

## THE EYE

### OCULAR MUSCLES:

- Six external (extrinsic)
- All originate from bony orbit
- All insert upon the sclera

**SUPERIOR RECTUS**  
turns eye upwards and inwards

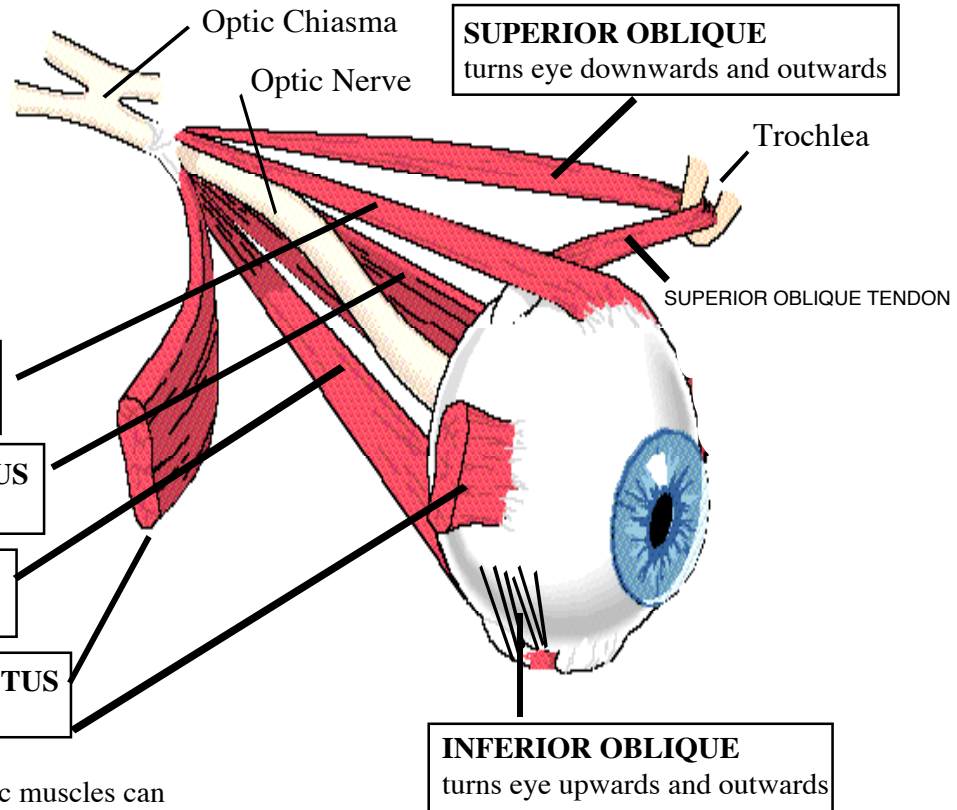
**MEDIAL (INTERNAL) RECTUS**  
turns eye inwards (towards nose)

**INFERIOR RECTUS**  
turns eye downwards and inwards

**LATERAL (EXTERNAL) RECTUS**  
(Cut here), turns eye outwards

**SUPERIOR OBLIQUE**  
turns eye downwards and outwards

**INFERIOR OBLIQUE**  
turns eye upwards and outwards



Note: Acting together, the extrinsic muscles can accomplish the rotatory movements of the eye.

## PROTECTION:

Hidden (posterior, 4/5ths) of eyeball encased by the bony socket (orbital cavity).  
Thick areolar and adipose tissue cushion eyeball from hard bone surface.

Exposed (anterior, 1/5th) of eyeball is protected by:

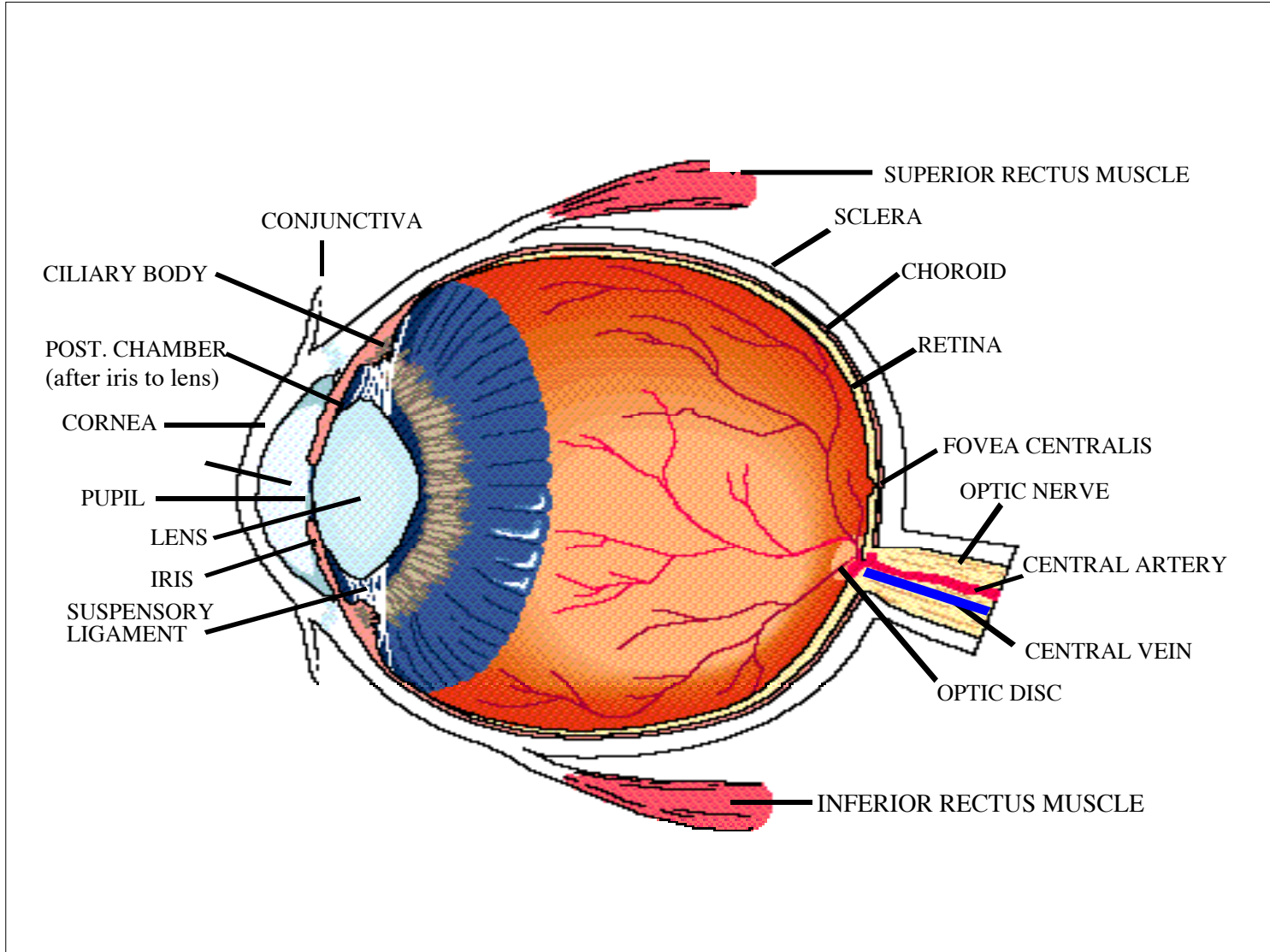
Eyelids (**palpebrae**): fringed with eyelashes (blink reflex).  
are also associated with the **glands of Zeiss** (sebaceous) and  
**Meibomian (tarsal) glands** (lipid);  
secretions prevent eyelids from adhering to each other.

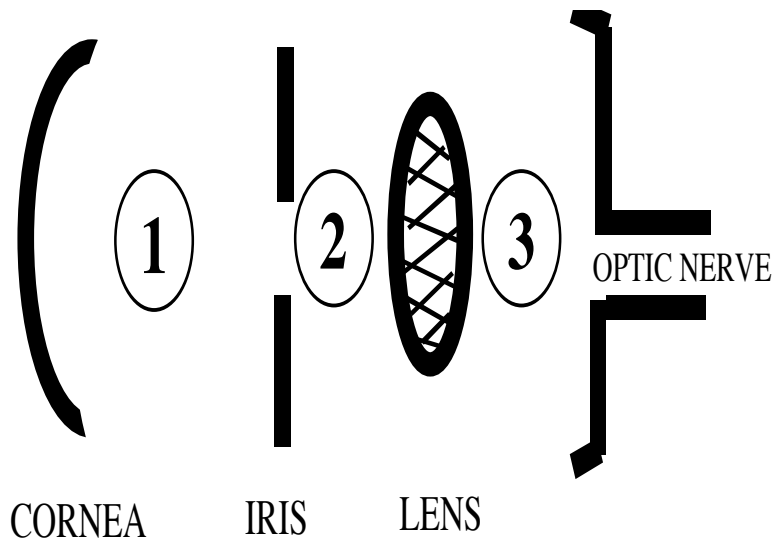
*See lacrimal apparatus.*

**Lacrimal glands:** (superior and lateral to each eye), tear - secreting;  
open at medial region of eye.  
contain lysozyme (anti - bacterial);

**Lacrimal ducts** drain tears to **Lacrimal sac** and finally to the  
**Naso - lacrimal duct** (drains tears to back of nose).

**Conjunctiva:** a delicate membrane lining eyelids.





**ANTERIOR CAVITY:** (aqueous humor)  
Anterior Chamber (1), cornea to iris  
Posterior Chamber (2), iris to lens (smallest)

**POSTERIOR CAVITY:** (vitreous humor)  
(3), lens to rear of eyeball

### ***THREE MAJOR LAYERS IN THE EYE (tunic = coat)***

•**FIBROUS** tunic (Outer layer)

Cornea: transparent, avascular, light transmission

Sclera: Tough fibrous tissue (white of eye)

•**VASCULAR** tunic (Mid - layer, uveal, pigmented)

Contains many veins and arteries

Choroid: posterior 5/6 of vascular coat, bound loosely to sclera, high melanocyte density (brownish color), absorbs excess light.

Ciliary body: production of aqueous humor

Suspensory Ligaments: attached to lens, relaxation allows lens curvature alterations for "accommodation", necessary for near vision.

Iris: colored muscular ring surrounding pupil, controls size of pupil opening

•**NEURAL** tunic (Inner layer, Nervous Coat)

Retina: Highly specialized to respond to stimulation by light. Continuous with the optic nerve.

Ends anteriorly just behind the ciliary body.

Major protein = rhodopsin

Converts light energy into nerve impulses (via optic nerve) to visual centers in the brain (occipital region).

Retina contains photoreceptor cells: rods and cones.

Rods: sensitive to dim light (no color discrimination).

Cones: stimulated by bright, colored light.

Optic Disc: "Blind spot"; nerve fibres from all parts of the retina converge to leave eyeball as optic nerve. No rods or cones here, also- blood vessels in/out.

Fovea centralis (center of macula lutea or "yellow spot"): Area of acute vision, contains cones only.