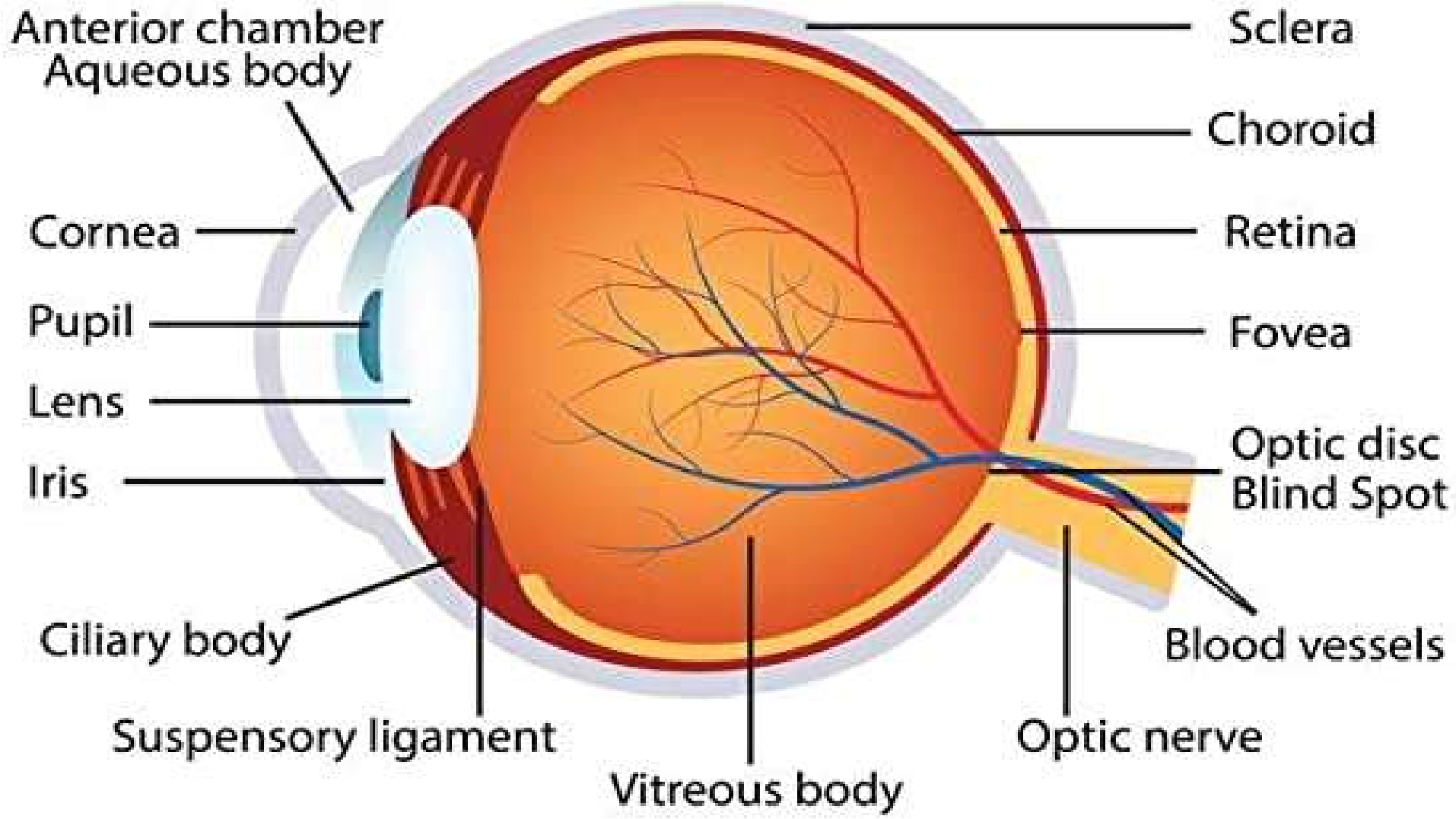
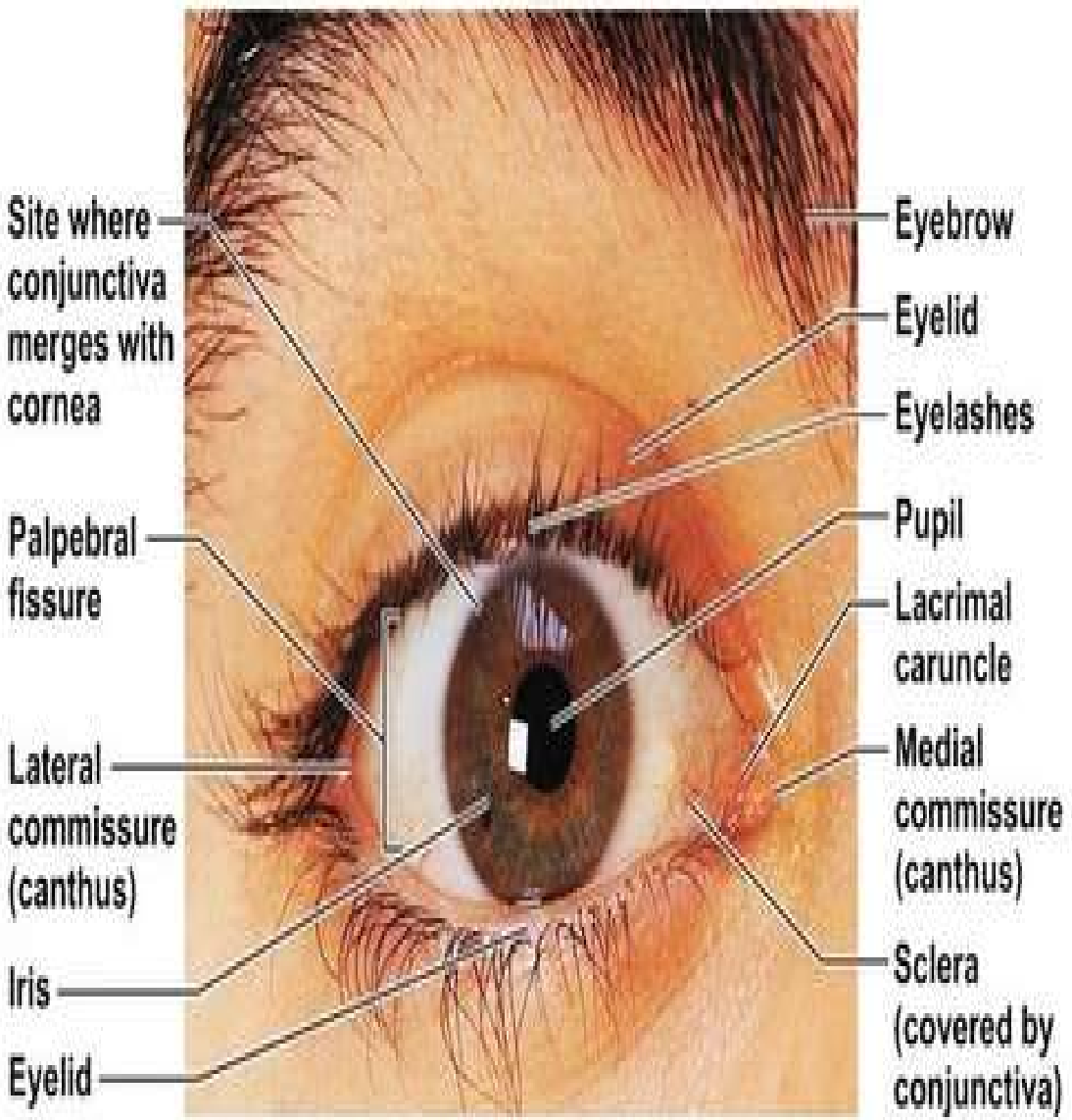
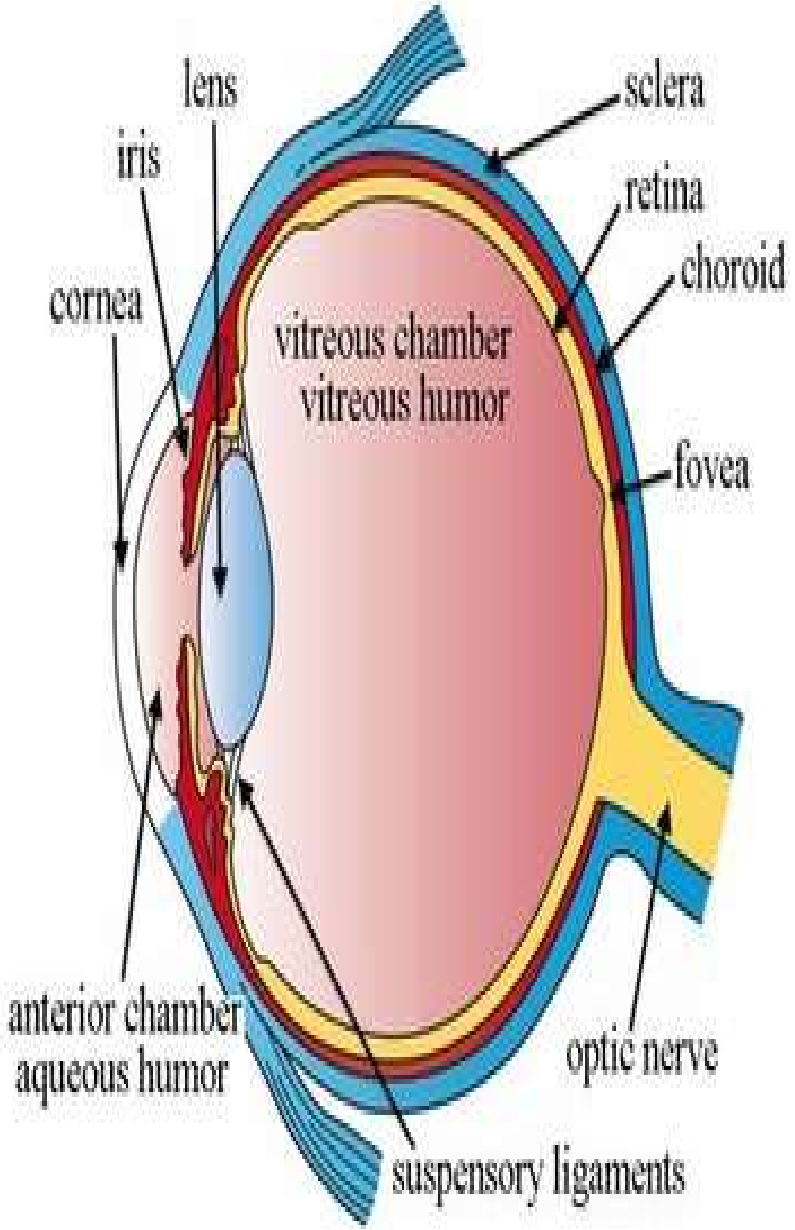
HUMAN EYE ANATOMY




Site where conjunctiva merges with cornea
Palpebral fissure
Lateral commissure (canthus)
Iris
Eyelid
Eyebrow
Eyelid
Eyelashes
Pupil
Lacrimal caruncle
Medial commissure (canthus)
Sclera (covered by conjunctiva)

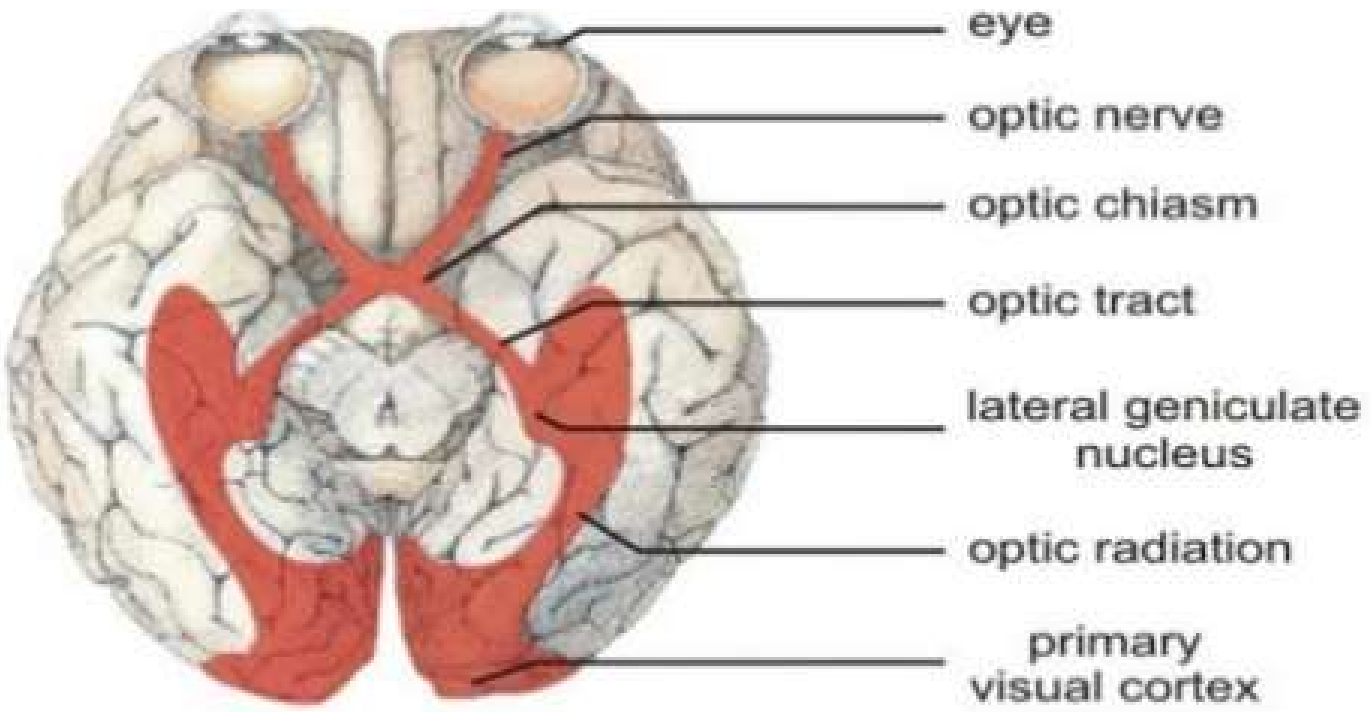
(a)


lens
iris
cornea
sclera
retina
choroid
vitreous chamber
vitreous humor
fovea
anterior chamber
aqueous humor
optic nerve
suspensory ligaments

(b)

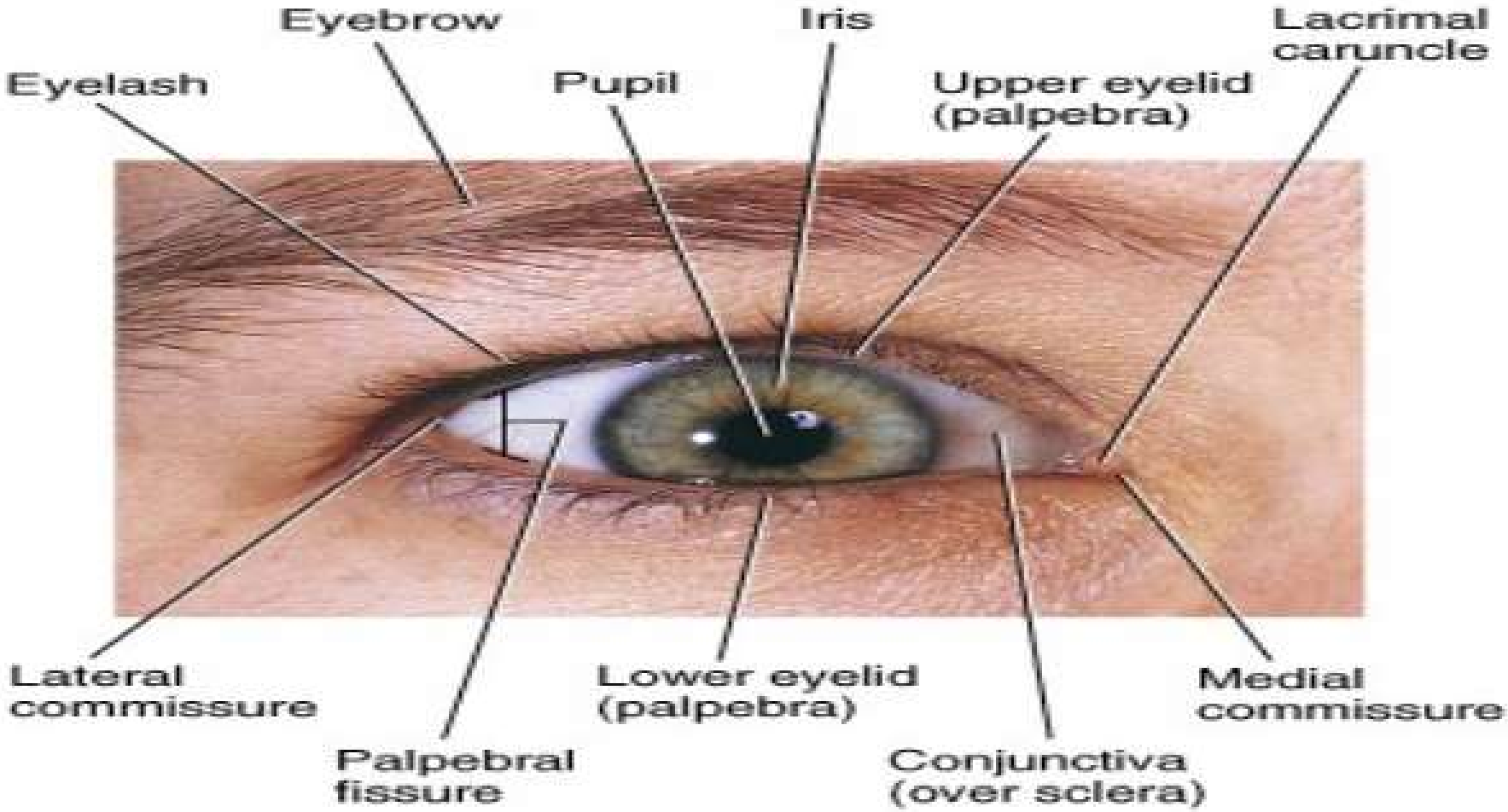
Introduction

- The eye is a specialized sense organ that helps us to understand our environment. It is a sensory unit composed of three parts: receptor, sensory pathway, and a brain center.



- It is spherical in shaped
- It is about 2.5 cm in diameter
- situated in the orbital cavity

External Anatomy of the Eye

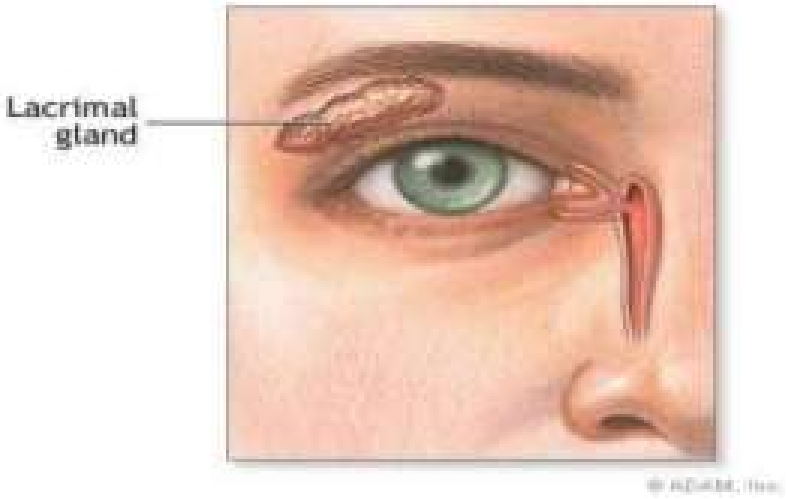


Accessory Organs & Eye Protection

- Orbital cavities (bony sockets) – house & protect the eye

- Adipose tissue – cushions the eye

- Lacrimal glands – produce tears that lubricate & have a germicidal effect



- Eyebrows – protect against foreign articles, perspiration, & direct rays of light

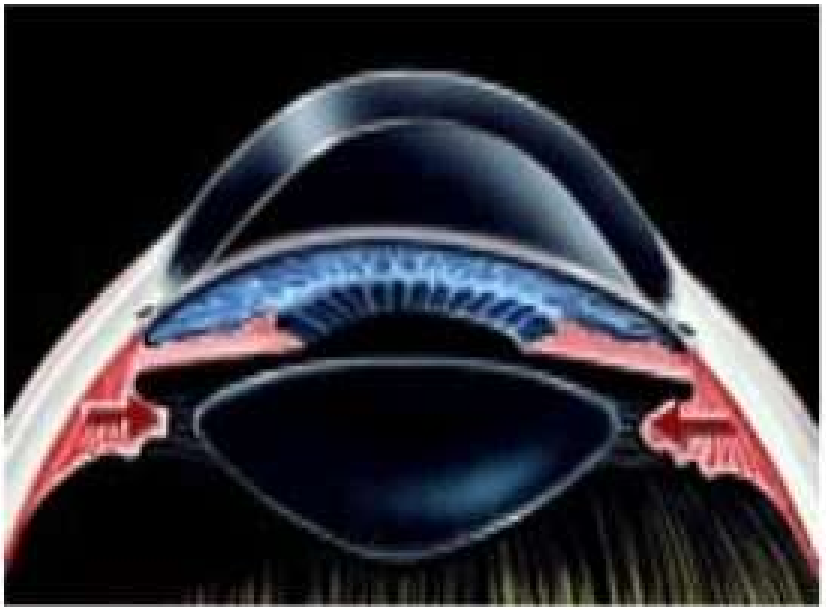
- Eyelids – folds of skin that cover the surface of the eye; close by reflex action when an object approaches

- Eyelashes – secrete oils that prevent lids from sticking together

Muscles of eye:-

- ***Extrinsic muscles*** – muscles located outside of the eye that control certain eye movements such as moving the eyeball from side to side or rolling the eyes

- ***Intrinsic muscles*** – muscles located inside the eye that help hold the lens in place & modify its shape



Layers:- There are three layer of the eye

1.Sclera – *white, outer layer of the eyeball;*
tough, fibrous membrane that helps to maintain the spherical shape of the eyeball

- Cornea – part of sclerotic coat;
  transparent, front part of eyeball through which light waves pass – no blood vessels but lots of nerve endings

- Canals of Schlem – venous passages that drain the fluid that accumulates behind the cornea; located where the sclera & cornea meet

- Conjuctiva – thin, transparent mucous membrane that covers the eyeball

2.Choroid layer – middle layer of the eye; supplies blood vessels to the eye and contains dark pigment granules that prevent the reflection of light in the eye

- Ciliary body – intrinsic muscle; smooth muscle fibers support & modify lens shape

- Iris – colored portion of eye formed by circularly and radially arranged smooth muscle fibers; regulates amount of light entering they eye by constricting or dilating the pupil

- Pupil – rounded opening of the iris through which light passes

- ***3.Retina*** *– innermost layer of the eye;* lines its surface and contains photoreceptors (cells responsible for converting light into nerve impulses – rods & cones)

Eye Parts

- Rods – cylindrical photoreceptors found in greatest concentration on the edges of the retina; most common type of receptor; allow us to see in low light and provide for peripheral vision

- Cones – Conical photoreceptors found in greatest concentration near the center of the retina; there are three varieties of cones, each most sensitive to a particular wavelength (color) of light – blue, green, & red; allow for visual acuity (sharp vision) and color vision

- Fovea centralis – a depression, or pit, in the center of the retina that contains only cones; provides for the most acute vision & color sensitivity

- Optic disk (blind spot) – area where optic nerve attaches to the retina; does not contain any photorecptors

- Lens – flexible, biconvex, crystal-like structure that brings rays of light into focus and produces an image on the retina

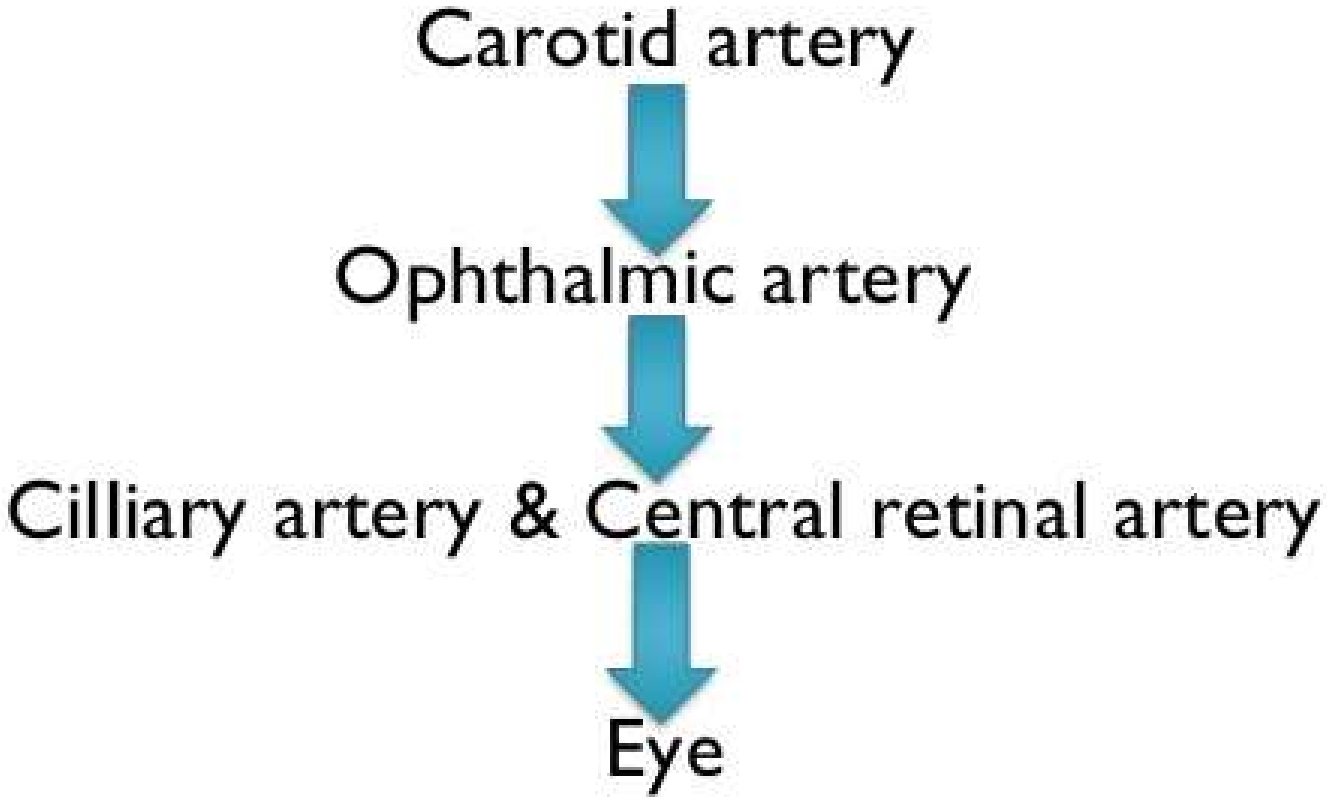
- Suspensory ligament – holds the lens in place; attached to the ciliary body, which controls the amount of tension exerted on the lens

Fluid in eye:-

- Aqueous humor – watery fluid that provides nutrition and helps maintain the shape of the cornea; found in the smaller, anterior chamber of the eye

- Vitreous humor – thick, gel-like substance that fills the largest chamber of the eye and helps to hold its spherical shape

Blood supply:-



The End