

- Overview of Anatomy and Physiology
- Anatomy of the eye
 - Accessory structures of the eye
 - Eyebrows
 - Eyelashes
 - Eyelids
 - Lacrimal apparatus
- Figure 53-1
- Overview of Anatomy and Physiology
- Anatomy of the eye (*continued*)
 - Structures of the eyeball
 - Sclera
 - Cornea
 - Choroid
 - Ciliary body
 - Iris
 - Pupil
 - Retina
- Overview of Anatomy and Physiology
- Anatomy of the eye (*continued*)
 - Chambers of the eye
 - Anterior chamber
 - Aqueous humor
 - Posterior chamber
 - Vitreous humor
- Figure 53-2

- Overview of Anatomy and Physiology
- Anatomy of the ear
 - External ear
 - Auricle
 - External auditory canal
 - Tympanic membrane
 - Middle ear
 - Eustachian tube
 - Malleus
 - Incus
 - Stapes
- Figure 53-3
- Overview of Anatomy and Physiology
- Anatomy of the ear (*continued*)
 - Inner ear
 - Labyrinth
 - Bony labyrinth—filled with perilymph
 - Semicircular canals
 - Vestibule
 - Cochlea—organ of Corti
 - Membranous labyrinth—filled with endolymph
- Figure 53-4
- Overview of Anatomy and Physiology
- Other special senses
 - Taste and smell
 - Taste buds: salty, sweet, sour, bitter
 - Olfactory receptors: sense of smell

- Touch
 - Tactile receptors
- Position/movement
 - Proprioceptors
- Laboratory and Diagnostic Examinations
- Diagnostic eye tests
 - Snellen test
 - Color vision
 - Refraction
 - Ophthalmoscopy
 - Tonometry
 - Amster grid test
 - Schirmer's tear test
- Disorders of the Eye
- Blindness and near-blindness
 - Etiology/pathophysiology
 - Loss of visual acuity
 - Congenital or acquired
 - Legal blindness
 - 20/200 with corrective eyewear (normal 20/20)
 - Visual field less than 20 degrees (normal 180)
- Disorders of the Eye
- Blindness and near-blindness (*continued*)
 - Clinical manifestations/assessment
 - Diplopia
 - Pain
 - Floaters and light flashes
 - Pruritus; burning of the eyes

- Loss of peripheral vision
 - Halos
 - Orbital pressure
 - Bulging of the eyes
- Disorders of the Eye
- Blindness and near-blindness (*continued*)
 - Medical management/nursing interventions
 - Corrective eyewear
 - Canes
 - Seeing-eye dogs
 - Magnifying systems
 - Surgical procedures
- Disorders of the Eye
- Refractory errors
 - Etiology/pathophysiology
 - Astigmatism—unequal curve in the shape of the cornea or lens
 - Strabismus—inability of the eyes to focus in one direction; cross-eyed
 - Myopia—nearsightedness; eyeball is too long
 - Hyperopia—farsightedness; eyeball is too short
- Disorders of the Eye
- Refractory errors (*continued*)
 - Clinical manifestations/assessment
 - Diminished or blurred vision
 - Medical management/nursing interventions
 - Corrective lenses
 - Surgical correction

- Radial keratotomy (RK)
- Photorefractive keratectomy (PRK)
- Laser-assisted in-situ keratomileusis (LASIK)

- Disorders of the Eye

- Conjunctivitis

- Etiology/pathophysiology
 - Inflammation of the conjunctiva
 - Bacterial or viral infection
 - Allergy
 - Environmental factors
 - Commonly called *pink eye*

- Disorders of the Eye

- Conjunctivitis (*continued*)

- Clinical manifestations/assessment
 - Erythema of the conjunctiva
 - Edema of the eyelid; crusting discharge
 - Pruritus; burning; excessive tearing
- Medical management/nursing interventions
 - Warm compresses
 - Eye irrigations with normal saline
 - Antibiotic drops or ointment
 - Keep free from exudate

- Disorders of the Eye

- Keratitis

- Etiology/pathophysiology
 - Inflammation of the cornea
 - Injury, irritants, allergies, viral infection, or diseases

- *Pneumococcus, Staphylococcus, Streptococcus, and Pseudomonas* are most common types of bacterial causes
- Herpes simplex is most common viral cause

- Disorders of the Eye

- Keratitis (*continued*)

- Clinical manifestations/assessment
 - Severe eye pain
 - Photophobia
 - Tearing
 - Edema
 - Visual disturbances

- Disorders of the Eye

- Keratitis (*continued*)

- Medical management/nursing interventions
 - Pharmacological management
 - Topical and systemic antibiotics
 - Analgesics
 - Pressure dressings
 - Warm or cold compresses
 - Epithelial debridement
 - Keratoplasty

- Disorders of the Eye

- Dry eye disorders (keratoconjunctivitis sicca)

- Etiology/pathophysiology
 - Lacrimal gland dysfunction from an autoimmune mechanism
- Clinical manifestations/assessment
 - Complaints of sandy or gritty sensation in the eye

- Surgical removal
 - Lens implant or glasses
- Postoperative
 - Avoid direct sunlight
 - Bed rest with bathroom privileges (BRPs)
 - Analgesics
 - No bending down or straining
 - Avoid coughing, sneezing, and blowing nose
- Disorders of the Eye
- Diabetic retinopathy
 - Etiology/pathophysiology
 - Capillary microaneurysms, hemorrhage, exudates, and formation of new vessels and connective tissue in the retina
 - Clinical manifestations/assessment
 - Microaneurysms
 - Progressive loss of vision; “floaters”
 - Medical management/nursing interventions
 - Photocoagulation
 - Vitrectomy
- Disorders of the Eye
- Macular degeneration
 - Etiology/pathophysiology
 - Slow, progressive loss of central and near vision due to aging retina
 - Clinical manifestations/assessment
 - Gradual and variable bilateral loss of vision
 - Color perception may also be affected
 - Medical management/nursing interventions
 - Usually no treatment
 - May use photocoagulation

- Disorders of the Eye
- Retinal detachment
 - Etiology/pathophysiology
 - Separation of the retina from the choroid in the posterior area of the eye
 - Clinical manifestations/assessment
 - Flashes of light; floating spots
 - Loss of a specific field of vision
 - Medical management/nursing interventions
 - Photocoagulation; cryosurgery; diathermy
 - Scleral buckling

- Figure 53-8

- Disorders of the Eye

- Glaucoma

- Etiology/pathophysiology
 - An abnormal condition of elevated pressure within an eye; obstruction of outflow of aqueous humor
 - Open-angle
 - Closed-angle

- Figure 53-9

- Disorders of the Eye

- Glaucoma (*continued*)

- Clinical manifestations/assessment
 - Open-angle
 - No signs or symptoms during early stages
 - Tunnel vision
 - Eye pain
 - Difficulty adjusting to darkness
 - Halos around lights
 - Inability to detect colors

- Disorders of the Eye
- Glaucoma (*continued*)
 - Clinical manifestations/assessment
 - Closed-angle
 - Severe pain
 - Decreased vision
 - Nausea and vomiting
 - Erythema of the sclera
 - Enlarged and fixed pupil
 - Halos around lights
- Disorders of the Eye
- Glaucoma (*continued*)
 - Medical management/nursing interventions
 - Open-angle glaucoma
 - Beta blockers
 - Miotics
 - Carbonic anhydrase inhibitors
 - Closed-angle
 - Osmotic diuretics
 - Iridectomy
- Disorders of the Eye
- Corneal injuries
 - Etiology/pathophysiology
 - Result from injuries to corneal layers of the eye
 - Clinical manifestations/assessment
 - Pain with movement of eye
 - Excessive tearing; pruritus
 - Erythema of conjunctiva
- Disorders of the Eye

- Corneal injuries (*continued*)
 - Medical management/nursing interventions
 - Flush with normal saline or water
 - Antibiotic drops or ointment
 - Penetrating wounds
 - Do not remove object if present
- Surgeries of the Eye
- Enucleation
 - Surgical removal of the eyeball
- Keratoplasty (corneal transplant)
 - Excision of the corneal tissue, followed by implantation of a cornea from a donor
- Photocoagulation
 - A laser is directed into a small spot on the retina
- Vitrectomy
 - Removal of excess vitreous fluid caused by hemorrhage and replacement with normal saline
- Laboratory and Diagnostic Examinations
- Diagnostic ear tests
 - Otoscopy
 - Tuning fork tests
 - Weber's test
 - Rinne test
 - Autometric testing
 - Vestibular testing
 - Romberg test
 - Past-point testing
- Figure 53-13

- Figure 53-14
- Loss of Hearing (Deafness)
- Hearing impairment
 - Etiology/pathophysiology
 - Decreased auditory acuity; partial or complete
 - Affects development of speech
 - Types
 - Conductive
 - Sensorineural
 - Mixed
 - Congenital
 - Functional
 - Central
- Loss of Hearing (Deafness)
- Hearing impairment (*continued*)
 - Clinical manifestations/assessment
 - Requests for repeating information
 - Nonresponse
 - Delayed speech development
 - Medical management/nursing interventions
 - According to cause
 - Hearing aids
 - Surgical procedures
 - Cochlear implant
- Inflammatory and Infectious Disorders of the Ear
- External otitis
 - Etiology/pathophysiology
 - Inflammation or infection of the external canal

- Clinical manifestations/assessment
 - Pain with movement of auricle or chewing
 - Erythema, scaling, pruritus, edema, watery discharge, and crusting of the external ear
 - Medical management/nursing interventions
 - Oral analgesics; corticosteroids
 - Antibiotic or antifungal ear drops; oral antibiotics
- Inflammatory and Infectious Disorders of the Ear
- Otitis media
 - Etiology/pathophysiology
 - Inflammation or infection of the middle ear
 - Clinical manifestations/assessment
 - Fullness in the ear
 - Severe, deep, throbbing pain
 - Hearing loss
 - Tinnitus
 - Fever
- Inflammatory and Infectious Disorders of the Ear
- Otitis media (*continued*)
 - Medical management/nursing interventions
 - Pharmacological management
 - Antibiotics
 - Analgesics
 - Nasal decongestants
 - Local heat
 - Aspiration of fluid from behind eardrum
 - Myringotomy
- Inflammatory and Infectious Disorders of the Ear

- Labyrinthitis
 - Etiology/pathophysiology
 - Inflammation of the labyrinthine canals of the inner ear
 - Most common cause of vertigo
 - Viral infection from URI
 - Drugs and food
 - Tobacco and alcohol

- Inflammatory and Infectious Disorders of the Ear

- Labyrinthitis (*continued*)

- Clinical manifestations/assessment
 - Severe and sudden vertigo; ataxic gait
 - Nausea and vomiting
 - Nystagmus; photophobia
 - Headache
- Medical management/nursing interventions
 - Antibiotics
 - Dramamine or meclizine for vertigo
 - IV fluids if nausea and vomiting present

- Inflammatory and Infectious Disorders of the Ear

- Obstructions of the ear

- Etiology/pathophysiology
 - Impaction of cerumen in canal; foreign bodies
- Clinical manifestations/assessment
 - Tinnitus and pain in the ear
 - Slight hearing loss; tugging at ear
- Medical management/nursing interventions
 - Removal of cerumen by irrigation

- Foreign objects are removed with forceps
 - Carbamide peroxide to soften cerumen
- Noninfectious Disorders of the Ear
- Otosclerosis
 - Etiology/pathophysiology
 - Chronic, progressive deafness due to formation of spongy bone, especially around the oval window
 - Clinical manifestations/assessment
 - Slowly progressive conductive hearing loss
 - Tinnitus; dizziness to vertigo
 - Medical management/nursing interventions
 - Stapedectomy
 - Air conduction hearing aid
- Noninfectious Disorders of the Ear
- Ménière's disease
 - Etiology/pathophysiology
 - Chronic disease of the inner ear
 - Increase in endolymph fluid
 - Clinical manifestations/assessment
 - Vertigo
 - Nausea and vomiting
 - Hearing loss; tinnitus
 - Diaphoresis
 - Nystagmus
- Noninfectious Disorders of the Ear
- Ménière's disease (*continued*)
 - Medical management/nursing interventions

- No specific treatment
- Decrease fluid pressure
 - Fluid restriction; diuretics; low-salt diet
- Dramamine, meclizine, and Benadryl
- Surgery
 - Destruction of labyrinth
 - Endolymphatic shunt
 - Cryosurgery
 - Vestibular nerve section
- Surgeries of the Ear
- Stapedectomy
 - Removal of the stapes of the middle ear
- Tympanoplasty
 - Operative procedures on the eardrum or ossicles of the middle ear to restore hearing
- Myringotomy
 - Surgical incision of the eardrum
- Cochlear implant
 - Surgical implantation of a hearing device for the profoundly deaf
- Nursing Process
- Nursing diagnoses
 - Health maintenance, ineffective
 - Anxiety
 - Self-care deficit
 - Fear
 - Impaired environmental interpretation syndrome
 - Impaired home maintenance
 - Impaired social interaction
 - Risk for injury

- Risk for loneliness
- Sensory perception, disturbed: auditory or visual