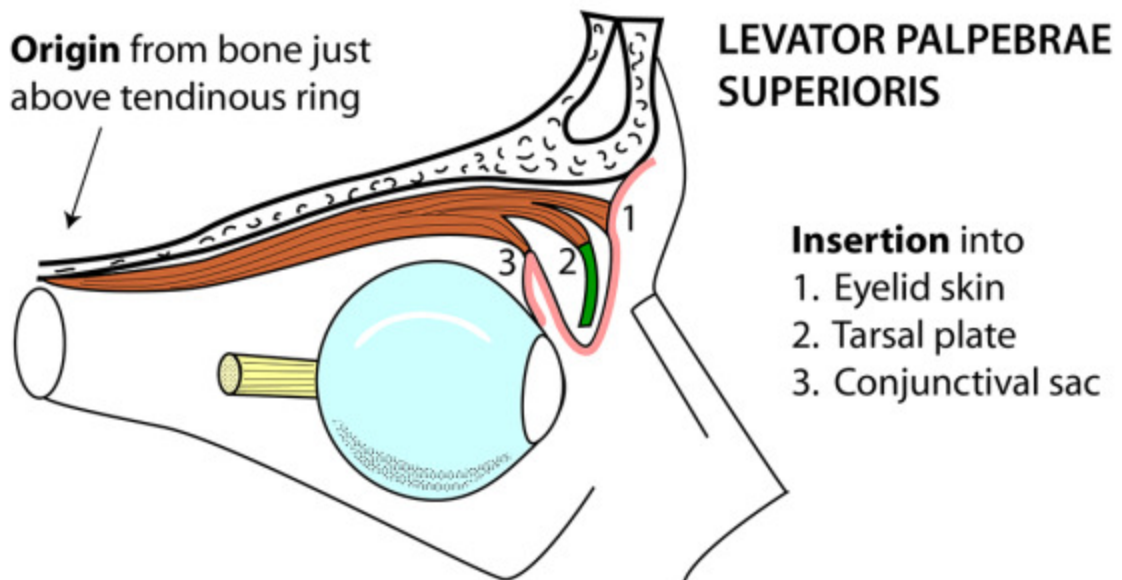
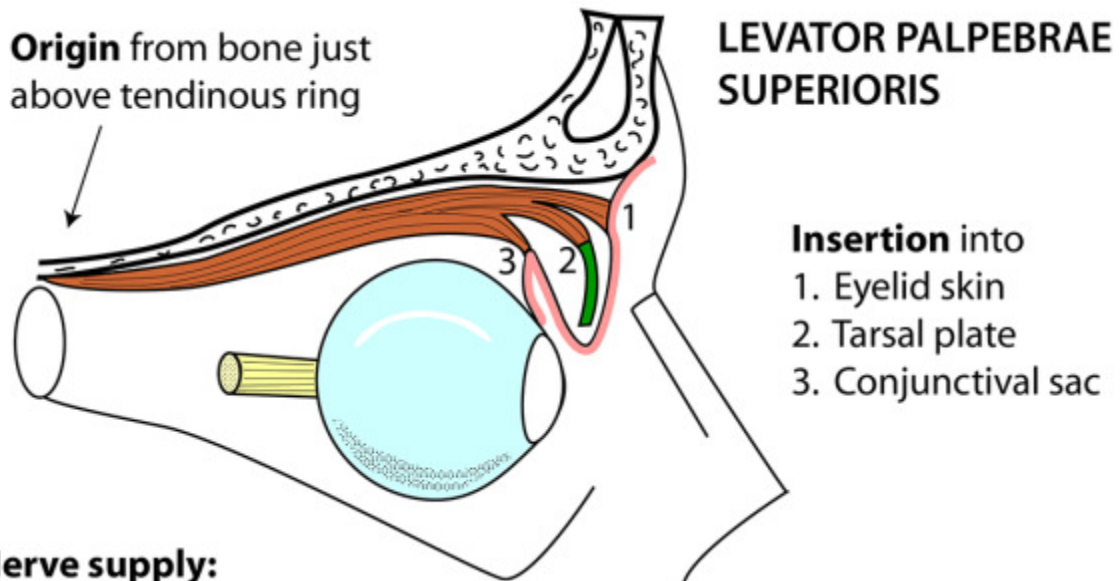


LEVATOR PALPEBRAE SUPERIORIS

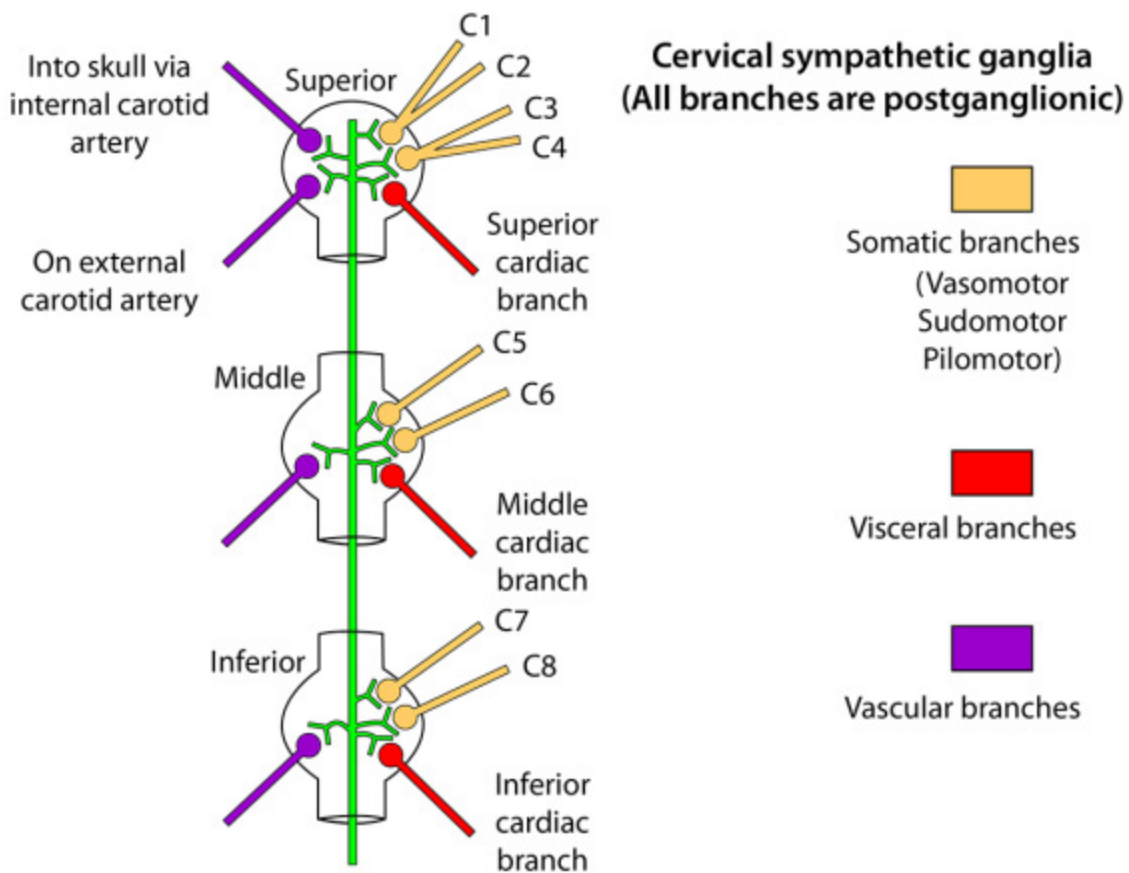


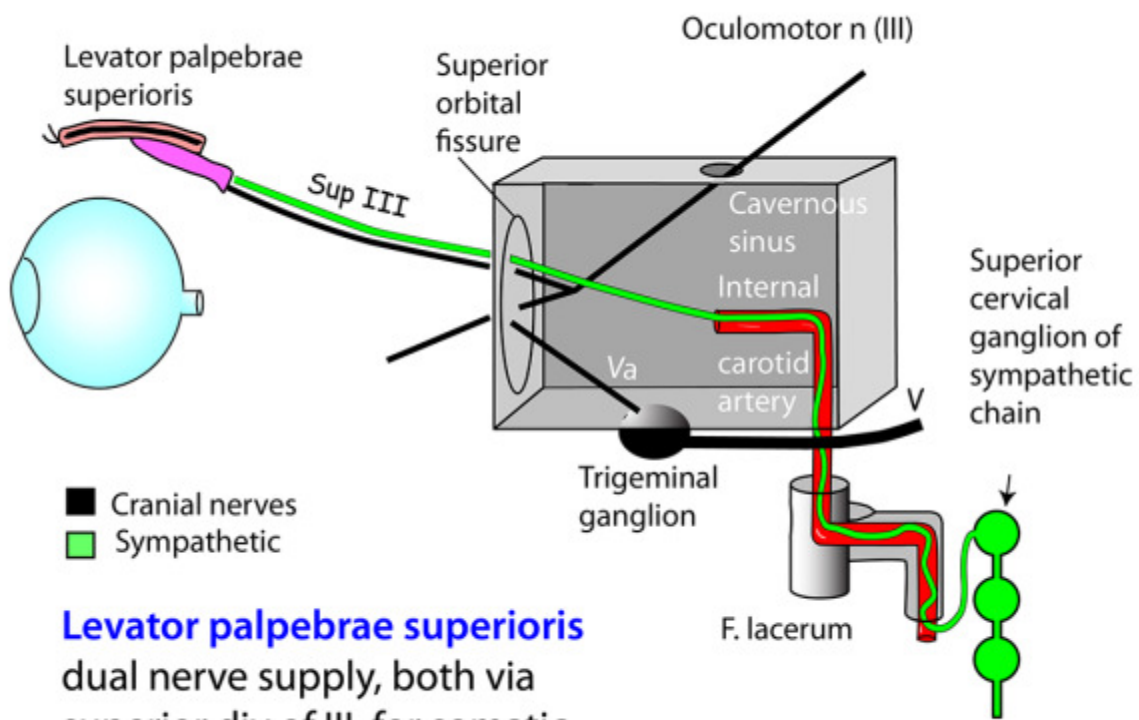


Nerve supply:

- **III (oculomotor)** to all three insertions (somatic) so defect gives complete ptosis
- **Sympathetic** to tarsal plate only (autonomic) so defect gives only partial ptosis

Note: For the muscle to function correctly both somatic and sympathetic supply must be intact





Levator palpebrae superioris
 dual nerve supply, both via
 superior div of III, for somatic
 and sympathetic motor

PUPIL AND LID APPEARANCES IN NORMAL PEOPLE AND IN PATIENTS WITH HORNER'S SYNDROME AND 3RD NERVE PALALYSIS



NORMAL



NORMAL



LEFT HORNER'S SYNDROME

- Moderate ptosis
- Small pupil
- No problems with eye movements



NORMAL



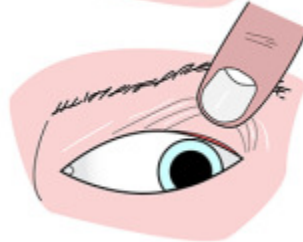
LEFT HORNER'S SYNDROME

- Moderate ptosis
- Small pupil
- No problems with eye movements



LEFT 3rd NERVE PALSY

- Severe ptosis
- Large pupil
- Down/out gaze



NORMAL



LEFT HORNER'S SYNDROME

- Moderate ptosis
- Small pupil
- No problems with eye movements



LEFT 3rd NERVE PALSY

- Severe ptosis
- Large pupil
- Down/out gaze



HORNER'S V III NERVE LESION

LESION	PUPIL SIZE	PTOSIS	FACE	EYE MOVEMENTS
HORNER'S (loss of sympathetic)	SMALL			
III (Oculomotor)	LARGE (loss of para-sympathetic)			

NOTE: Levator palpebrae superioris needs both sympathetic and somatic nerves to function correctly

HORNER'S V III NERVE LESION

LESION	PUPIL SIZE	PTOSIS	FACE	EYE MOVEMENTS
HORNER'S (loss of sympathetic)	SMALL	YES (mild)		
III (Oculomotor)	LARGE (loss of para-sympathetic)	YES (severe) (loss of somatic)		

NOTE: Levator palpebrae superioris needs both sympathetic and somatic nerves to function correctly

HORNER'S V III NERVE LESION

LESION	PUPIL SIZE	PTOSIS	FACE	EYE MOVEMENTS
HORNER'S (loss of sympathetic)	SMALL	YES (mild)	DRY FLUSHED	
III (Oculomotor)	LARGE (loss of para-sympathetic)	YES (severe) (loss of somatic)	NORMAL	

NOTE: Levator palpebrae superioris needs both sympathetic and somatic nerves to function correctly

HORNER'S V III NERVE LESION

LESION	PUPIL SIZE	PTOSIS	FACE	EYE MOVEMENTS
HORNER'S (loss of sympathetic)	SMALL	YES (mild)	DRY FLUSHED	NORMAL
III (Oculomotor)	LARGE (loss of para-sympathetic)	YES (severe) (loss of somatic)	NORMAL	PATIENT LOOKS DOWNWARDS AND OUTWARDS (sole action of superior oblique & lateral rectus)

NOTE: Levator palpebrae superioris needs both sympathetic and somatic nerves to function correctly

SIZE OF PUPIL & REACTION TO LIGHT	CAUSES
SMALL PUPIL normal reaction to light	Old age; Horner's syndrome; Pontine lesion
SMALL PUPIL impaired reaction to light	Opiates; pilocarpine drops for glaucoma; diabetes; Argyll-Robertson pupil of neurosyphilis (accommodation but no reaction to light)
LARGE PUPIL normal reaction to light	Normal finding in children
LARGE PUPIL impaired reaction to light	Atropine drops; II & III nerve lesions; Holmes Adie pupil (myotonic pupil with slow constriction to light & slow dilatation in dark); post anoxia