

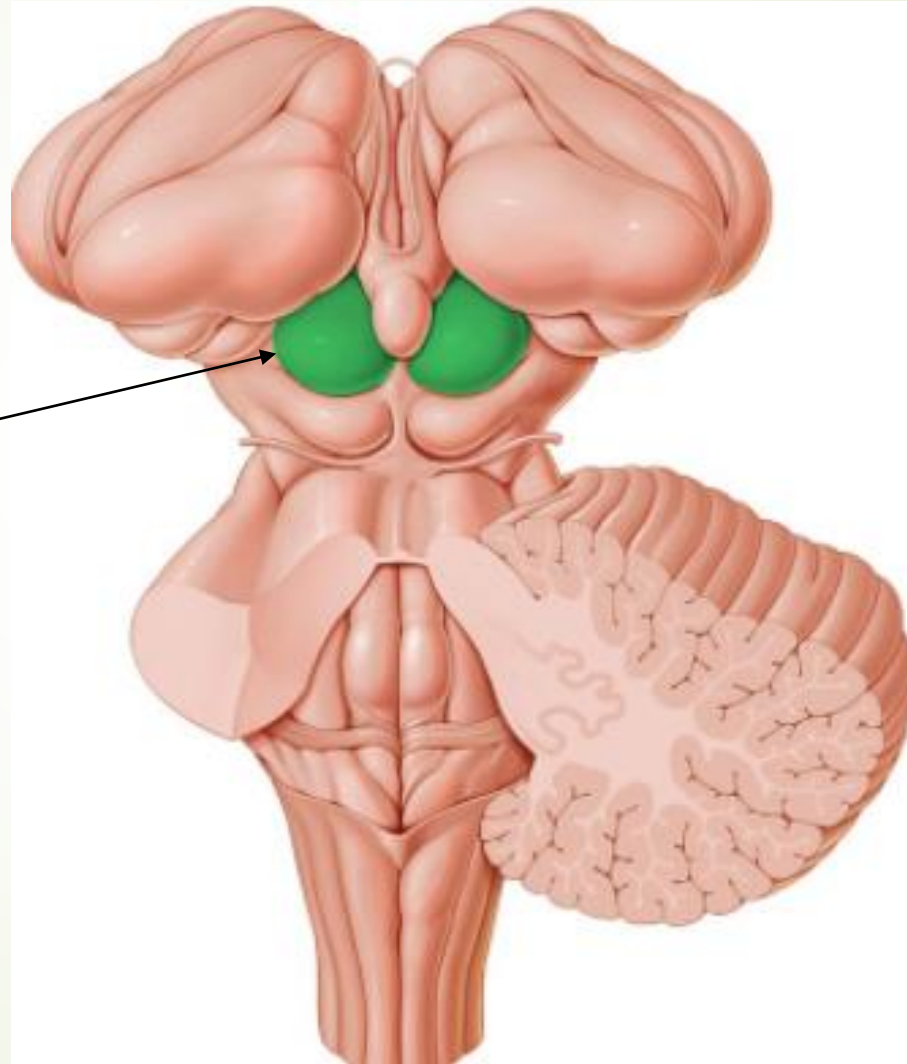


PARINAUD SYNDROME
[aka. DORSAL MIDBRAIN
SYNDROME]

by: Munmun Aziz
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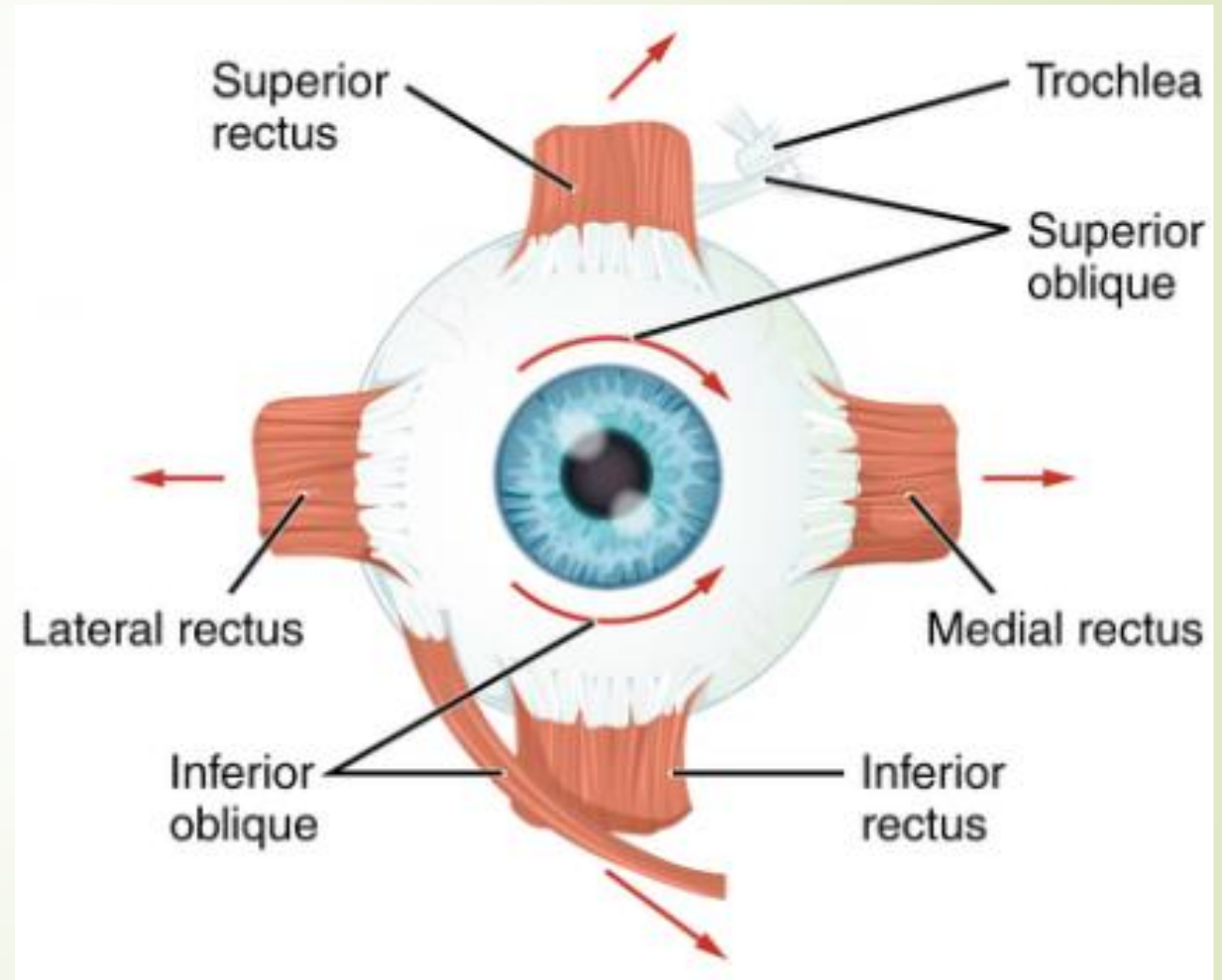
QUADRIGEMINAL PLATE [TECTAL PLATE]

Superior colliculus

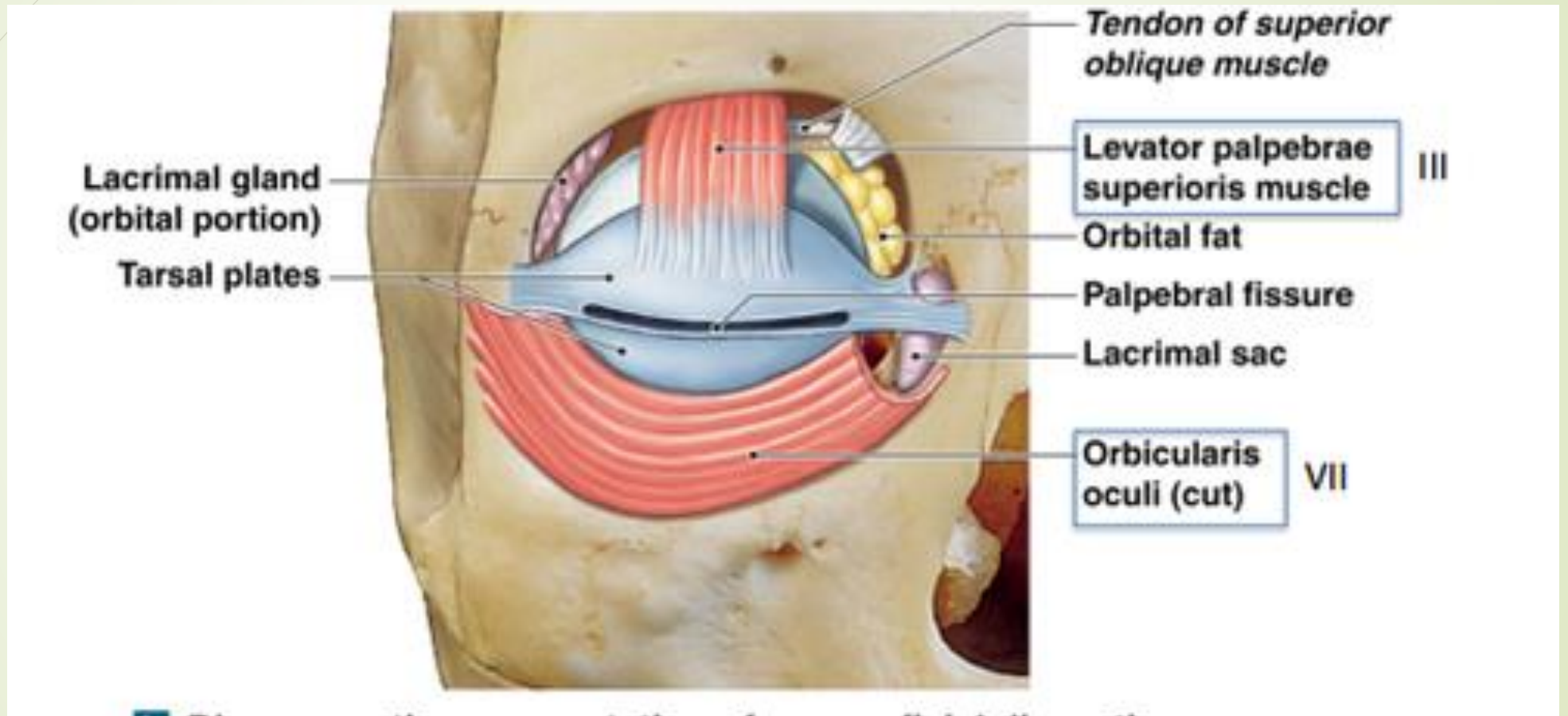


What muscles does the Oculomotor nerve innervate?

- Superior rectus
- Inferior rectus
- Medial rectus
- Inferior oblique
- ❖ Somatic fiber → levator palpebrae superioris



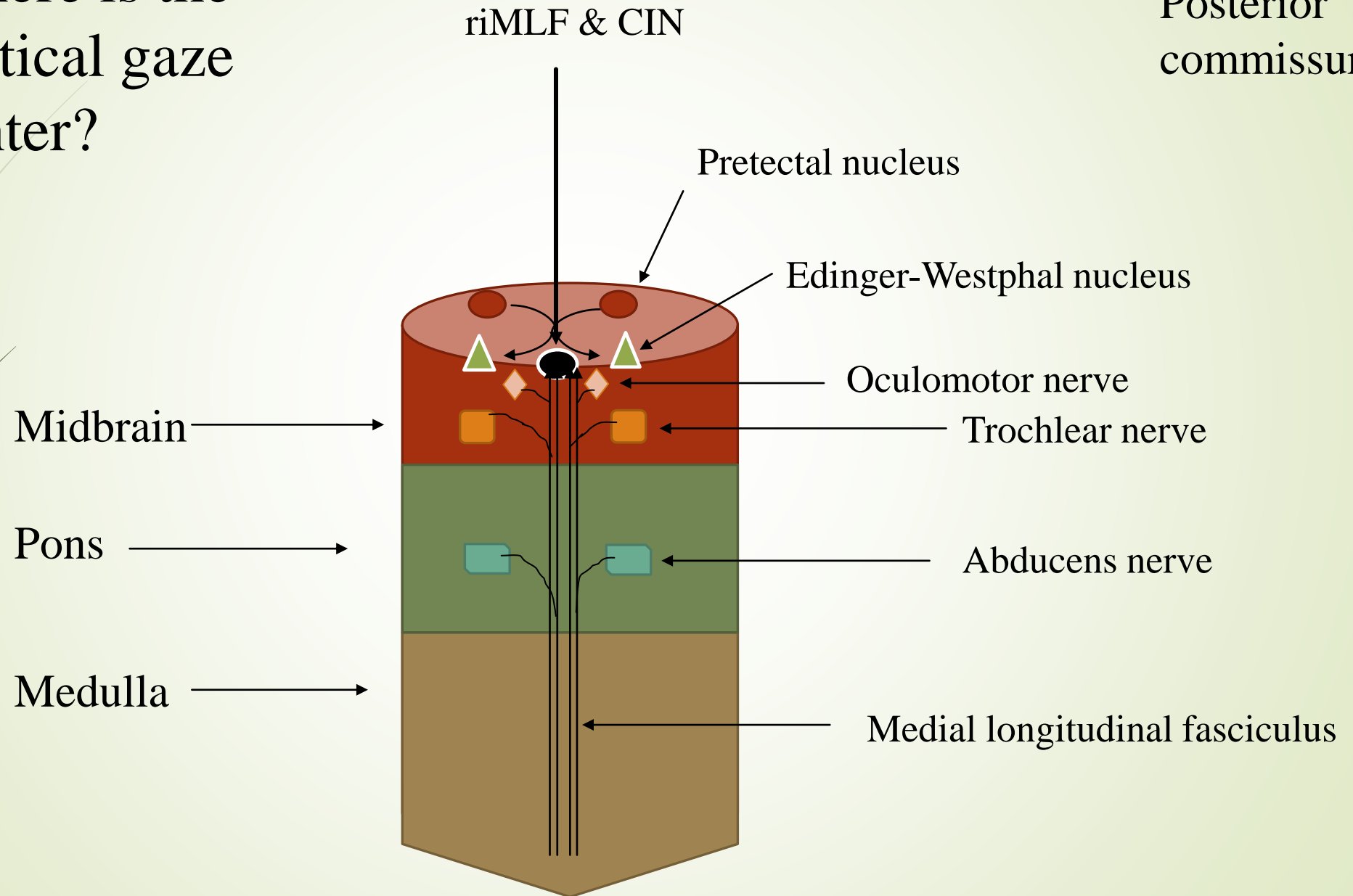
Levator Palpebrae Superiorus



Which nerve innervates this muscle? Somatic fiber of CNIII


Where is the vertical gaze center?

Where MLF meets Posterior commissure.





What is
PARINAUD SYNDROME?



PS is a condition where there is compression to the dorsal midbrain at the level of the superior colliculus.

Compression applies pressure to:

Pretectum

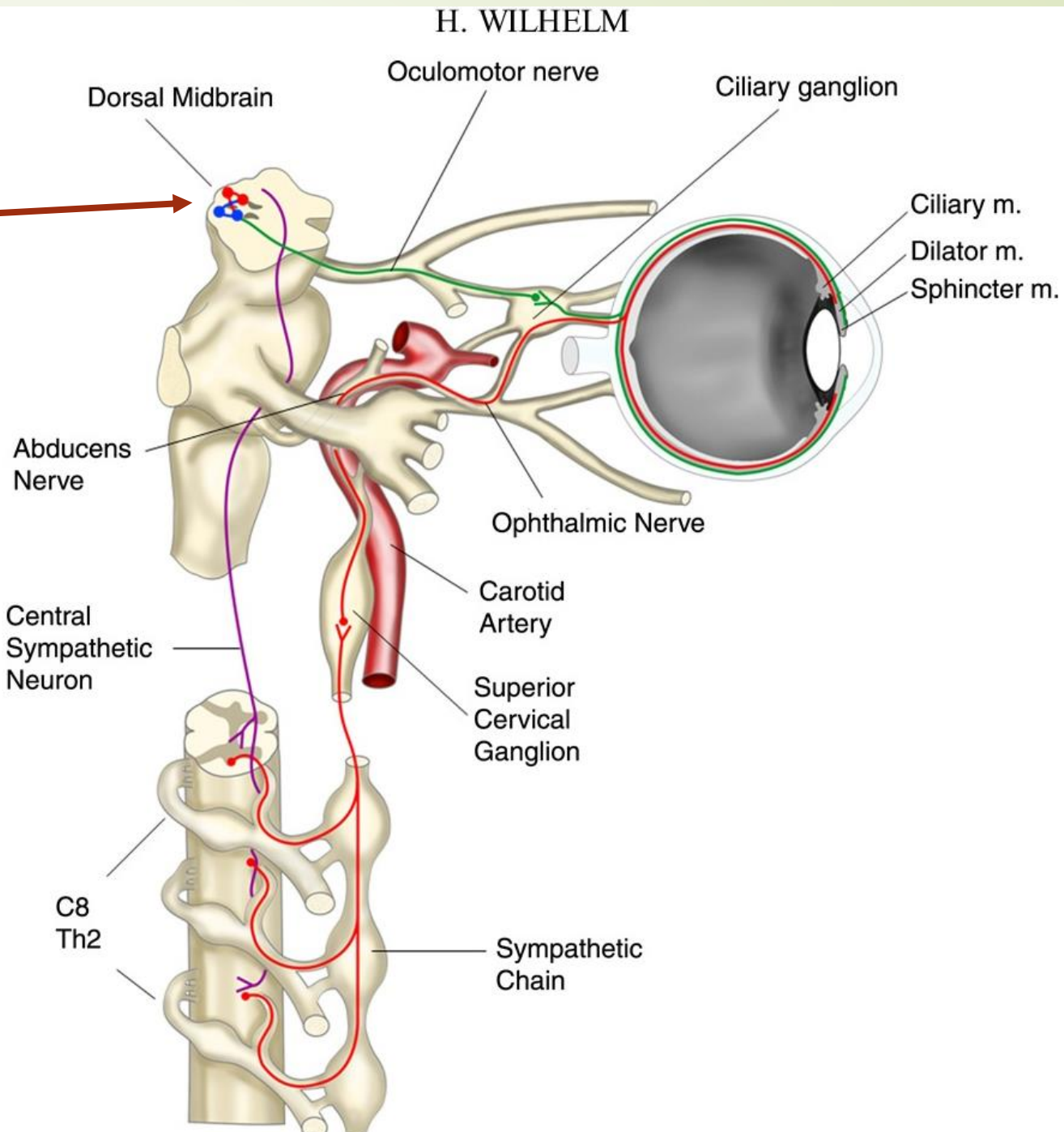
- Pretectal nuclei
- Posterior commissure

Supranuclear fibers

Vertical gaze center

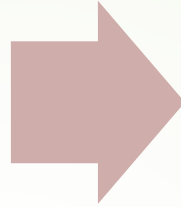
- Rostral interstitial nucleus of Medial Longitudinal Fasciculus [riMLF]
- Interstitial nucleus of Cajal [CIN]

Compression to the dorsal midbrain



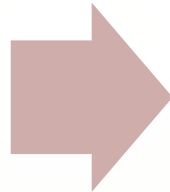
Pathophysiology:

Pretectum



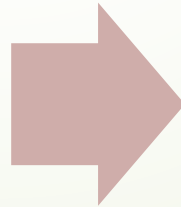
Pupillary light near dissociation

Supranuclear fibers



Convergence-retraction nystagmus
Upper eyelid retraction (Collier's sign)

Vertical gaze center

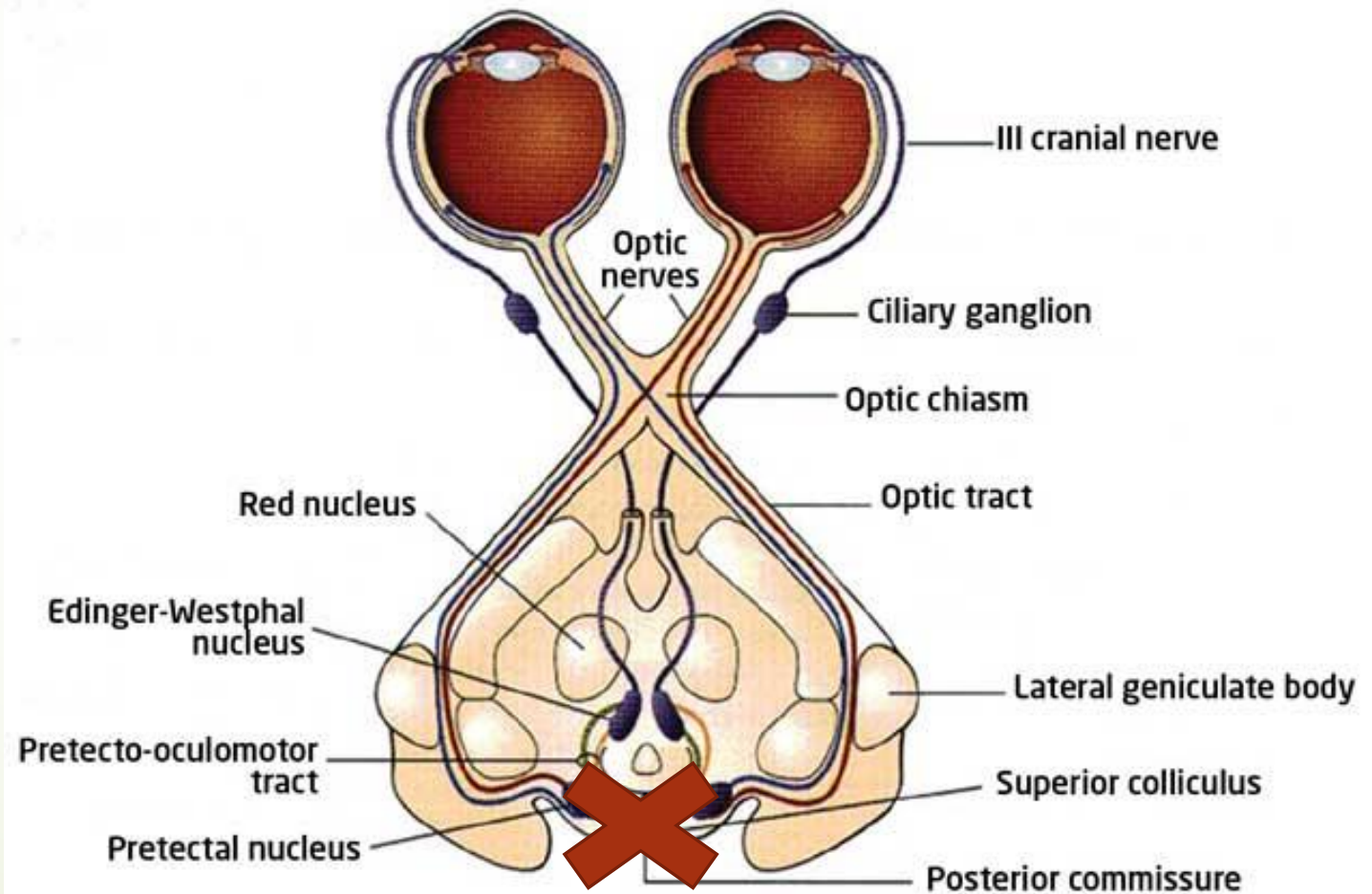


Upward gaze palsy

Pretectum
Pretecal nucleus
Posterior commissure



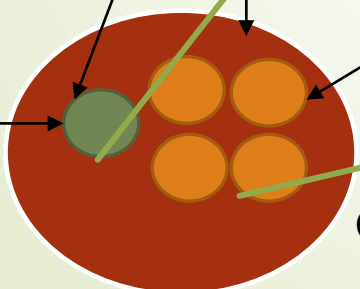
Pupillary light-near
dissociation



Oculomotor
supranuclear fiber

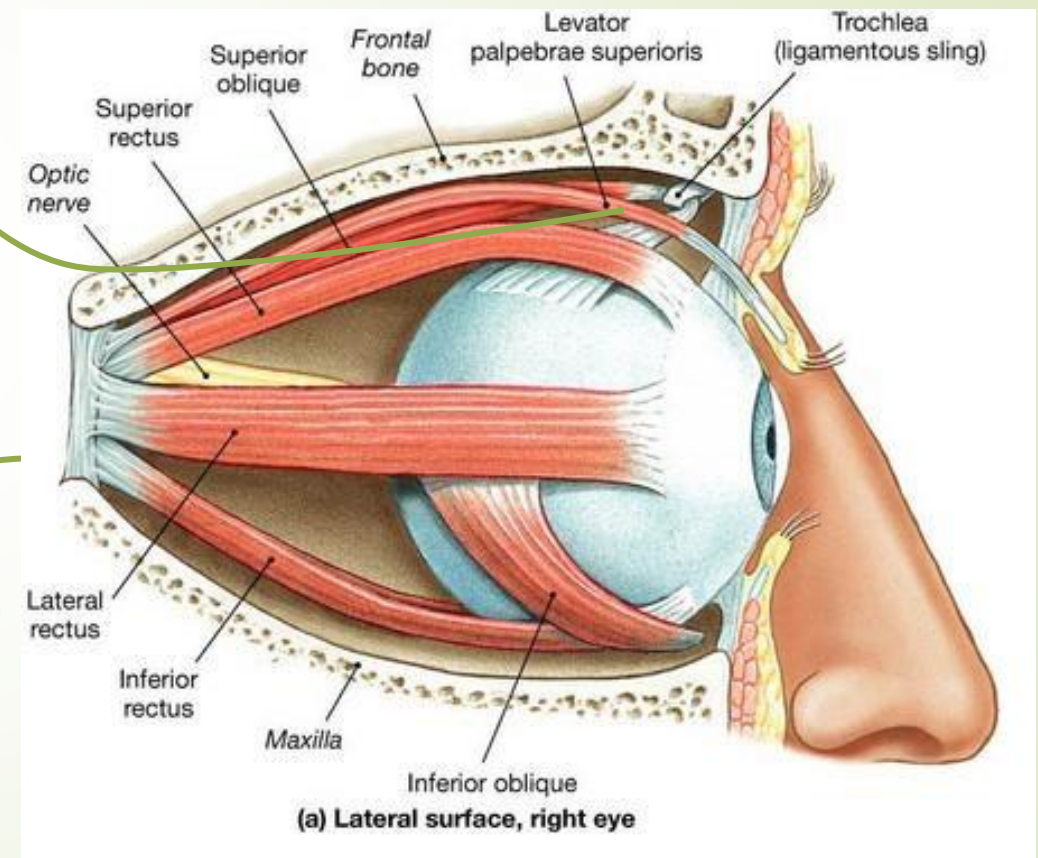


Convergence retraction
nystagmus
Upper eyelid retraction



NUCLEAR FIBERS

CNIII



Upper eyelid retraction [collier's sign]

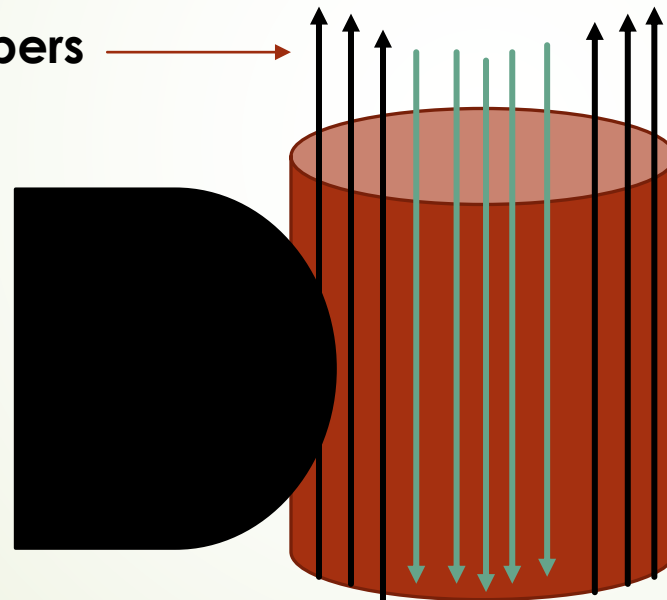



Vertical gaze center



Upward gaze palsy

Upgaze fibers





Etiology:

- ❑ Pinealoma (children/adolescents)
 - Germ cell tumor (50%)

- ❑ Midbrain cerebrovascular lesions (middle-aged/older)
 - Ischemia
 - Top of the basilar syndrome (rare)
 - Hemorrhage



Management:

Pinealoma

- Germ cell tumor → Chemotherapy/radiation

Ischemia

- Top of the basilar syndrome → thrombolysis or thrombectomy

❖ Treat the underlying cause



References

Feroze KB, Patel BC. Parinaud Syndrome. [Updated 2020 Aug 8]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2020

Shields, M., Sinkar, S., Chan, W., & Crompton, J. (2017). Parinaud syndrome: a 25-year (1991-2016) review of 40 consecutive adult cases. *Acta ophthalmologica*, 95(8), e792–e793. <https://doi.org/10.1111/aos.13283>

Bhola, R. (2006). Dorsal Midbrain Syndrome With Bilateral Superior Oblique Palsy Following Brainstem Hemorrhage. *Archives Of Ophthalmology*, 124(12), 1786. <https://doi.org/10.1001/archopht.124.12.1786>

