

Primary Eye Care Training for SMO

Dr Hla Mar Lar

Programe Manager

Trachoma control and Prevention of Blindness

Anatomy of the eye

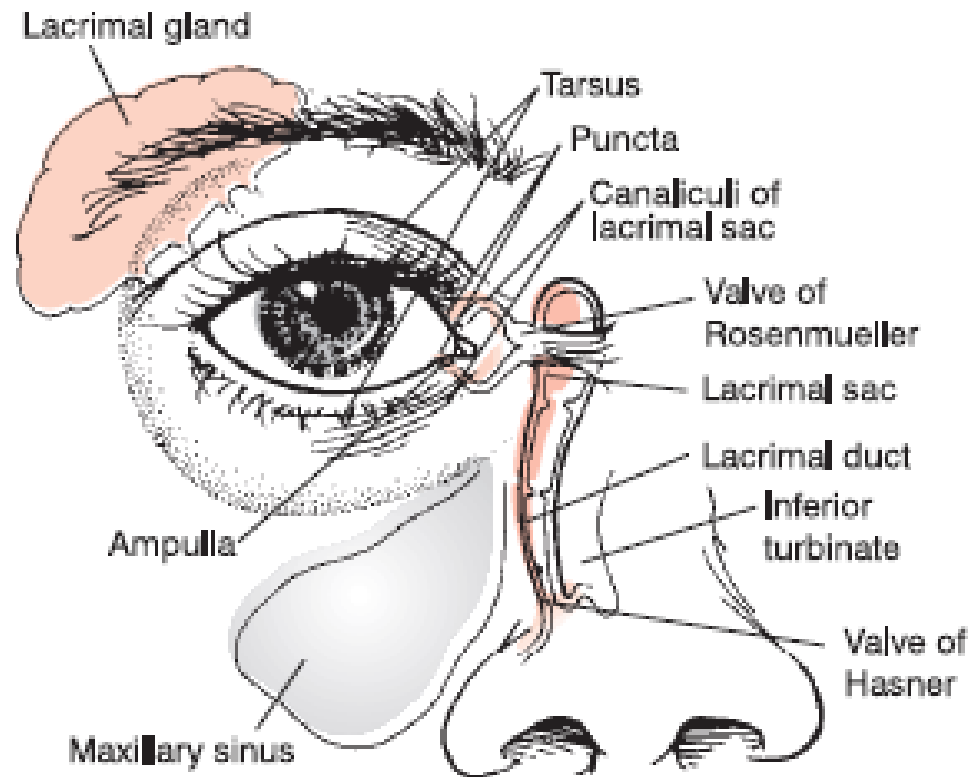
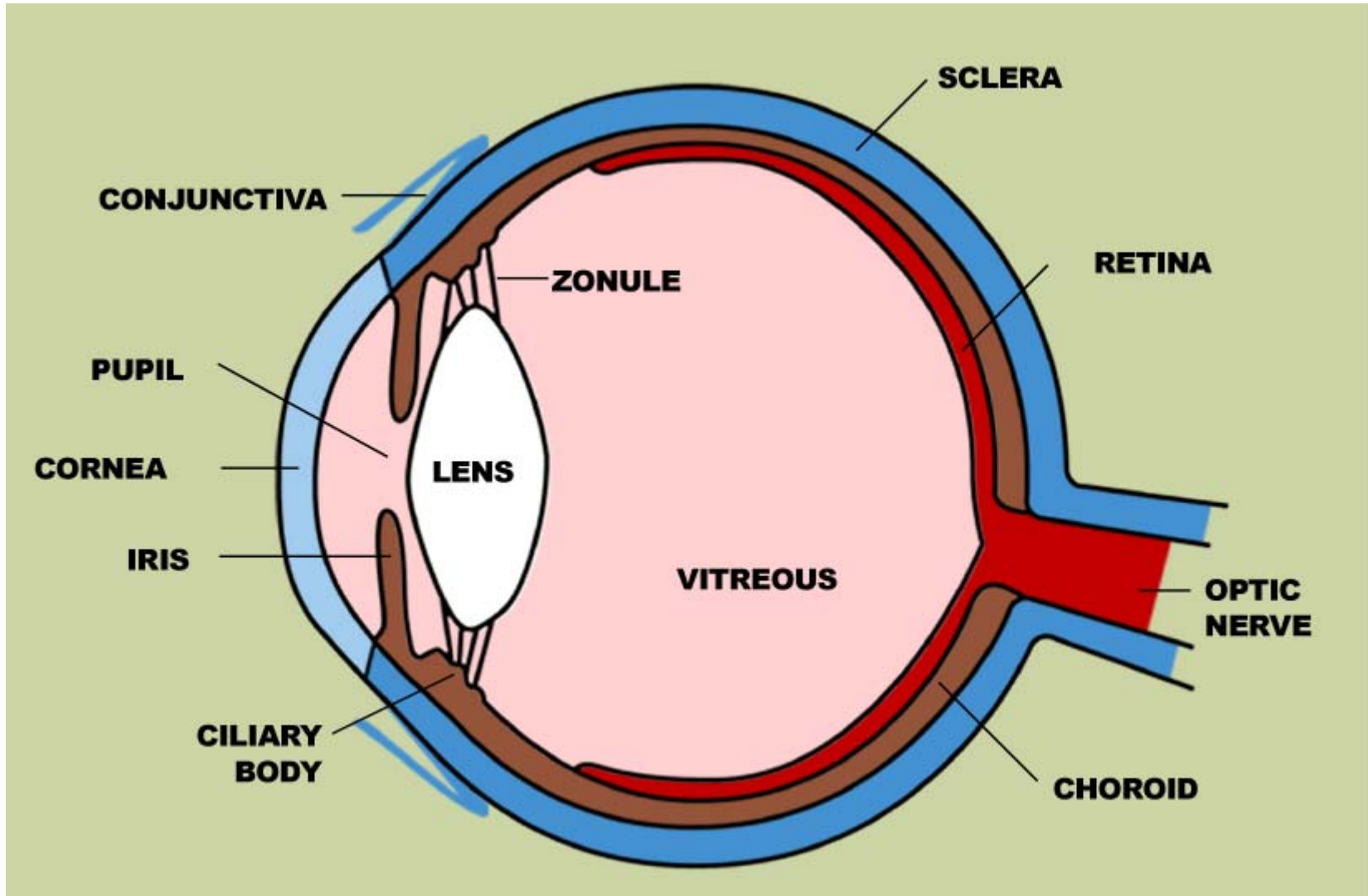


Figure 1-14



Function of the eye

Eyelid

- Thinnest skin in the body
- Mechanical barrier to external insults (e.g., foreign body)
- Contribute to production & drainage of tear film

Eyelashes

- The only hair in the body which never gets grey
- Protective function

Conjunctiva

- Mucous membrane
- Contains lymphoid tissue and contribute to part of immune system

Cornea

- Clear and transparent
- Acts as refractive surface; filters dangerous UV lights
- Protective barrier to infection and trauma

Sclera

- Loose connective tissue
- Provides tough protective coat around the globe

Iris & Pupil

- Entry of light and visual stimuli

Anterior Chamber & Posterior Chamber

- Circulation of aqueous humor

Lens

- Protects dangerous UV light
- Acts as refractive media

Ciliary Body

- Formation of aqueous humor

Retina

- Receive light and visual stimuli

Optic Nerve

- Relay visual stimuli to the visual cortex

Extraocular Muscles

- Movement of eyeball

Lacrimal Gland

- Produces tear

Common Causes of Red Eye

- Conjunctivitis
- Acute Angle Closure Glaucoma
- Subconjunctival Haemorrhage
- Anterior Uveitis
- Keratitis / Corneal Ulcer
- Episcleritis

CONJUNCTIVITIS

- Any infection or inflammation of the conjunctiva

Causes

1 .Infective

- 1.Bacterial
- 2.Viral
- 3.Trachoma

2.Allergic

3.Physical and chemical irritants

- 1.Foreign bodies
- 2.Dust and smoke
- 3.UV light

SYMPTOMS

- Sensation of irritation
- Discharge
- Itching
- Discomfort in eye
- Slight pain
- Photophobia

SIGNS

- Hyperaemia & Congestion
- Increased secretion (discharge)
 1. Watery (viral)
 2. Muroid (vernal)
 3. Purulent (bacterial)
 4. Mucopurulent (bacterial, chlamydial)
- Oedema of the conjunctiva (chemosis)
- Follicles (Chlamydia, viral)
- Papillae (Allergic)

TREATMENT

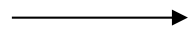
1. Bacterial



Antibiotic eyedrops

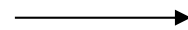
(e.g., ciprofloxacin, chloramphenicol)

2. Viral



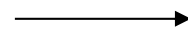
Symptomatic (artificial tears)

3. Trachoma



Azithromycin, TEO ointments

4. Allergic



Anti-allergic

(Corticosteroid, antihistamine, mast cell stabilizing drops)

Cold Compress to relieve the pain

Personal Hygiene

Angle closure glaucoma

Glaucoma

- Chronic optic neuropathy with progressive visual field loss in which increased intraocular pressure is an associated factor

Types

- Primary/Secondary
- Open Angle/Angle Closure
- Congenital/Acquired

Acute Attack of Angle Closure Glaucoma

Symptoms

- Ocular emergency
- Sudden loss of vision
- Periocular pain
(sometimes mistaken with headache)
- Redness
- Nausea and vomiting in severe cases

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Management

Immediate treatment

- Tab Acetazolamide 500mg stat & 1 tds
- Hyperosmotic agents - Oral glycerine, IV Mannitol
- Topical steroid(dexamethasone) E/D qid
Topical pilocarpine 2% E/D qid
- Analgesic & antiemetics

REFER TO EYE SURGEON

Laser Treatment

- Nd:YAG laser iridotomy

Surgical procedure

- Trabeculectomy with peripheral iridectomy

	Conjunctivitis	ACG
Age	Any age	Middle to old age
Vision	Normal	Severe visual loss
Pain	Foreign body sensation	Dull, aching periocular
Discharge	(+)	(-)
Cornea	Clear	Hazy
Pupil	React	Dilate & Fixed

Subconjunctival Haemorrhage

- Any age
- Associated with minor injuries
- History of hypertension, blood disorders, coughing

Symptoms

- Red eye (sudden onset, no pain)

Signs

- Normal visual acuity
- Hyperaemia of conjunctiva (sectoral or diffused)

Treatment

- Reassurance
- Vitamin C supplement
- Cold compress



Acute Anterior Uveitis

Symptoms

- Ocular Pain , Red eye, Photophobia
- Blurring of vision, water discharge

Signs

- Circumciliary Congestion, Corneal Keratic Precipitates
- AC cells and flares, Hypopyon
- Miosis
- Posterior synechiae (adhesion of iris & lens)
- IOP (reduced or elevated)

Treatment

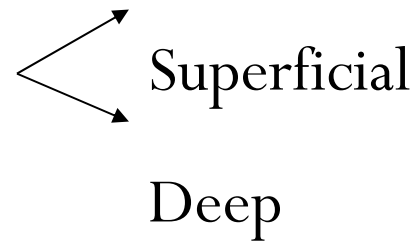
- Mydriatics (to dilate pupil)
 - Atropine E/D (A1)
 - Tropicamide E/D (Mydracyl)
 - Cyclopentolate E/D
- Steroids (to ↓ the inflammation)
 - eye drops
 - Periocular injection
 - systemic

Complications

- Band Keratopathy
- Posterior synechiae (Adhesion between iris and lens)
- Secondary cataract, glaucoma

KERATITIS

Any type of corneal inflammation



CORNEAL ULCER

Loss of some of the epithelium and inflamed in the surrounding cornea

CORNEAL SCAR

Final result (white and opaque)

PERFORATION

Blindness

Causes

- Bacterial
- Viral
- Fungal
- Filamentous
- Nutritional (Vitamin A deficiency)
- Vernal (Allergic)

Symptoms

- 1. Pain
- 2. Blurred vision
- 3. Photophobia
- 4. Watering

Signs

- Superficial Punctate Epithelial Erosion
- Punctate Epithelial Keratitis
- Epithelial oedema
- Filaments
- Pannus

Causes	Signs	Treatment
Viral Herpes Simplex common	Irregular, superficial dendritic	Antiviral (Acyclovir ointment) * (Not steroids)
Bacterial common	Central or lower Cornea, slough around Ulcer and hypopyon	Topical and systemic antibiotics (Mono/Duotherapy)
Fungal infection	Chronic, ring shape ulcer, hypopyon	Antifungal agents * (Not steroids)
Nutritional	Central and lower half of cornea, both eye	Vitamin A
Vernal ulcer (Allergic)	Central oval ulcer, both eye, itching	Topical steroids

- Mydriatics (Atropine) eyedrops in bacterial and fungal ulcers to prevent posterior synechiae and reduce pain
- Visual Rehabilitation (Keratoplasty for cornea scars)

EPISCLERITIS

- Inflammation of the episclera
- Common, benign, idiopathic and recurrent

SYMPTOMS

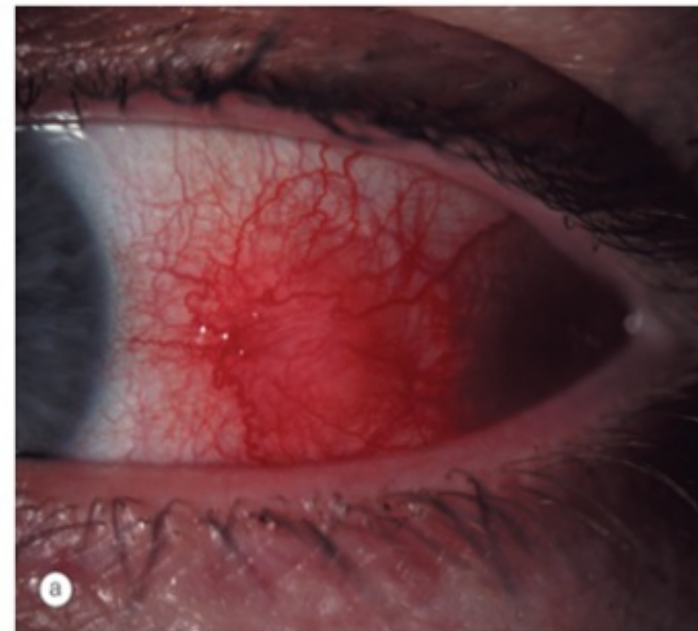
- Pain (constant and often severe)
- Redness

SIGNS

- Nodular or diffuse hyperaemia on the episclera

TREATMENT

Cold artificial tears,
Oral NSAIDs (analgesics)
Topical steroids



CLINICAL FEATURES of Trachoma

- Incubation period - 2-3 weeks
- chronic disease, progresses slowly

Disease Stages

- Active Trachoma
- Scarring Trachoma

Symptoms

- Irritable red eye and mucopurulent discharge

- Nearly always bilateral

Corneal changes

- upper part under upper eyelid
- Superficial punctate keratitis
- Pannus
(Growth of blood vessels to cornea)

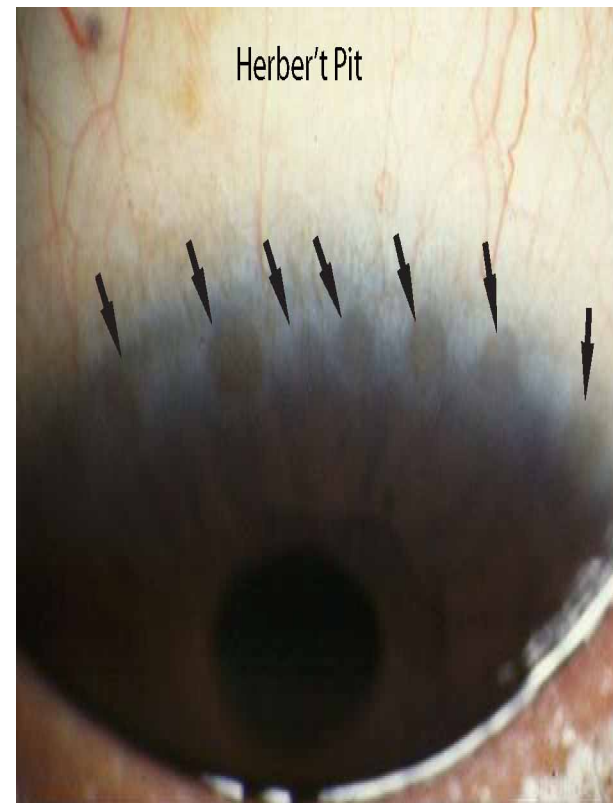
Herbert's pit

(scarred and shrank follicles to form little pits at the limbus)
characteristic sign of trachoma.

Pannus



Herbert's Pits



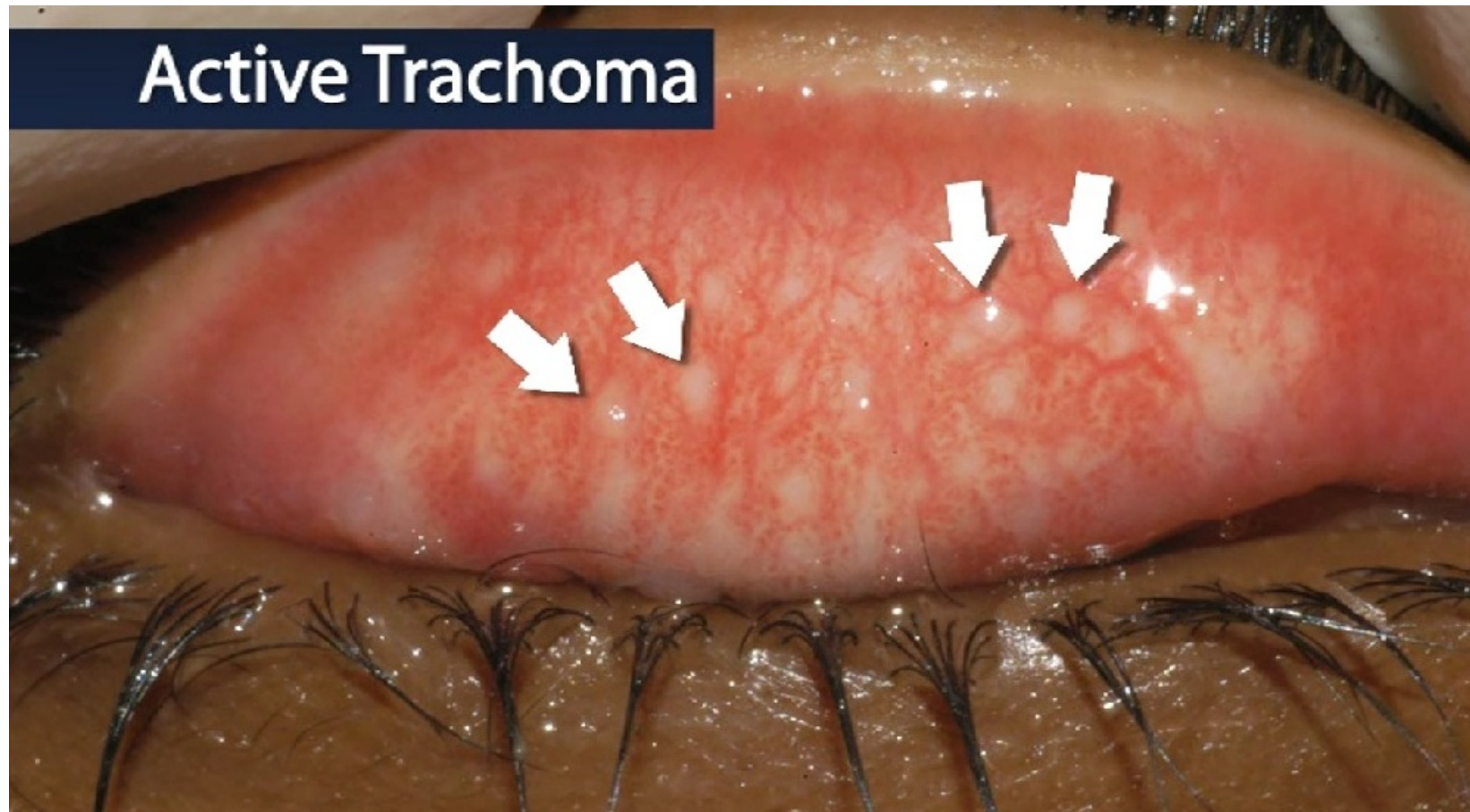
Scarring

- Eyelid (upper) entropion,
margin of eyelid turns inward
- Trichiasis – inturning eyelashes, one or more
- Tarsal plate – thickened and deformed
- Meibomian glands – obstructed or destroyed

Classification of trachoma (WHO)

- **TF -Trachoma with follicles**
Active disease, needs treatment
- **TI -Trachoma intense**
Sever disease, needs urgent treatment
- **TS -Trachomatous scarring**
Old infection, now inactive
- **TT -Trachomatous trichiasis**
Needs urgent surgical treatment
- **CO -Corneal Opacity**
Visual loss from previous trachoma

Trachoma with follicles



TREATMENT

- **Topical**

1% tetracycline eye ointment

- Continuous treatment-TEO 2 times a day x 6 weeks
- Intermittent treatment – TEO 2 times a day for a week each month x 6 months

- **Systemic**

Azithromycin,

- single oral dose 1 g for adults
- 10 mg / kg for children

PREVENTION OF TRACHOMA

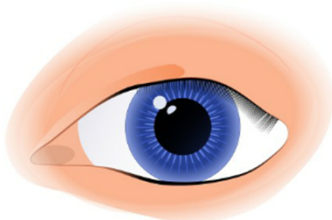
Community based strategy by WHO

- **S SURGERY FOR TRICHIASIS**
- **A ANTIBIOTICS**
- **F FACE WASHING TO REDUCE
TRANSMISSION**
- **E ENVIRONMENTAL HYGIENE
WATER SUPPLY, SANITATION**

Cataract

- Opacification of lens

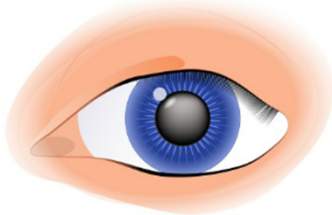
Cataract



Healthy eye



Clear lens



Eye with cataract



Lens clouded
by cataract

Causes of Cataract

- Degeneration
- Congenital (eg. Hereditary, Down' syndrome
rubella , galactosemia)
- Trauma
- Metabolic
- Inflammatory (ophthalmic , systemic)
- Toxic (steroids)

Clinical presentations

- Vision _ reduced (visual acuity, contrast sensitivity), glare
- Change in refraction _ myopic shift, astigmatism
- Maturity of cataract _ (immature, mature, hypermature)
- Refer to the Ophthalmologist

Thank you