# Causes of the Red Eye

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## Conjunctivitis
- Daytime redness and discharge
- Morning "crusting" with one or both eyes feeling “stuck shut”
- Foreign body sensation
- NO decrease in vision

### Allergic Conjunctivitis
- Bilateral redness and clear-watery or stringy-mucoid discharge
- **Itchiness** is characteristic and helps differentiate allergic from viral conjunctivitis
- Often associated with history of atopic disease (e.g. rhinitis, dermatitis, hay fever)
- Treatment: cool compresses, antihistamines, mast cell stabilizers, NSAIDs

### Viral Conjunctivitis
- Bilateral redness and clear-watery or stringy-mucoid discharge
- Burning or "gritty" feeling is characteristic
- Often accompanied by a tender palpable pre-auricular node
- Highly contagious and **hand washing** is critical to prevent transmission
- Treatment: cool compresses and lubricating eye drops

### Bacterial Conjunctivitis
- Unilateral or bilateral redness and **purulent discharge**
- Swab and culture conjunctiva to **rule out gonorrhea** (which infects the cornea)
- Most common agents include *S. aureus*, *S. pneumoniae*, *H. influenzae*
- Treatment: broad-spectrum antibiotic drops

### Neonatal Bacterial Conjunctivitis
- Occurs in neonates (3-5 days old) born to mothers with chlamydia or gonorrhea
- Untreated cases may result in persistent conjunctivitis with corneal or conjunctival scarring
- Chlamydia is far more common etiology, but MUST culture to rule out gonorrhea
- Treatment: oral erythromycin (for 3-6 weeks)

### Giant Papillary Conjunctivitis
- Characterized by **large papillae** on the conjunctiva lining the upper eyelid
- Immune reaction to mucus debris on lenses in **contact lens wearers**
- Treatment: clean, change or discontinue use of contact lens
- Note: *Pseudomonas* infection is much more common in contact lens wearers
### Other Common Causes of the Red Eye

<table>
<thead>
<tr>
<th>Condition</th>
<th>Presentation</th>
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<tbody>
<tr>
<td><strong>Corneal Abrasion</strong></td>
<td>- Presents with excruciating eye pain and inability to open eye due to foreign body sensation</td>
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<td>- Patient will have a history of either eye trauma or prolonged wearing of contact lenses</td>
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<td>- Diagnosis is confirmed by staining of cornea with fluorescin</td>
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<td>- Treatment: depends on specific etiology</td>
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<td><strong>Corneal Bacterial Ulcer</strong></td>
<td>- Presents with redness, pain, photophobia and blurry vision out of the affected eye</td>
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<td>- Exam shows defect in corneal epithelium and infiltrate appearing as white spot on cornea</td>
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<td>- More common in contact lens wearers (especially <em>Pseudomonas</em>)</td>
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<td>- Treatment: mild-moderate use fluoroquinolones, moderate-severe use tobramycin</td>
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<td><strong>Subconjunctival Hemorrhage</strong></td>
<td>- Presents with blood underneath the conjunctiva but typically NO pain or visual loss</td>
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<td>- Results from rupture of a small subconjunctival vessel, often from sneezing or vomiting</td>
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<td>- Rule out trauma to the eye or base of skull fracture</td>
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<td>- For recurrent or bilateral hemorrhages, evaluate for hypertension or coagulopathy</td>
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<td>- Treatment: typically just reassurance that the redness will resolve over the next few weeks</td>
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<td><strong>Herpes Keratitis</strong></td>
<td>- Presents with moderate pain with or without significantly decreased vision</td>
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<td>- &quot;Dendritic&quot; tree-branching area of staining with fluorescein is characteristic</td>
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<td>- Treatment: urgent administration of topical or oral antivirals</td>
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<td>- Note: topical steroids worsen herpes keratitis, do NOT use them!</td>
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<td><strong>Iritis (Anterior Uveitis)</strong></td>
<td>- Presents with redness in ring around cornea, a constricted pupil and severe photophobia</td>
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<td>- Exam shows poor pupillary light reflex in affected eye (constriction due to ciliary spasm)</td>
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<td>- Causes include blunt trauma, infection, sarcoidosis, connective tissue disorders, idiopathic</td>
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<td>- Treatment: varies widely depending upon etiology</td>
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<td><strong>Angle-Closure Glaucoma</strong></td>
<td>- Presents with rock-hard red eye, hazy cornea, visual “halos” and pain</td>
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<td>- Patients often interpret the associated pain as unilateral headache rather than eye pain</td>
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<td>- Exam shows a fixed, dilated pupil and a shallow anterior chamber</td>
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<td>- Diagnosed based on increased intraocular pressure</td>
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<td>- Treatment: pressure-lowering agents (mannitol) and laser iridotomy</td>
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### Eyelid-Related Causes of the Red Eye

#### Blepharitis
- Presents with red, watery, burning eyes and **crusted eyelashes** most noticeable in morning
- Due to inflammation of the margin of the eyelid, near the origins of the eyelashes
- Commonly associated with **rosacea** but can be a manifestation of *S. aureus* colonization
- Treatment: warm compresses, eyelid scrubs, antibiotic ointment

#### Chalazion
- Presents with a hard, **painless** pea-like nodule on the upper or lower lid
- Adjacent conjunctiva is often red, but may appear normal
- Due to **non-infectious** granulomatous inflammation of a meibomian gland
- Treatment: incision with drainage or injection of corticosteroids

#### Hordeolum (Stye)
- Presents with localized **painful** internal or external swelling and redness of the lid margin
- Due to either *S. aureus infection* or by blockage of an oil gland at the base of the eyelash
- Can last 1-2 weeks without treatment or as short as 4 days if properly treated
- Treatment: warm compresses (for unresponsive styes, incision and drainage can be used)

### Less Common Causes of the Red Eye

#### Pterygium
- Presents with a **triangular encroachment** of conjunctival epithelial tissue onto the cornea
- Usually NO symptoms, but may have redness, irritation or decreased vision
- Treatment: supportive if small, surgery if large enough to significantly degrade vision

#### Scleritis
- Presents with very painful redness (sometimes purple) of the sclera and conjunctiva
- Potentially blinding inflammation of the sclera (may also involve the episclera and cornea)
- Often associated with autoimmune disease (**Wegener's granulomatosis, RA**)
- Treatment: NSAIDs, high-dose corticosteroids ± other immunosuppressive agents

#### Episcleritis
- Usually asymptomatic, but may present with mild eye pain and redness
- Self limited immune-mediated inflammation of the episclera
- Treatment: symptomatic control with topical lubricants, NSAIDs or corticosteroids

#### Dacryocystitis
- Presents with unilateral pain, **swelling and redness over the lacrimal sac**
- Acute or chronic infection of lacrimal sac, usually due to obstruction of nasolacrimal duct
- Infectious agent is typically *S. aureus, S. pneumoniae* or **Pseudomonas**
- Treatment: oral clindamycin or IV vancomycin