Red Eyes

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Where there is no vision, the people perish.
Proverbs 29:18
Red Eye: possible causes

- Trauma
- Chemicals
- Infections
- Allergy
- Systemic conditions
### Red Eye Disorders: cause and effect

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Itching</td>
<td>Allergy</td>
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<tr>
<td>Burning, gritty</td>
<td>Surface problems:</td>
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<td></td>
<td>(lid, corneal or conj d/o,</td>
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<td></td>
<td>foreign body, dry eye)</td>
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<tr>
<td>Localized lid</td>
<td>Hordeolum, chalazion</td>
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<tr>
<td>tenderness</td>
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## Red Eye Disorders: cause and effect (cont’d)

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<tr>
<th><strong>Symptom</strong></th>
<th><strong>Cause</strong></th>
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<tbody>
<tr>
<td>Deep, intense pain</td>
<td>Corneal abrasions, iritis, scleritis, acute glaucoma, sinusitis</td>
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<tr>
<td>Photophobia</td>
<td>Iritis, acute glaucoma, corneal abrasion</td>
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<td>Halo vision</td>
<td>Corneal edema (acute glaucoma, contact lens overwear)</td>
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</table>
Red Eye Disorders: non-vision threatening

- Subconjunctival hemorrhage
- Blepharitis
- Hordeolum/Chalazion
- Conjunctivitis
- Episcleritis
- Corneal abrasion
Chronic inflammation of lid margin
- Types: staphylococcal, seborrheic – most common
- Symptoms: foreign body sensation, burning, matting of lashes, slight mucus discharge

Rx:
- Lid hygiene: warm compresses and cleansing scrubs with dilute baby shampoo
- Occasionally, Antibiotic ointment
Hordeolum/Chalazion

Goal
- Determine chronicity ( < 1 month = medical tx)
- Promote drainage

Rx
- Acute/subacute: warm compresses 5-10 minutes TID, wash lashes w/ dilute baby shampoo
- Chronic: refer to an ophthalmologist
Conjunctivitis

- Causes: viral, bacterial, allergy, tear deficiency
- Discharge:
  - purulent = bacterial (staph, strep, haemophilus)
  - stringy white mucus = allergy
  - Clear/Mucus = viral (+ preauricular lymphadenopathy)
Vernal Keratoconjunctivitis

- Young males, bilateral intense itching & photophobia
- Spring and fall
- 2 forms: palpebral or bulbar
- Palpebral – giant papillae of tarsal conjunctiva of upper lid; thick, ropy, dirty white discharge; milky veil
- Limbal or bulbar: limbal nodules on upper margin of cornea (gray, jellylike, elevated lumps with vascular cores), may have white center filled with eosinophils, Horner-Trantas dots
- Shield ulcer – sterile, oval abrasion
- Treatment: mast-cell stabilizer & H1 – receptor blocker, sometimes topical cyclosporine or steroid injection
Conjunctivitis Rx

- Bacterial: topical antibiotics usually sufficient
- Viral: artificial tears, cool compresses, can take two weeks to resolve
- Allergic: topical antihistamine (pataday or OTC Zaditor/Alaway) and artificial tears
Episcleritis

- Focal redness, +/- mild tenderness
- Inflamed episcleral vessels can be moved over deeper sclera with Q-tip
- Self-limited, but can be treated with Artificial Tears and NSAIDs
Red Eye Disorders: vision threatening

- Corneal infections
- Chemical Injury
- Hyphema
- Iritis
- Scleritis
- Acute glaucoma
- Orbital cellulitis
Corneal Ulcer

- Stromal opacity (infiltrate) with overlying epithelial defect
- Small, peripheral ulcers can be treated with vigamox every hour (including during night)
- Large or central ulcers should be cultured, treated with fortified antibiotic drops
- NEVER patch these!
Patients may just present with mild irritation
May have discrete punctate lesions, or classic dendrites
May present with corneal ulcer
Primary Ocular HSV infection

- Usually a unilateral blepharoconjunctivitis
- Preauricular nodes
- Usually have skin or eyelid margin vesicles
- Usually self limited, but can treat with viroptic or acyclovir
Chemical burn

- Bases are worse than acids
- Irrigate, irrigate, irrigate
- Test for pH multiple times q 30 minutes

- Keep in mind that glaucoma drops often cause red eye from the chemicals (not truly a burn or injury)
Hyphema

- Usually 2/2 trauma.
- Spontaneous hyphemas can occur.

Rx: topical steroid, cycloplegic agents, bedrest, elevate head of bed 30 degrees, shield eye

- Worry about rebleeds, day 3, labs for sickle cell
Corneal Abrasion/FB Treatment

- **Signs and Symptoms**
  - Redness, tearing, pain, small pupil, blurred vision

- **Causes**
  - Injury, welder’s arc

**Goals**
- Promote rapid healing, relieve pain, and prevent infections

**Rx**
- Topical antibiotics
- Cycloplegics (1% cyclopentolate or 5% homatropine)
- Oral pain relievers
- Do not patch FB or infections
Iritis

- **Signs & Symptoms:** circumcorneal redness, pain, photophobia, decreased vision, small pupil (Cells/Flare present)
- Often associated with systemic inflammation or trauma

**Rx:** topical steroids and cycloplegic agent
Severe boring or piercing ocular pain
Nodular or Diffuse
Caused by immune mediated vasculitis
Associated with connective tissue disease
Immediate referral to ophthalmology
Acute Glaucoma

- **Signs & symptoms**
  - severe ocular pain
  - frontal headache
  - halos around lights
  - mid-dilated pupil
  - nausea and vomiting

- **Rx:**
  - Pilocarpine 2% q 15 minutes x 2
  - Acetazolamide 500 mg PO or IV
  - Oral glycerine or isosorbide, 1cc/kg body weight
  - IV Mannitol 20% 300-500 cc
Orbital Cellulitis

- **Signs**
  - skin redness and swelling
  - impaired and painful motility
  - +/- proptosis, +/- decreased vision
  - apd or optic disc swelling if optic nerve involved

- **Rx**
  - CT scan, blood cultures, iv abx, admission to hospital