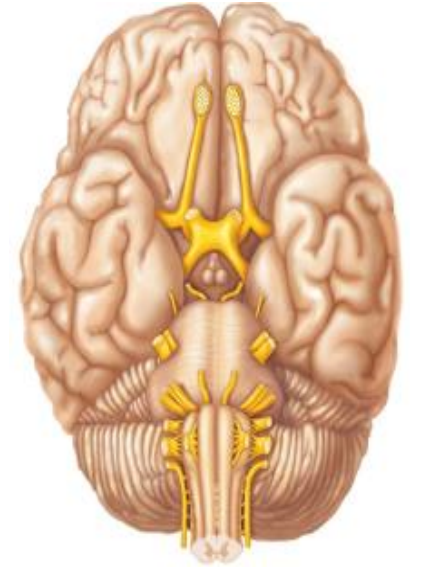


**Midbrain**  
**and cranial nerves originating from**  
**Midbrain**



**Dr. Rasha Abdelaziz Abdellatif**  
**Associate professor of human anatomy and**  
**Embryology – Mutah university**

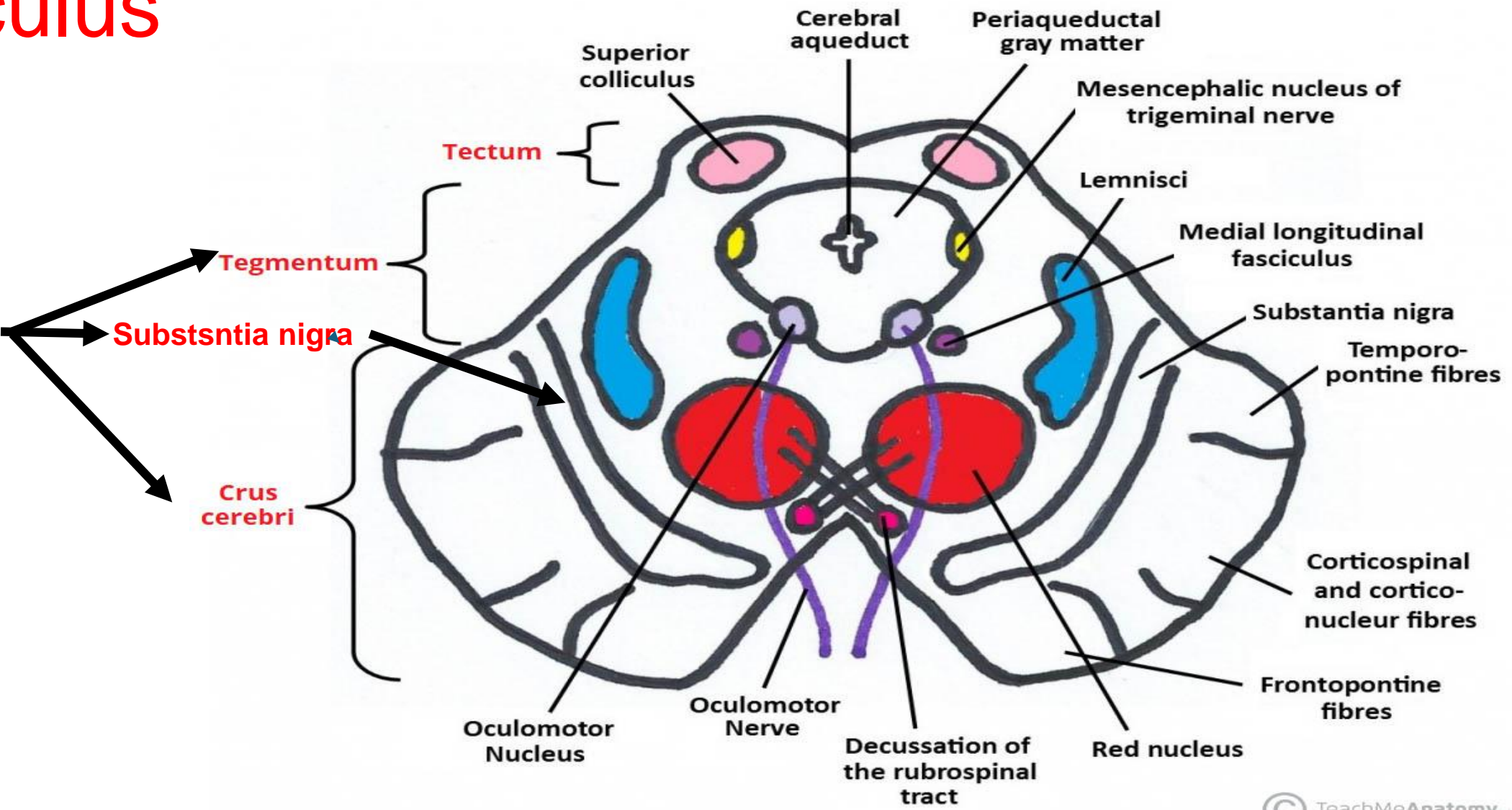
# Session ILOs

**By the end of this lecture, the student should be able to:**

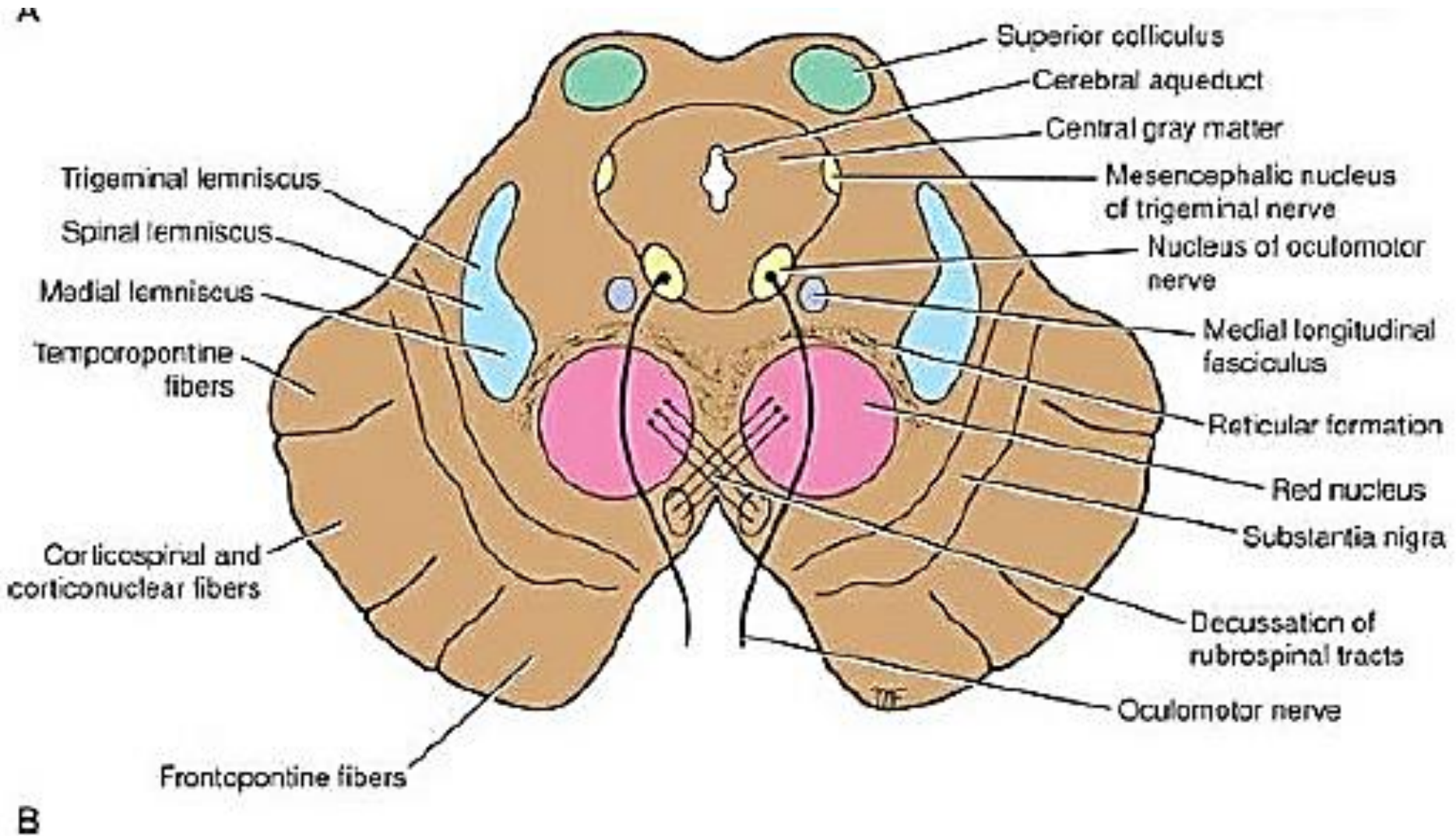
- 1. Outline the detailed neuroanatomy of cross sections of midbrain**
- 2. describe the origin of cranial nerves III,IV**
- 3. describe the course of cranial nerves III,IV**
- 4. describe the supply of cranial nerves III,IV**

# Midbrain cross section at the level of superior colliculus

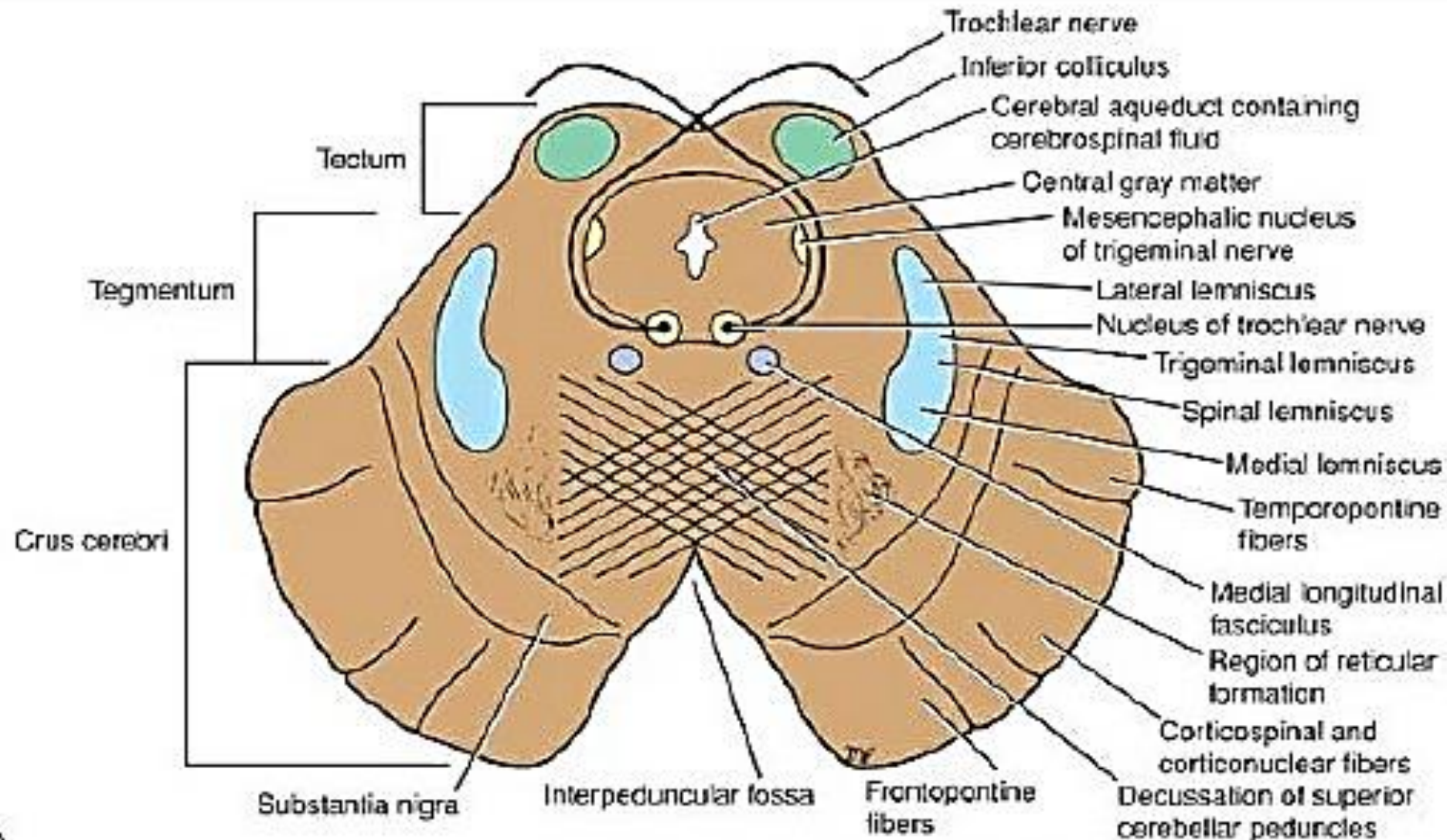
Cerebral peduncle



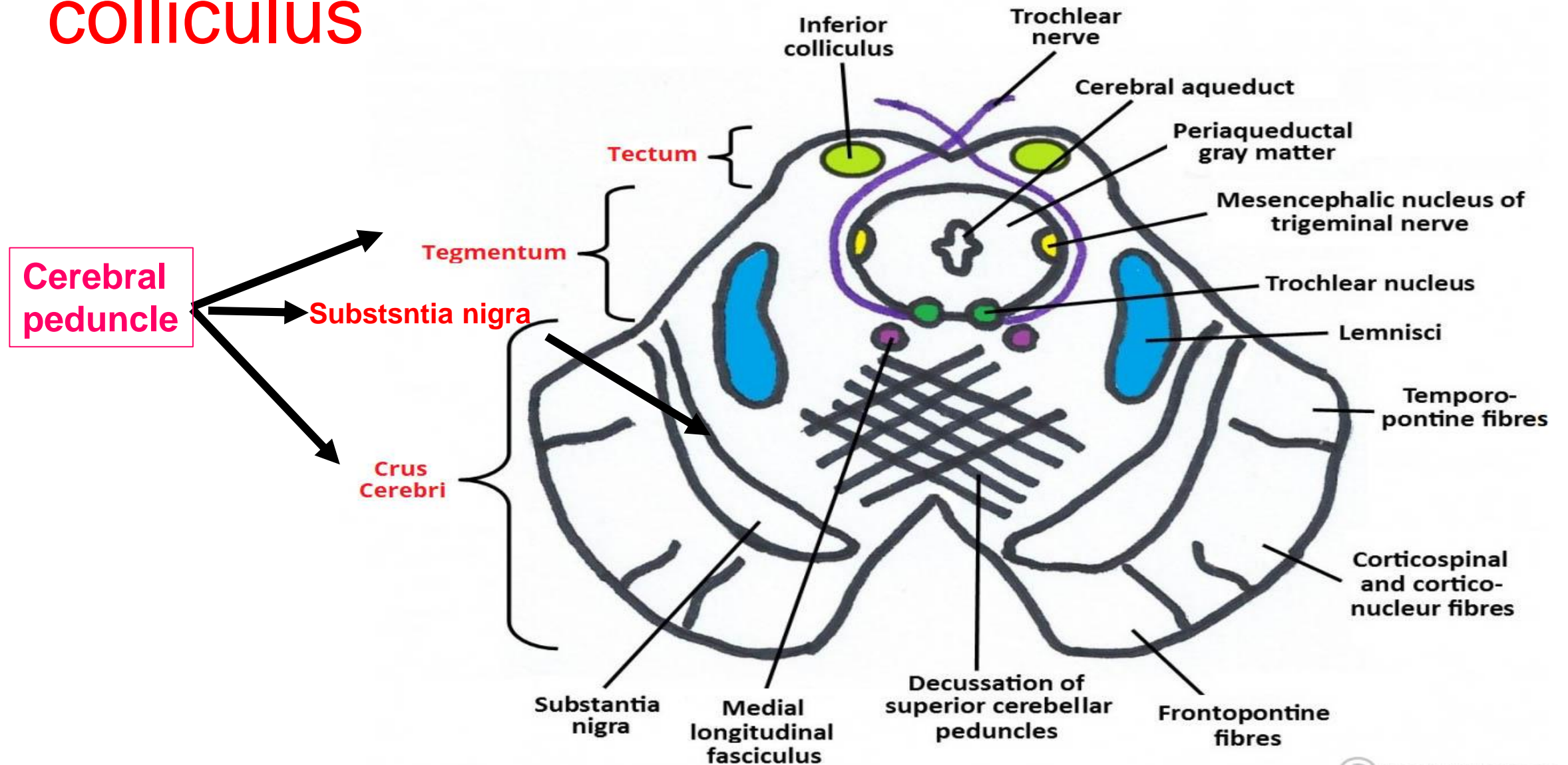
# Midbrain cross section at the level of superior colliculus



# Midbrain cross section at the level of inferior colliculus

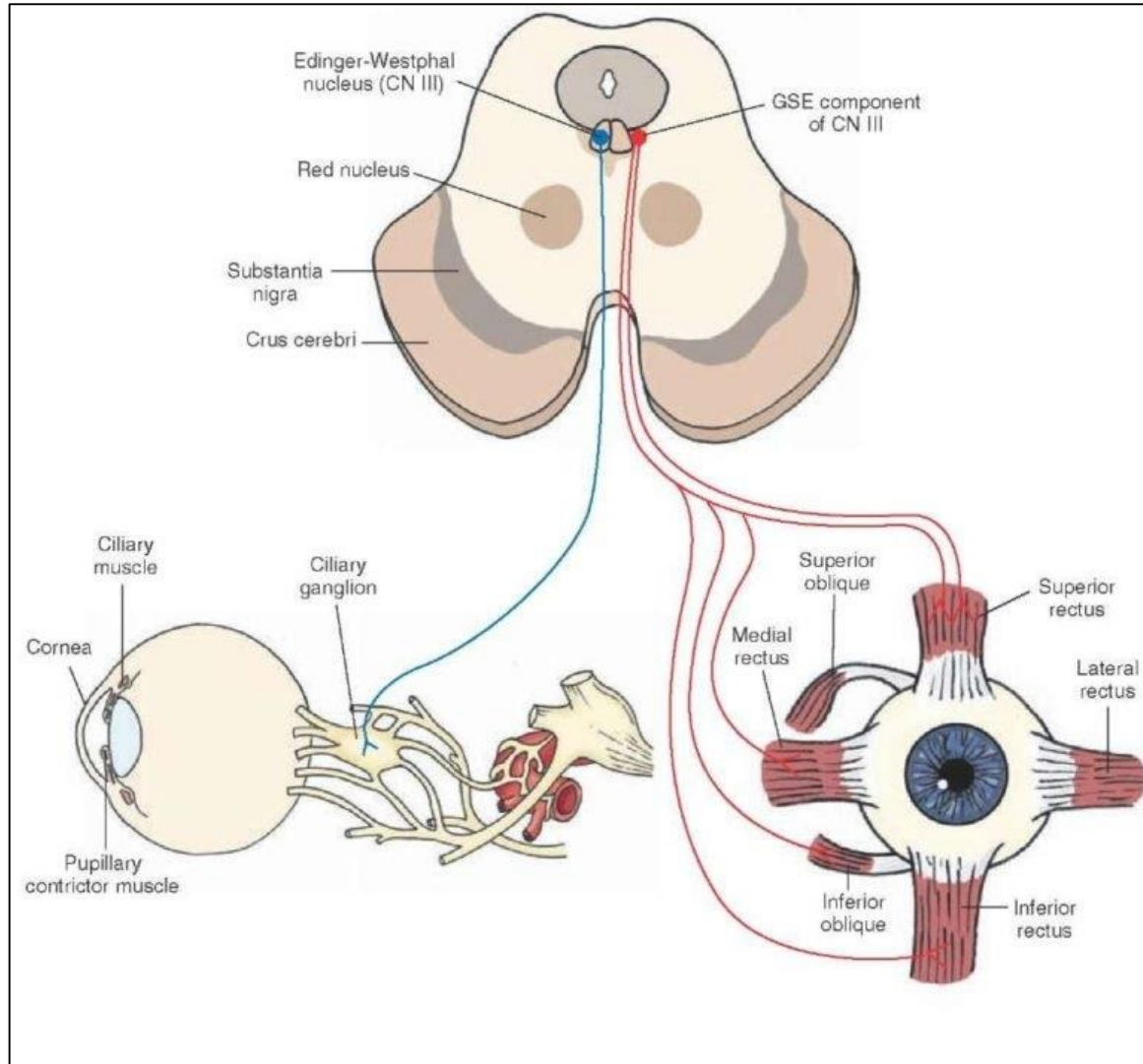


# Midbrain cross section at the level of inferior colliculus

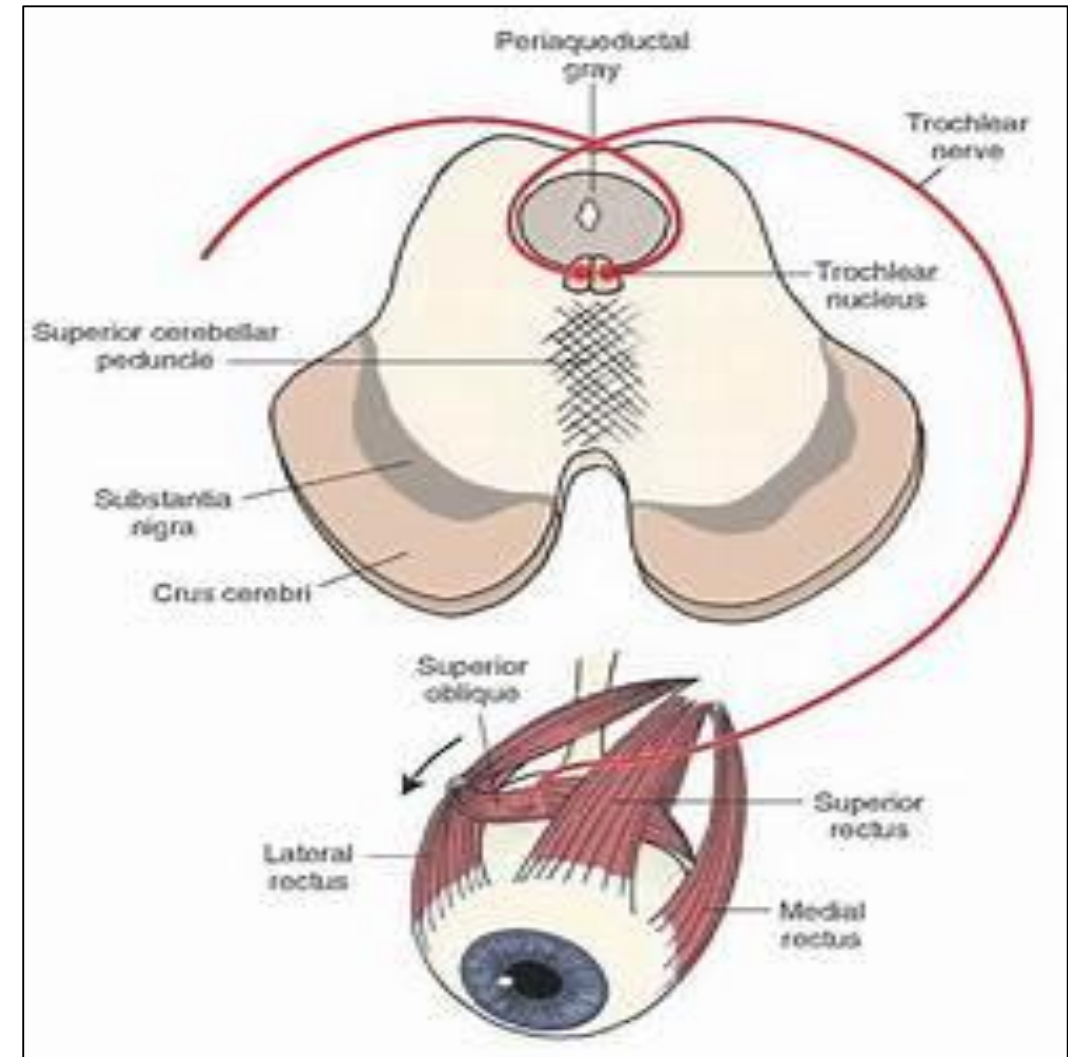


# Cranial nerves Originating from Mid brain

## Oculomotor Nerve (III)



## Trochlear Nerve (IV)



# Cranial nerves Merging from Mid brain

## Oculomotor Nerve (III)

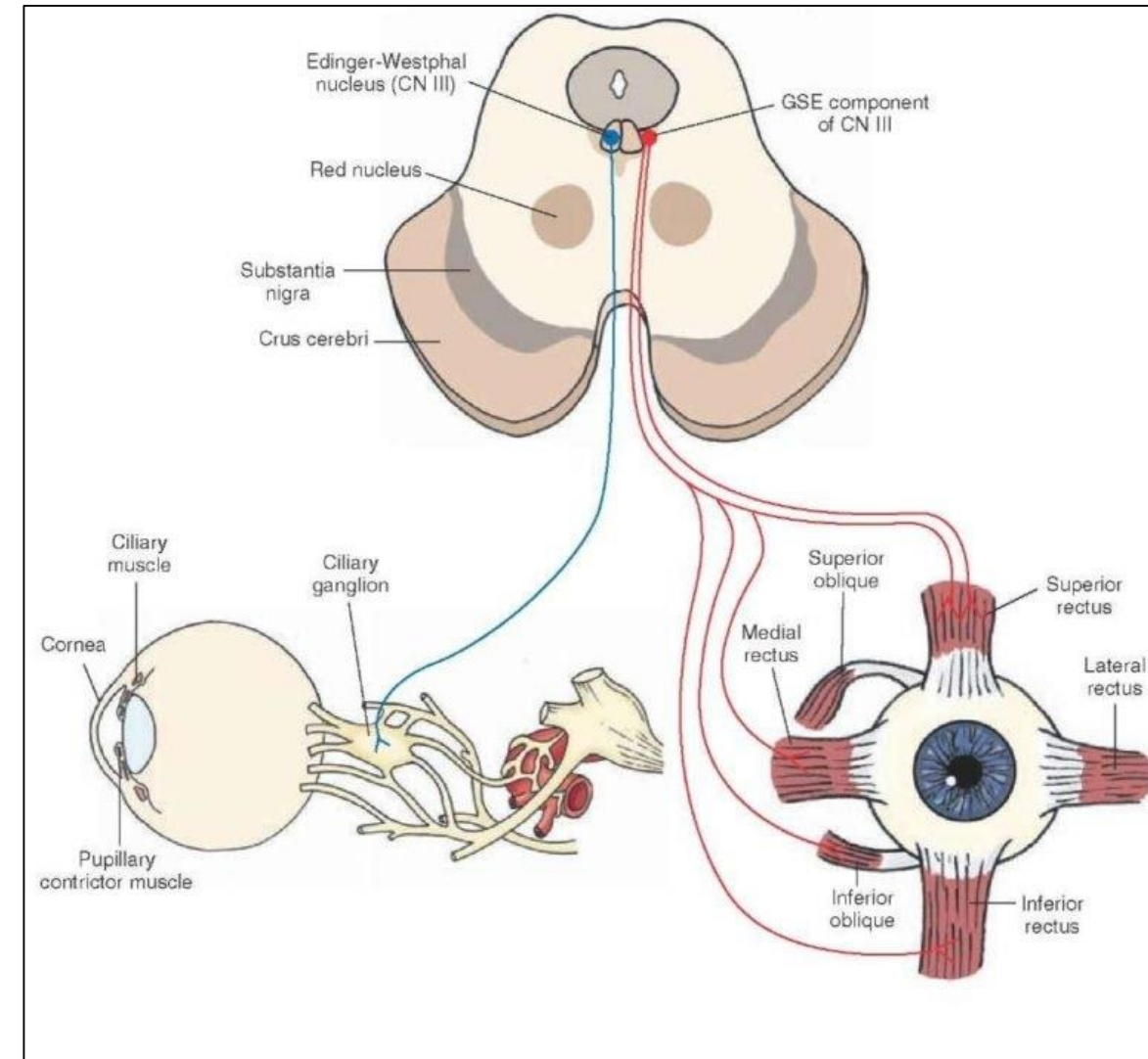
-it arises from:

**Oculomotor nucleus**

**Edinger Westphal nucleus**

- Lies in the posterior part of the tegmentum of midbrain close to the mid-line and at the level of superior colliculus.

-The nerve emerges on the medial side of the crus cerebri.



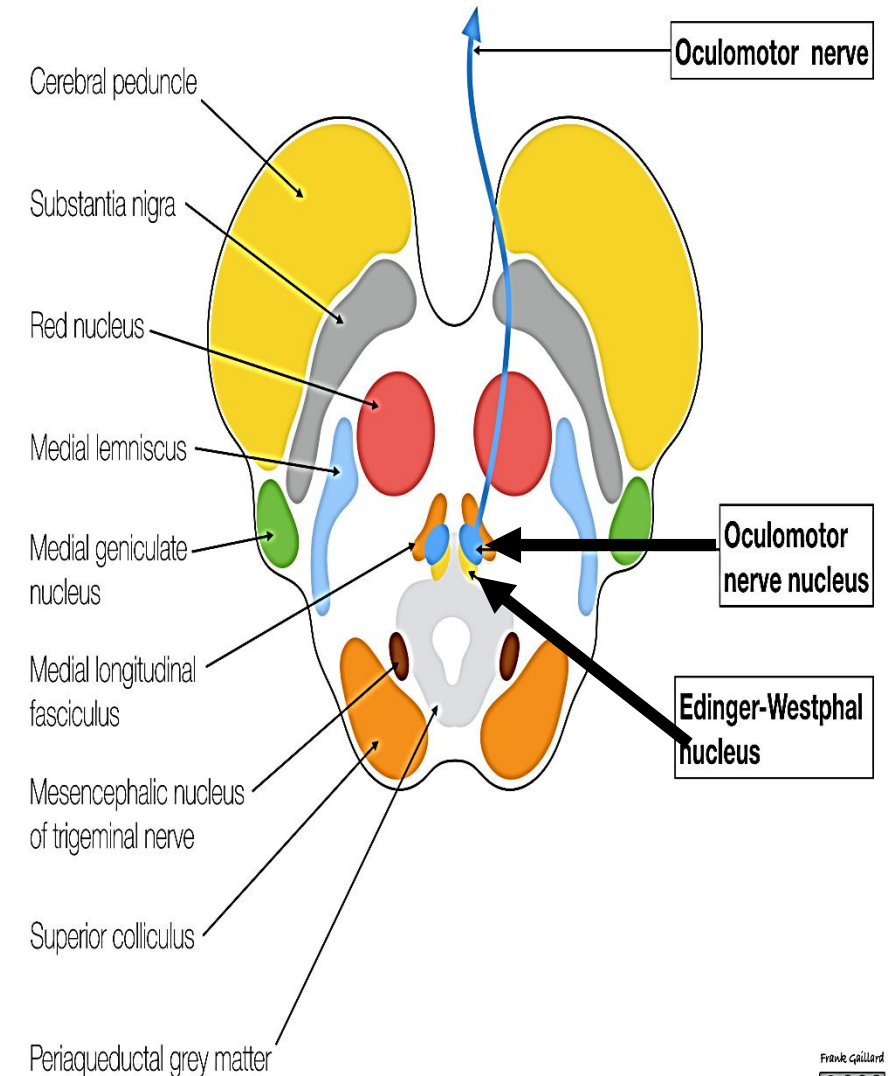
# 3<sup>rd</sup> cranial nerve (Oculomotor)

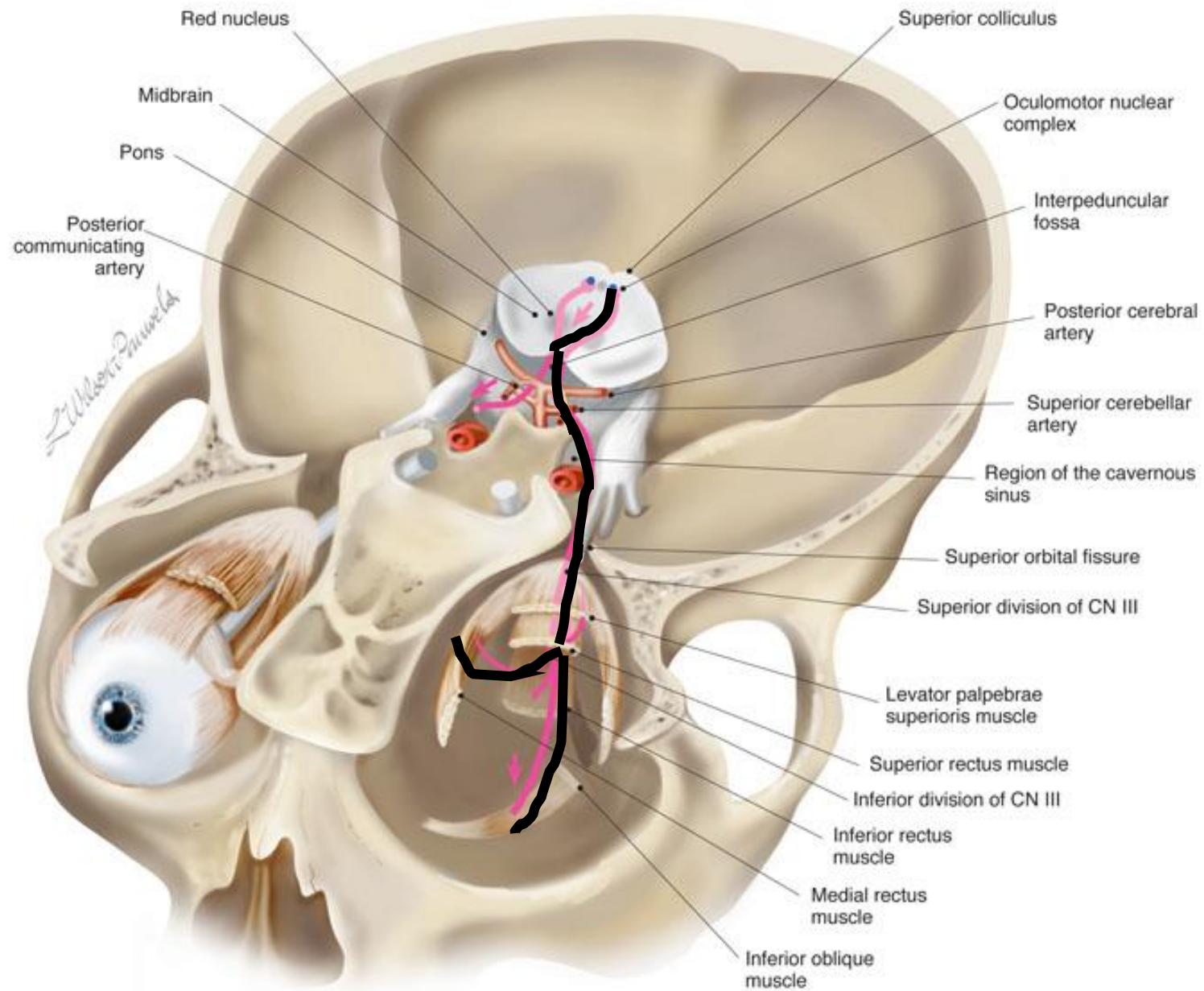
## ➤ **Origin: 2 motor nuclei**

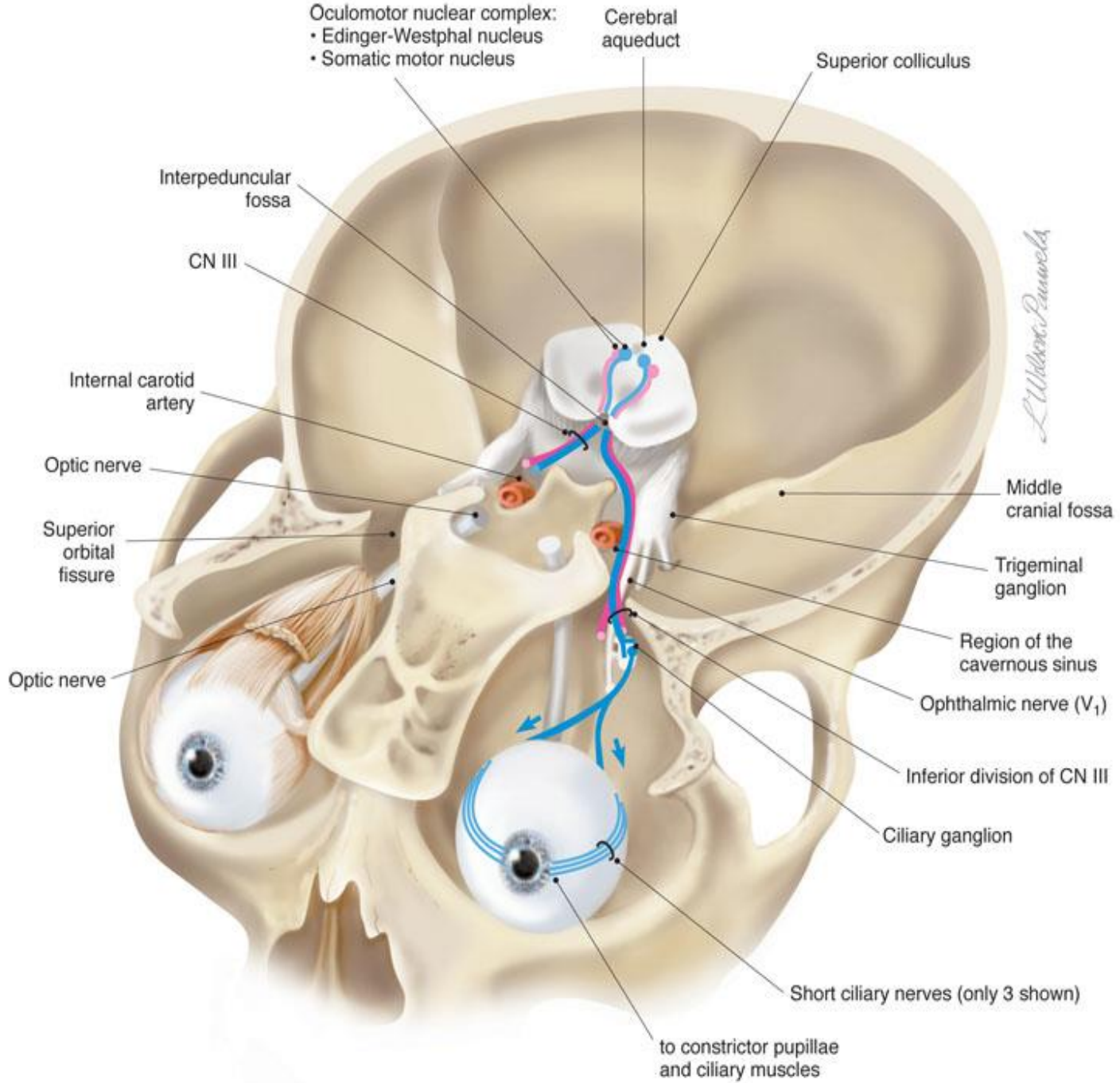
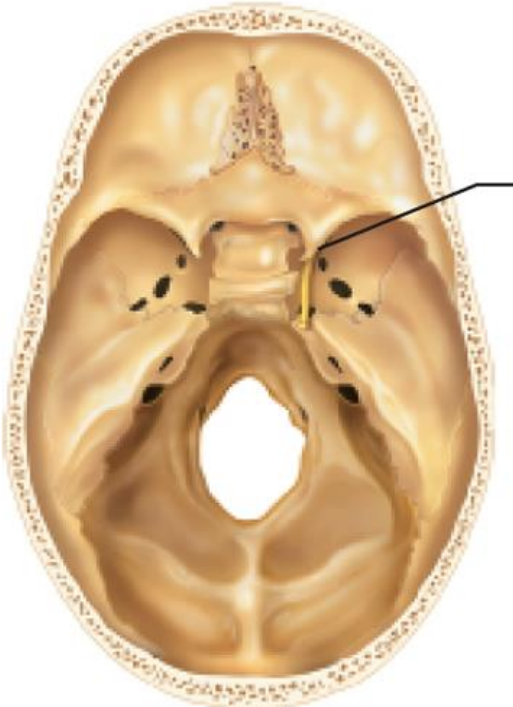
- 1- **Oculomotor nucleus (main motor nucleus)**
  - 2- **Edinger-Westphal nucleus (accessory parasympathetic nucleus)**
- in front of cerebral aqueduct at level of superior colliculus.**

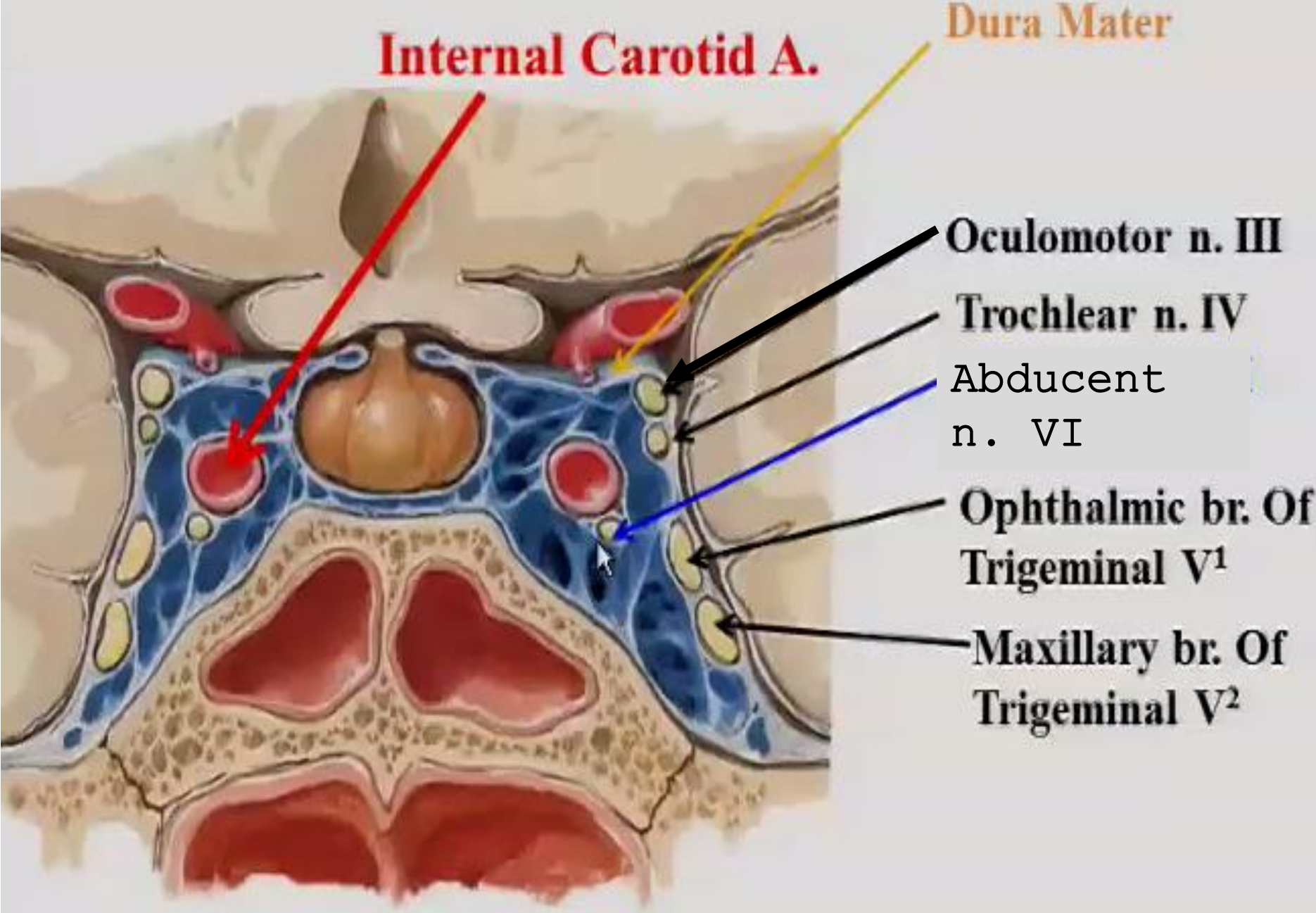
## ➤ **Course:**

- 1- **Emerge on the anterior surface of the midbrain in the interpeduncular fossa.**
- 2- **pass in the lateral wall of cavernous sinus.**
- 3- **Enter the orbit through the superior orbital fissure divided into two divisions superior and inferior.**







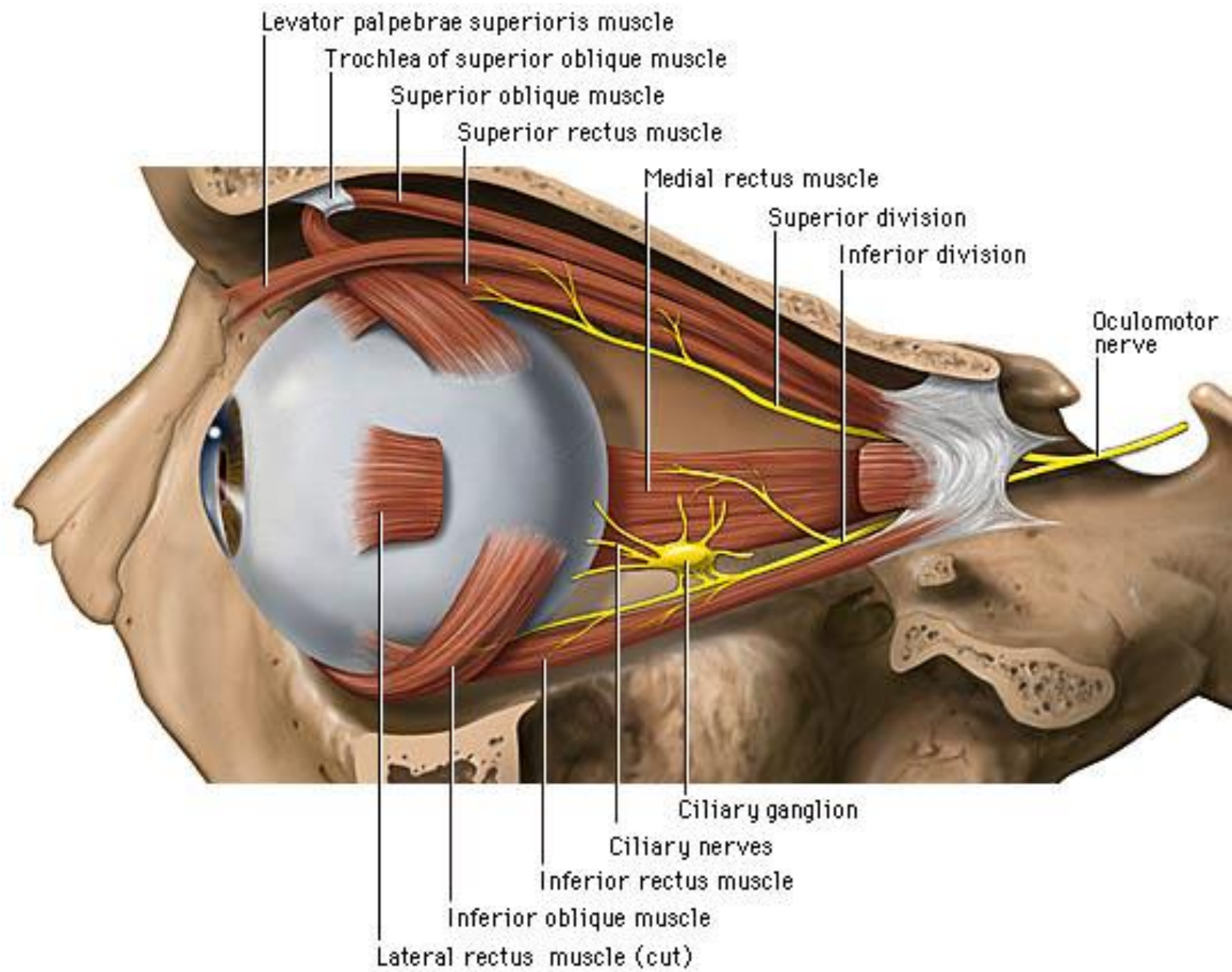


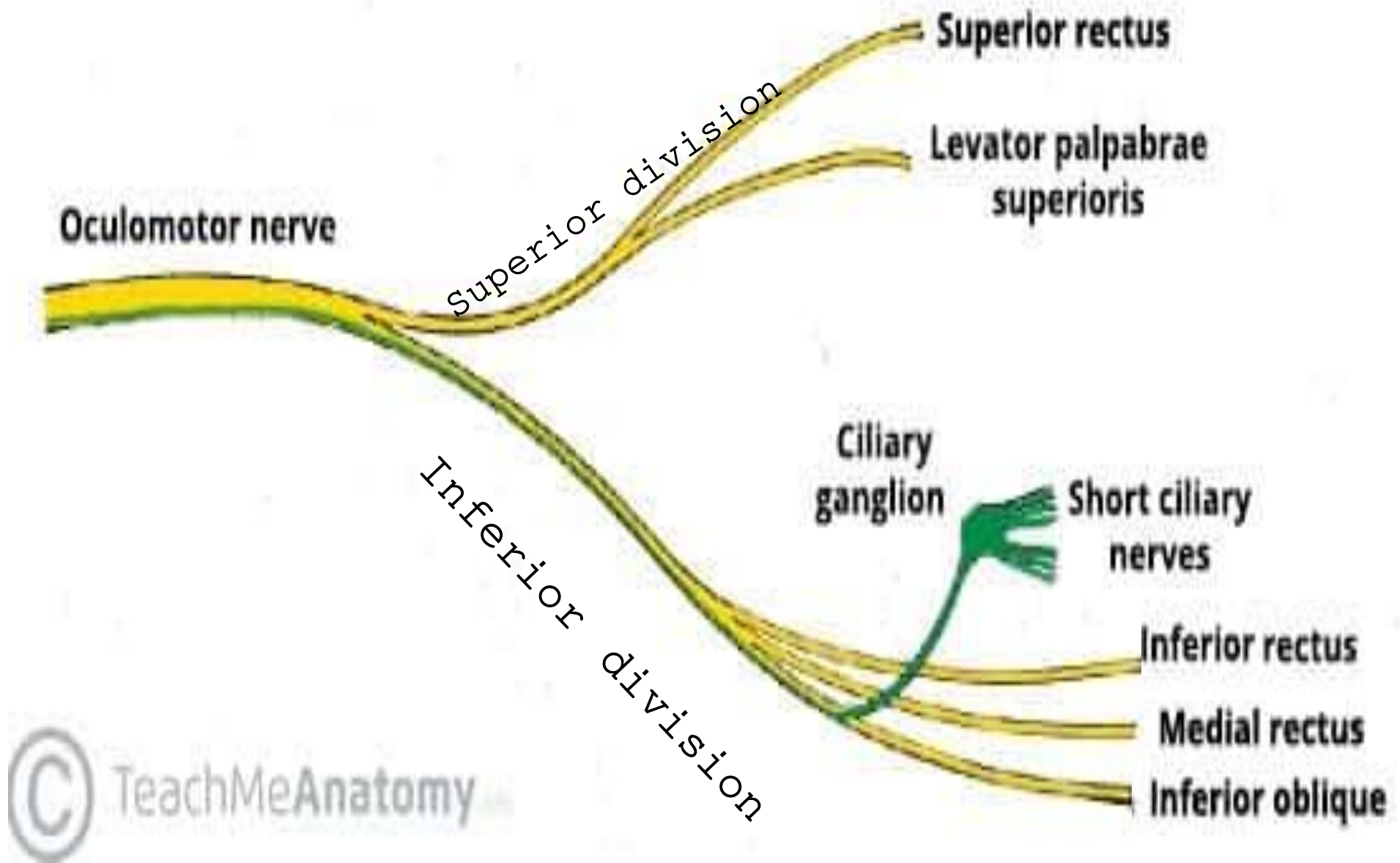
# Function:

It supplies all extra ocular muscles

**Except** lateral rectus (supplied by abducent nerve)  
Superior oblique (supplied by trochlear nerve)

It also supplies the constrictor pupilla and ciliary muscles by parasympathetic fibers from the Edinger- Westphal nucleus. These fibers reach the ciliary ganglion through the oculomotor to relay in the ganglion





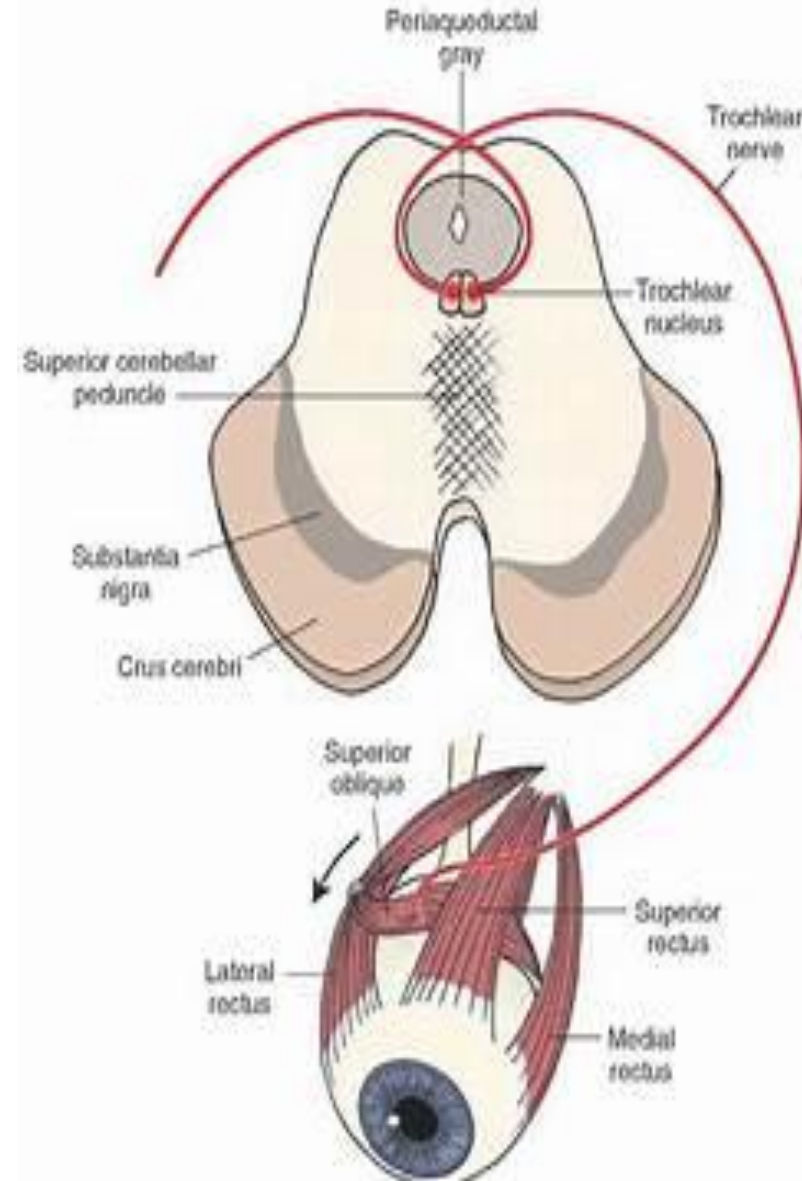
**The nerve to inferior oblique gives parasympathetic root to the ciliary ganglion.**

# 4<sup>th</sup> cranial nerve(trochlear nerve)

**Origin:** Trochlear nucleus in the midbrain at the level of inferior colliculus

**Course:** It passes backward and then medially to cross toward the opposite side around back and side of midbrain.

**Supply:** superior oblique muscles

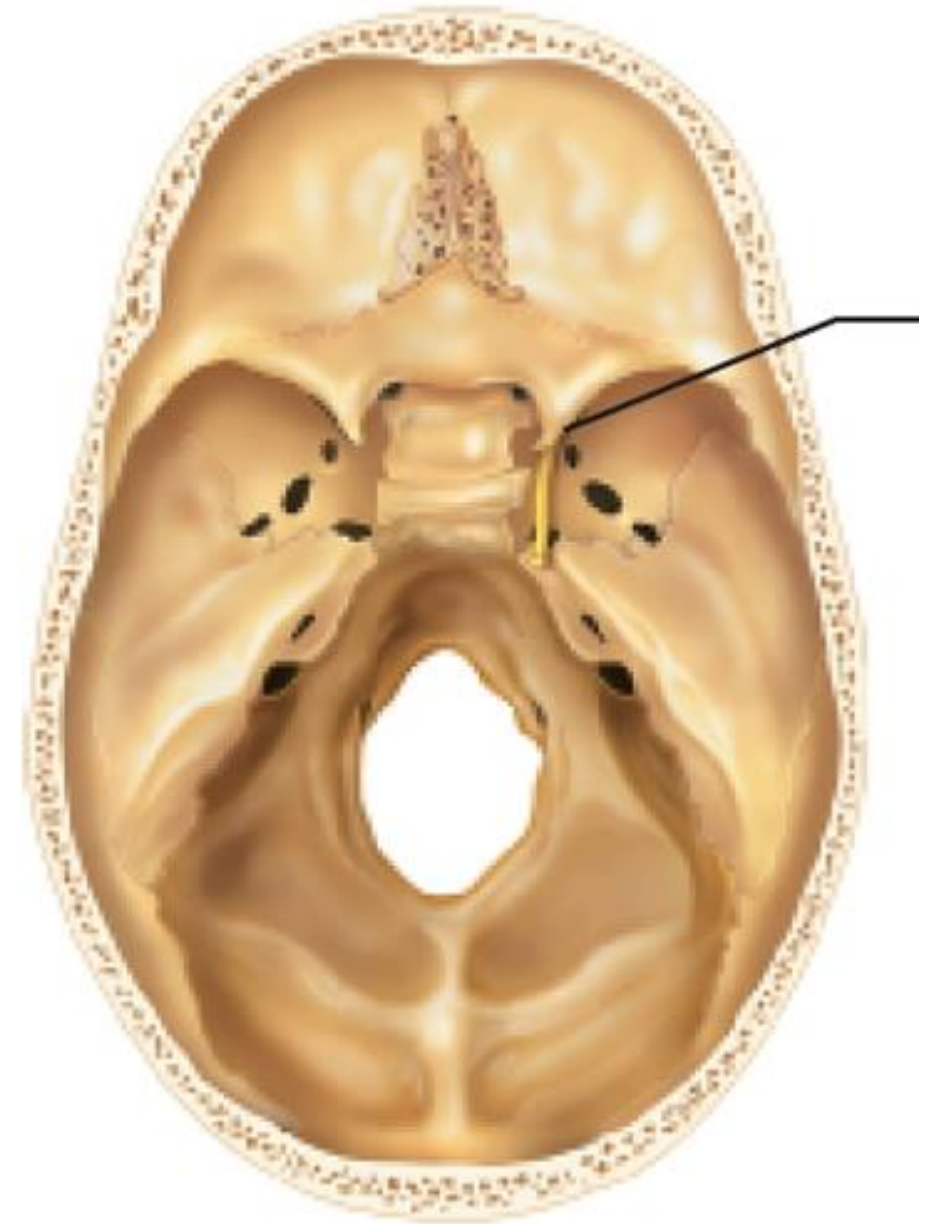


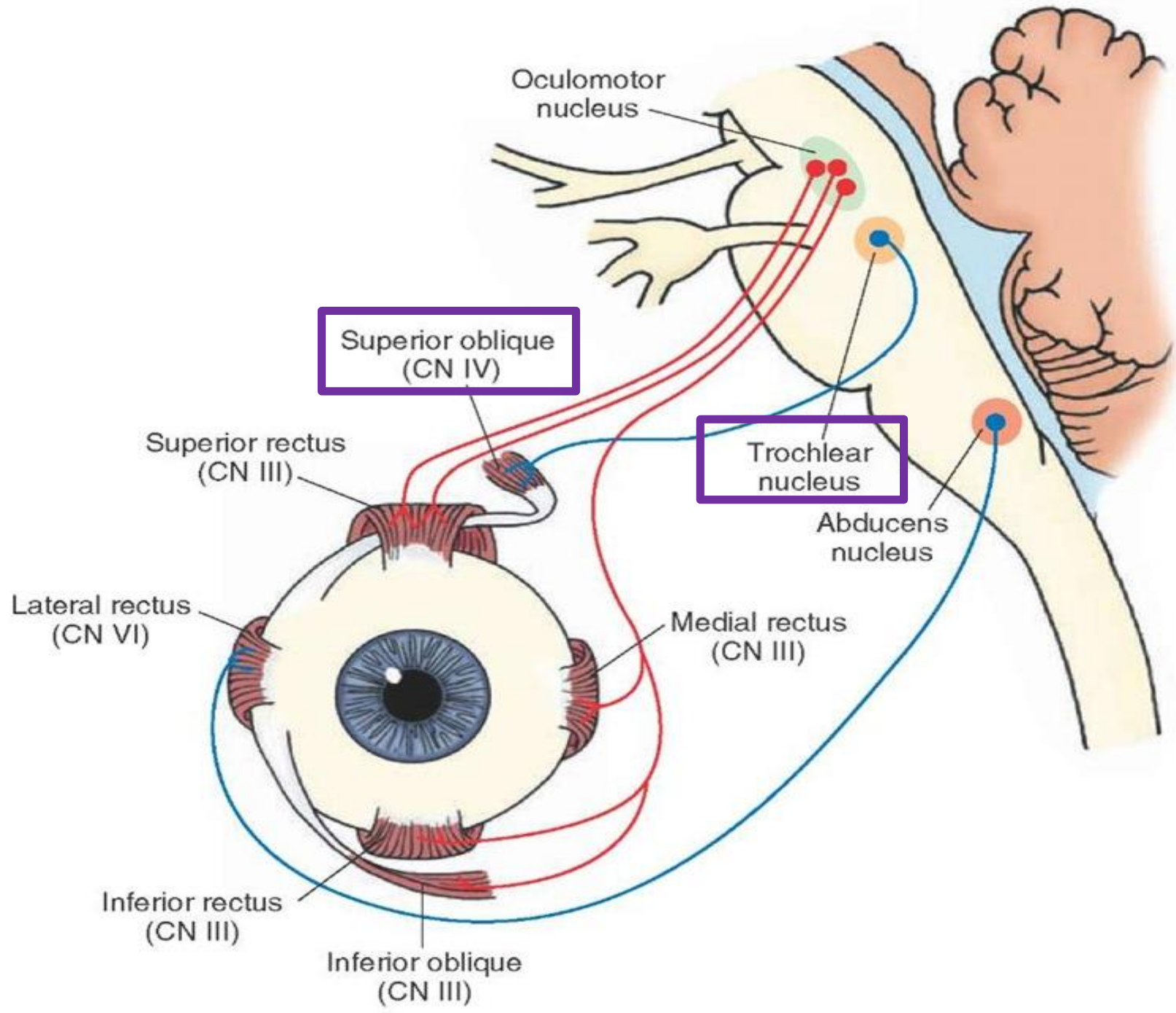
## Course of Trochlear Nerve

1-middle cranial fossa

2-in the lateral wall of the cavernous sinus

3-And enters the orbit through the superior orbital fissure **outside the common tendinous ring.**





Thank  
you

