Eye Defects

- Refraction Defects are typically caused by irregularities in corneal curvature, focusing power of the lens or length of the eyeball
  - Myopia
  - Hyperopia
  - Presbyopia
  - Astigmatism

Eye Defects

- Movement Defects
  - Strabismus
  - Nystagmus
Eye Infections and Trauma

- **Conjunctivitis** is a superficial inflammation or infection of the conjunctiva which lines the eyelids and covers the sclera. Causes include:
  - Allergens and irritating chemicals
  - *Staphylococcus aureus* causes pinkeye
  - *Chlamydia trachomatis* and gonorrhea are STD's that may infect newborns; gonorrhea may be self-inoculated in adults

- **Stye** is an infection involving hair follicles on the eyelid
  - Herpes simplex virus is a cause of keratitis or corneal inflammation and ulceration; severe pain and photophobia
  - Contact lens are a frequent source of infection in the eye, both conjunctivitis and keratitis
  - Contaminated makeup is also a source

- **Trauma from**:
  - Abrasions can cause visual loss by damaging the cornea
  - Penetration injuries can cause damage to the internal structures of the eye, allow loss of vitreous humor or allow entrance by microorganisms
Glaucoma

Glaucoma results from increased intraocular pressure caused by the accumulation of aqueous humor.
- Open-angle (chronic) glaucoma
- Narrow-angle glaucoma

Other Eye Defects

- Cataracts are a progressive opacity or clouding of the lens.
- The changes may be due to degenerative effects of aging or metabolic abnormalities such as diabetes.
- Surgery can remove the cloudy lens and replace it with a clear artificial one.

Detached retina is an acute problem that occurs when the retina tears.
- Vitreous humor flows behind the retina and lifts it away from the choroid which supplies blood.
- The retinal cells die from lack of nutrition and a darkened area develops in the visual field.
Age-related macular degeneration (AMD) is a common cause of visual loss in older persons. The cause seems to be a combination of genetic factors and environmental exposure to UV and drugs. Degeneration occurs at the fovea centralis in the macula lutea, with its high concentration of cones. Vision becomes blurred and loss of depth perception.
Hearing Loss

- Conduction deafness
  - Wax accumulation or object in canal
  - Scar tissue or adhesions of eardrum or ossicles

- Sensorineural deafness
  - Infection
  - Head trauma
  - Ototoxic drugs
  - Sudden loud noise or prolonged exposure to loud noises
  - Presbycusis
  - Congenital deafness

Ear Infections

- Otitis media
  - Build up of exudate in the cavity impedes movement of eardrum and ossicles
  - Auditory tube usually obstructed by inflammation preventing drainage
  - Increasing pressure may cause rupture of eardrum
  - Prolonged infection can cause scar tissue and adhesions leading to permanent conductive hearing loss
  - May lead to mastoiditis
  - Enlarged adenoids may compress tube
Otitis Externa

- Infection in the external canal and pinna
- Usually bacterial in origin; sometimes fungal
- Associated with swimming, introduction of microbes when cleaning the ear or with frequent use of earphones or earplugs.
- Pain, purulent discharge and hearing deficit are common signs

Chronic Disorders of the Ear

- Otosclerosis involves the fixation of the stapes to the oval window blocking conduction of sound into the cochlea
Meniere’s Syndrome is an inner ear disorder
- Excess endolymph develops intermittently
- Attacks may last minutes to hours
- Causes vertigo, tinnitus and unilateral hearing loss,
- May result in loss of balance, falls, nausea and vomiting, inability to focus and nystagmus