

Ophtalmic Surgery

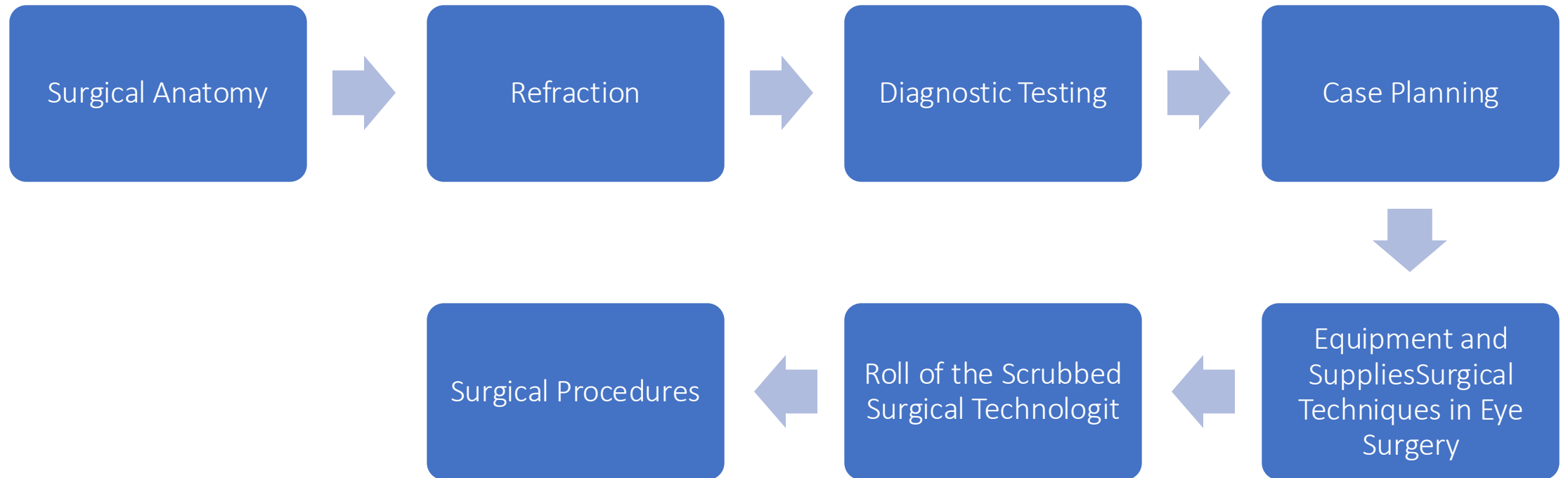
Surgical Techniques and Considerations



Lesson Objectives:

1. Identify key anatomical structures of the eye
2. Discuss common diagnostic procedures of the eye
3. Discuss specific elements of case planning for eye surgery
4. Discuss surgical techniques used in eye surgery, including use of the operating microscope
5. Describe common surgical procedures of the eye

Progression

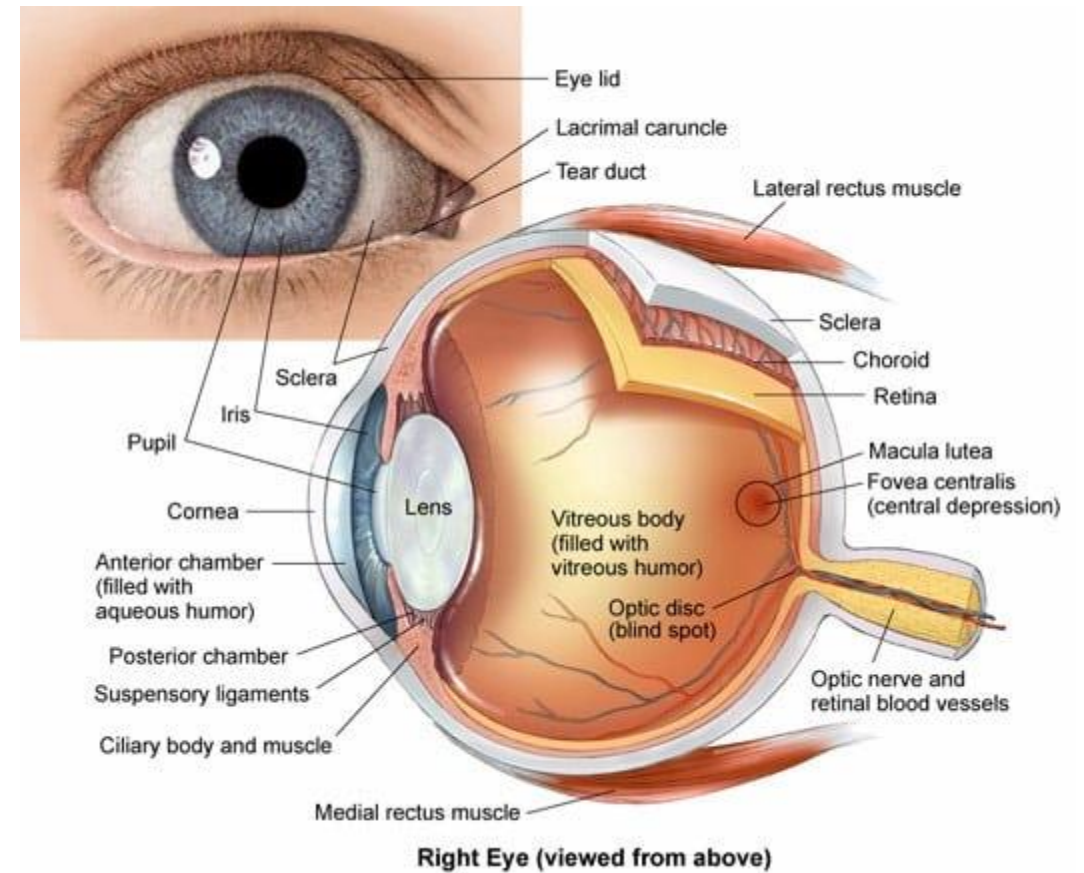


Ophthalmic Surgery

- **Goal:**
 - Restoring vision lost as a result of disease, injury, or congenital defect
- **Procedure done on:**
 - External and Internal Structures of eye
- **Careful Considerations**
 - Verifying that the operative site and the implants are correct, positioning precautions, and drug and environmental safety.

Surgical Anatomy of the Eye

- Orbital cavity
- Eyelids
- Globe
- Eye muscles
- Conjunctiva
- Cornea
- Sclera
- Choroid layer and ciliary body
- Iris
- Retina
- Lens
- Anterior and posterior chambers
- Lacrimal apparatus

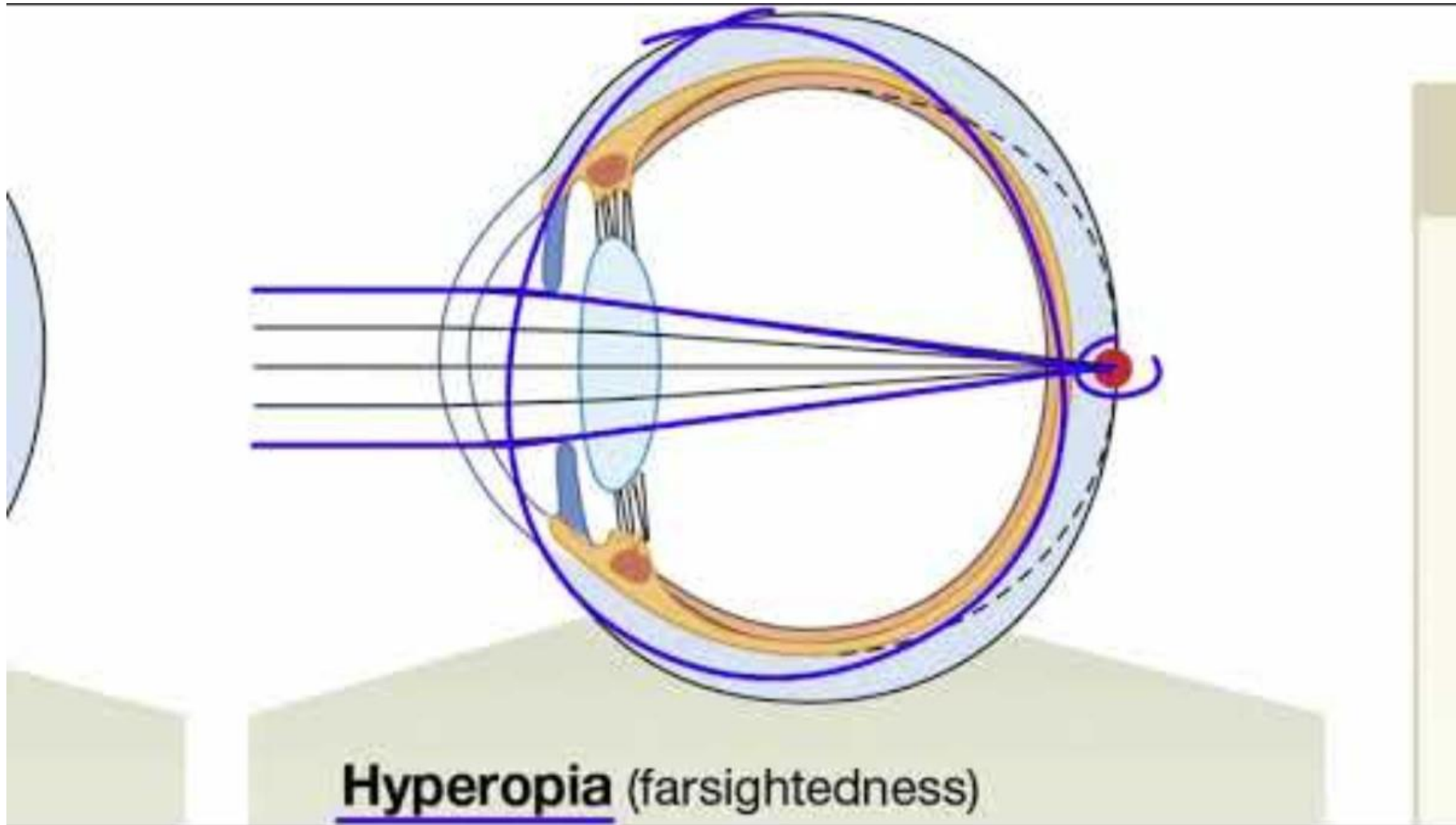


Refraction

- Bending of light through a transparent medium.
- **Occurrence:** Light enters the eye, passing through cornea, aqueous humor, lens, and vitreous.
- **Convergence:** Rays converge at the focal point.
- **Accommodation:** Lens adjusts shape to focus image on fovea.
- **Function:** Enables viewing objects at different distances and maintaining focus.

Watch the "Light Refraction and Focused Vision in the Eye" video

Light Refraction and Focused Vision in the Eye Video (Start at 0:27)

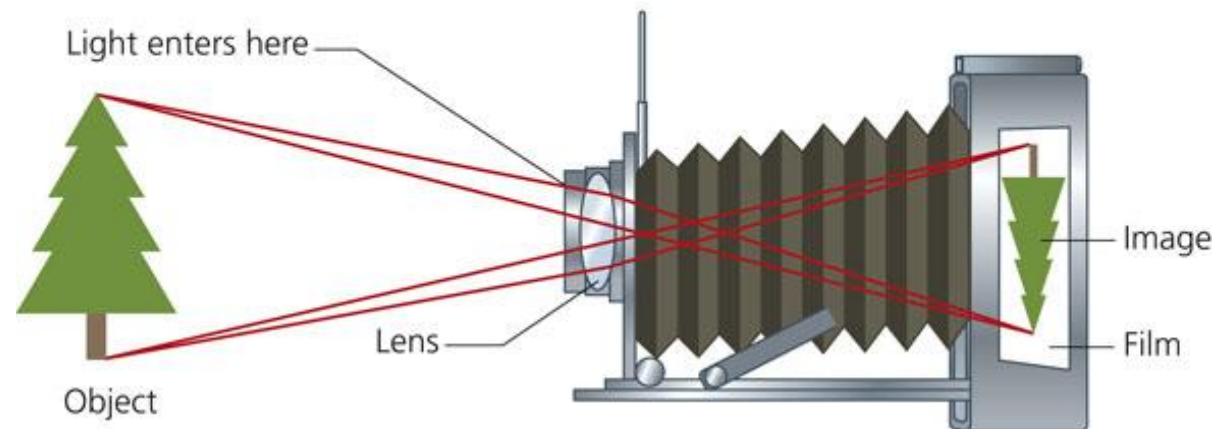
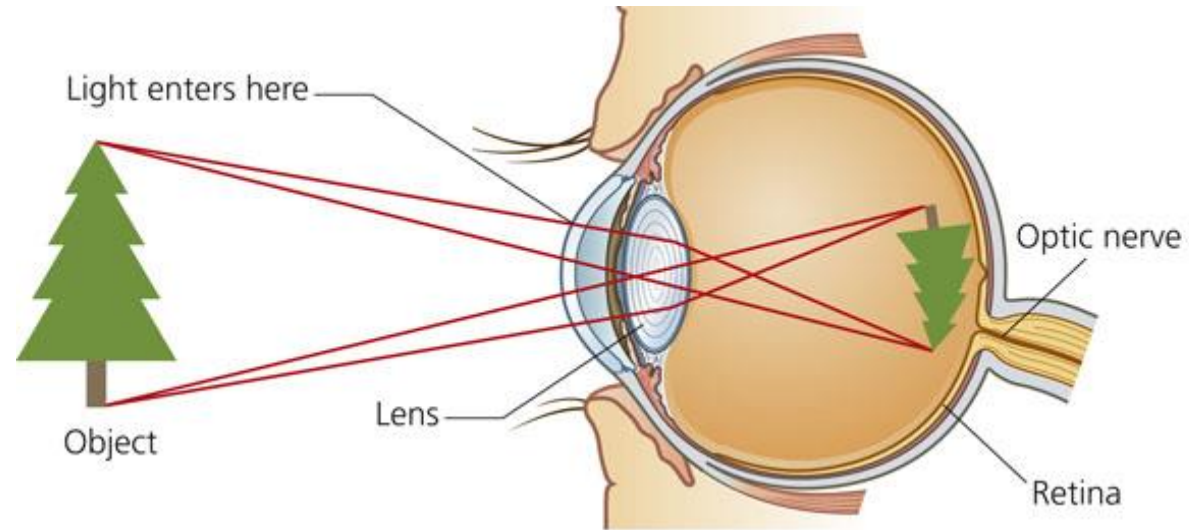


Light Refraction and Focused Vision in the Eye Video

Summary of Video:

- Light is Refracted or bent through the lens to the retina
- Corrective lens puts the focus correctly on the retina
- Cataract is loss of lens transparency

Image Creation



Diagnostic Testing

Refraction

- Utilizes a phoropter to assess visual acuity by comparing corrective lenses.

Slit Lamp Examination

- Examines anterior eye structures, including the cornea, iris, and lens.

Intraocular Pressure Measurement

- Utilizes a tonometer to measure IOP.

Direct Examination:

- Uses an ophthalmoscope for evaluating internal eye structures.

More Diagnostic Tests

Fluorescein Angiography:

- Injects fluorescein dye to visualize retinal and choroid abnormalities.

Ophthalmic Ultrasonography:

- Measures tissue density and detects abnormalities using A-scan or B-scan ultrasound.

MRI and CT Imaging:

- Evaluates orbital and intracranial structures, though CT may have limitations in ophthalmology.

Case Planning

- **Verification of the operative site**
 - Correct Eye!
- **Positioning the patient for ophthalmic surgery**
 - Beach Chair is common
- **Prepping and draping**
 - Eyelid, margins, inner and outer canthus, face skin prep
- **Anesthesia**
 - Surgical work is directly near Anesthesia and the airway
- **Ophthalmic drugs**
- **Instruments**
 - Specialty eye trays and micro instruments



Ocular Diseases and Disorders

- Chambers of the eye can become damaged
- Irregularities of epithelial surface
- Retinal and choroid diseases
- Eye tissue abnormalities
- Orbital structures

Equipment and Supplies

- **Electrosurgical Unit:**

- Two types: single-use, battery-powered cautery and bipolar unit.
- Battery unit for coagulation, bipolar unit for cutting and coagulation.



- **Eye Sponges:**

- Made of lint-free cellulose.
- Used for blotting blood or fluid, never on the cornea.

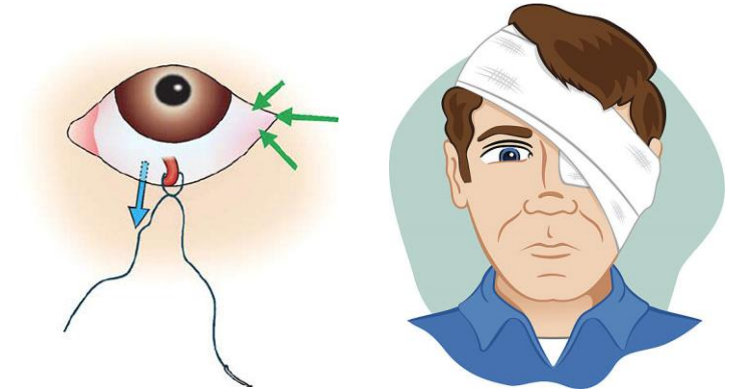


- **Sutures:**

- Supplied in various materials and sizes.
- Handle gently to protect needles and suture material.

- **Ophthalmic Dressings:**

- Soft gauze for fluid absorption and debris prevention.
- Rigid shield for protection against bumping or abrasion.



Microsurgery

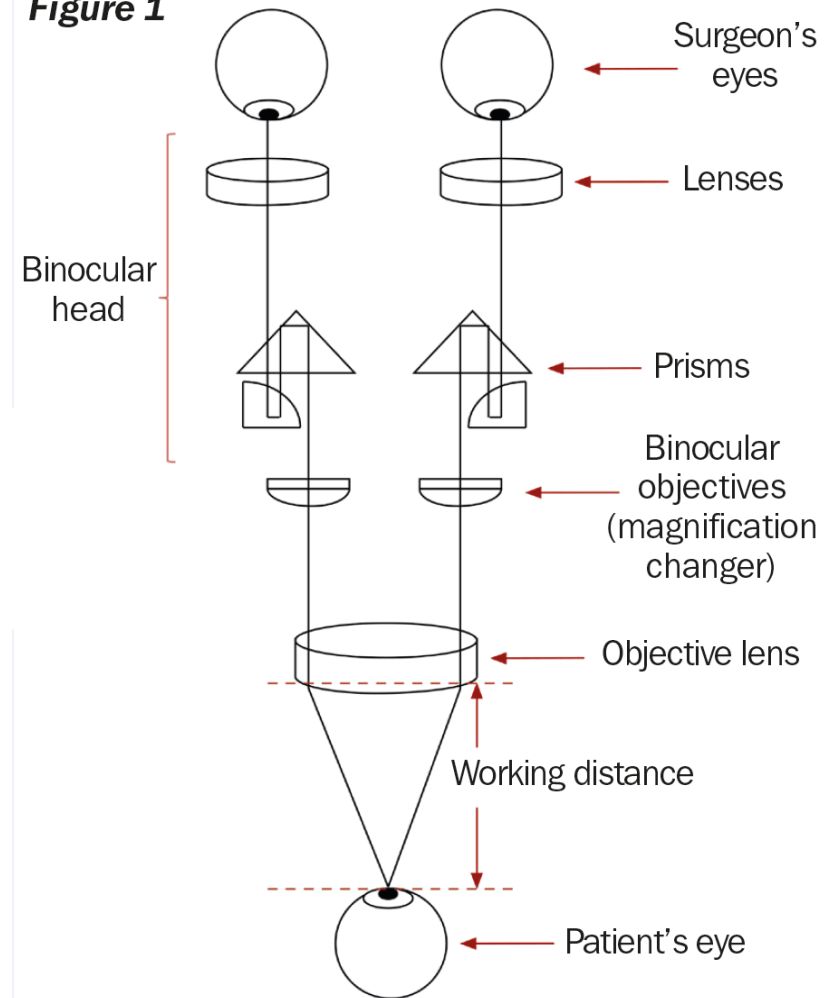
- Surgeon's field of vision magnified, but scope limited, requiring special instrument passing techniques and uninterrupted concentration to reduce patient injury risks.
- Stillness essential; ST ensures minimal microscope movement and steady hand to prevent harm.



The Operating Microscope

- Delicate equipment; ST familiarizes with components to prevent damage.
- Guidelines: Secure arms, balance, adjust for eyesight, tighten controls, handle carefully, make adjustments before surgery.

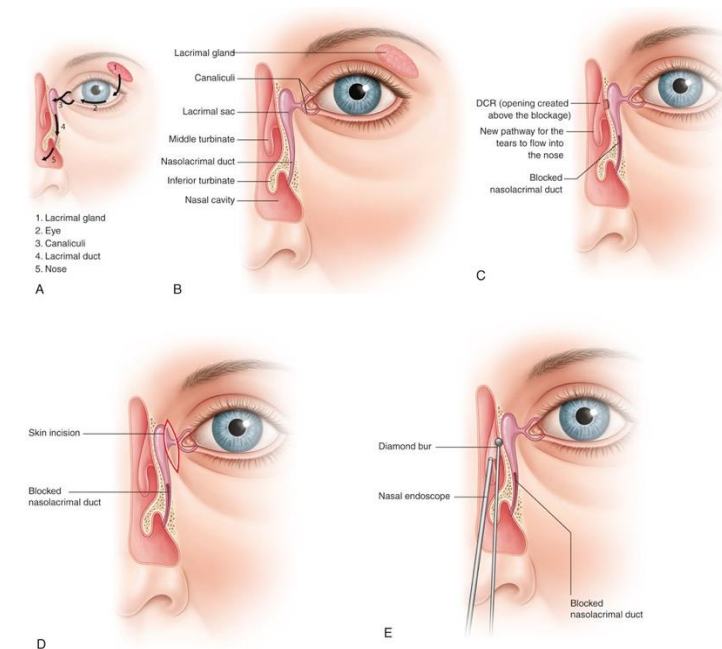
Figure 1



Ophthalmic Surgical Procedures

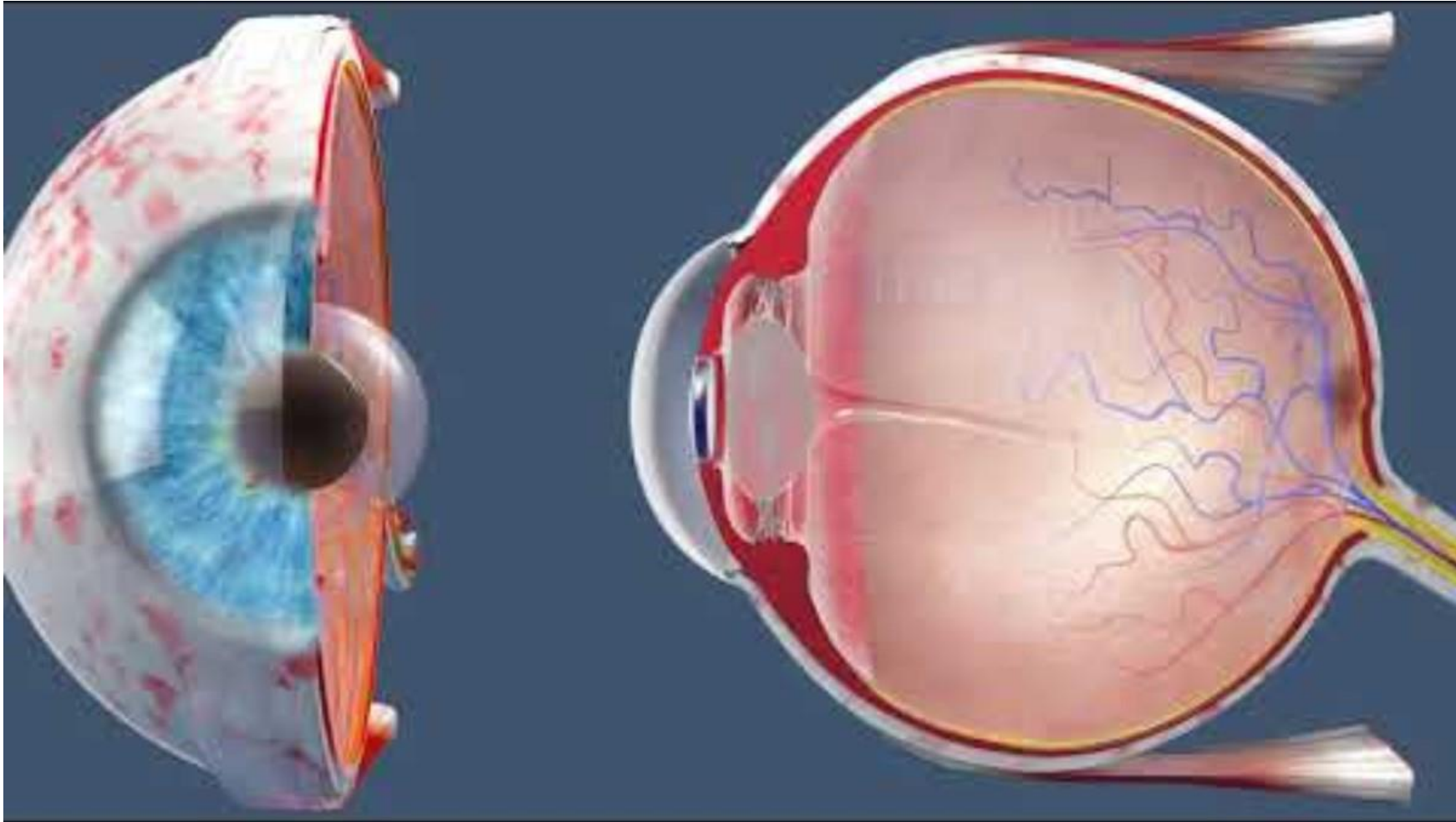
- Excision of a chalazion
- Dacryocystorhinostomy
- Muscle resection and recession
- Penetrating keratoplasty
- Extracapsular cataract extraction
- Anterior vitrectomy
- Scleral buckling procedure for detached retina
- Filtering procedures and trabeculectomy

- Eye removal
- Periorbital lacerations
- Eyelid lacerations



Watch the "Cataract Surgery" Video

Cataract Surgery Video



Cataract Surgery Video

Summary of Video:

- Laser portion and Surgical Portions
- Use of Microscope

Surgical Interventions

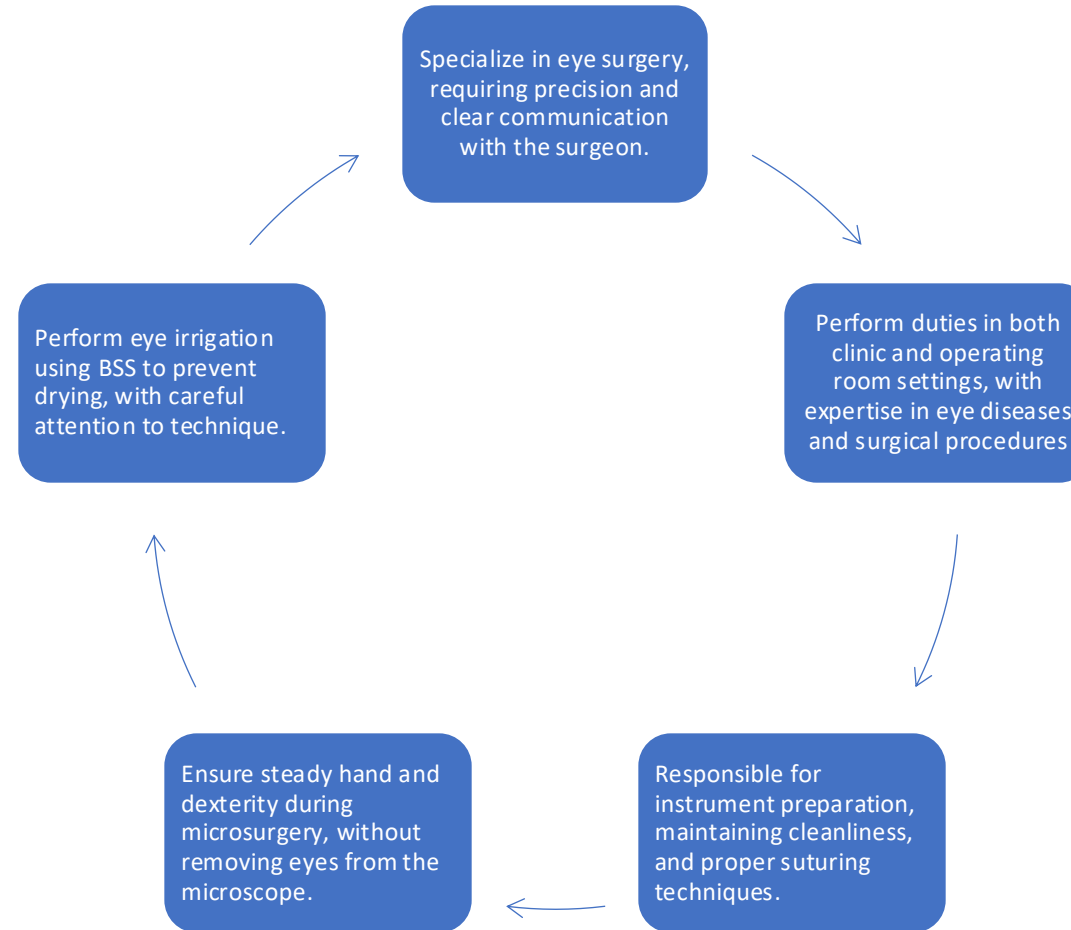
❓ Procedures

- › Surgical repair of chalazion
 - ❓ Small lump on inner or outer eyelid
 - ❓ <https://www.youtube.com/watch?v=1GA-Rx-U-Ow>
- › Surgical repair of entropion
 - ❓ Abnormal inversion of the lower lid margins which causes eyelashes to rub against the cornea
 - ❓ <https://www.youtube.com/watch?v=z2l8B7z05to&t=193s>
- › Iridectomy
 - ❓ Removal of a section of the iris
 - ❓ <https://www.youtube.com/watch?v=TpODWd1avgA>
- › Strabismus correction: recession/resection
 - ❓ “Crossed eyes”, “Wall eyes”, or “Lazy eye”
 - ❓ http://www.youtube.com/watch?v=rAK_T7Vuwww

Surgical Interventions (contd.)

- › Scleral Buckle
 - http://www.youtube.com/watch?v=nsp_X0EHQ7s
- › Dacryocystorhinostomy
 - Nosocomal duct is obstructed by tissue or bone
 - <https://www.youtube.com/watch?v=poD8crsb7gQ>
- › Enucleation
 - <https://www.youtube.com/watch?v=X7KA1dVcNYs>
- › Keratoplasty (corneal transplant)
 - <https://www.youtube.com/watch?v=IYdMaMfz67c>
- › Cataract extraction
 - Extracapsular <http://www.youtube.com/watch?v=rUCoQzui704>
 - Intracapsular http://www.youtube.com/watch?v=Gvz-o_BITow

Role of Scrubbed Surgical Technologist



Read Chapter 25 from the E-book!

Read **Chapter 25** from your E-Book to pass the upcoming quiz from **Surgical Technology - Elsevier eBook on VitalSource, 8th Edition**.

[Click Here](#) to read chapter 25!

Thank you!

Get ready for your quiz and rest of the activities now. Best of luck!



Congratulations!

Lesson 25 is complete.