

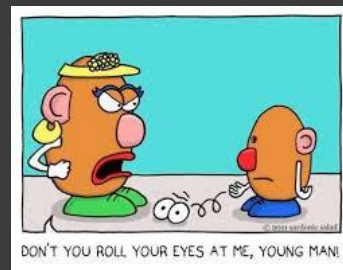
CROSSING, REDNESS, TEARING... OH MY!

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PEDIATRIC OPHTHALMOLOGY
AND ADULT STRABISMUS
PARK NICOLLET



They have a lazy eye...



Be Specific!!

- Eyes crossing (esotropia)
- Eyes drifting (exotropia)
- Head turn
- Droopy eyelid
- Vision concerns

Esotropia vs. Pseudoesotropia





Fig. 2 Right eye deviated outward, exotropic.

www.aapos.org/terms/conditions/49



Vertical strabismus



Ocular torticollis

- Nystagmus
 - Finding their null point
- Strabismus
 - Fusion or less strain
- Ptosis
 - Chin up to see below lids
- Refractive Error
 - Squinting equivalent

Amblyopia

- Three main reasons for amblyopia
 - Refractive
 - high myopia/hyperopia or anisometropia
 - Strabismic
 - Esotropia or exotropia or hypertropia
 - Deprevational
 - Cataract, corneal opacity, vitreous hemorrhage, ptosis, hemangioma

Amblyopia

- Greater than 2 lines difference in visual acuity or obvious preference for fixation in non-verbal
- Induced tropia test
 - Take 12 pd base down over both eyes
 - Symmetric response= no preference
 - Asymmetric response= amblyopia

Amblyopia

• Treatment

- Force brain to use weaker eye
- Fix underlying etiology (give glasses, fix strab remove cataract, etc)
- Patch
- Atropine
- Occluding CL
- Fog glasses
- No-No arm braces
- Super glue



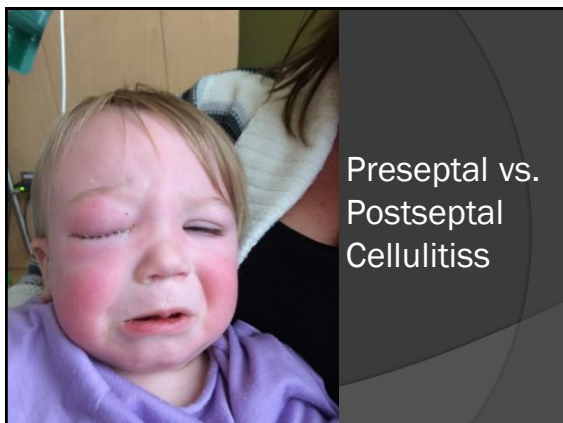
Their eyelid is swollen...



Stye vs.
Chalazion

Management Stye/Chalazion

- Warm compresses
- Lid hygiene
- Erythromycin vs. Maxitrol/Tobradex
- Surgical excision



Preseptal vs.
Postseptal
Cellulitis

Cellulitis

- Can they open their eyelids on their own?
- Can you get the eyelids open?

Orbital cellulitis

- Results from
 - Spread of contiguous sinus disease (most common)
 - 75-85% of cases are chronic sinusitis (acute 0.5-3%)
 - Most commonly ethmoid aircells
 - Traumatic violation of the orbit (implantation of foreign bodies)
 - Trans-septal spread of preseptal cellulitis
 - Metastatic hematogenous spread to orbit
 - Valveless orbital veins
 - Dental abscess to orbit

Treatment

- Antibiotics
 - Local resistance patterns
 - Check blood cultures first
- To drain or not to drain?
 - Worrisome optic neuropathy signs
 - Abscess within orbit
 - not subperiosteal
 - Treatment failures



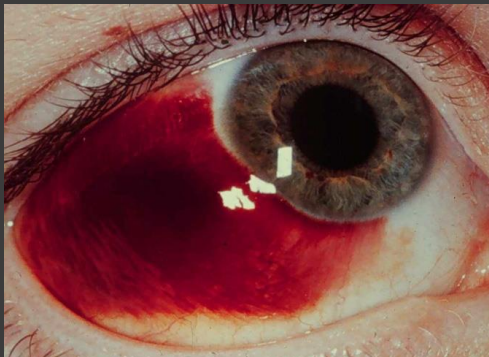
Orbital cellulitis

- Common organisms
 - *Staphylococcus Aureus*
 - Streptococcus species
 - Anaerobic
 - If <4 years old consider *H. Influenza*
 - Impaired humoral immunity to bacteria with polysaccharide capsules

My child's eye is red...



Subconjunctival Hemorrhage



Management SCH

- Cool compresses
- Artificial Tears
- Time
- If recurrent can consider CBC, bleeding studies though low yield

Conjunctivitis



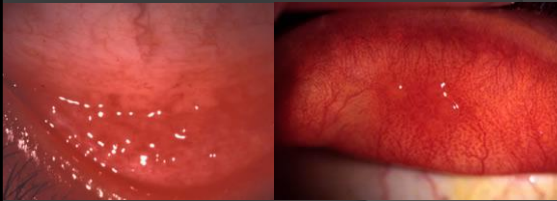
Types of conjunctivitis

- | | |
|--|--|
| <p>Infective*</p> <p>Bacterial</p> <ul style="list-style-type: none"> • Acute typical (including Staphylococcus aureus, Haemophilus influenzae, Streptococcus pneumoniae, Pseudomonas aeruginosa) • Gonococcal • Meningococcal • Adult chlamydial (Chlamydia trachomatis serotypes D to K) • Trachoma (IC trachomatis serotypes A, B, Ba and C) <p>Viral</p> <ul style="list-style-type: none"> • Adenoviral • Herpes (herpes simplex [herpes simplex virus 1 and 2], herpes zoster [varicella zoster virus]) • Molluscum (molluscum contagiosum [molluscum contagiosum virus]) <p>Allergic</p> <p>Acute allergic</p> <ul style="list-style-type: none"> • Seasonal • Perennial <p>Atopic</p> <p>Vernal</p> <p>Cicatricial</p> <p>Autoimmune</p> <p>• Ocular cicatricial pemphigoid</p> | <ul style="list-style-type: none"> • Stevens-Johnson syndrome • Atopic keratoconjunctivitis • Linear IgA disease <p>Infective causes</p> <ul style="list-style-type: none"> • Trachoma • Herpes zoster, herpes simplex • Severe adenoviral <p>Trauma</p> <ul style="list-style-type: none"> • Chemical • Irradiation • Post-surgery <p>Skin diseases</p> <ul style="list-style-type: none"> • Scleroderma • Rosacea <p>Secondary to drugs</p> <ul style="list-style-type: none"> • Topical eye drops: pilocarpine, timolol <p>Neoplastic</p> <ul style="list-style-type: none"> • Sebaceous cell carcinoma • Ocular surface squamous cell neoplasia <p>Traumatic – iatrogenic</p> <ul style="list-style-type: none"> • Chemical • Radiation • Surgery • Foreign body |
|--|--|

*Seasonal conjunctivitis is a subset of infective causes and can be caused by a variety of organisms.

Conjunctivitis

- Follicular or Papillary

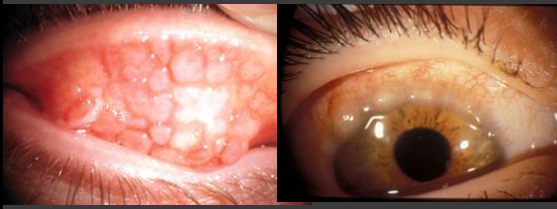


Treatment

- Viral- supportive care, tears, hand hygiene
- Bacterial- self limited
 - Resistance patterns always changing- geographic
 - Polytrim (continues to cover MRSA)
 - Fluroquinolones (vigamox, etc) variable efficacy
 - Oral abx (doxy, erythromycin)- concurrent blepharitis, otitis, bronchitis
- Allergic- Zaditor (OTC), Patanol
- Other- Molluscum, fungal, chemical, foreign body

Vernal Conjunctivitis

- Mostly boys 3-20
- Spring (April-Aug)
- May lead to corneal ulcers/scarring
- Often requires steroids during flares



Blepharitis

- Reaction to Staph/Strep on lids
- Warm compresses, lid hygiene, erythromycin/maxitrol/tobradex



Phlyctenule



Herpes Simplex

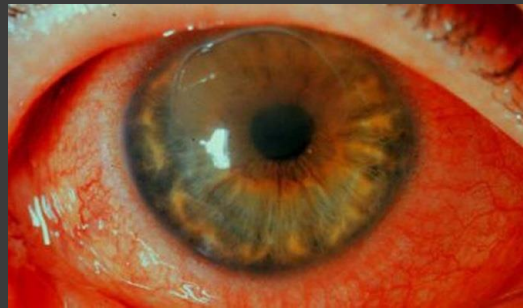
- Primary
 - Follicular conjunctivitis
 - Preauricular node
 - +/- vesicle
 - +/- dendrites
- Refer to us if eye is red/complains of vision loss



They keep saying their eye hurts...



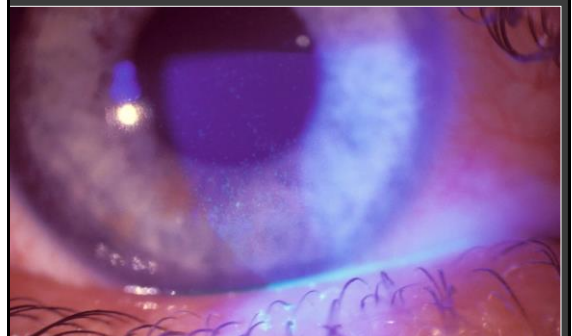
Corneal abrasion

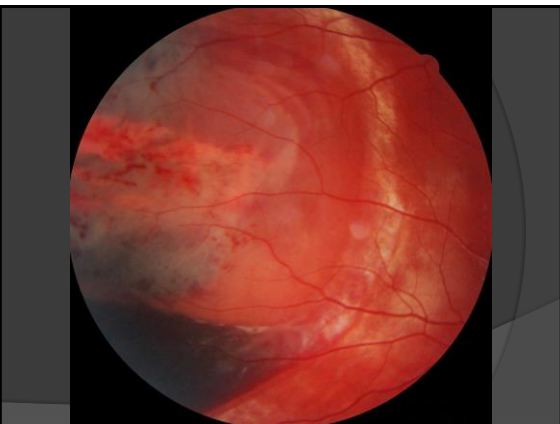
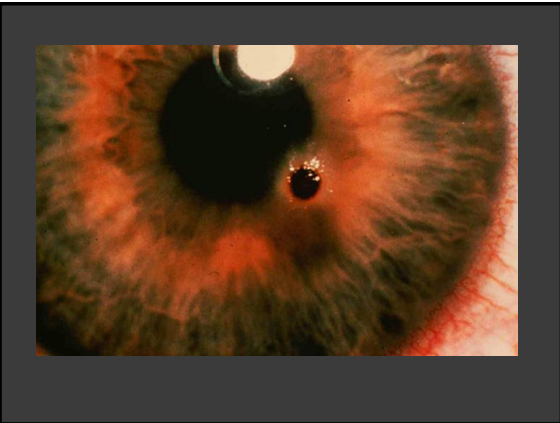
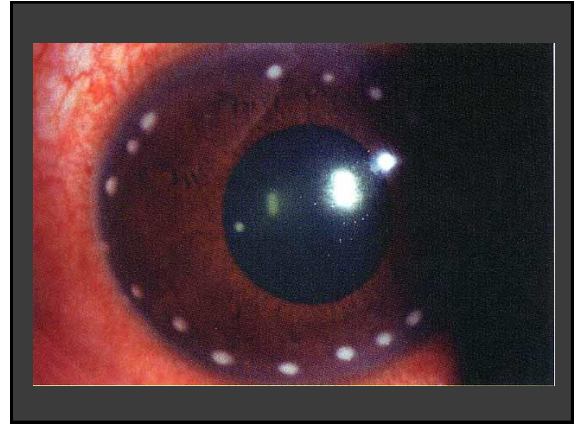


Management: Corneal Abrasion

- Non-contact lens wearer
 - Clean- erythromycin ointment or polytrim drops
 - Dirty- fluoroquinolone (Vigamox, Ofloxacin, Ciprofloxacin)
- Contact lens wearer
 - Fluoroquinolones
- If large ointment, if small drops
- If non-healing, vision loss refer to ophthalmology

Dry eye/chemical exposure





Trauma

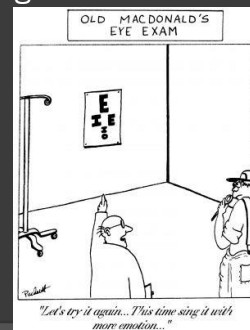


- glitter
- metal nail/screw
- nail glue
- plaster
- plastic
- air soft BB pellet
- fibers from stuffed animal
- seeds/plant material
- fish hooks
- eyebrow wax
- glass
- metal
- paint
- chemicals

Non-accidental trauma



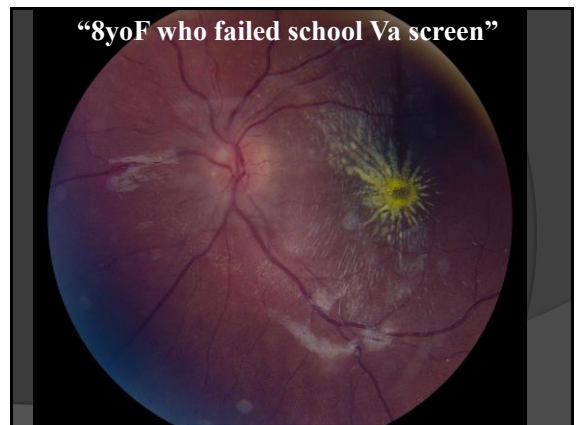
My child failed their vision screening at school....

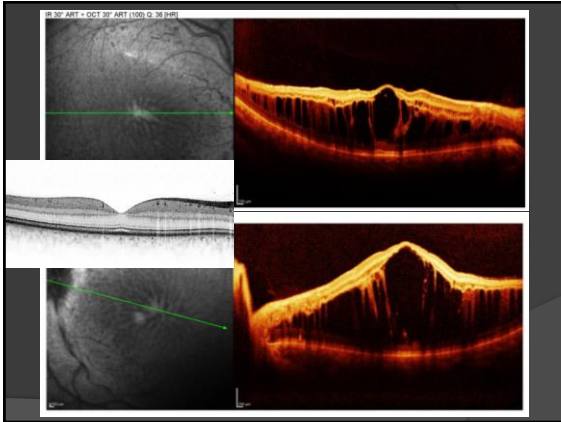


Failed vision screen

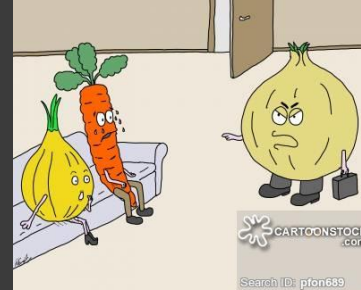
- ⦿ Immaturity/Language Barrier
- ⦿ Functional
- ⦿ Refractive error
- ⦿ Amblyopia and Strabismus
- ⦿ High level of suspicion is key...

"8yoF who failed school Va screen"





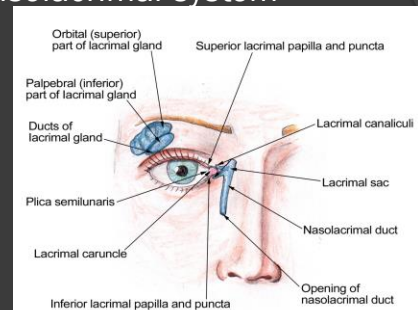
Their eyes won't stop tearing...



"Ok, young lady, answer this! If you never removed any of your layers, why are his eyes watering?"

- Conjunctivitis
- Corneal abrasion
- Blepharitis
- Irritant
 - Misdirection of lashes
 - Chemical exposure
- Glaucoma
 - Blepharospasm, corneal clouding, buphthalmus
- Nasolacrimal Duct Obstruction

Nasolacrimal system



Nasolacrimal duct obstruction

- Per AAPOS:
 - Over 5% of infants have symptoms of nasolacrimal duct obstruction affecting one or both eyes.
 - Over 90% clear spontaneously during the first year of life.
 - Parents may try massage
 - Probing and Irrigation ~90% effective
 - If funny anatomy or fail initial probing to stent
- Keep glaucoma on your differential of tearing!!!!



Nasolacrimal duct fistula

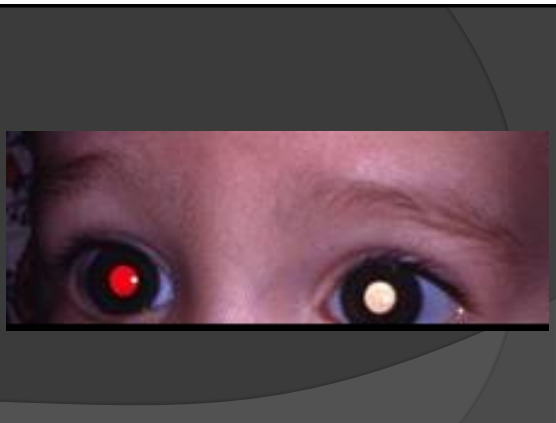


Dacryoceale

- Differential: dermoid cyst, hemangioma, encephalocele (medial canthal tendon location key!!)
- Associated with nasal mucocele- ask if trouble breathing
- Often resolve on own with massage if not then probe



One of their eyes looks funny on my iPhone...

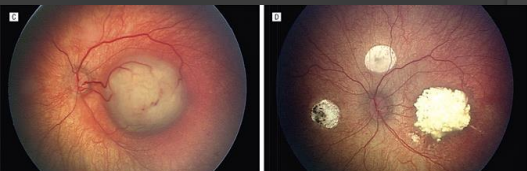


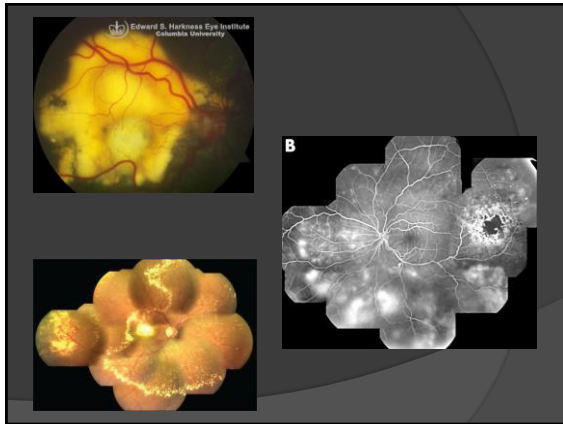
Leukocoria

- | | |
|---------------------------|--------------------------------|
| • Retinoblastoma | • Organizing VH |
| • PHPV | • Retinal dysplasia |
| • ROP | • Corneal opacity |
| • Cataract | • FEVR |
| • Coloboma | • High myopia/anisometropia |
| • Uveitis | • Myelinated nerve fiber layer |
| • Larval granulomatosis | • Norrie disease |
| • Congenital retinal fold | • Retinal detachment |
| • Coats | |

Retinoblastoma

- External beam radiotherapy – seldom used
- Primary enucleation
- Systemic chemotherapy
 - Vincristine, carboplatine, etoposide
 - Low blood count, hearing loss, renal toxicity, AML (etoposide)
- Local
 - Cryotherapy, laser photocoagulation
- Intraarterial chemotherapy

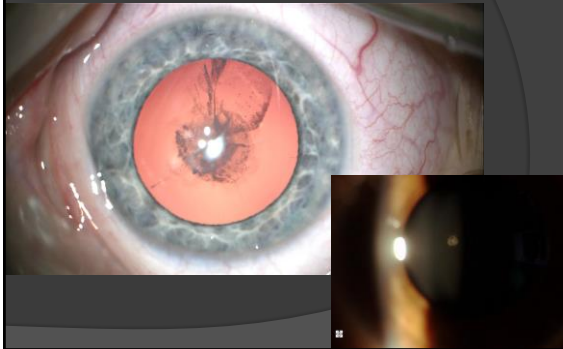




Anterior Capsular



Posterior capsular/subcapsular

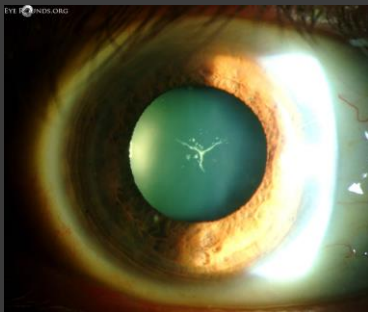


Coronary Cataract

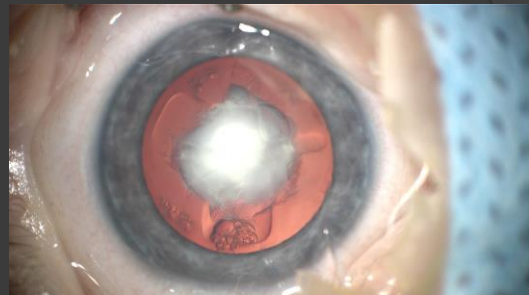
- “Crown” like, Cortical spoking



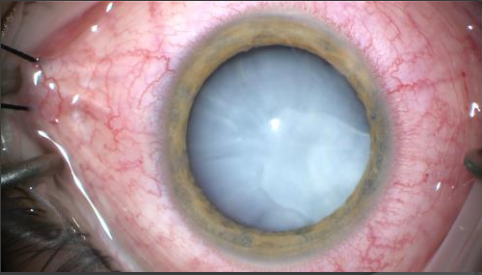
Sutural Cataract



Nuclear Cataract

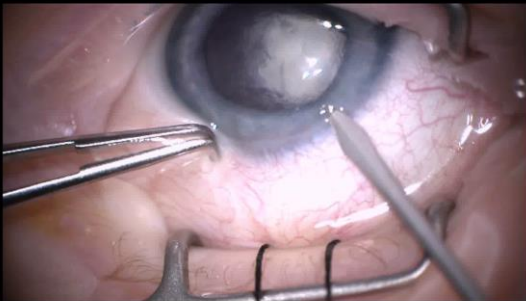
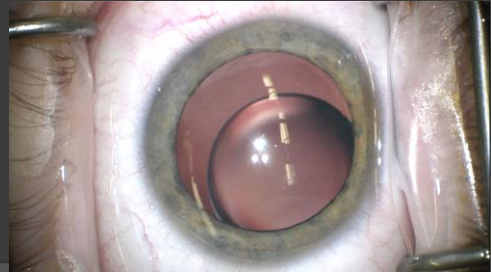


Complete/White



Systemic Disease

- Lowe's, Alport, Galactosemia, Marfans, Wilson's, myotonic dystrophy



THANK YOU!!! Questions?

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