

Neuro-ophthalmology Review

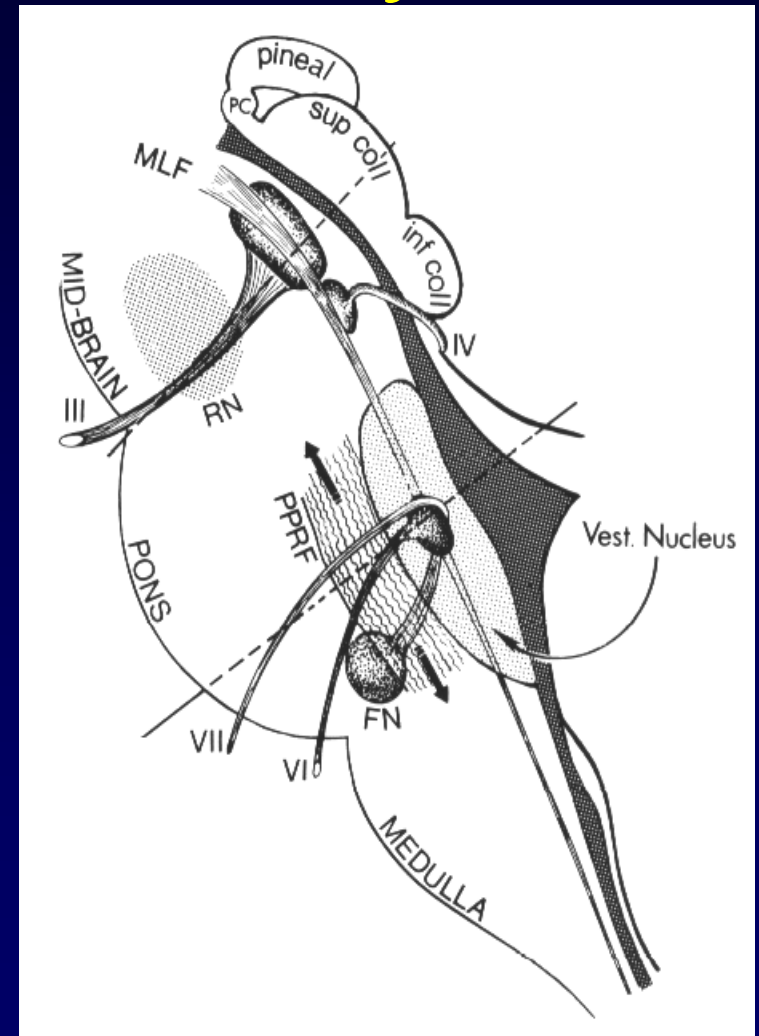
Second Hour

Thomas M. Bosley, MD
Professor of Ophthalmology
King Saud University

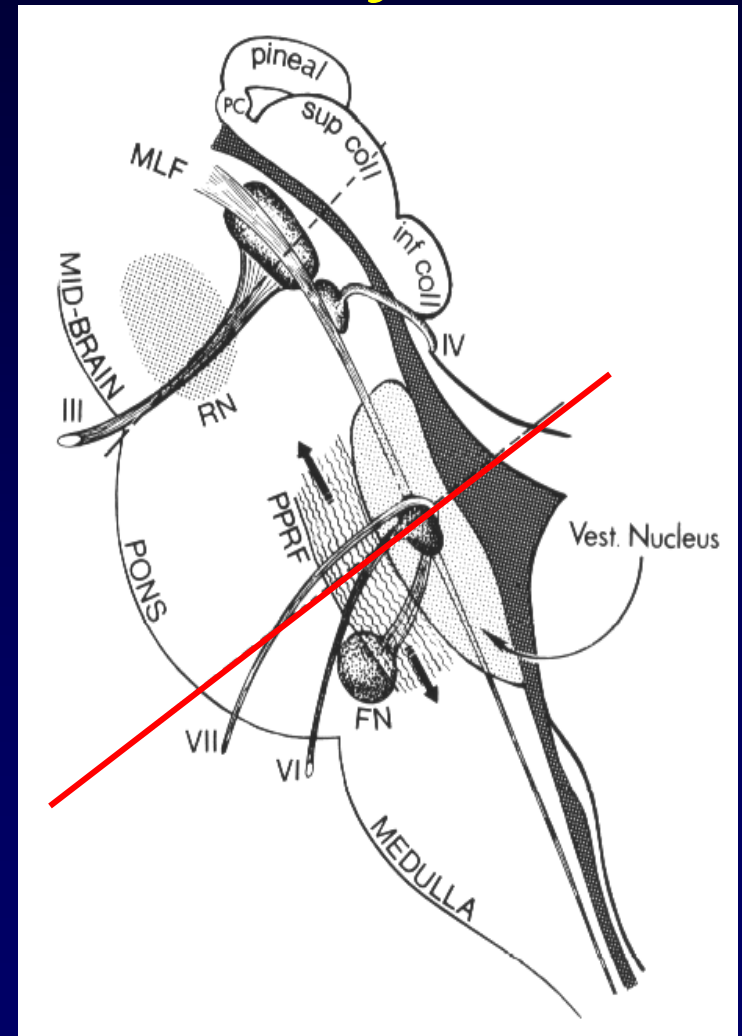
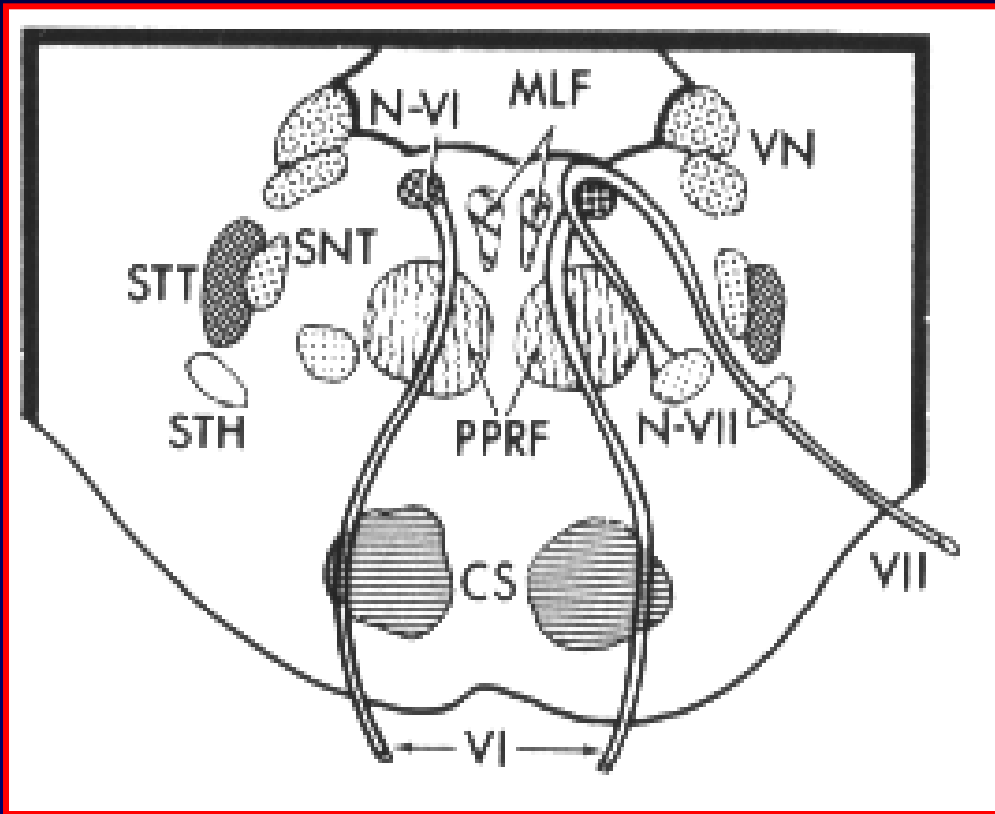
Neuro-ophthalmology

- Afferent
- Efferent
- Other
- Anatomy
- Examination
- Diagnoses
- Tests

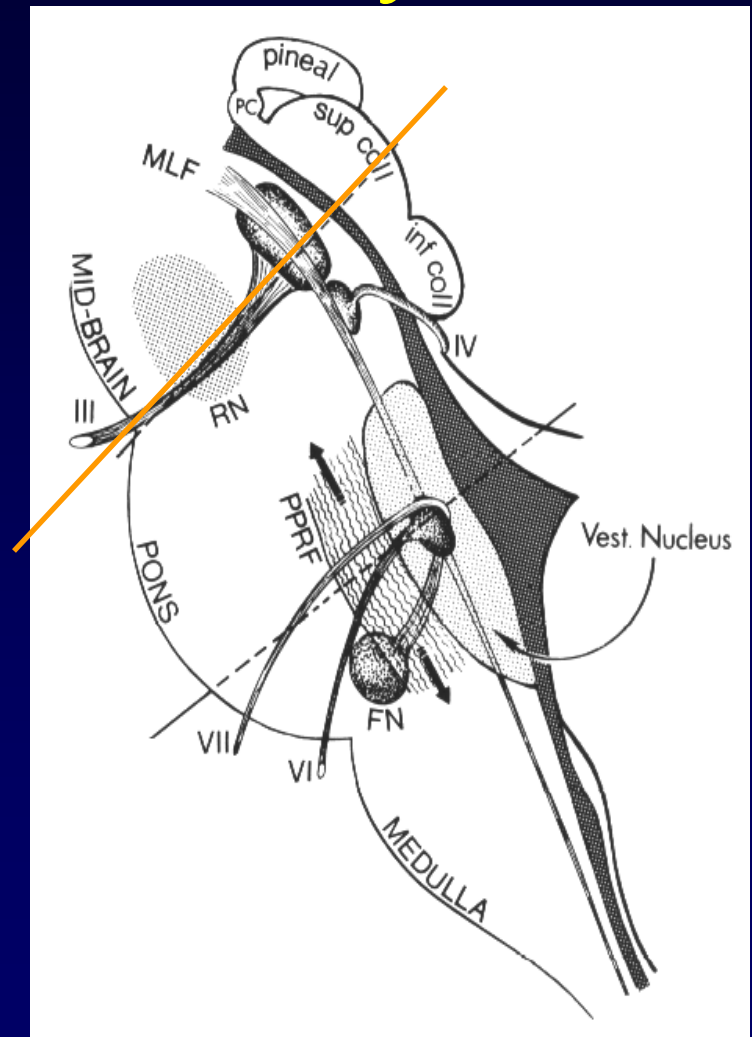
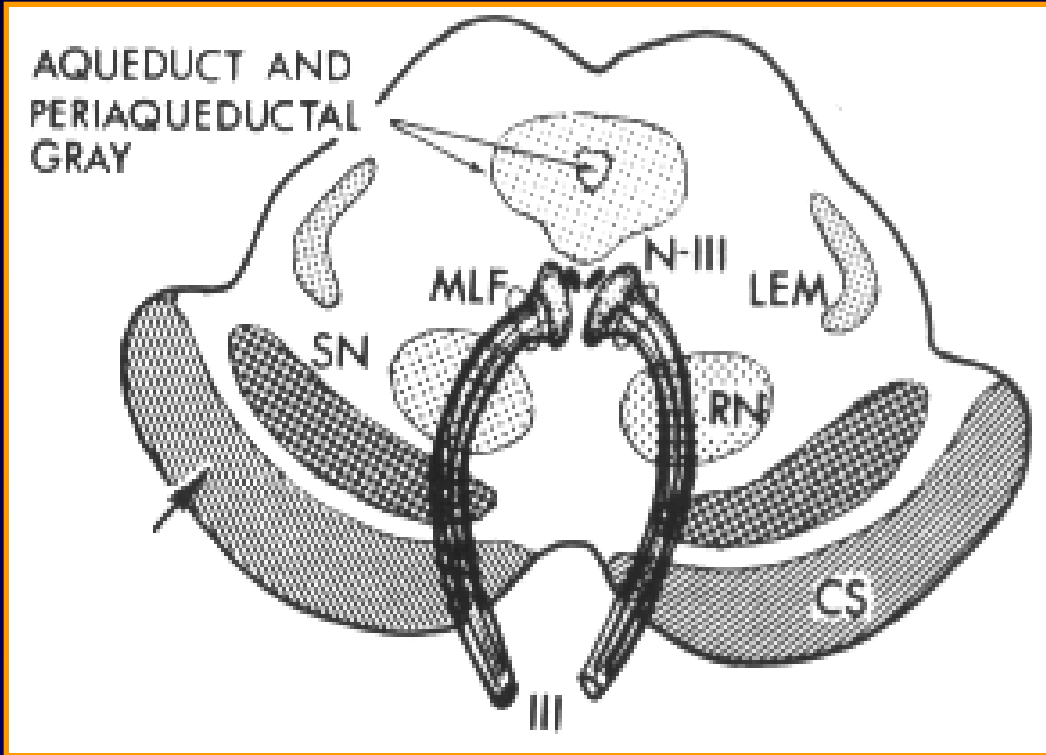
Efferent Neuro-anatomy



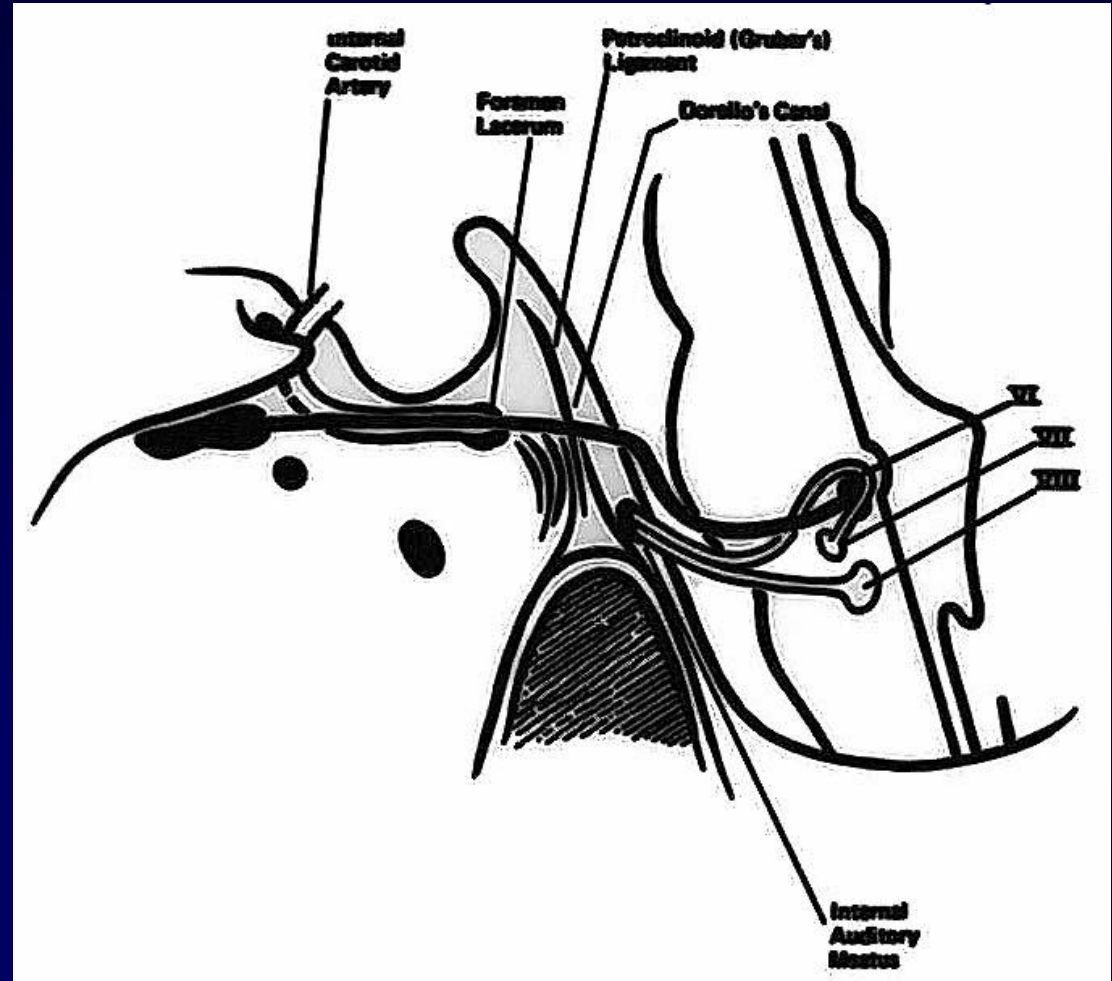
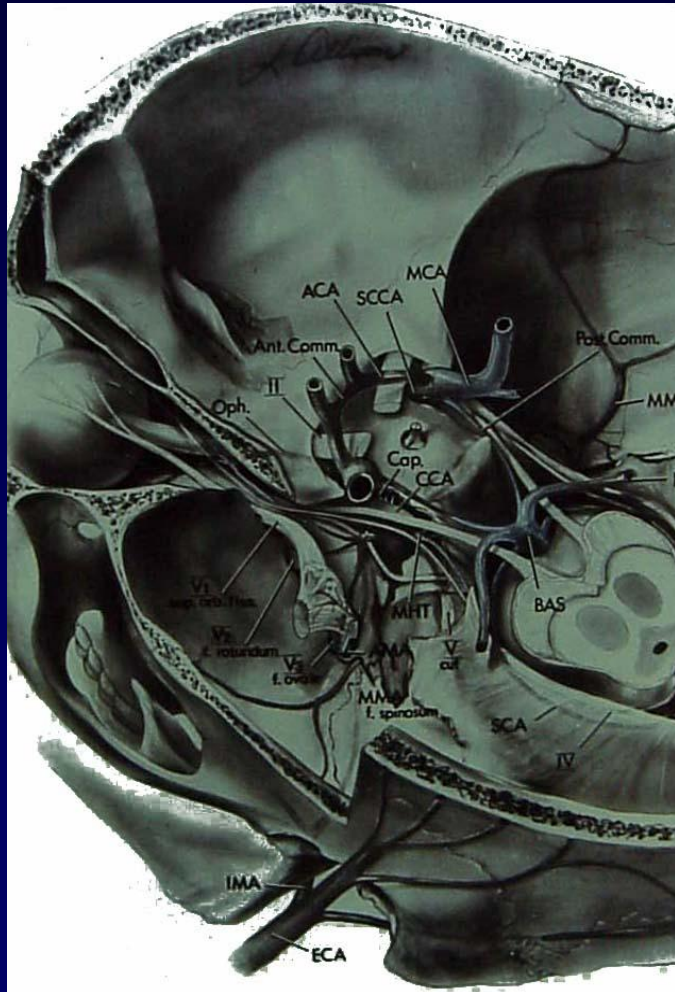
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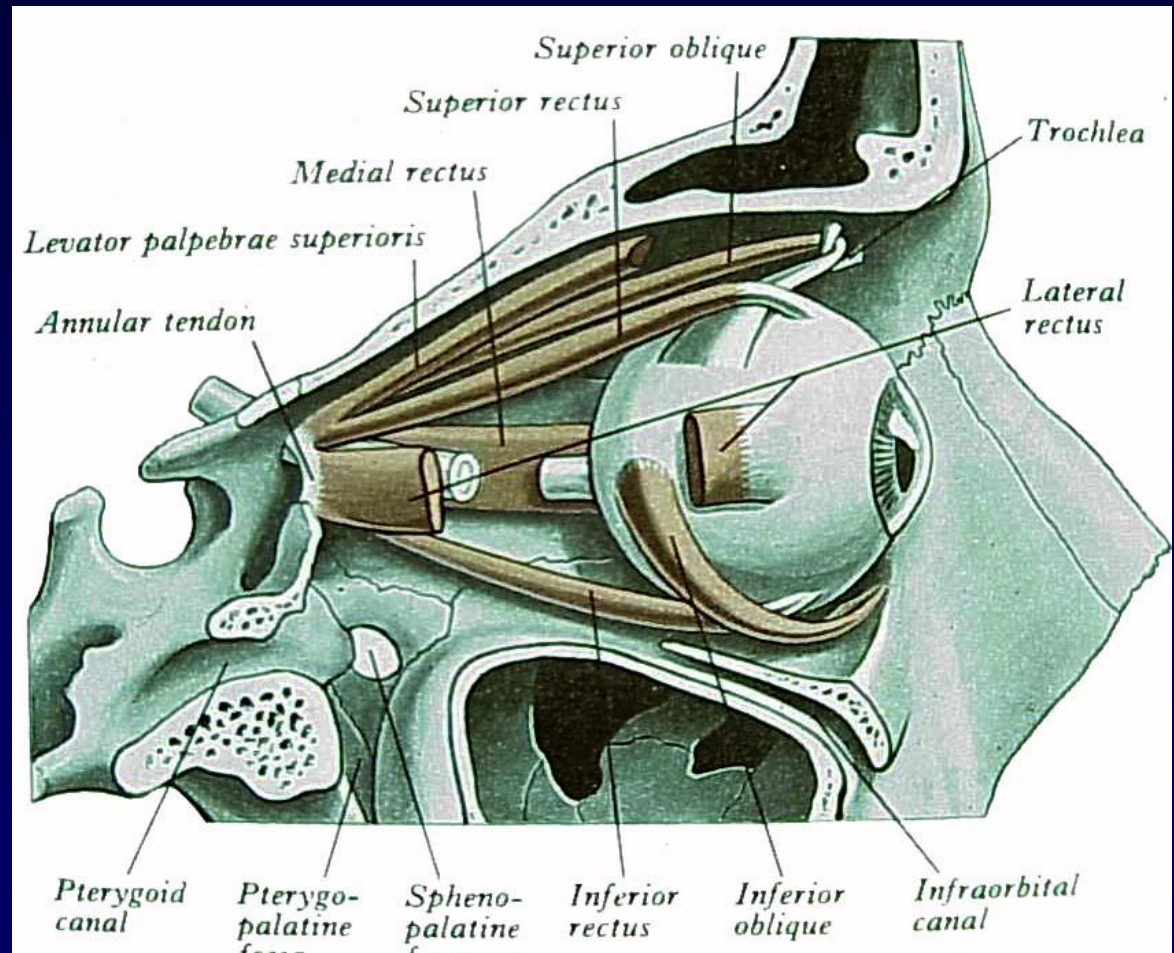
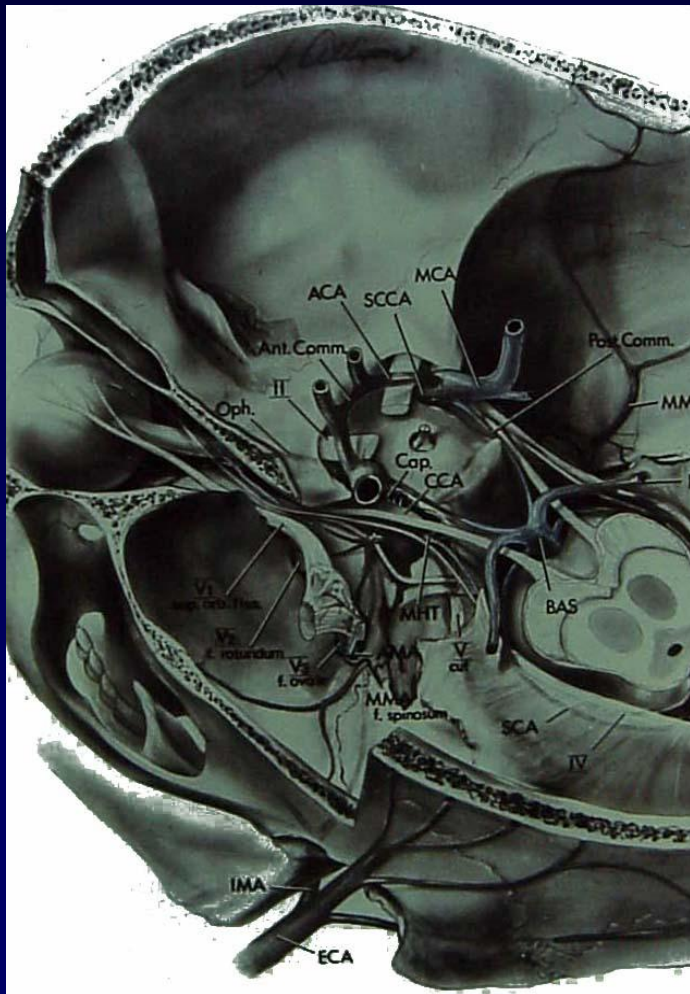
Efferent Neuro-anatomy



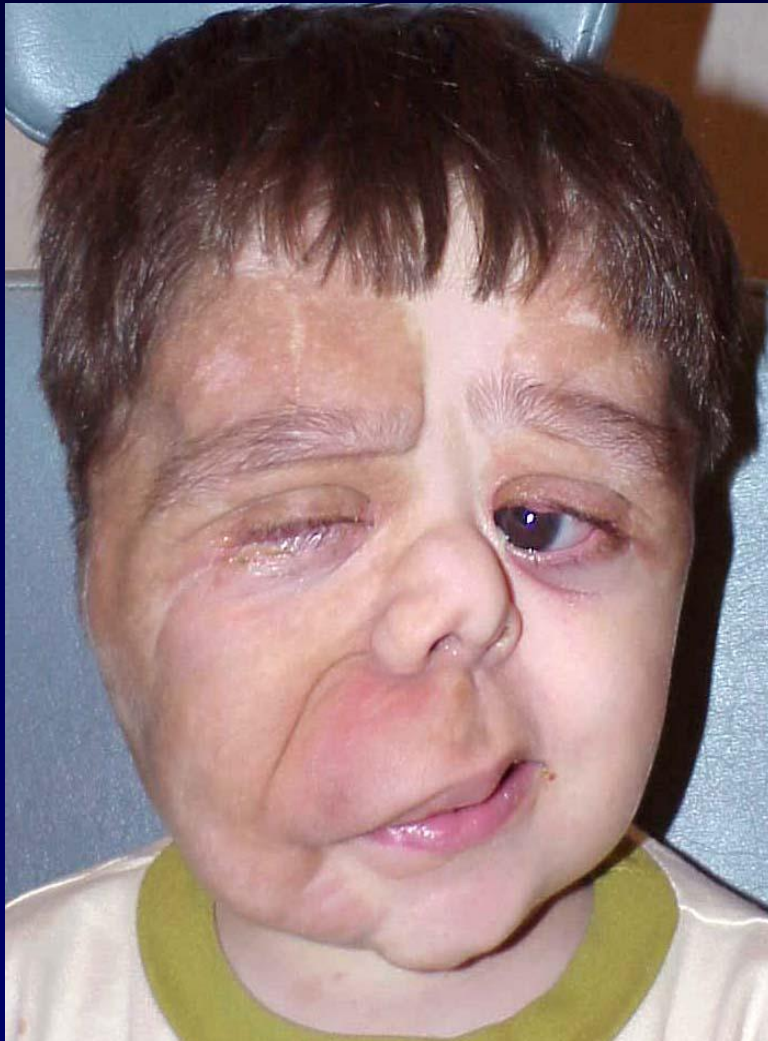
Efferent Skull Anatomy



Efferent Skull Anatomy



Orbit Pathology



Orbit Pathology



Efferent Examination

- Just look at patient
- Movements of both eyes in all directions
- Smooth pursuit
- Saccades

Efferent Examination

- Just look at patient
- Movements of both eyes in all directions
- Smooth pursuit
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Are eyes straight?

What are the lid positions?

Are the eyes proptotic?

Are there any spontaneous eye movements

Efferent Examination



Are eyes straight?

What are the lid positions?

Are the eyes proptotic?

Are there any spontaneous eye movements

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Efferent Examination



Are eyes straight?

What are the lid positions?

Are the eyes proptotic?

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Efferent Examination



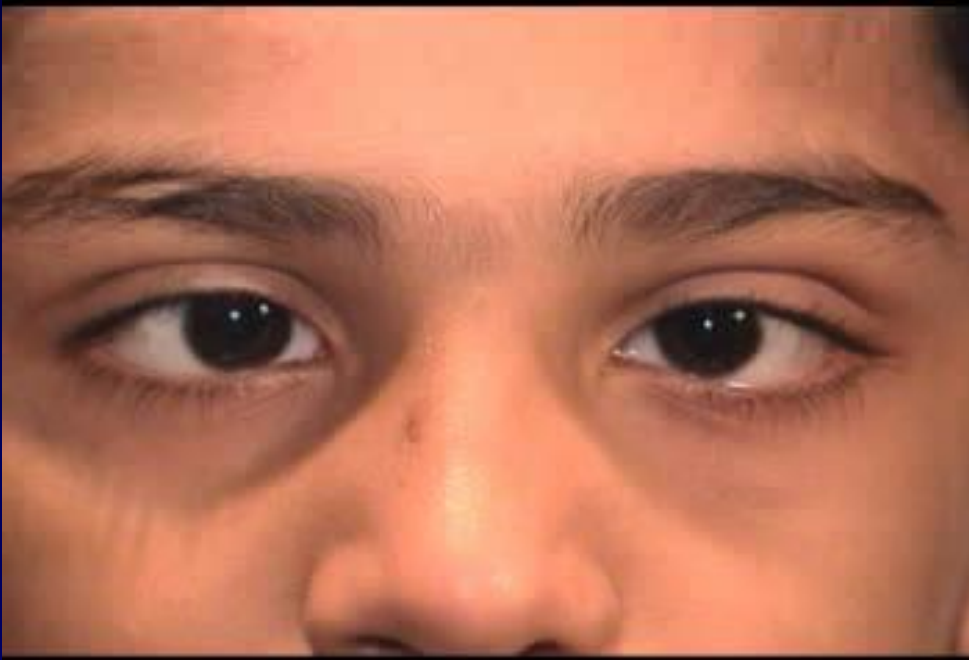
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Efferent Examination



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Efferent Examination

- Just look at patient
- Movements of both eyes in all directions
- Smooth pursuit
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Have the patient move eyes in all directions, not just the direction where you think there is a problem.

Hold lids if necessary (only after looking first without holding lids)

Examine each eye separately if necessary

Efferent Examination



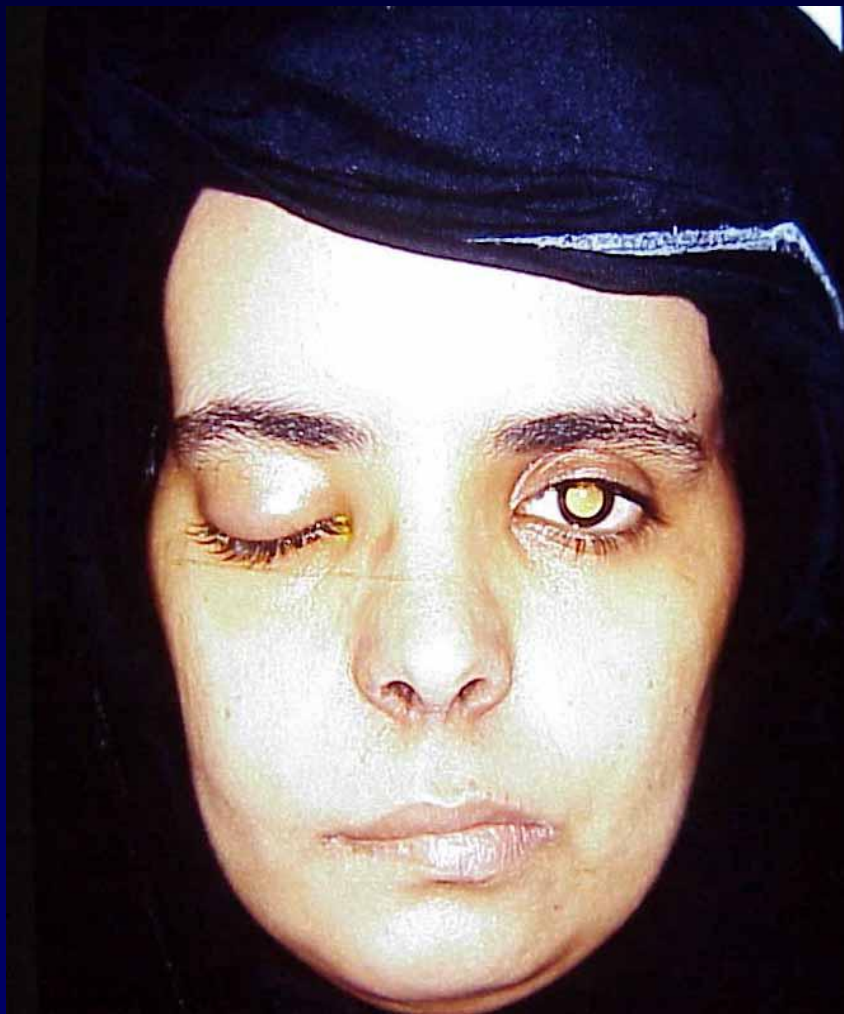
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Efferent Examination



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Examine each eye separately if necessary

Efferent Examination



210439-3

Efferent Examination



210439-3

10 yo girl

- Born with weakness of the face
- Parents noticed unusual eye movements at early age
- No family history





154333-4

10 yo girl

- Bilateral Mobius syndrome, R>L
- Possible congenital injury to 3rd CN OD



Efferent Examination

- Just look at patient
- Movements of both eyes in all directions
- Smooth pursuit
- Saccades

The reflex that helps to maintain fixation on an object in motion in the visual world while the head is stable

Also the reflex that inhibits the vestibulo-ocular reflex

Efferent Examination

- Just look at patient
- Movements of both eyes in all directions
- Smooth pursuit
- Saccades

The reflex that permits a rapid refixation from one point in the visual field to another.

Efferent

- Anatomy
- Examination
- Diagnoses
- Tests
- Orbit
 - Extraocular muscles
 - Trauma
 - Mass
- Neuromuscular junction
- Single cranial nerves
- Multiple cranial nerves
- Intraparenchymal problem
 - INO
 - Gaze palsy

Efferent Diagnoses



- Orbit
 - Extraocular muscles
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Efferent Diagnoses



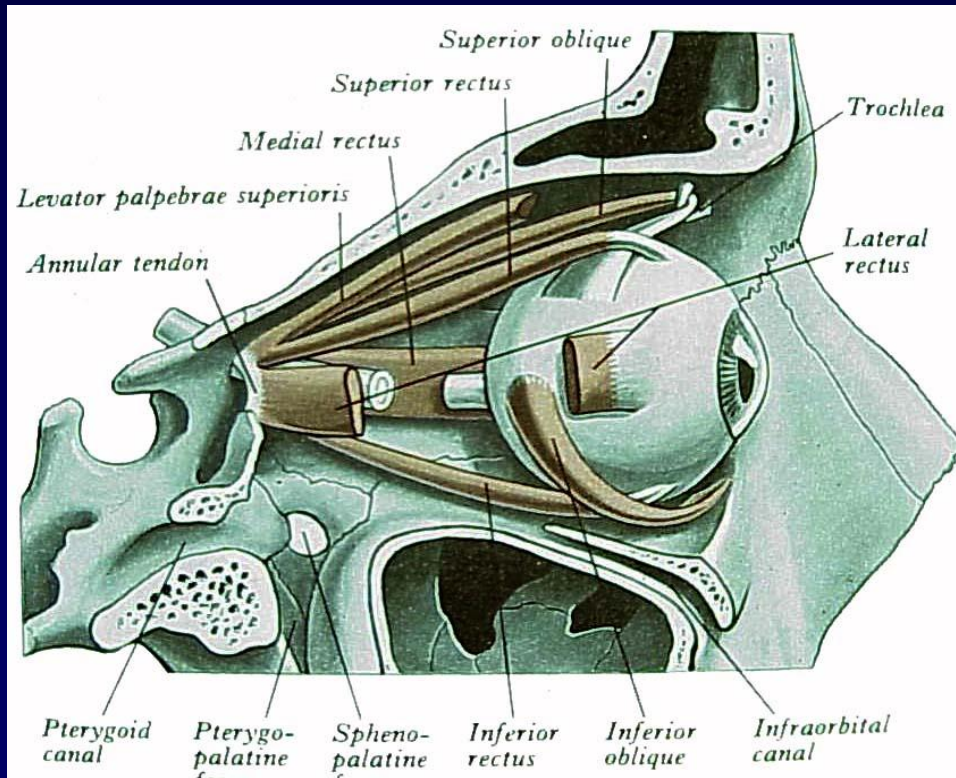
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14 yo boy



253324-3

Efferent Diagnoses



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29 yo man



- Left optic nerve sheath meningioma resected in 1988
- Developed progressive ptosis in 1993 with pain, treated as sinusitis and resolved
- Syndrome recurred in 9/00

29 yo man



Efferent Diagnoses



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Efferent Diagnoses

Oculomotor nerve (3)

Trochlear nerve (4)

Abducens nerve (6)

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Efferent Diagnoses

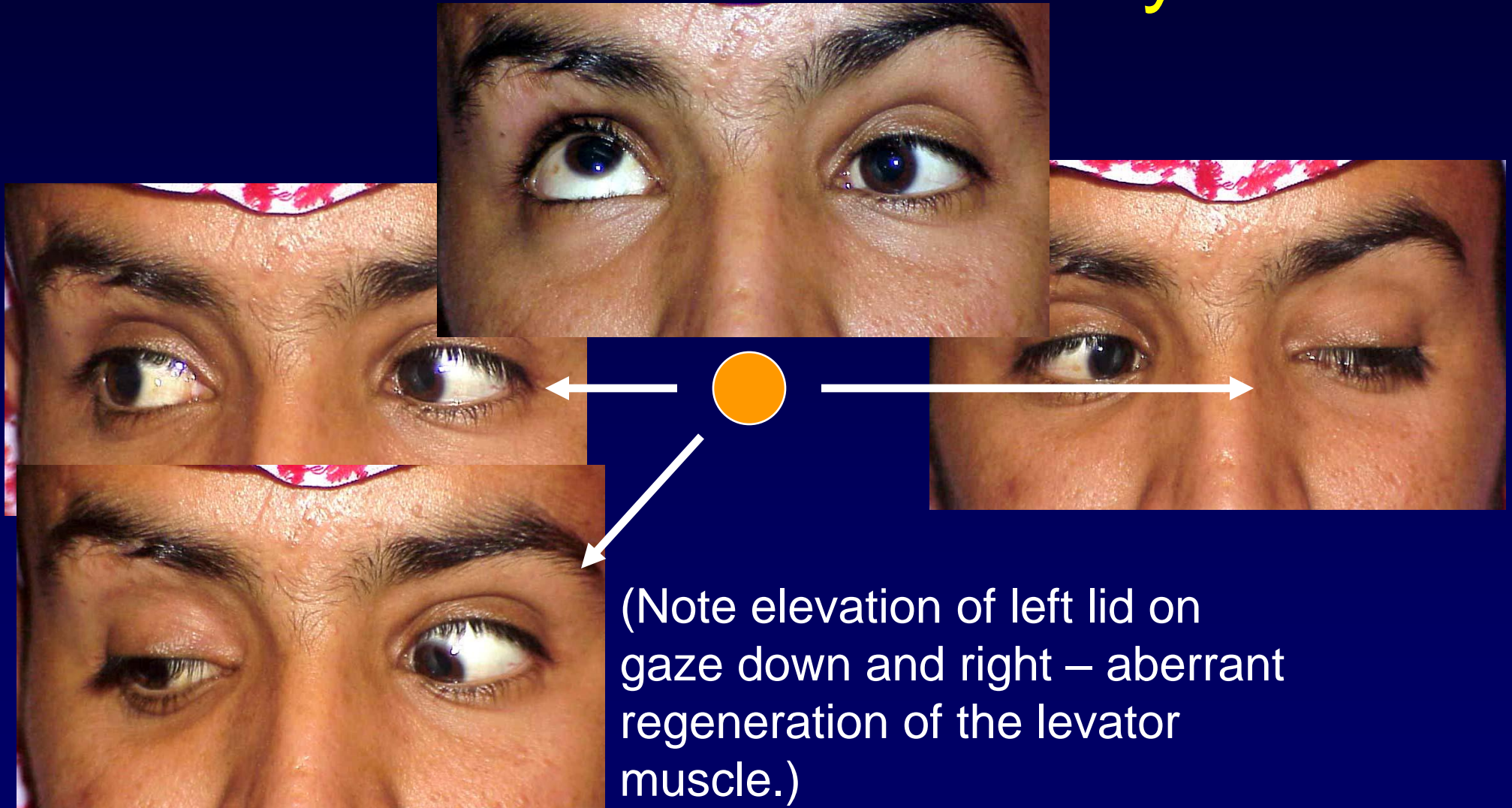
Oculomotor nerve (3)

Trochlear nerve (4)

Abducens nerve (6)



Oculomotor CN Palsy



(Note elevation of left lid on gaze down and right – aberrant regeneration of the levator muscle.)

Efferent Diagnoses

Oculomotor nerve (3)

Trochlear nerve (4)

Abducens nerve (6)



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Efferent Diagnoses



Oculomotor nerve (3)

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Efferent Diagnoses

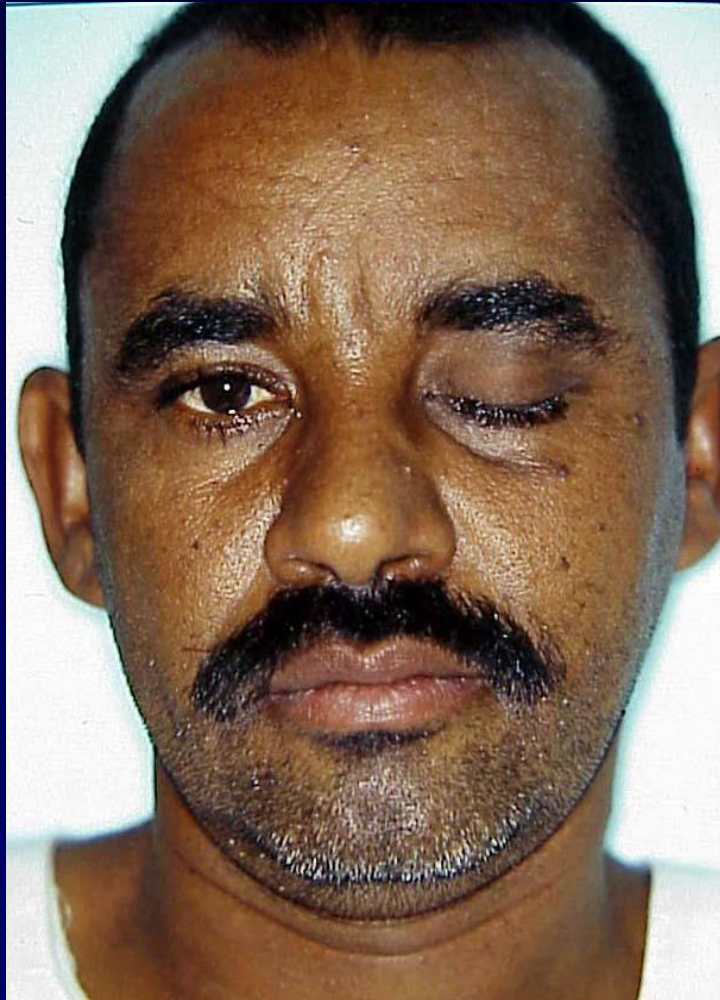
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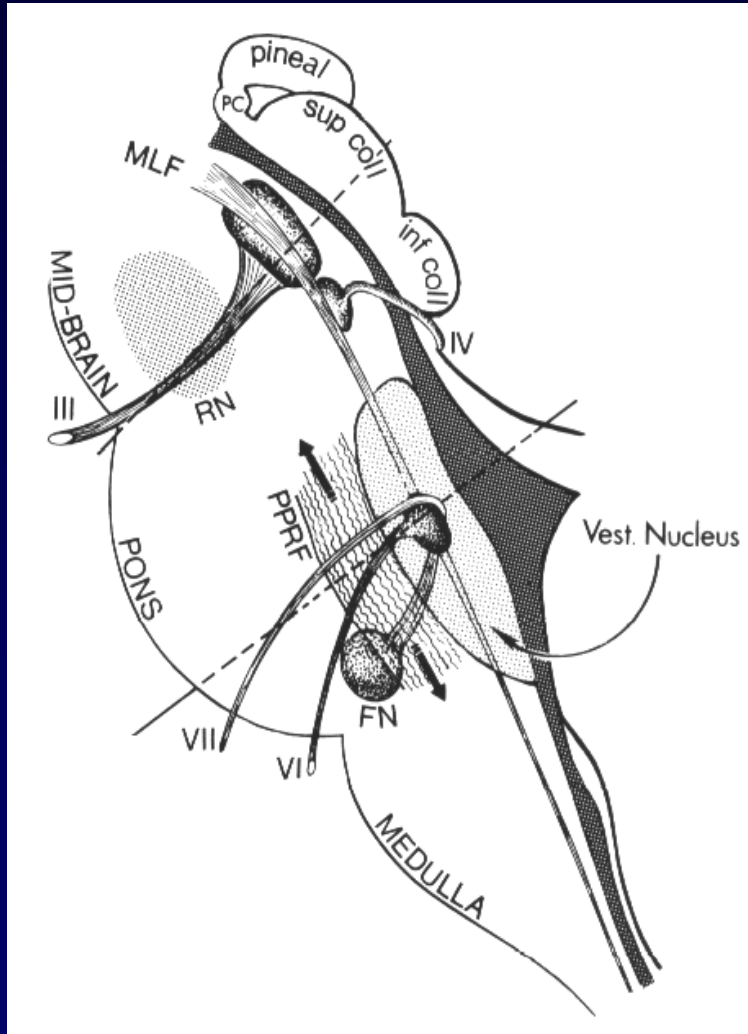


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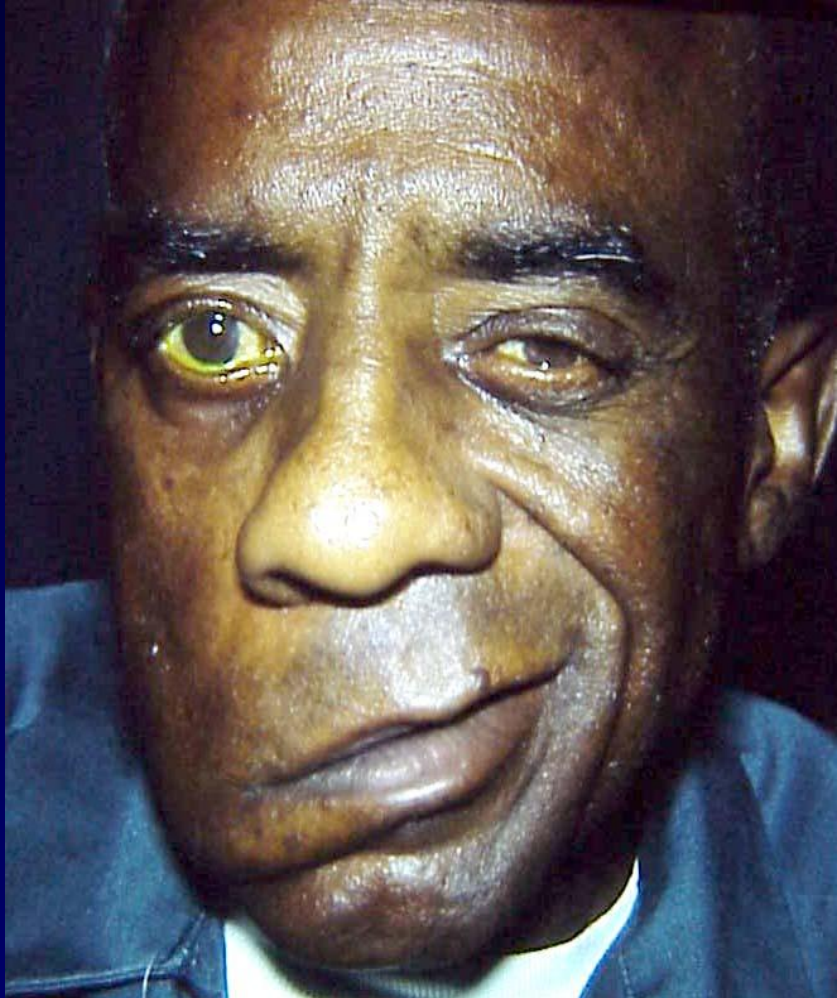
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Neuro-ophthalmology

Unusual faces

- Afferent
- Efferent
- Other



Neuro-ophthalmology

- Afferent
- Efferent
- Other

Unusual scans



Neuro-ophthalmology

Unusual teeth

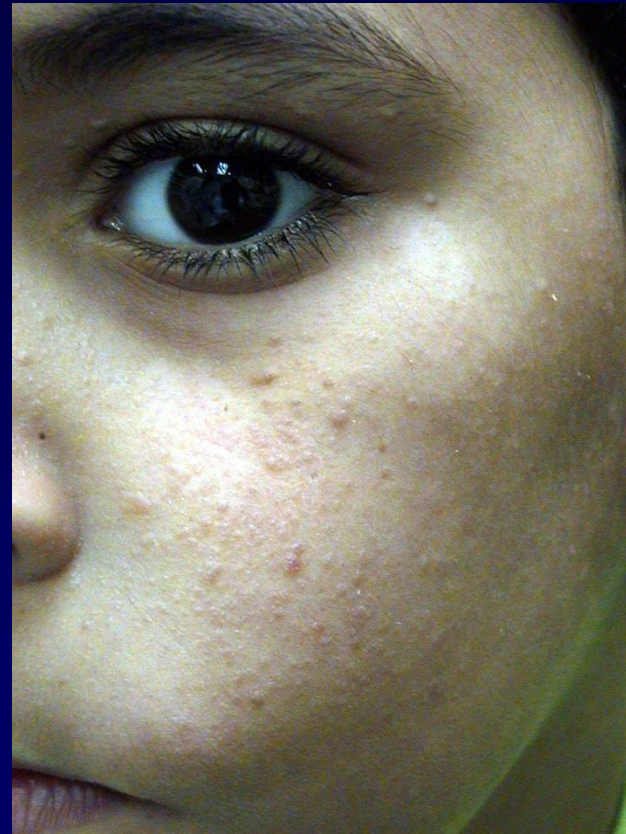
- Afferent
- Efferent
- Other



Neuro-ophthalmology

Unusual skin lesions

- Afferent
- Efferent
- Other



Neuro-ophthalmology

Unusual postures

- Afferent
- Efferent
- Other



Neuro-ophthalmology

- Afferent
- Efferent
- Other

And much, much more ...