

THE RED EYE – DIFFERENTIAL DIAGNOSIS

Leibowitz HM. The red eye. N Engl J Med. 2000 Aug 3;343(5):345-51.
Jacobs DH. Evaluation of the Red Eye. UpToDate 2003.

Take home points:

1. Worrisome diagnoses (things you want to rule out): infectious keratitis, iritis (including acute anterior uveitis), acute angle closure glaucoma
2. Worrisome symptoms/signs: decreased visual acuity, objectively can't keep eye open, severe eye pain, photophobia
3. A simple penlight exam can help in the differential diagnosis

Key questions on the history:

- Is there decreased visual acuity? *Patient may need urgent referral to ophtho*
- Is there a foreign body sensation? *Think foreign body or corneal abrasion, especially if patient cannot keep eye open*
- Do you wear contact lenses? *Increased suspicion of keratitis*
- Ask about photophobia, trauma, discharge other than tears

Clues on penlight exam

- Non-reactive pupil: *acute angle closure glaucoma*
- Very small pupil (1-2 mm): *corneal abrasion, infectious keratitis, iritis*
- Purulent discharge: *bacterial conjunctivitis, keratitis*
- Pattern of redness: *diffuse redness (usually conjunctivitis) vs. ciliary flush (redness is near the limbus where there is transition from the cornea to the sclera; usually indicates more serious entities)*
- White spot, opacity, or foreign body on cornea? *Think corneal abrasion or keratitis*
- Hypopyon or hyphema? *Endophthalmitis, keratitis, trauma, retinal detachment, acute glaucoma → needs urgent referral to ophtho*

TABLE 1. DIAGNOSTIC CHARACTERISTICS OF SELECTED DISORDERS THAT CAUSE A RED EYE.

CHARACTERISTIC OR SITE	CONJUNCTIVITIS	EPISCLERITIS	SCLERITIS	ANGLE-CLOSURE GLAUCOMA	ACUTE ANTERIOR UVEITIS	SUPERFICIAL KERATITIS
Hyperemia	Diffuse, more prominent toward fornices	Focal	Focal or diffuse	Diffuse; most prominent adjacent to limbus	Diffuse; most prominent adjacent to limbus	Diffuse
Discharge	Yes	No	No	No	Minimal, if present	Yes (if infectious cause)
Pupil	Not affected	Not affected	Constricted if secondary uveitis present, otherwise not affected	Moderately dilated; unreactive to light	Constricted; poor response to light	Constricted if secondary uveitis present, otherwise not affected
Ocular pain	Essentially none	Mild to moderate	Moderate to severe	Moderate to severe (often with headache and vomiting)	Moderate	Moderate to severe
Vision	Generally not affected	Not affected	May be reduced	Severely reduced	Mildly to moderately reduced	Moderately to severely reduced
Cornea	Clear	Clear	Occasional peripheral opacity, otherwise clear	Hazy	May be hazy (not as prominently as in angle-closure glaucoma)	Hazy