

---

---

---

---

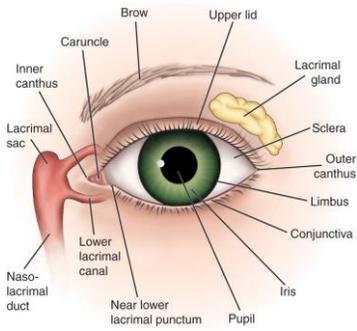
---

---

---

---

### External Structures of the Eye



Wolters Kluwer Copyright © 2018 Wolters Kluwer - All Rights Reserved

---

---

---

---

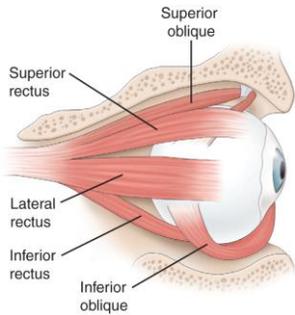
---

---

---

---

### Extraocular Muscles



Wolters Kluwer Copyright © 2018 Wolters Kluwer - All Rights Reserved

---

---

---

---

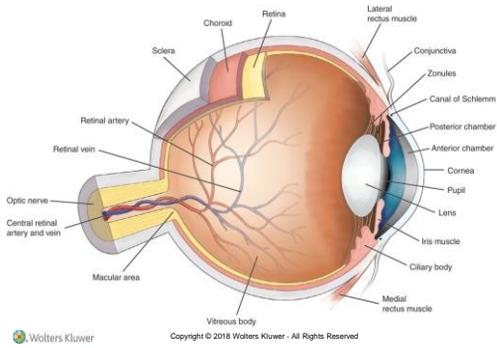
---

---

---

---

### Cross-Section of the Eye



---

---

---

---

---

---

---

---

### Diagnostic Evaluation

- ❖ Ophthalmoscopy
  - Direct and indirect
- ❖ Slit-lamp examination
- ❖ Color vision testing
- ❖ Amsler grid
- ❖ Ultrasonography
- ❖ Optical coherence tomography

Wolters Kluwer Copyright © 2018 Wolters Kluwer - All Rights Reserved

---

---

---

---

---

---

---

---

### Diagnostic Evaluation

- ❖ Fundus photography
- ❖ Tonometry
- ❖ Laser scanning
- ❖ Angiography
- ❖ Perimetry testing

Wolters Kluwer Copyright © 2018 Wolters Kluwer - All Rights Reserved

---

---

---

---

---

---

---

---

## Ophthalmic Medications

- ❖ Ability of the eye to absorb medication is limited
- ❖ Barriers to absorption include the size of the conjunctival sac; corneal membrane barriers, blood-ocular barriers; and tearing, blinking, and drainage
- ❖ Intraocular injection or systemic medication may be needed to treat some eye structures or to provide high concentrations of medication
- ❖ Topical medications (drops and ointments) are most frequently used because they are least invasive, have fewest side effects, and permit self-administration

Wolters Kluwer

Copyright © 2018 Wolters Kluwer - All Rights Reserved

## Ophthalmic Medications

- ❖ Topical anesthetics
- ❖ Mydriatics (dilate) and cycloplegics (paralyze)
  - Contraindicated with narrow angles or shallow anterior chambers and inpatients on monoamine oxidase inhibitors or tricyclic antidepressant
  - May cause CNS symptoms and increased BP, especially in children or older adults
- ❖ Anti-infective medications
  - Antibiotic, antifungal, or antiviral products

Wolters Kluwer

Copyright © 2018 Wolters Kluwer - All Rights Reserved

## Ophthalmic Medications

- ❖ Medications used for glaucoma
  - Increase aqueous outflow or decrease aqueous production
  - May constrict the pupil and may affect ability to focus the lens of the eye; affects vision
  - May also may produce systemic effects
- ❖ Anti-inflammatory drugs; corticosteroid suspensions
  - Side effects of long-term topical steroids include glaucoma, cataracts, and increased risk of infection. To avoid these effects, oral NSAID therapy may be used as an alternate to steroid use

Wolters Kluwer

Copyright © 2018 Wolters Kluwer - All Rights Reserved

### Refractory Errors

- Emmetropia
- Myopia
- Hyperopia (hypermetropic)
- Astigmatism
- Blindness
  - Etiologies
  - Surgeries
  - Laser surgery

---

---

---

---

---

---

---

---

### Glaucoma

- Optic nerve damage
- Risk factors
- Types
  - Wide-angle glaucoma
  - Narrow-angle glaucoma
  - Congenital glaucoma
  - Other

---

---

---

---

---

---

---

---

### Glaucoma

- S/S
  - "silent thief"
- Dx
- Treatment/Management
  - Pharmacological
    - Miotic eyedrops
    - Beta blockers, alpha 2-agonist
    - Carbonic anhydrase inhibitor
    - Prostaglandins

---

---

---

---

---

---

---

---

## Glaucoma

- o Surgery
  - o Laser trabeculoplasty
  - o Peripheral iridotomy
  - o Filtering procedures
    - o Trabeculectomy
    - o Complications
    - o Drainage implants
- o Nursing Care

---

---

---

---

---

---

---

---

## Cataracts



- o Opaque lens
- o Etiologies
- o S/S
- ❖ Painless, blurry vision, surroundings dimmer
- ❖ Sensitivity to glare
- ❖ Reduced visual acuity
- ❖ Other effects include myopic shift; astigmatism; diplopia (double vision); and color shifts, including brunescens (color value shift to yellow-brown)
- ❖ Diagnostic findings include decreased visual acuity and opacity of the lens by ophthalmoscope, slit lamp, or inspection

---

---

---

---

---

---

---

---

## Cataracts- Treatment/ Management

- ❖ If reduced vision does not interfere with normal activities, surgery is not needed
- ❖ Surgery is preformed on an outpatient basis with local anesthesia
- ❖ Surgery usually takes less than 1 hour, and patients are discharged soon afterward
- ❖ Complications are rare but may be significant
  - o Extracapsular extraction
  - o Phacoemulsification extraction
  - o Intracapsular extraction
  - o Lens replacement

---

---

---

---

---

---

---

---

## Nursing Management

- ❖ Preoperative care
- ❖ Usual preoperative care for ambulatory surgery
- ❖ Dilating eye drops or other medications as ordered
- ❖ Postoperative care
- ❖ Patient education
- ❖ Provide written and verbal instructions
- ❖ Instruct patient to call physician immediately if vision changes; continuous flashing lights appear; redness, swelling, or pain increase; type and amount of drainage increases; or significant pain is not relieved by acetaminophen

Wolters Kluwer

Copyright © 2018 Wolters Kluwer - All Rights Reserved

---

---

---

---

---

---

---

---

### Corneal Surgeries

- Phototherapeutic keratectomy
- Penetrating keratoplasty and corneal endothelial transplantation
- Descemet stripping endothelial keratoplasty
- Keratoprosthesis
- Nursing Care
  - Complications
  - Graft failure

---

---

---

---

---

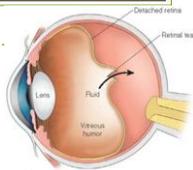
---

---

---

### Retinal Detachment

- 3 Types
  - Rhegmatogenous
  - Traction
  - Rhegmatogenous & Traction
  - Exudative
- S/S
  - sensation of a shade or curtain coming across the vision of one eye, bright flashing lights, sudden onset of floaters



---

---

---

---

---

---

---

---

## Retinal Detachment

- Diagnostics
  - assess visual acuity, assessment of retina by indirect ophthalmoscope, slit lamp, stereo fundus photography, and fluorescein angiography; tomography and ultrasonography may also be used
- Surgery
  - Scleral buckle
  - Pars Plana Vitrectomy
  - Pneumatic Retinopexy
  - Transconjunctival sutureless vitrectomy
- Nursing Care

---

---

---

---

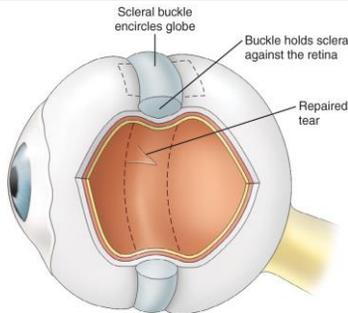
---

---

---

---

## Scleral Buckle



Wolters Kluwer

Copyright © 2018 Wolters Kluwer - All Rights Reserved

---

---

---

---

---

---

---

---

## Macular Degeneration

- Older adults
- S/S
  - Drusen
  - "Dry"
    - Slow breakdown of the layers of the retina with the appearance of drusen
  - "Wet"
    - May have abrupt onset
    - Proliferation of abnormal blood vessels growing under the retina—choroidal neovascularization
- Treatment/ Nursing care
  - Ranibizumab (Lucentis)
  - Amsler grids




---

---

---

---

---

---

---

---

### Eye Injuries/ Emergencies

- Fractures
- Foreign Body
- Penetrating eye injuries
- Chemical burns

---

---

---

---

---

---

---

### Infectious and Inflammatory Disorders

- ❖ Dry eyes
- ❖ Conjunctivitis ("pink eye")
  - Classified by cause: bacterial, viral, fungal, parasitic, allergic, toxic
  - Viral conjunctivitis is contagious
- ❖ Uveitis
- ❖ Orbital cellulitis

---

---

---

---

---

---

---