DR HELEN DE JAGER

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TREATING COMMON EYE CONDITIONS IN A GP PRACTICE…

WHEN TO REFER

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MBCHB PRET, DIP OPHTH SA, FC OPHTH SA, MMED OPHTH

OPHTHALMOLOGIST IN PRIVATE PRACTICE

BROOKLYN PRETORIA AND VISIOMED (NORTHCLIFF) JOHANNESBURG

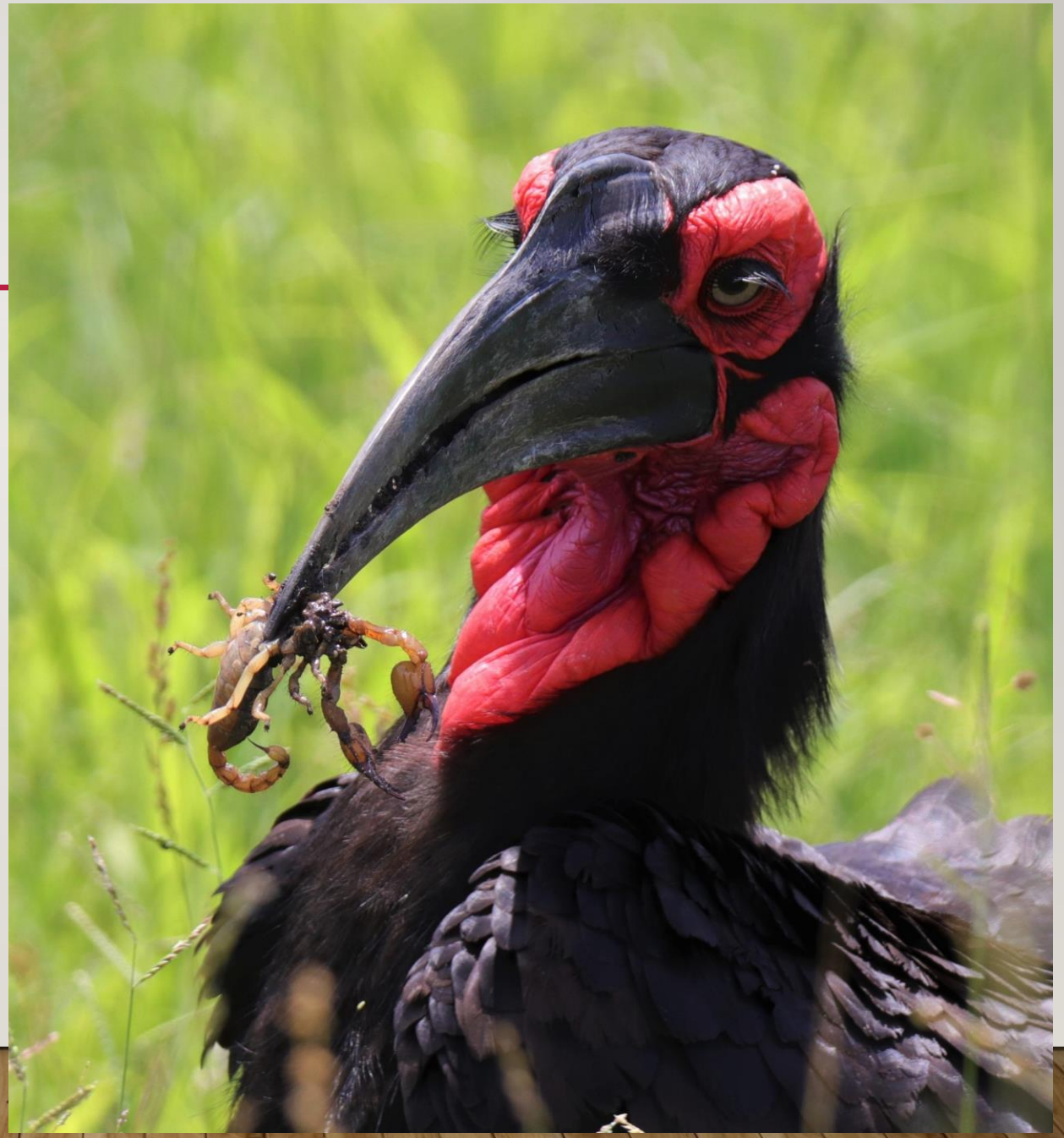
APPROACH TO THE EYE EXAM

THE EYE EXAMINATION

- History
- Examination
  - Optic nerve functions
    - Visual Acuity
    - Visual fields
    - Pupil reaction
  - Eye movements
  - Orbit

THE EYE EXAM

- Anterior segment
  - Eyelids
  - Conjunctiva
  - Cornea
  - Anterior chamber
  - Iris/Pupil exam
  - Lens
  - IOP



THE EYE EXAM

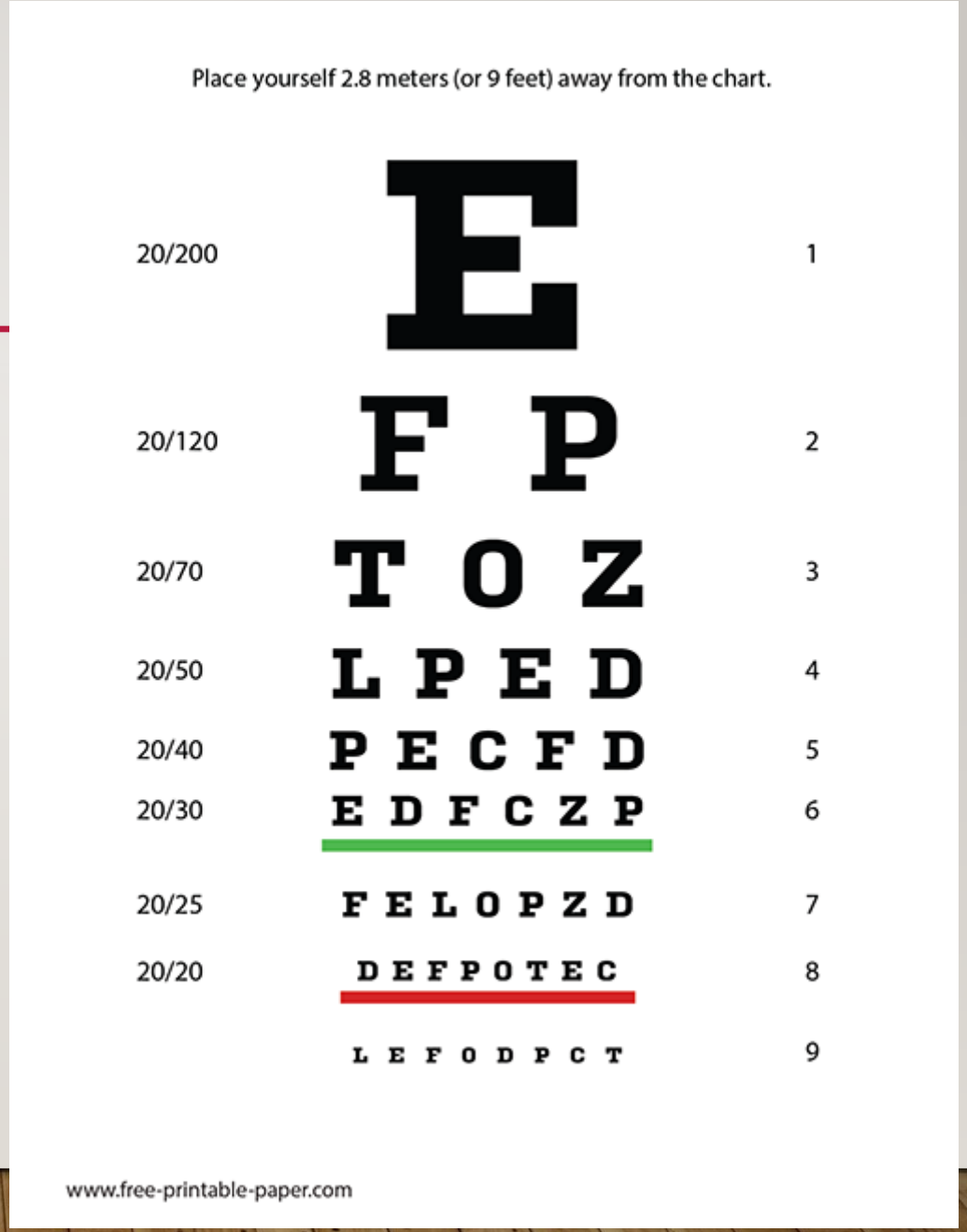
- Posterior Segment
  - Vitreous
  - Optic disc
  - Macula
  - Retinal blood vessels
  - Peripheral retina
- Eye emergencies

EQUIPMENT NEEDED FOR BASIC EXAM

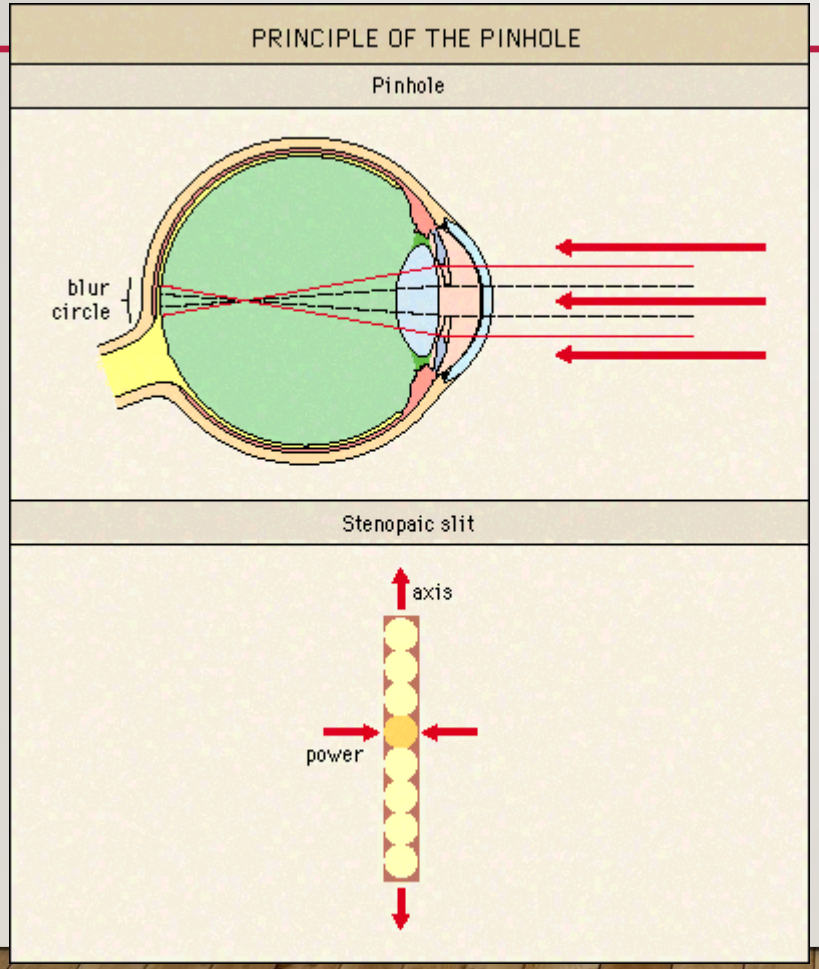
- 1. Occluder and pinhole
- 2. Snellen or pocket vision chart . Search free printable Snellen chart, Apps
- 3. Penlight and direct ophthalmoscope or Digital HANDHELD fundoscope (Aurora)
- 4. Topical anaesthetic drop(Yellow top, Novesin wonder,
  - Tetracaine 1% Minims Transpharm R 275 exVAT vir 20)
- 5. Fluorescein strips or Minims Fluorescein 2% (R400 vir 20) of
  - Strips R225 ex VAT For 100 strips Saronja Eyephrama Tel nr 082 322 0594
- 6. Mydriatic drops(Red top: Mydriacyl , Cyclomydril,
  - Tropicamide 1% Minims (R330 vir20)

SNELLEN CHART

Metre	Decimal	LogMAR
6/60	0.10	1.00
6/48	0.125	0.90
6/38	0.16	0.80
6/30	0.20	0.70
6/24	0.25	0.60
6/19	0.32	0.50
6/15	0.40	0.40
6/12	0.50	0.30
6/9.5	0.63	0.20
6/7.5	0.80	0.10
6/6	1.00	0.00
6/4.8	1.25	-0.10
6/3.8	1.60	-0.20
6/3	2.00	-0.30

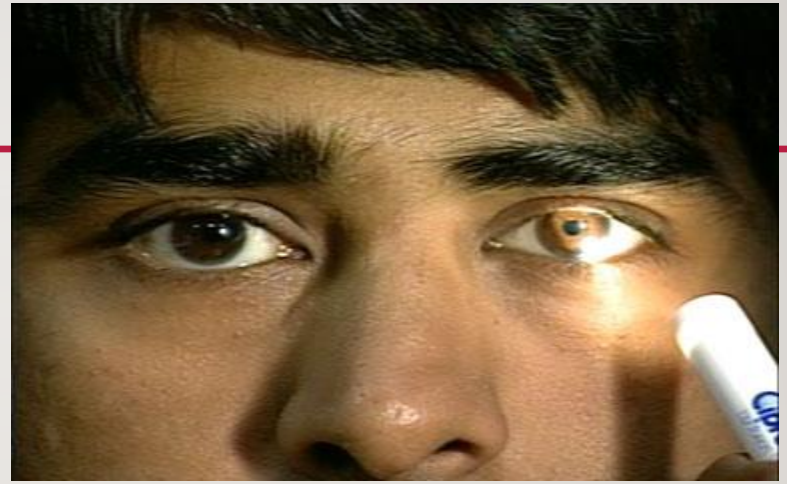


PINHOLE TEST IF VISION IS DECREASED



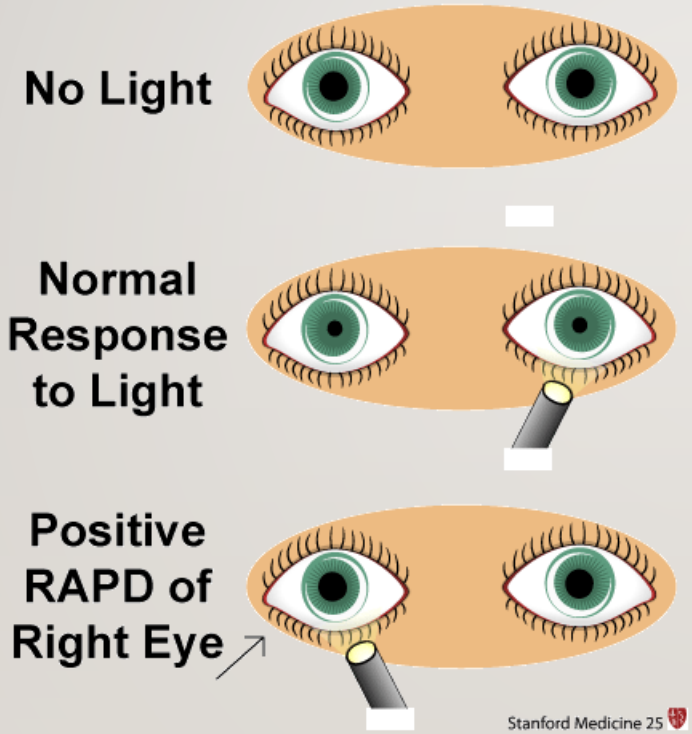
- If the VA improves with pinhole, most likely a refractive error
- Refer patient for optometrist

PUPIL REACTION



- Direct light response
- Indirect light response
- Swinging flashlight test
- Response to accommodation (Convergence, miosis)

RELATIVE AFFERENT PUPIL DEFECT(RAPD) IS DIAGNOSED WITH SWINGING FLASHLIGHT TEST



- RAPD means the pupil does not constrict to light
- <u>Reason:</u>
- Optic nerve damage or severe retinal damage
- A cataract can never give a RAPD!

CONFRONTATION VISUAL FIELD

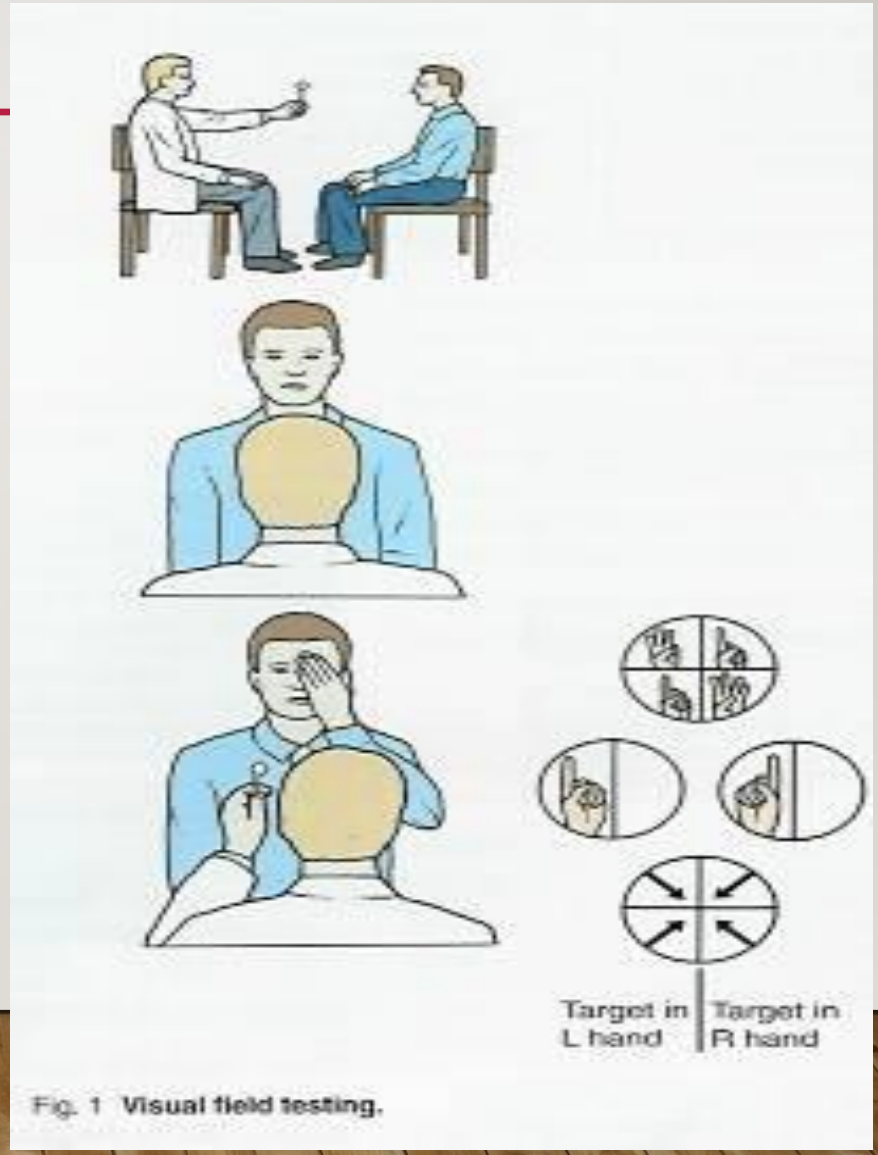
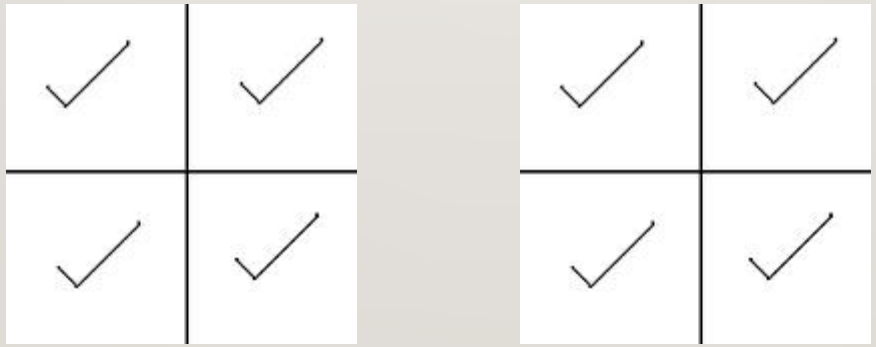


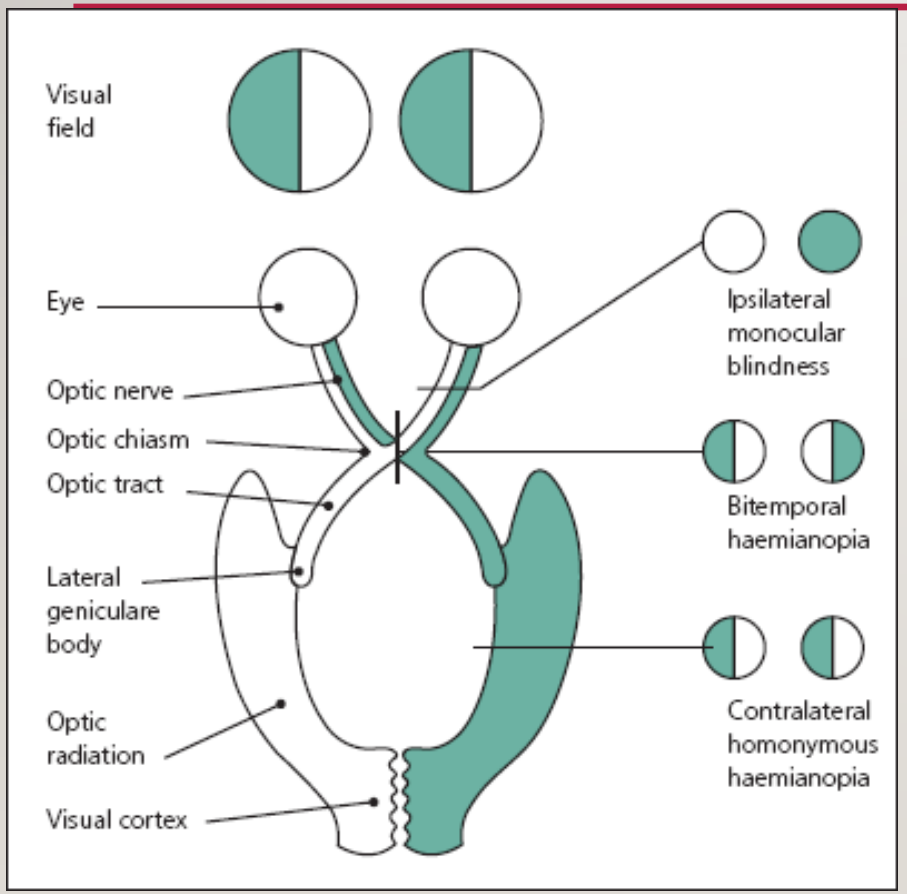
Fig. 1 **Visual field testing.**

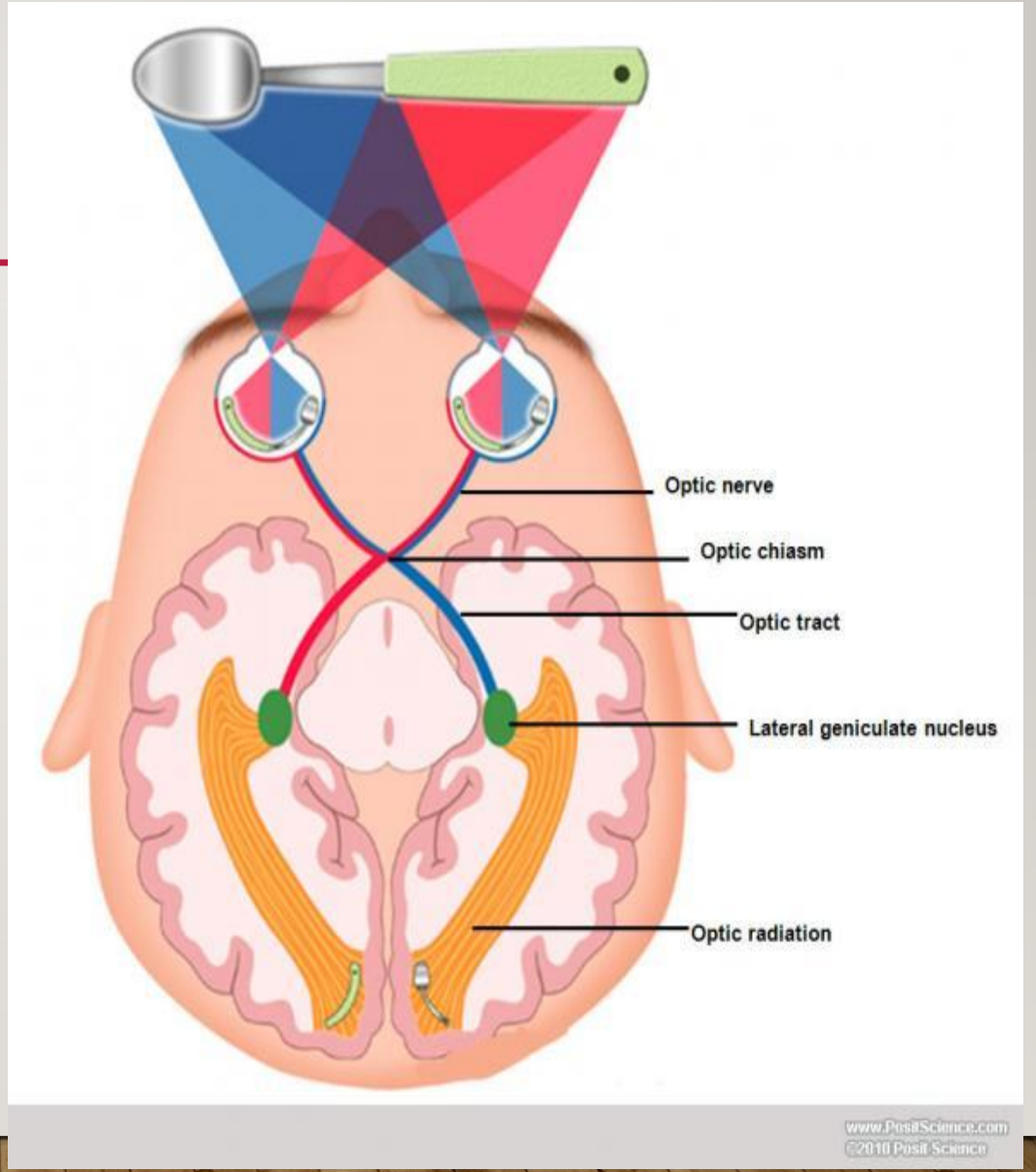
HOW TO COMMENT ON VISUAL FIELDS

- Normal: Counting fingers in all four quadrants
- Left eye of patient Right eye of patient



VISUAL PATHWAY

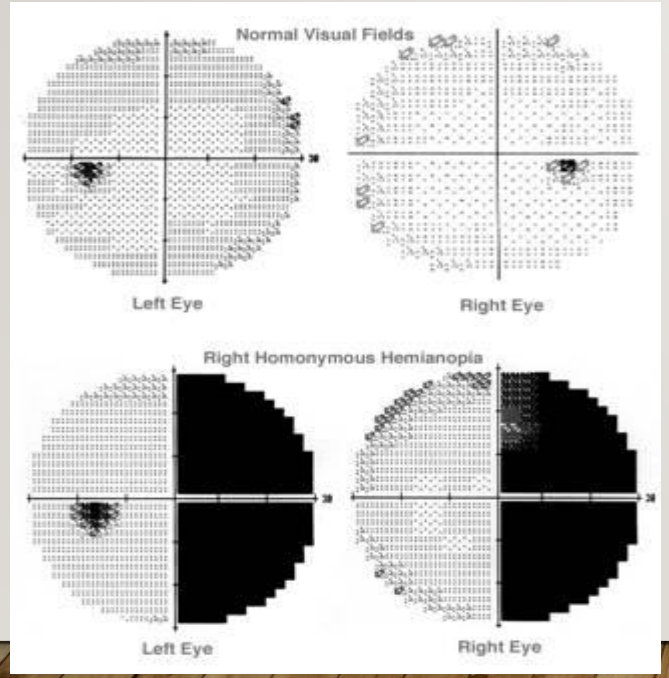




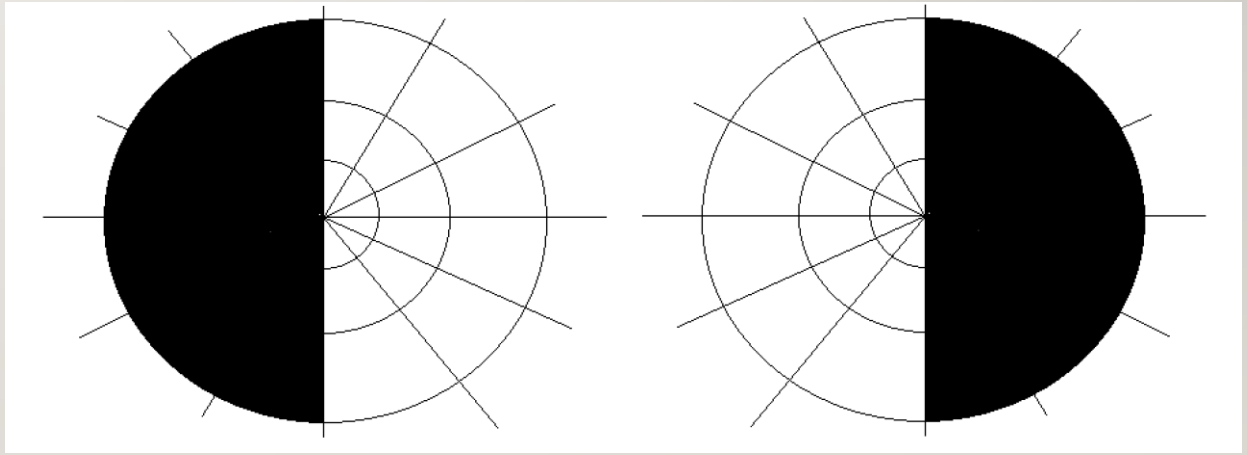
VISUAL FIELD IN PATIENT WITH A STROKE

- Patient with left occipital lobe stroke:

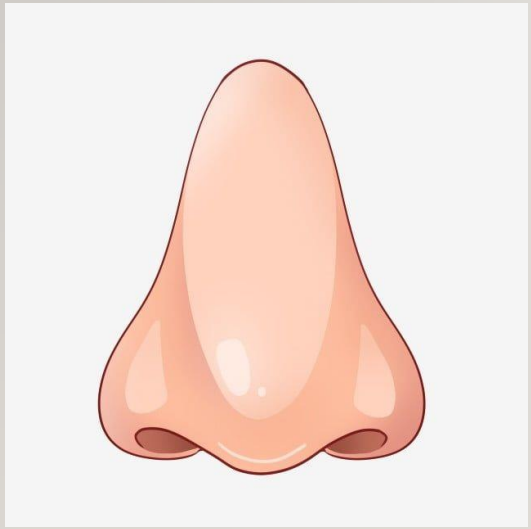
  Right homonymous hemianopia

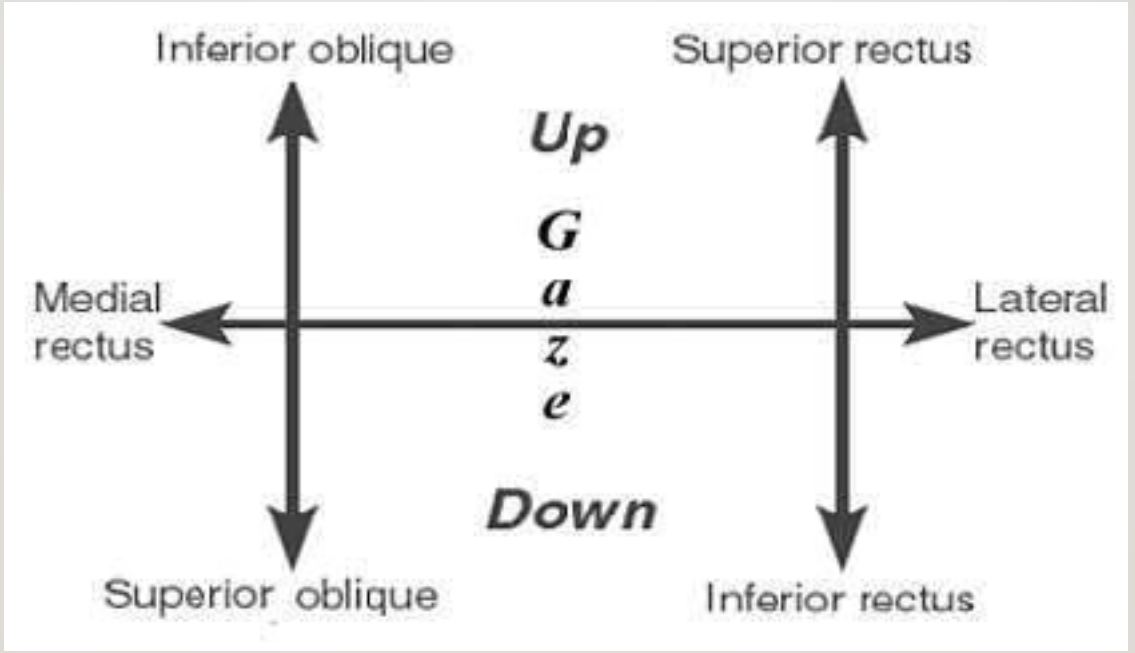


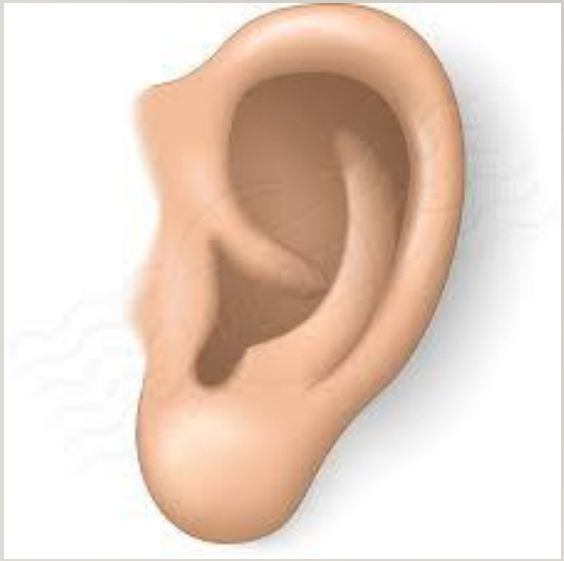
- Pituitary adenoma causes bitemporal hemianopia



THE H OF OCULAR MOTILITY







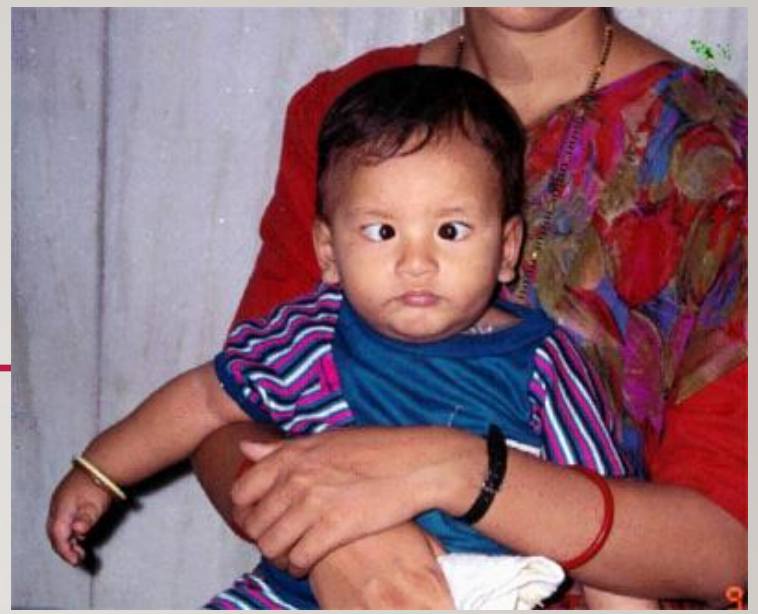
MOTILITY PROBLEMS CAN PRESENT AS:

- 1. Child with squint
- 2. Double vision
  - Binocular or Monocular
    - Ask the patient to close one eye:
    - If diplopia disappears = Binocular(eye muscle/nerve problem)
    - If persists: monocular: Refractive problem in eye(cornea or lens)
  - Horizontal or vertical

CRANIAL NERVES TO THE EYE

- LR 6 SO4
- All the rest 3

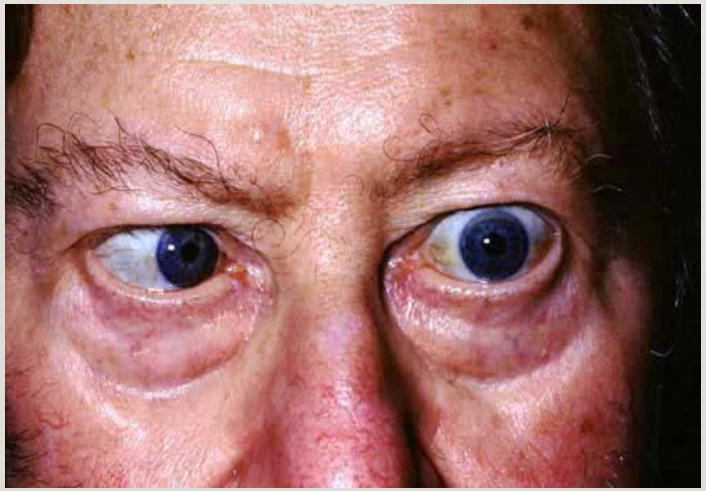
CHILD WITH A SQUINT



- All children with a squint <u>after the age of 3 months</u>
- should be referred to the eye clinic immediately
- Esotropia or Exotropia
- If unsure do cover – uncover test. Fixate at distant target, move occlude just over one eye, and then see what happens if you uncover it. There should be no eye movement… if present.. Squint!!

DOUBLE VISION

- **<u>Horizontal diplopia</u>**:
- Unable to look to the left side = Left lateral rectus palsy = Left 6th Nerve palsy
- Adults Most common cause stroke, Kids: head injury trauma



DOUBLE VISION

- **<u>Vertical diplopia and head tilt</u>** = 4th nerve palsy,
- Thus, an ipsilateral higher eye (i.e., hypertropia) and
- excyclotorsion (the affected eye deviates upward and rotates outward).
- Patients may report vertical and/or torsional diplopia that is usually worse on downgaze and gaze away from the affected side.
- Causes:
- Trauma, congenital,
- Microvascular disease(can resolve spontaneously 4-6 months

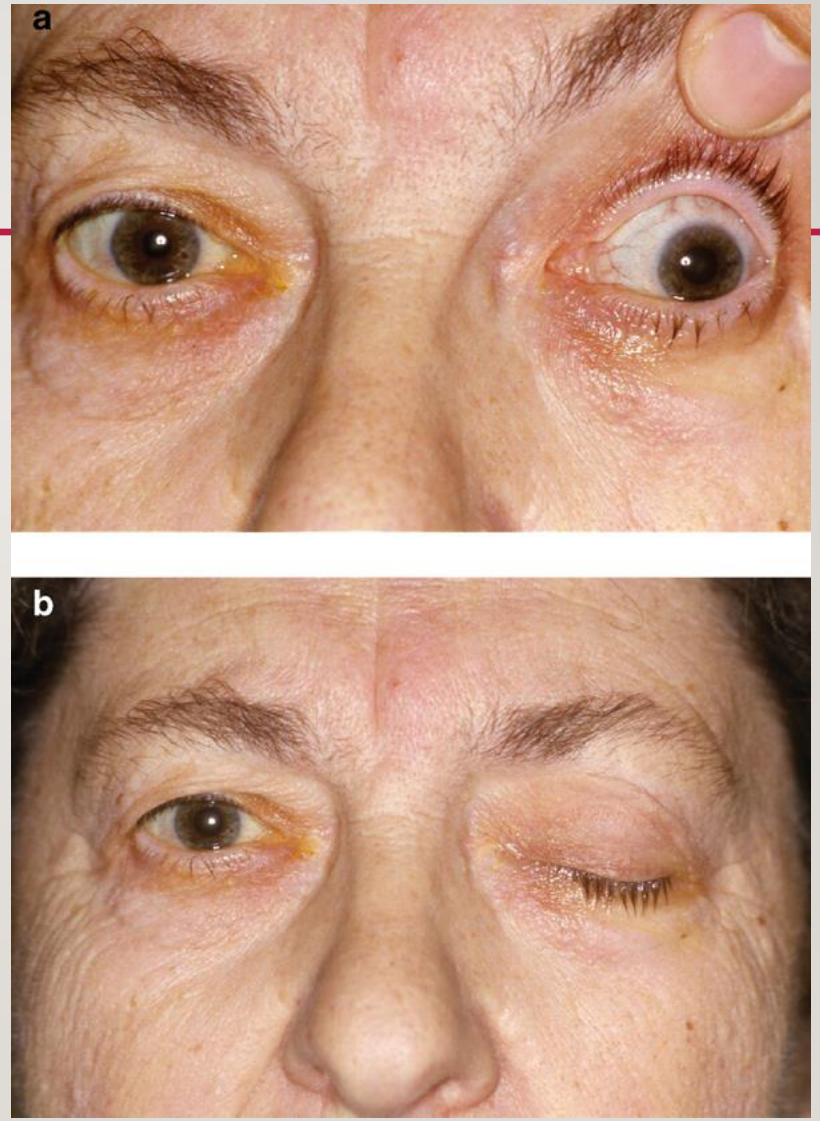
DOUBLE VISION AND PTOSIS

- Eye with ptosis, and down and out position= 3rd nerve palsy:
- Always check pupil:

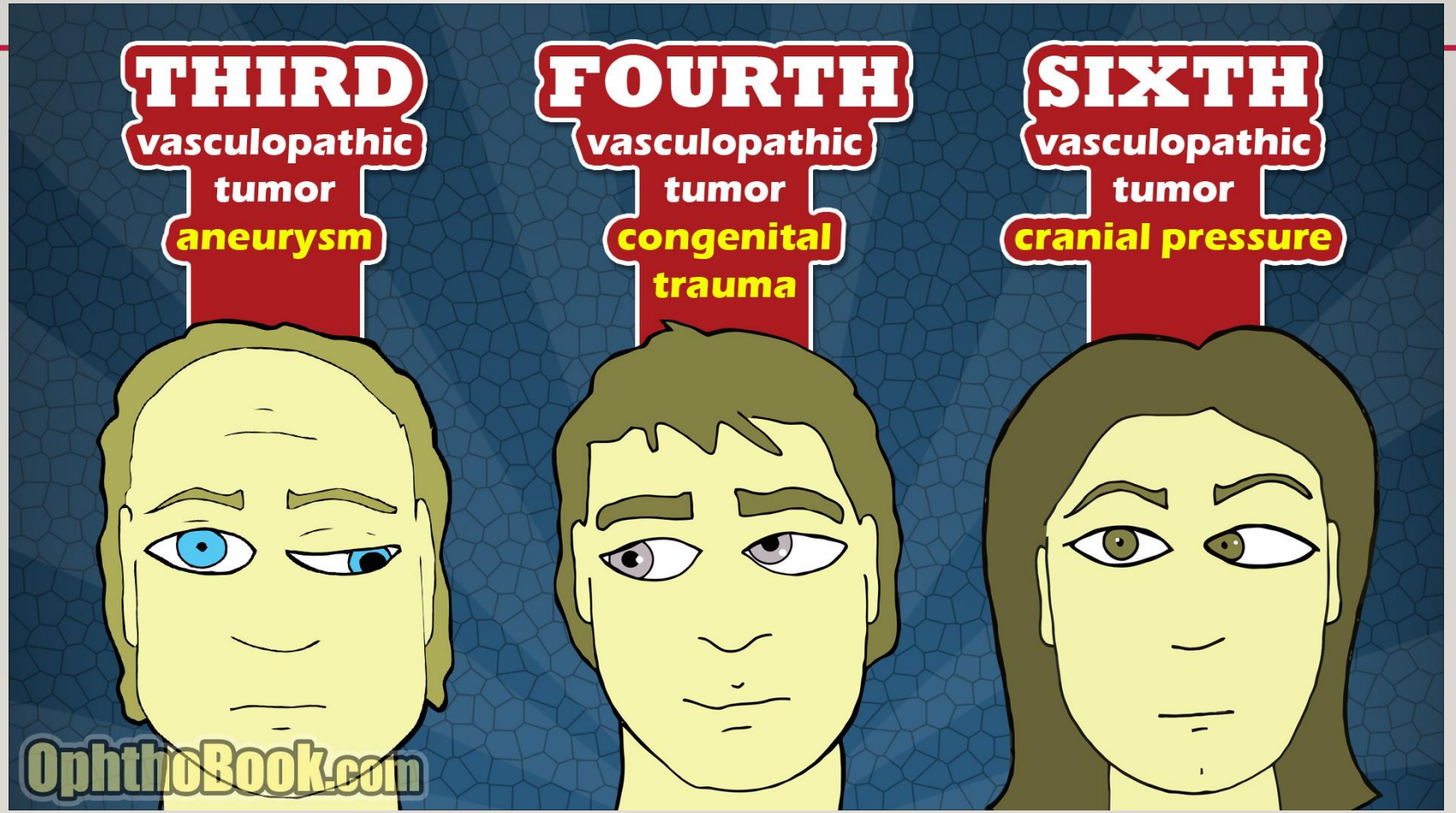
  if dilated, refer Neurosurgeon ASAP

  A posterior communicating artery aneurysm should be investigated

Pupil sparing usually ischaemic cause

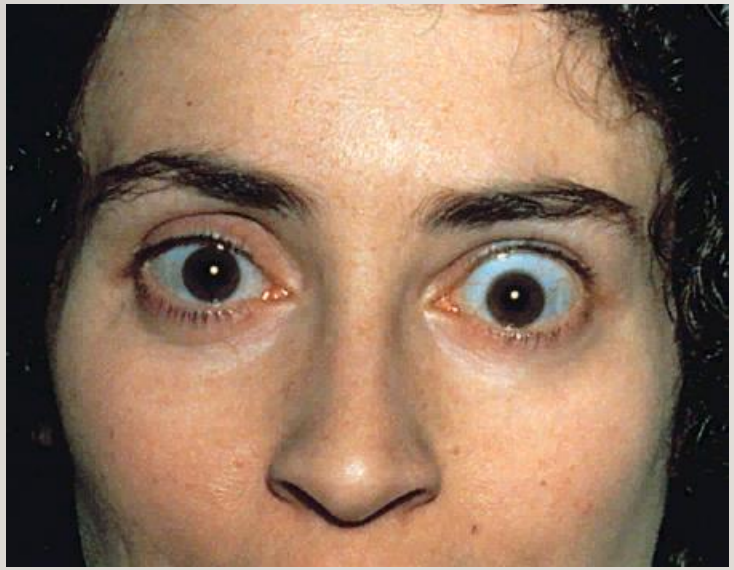


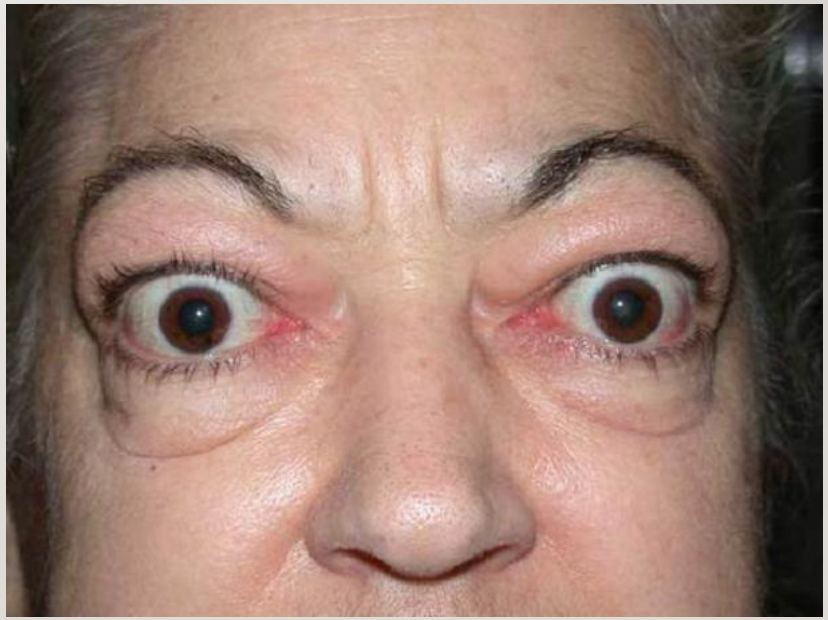
CRANIAL NERVE PALSIES



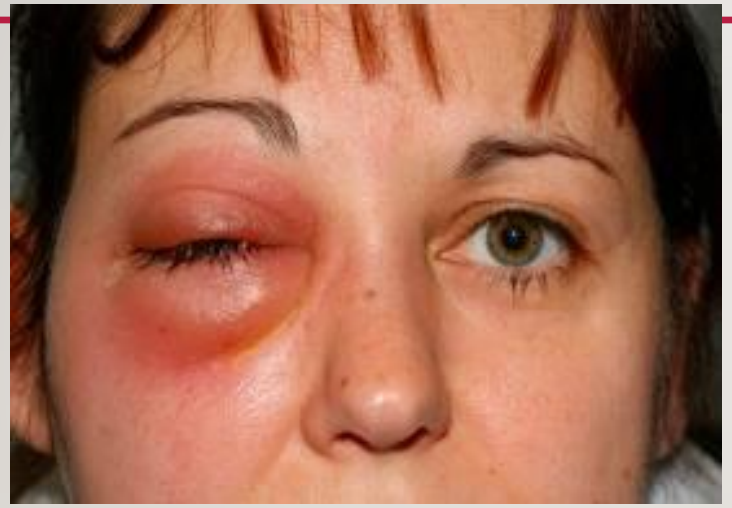
ORBIT: PROPTOSIS

- Most common cause of uni or bilateral proptosis is Hyperthyroidism

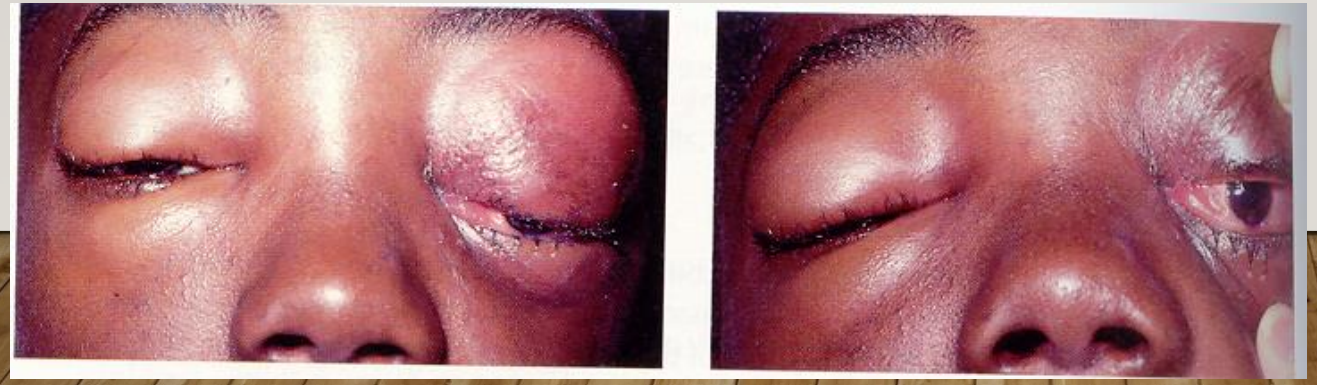




ORBIT:PROPTOSIS IN KIDS



- Child with fever, swollen lids and proptosis = Bacterial orbital cellulitis till proven otherwize
- Life threatening!
- Needs urgent CT scan, IV AB



EXOPHTHALMOMETRY

- Normal is < 20mm or < 2mm difference between the two eyes = Proptosis

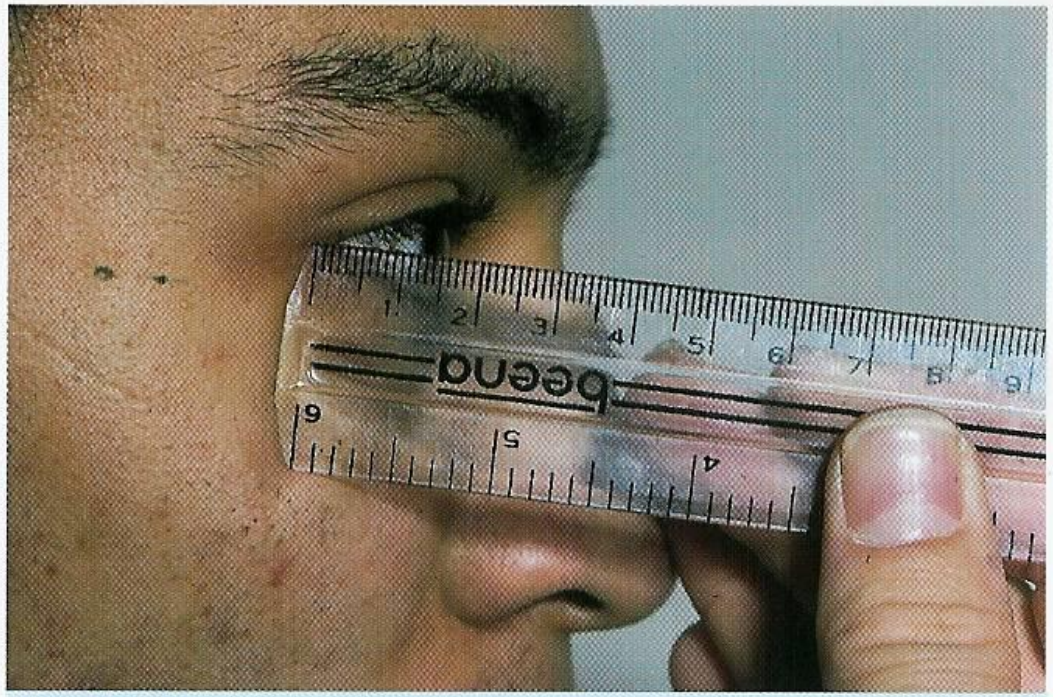
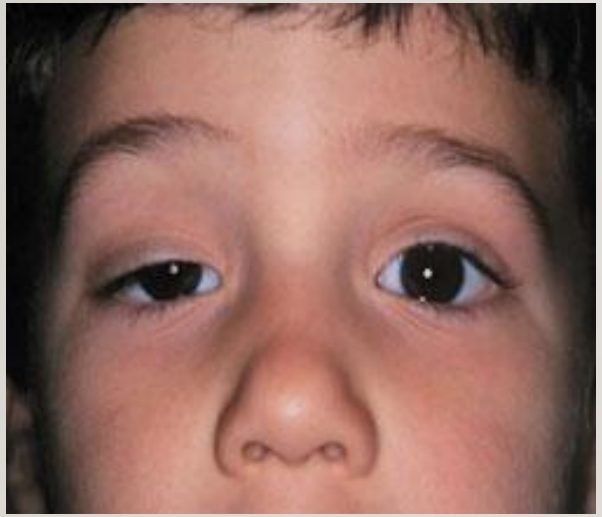


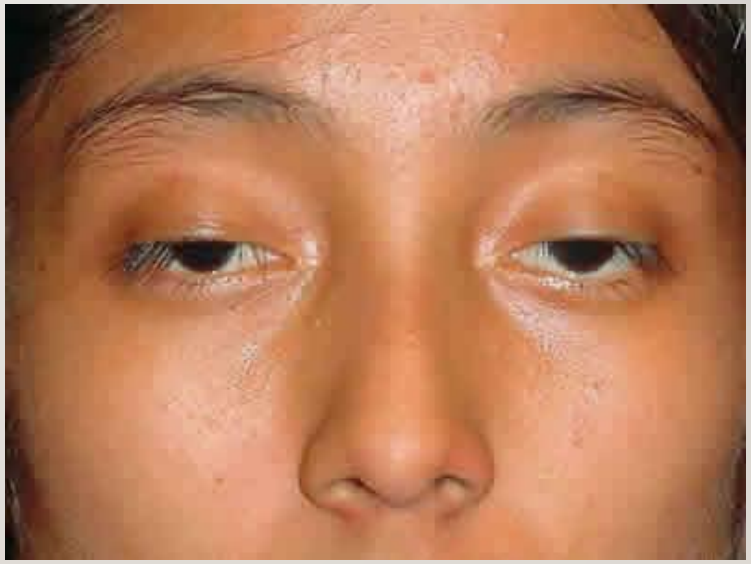
Fig. 17.4
Measurement of globe protrusion with a plastic rule

EYELIDS: PTOSIS

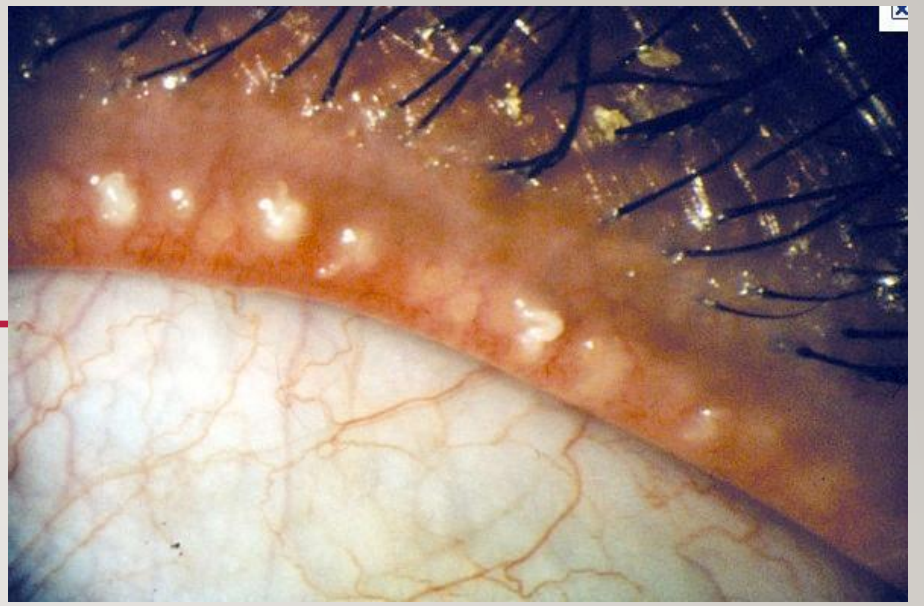
URGENT IN KIDS IF UNABLE TO SEE THE WHOLE PUPIL



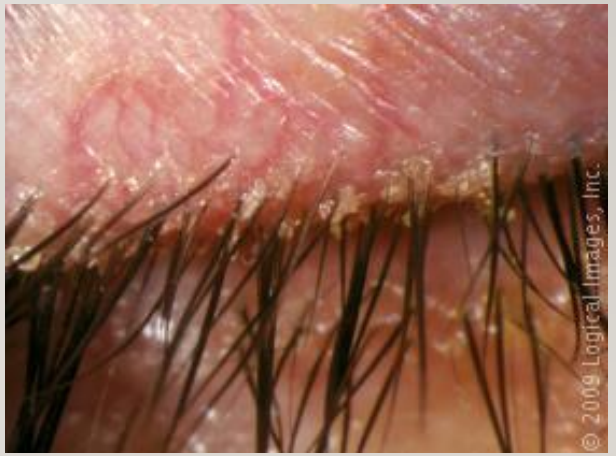
SURGERY AFTER AGE OF 5 IF ABLE TO SEE PUPIL COMPLETELY

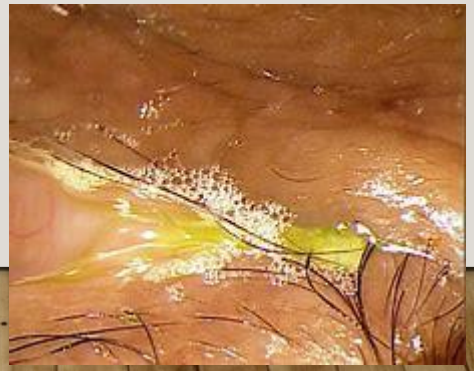


EYELIDS: BLEPHARITIS

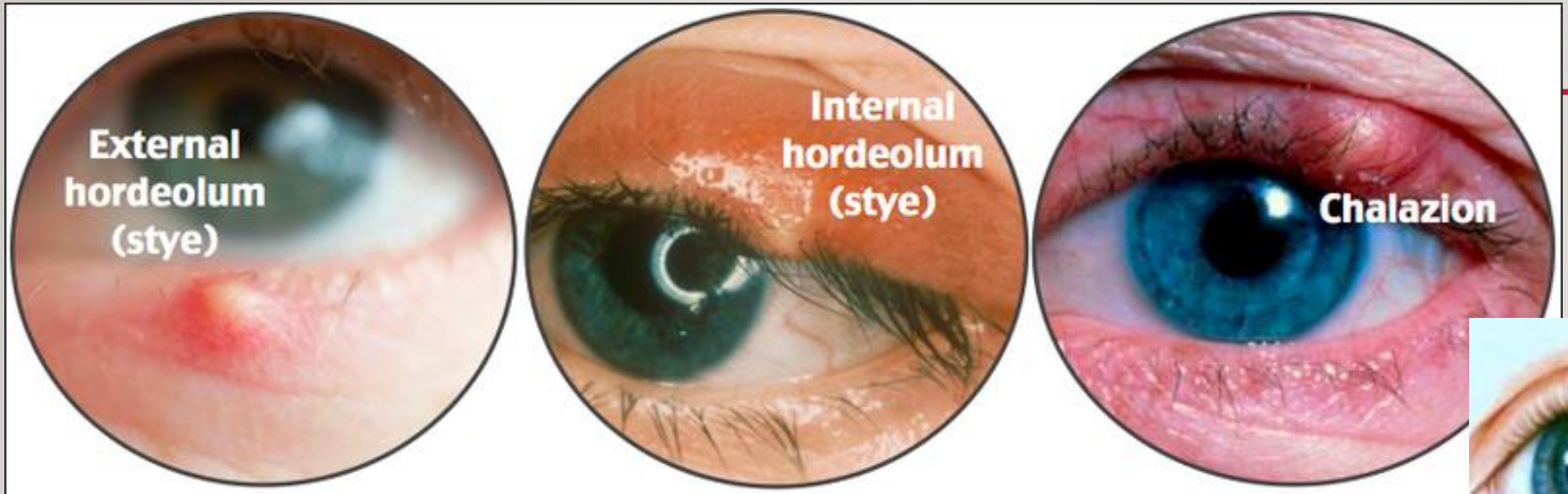


- Causes "sand in eye" feeling, red and dry eye
- Tx:
  - Warm compresses and Lid hygiene(Naviblef eyelid shampoo)
  - Antibiotics: oral Doxicycline 100mg nocte po x 6/12
  - Tear substituent: Optive Omega, Artelac Advanced
  - Topical Steroid : Alrex, FML bd OU x 3/12

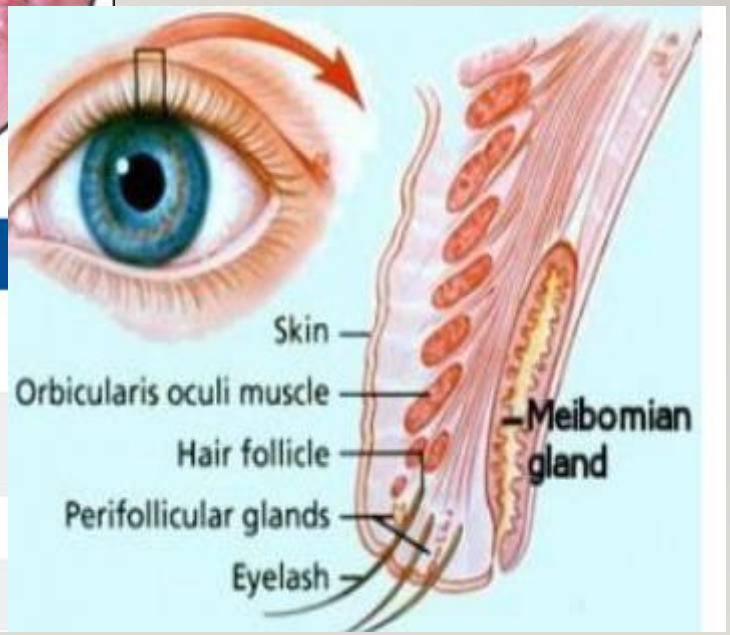




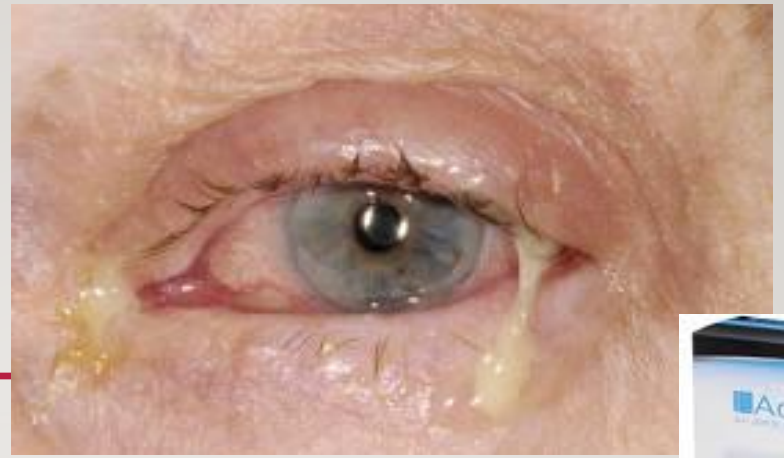
CHALAZION VS EXTERNAL HORDEOLUM



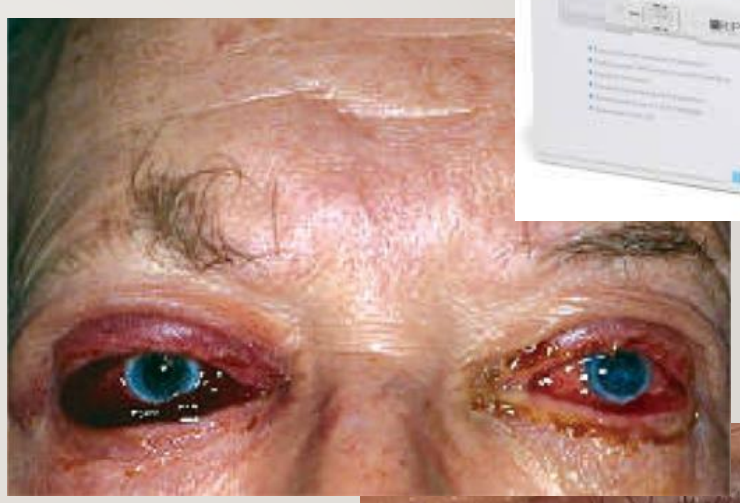
	Hordeolum (Stye)	Chalazion
Location	Most commonly found at or near an eyelash follicle	Most commonly found above the eyelashes on the upper lid
Cause	Bacterial infection either at the root of the eyelash follicle or in the oil gland of the lids	A blocked oil gland (Meibomian or Zeiss)
Symptoms	Tenderness, swelling	Firm, painless lump
Treatment	Spontaneous drainage, warm compresses	Warm compresses, antibiotic eyedrops, surgery

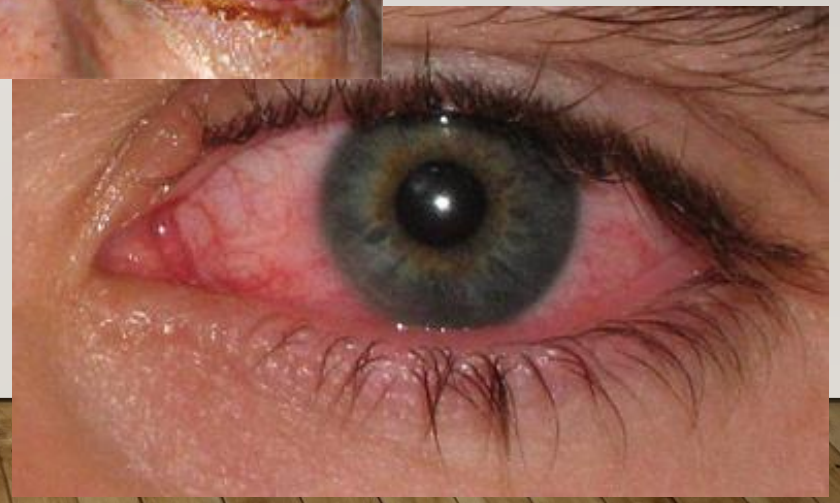


CONJUNCTIVITIS

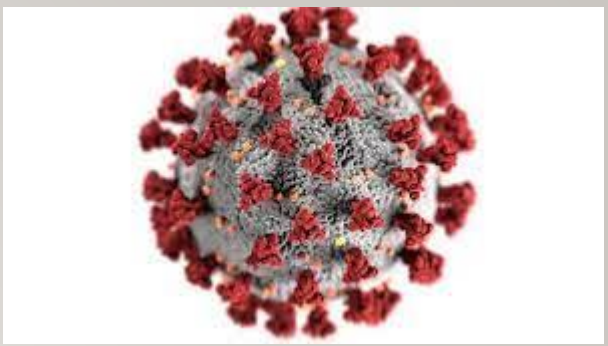


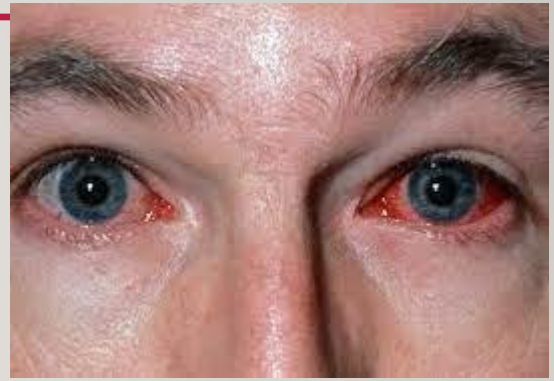
- Red eye, but normal vision
- Discharge:
  - Yellow and sticky lids: Bacterial, Tx Exocin/ Ciloxan/ Tobrex
  - Watery discharge: Viral
  - Mucous discharge: Allergy , Rx Patanol, Relestat, Zaditen



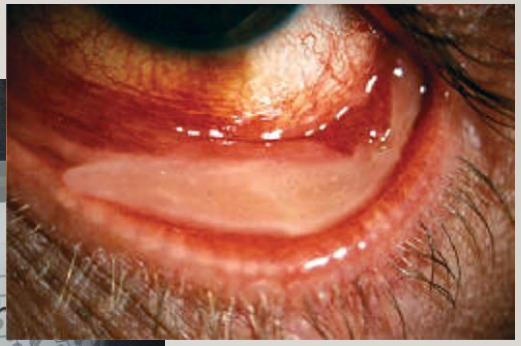


ANTERIOR SEGMENT MANIFESTATIONS OF COVID 19

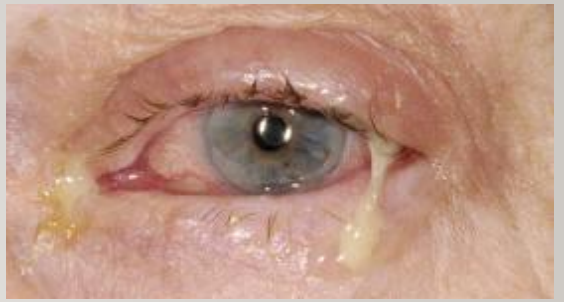




- Viral conjunctivitis (0.8-5 % of Covid positive patients)
- Can be Hemorrhagic and pseudomembranous conjunctivitis.
  - Needs debridement of membrane, PPE needed.
- Pearl: have a high index of suspicion of Covid 19 in any Conjunctivitis patient
- SARS-CO-V 2 Virus was isolated from conjunctival swabs
- Be carefull!! High risk of spreading through the practice!!
- Clean surfaces touched with alcohol swabs immediately!

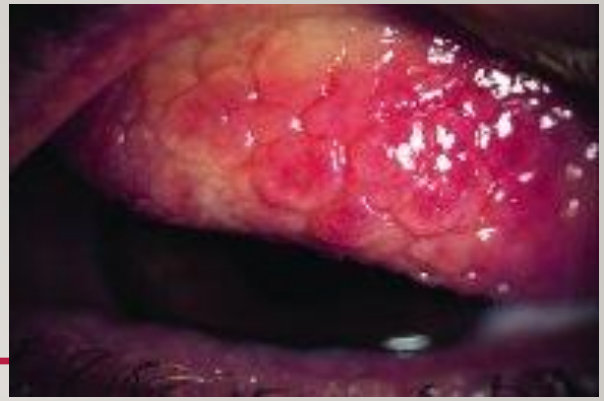


A PATIENT WITH CONJUNCTIVITIS

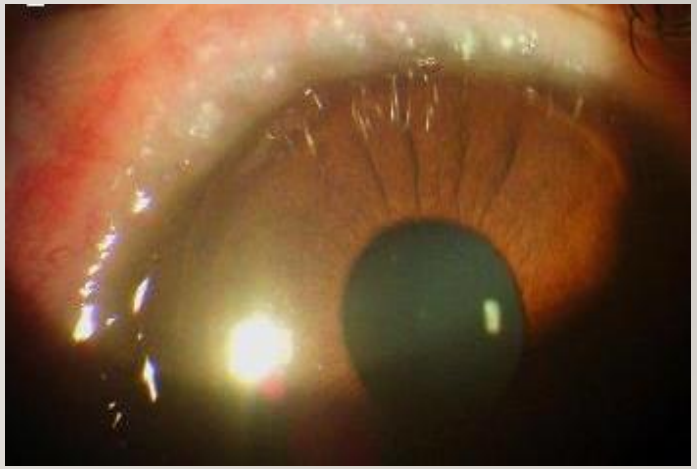


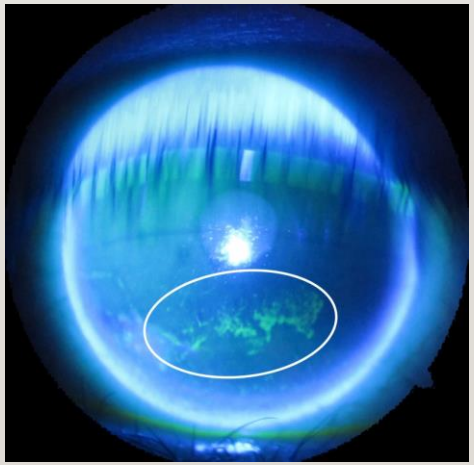
- Ophthalmia neonatorum should be referred immediately
- An adult with bacterial conjunctivitis should be referred if the condition does not resolve on routine topical AB Tx after 10 days,
  - or vision decreases
- Exocin, Ciloxan, Tobrex daytime. If steroid added, check cornea with fluorescein, and check IOP!
- Chloramex, Fucithalmic at night
- Cold compresses, anti inlfam oral for severe swelling, wipe discharge frequently wet cotton round

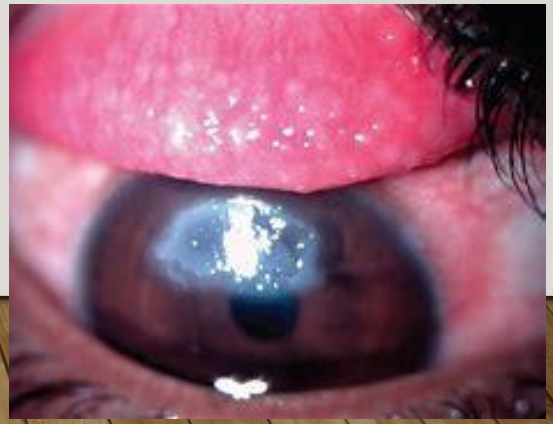
CHRONIC ALLERGIC CONJUNCTIVITIS



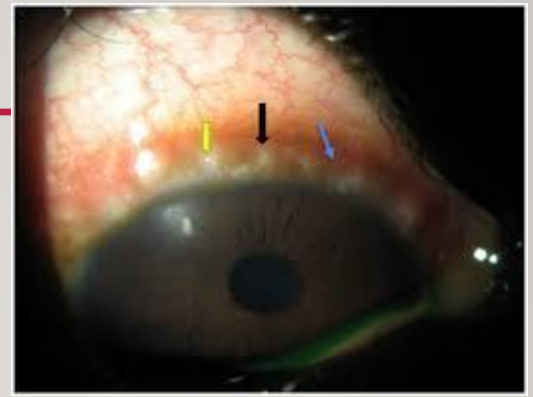
- Symptoms: Itching, rubbing of eyes
- Signs:
  - Papillary hypertrophy/cobblestone appearance of superior tarsus
  - Limbal Trantas dots
  - Keratopathy: PEE, Shield ulcers
- Refer if
  - Topical antihistamines not affective
  - Visual acuity is reduced





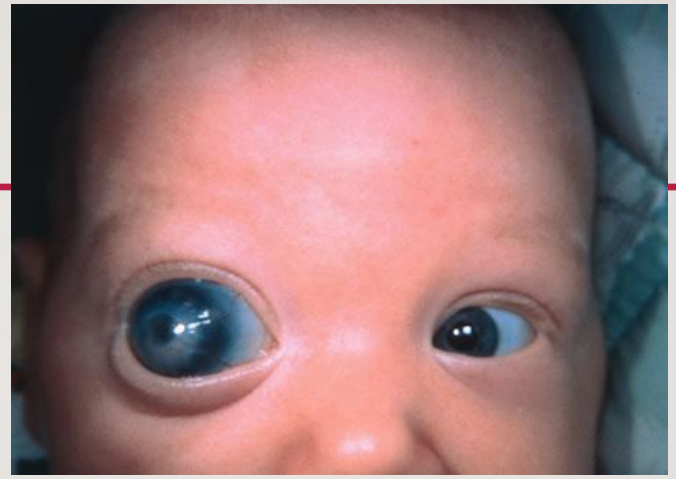


CHRONIC ALLERGIC KERATOCONJUNCTIVITIS



- Esp if associated with frequents allergic rhinitis and Seasonal asthma,
- should be treated with
- 1. Topical steroids : Alrex, Lotemax
- 2. Nasal corticosteroid pump Ryaltris
- 3. Tacrolimus eye drops./Cyclosporine
  - Fagron compounding pharmacy

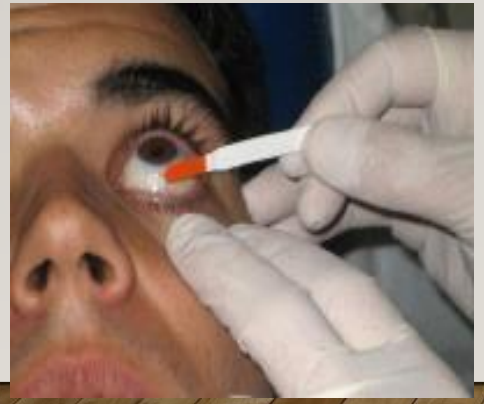
CHILD WITH CONGENITAL GLAUCOMA

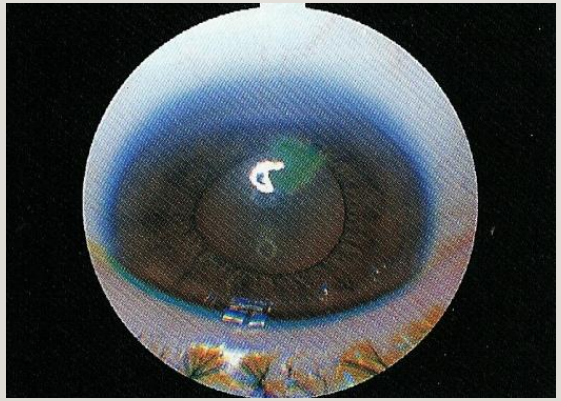


- Symptoms
  - Photophobia
  - Lacrimation
  - Blepharospasm
- Signs
  - Increased IOP
  - Hazy cornea(Haab's striae)
  - Increased corneal diameter
- All children with congenital glaucoma should be referred immediately

CORNEA

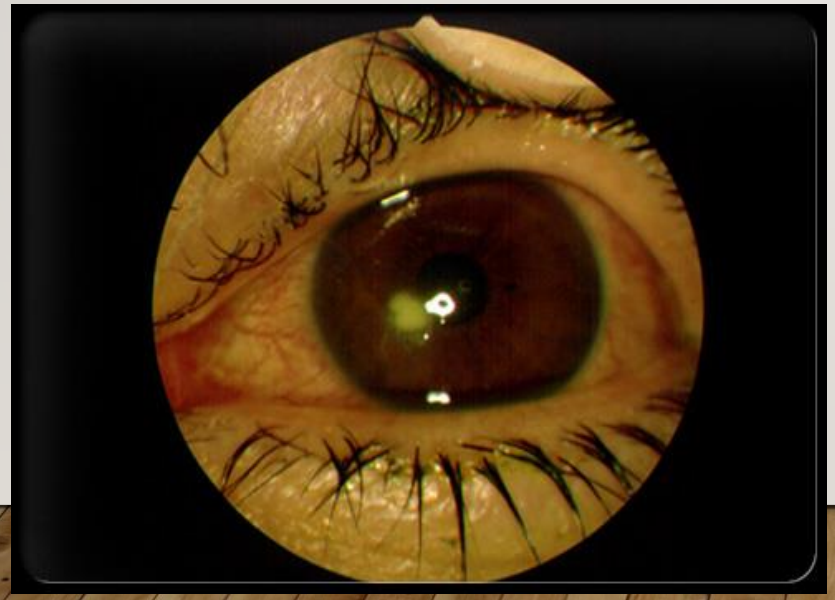
- Fluorescein staining
  - Fluorescein sticks to the cornea where the epithelium is removed
  - Any fluorescein staining on the cornea warrants referral to ophthalmologist!!

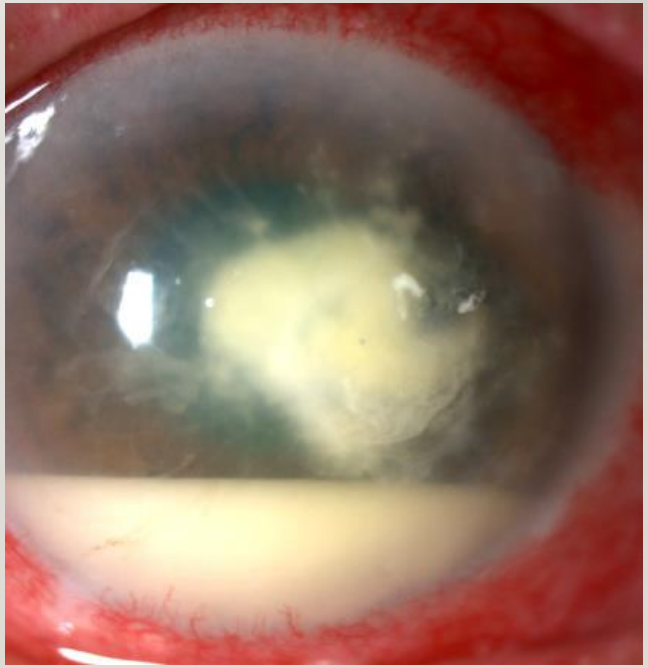




CORNEAL ULCER

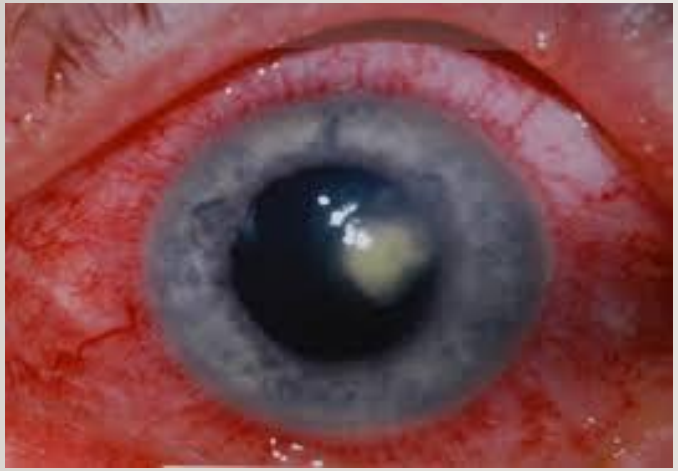
- Need urgent corneal scraping and Mx by Ophthalmologist to prevent permanent vision loss, Start hourly Ciloxan drops if possible!! No steroids before improvement on AB!

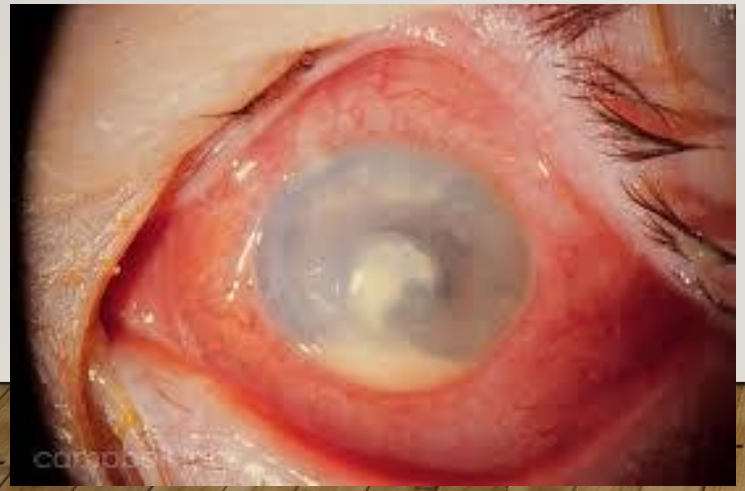




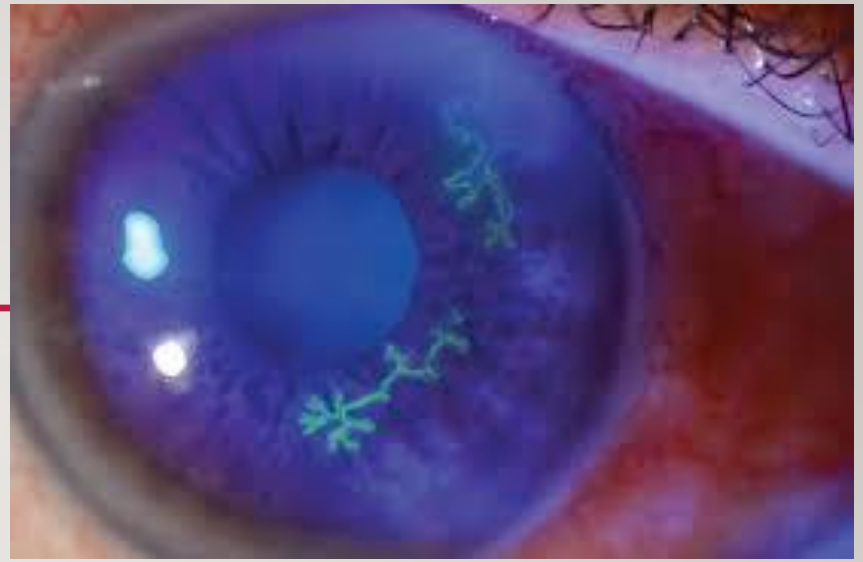
CORNEAL ULCER

BACTERIAL



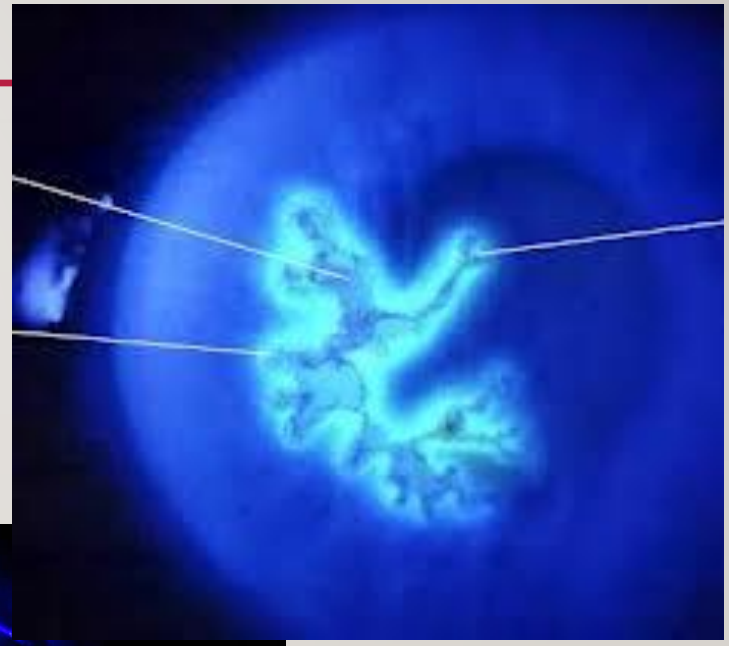


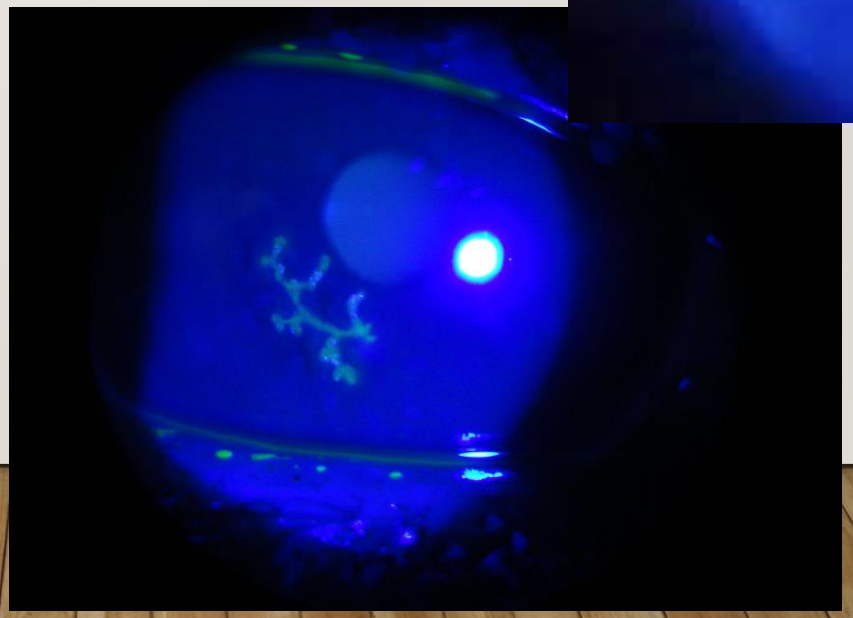
VIRAL



HERPETIC DENDRITIC CORNEAL ULCERS

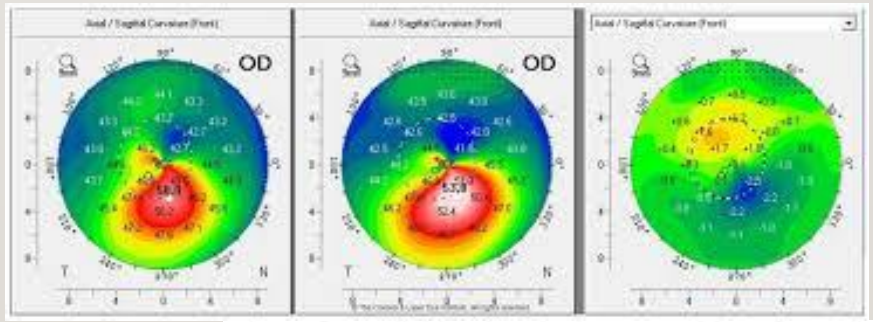
- Decreased corneal sensation
- Tx Oral Antivirals NO STEROIDS!!! Zovirax ointment not available!
- **Aciclovir 800mg 5x per day x 14 days**
- **or valaciclovir 1g tds po x 14 days**
- **or famciclovir 500mg bd po for 14 days**

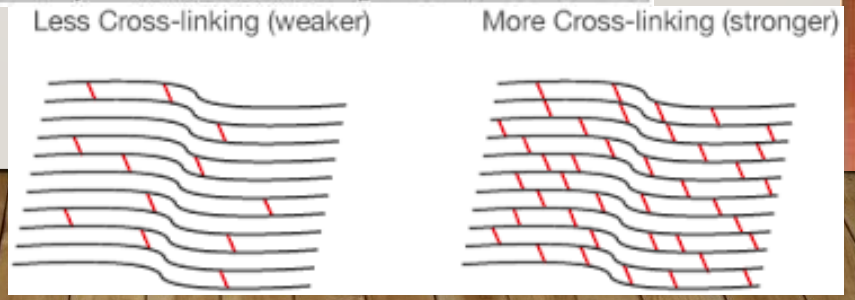




CORNEAL SHAPE: KERATOCONUS

- Irregular conical shape of the cornea, astigmatism that worsens
- Onset : puberty, usually family history
- Refer for assessment if candidate for corneal crosslinking to
- stop progression and decrease risk to get corneal transplant by 70 %

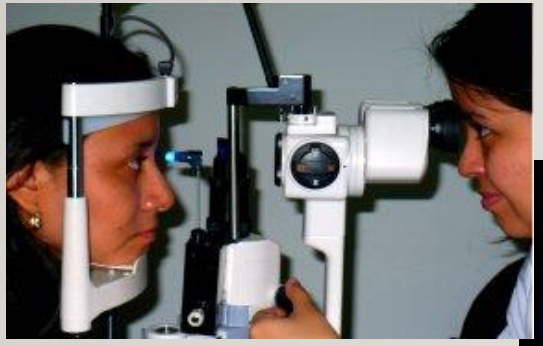


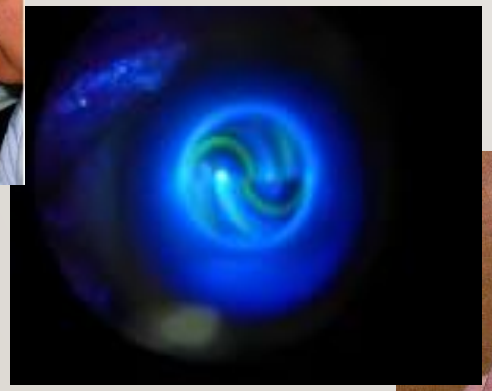


START MEASURING INTRA OCULAR PRESSURE PAIN FREE AND EASY

- Normal between 10-21mmHg
- >21mmHg = Glaucoma

icare
tonometer



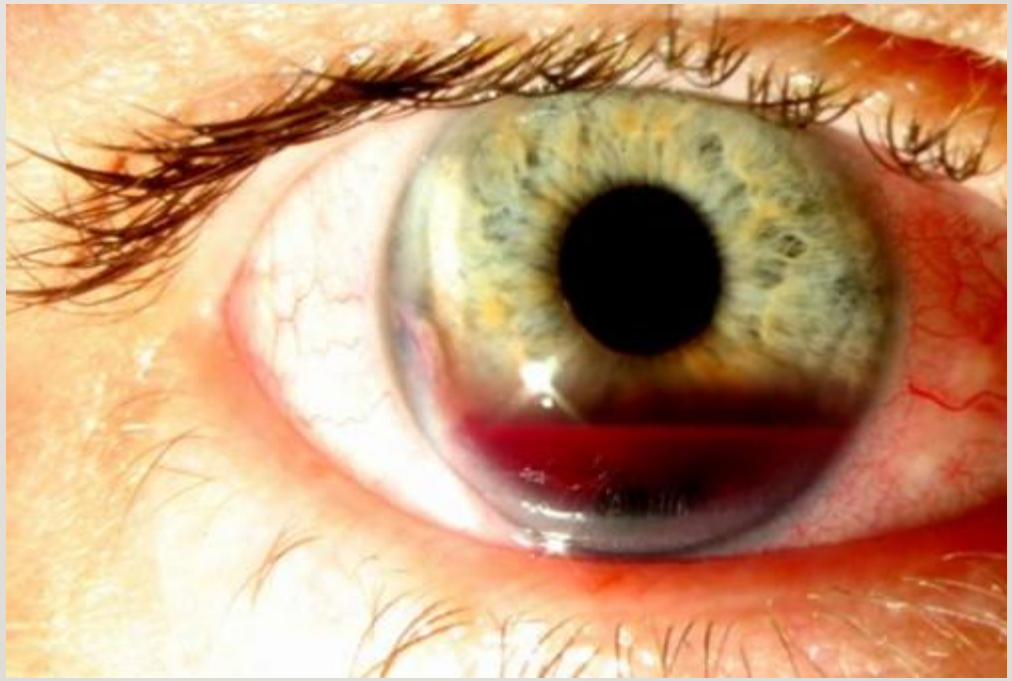


GLAUCOMA IN SOUTH AFRICA.. BECOME A GP-GA

- In South Africa, the prevalence of glaucoma in people older than 40 years of age is between 4.5% and 5.3%.
- 1 in 40 people over the age of 40 years will develop glaucoma in South Africa
- 50% don't know they have it!
- It has no warning signs… Vision loss is permanent!!!
- Become a GPGA… GP Glaucoma Activist!!! Save Vision !!! Test IOP on all patients over 40!!!
- Bill code 3014(R102) for it, and bill for the disposable tip (R22)
- Get your Icare Tonometer today!!! from Gennop SA./ medequip (R53000 newest model!)

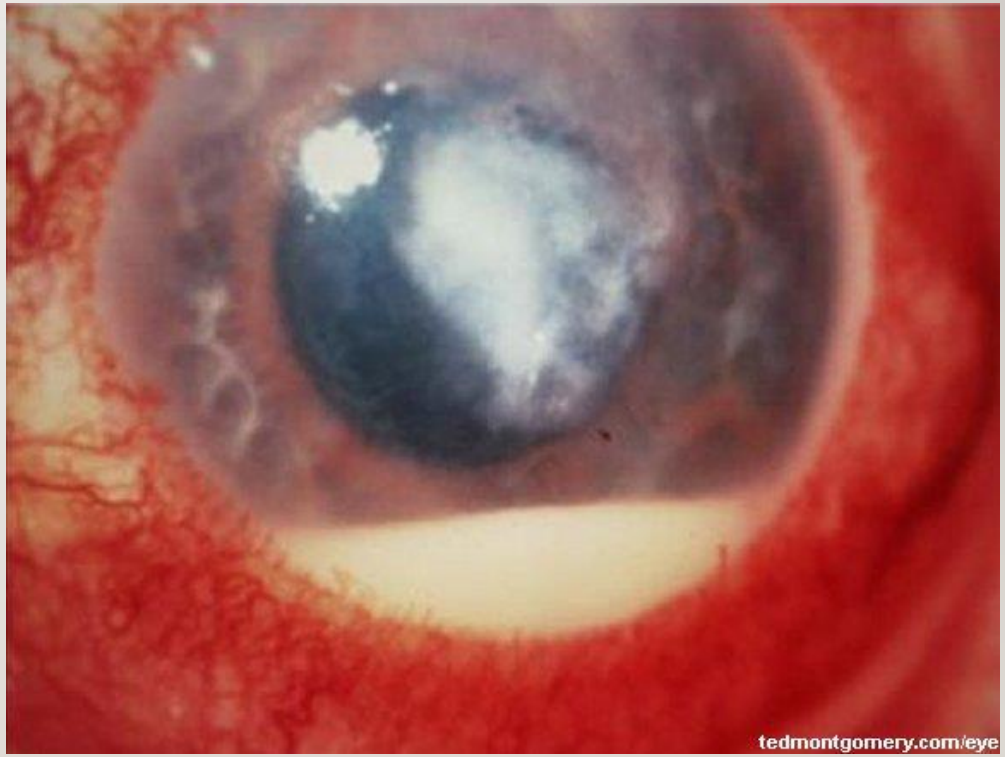
ANTERIOR CHAMBER : HYPHEMA

- Blood in AC



ANTERIOR CHAMBER : HYPOPYON

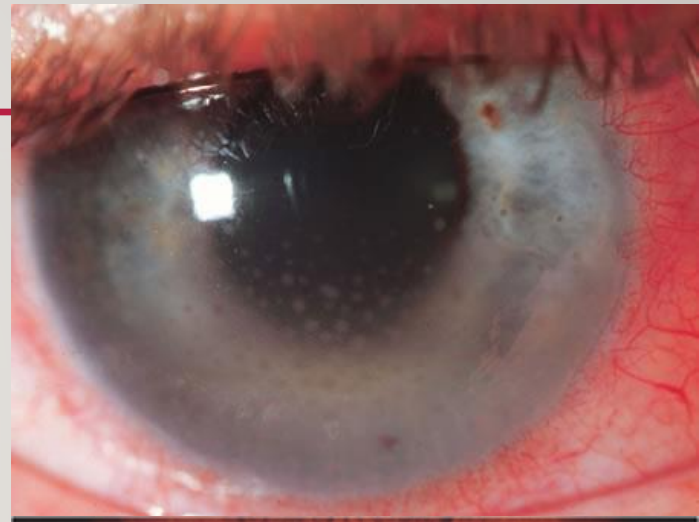
- Pus in AC
- After corneal ulcer or eye surgery..
- Need urgent phone call to your nearest
- ophthalmologist

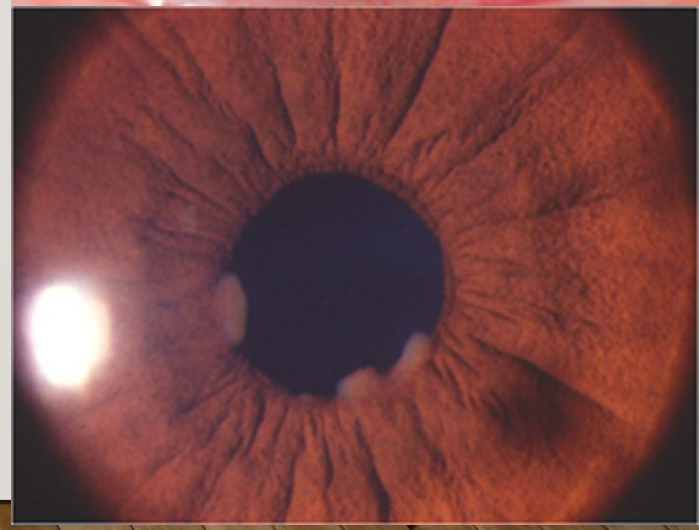


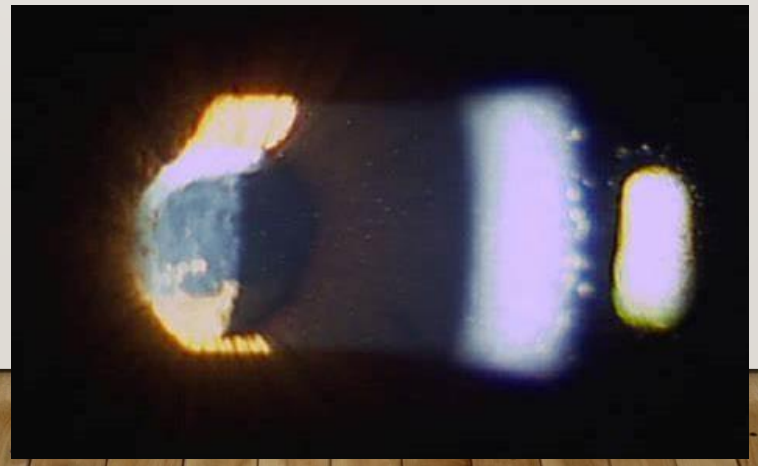
UVEITIS (RED, PAIN, PHOTOPHOBIC!, LASTING MORE THAN 10 DAYS)

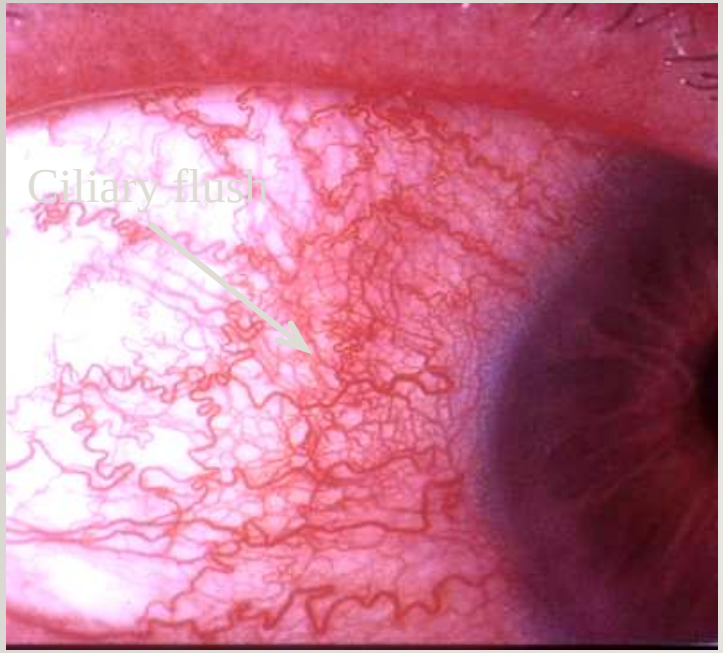
- Symptoms :
  - Photophobia
  - Pain
  - Redness
  - Decreased vision
  - Lacrimation
- Tx :
- Topical Steroids if no corneal staining,
- check IOP!!!

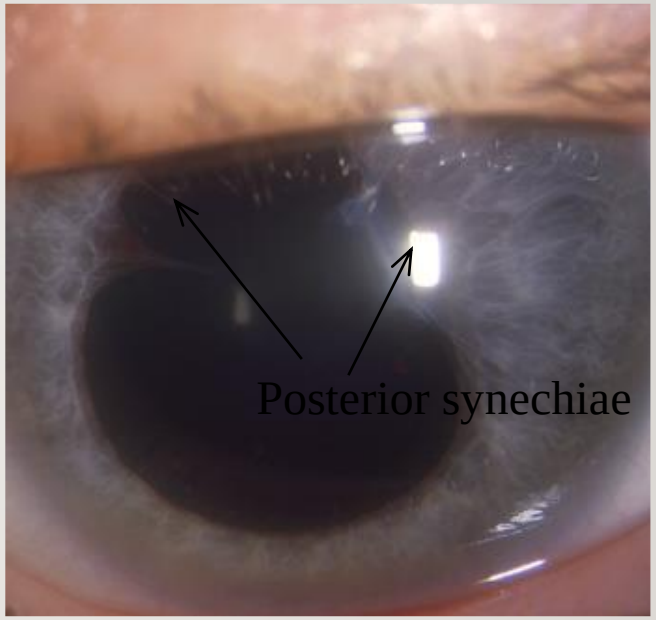
- Signs :
  - Circumcorneal injection
  - Keratic precipitates
  - Flare/Cells in the AC
  - Iris nodules

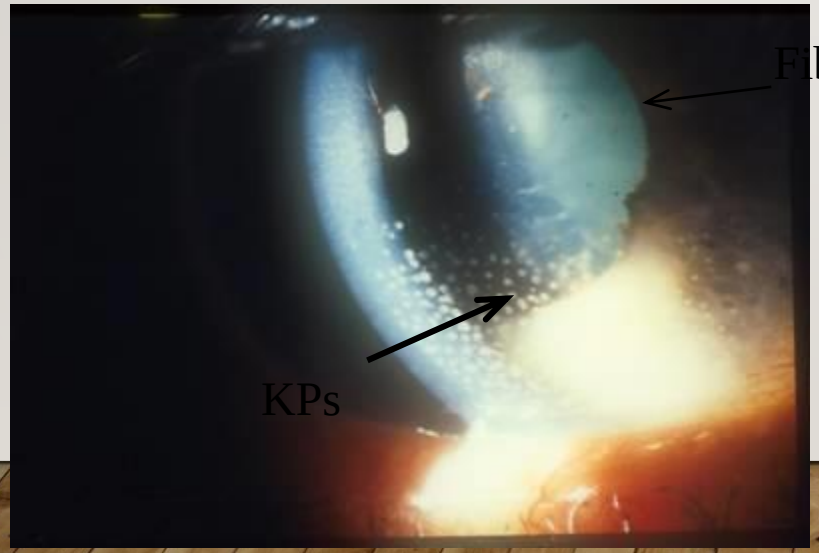


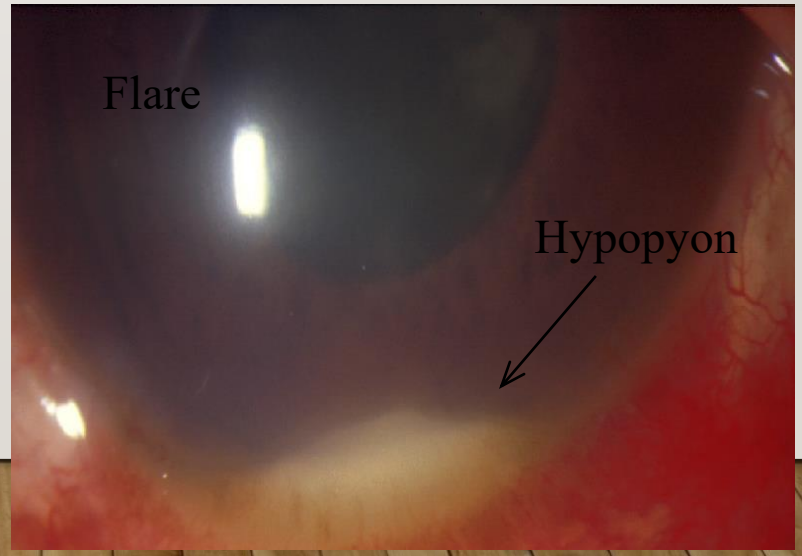





Ciliary flush


Posterior synechiae


Fibrin
KPs


Flare
Hypopyon

WHO LIKES DOING A FUNDOSCOPY?

- Covid 19 and close contact is probably not advisable in non urgent setting
- DR Li Wenliang(Ophthalmologist).. The first health provider to voice concern about the spread of the virus. He was summoned by the Wuhan police on the 3rd Jan 2020 of making false comments on the Internet about a unconfirmed SARS outbreak…
- He went back to work and then contracted the Covid 19 virus from a asymptomatic glaucoma patient. He died on the 7 Feb 2020 form Covid 19. He was only 33 years old.
- Is there another alternative??

DIGITAL HANDHELD FUNDOSCOPY

- Meet Aurora,/ Eurocam
- handheld digital fundoscopy
- Good distance from patient
- User friendly, can be undilated!
- Expensive!
- Eurotech/Huvitz
- Cost: R60 000

HOW TO DILATE A PATIENT

- 1. Do eclipse test: If positive, DO NOT DILATE
  - (Risk of acute angle closure glaucoma)
- 2. In Adults:
  - put one drop of Novesin in, wait 30sec, then 1 drop Mydriacyl (burns a lot!)
  - Pt is not allowed to drive if both pupil are dilated
- 3. Kids:
  - use Cyclomydril (does not burn, but takes longer)

ECLIPSE TEST OF ANTERIOR CHAMBER DEPTH

- If the eclipse test is positive, DO NOT DILATE!!

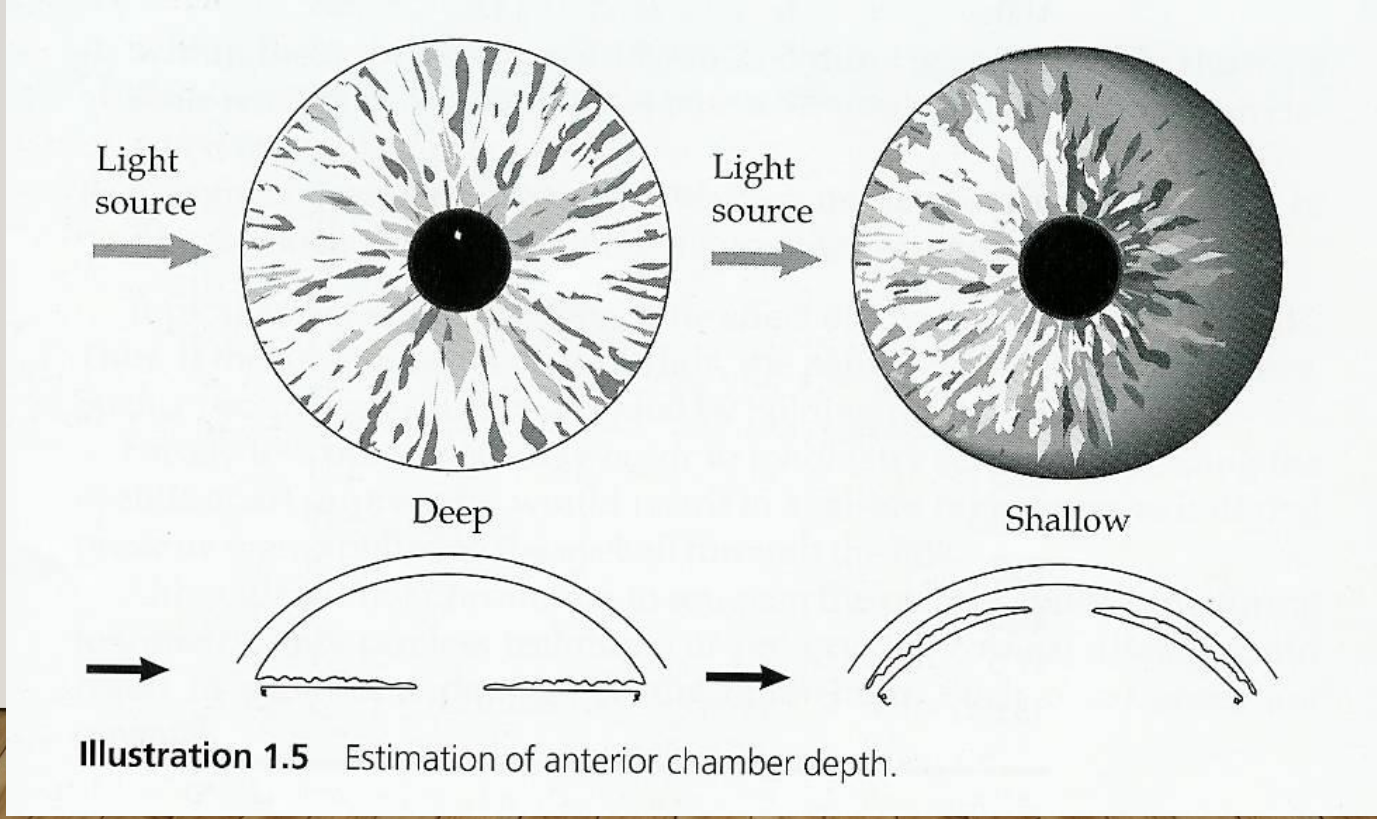


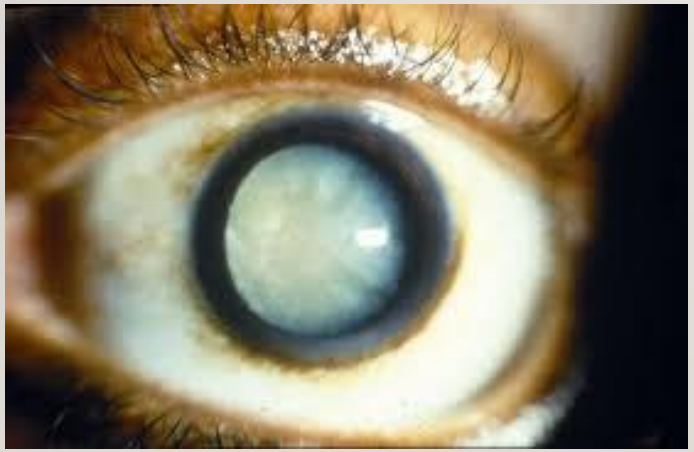
Illustration 1.5 Estimation of anterior chamber depth.

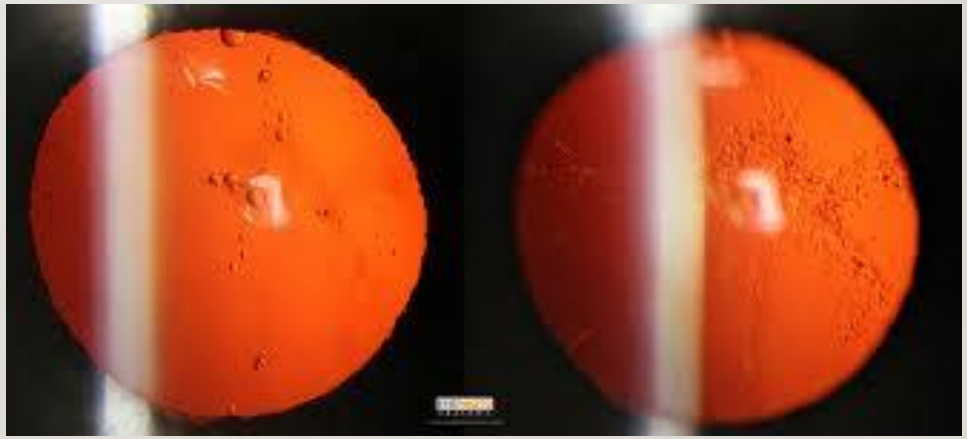
LENS: CHILD WITH A CATARACT

- A child with a congenital cataract should be referred before the age of 8 weeks to prevent nystagmus and amblyopia

CATARACTS

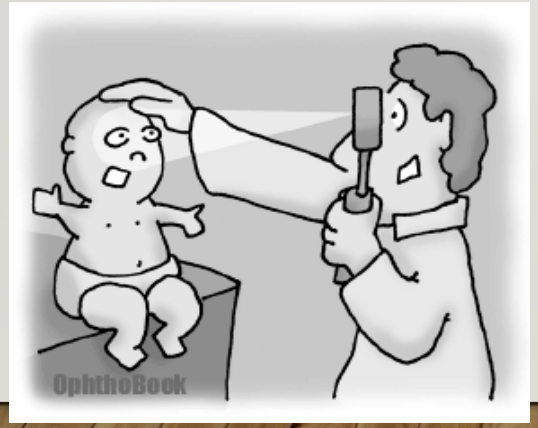
- Refer if
  - Decreased vision
  - Unable to perform his or her job or hobbies or driving licence failure

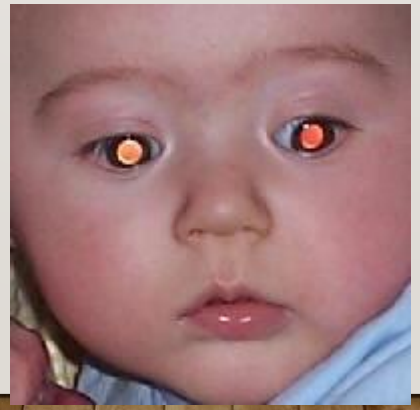




HOW TO CHECK FOR A RED REFLEX

- Hold ophthalmoscope in front of your eye about 1m away from the patient . Shine the light into the patients eye
- Move it a little bit to get a red reflex shining back at you!!
- You can also take a cellphone photo with your flash on!!

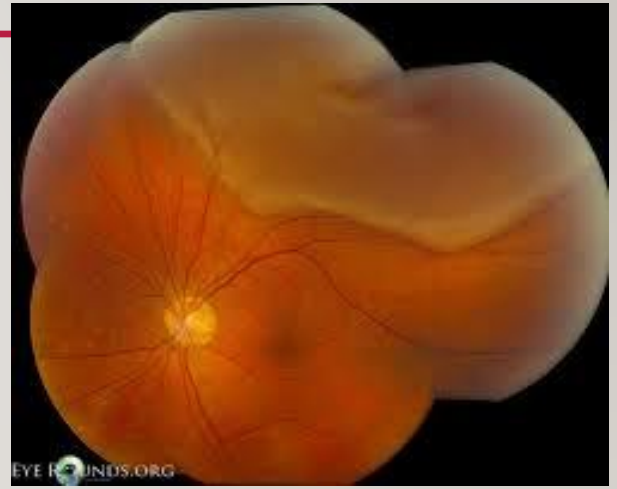




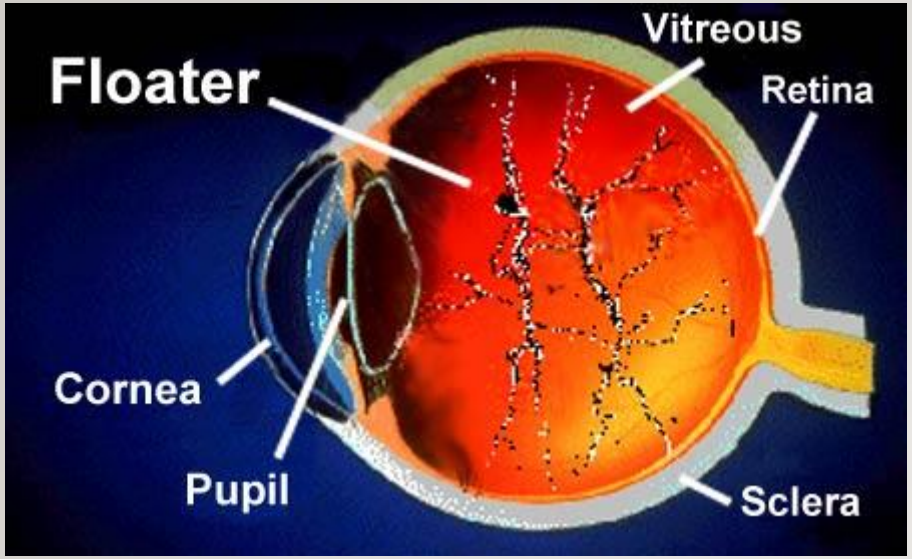
CHILD WITH LEUCOCORIA

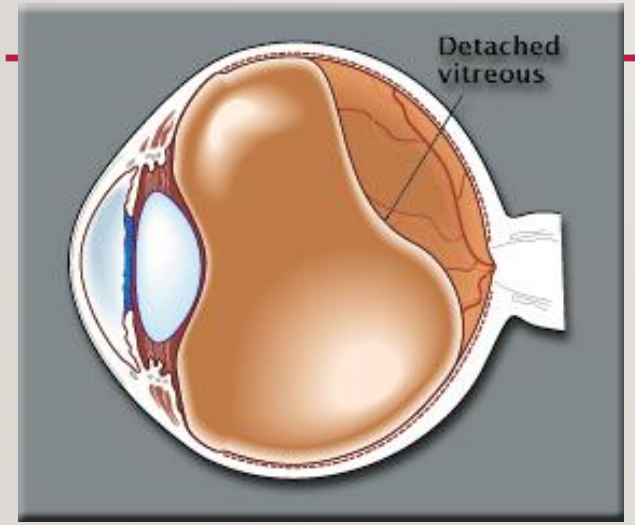
- Common causes: Cataract, ROP, Retinoblastoma, extensive retinal detachment
- All babies should be examined for a red reflex. If absent, refer immediately

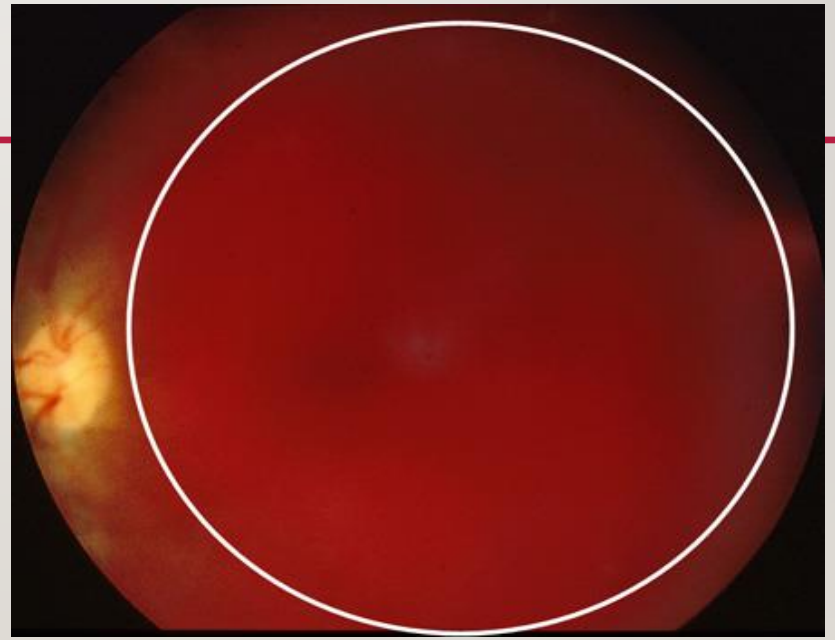
COMPLAINING OF VITREOUS FLOATERS



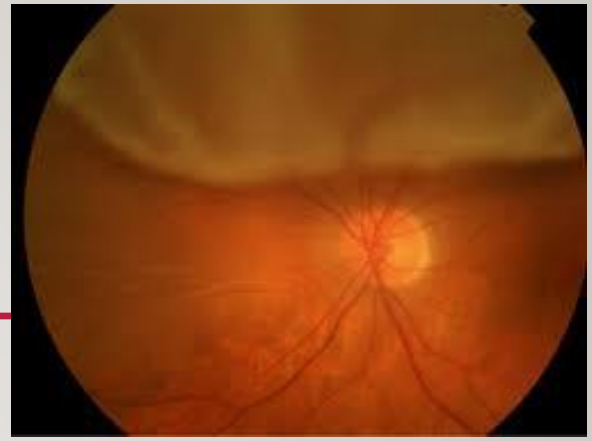
- Refer if
  - sudden increase
  - Light flashes also
  - Black curtain moving over the eye
- Rule out a retinal detachment or a posterior vitreous detachment. You have to do a dilated fundoscopy or refer!!!


Floater
Vitreous
Retina
Cornea
Pupil
Sclera


Detached
vitreous



FLASHING LIGHTS



- Refer immediately
- Rule our retinal detachment
- Remember to inform the patients that they can't fly if gas was inserted in their eye during retinal surgery

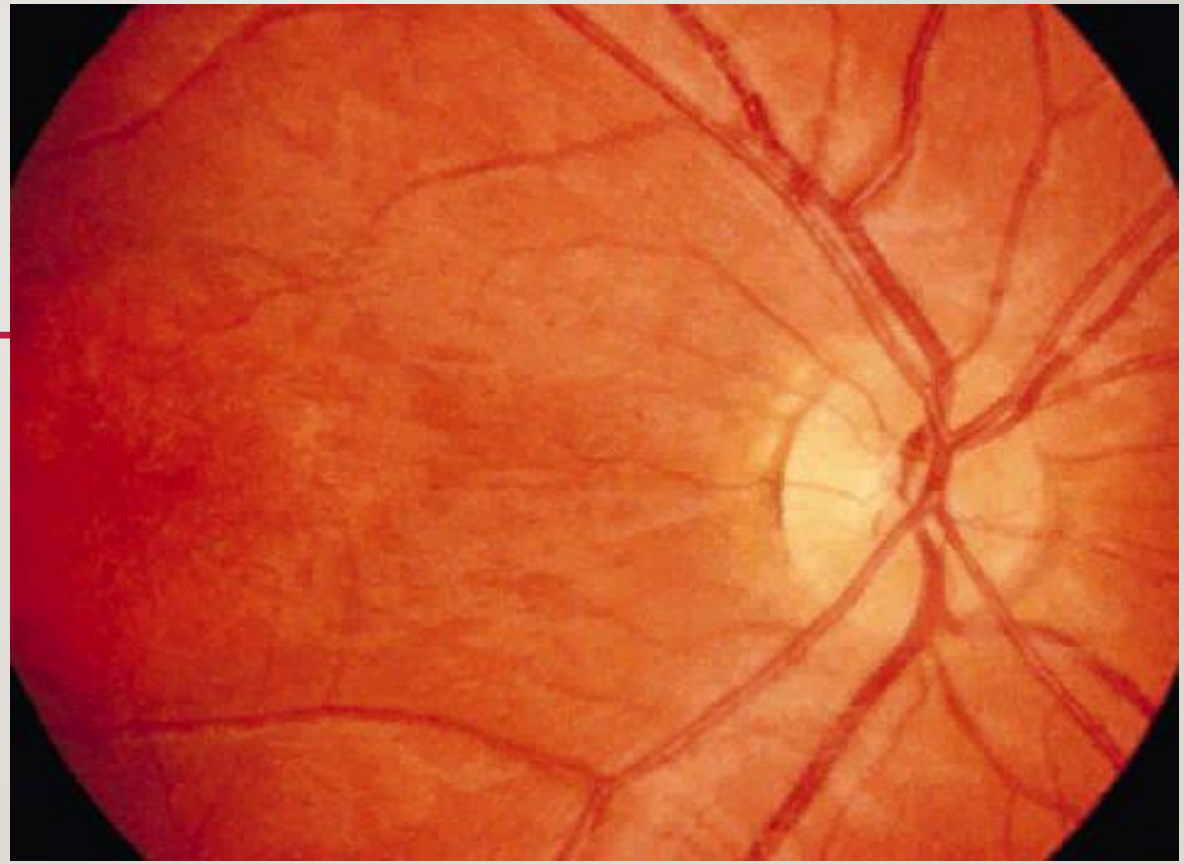
OPTIC NERVE

1. Colour:

Pink or white

2. Cup to disc ratio

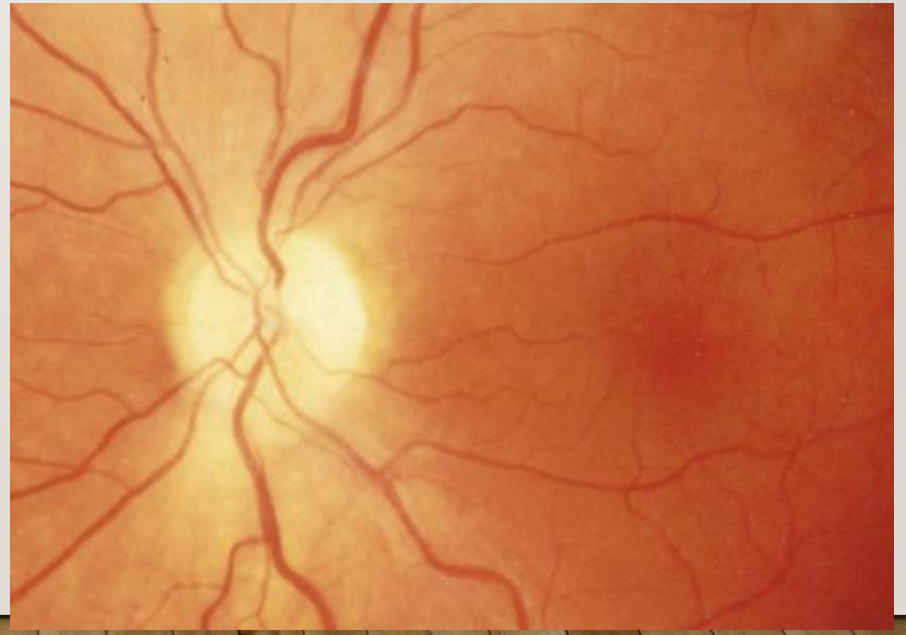
3. Swollen



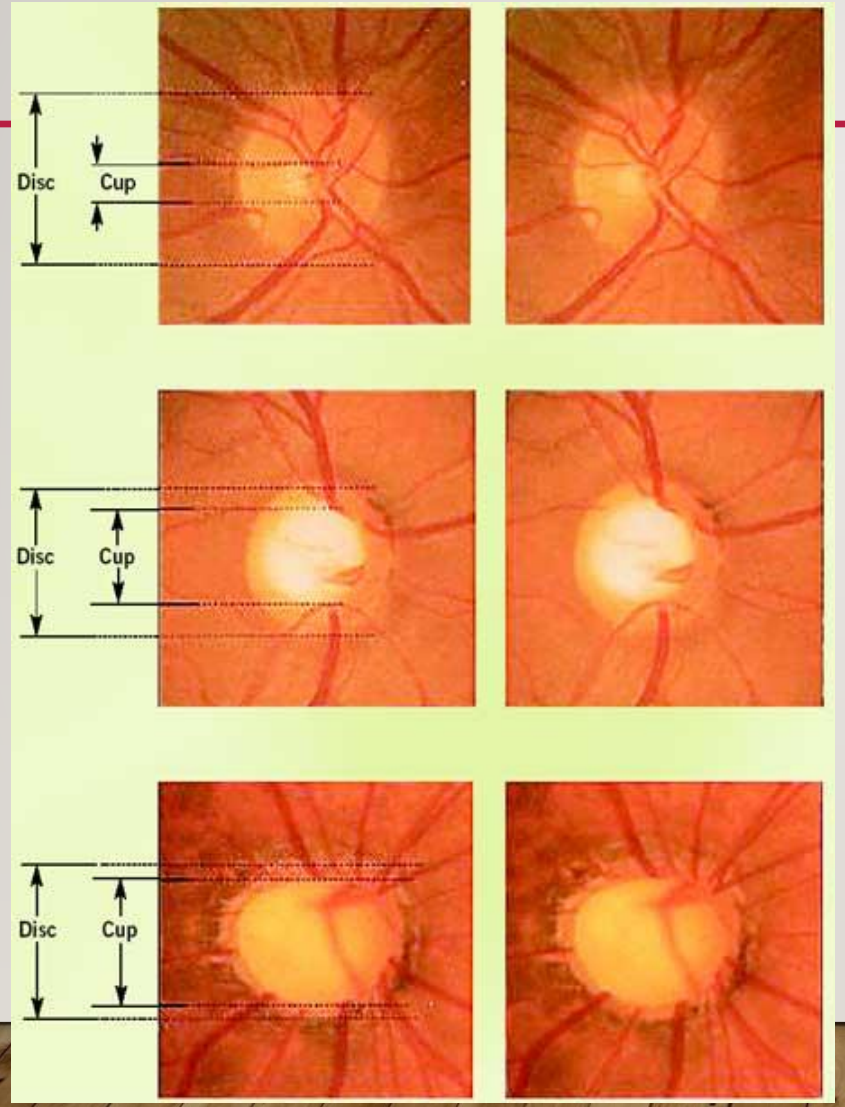
COLOUR OPTIC NERVE

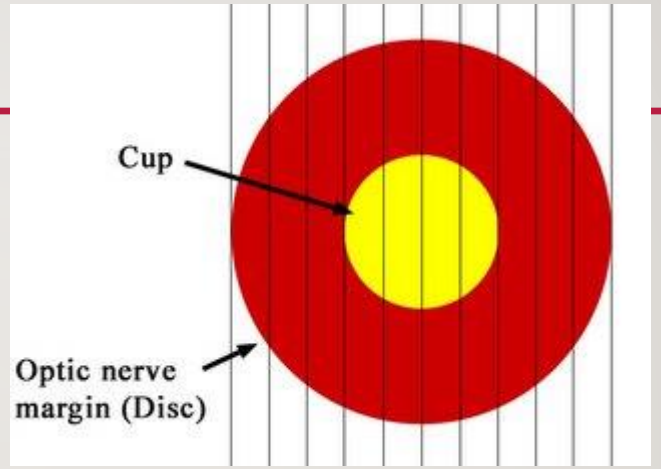
- Normal pink/orange disc

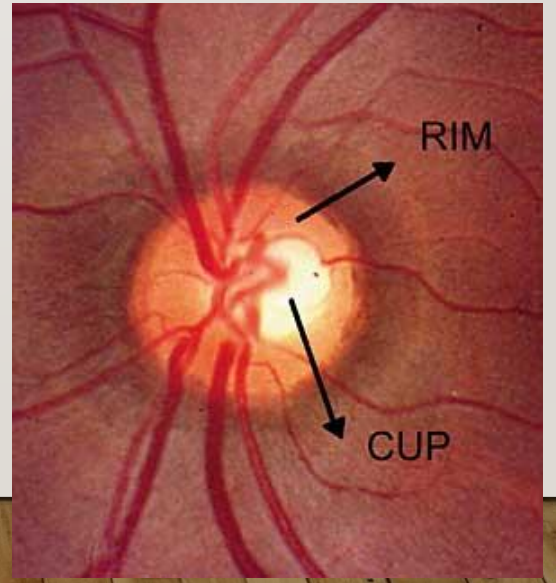
- Pale disc = optic atrophy



OPTIC NERVE CUPPING = GLAUCOMA

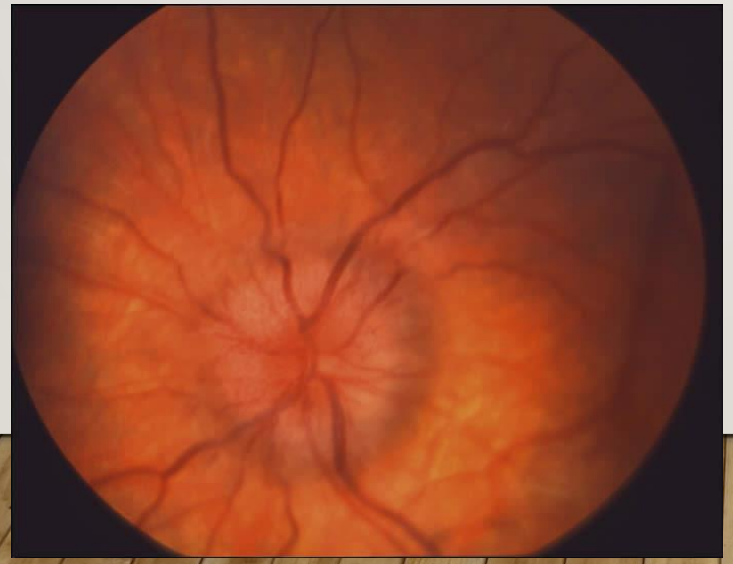






SWOLLEN DISC

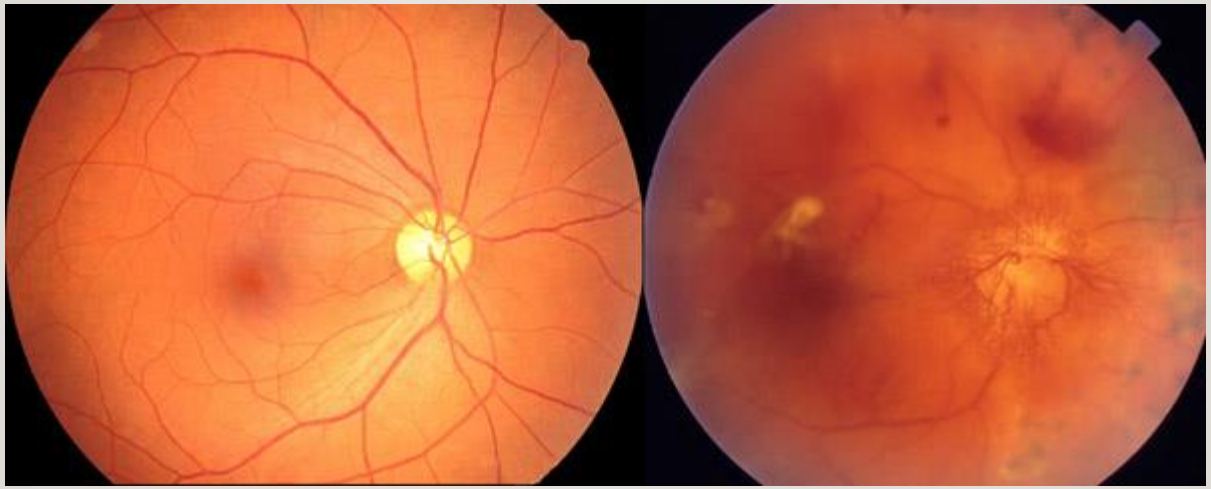
- Swollen disc : causes:
  - Raised intracranial pressure = Contraindication to do Lumbar Puncture!!
  - Optic neuritis
  - Needs urgent attention!!!



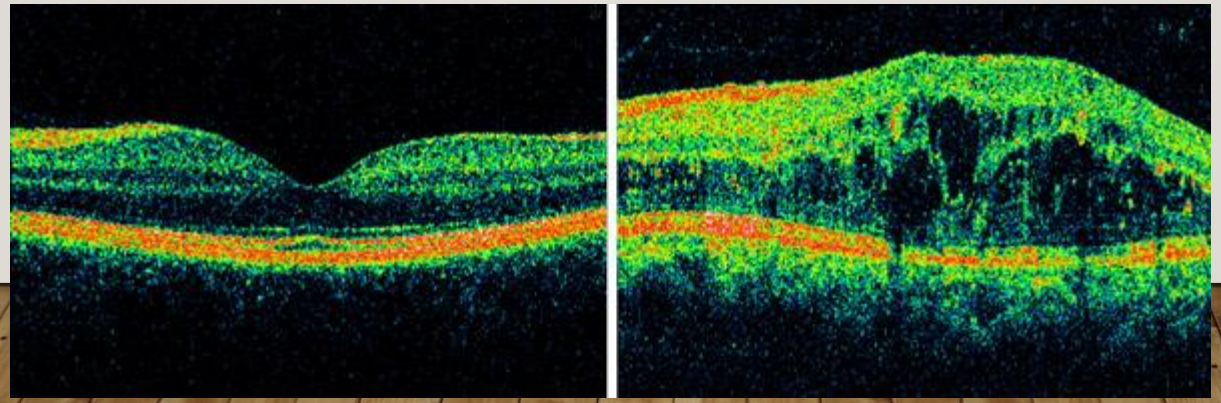
MACULA = CENTRAL VISION

Normal macula

- Normal eye

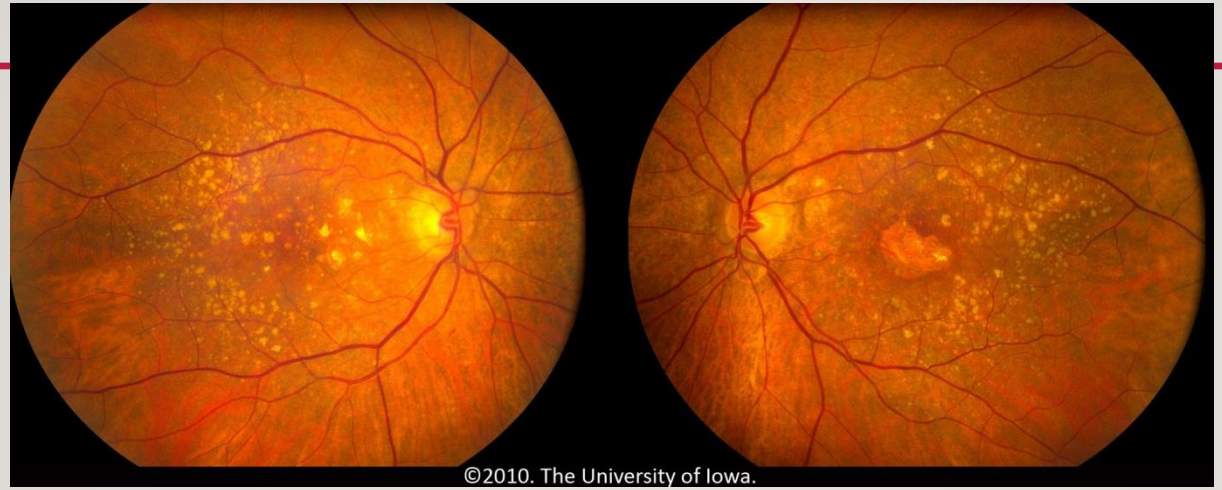


Diabetic Maculopathy

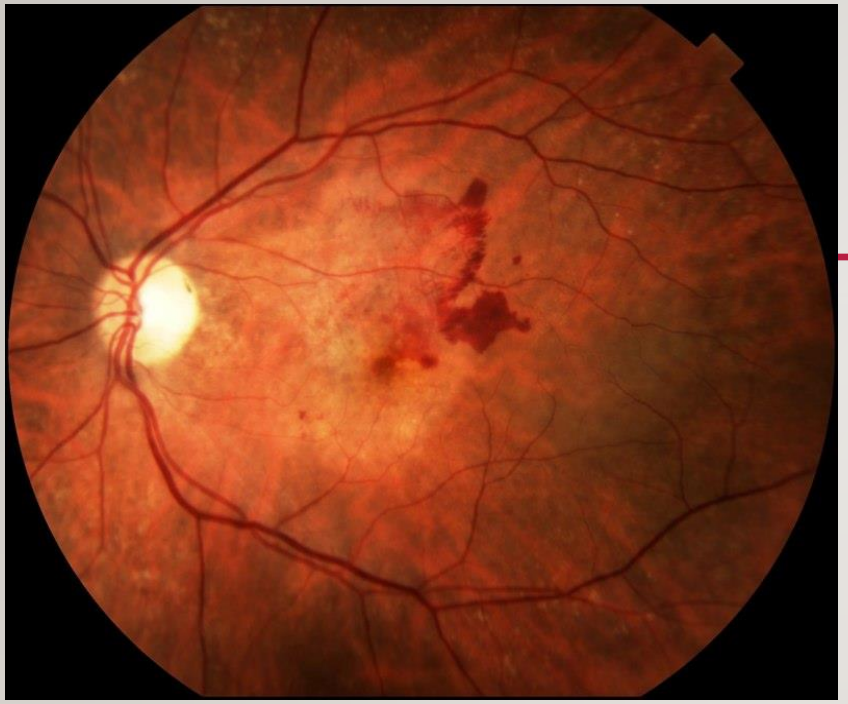


AGE RELATED MACULA DEGENERATION

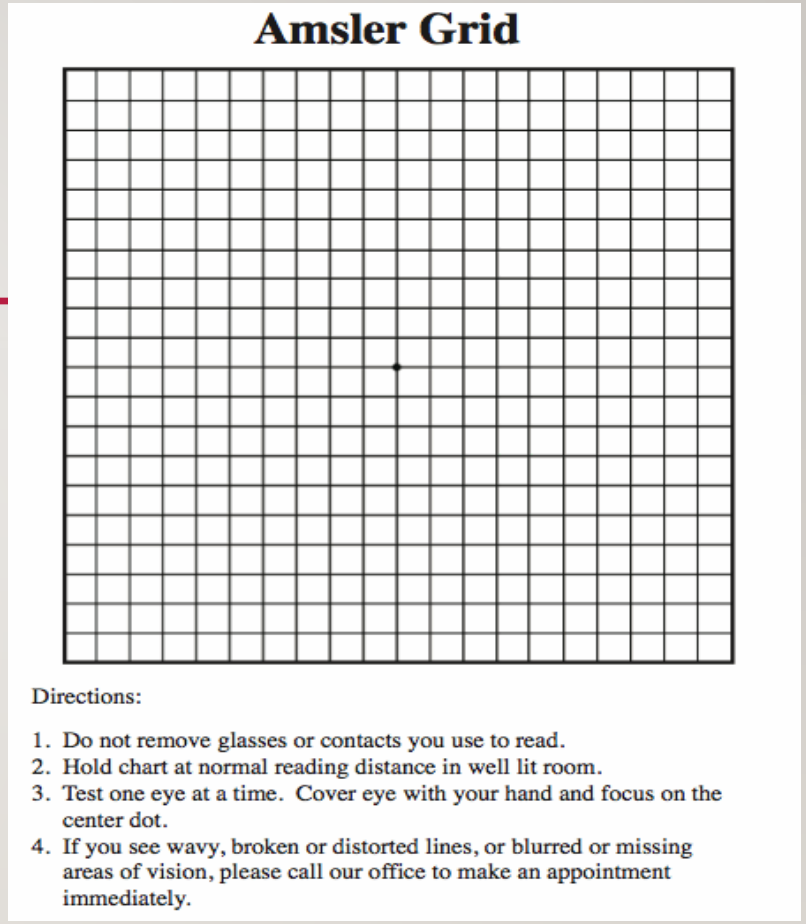
- Dry



- Rx:
  - Stop smoking
  - Wear sunglasses
  - Multivitamins: Ocuvite, Preservision
  - Omega 3



WET AMD



- Rx
  - Daily Amsler grid
  - Intravitreal Avastin injection

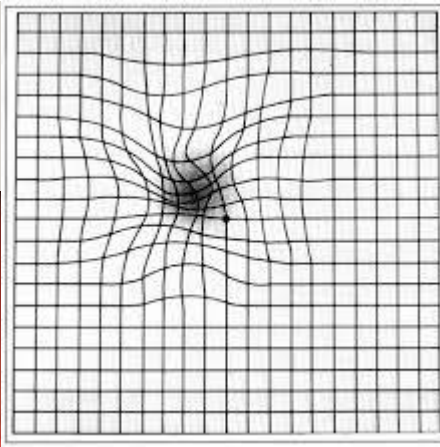
METAMORPHOPSIA

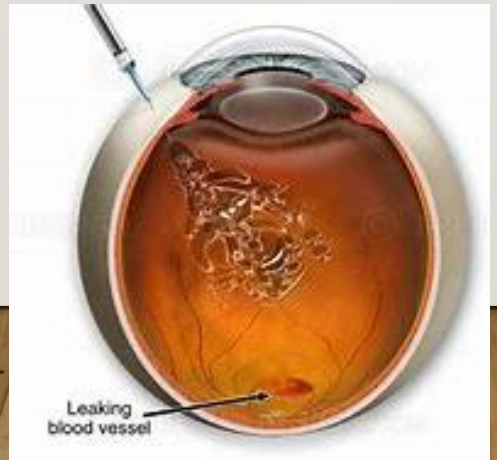
- Objects are seen as distorted in shape
- Refer immediately
- Rule out AMD
- Avastin injections (R700 for vial)

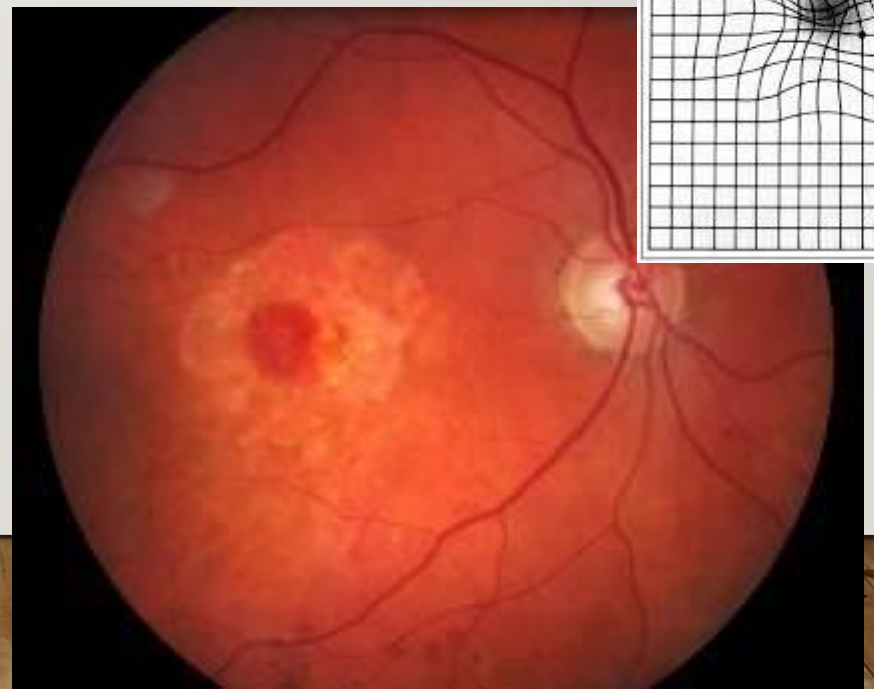
CAN SAVE VISION!!

Also Lucentis and Eylea

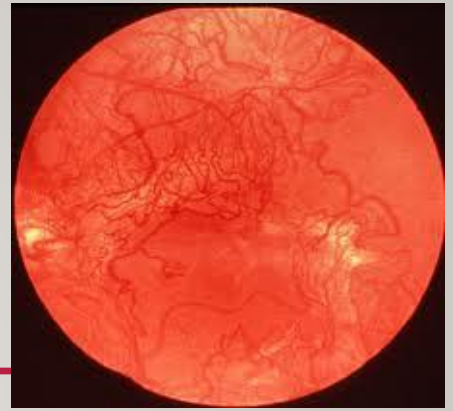
(R8000 for vial)



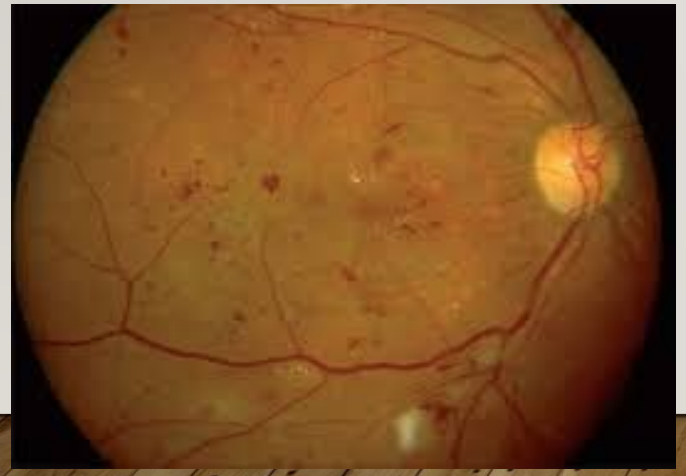


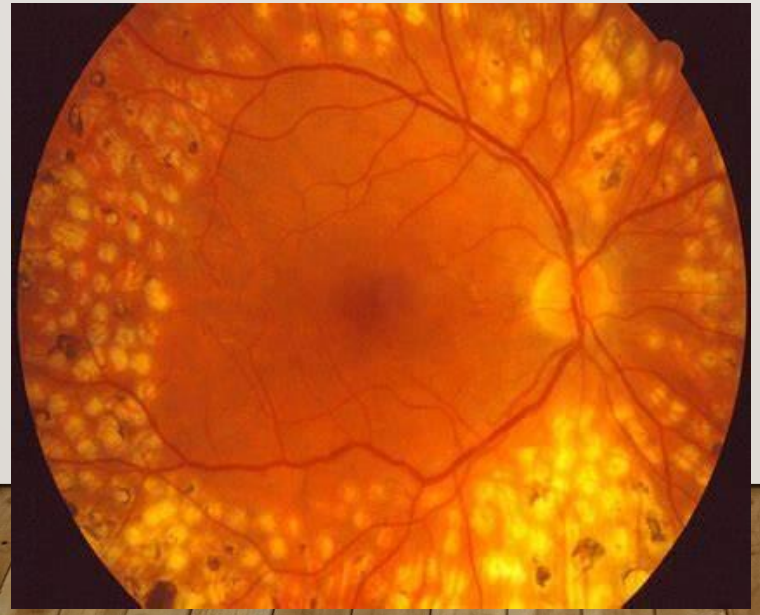


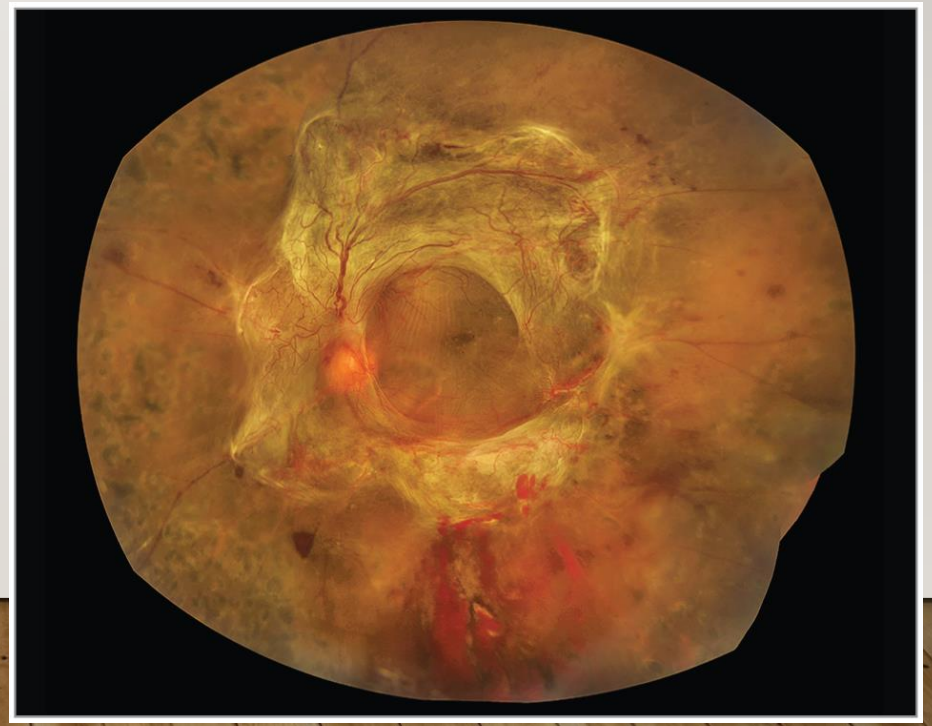
A DIABETIC PATIENT



- Yearly fundoscopy!!! don't WAIT TILL THEY LOOSE VISION…
- Non-proliferative diabetic retinopathy : Refer within 1 month
- Proliferative DR : Refer immediately



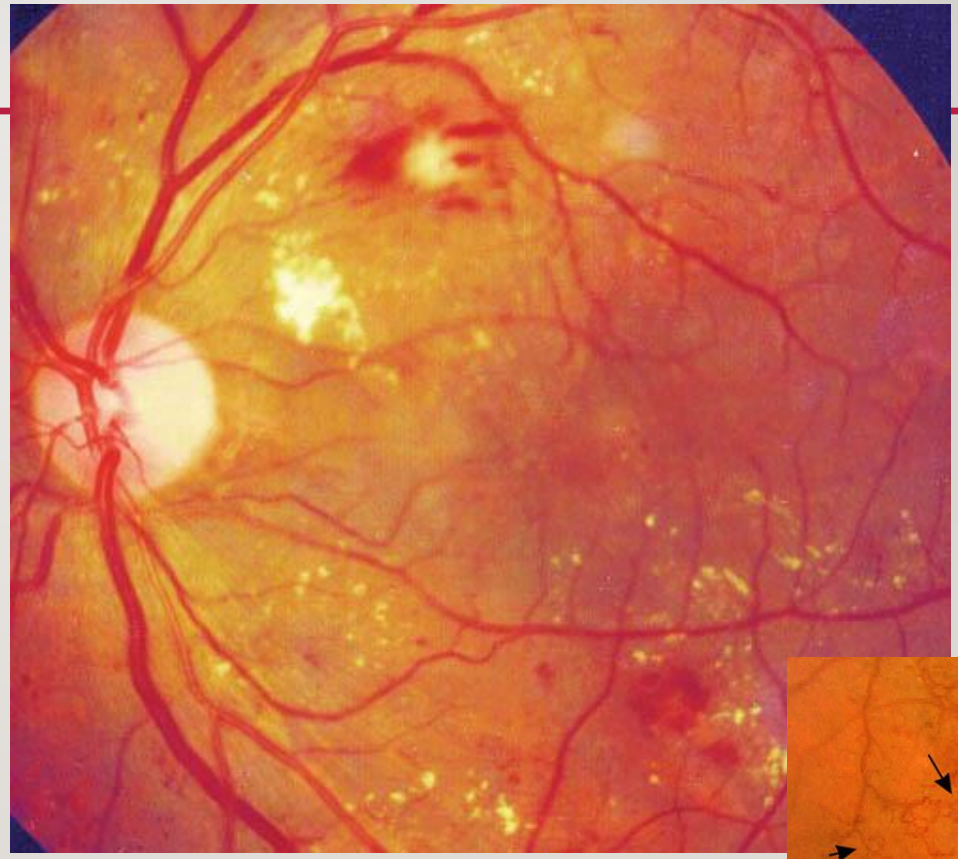


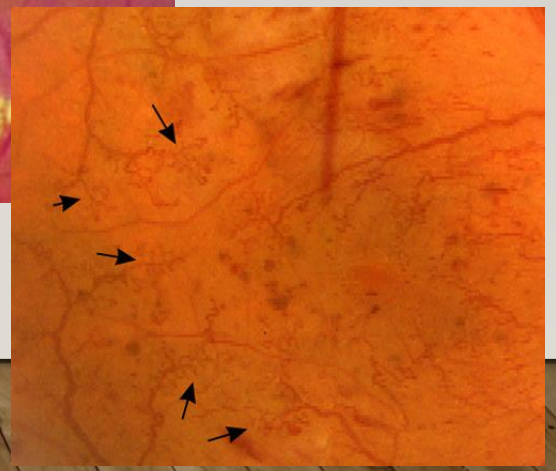


RETINA- DIABETIC RETINOPATHY

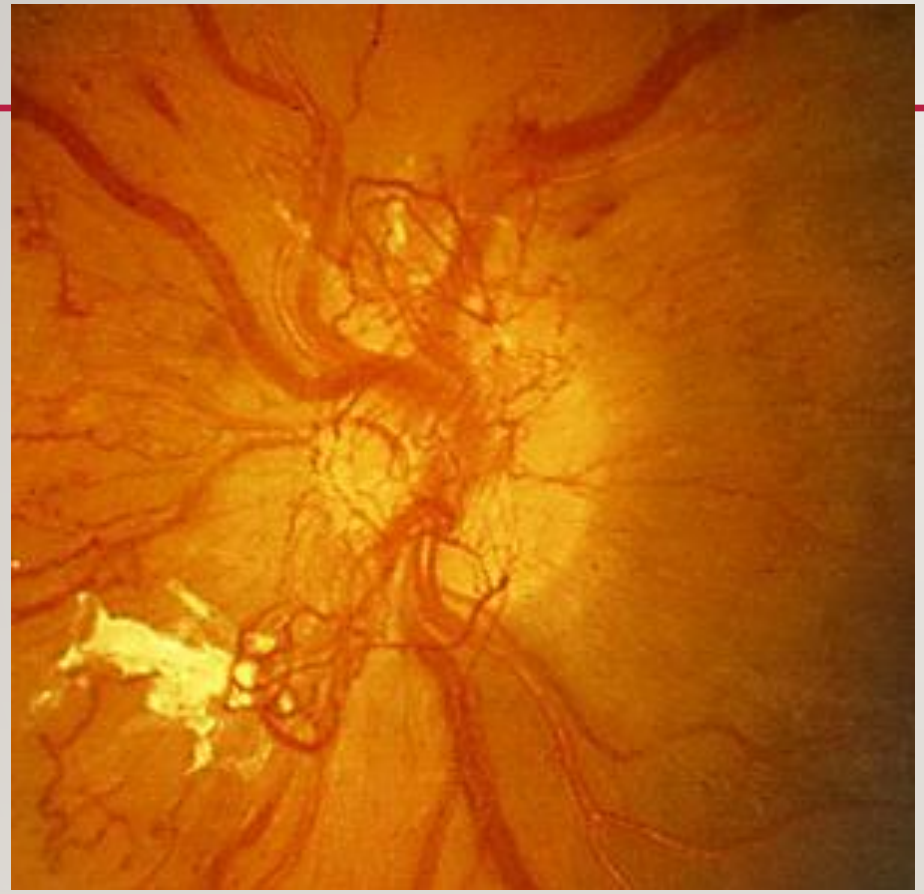
Non proliferative DR

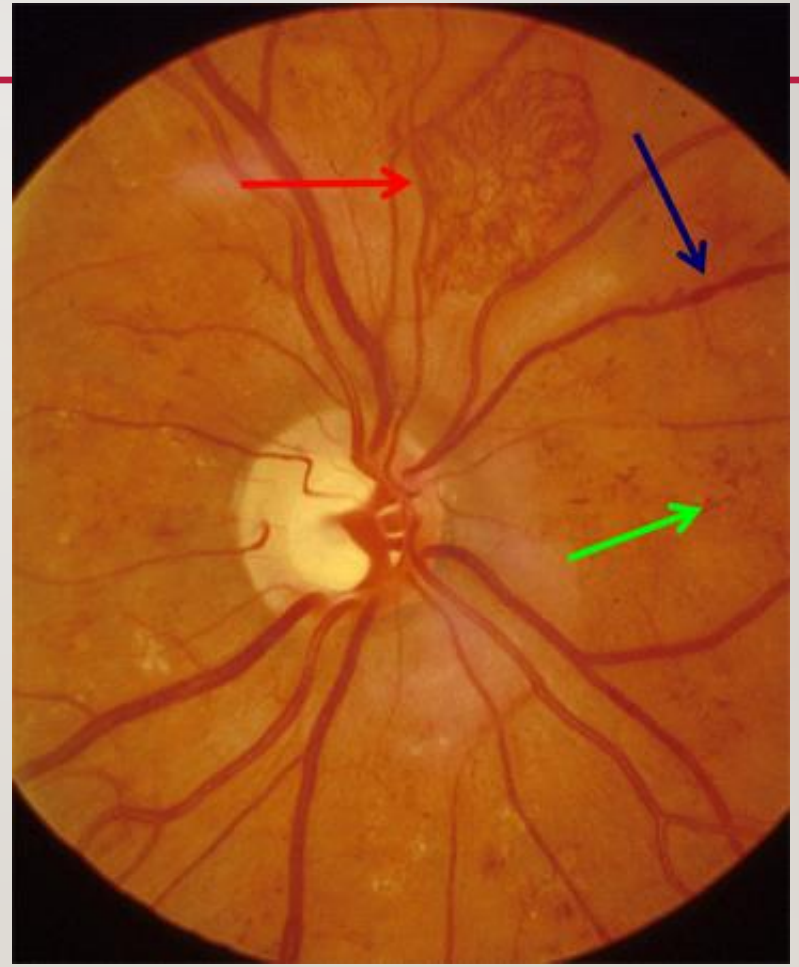
- Microaneurysm
- Dot and blot Hx
- Venous beading
- IRMA(Intraretinal
- microangiopathy)





DIABETIC RETINOPATHY: PROLIFERATIVE



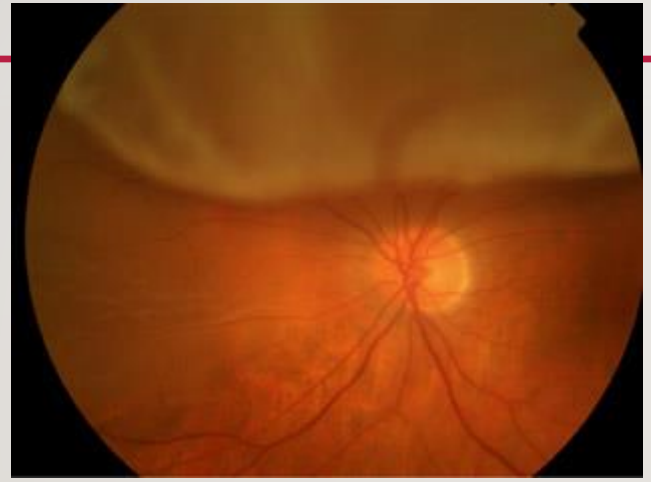


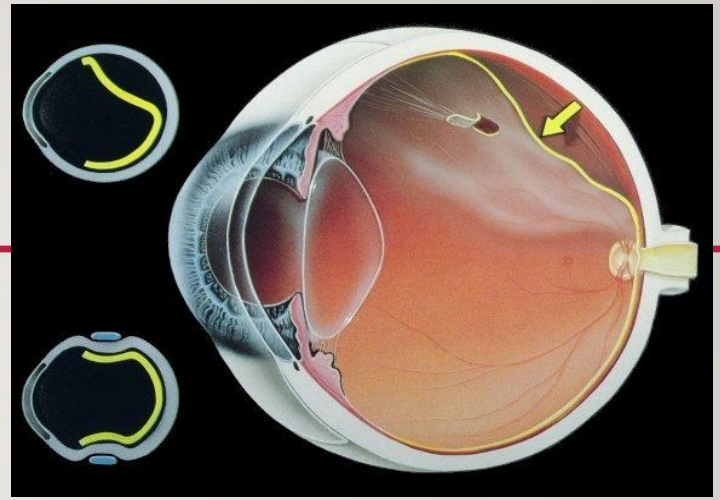
RETINAL BLOODVESSELS

- AV nipping(Hypertensive retinopathy)

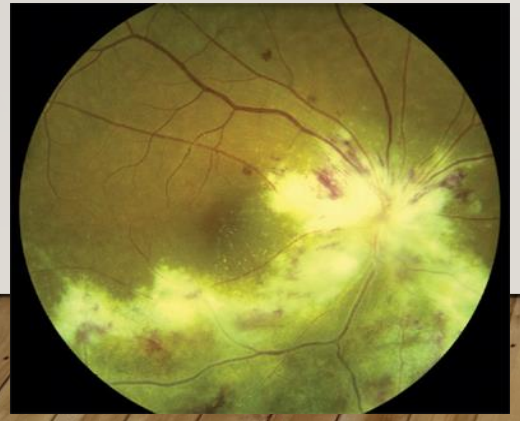
PERIPHERAL RETINA

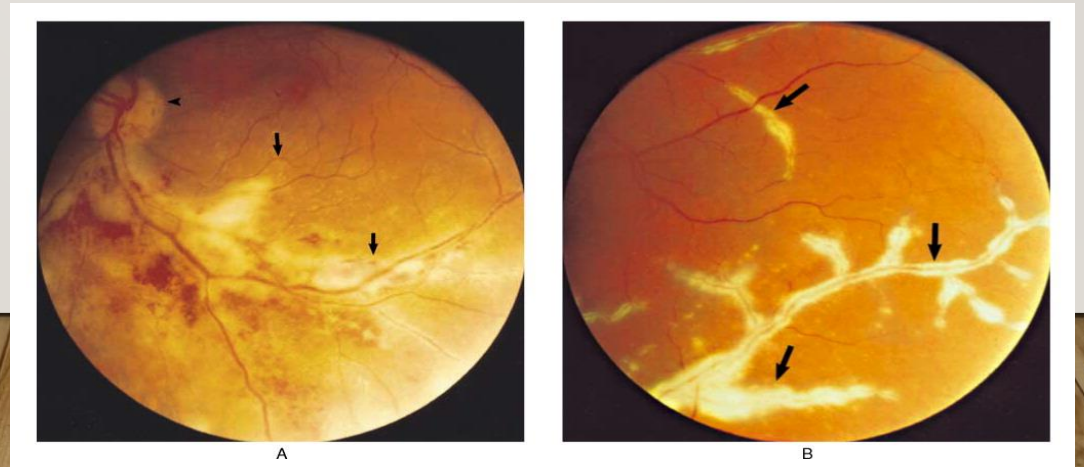
- Retinal detachment



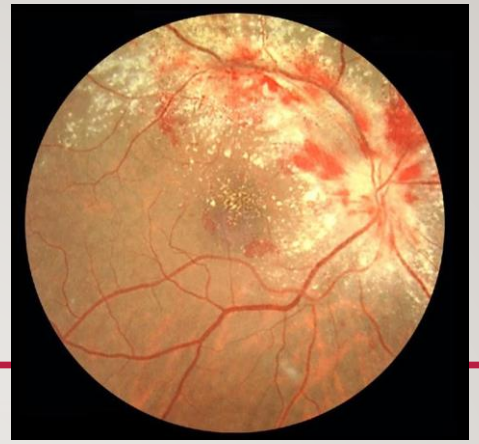


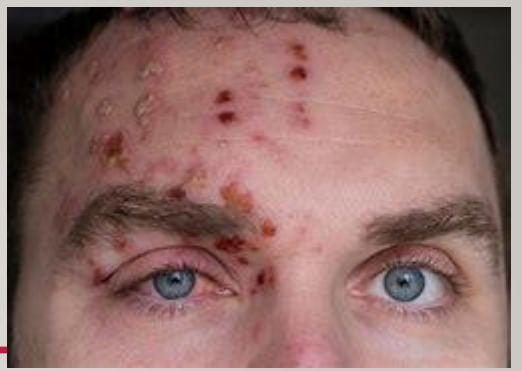
- Retinitis(CMV retinitis)



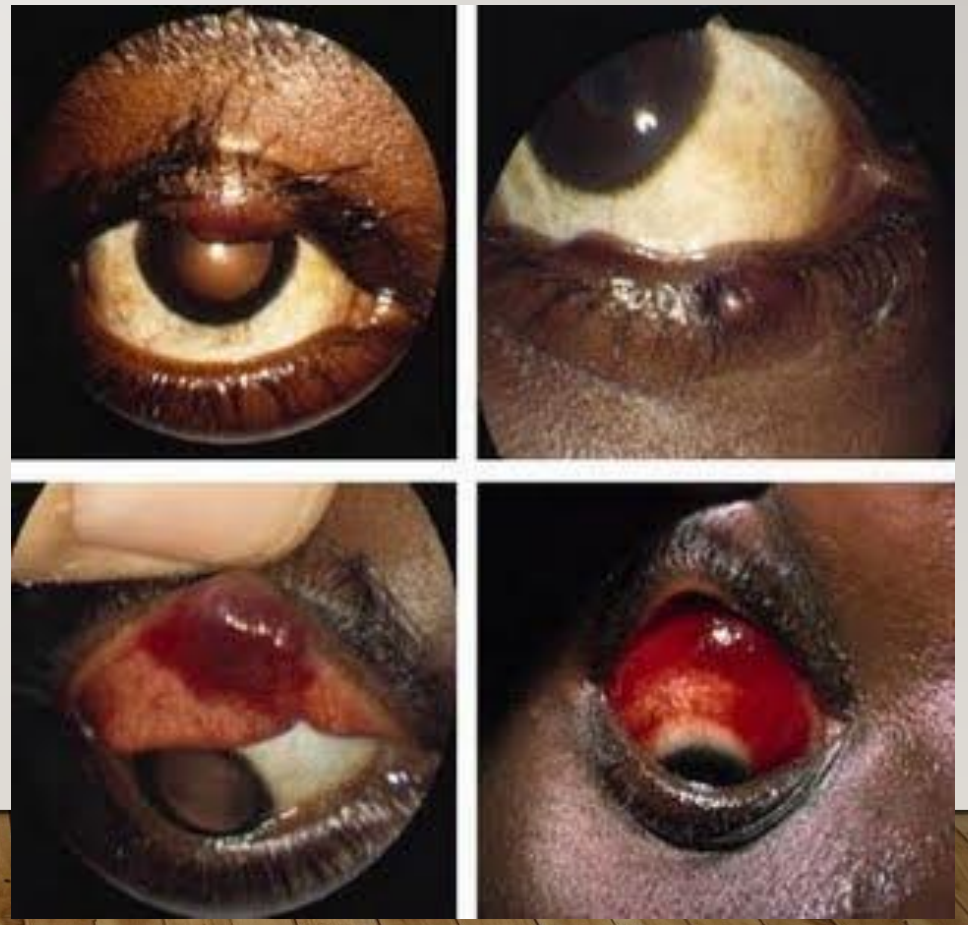


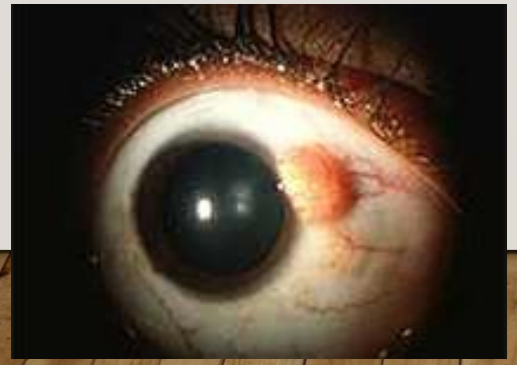
A PATIENT WITH HIV/AIDS





- Refer when: Yearly check-up
  - Visual loss
  - Herpes Zoster Ophthalmicus
  - Karposi sarcoma
  - Cancers of conjunctiva



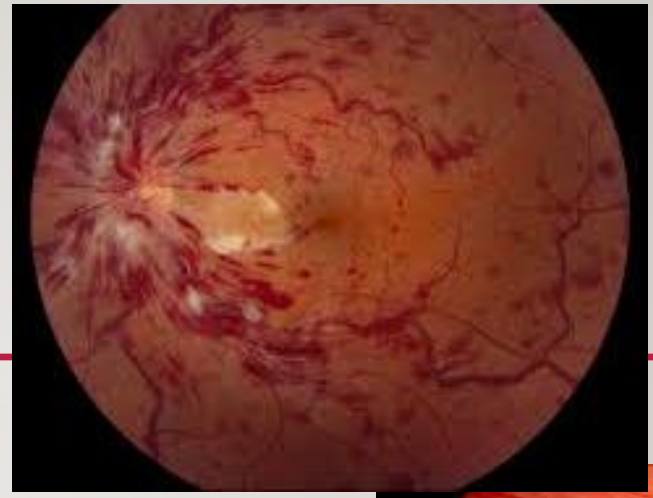


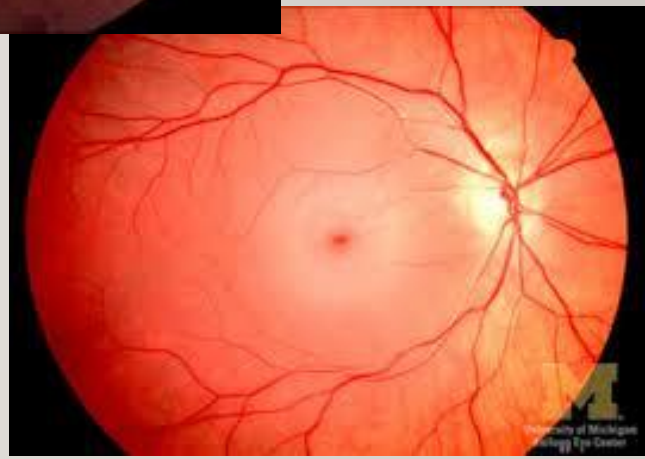
HERPES ZOSTER OPHTHALMICUS

- Rule out HIV in young patients
- Refer immediately esp.

  if the tip of nose is involved (Hutchinson sign)\
- Tx: Start oral tx immediately, even after 72hrs..
- Valaciclovir 1000mg tds po x 14 days po
- or Aciclovir 800mg 5x per day x 14 days po

SUDDEN LOSS OF VISION





- Causes: Vascular
  - CRVO/BRVO
  - CRAO/BRAO(Cherry red spot macula)
  - Giant cell Arteritis(scalp tenderness, jaw claudication)

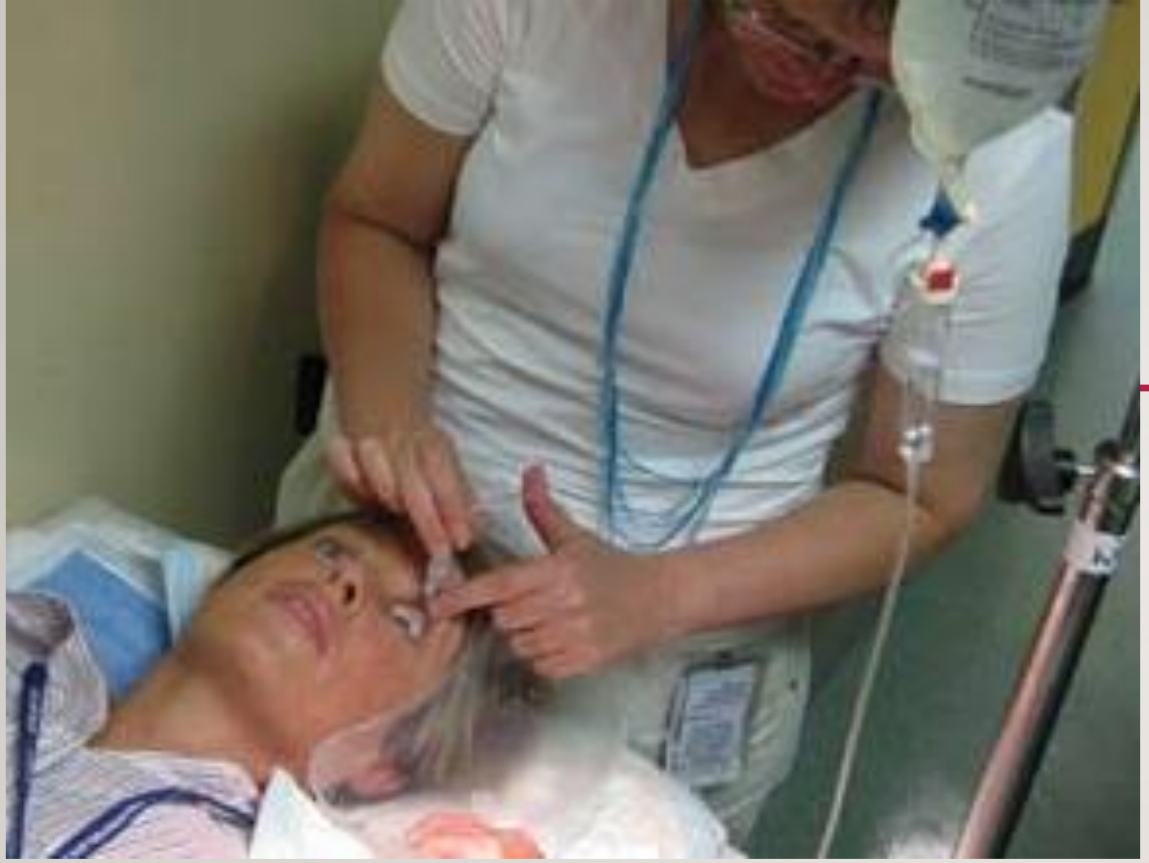
  Neurological:
  - Optic neurtits

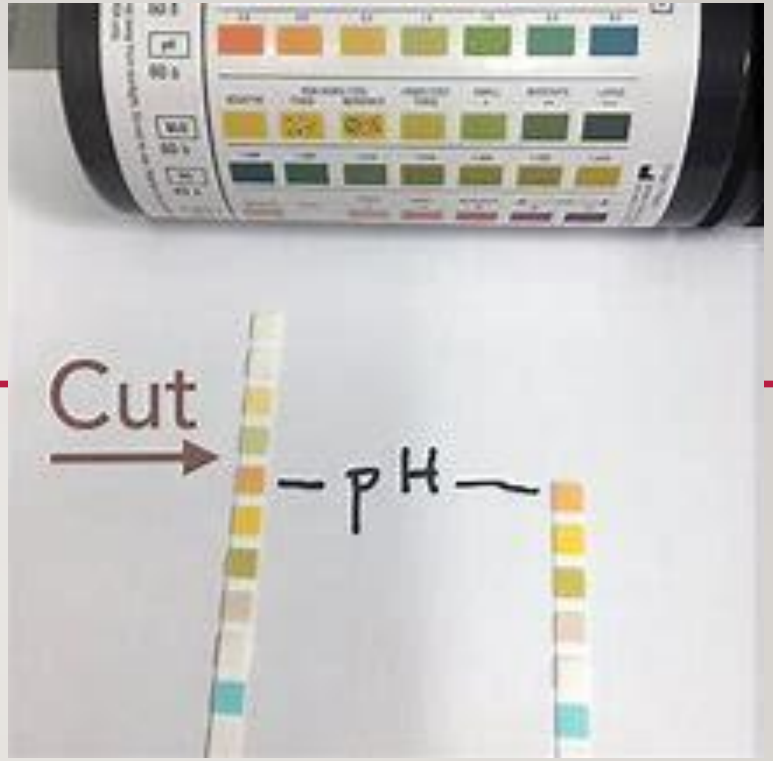
    Pain on eye movements, sudden severe loss, RAPD++

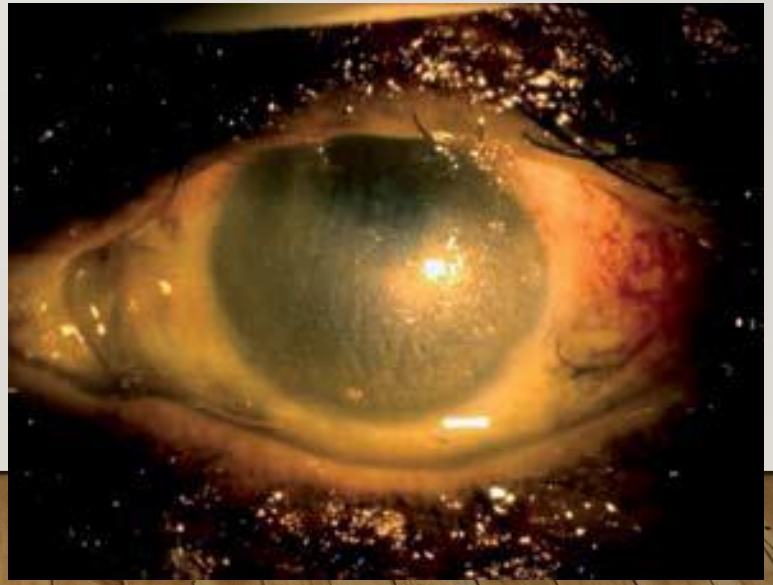
Refer immediately

CHEMICAL INJURY: IMMEDIATE EYE IRRIGATION!!!!

- 1. Instil local anaesthetic drops to affected eye/eyes.
- 2. Iirrigation with 1 litre of a neutral solution, eg Normal Saline (0.9%), not milk…WATER!!!
- 3. Evert the eyelid and clear the eye of any debris / foreign body that may be present by sweeping the conjunctival fornices with a moistened cotton bud.
- 4. Continue to irrigate, aiming for a continuous irrigation with giving set regulator fully open.
- 5. Review the patient's pain level every 10 minutes and instil another drop of local anaesthetic as required.
- 6. After one litre of irrigation, review.
- 7. Wait 5 minutes after ceasing the irrigation fluid then check pH. Acceptable pH range 6.5-8.5.
- Severe burns will usually require continuous irrigation for at least 30 minutes.




Cut
pH

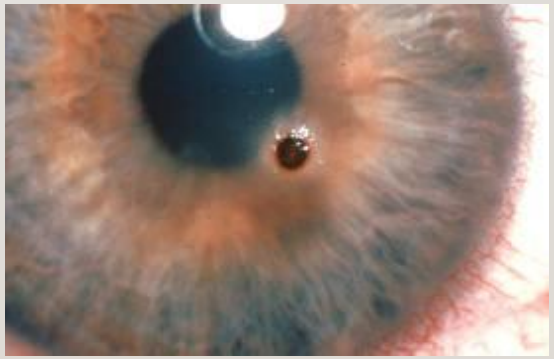


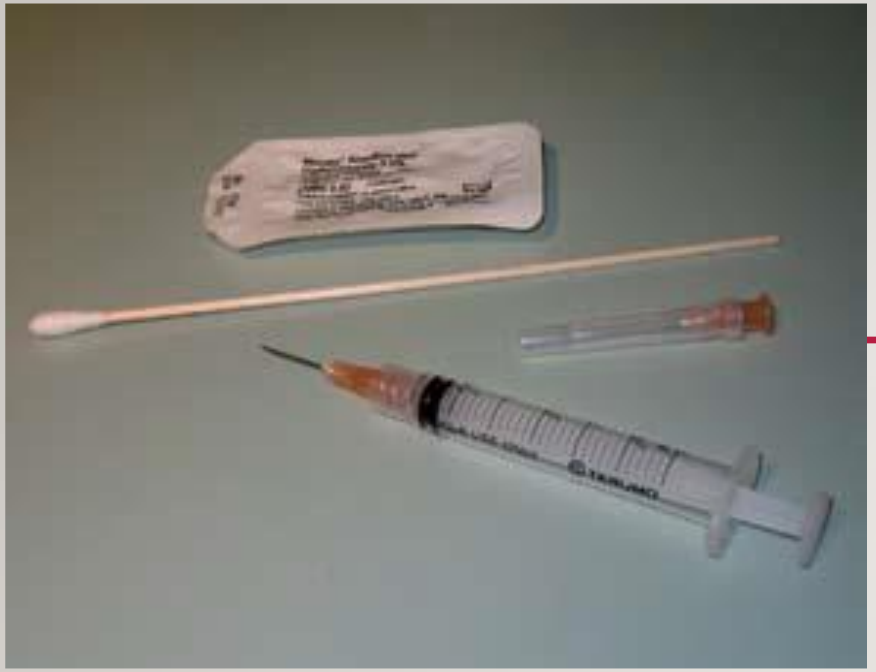
CORNEAL FOREIGN BODY

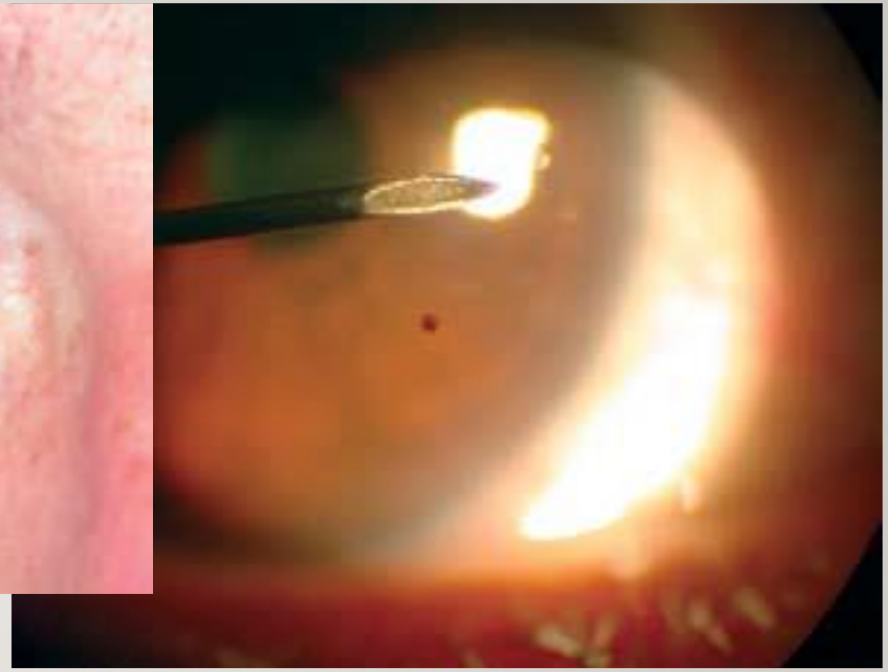
- ***History***
- What is the likely foreign body? dirt, glass, metal and inorganic material.
- **Retained organic material may lead to infection;**
- **retained metallic foreign bodies may lead to rust rings that produce persistent inflammation and corneal epithelial defect.**
- **Wood is the worst!**
- Velocity of impact?
- **High speed motor drilling without eye protection may lead to a penetrating corneal/scleral injury.**

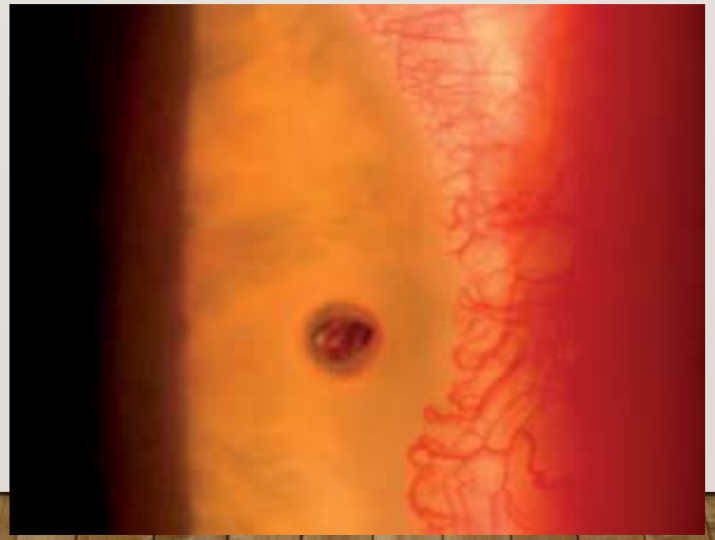
CORNEAL FOREIGN BODY

- Refer when :
  - having difficulty in removing the superficial corneal FB (under magnification with sterile needle!)
  - the superficial corneal FB is situated more than 2mm from the edge of the pupil
  - central corneal FB





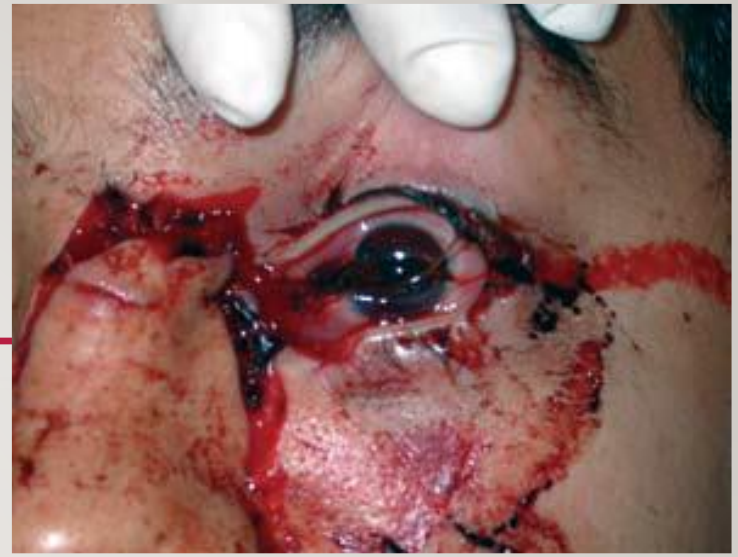




TREATMENT FOR CORNEAL FOREIGN BODY

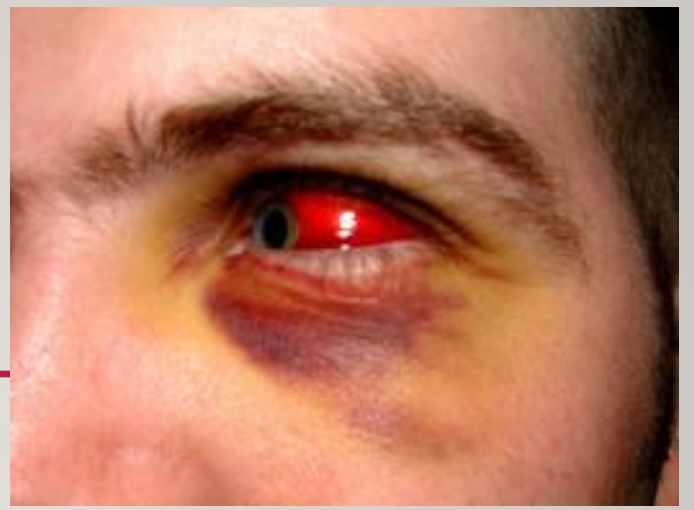
- Use topical anaesthesia.
- Foreign body removal under slit lamp as directed . If you are attempting the procedure for the first time, guidance and supervision are advised.
- Rust rings in the visual axis should be removed by an ophthalmologist, or suitably experienced emergency physician.
- Use Fluorescein to assess and measure the size of epithelial defect.
- Topical antibiotic (qid) and Oral analgaesia as required.
- NB It is not necessary to pad an eye
- There are no indications for continued use of topical anaesthetic drops.
- Daily visual acuity and slit lamp review until complete healing of defect.

EYELID LACERATION

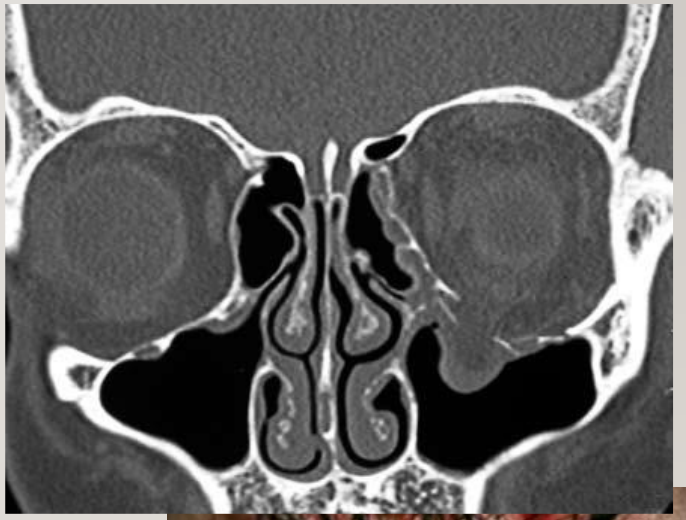


- Refer when:
  - associated penetrating injury to the globe
  - the eyelid margin is disrupted
  - the laceration involves the medial canthus with damage to the lacrimal ducts

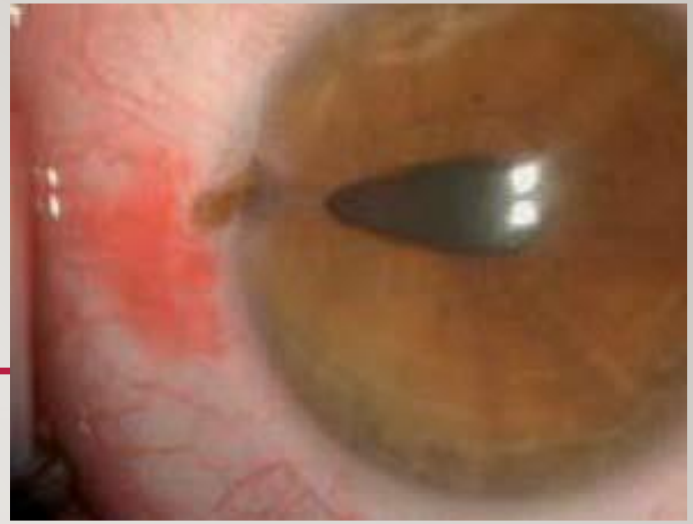
BLUNT TRAUMA TO THE EYE



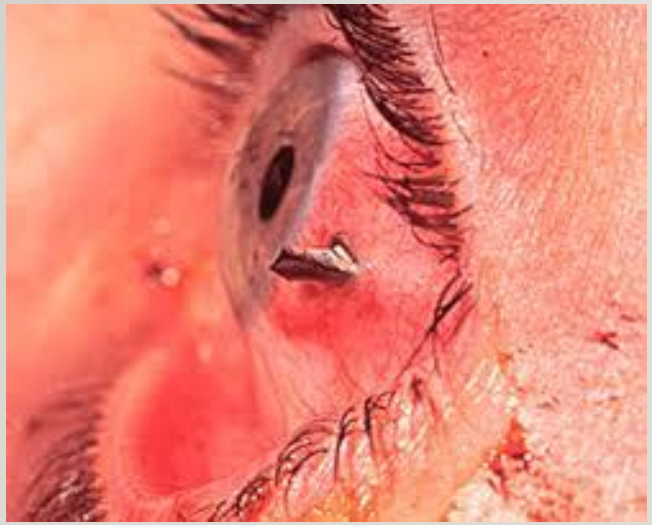
- Refer if :
  - decreased vision
  - decreased eye movements, esp upwards
  - Double vision
  - Crepitus after nose blowing
  - Hyphaema

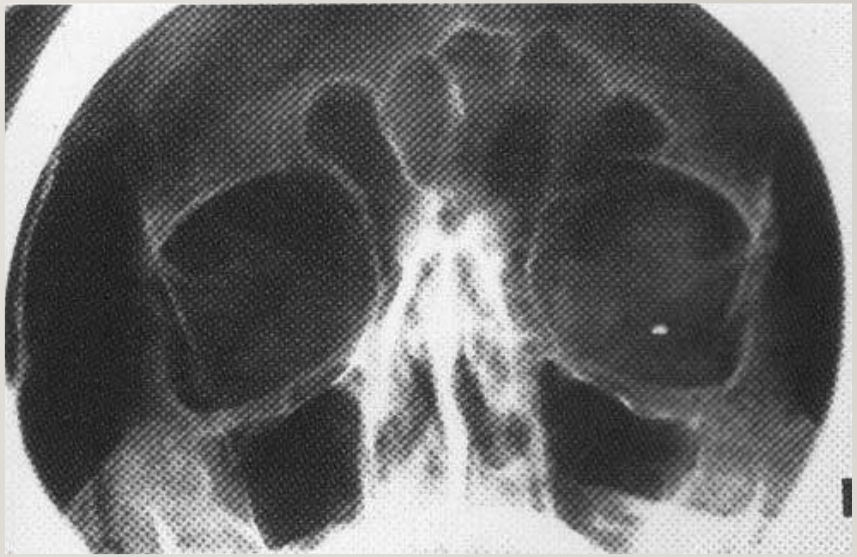


PENETRATING EYE INJURY



- Keep patient fasting
- Refer immediately, Plastic eye shield if available





ANY QUESTIONS ????

THANK YOU