

Neuroscientific topics related to Subspecialties

- eye or vision sense is very important , controlled by 6& half cranial nerves : optic , oculomotor , trochlear , abducent , facial “orbicularis oculi”, Vestibulo–ocular ”goose eye reflex”, **ophthalmic** branch of trigeminal .
 - test :Dim the room lights.
1. Ask the patient to focus on a distant object.
 2. Shine a bright light directly into one eye for a second, then quickly switch to the other eye “swinging”.
 3. Compare between eyes response .
- relative afferent papillary defect : the pupil on the side with the damaged optic nerve dilates **paradoxically** more than the other eye in response to the swinging light test. This happens because the damaged optic nerve sends a weaker signal to the brainstem, causing a relatively sluggish pupillary constriction compared to the healthy side. it's relative cause it's compared with normal eye , we know the exact damage to optic nerve by specialized MRI .
 - multiple sclerosis : demyelinating lesions separated by time & place .
 - Marcus Gunn Sign : relative afferent papillary defect + multiple sclerosis .
 - raised intracranial pressure due to tumor = to decrease it don't amplify lumbar puncture till you know where is the tumor exactly “risk of herniation”. instead administer soluble mannitol IV , to adjust osmotic pressure to decrease cranial pressure , but be careful it is contraindicated in diabetic or Ureaemic patients .
 - Carbonic anhydrase inhibitors “**acetazolamide**” : decrease intraocular pressure , significant allergy cause hypokalemia leading to arrhythmia then death .
 - papilledema : Bilateral swelling of the optic nerve head due to high intracranial pressure (ICP). If a tumor presses on one optic nerve, it will cause ” **foster kennedy syndrome**” unilateral papilledema (swelling on only one side).
 - autonomic dysfunction of cardiology : where there is a disruption in the normal functioning of the autonomic nervous system (ANS) specifically related to the heart.