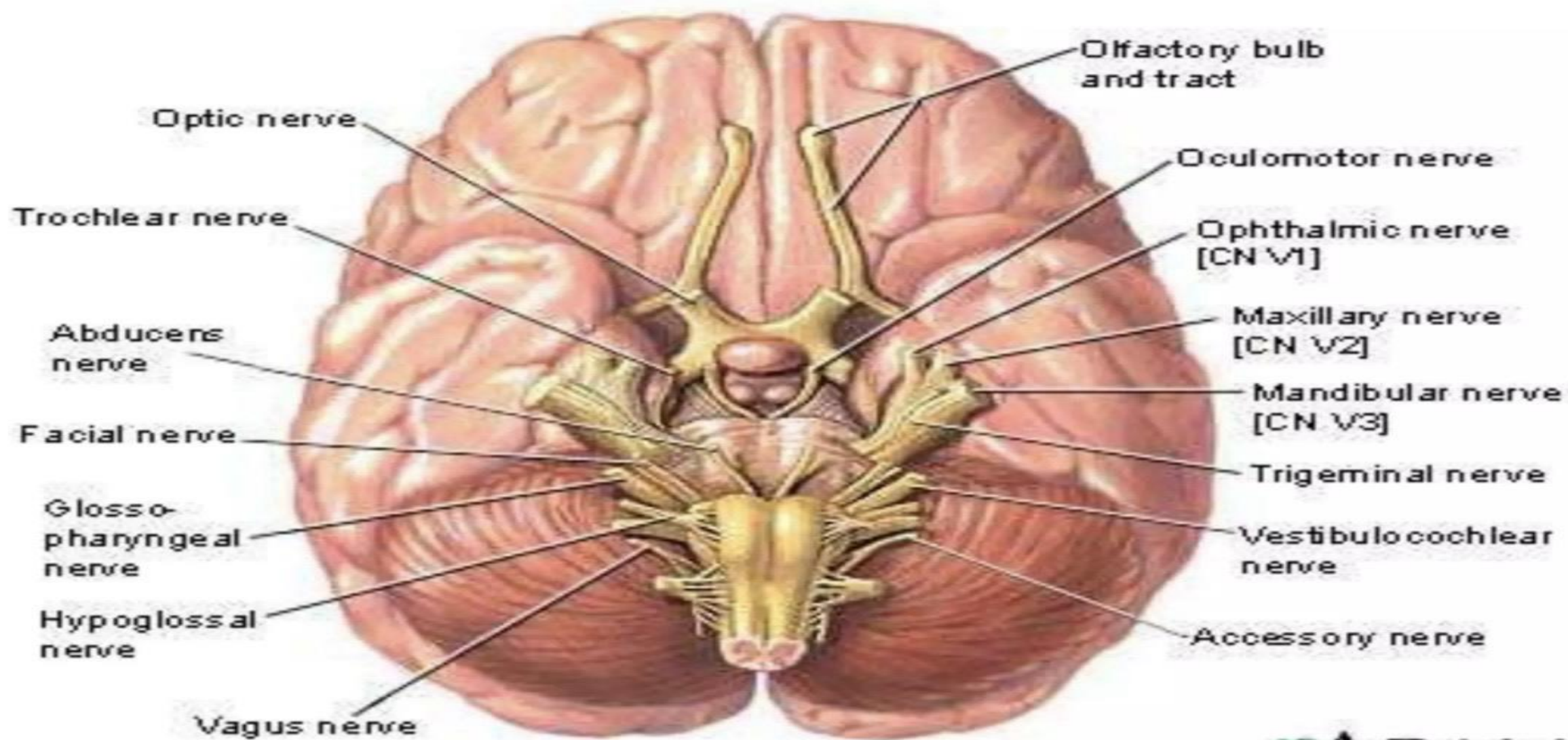


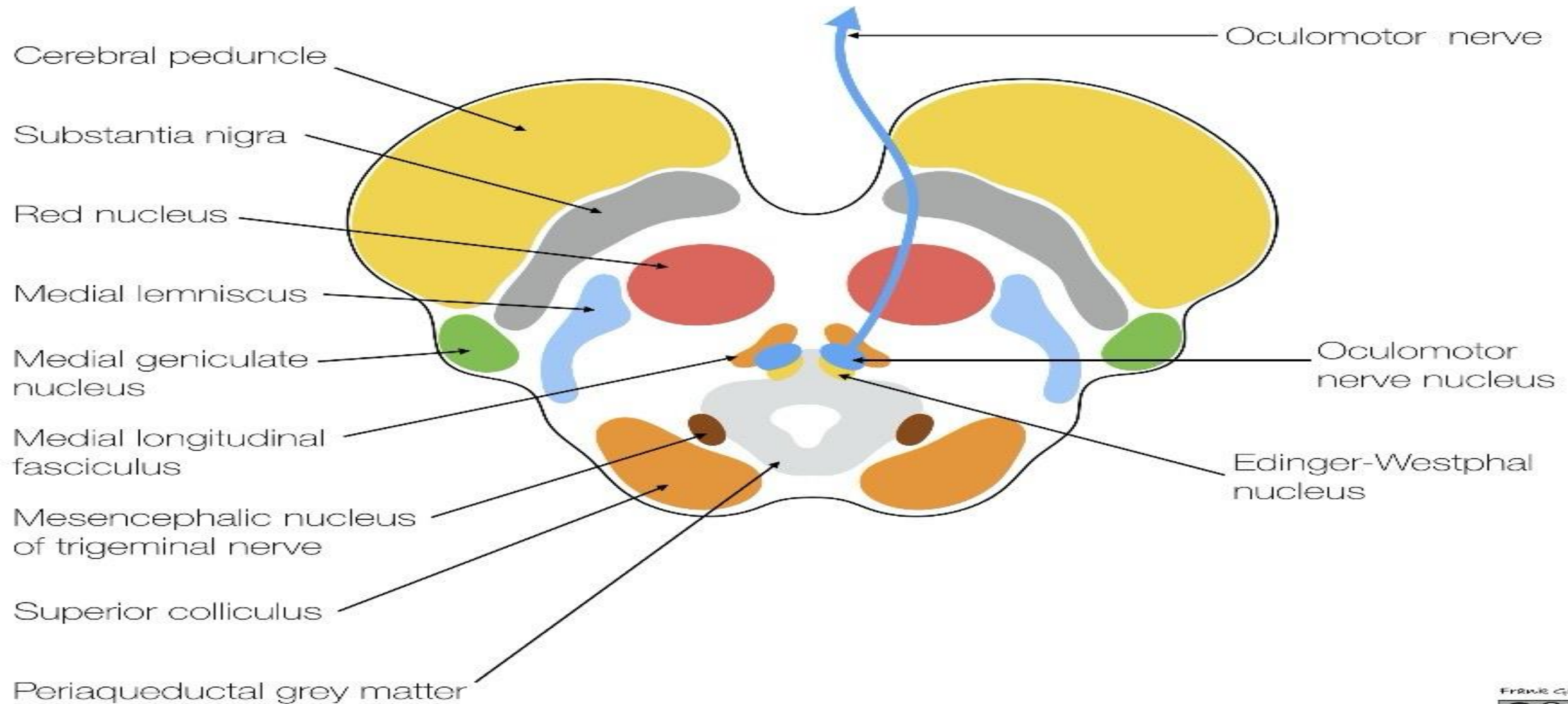
Cranial nerve III , IV and VI.



Cranial nerve III or
Oculomotor nerve.

Midbrain

Axial section at the level of the superior colliculus and CN III



Cranial nerve III or Oculomotor nerve.

- **Two motor nuclei:**
- Oculomotor nucleus (somatic).
- Edinger – westphal or accessory oculomotor nucleus (parasympathetic , visceral).
- Both the nuclei lie in the midbrain at the level of **superior colliculi**.

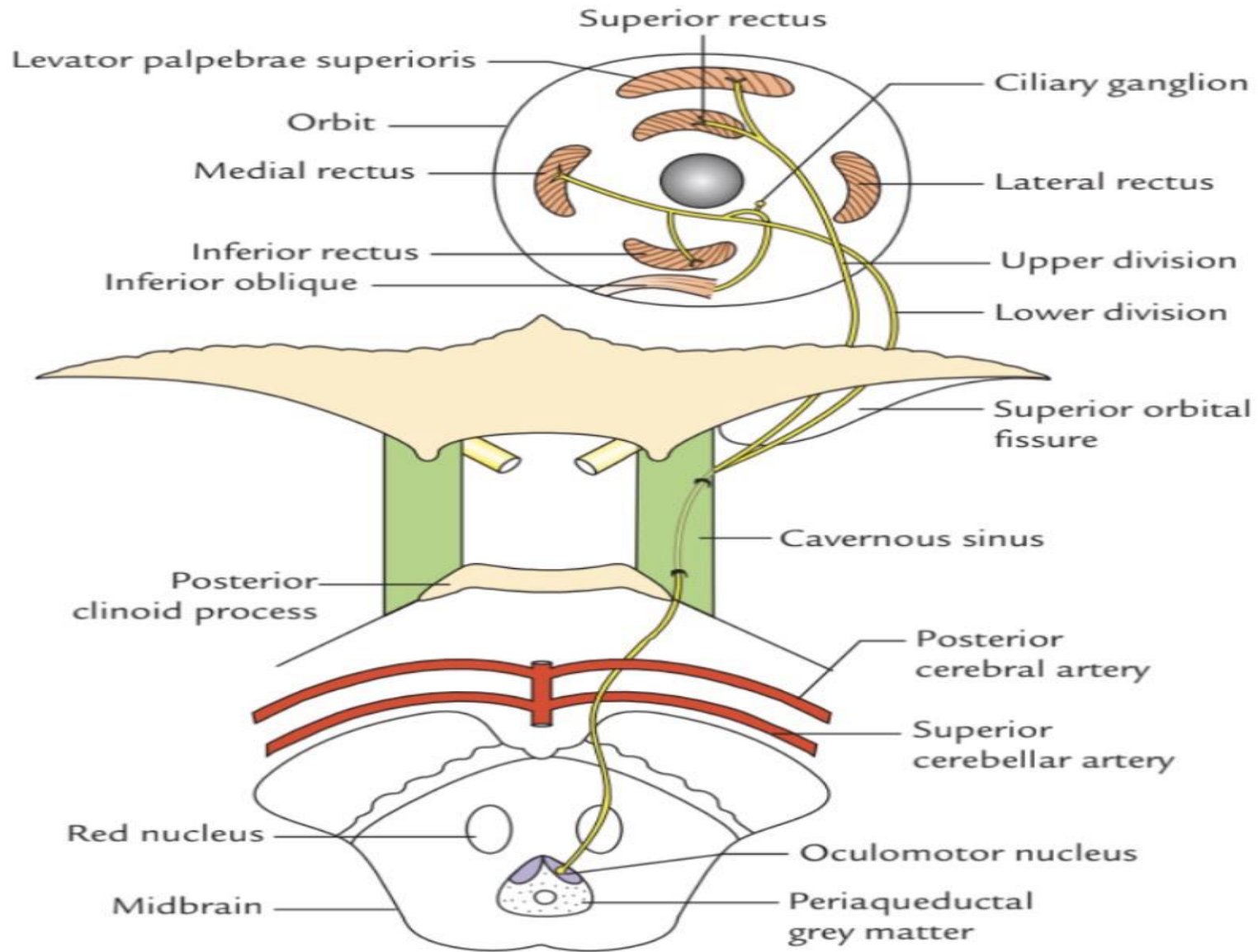


Fig. 22.4 Origin, course, and distribution of the oculomotor nerve.

Pathway :

The nerve is attached to the medial surface of the crura of midbrain.



Enters the cavernous sinus.



At the anterior pole of cavernous sinus the nerve divides into superior and inferior divisions.



Both the division pass through the middle part of the superior orbital fissure.



Reaches the orbital cavity.

Branches :

- Superior division:

Superior rectus .

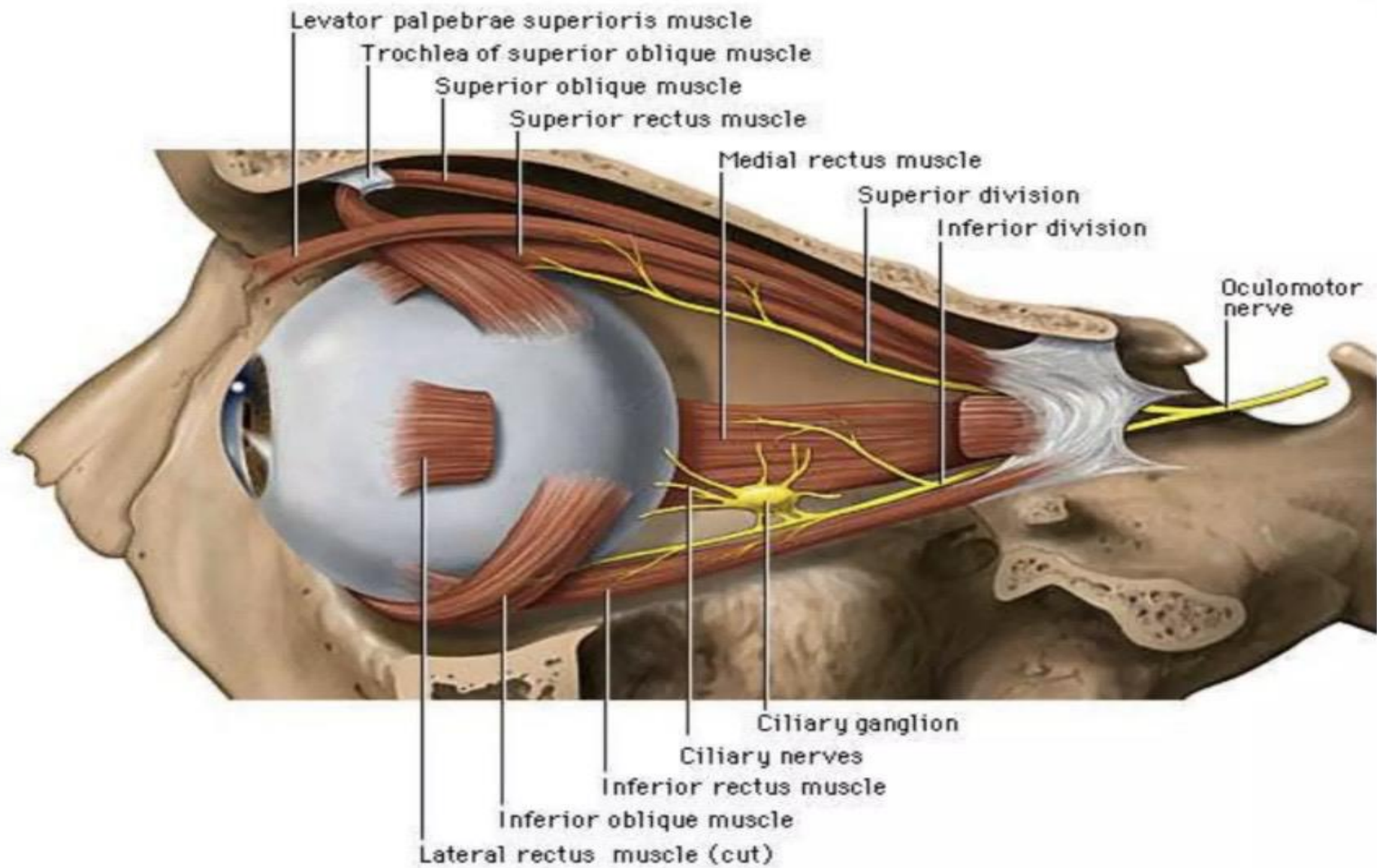
Levator pelpabrae superioris.

- Inferior division:

Inferior rectus.

Medial rectus.

Inferior oblique.



Functions.

- Lifting the upper eyelid.
- Turning the eye upward downwards and medially.
- Constricting the pupil.
- Accommodating the eye.

Oculomotor nerve palsy.

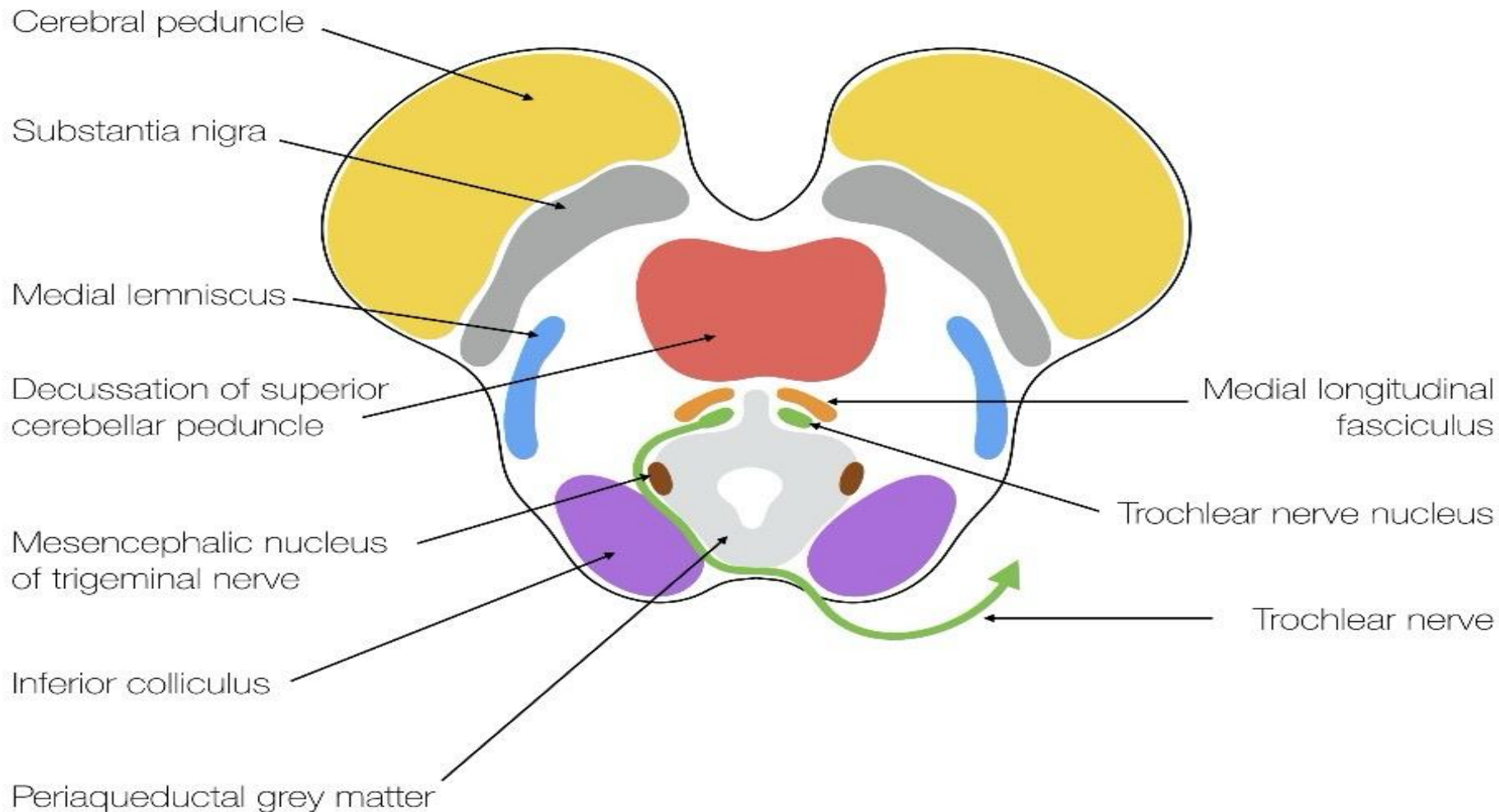
- **Caption:** MODEL RELEASED. Oculomotor nerve palsy. Face of a 36-year-old woman with third (III) nerve palsy after surgery to treat a subarachnoid haemorrhage. A berry aneurysm, a common localised dilation of an intracranial artery, caused the subarachnoid haemorrhage. III nerve palsy is a dysfunction of the third cranial nerve, the oculomotor nerve, which controls the movement of the eyes. It leads to an inability to move the eye, double vision, a fixed and non-reactive pupil and eyelid drooping (ptosis, seen here, right eye). Ptosis can be corrected by surgery



Cranial nerve IV or
Trochlear nerve.

Midbrain

Axial section at the level of the inferior colliculus and CN IV



Cranial nerve IV or Trochlear nerve.

- The nerve has one motor nucleus .Trochlear nucleus.(somatic).
- Nucleus lies at the level of inferior colliculi nucleus.
- **The nerve is unique in three aspects:**
- It is the smallest cranial nerve.
- Emerge from dorsal aspect of midbrain.
- Decussate within the brain stem.

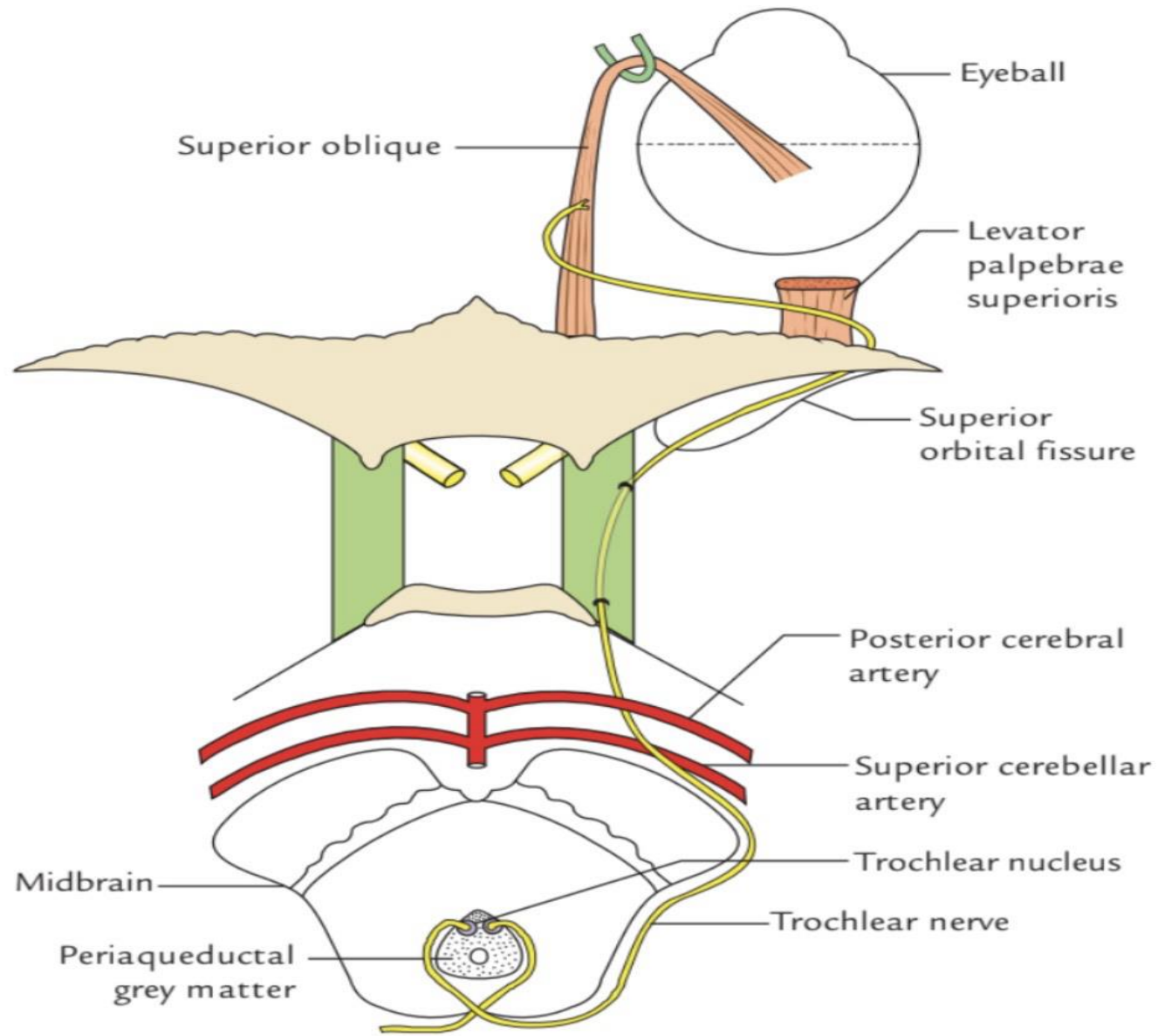

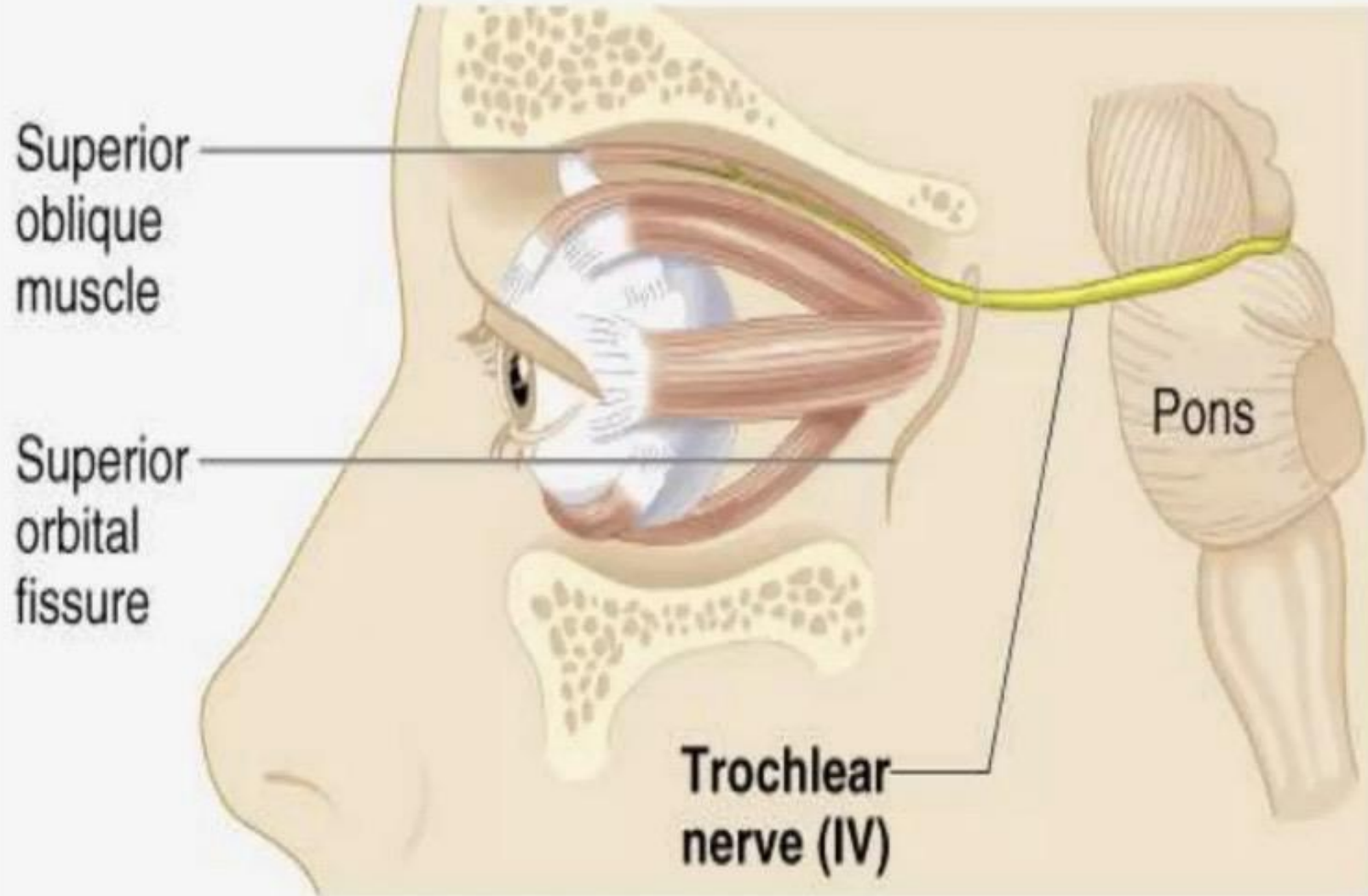


Fig. 22.5 Origin, course, and distribution of the trochlear nerve.

Pathway:

- Emerges from the posterior surface of midbrain beneath the inferior colliculi.
 - Curves around the lateral surface of cerebral peduncles.
 - Enters the cavernous sinus.
 - Passes through the lateral part of the superior orbital fissure.
 - Reaches the orbital cavity.
 - Supplies superior oblique muscle.
- 



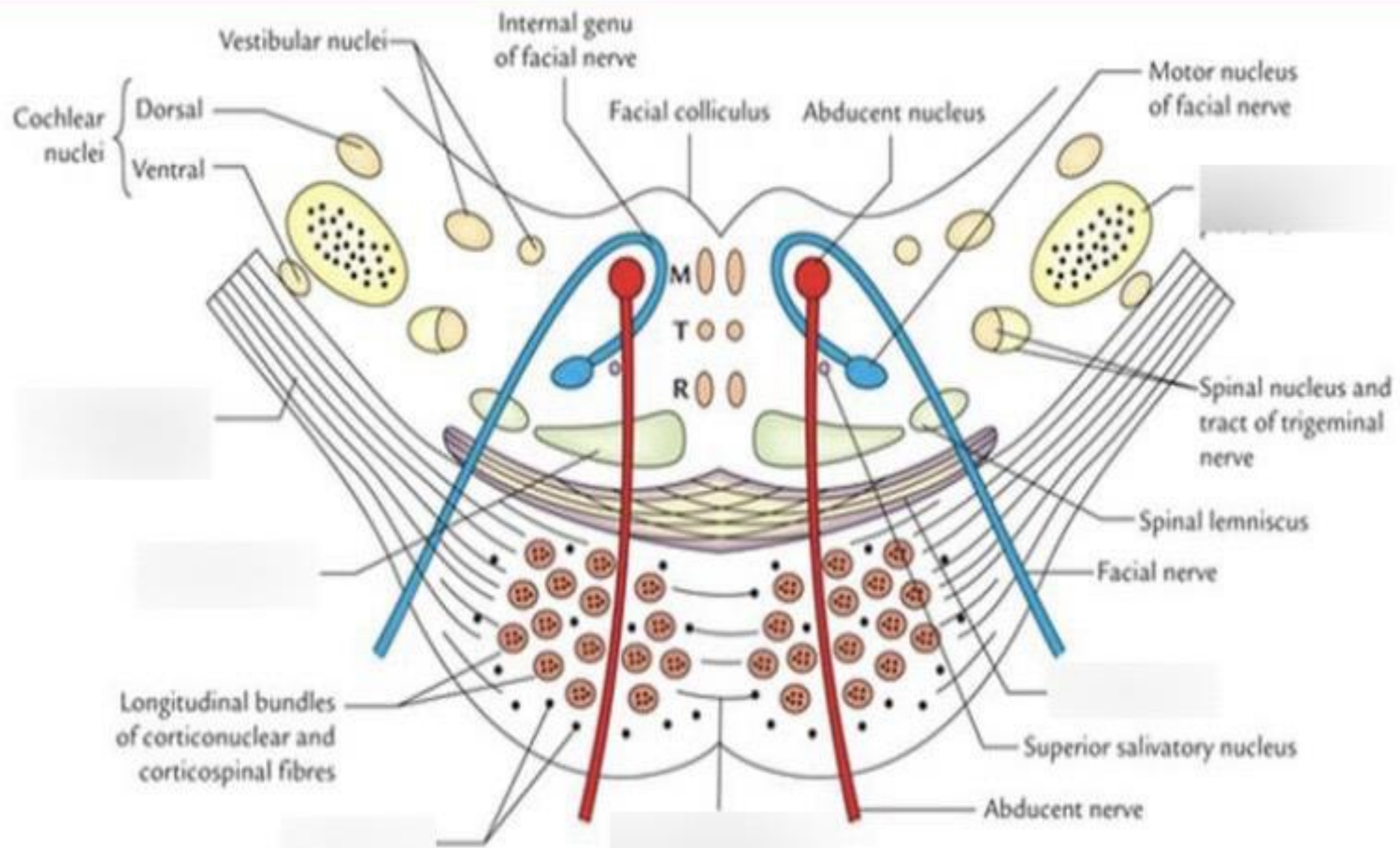
Functions.

- Supplies the superior oblique muscles.
- Turns the eyeball downwards and laterally.

Trochlear nerve palsy.



Cranial nerve VI or Abducent Nerve.



Cranial nerve VI or Abducent Nerve.

- Abducent nerve has one motor nucleus .
- Abducent nucleus.(somatic).
- The abducent nucleus is located in the lower pons.
- Supplies Lateral rectus muscle.

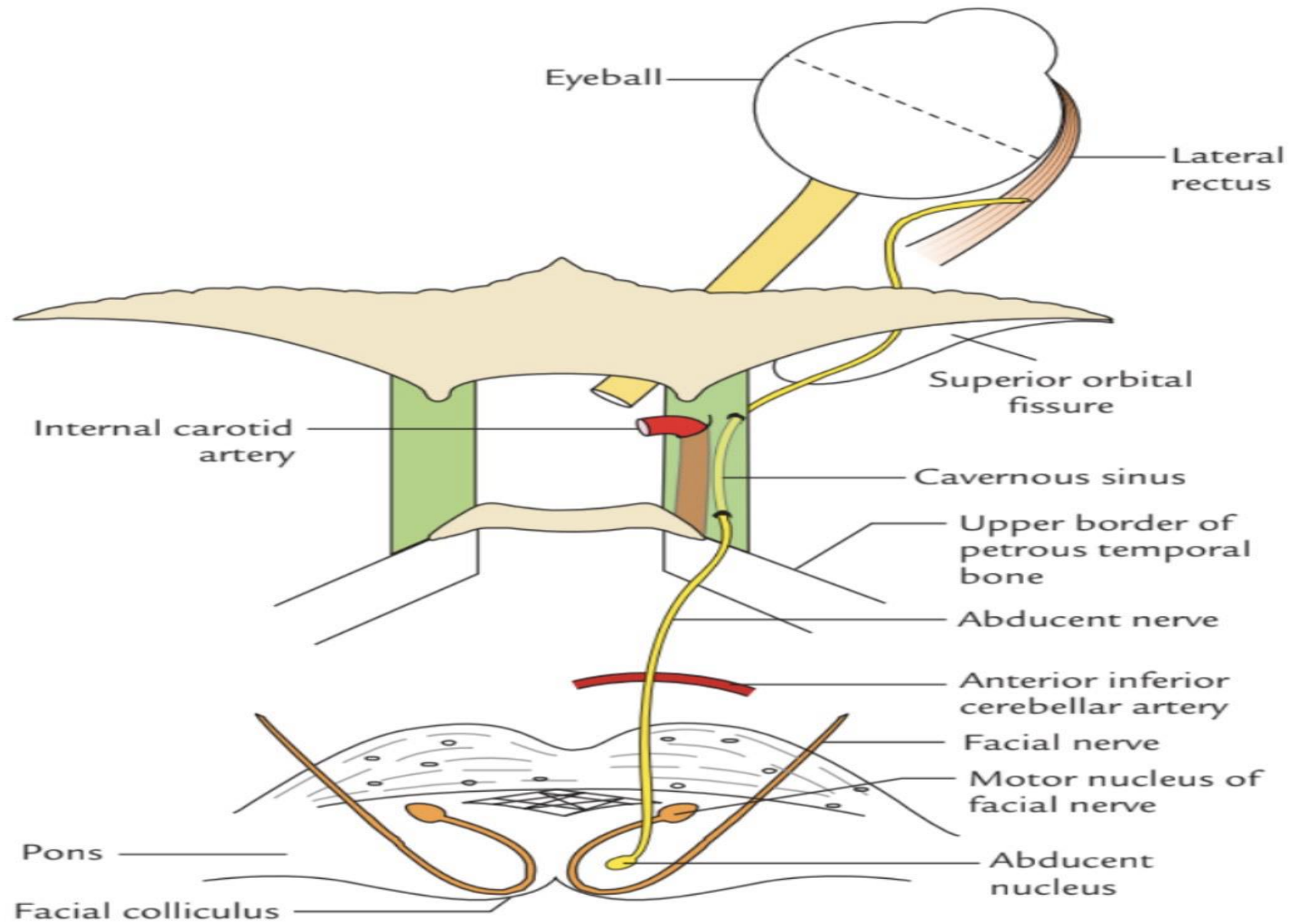


Fig. 22.6 Origin, course, and distribution of the abducent nerve.

Pathway:

The nerve emerges b/w pons and the pyramid of the medulla .



Enters the inferior petrosal sinus at the apex of the petrous temporal bone.



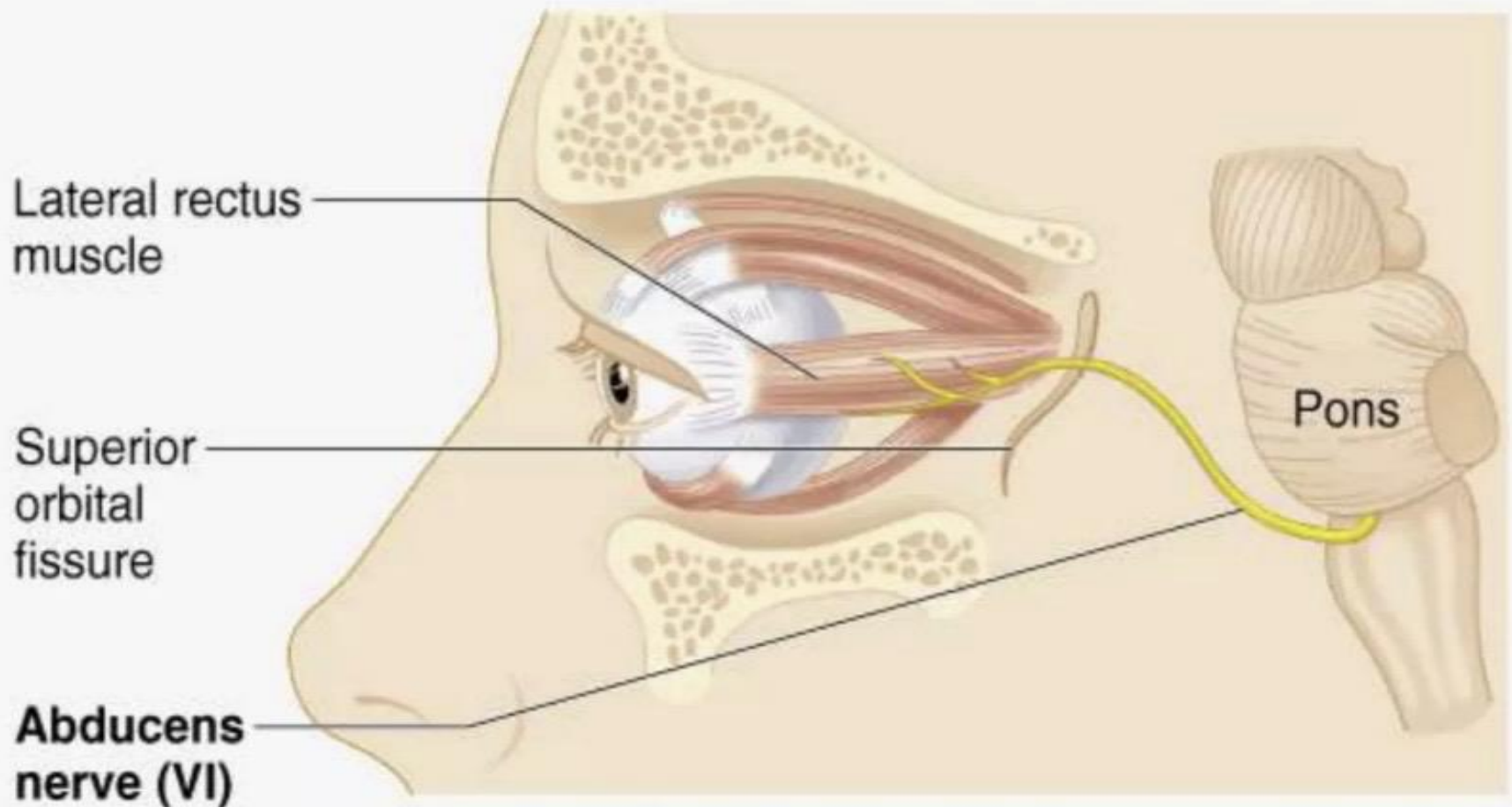
Passes through the middle part of the superior orbital fissure .



Reaches the orbital cavity.



Supplies lateral rectus muscle.



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Functions.

- Innervates the lateral rectus muscle of the ipsilateral orbit.
- Lateral rectus is responsible for lateral gaze.

Abducent nerve palsy.

