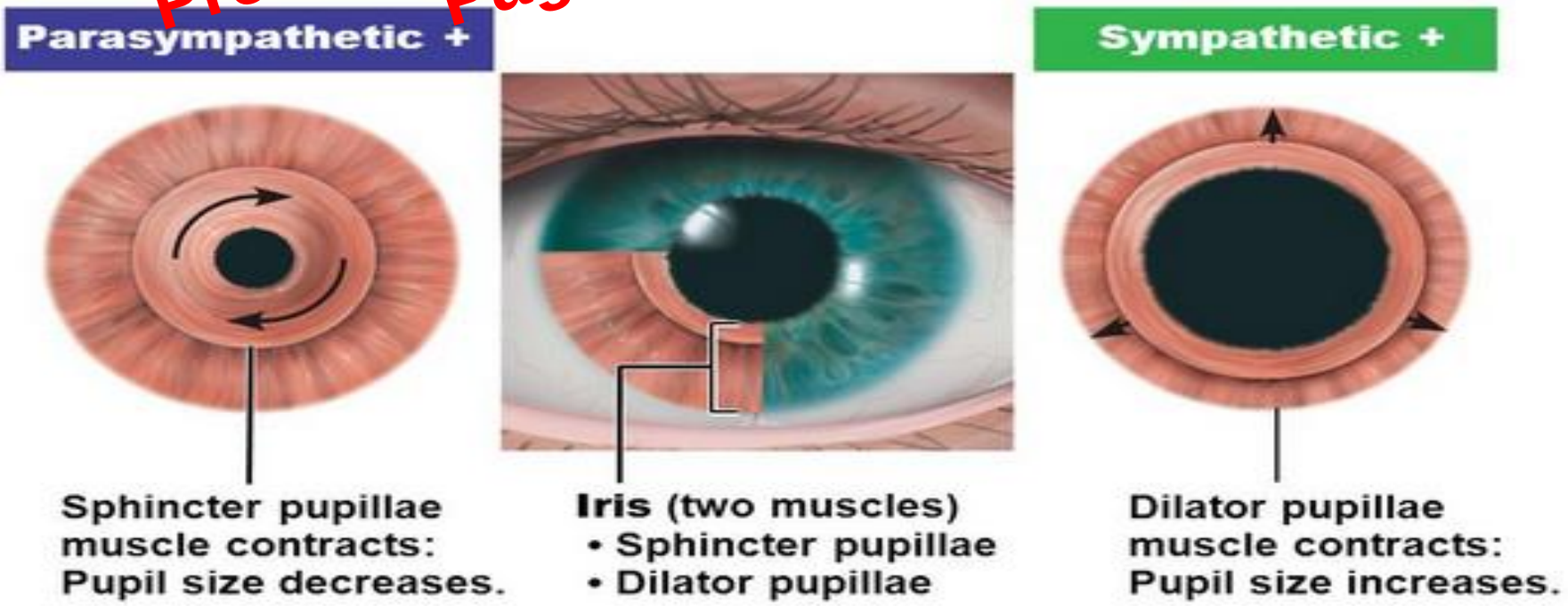
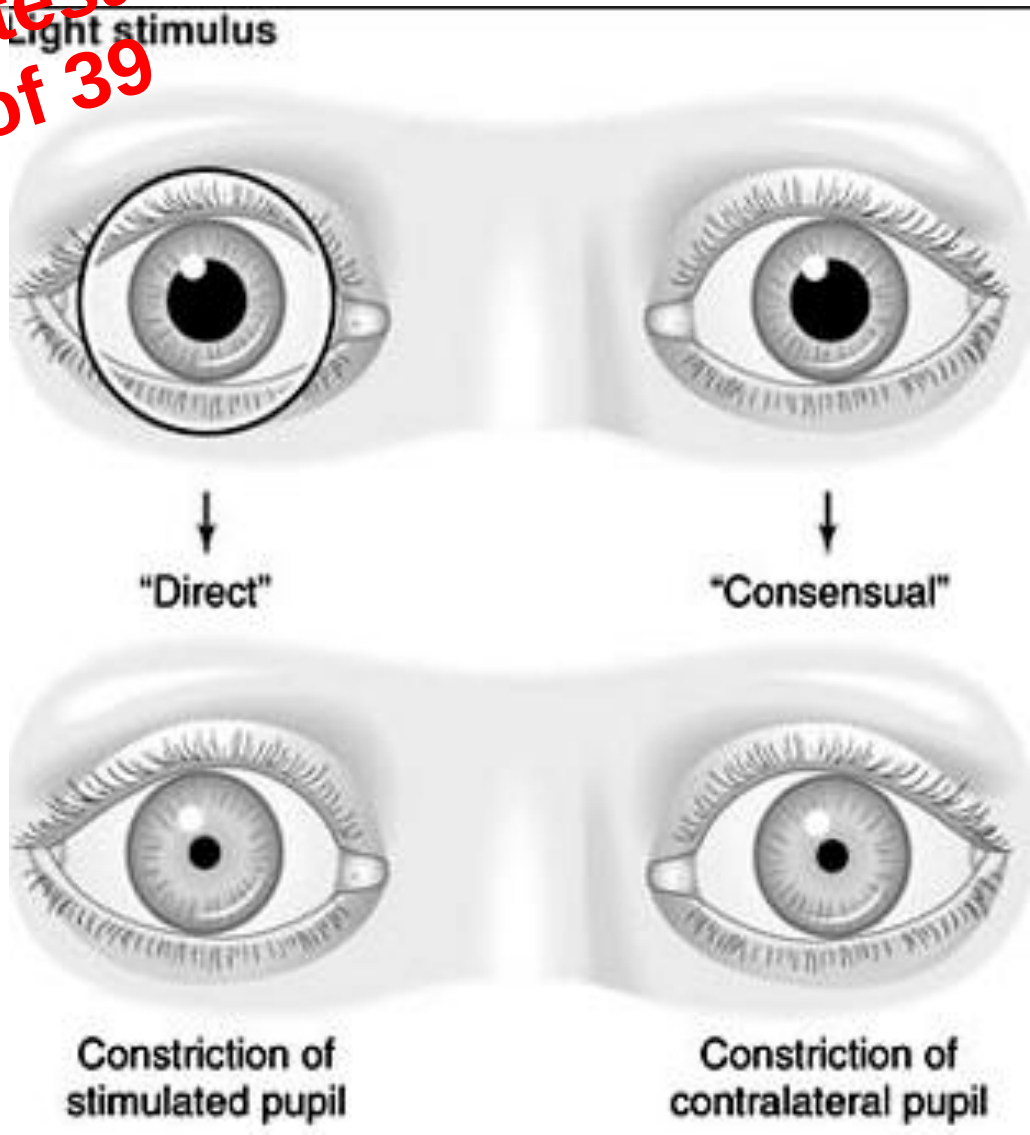
Figure 15.5 Pupil constriction and dilation, anterior view.



1. LIGHT REFLEX

- Both pupil will constrict when light is shone in one eye.
- In **NORMAL** subjects, the direct and consensual response are always identical in time, course and magnitude.



normal - both pupils constrict

CN III lesion - loss of consensual pupillary light reflex

CN II lesion - loss of direct pupillary light reflex

SUMMARY: PATHWAY OF CONVERGENCE REFLEX

Fibers form Medial Rectus m. via III n.

↓

Mesencephalic n. of V n.

↓

Convergence Center in Tectal or Pre Tectal Region

↓

EW Nucleus

↓

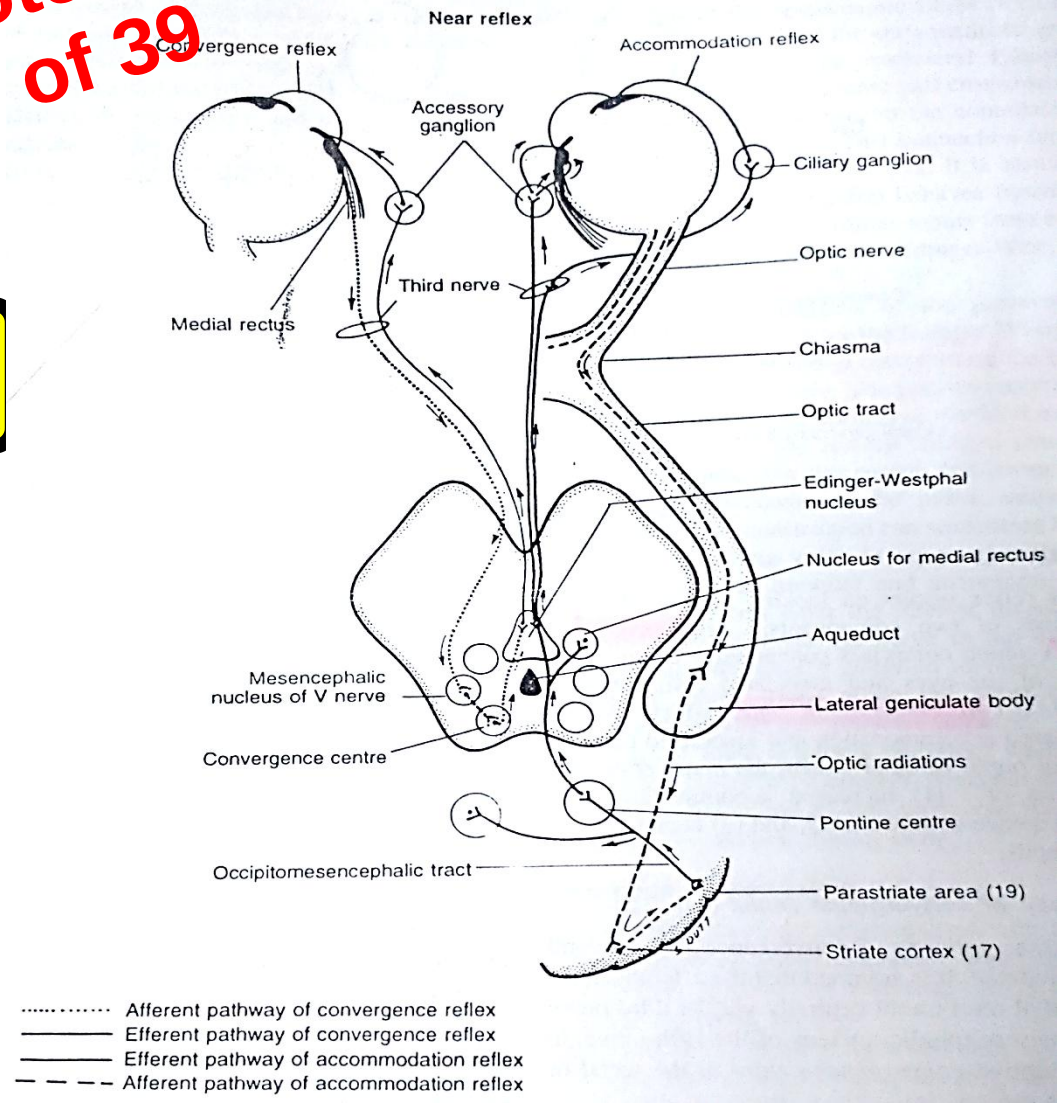
Efferent fibers travel along III n.

↓

Relay in Accessory Ganglion

↓

Sphincter Pupillae



3.PUPILLARY LIGHT-NEAR DISSOCIATION

- Refers to any situation in which the pupillary near reaction is **present** and light reaction is **absent**
- Causes of light-near dissociation

1. Bilateral complete afferent pathway defect

   Eg: bilateral retinal detachment

2. Lesions in midbrain: interupted in pretectal area

   Eg: tumours, cascular lesion, encaphalitis, neurosyphilis

3. 3rd nerve palsy with aberrant regeneration of medial rectus innervation into sphincter innervation pathway
4. Ciliary ganglion or short ciliary nerve lesions with abberant regeneration of accommodation
5. Pupillary light-near dissociation associated with peripheral neuropathies as in diabetes, alcoholism

HORNER'S SYNDROME: PREGANGLIONIC

- Occurs due to lesions located from C8 to T2 of preganglionic fibres to the superior cervical ganglion
- Causes:
  - Pancoast tumor of the lung
  - Carotid and aortic aneurysm
  - Malignant cervical lymph nodes
- Clinical association
  - Lung or breast malignancy that has spread to thoracic outlet
  - History of injury or surgery in neck, cervical spine or chest
  - Anhydrosis involves face and neck
  - Brachial plexus palsy