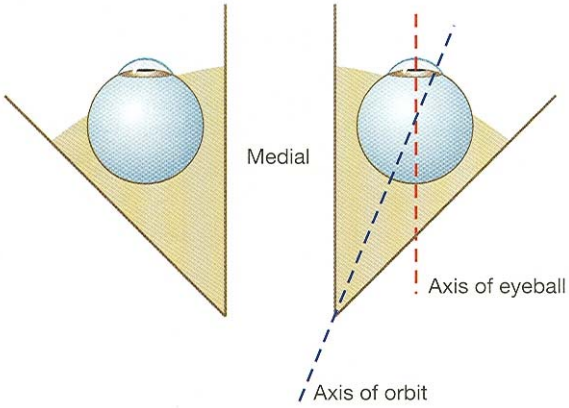
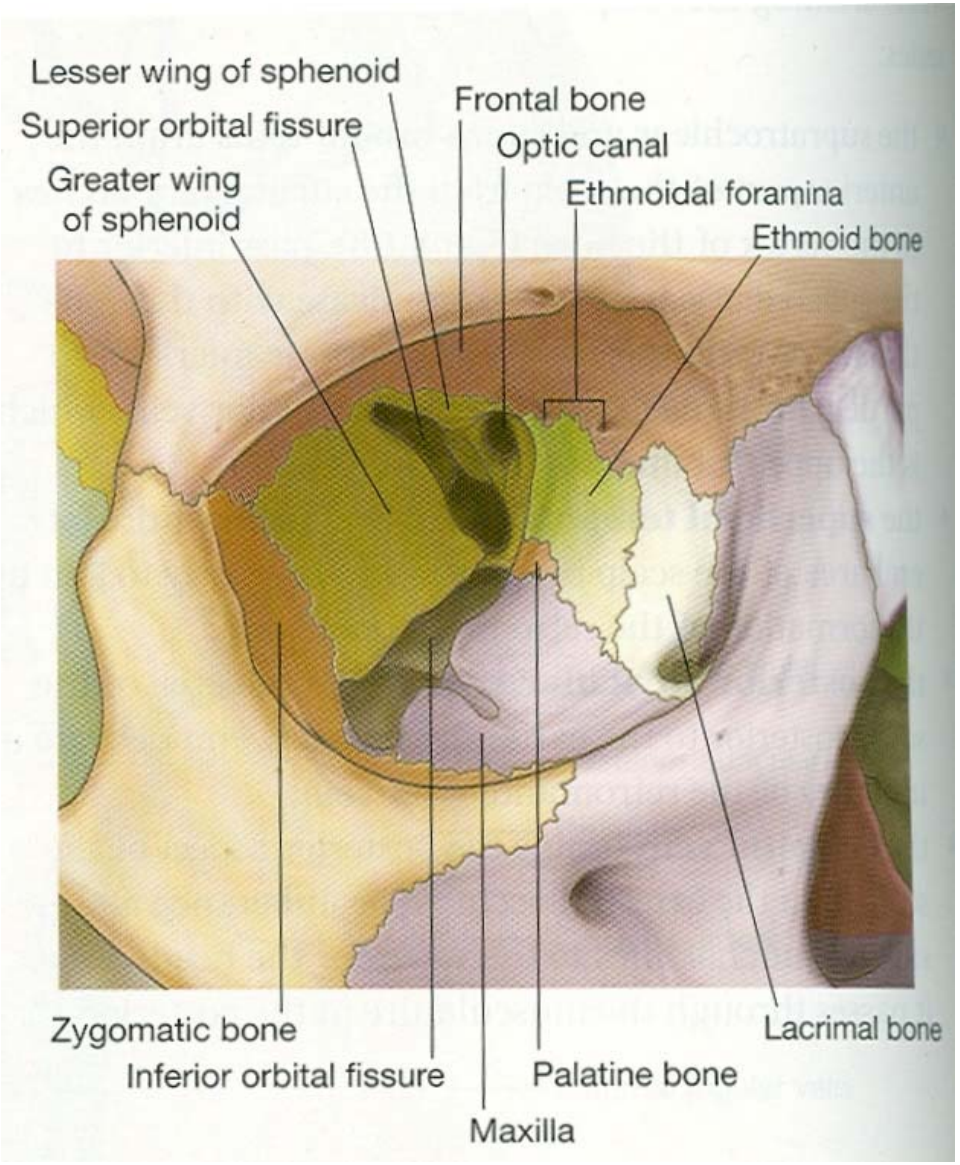
Orbit & it’s content

Bony orbit

- Pyramidal cavities



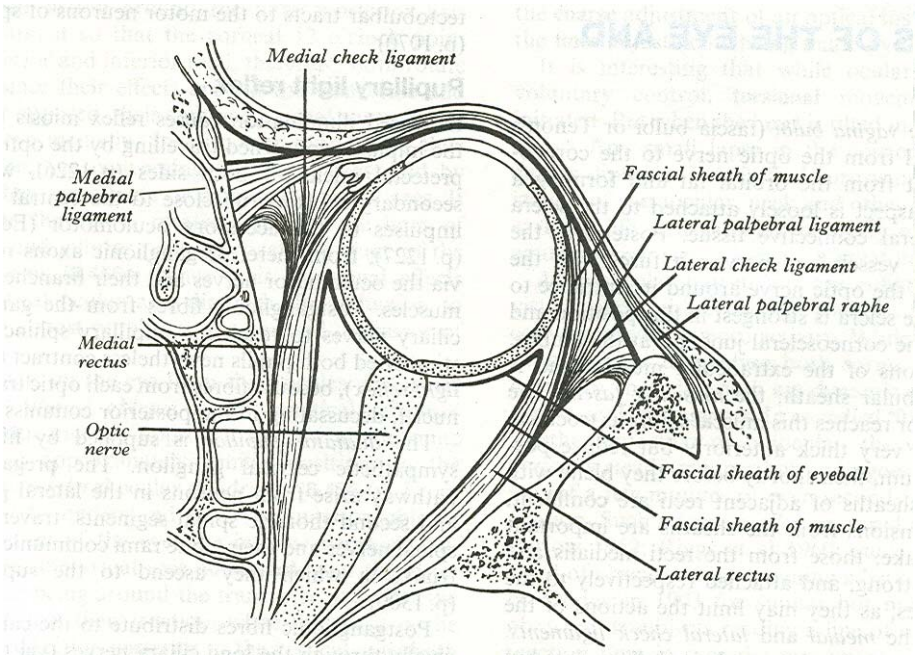


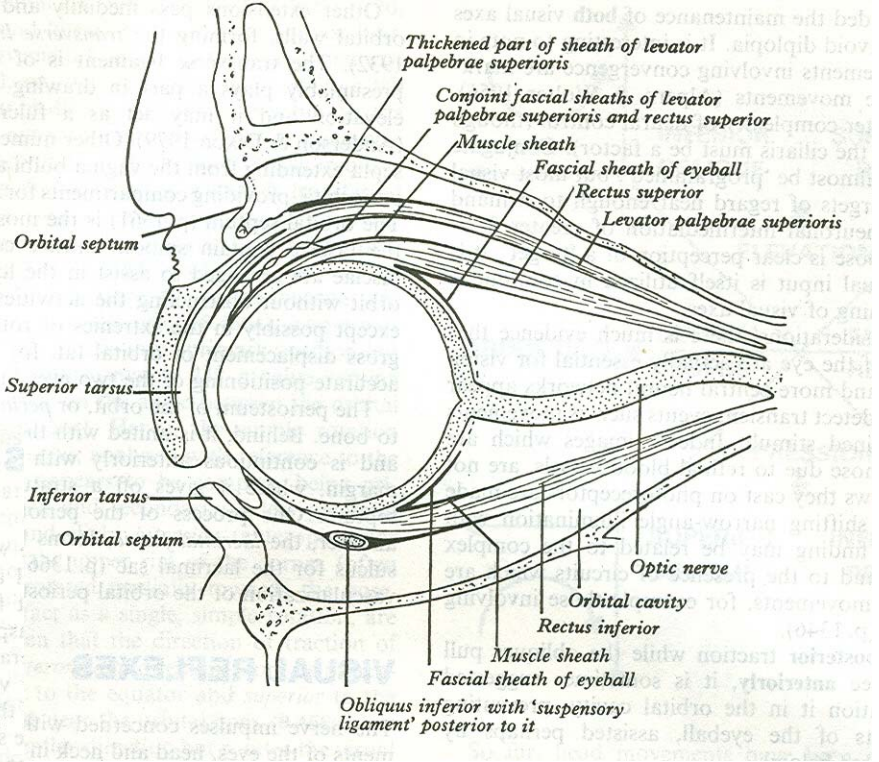
Contents

- Eyeball
- Fascia
- Muscles
- Vessels: Ophthalmic artery, Superior & inferior ophthalmic veins & lymphatics
- Nerves: Optic oculomotor trochlear,Branches of ophthalmic nerves
- Lacrimal gland
- fat

Fascia

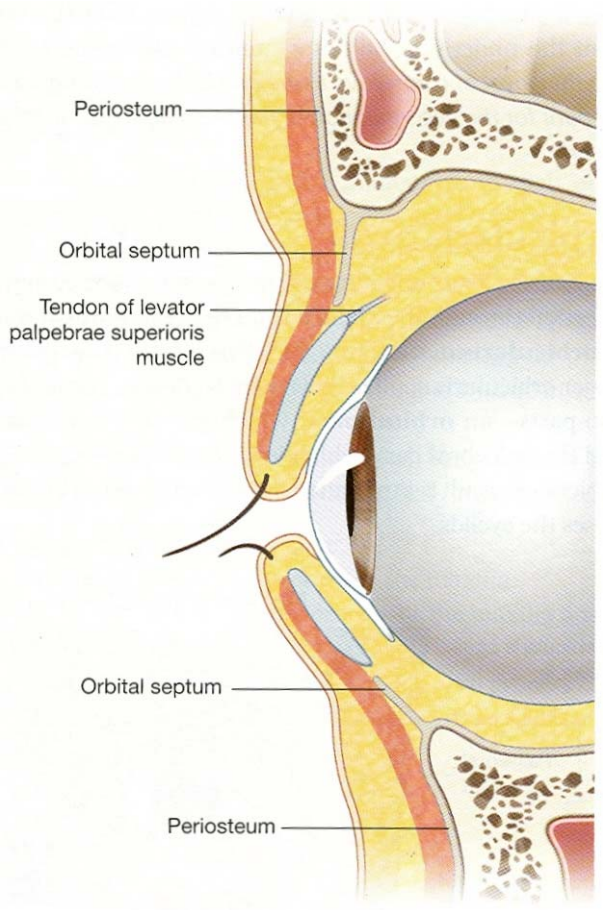
- Orbital fascia
- Bulbar fascia





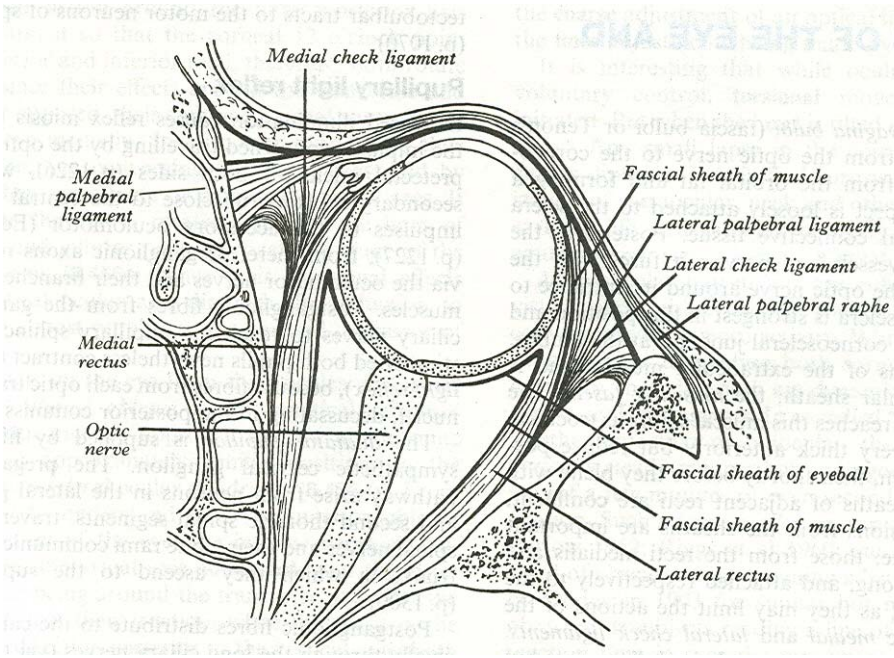
Orbital fascia

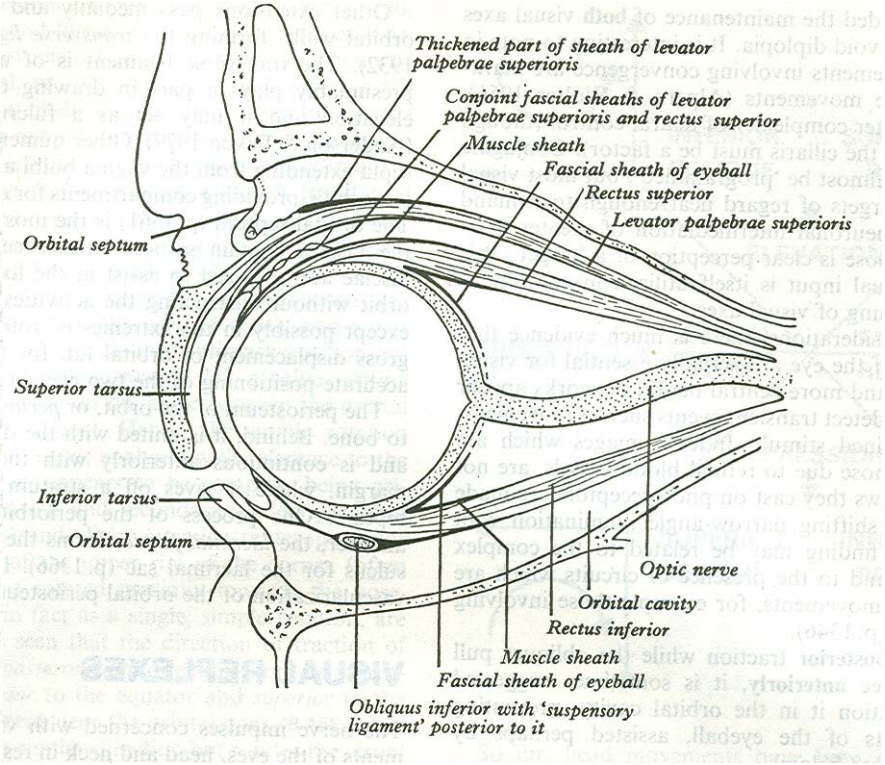
- Forms periosteum
- Expansions: orbital septum, Fibrous pulley, Lacrimal fascia



Bulbar fascia

- Tenons capsule
- Expansions: sheath around muscles
- Medial check ligament
- Lateral check ligament





Extraocular muscles

- Voluntary

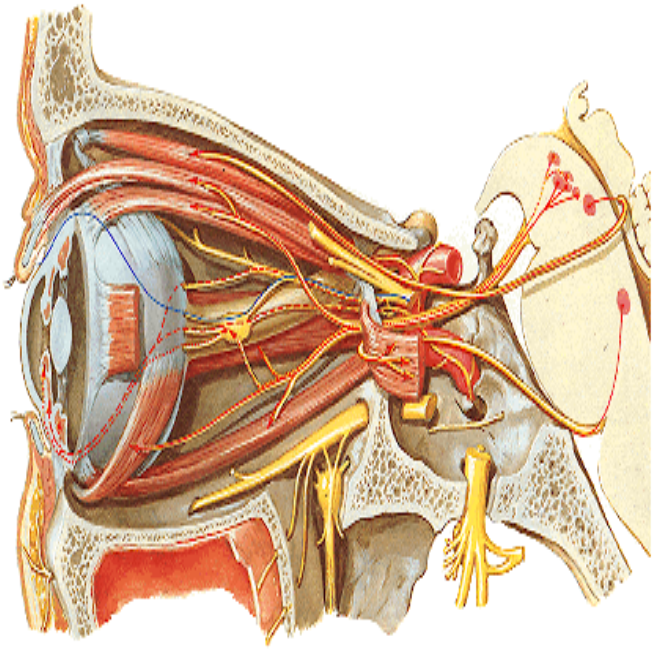
4Recti- Superior rectus
Inferior rectus
Medial rectus
Lateral rectus

2 Obliqi- Superior oblique
Inferior oblique

Levator palpebrae superioris

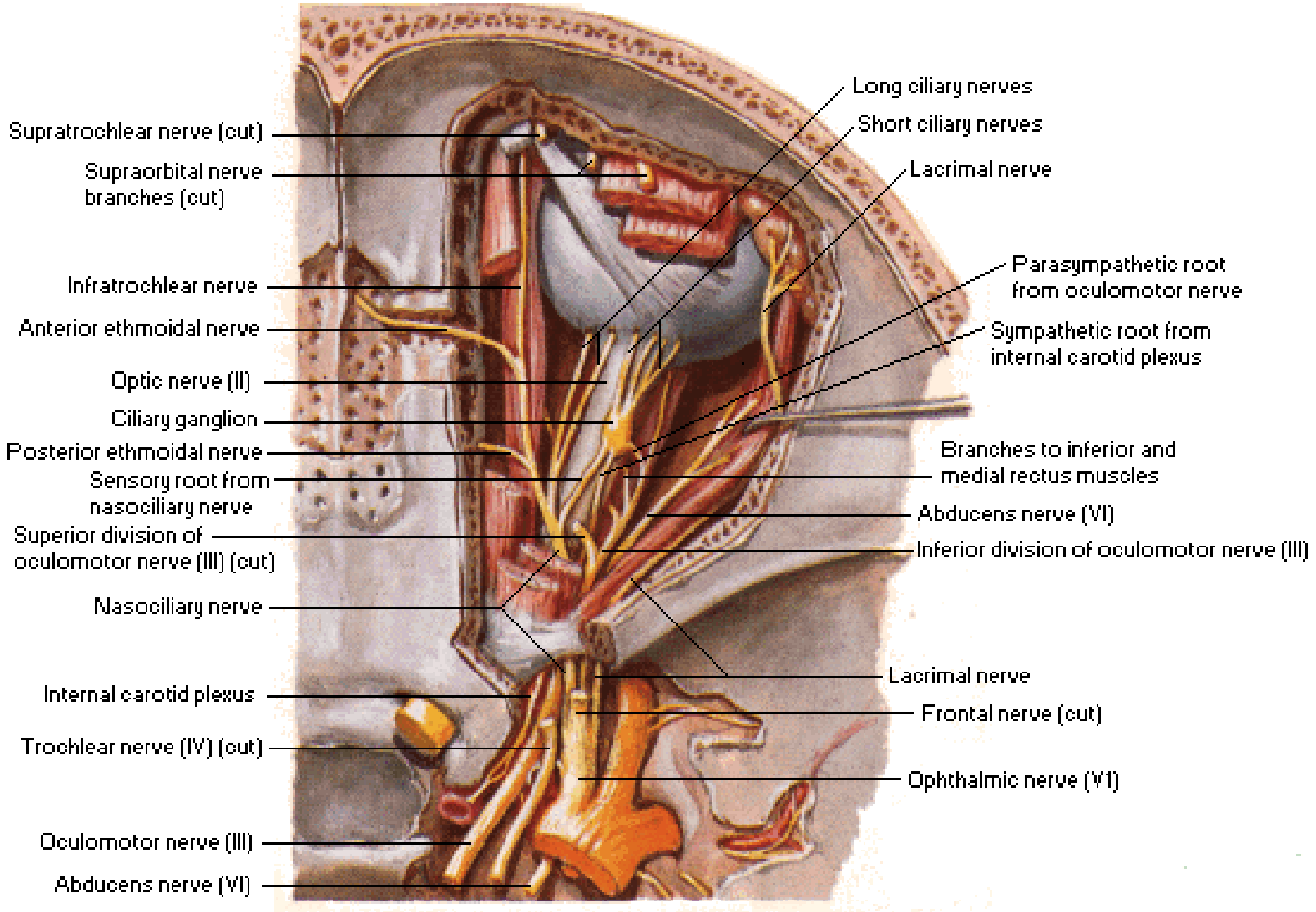
- Involuntary

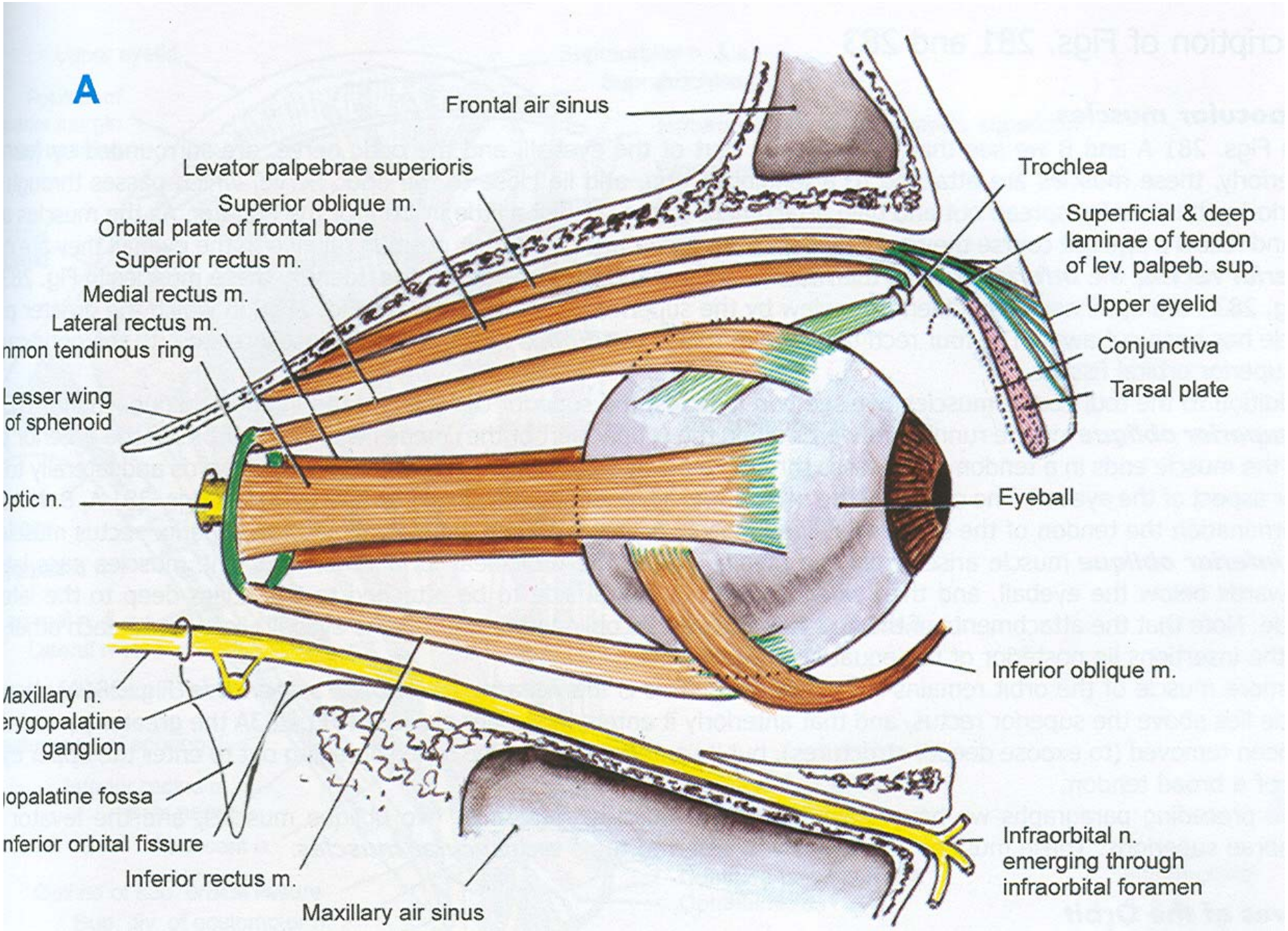
Superior tarsal
Inferior tarsal
Orbitalis



Nerves of Orbit - Muscles Partially Cut Away

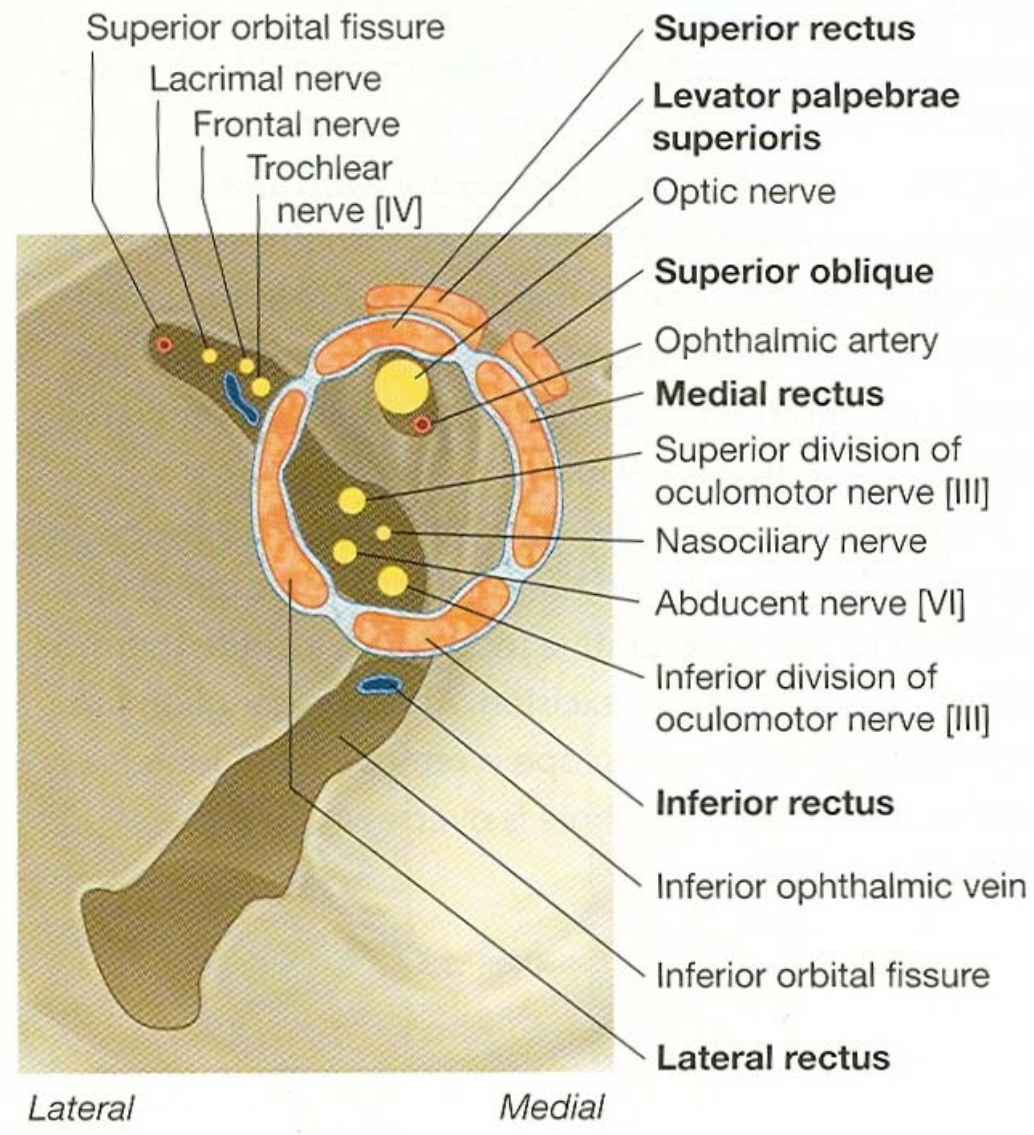
Superior View



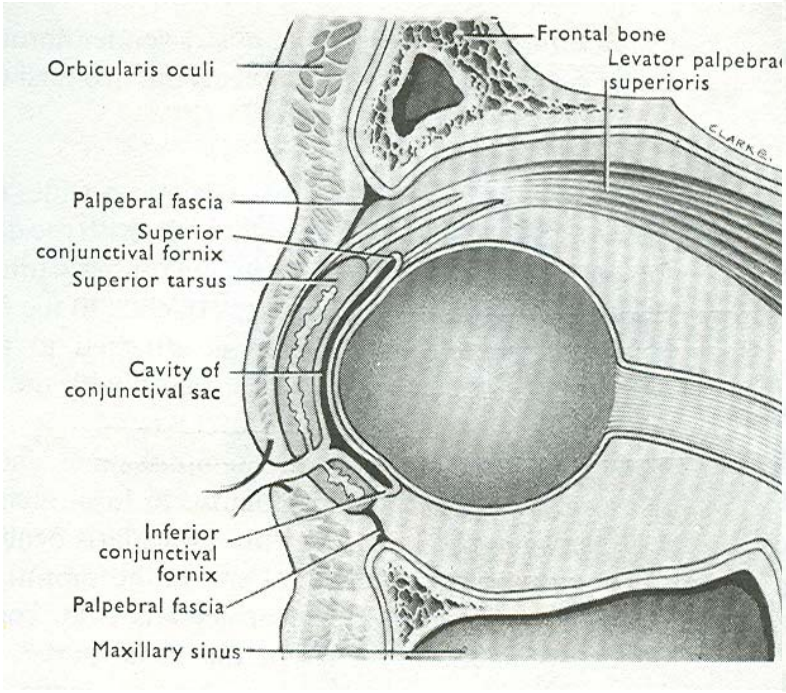

A
Frontal air sinus
Levator palpebrae superioris
Superior oblique m.
Orbital plate of frontal bone
Superior rectus m.
Medial rectus m.
Lateral rectus m.
mmon tendinous ring
Lesser wing
of sphenoid
Optic n.
Maxillary n.
erygopalatine
ganglion
opalatine fossa
nferior orbital fissure
Inferior rectus m.
Maxillary air sinus
Trochlea
Superficial & deep
laminae of tendon
of lev. palpeb. sup.
Upper eyelid
Conjunctiva
Tarsal plate
Eyeball
Inferior oblique m.
Infraorbital n.
emerging through
infraorbital foramen

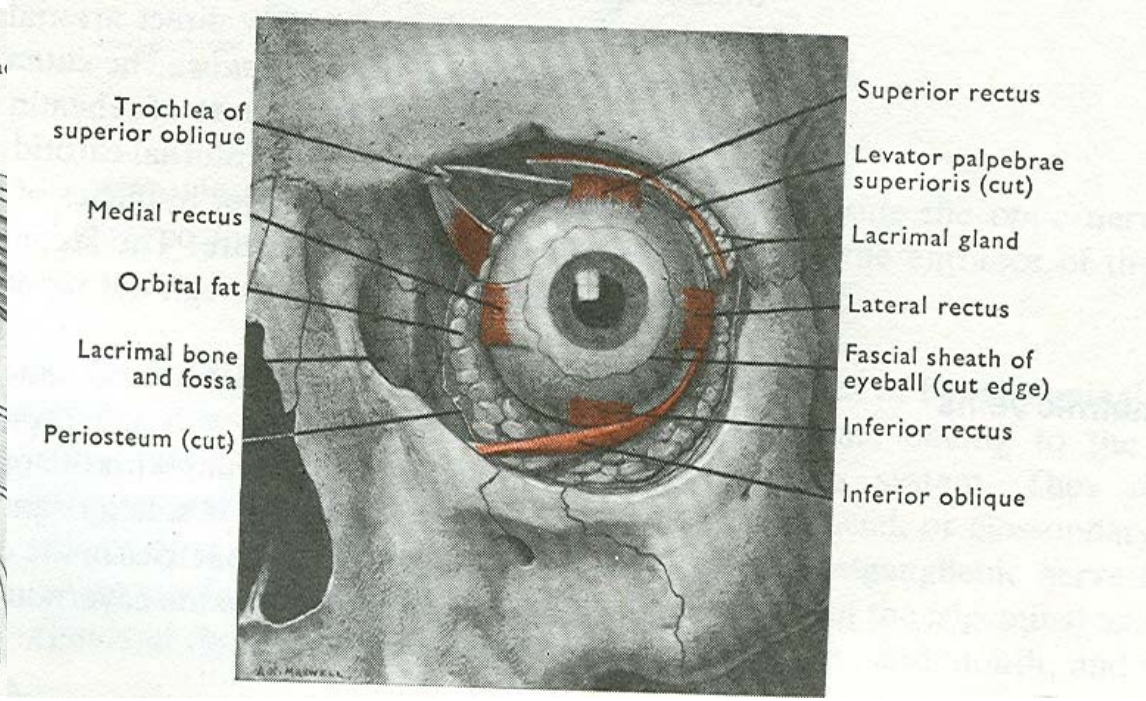
Voluntary muscles

- Origin: All recti from tendinous ring, LR also from Orbital surface of greater wing of sphenoid
- LPS- Orbital surface of lesser wing of sphenoid
- SO- Orbital surface of body of sphenoid
- IO- From orbital suface of maxilla



- Insertion: All recti behind the limbus at variable distance
- Oblique: Behind the equator
- LPS: Into the skin of eyelid, anterior surface of tarsus, upper margin of tarsus

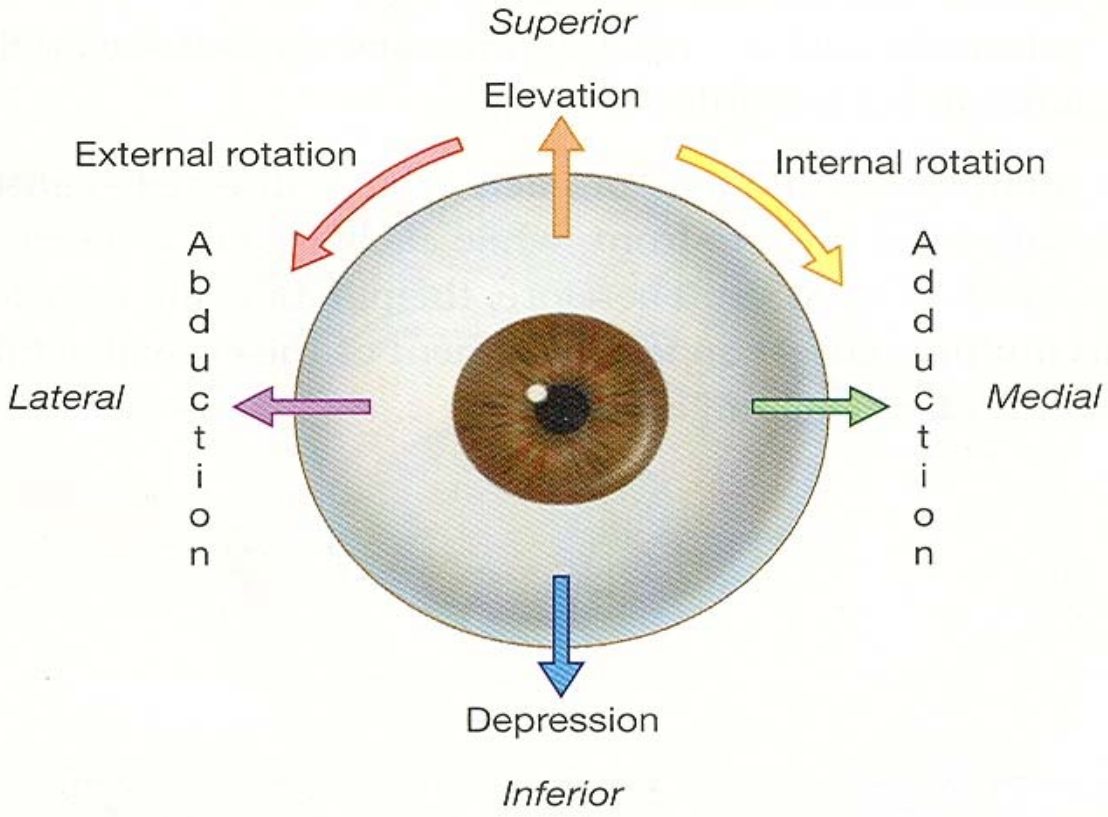




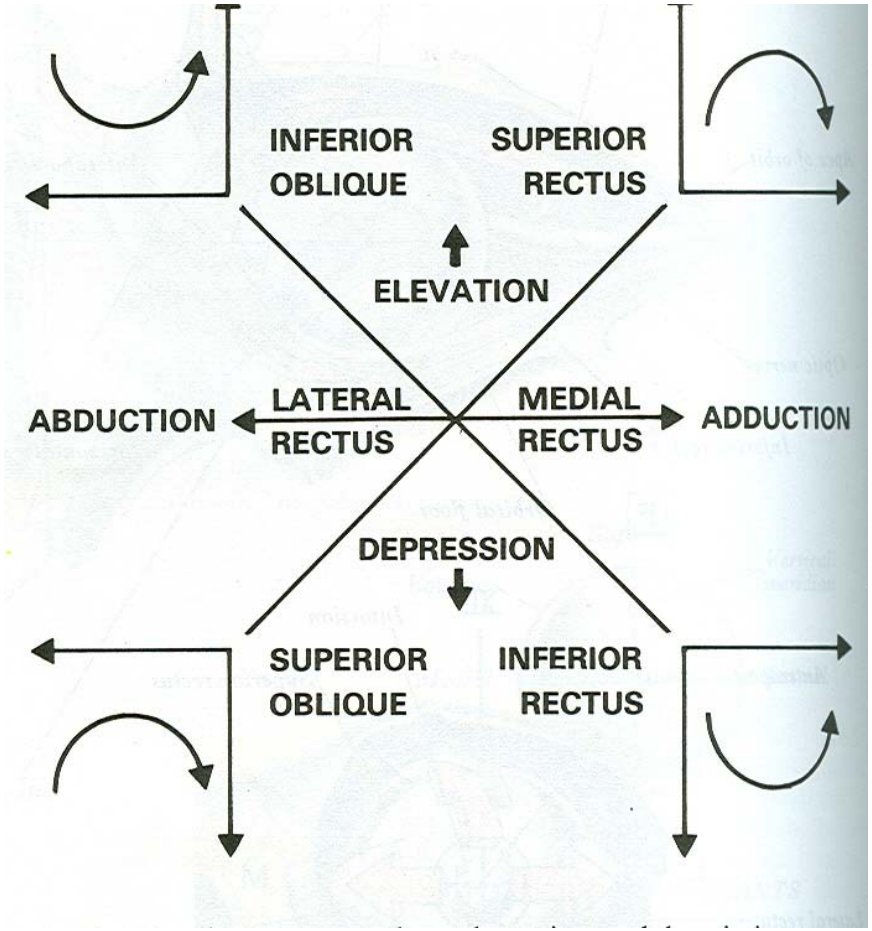
Nerve supply: All muscles by 3rd nerve except LR 6Th & SO 4Th nerve

- Action of various muscles &

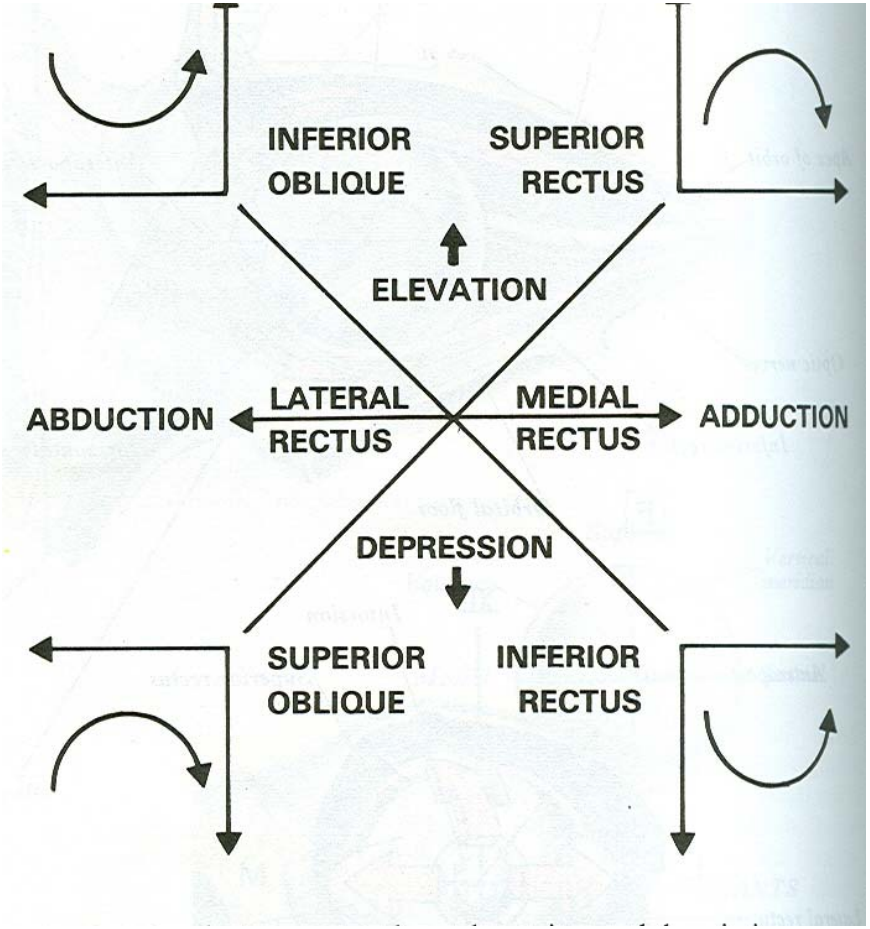
Movements produced by them

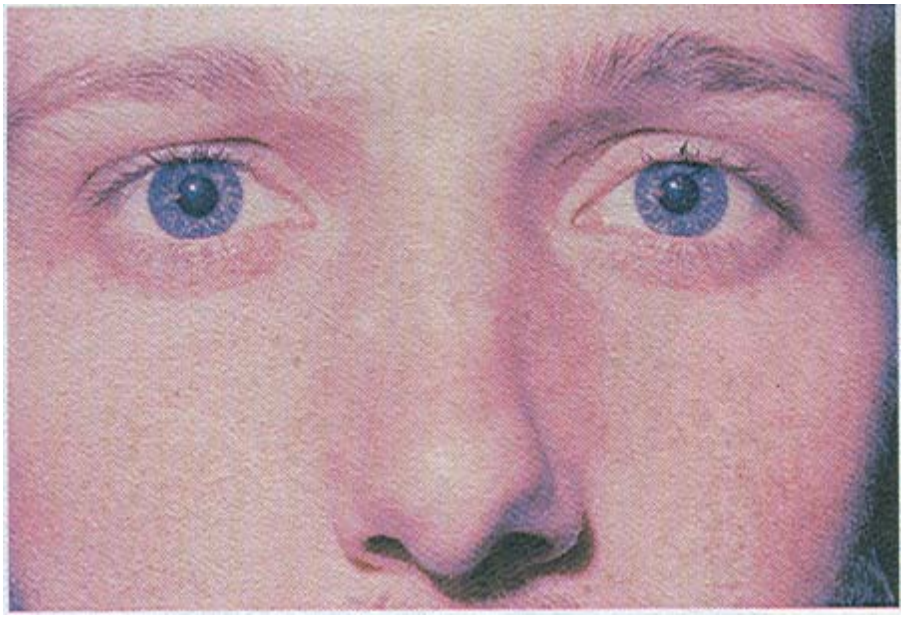


Action of various extra ocular muscles

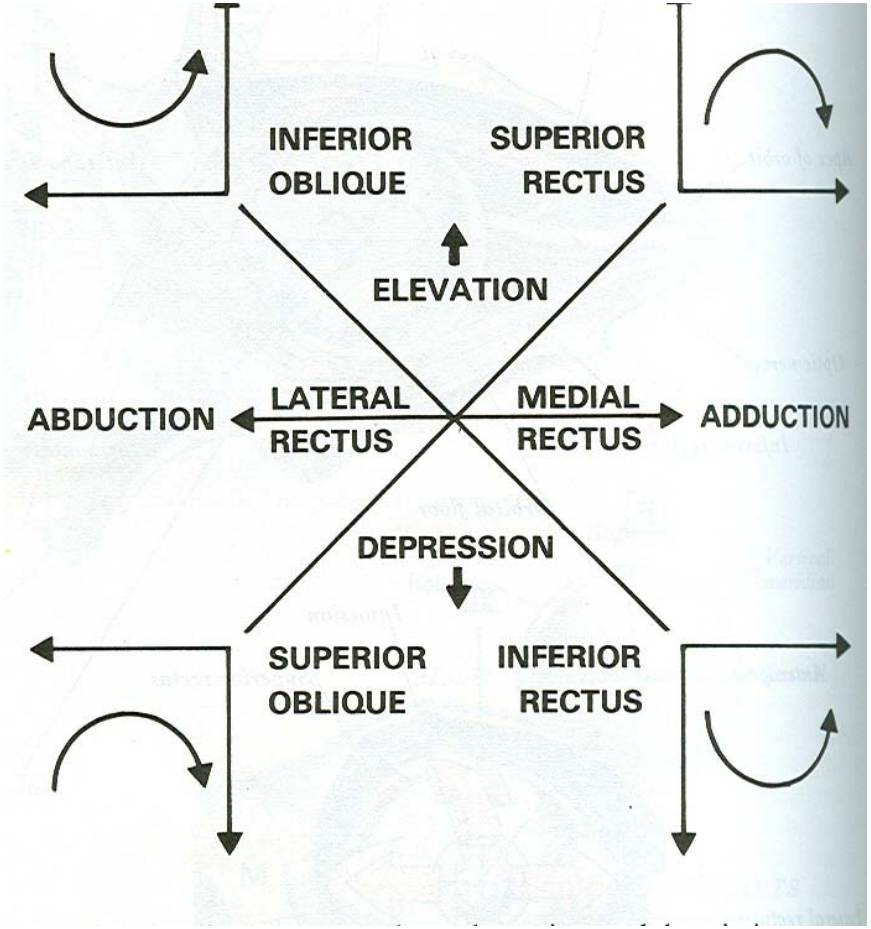


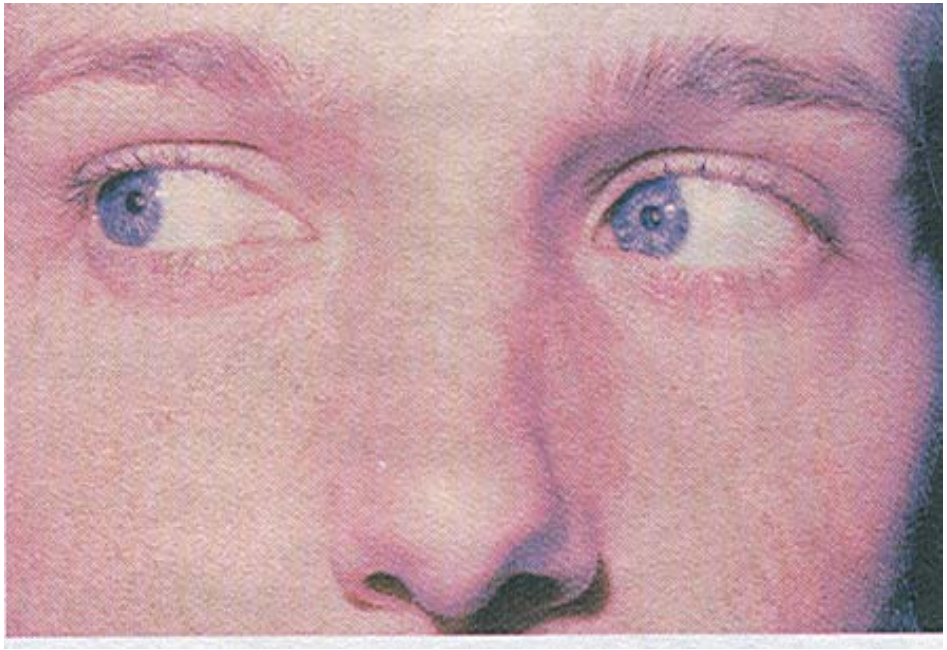
Muscle tested		Movement
Superior rectus		Look laterally and **upward**
Inferior rectus		Look laterally and **downward**
Lateral rectus		Look **laterally**
Medial rectus		Look **medially**
Inferior oblique		Look medially and **upward**
Superior oblique		Look medially and **downward**



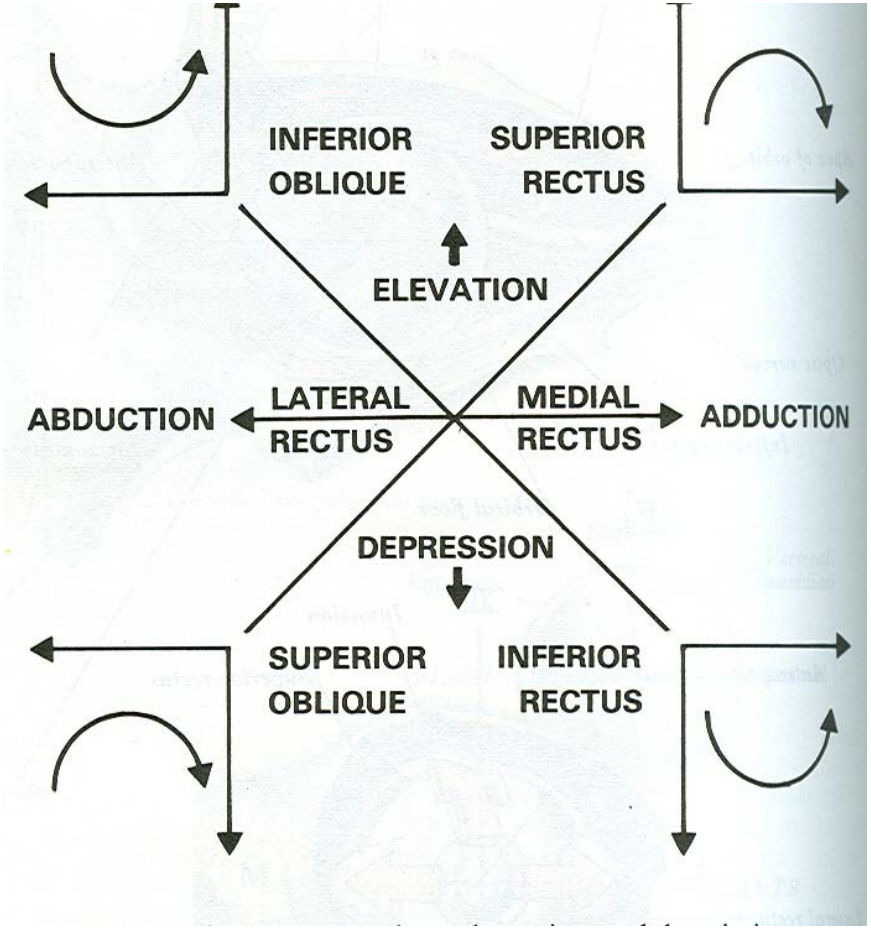


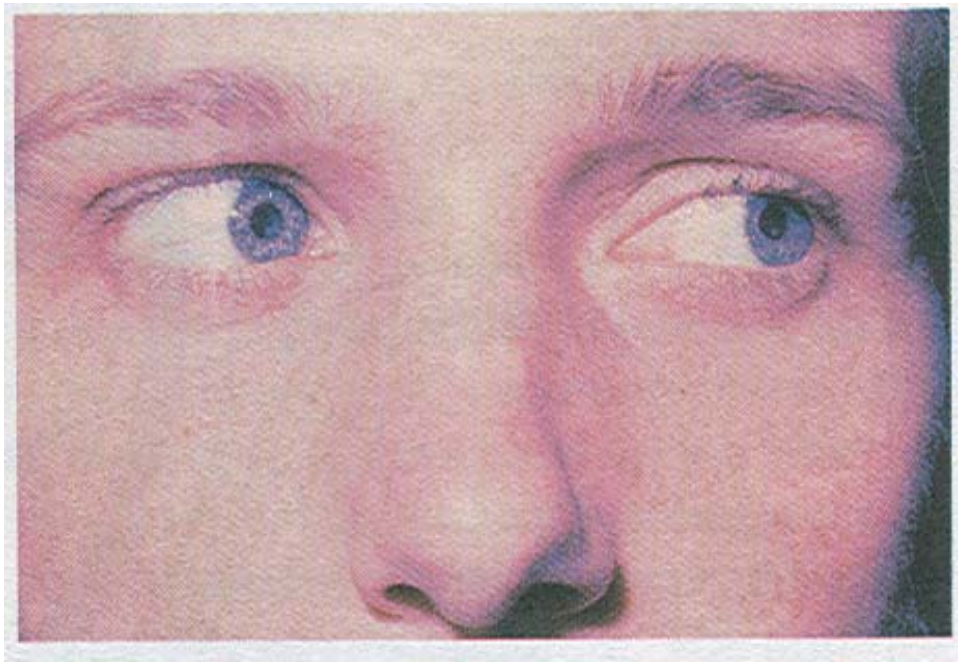
NEUTRAL POSITION



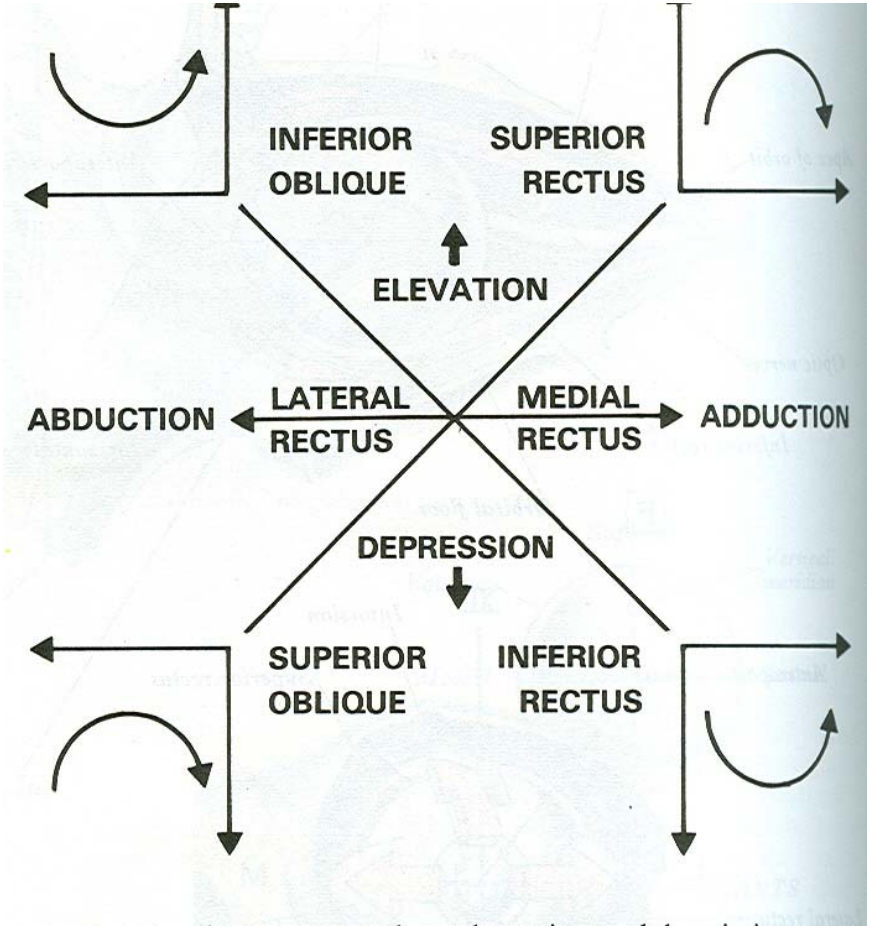


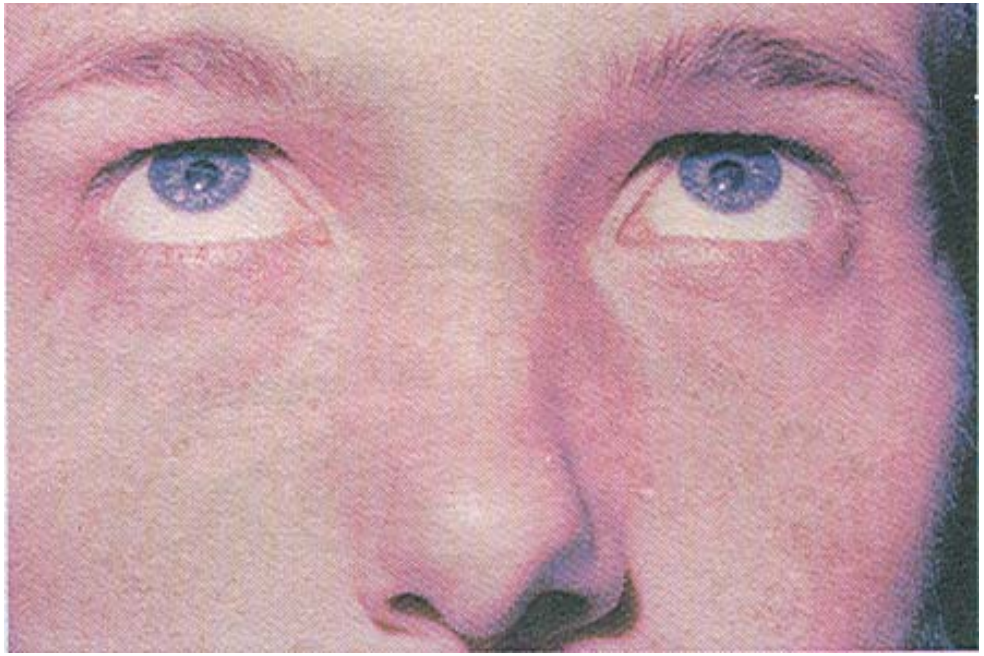
RT LR and LT MR



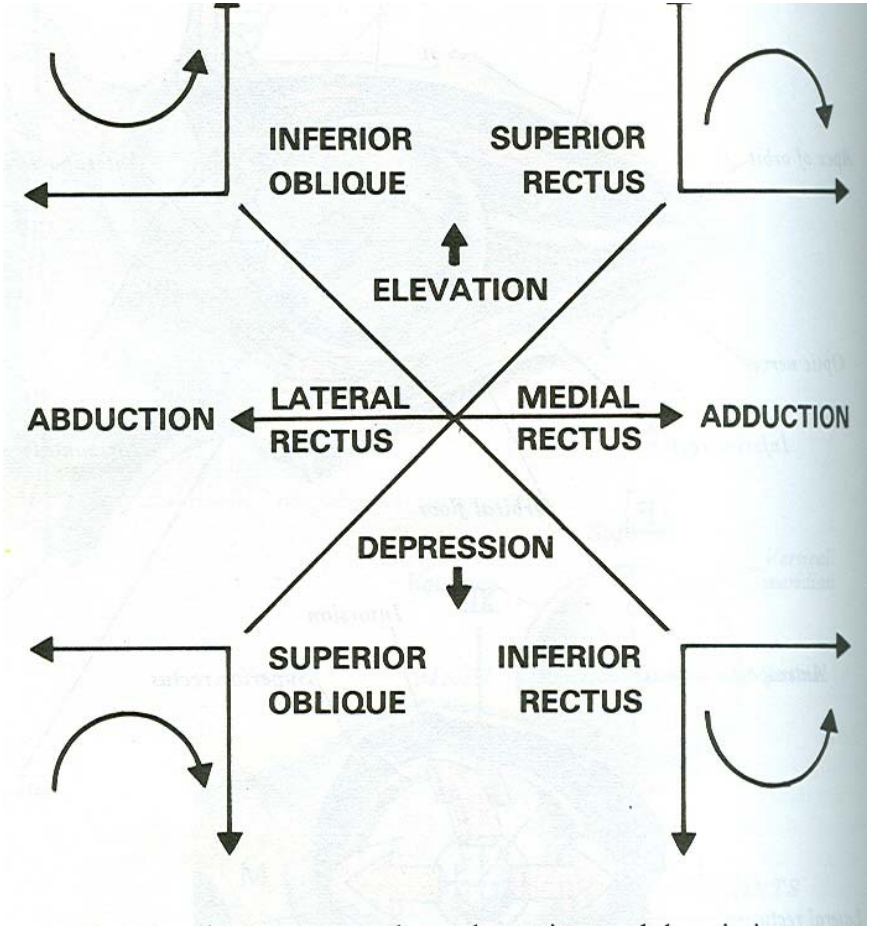


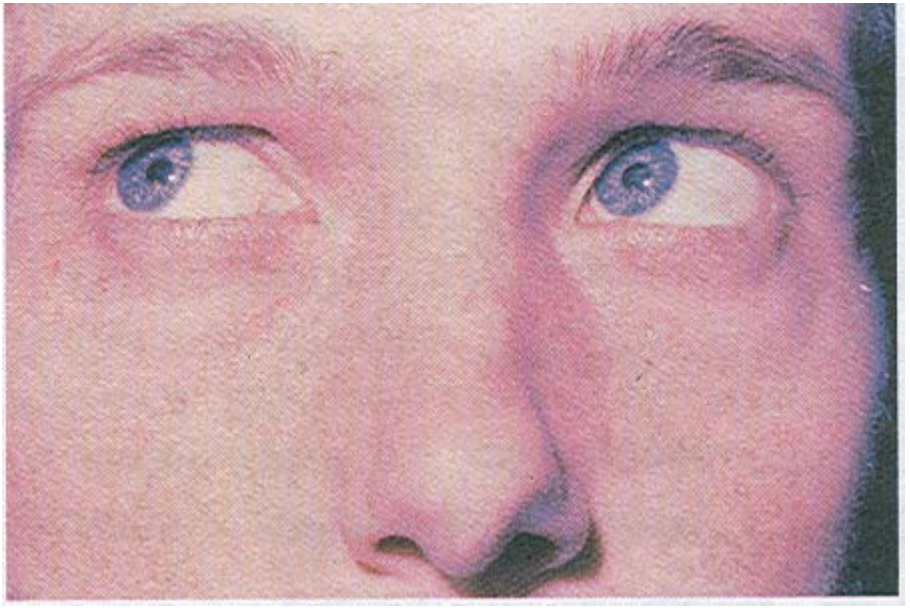
RT MR and LT LR



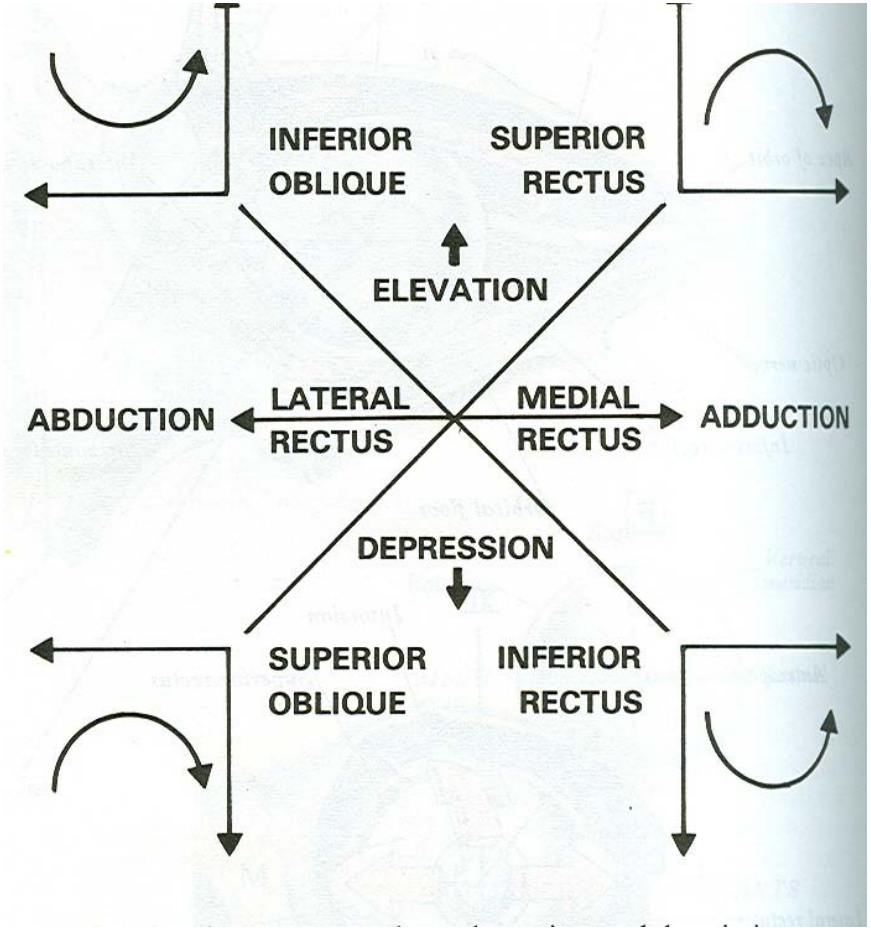


Both eyes SR and IO

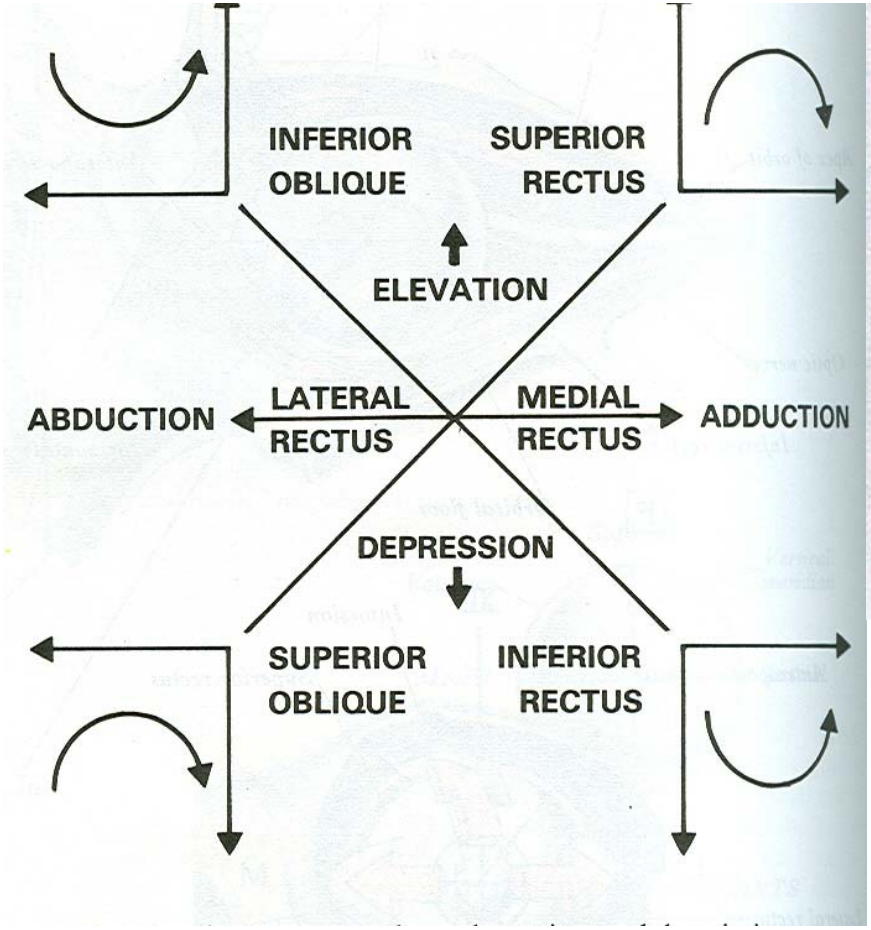




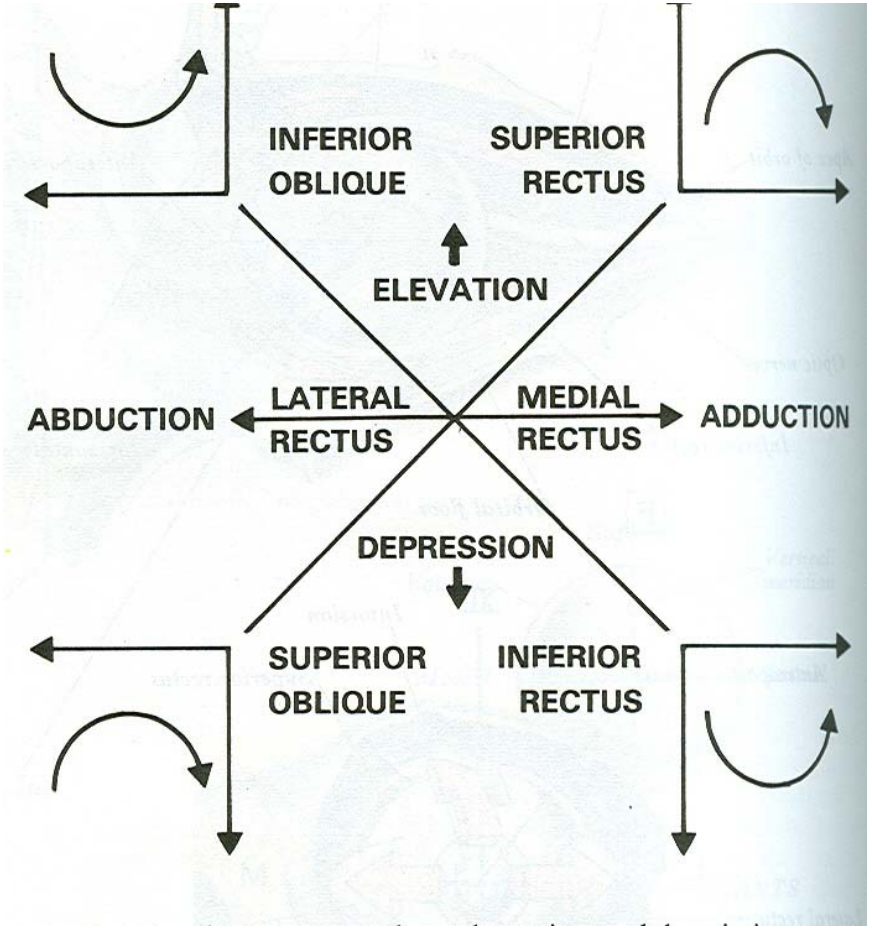
RT IO and LT SR



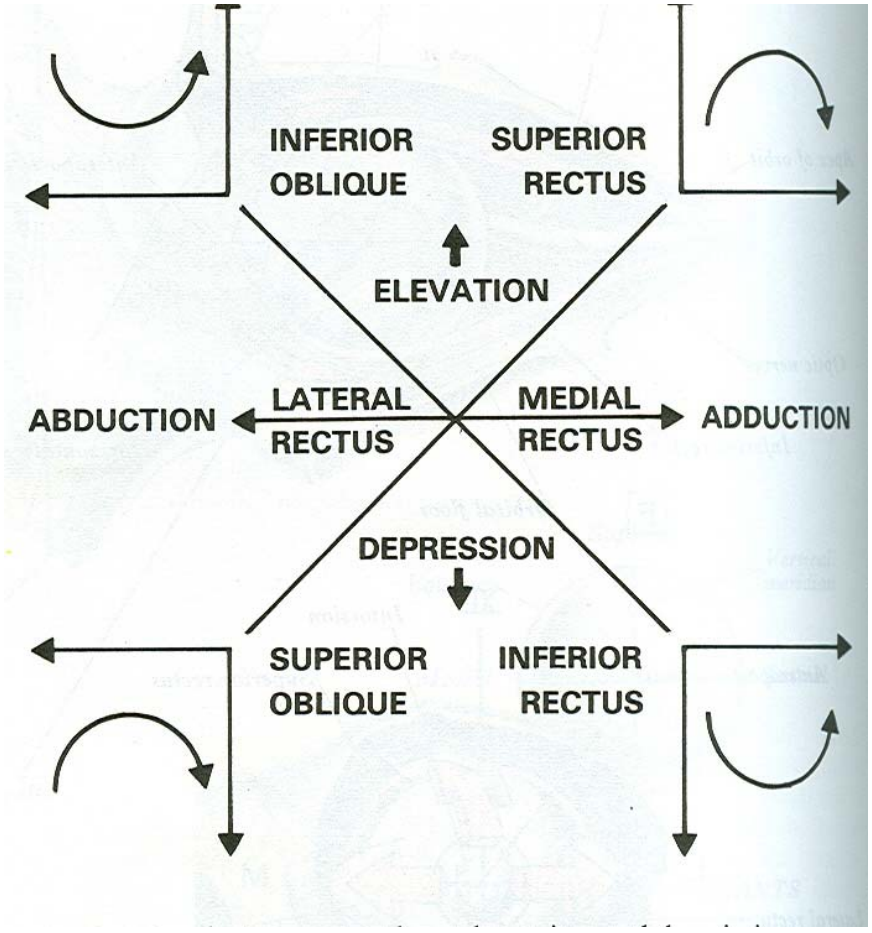
RT SR and LT IO



Both eyes IR and SO



RT IR and LT SO



RT SO and LT IR

Combined movements:

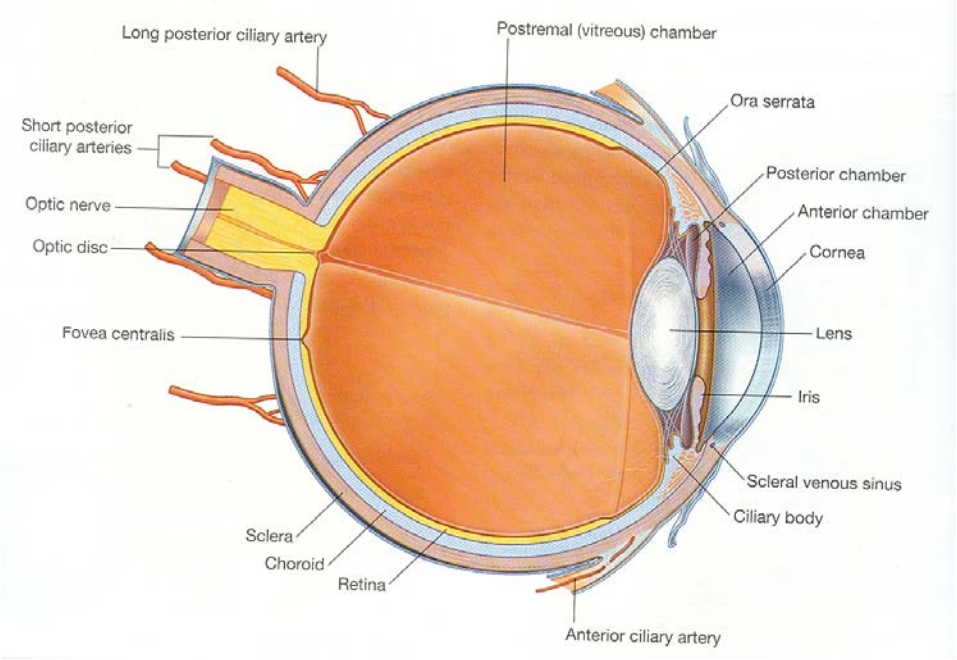
- Conjugate movement: Horizontal, vertical & oblique
- Disjunctive movements: Dissociated movement of the two eye

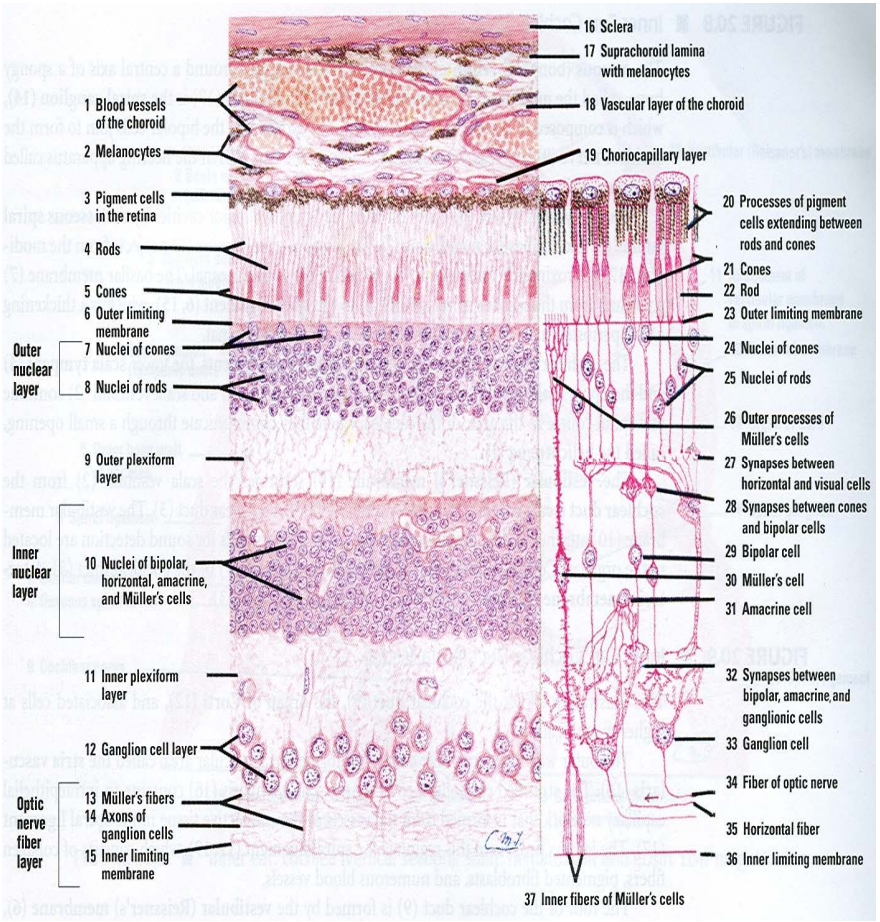
Applied

- Squint:
  Concomitant
  Paralytic
- Nystagmus

Optic nerve

- 2nd cranial nerve
- Nerve of sight
- Starts from axons of ganglionic cell layer of retina
- Emerges from 3-4cm nasal to the centre of eyeball





Parts of nerve

- Total length- 4 cm
- 25 mm intraorbital
- 5 mm intracanalicular
- 10 mm intracranial
- Surrounded by all three meninges

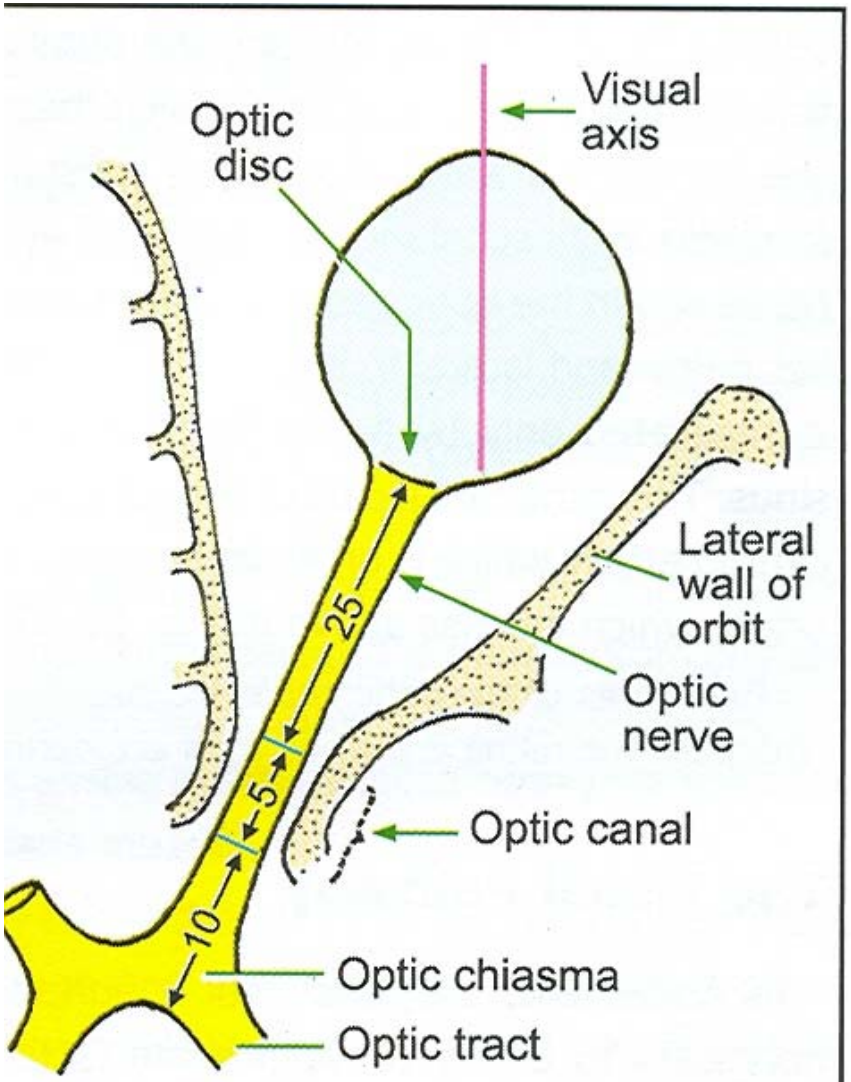
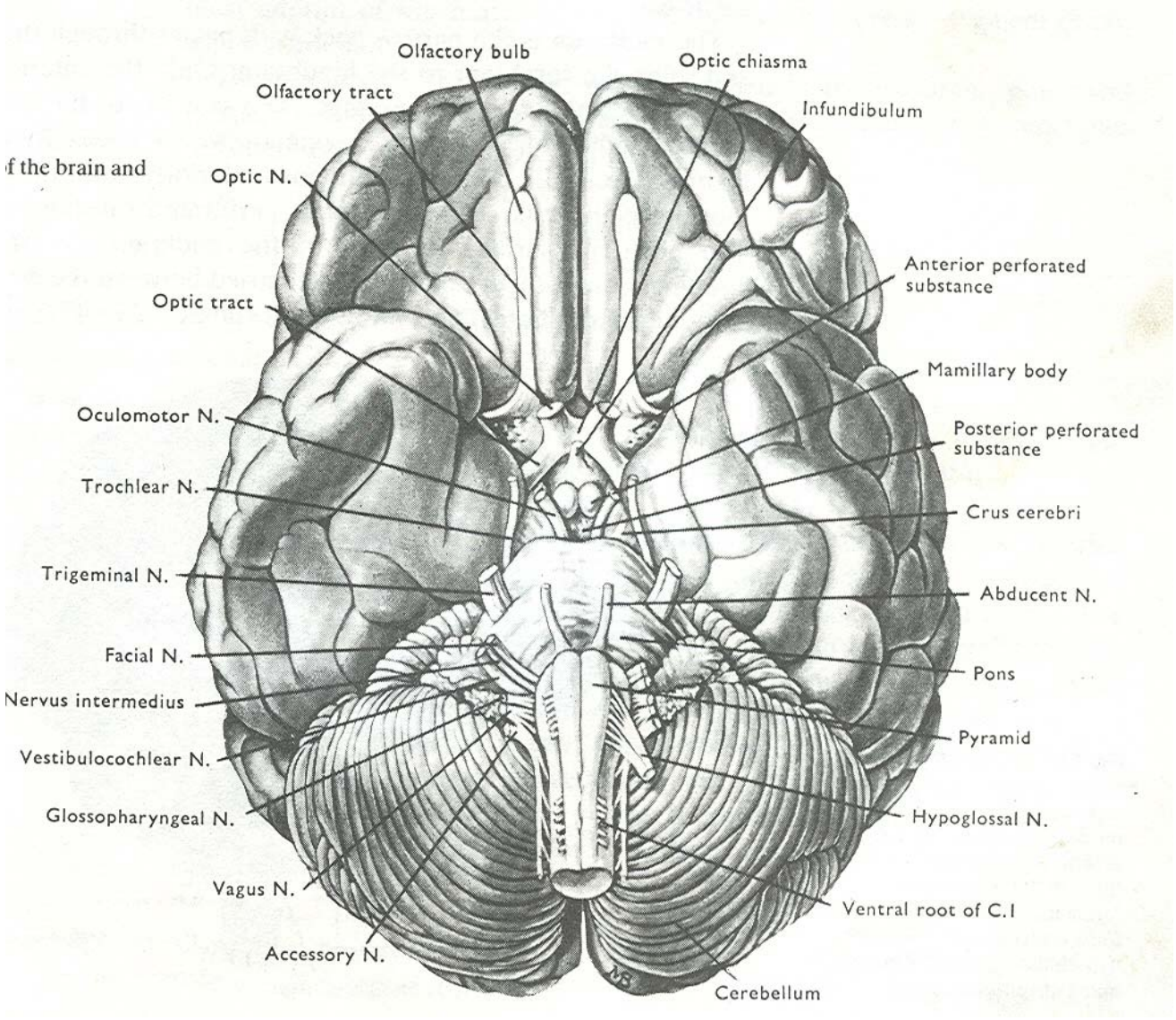


Fig. 59.23. Scheme to show course of the optic nerve

- Made up of 12 lac mylinated neuron
- 53% cross in optic chiasma

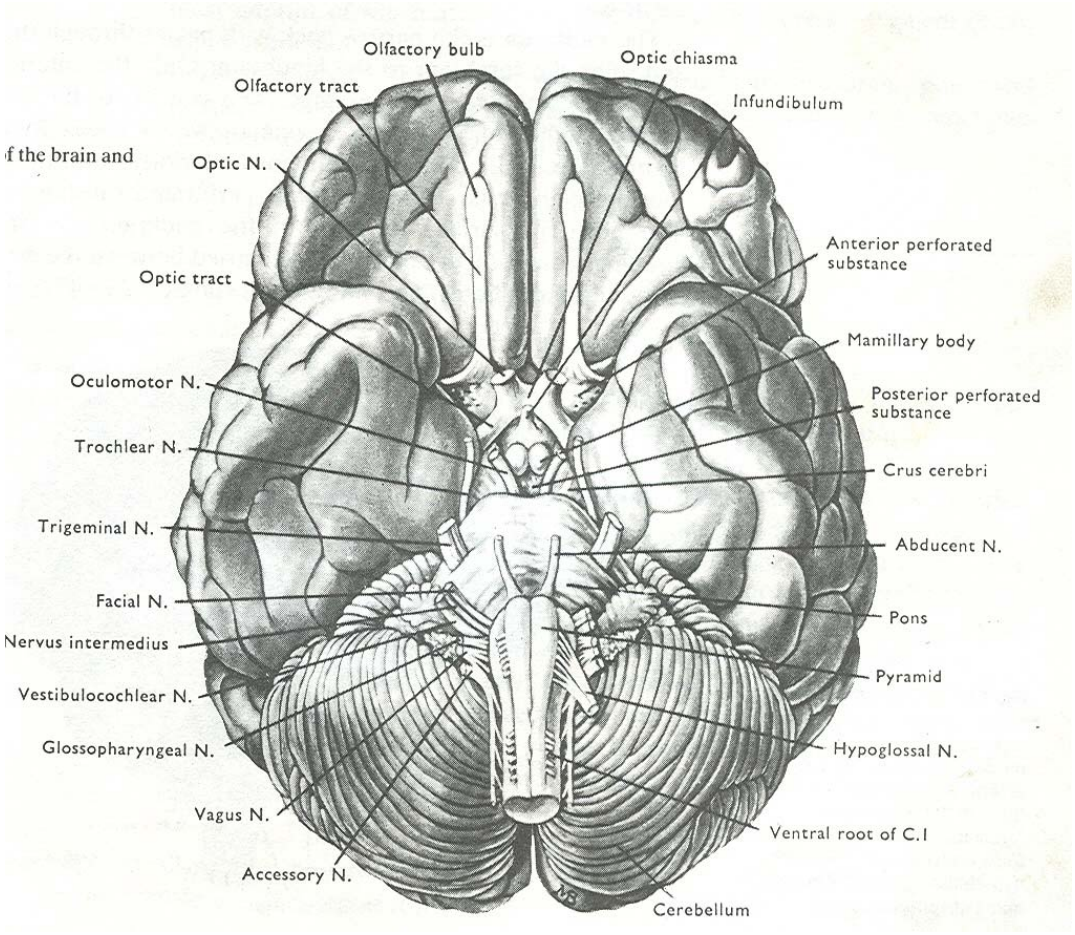


Applied

- Papilloedema
- Optic atrophy
- Optic neuritis

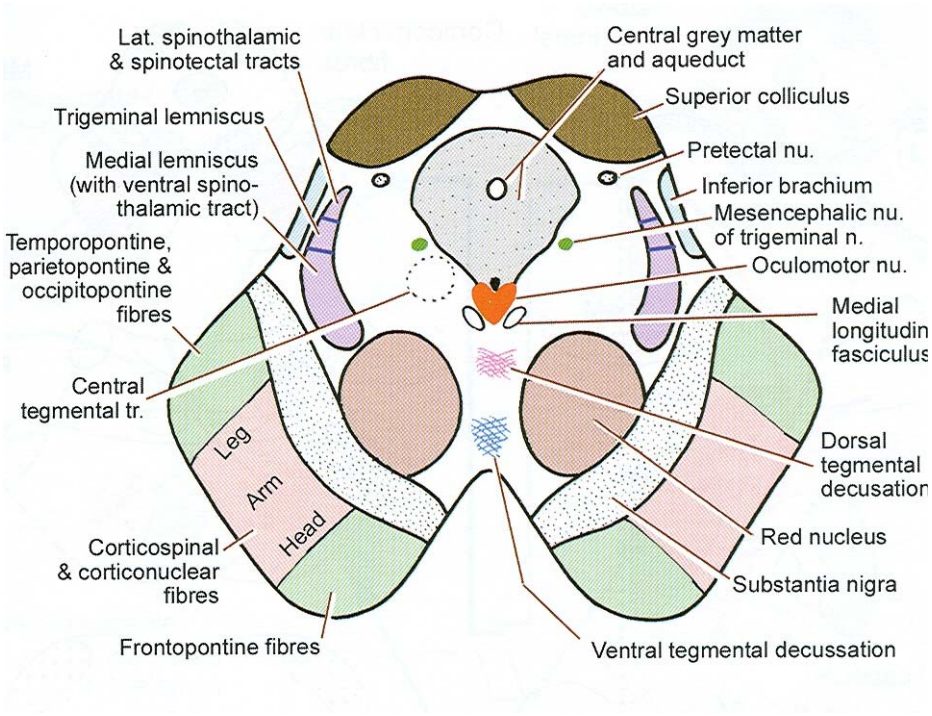
Oculomotor

- 3rd cranial nerve
- Supplies extra ocular as well as intraocular muscle
- Functional component:
- Somatic efferent
- General visceral efferent
- General somatic afferent



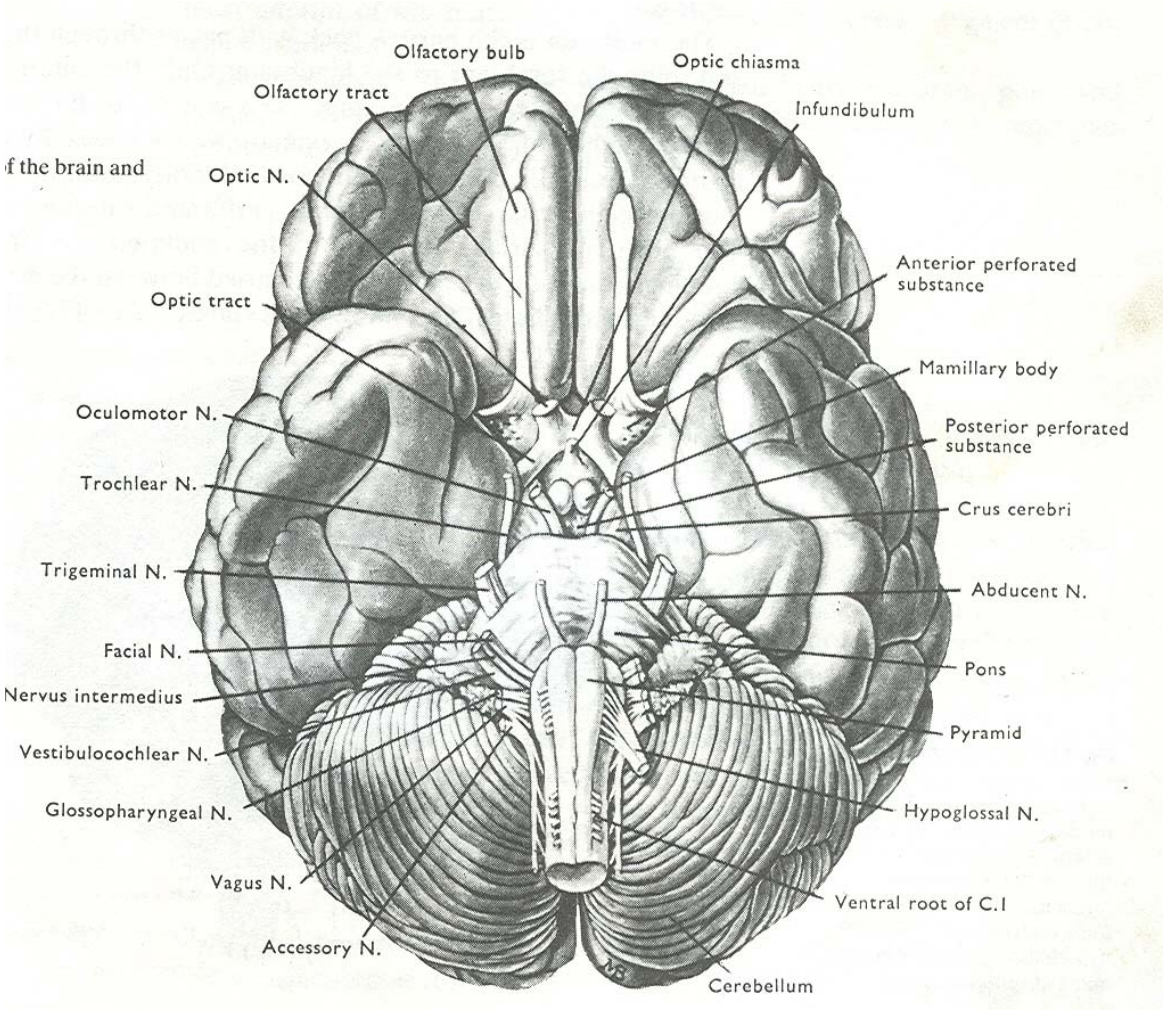
Nuclei in the brain

- Situated in the ventromedial part of central part of grey matter of the midbrain at the level of superior colliculus

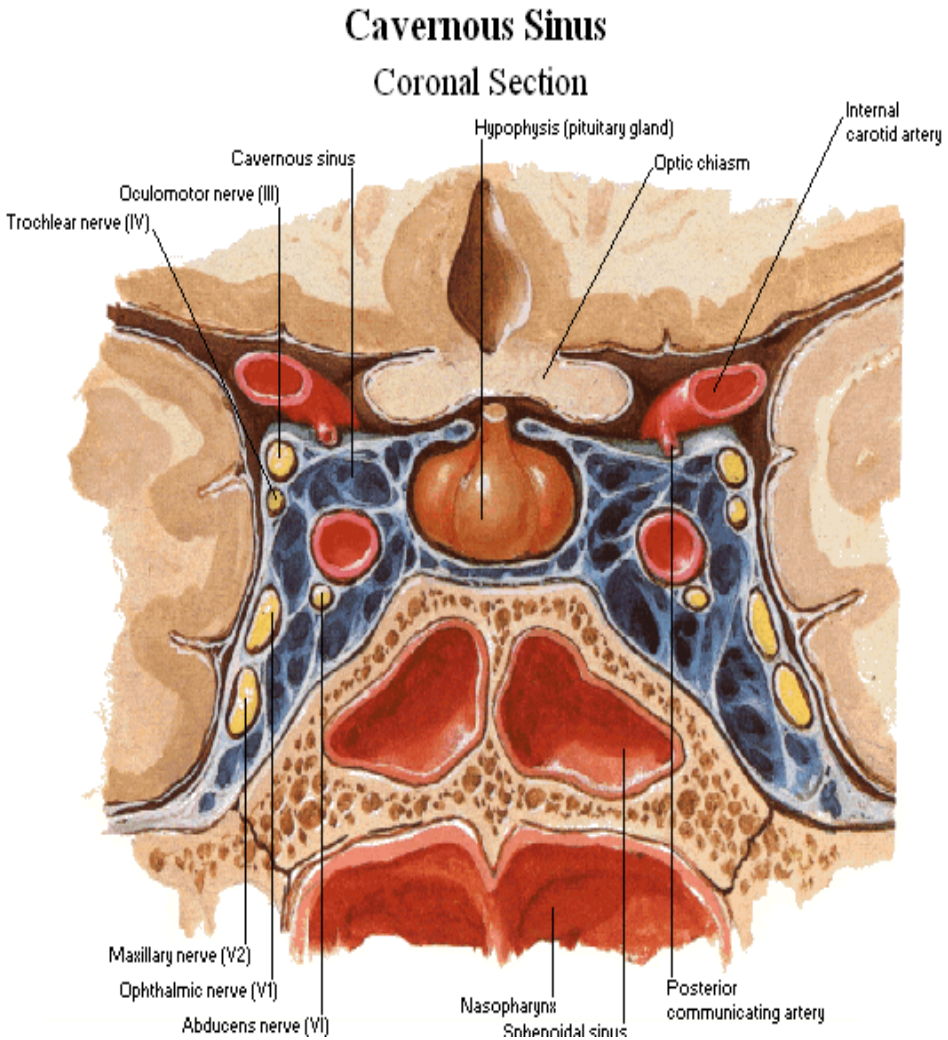


At the base of the brain

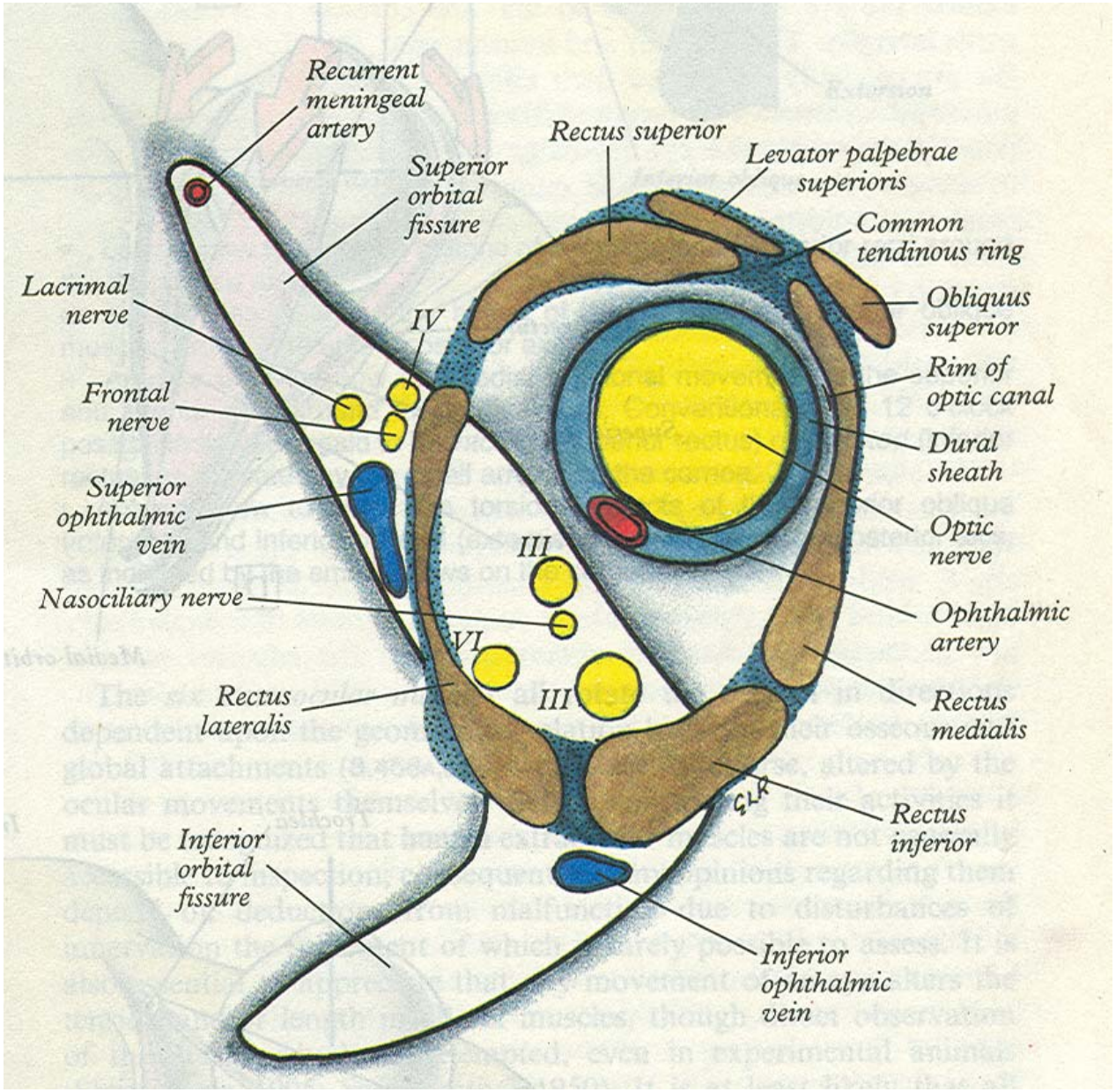
- Nerve is attached to oculomotor sulcus on the medial side of crus cerebri



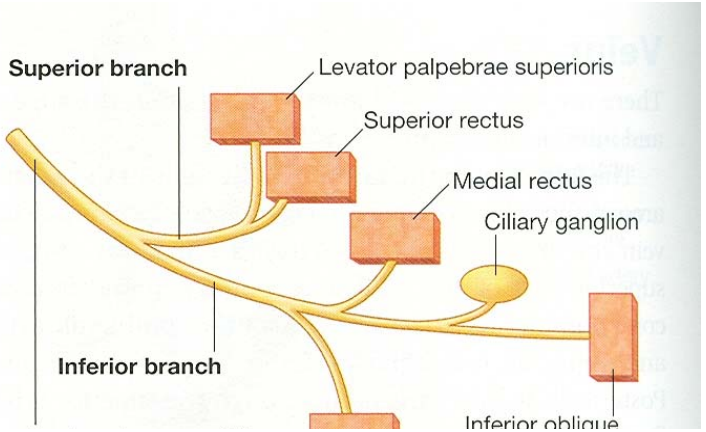
- Nerve enters he cavernous sinus by piercing the posterior part of it’s roof
- Nerve divides in to two divisions

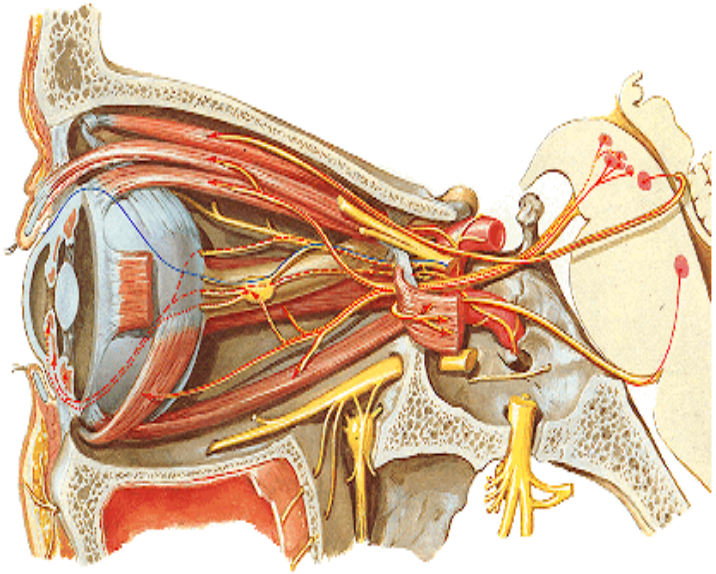


- Two rami enter into the orbit thru superior orbital fissure



- Upper division supplies SR & LPS
- Lower division supplies MR IR & IO
- Nerve to IO supplies parasympathetic fibers to ciliary ganglion





Applied

- Total paralysis causes ptosis, lateral squint, Dilatation of pupil, loss of accommodation, diplopia, proptosis
- Weber syndrome
- Supra nuclear paralysis causes loss of conjugate movement of eyes