

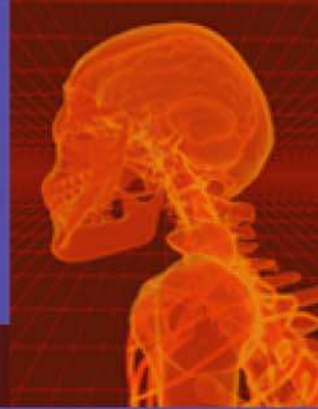
# MEDICAL TERMINOLOGY

**FOR HEALTH PROFESSIONS**

ANN EHRLICH

CAROL L. SCHROEDER

*Sixth Edition*



## Chapter 11

### Special Senses: The Eyes and Ears



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# Eyes (and Vision)

- Primary Function
  - Receptor organs for the sense of sight.
- Related Combining Forms
  - opt/i, opt/o, optic/o
  - ophthalm/o



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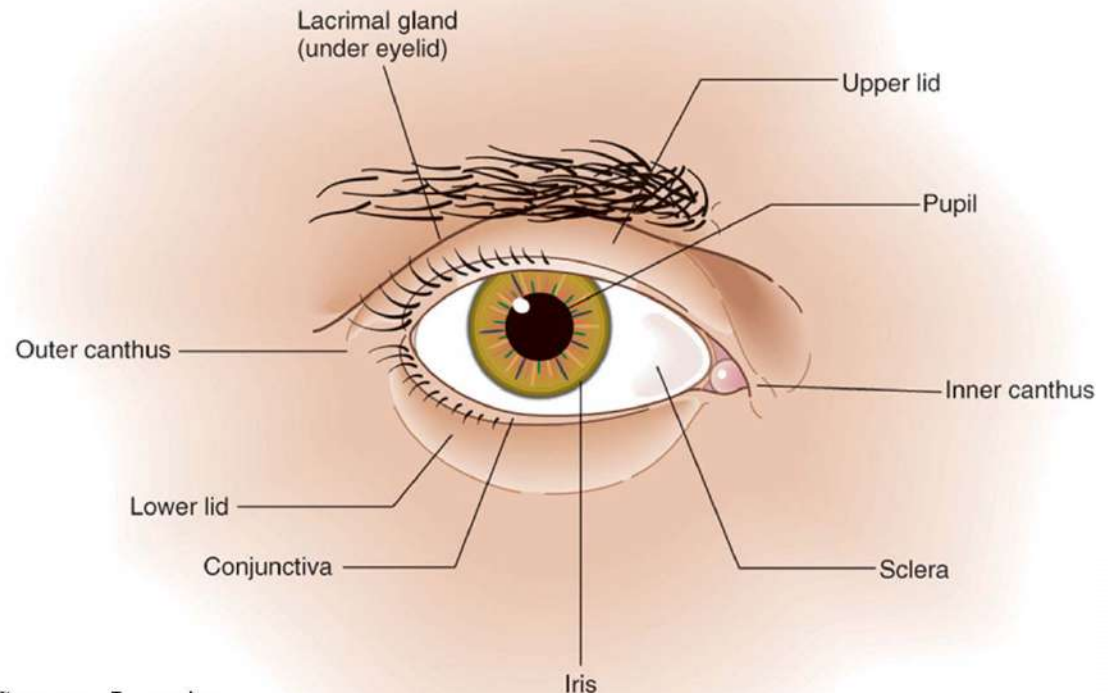
# Adnexa of the Eye

- Primary Functions

- Accessory structures that provide external protection and allow the eyes to move.

- Includes:

- Orbit
- Eye muscles
- Eyelids Eyelashes
- Conjunctiva
- Lacrimal apparatus



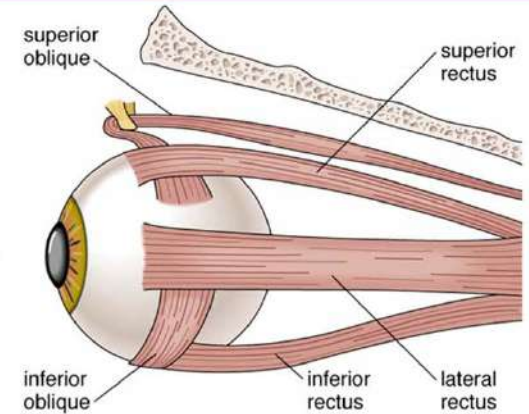
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# Adnexa of the Eye

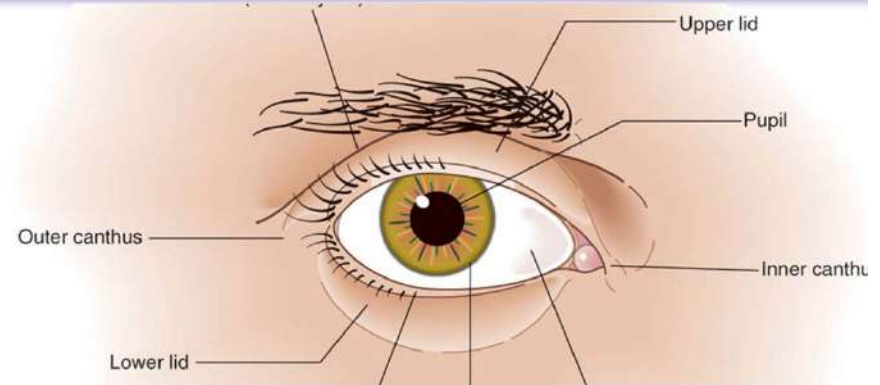
- The eye muscles
  - 6 major muscles make possible a wide ROM
  - Binocular refers to both eyes working together
- Pathologies
  - Strabismus
  - Esotropia
  - Exotropia



# Adnexa of the Eye

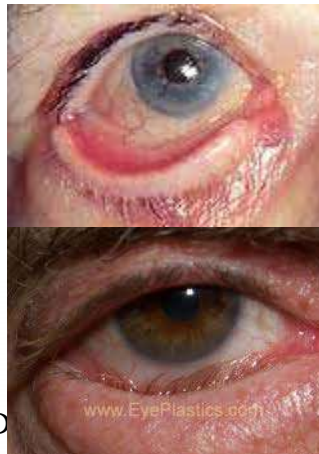
- The Eyelids

- Upper & lower lids protect
- Combining Term - **Blephar/o**
- Canthus is where upper and lower eyelids meet
  - Inner canthus – where lids meet nearest the nose
  - Epicanthus – vertical fold of skin on sides of nose



- Pathologies

- Blepharoptosis
- Ectropion
- Entropion



- Hordeolum
- Chalazion



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# Adnexa of the Eye

- Eyebrows and Eyelashes
  - Prevent foreign matter from reaching the eyes
- Conjunctiva
  - Protective covering over the exposed surface of the eye
  - Conjunctivitis



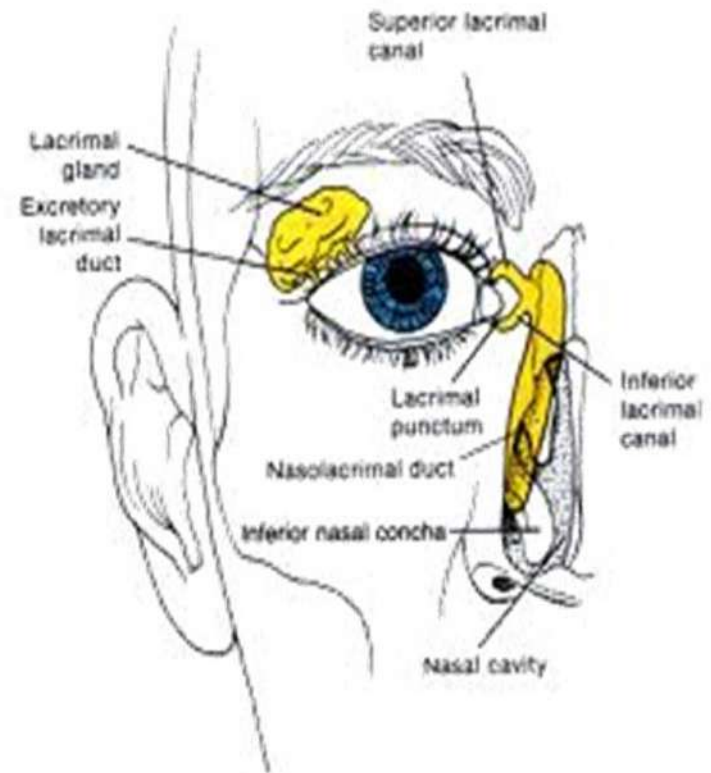
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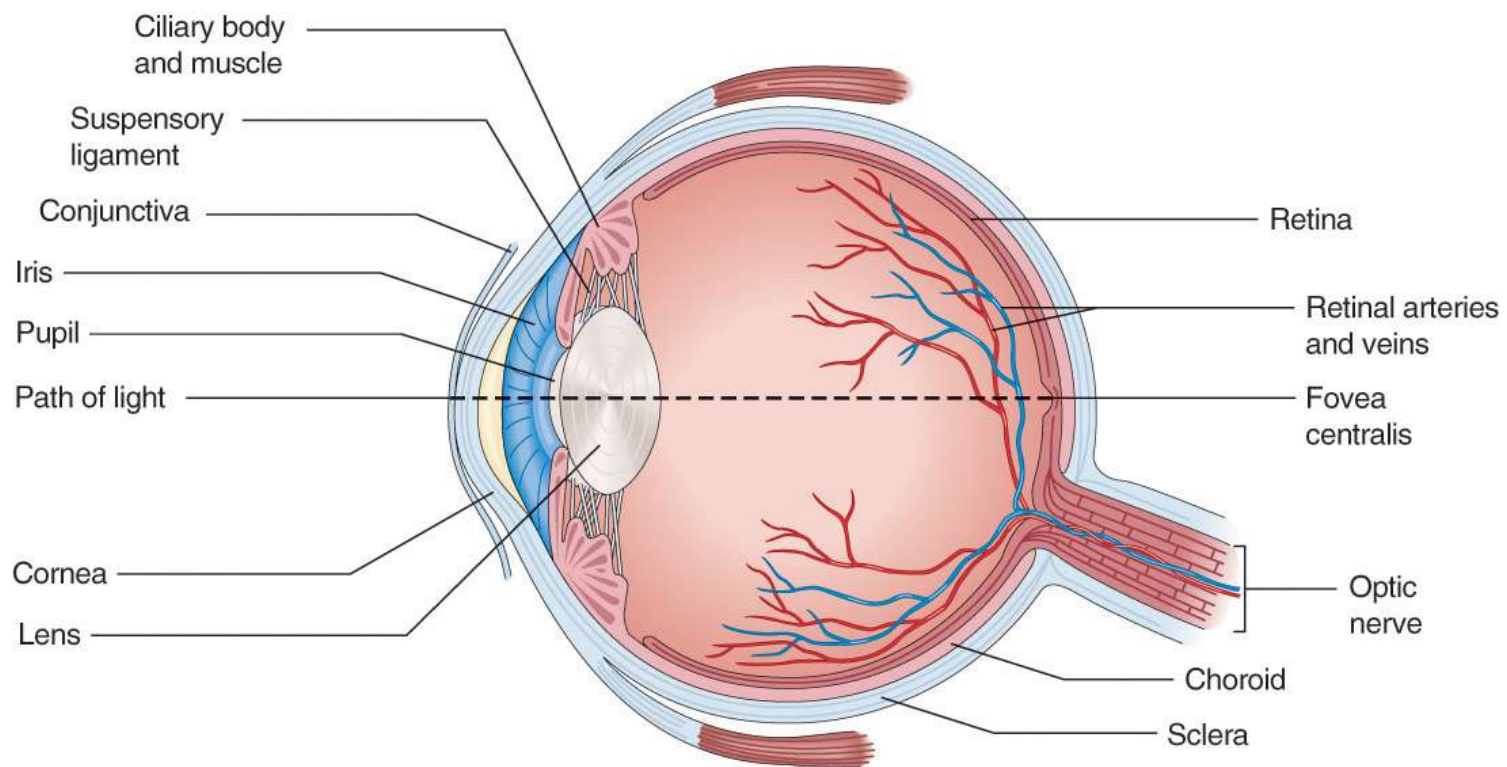
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# Adnexa of the Eye

- Lacrimal Apparatus
  - Primary Functions
    - Produces, stores, and removes tears.
  - Lacrimal glands
  - Lacrimal fluid
  - Lacrimal sac
  - Lacrimal duct
  - Related Combining Forms
    - dacryocyst/o
    - lacrim/o



# Structures of the Eyeball



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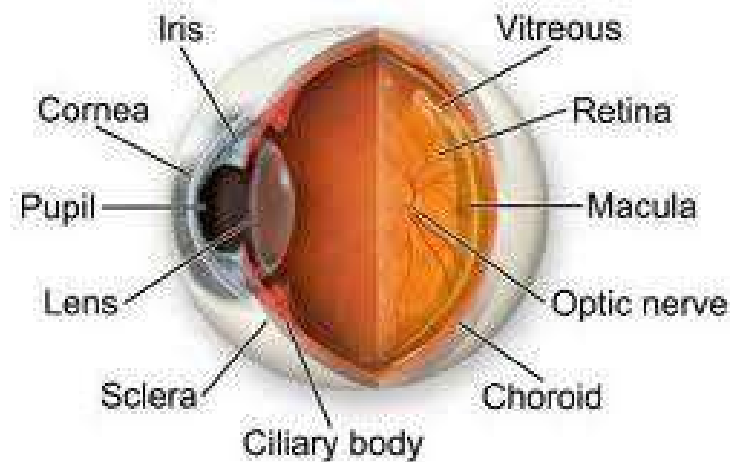
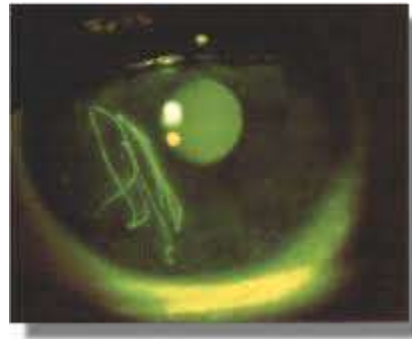
# Sclera and Cornea

- Sclera is the fibrous outer layer of the eye

Combining form - Scler/o

- Maintains the shape
- Protects delicate inner layers
- Cornea is the transparent anterior portion
  - Provides most of the optical power of the eye
  - Combining form - Kerat/o

Scleritis  
Keratitis  
Corneal abrasion  
Corneal ulcer



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# Choroid

- Also known as choroid coat or choroid layer
- The opaque middle layer of the eyeball
  - Contains many blood vessels and provides the blood supply for the entire eye
- Ciliary Body
  - Set of muscles and ligaments that adjust the lens to refine the focus of light rays on the retina



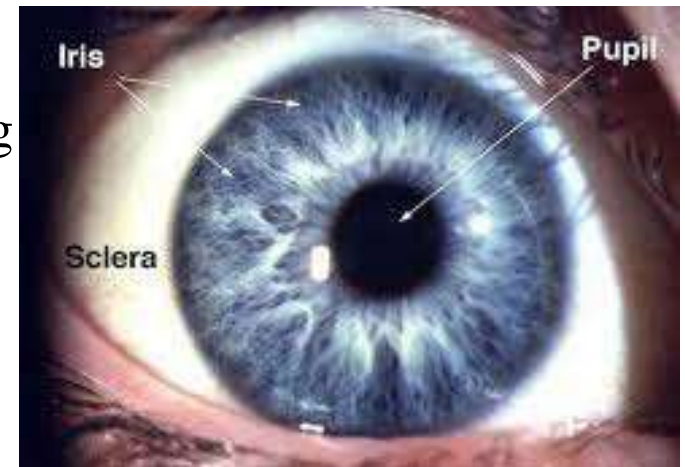
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# Iris & Pupil

- Iris – pigmented, muscular layer
  - Primary Function
    - Controls the amount of light entering
  - Related Combining Forms
    - ir/i, ir/o
    - irid/o
    - irit/o
- Pupil – black opening in center of iris
  - Anisocoria – pupils are unequal



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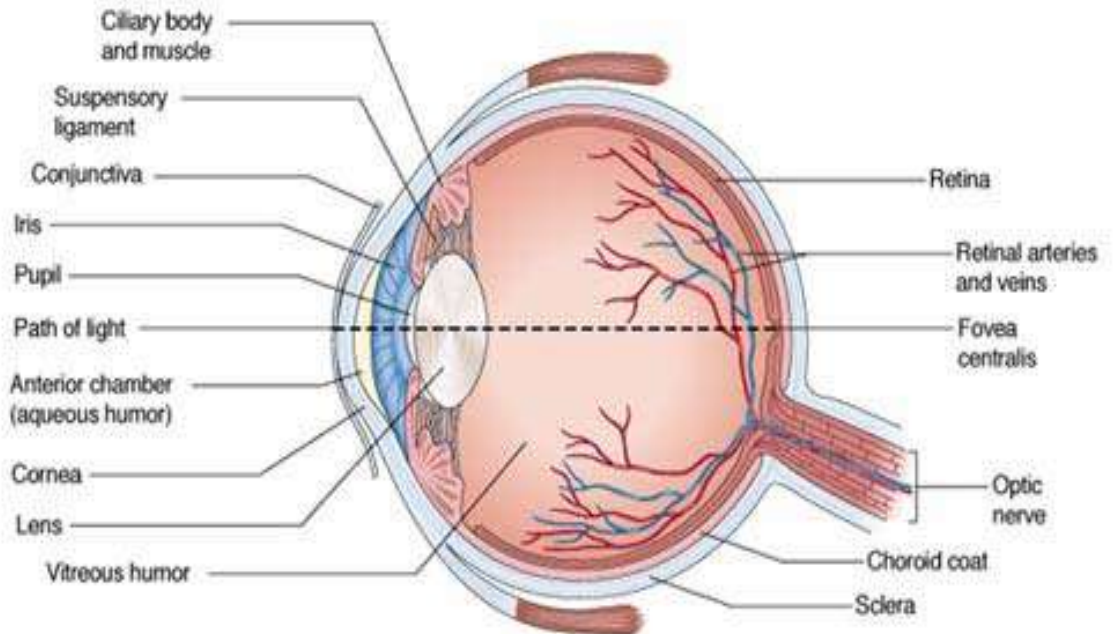
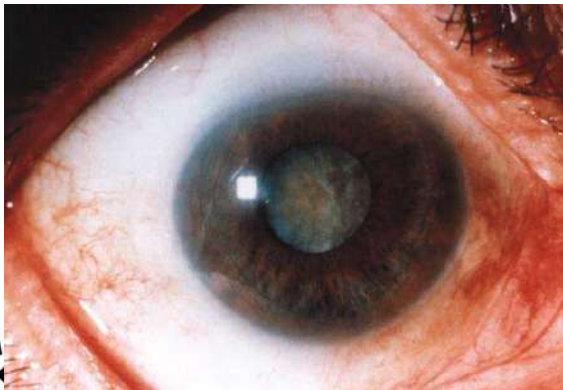
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# Lens

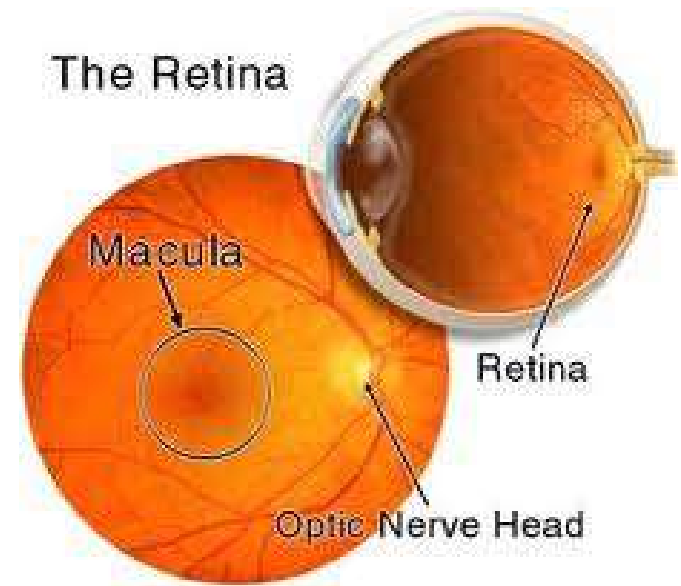
- Primary Function
  - Focuses rays of light on the retina.
- Related Combining Forms
  - phac/o
  - phak/o

## Cataract



# Retina

- Primary Functions
  - Converts light images into electrical impulses and transmits them to the brain.
- Related Combining Form
  - retin/o
- Macula
  - Defined area in the center of the retina
  - This is the area of sharpest vision



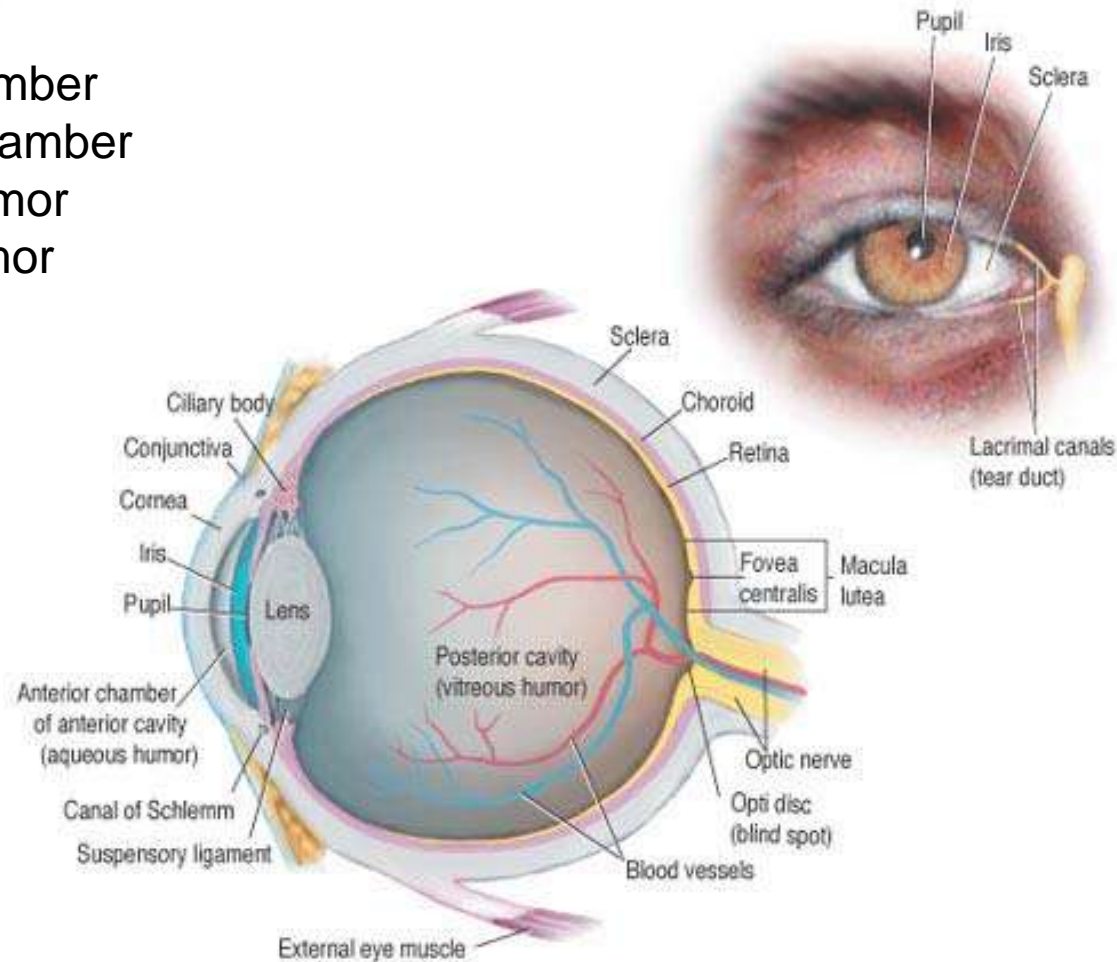
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# Segments of the Eye

- Anterior chamber
- Posterior Chamber
- Aqueous humor
- Vitreous humor



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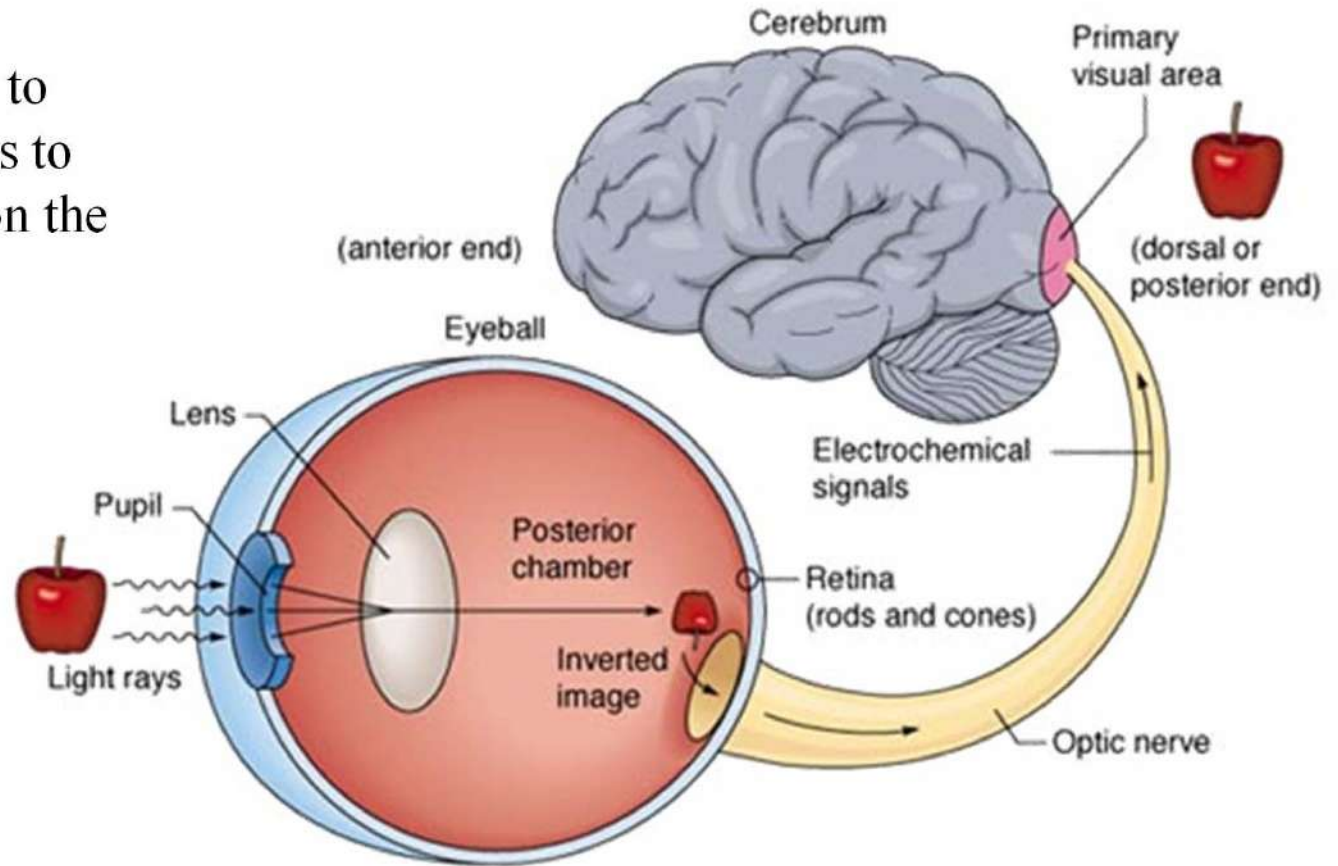
# Normal Action of the Eye

**Refraction** is the ability of the lens to bend the light rays to help them focus on the retina

**Hyperopia**

**Myopia**

**Astigmatism**



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# LASIK

# Ears (Hearing and Sound)

- Primary Functions
  - Receptor organs for the sense of hearing.
  - Help to maintain balance.
- Related Combining Forms
  - acous/o, acoust/o
  - audi/o, audit/o
  - ot/o

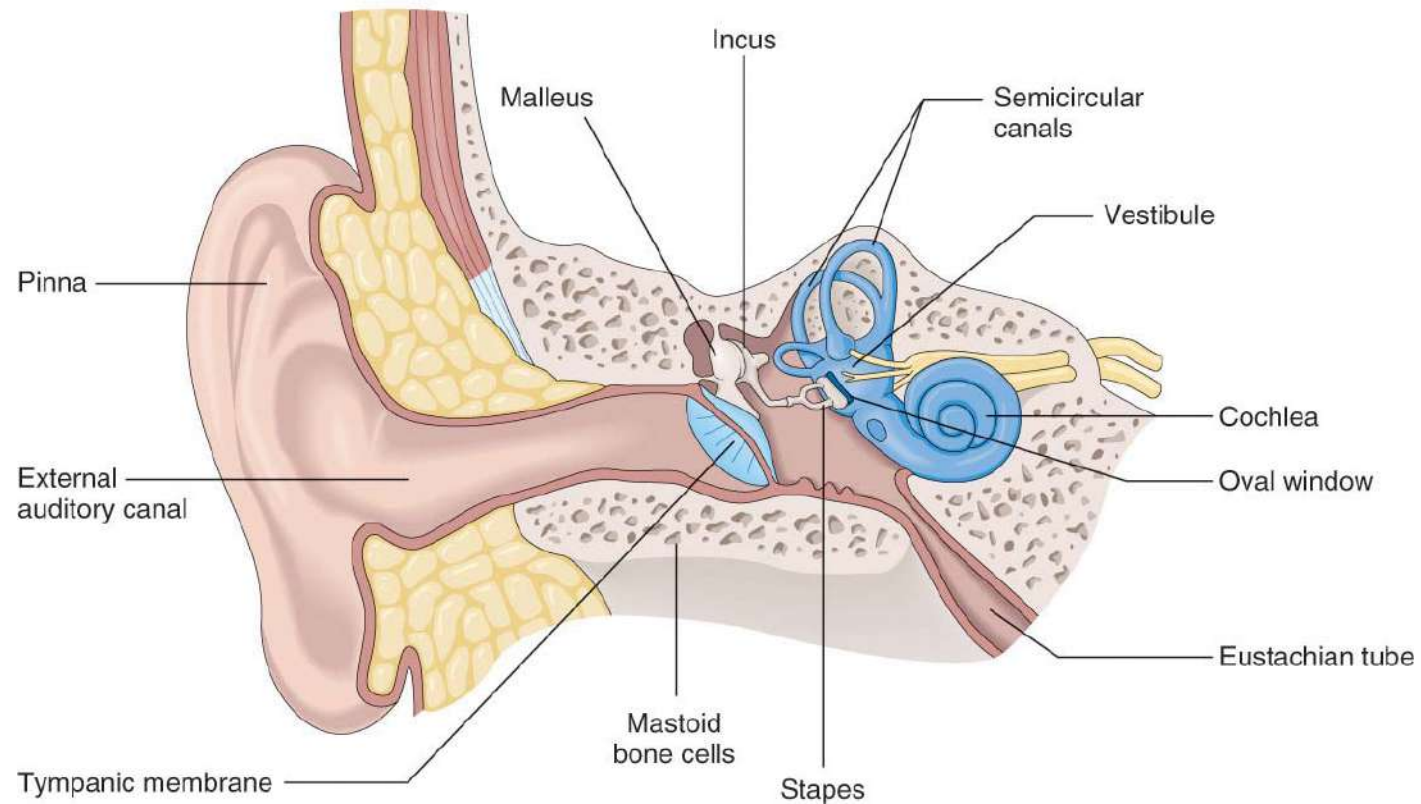


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# Structures of the Ear



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# Outer Ear

- Primary Function
  - Transmits sound waves to the middle ear.
- Primary Structures
  - Pinna
  - External auditory canal
  - Cerumen
- Related Combining Form
  - pinn/i



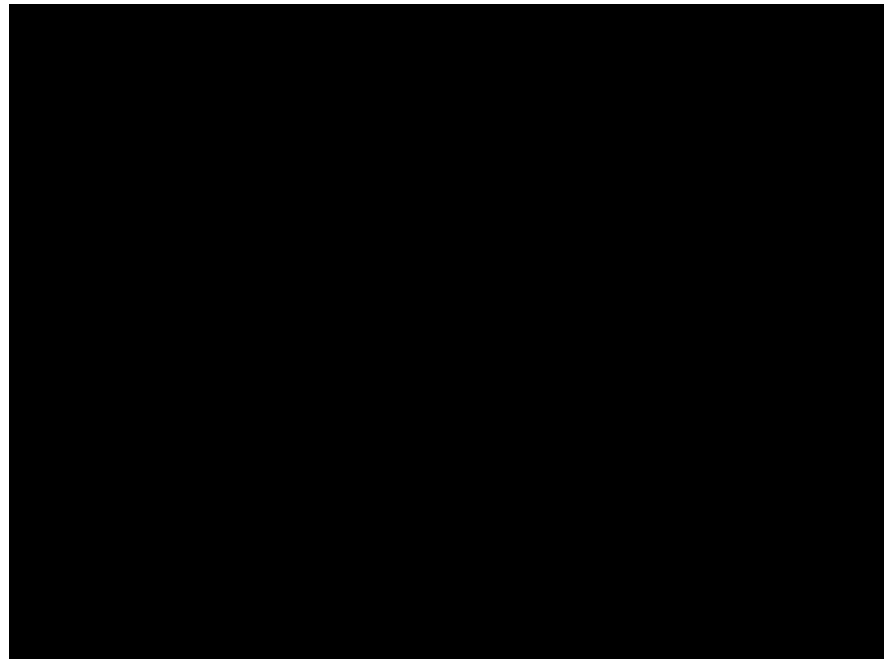
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# Outer Ear Pathologies

- Impacted cerumen
- Ootalgia
- Otitis Externa
- Otomycosis
- Otorrhagia



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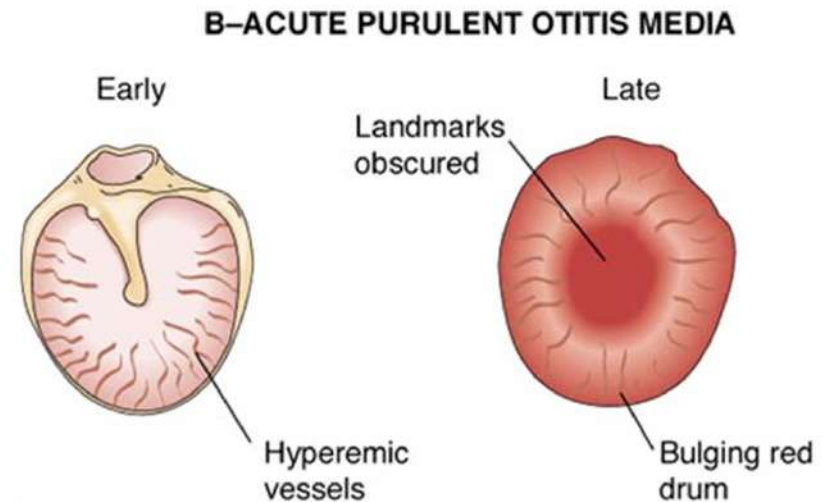
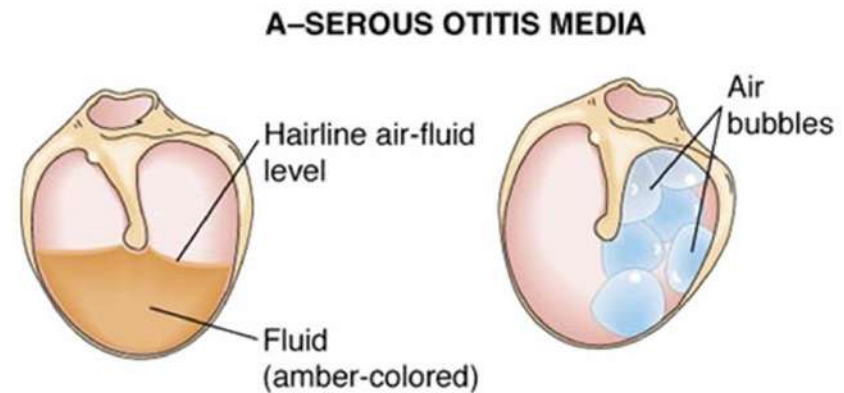
# Middle Ear

- Primary Function
  - Transmits sound waves to the
- Primary Structures
  - Tympanic membrane
  - Auditory Ossicles
    - Malleus
    - Incus
    - Stapes
  - Eustachian Tubes
- Related Combining Forms
  - myring/o
  - tympan/o



# Middle Ear Pathologies

- Myringitis
- Eustachitis
- Otosclerosis
- Otitis Media
  - Serous OM
  - Purulent OM



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# Tympanostomy Tubes



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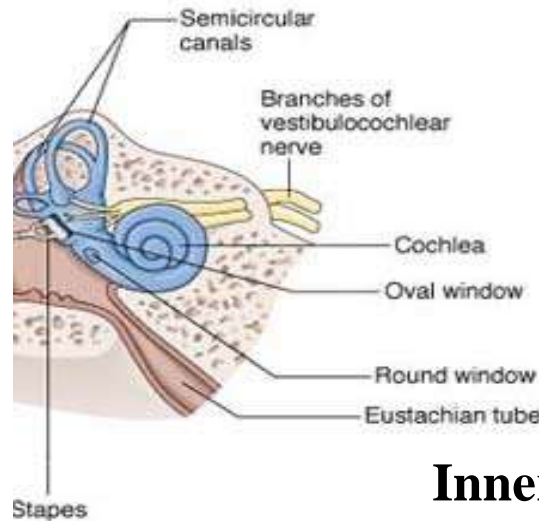
# Inner Ear

- Primary Functions

- Receives sound vibrations and transmits them to the brain.

- Primary Structures

- Oval Window
- Cochlea
- Semicircular Canals
- Acoustic Nerve



- Related Combining Form

- labyrinth/o

## Inner Ear Pathologies

- Labyrinthitis
- Vertigo
- Meniere's Syndrome
- Tinnitus

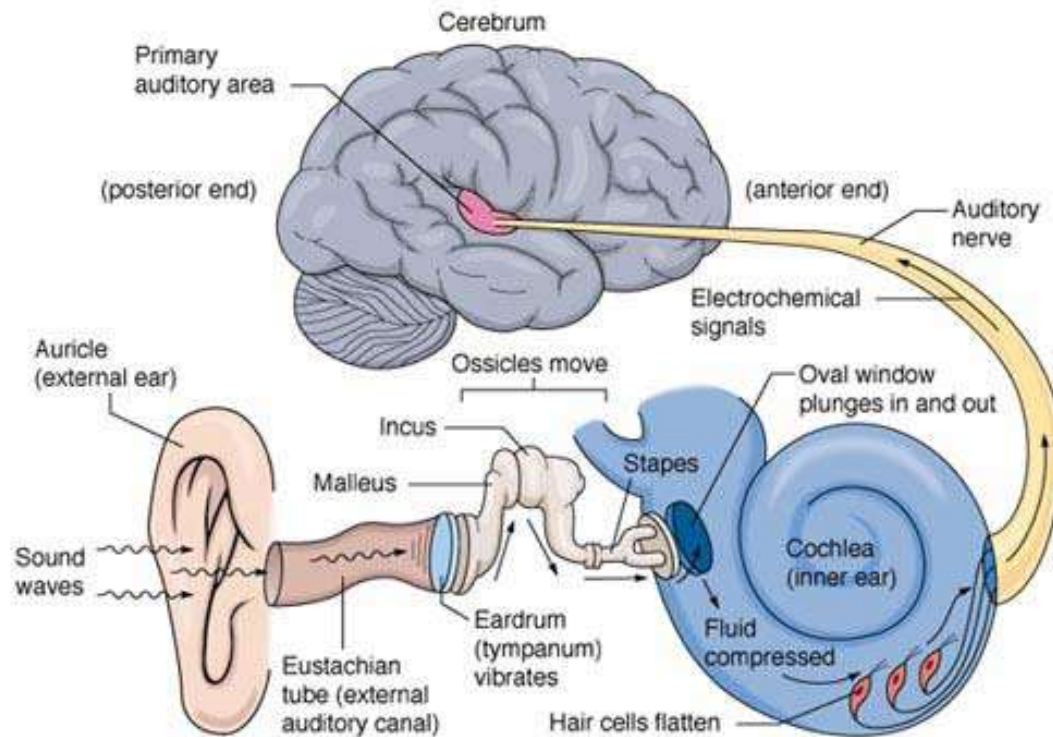


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# Hearing & Hearing Loss



## Hearing

- Air conduction
- Bone conduction
- Sensorineural conduction

## Hearing Loss

- Conductive
- Sensorineural
- Presbycusis



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# How We Hear