WHY DOES THE EYE GET RED?

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OBJECTIVES

- To identify what is red when looking at a “red eye”
- To identify where the redness may be located anatomically
- To learn the different etiologies of a “red eye”
WHAT IS RED IN A “RED EYE”? 

Blood!
ANATOMY REVIEW

Anatomic location of blood in “red eye” helps narrow the differential
WHERE IS THE REDNESS ANATOMICALLY?

- Blood in the conjunctiva, within prominent or dilated superficial vessels.
  - *Conjunctival Injection*

- Blood outside of the vessels, between the sclera and the conjunctiva
  - *Subconjunctival hemorrhage*

- Blood within the eye, pooled in the anterior chamber
  - *Hyphema*
CONJUNCTIVAL INJECTION
Blood in the conjunctiva, within prominent or dilated superficial vessels.

Pathologies from different anatomic origins can all manifest with conjunctival injection.

Several different mechanisms can lead to conjunctival injection:
- Inflammation
- Irritation
- Infection
- Increased blood flow
Identifying geographic patterns redness on the conjunctiva can help further narrow your differential

- **Diffuse:** Injection throughout conjunctiva
- **Sectoral/focal:** Injection limited to specific area of conjunctiva
- **Ciliary Flush:** Ring of injection surrounding the cornea
CONJUNCTIVAL INJECTION

- **Lids/Lashes**
  - Blepharitis
  - Post-Septal Orbital cellulitis
CONJUNCTIVAL INJECTION

- Conjunctiva
  - Viral Conjunctivitis
  - Bacterial Conjunctivitis
  - Allergic Conjunctivitis
CONJUNCTIVAL INJECTION

- Sclera
  - Episcleritis
  - Scleritis
CONJUNCTIVAL INJECTION

**Cornea**

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<thead>
<tr>
<th>Corneal Ulceration</th>
<th>Dry Eye</th>
<th>Corneal Abrasion</th>
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CONJUNCTIVAL INJECTION

- Anterior Chamber

  Acute Angle Closure
  Glaucoma

  Anterior Uveitis / Iritis
SUBCONJUNCTIVAL HEMORRHAGE
Blood outside of the vessels, between the sclera and the conjunctiva
- Blood is NOT inside the eye
- Caused by rupture of capillaries
- Can look scary (especially to patients), but subconjunctival hemorrhages usually require no treatment, resolve spontaneously and do NOT affect vision.
HYPHEMA
HYPHEMA

- Blood within the eye, pooled in the anterior chamber
  - This is a true intraocular hemorrhage
- Typically caused by blunt trauma
  - Often due to tears in the highly vascular iris
- Traumatic inflammation and obstruction of aqueous humor drainage can lead to concurrent conjunctival injection
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