The Red Eye
WHEN TO TREAT, WHEN TO REFER

Dr. Raji Mulukutla, M.D.
WHAT IS RED EYE?

• Red eye is a non-specific manifestation of a variety of ocular, orbital, and occasionally systemic diseases that commonly presents to PCP’s and Urgent Care Centers.

• The history and initial presentation can be key to a diagnosis. The complete differential diagnosis is VERY long.

• Always keep in mind that while it is unlikely, it CAN be a sign of a sight threatening, and even a life threatening, condition.
OBJECTIVES:

DIFFERENTIATE BETWEEN BENIGN AND VISION THREATENING CAUSES

MANAGEMENT (Benign)
WHEN TO REFER (Vision Threatening)
THE SIMPLEST RULE OF THUMB

**TREAT!**
- Present less than 3 days
- Bilateral
- No associated severe pain and/or vision loss

**REFER!**
- Present more than 3 days
- Unilateral
- Associated pain and/or vision loss
- Contact lens
- History of trauma
RED FLAGS OF RED EYE

- Decreased Vision
- APD (Marcus-Gunn Pupil)
- Ciliary Flush
- Pain +++
- Corneal Opacity
- Photophobia
- Headaches and Nausea
THINK ABOUT

Anatomy: Where is it, front to back in the eye?

- Conjunctiva
- Cornea
- Iris
- Episclera
- Sclera
- Angle closure glaucoma

Is it **ACUTE** or **CHRONIC**?

Is it visually threatening?

Another Red Eye???? Is it Friday yet?!
DIFFERENTIAL DIAGNOSIS OF RED EYE:

Superficial:
- Subconjunctival Hemorrhage
- Conjunctivitis: Allergic, Viral, Bacterial
- Dry Eye

Cornea:
- Foreign Body
- Abrasion
- Ulcer

Deeper:
- Episcleritis
- Iritis
- Acute Angle Closure Glaucoma
- Scleritis
What is the patients history?

- Onset: Sudden, Progressive, or Constant
- Family/Friends with red eye
- Trauma
- Contact lens wearer
- Recent URI
- Decreased vision
- Pain
- Discharge
- Itching
- Photophobia
- Eye rubbing
- History of similar episodes
- Systemic medical problems: Autoimmune disease
Normal Anatomy

- Eyelid
- Pupil
- Sclera
- Iris
- Conjunctiva/Episclera
- Retina
- Choroid
- Vitreous humor
- Optic nerve
- Ciliary body
- Cornea
- Lens
How Do We Approach Red Eye?

• Acute symptoms need quick attention to rule out vision threatening complications

• If vision is affected, it can be serious and needs to be managed soon

• If pain is significant, the patient needs to be treated as quickly as possible

• Minimal or no pain and no vision loss is NOT an acute emergency
SYMPTOMS

• Decreased VA: inflamed cornea, iritis, acute glaucoma
• Pain: keratitis, ulcer, iritis, acute glaucoma
• Photophobia: iritis
• Colored Halos: acute glaucoma
• Discharge: conj and/or lid inflammation, corneal ulcer
  purulent/mucopurulent = bacterial
  watery = viral
  scant/white/stringy = allergy or dry eye
• Itching: allergy
PHYSICAL EXAM

• Vision: This is the single most important thing! If the vision is poor, REFER!!
• Pupils: Symmetric? Brisk? APD?
• Pattern of redness: Heme? Diffusely injected? Ciliary flush?
• Amount and type of discharge?
• Fluorescein staining?
• Corneal opacities or irregularities?
## Interpreting the findings

<table>
<thead>
<tr>
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<th><strong>Benign Causes</strong></th>
<th><strong>Worrisome Causes</strong></th>
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</thead>
<tbody>
<tr>
<td>Visual Acuity</td>
<td>Normal (&gt;20/30)</td>
<td>Significantly reduced</td>
</tr>
<tr>
<td>EOM</td>
<td>Full</td>
<td>Limited</td>
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<tr>
<td>Pupils</td>
<td>Normal, brisk/equal</td>
<td>Abnormal</td>
</tr>
<tr>
<td>External Exam</td>
<td>Normal or isolated lid swelling</td>
<td>Proptosis</td>
</tr>
<tr>
<td>Anterior Segment</td>
<td>Mild, diffuse redness</td>
<td>Severe redness, corneal opacity, hypopyon/hyphema</td>
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<tr>
<td>Fluorescein</td>
<td>None or punctate stain</td>
<td>Frank epithelial defect, Dendrite</td>
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<tr>
<td>IOP</td>
<td>Normal</td>
<td>High</td>
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MANAGEMENT FOR PRIMARY CARE PHYSICIANS:

- Blepharitis/Stye:
  Warm compresses, lid care, topical antibiotic ointment/gtts
  Consider oral ATBs for rosacea

- Sub-Conj Hemorrhage:
  Artificial tears for comfort

- Viral Conjunctivitis:
  Cool compresses, tears, NO contact lenses
  If very uncomfortable and you think they need steroids, REFER!

CONSIDER REFERRAL FOR ANYTHING BEYOND THESE DIAGNOSES!
THEY SHOULD HAVE SLIT LAMP EXAM, IOP CHECK
IMPORTANT SIDE EFFECTS:

**Topical Anesthetics**

- Only use them to aid in exam and diagnosis- NEVER dispense!
- Patients love them and will ask for them!
- Inhibit epithelial growth and healing, decrease the blink reflex
- Can lead to dehydration, injury, infection

**Topical Corticosteroids**

- Dispense with extreme caution
- Can make certain conditions worse - HSV
- Can mask symptoms - Scleritis
- Over the long haul, can lead to cataract formation and/or elevated IOP
REMEMBER:

Any condition that fails to improve over 5-7 days, or that GETS WORSE warrants a referral.

If it doesn’t behave as you would expect, or if the clinical picture changes for the worse (abnormal findings that were not initially present) then REFER!
Case Study

• 21 year old college student with 2 day history of redness both eyes, runny discharge and eyes crusted shut in the morning.
• Started with one eye, but now both eyes are crusty

What do we want to know???

• Cold?
• Pink eye contacts?
• Contact lens wearer?
Conjunctivitis: what kind?

- All types generally start in one eye and then involve the other
- Generally uncomfortable, but no significant pain
- Vision is normal
- Tell them apart by the type of discharge

**Allergic**
- Pollen
- Contact Lens Solution
- Seasonal

**Viral**
- Adenovirus
- Herpes Virus

**Bacterial**
- Staph aureus
- H.Flu
- Strep pneumo
- Pseudomonas
Case Study

• 38 yo female with 4 day history of increasing redness, photophobia left eye

What do we want to know???

• History of trauma?
• Contact lens wearer?
• Previous similar episodes?
• Systemic autoimmune disease?
Case Study

• 72 yo male, presents in acute distress
• c/o worsening pain right eye over past 12 hours with blurred vision, halos around lights
• Also c/o nausea and headache
• On exam: Vision is 20/400, cornea appears hazy, and the pupil dilated and sluggish

What should we do???
Take Home Message

R/O sight-threatening disorders in a patient with red eye

Refer if you have any concern about the severity of the disease

Pain and decreased vision is more concerning than isolated red eye

Always look for ocular signs before making a diagnosis, as symptoms are not always enough
Thank You!