

Ocular Emergencies: Red Eye



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KEYWORDS

- Red eye • Conjunctiva • Conjunctivitis • Allergic • Ocular inflammation
- Ocular trauma

KEY POINTS

- Red eye is one of the most common indicators that something in the eye is not going well.
- Different disorders can cause conjunctival injection, leading patients to seek emergency care.
- Because the eye is a visible organ, it may show the first signs of either local or systemic problems at early stages of the disease.
- It is important for general practitioners to identify the various causes of red eye to evaluate when to comfortably manage a particular case or consult with an eye specialist to provide adequate patient care.

Eye emergencies are part of a significant proportion of general visits to the emergency room. Some of these can be managed safely by general practitioners, but some more serious conditions require specialized treatment. Red eye is one of the most common indicators that something in the eye is not going well. Different disorders can cause conjunctival injection, leading patients to seek emergency care. Because the eye is a visible organ, it may show the first signs of either local or systemic problems at early stages of the disease. It is important for general practitioners to identify the various causes of red eye to evaluate when to comfortably manage a particular case or consult with an eye specialist to provide adequate patient care.

Most of the following eye conditions involve various degrees of ocular inflammation, which is the necessary condition to cause conjunctival injection and, therefore, visible redness in the eye.

COMMON CAUSES OF RED EYE

Various events may cause dilation or exposure of the conjunctival vessel network, resulting in red eye. A short list of the most common problems associated with redness is shown here:

1. Dry eye syndrome (dysfunctional tear syndrome [DTS])
2. Conjunctivitis

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3. Keratitis and corneal ulcers
4. Corneal abrasions
5. Foreign body in the ocular surface
6. Blepharitis
7. Episcleritis and scleritis
8. Distichiasis
9. Uveitis
10. Endophthalmitis
11. Subconjunctival hemorrhage
12. Corneal graft rejection
13. Acute glaucoma
14. Chemical burns
15. Drug induced disorders

DRY EYE SYNDROME (DYSFUNCTIONAL TEAR SYNDROME)

DTS is one of the most common conditions in ophthalmology, and is often unrecognized and underestimated. DTS is a cause of recurrent patient visits to health providers in the United States and a very frequent disease leading to chronic red eye. DTS may significantly affect visual acuity and impair daily activities, becoming a public health issue.^{1–3} The prevalence of DTS increases with age and has been estimated to range from 5% to 34% of the adult population globally, affecting 18% of women and 11% of men in the United States.^{4–7}

Pathophysiology

There is an underlying inflammation of the ocular surface with an altered morphology in the corneal sub-basal nerve plexus affects the epithelial resurfacing. Inflammatory mediators and hypersensitivity generate hyperosmolarity of the tear film as a consequence of systemic (hormonal and autoimmune) or localized (mechanical) processes affecting the tear film.^{8,9}

Classification

Decreased tear production

Decreased tear production can be caused by any form of lacrimal gland dysfunction. The causes include autoimmune and infiltrative conditions affecting the ocular surface, such as Sjögren, sarcoidosis, graft-versus-host disease, mucous membrane pemphigoid, diabetes, and lymphomas; and localized mechanical conditions leading to a decreased reflex of tear secretion, including contact lens–related and age-related lacrimal gland impairment with ductal obstruction, and ocular burns.¹⁰

Increased evaporative loss

This condition is caused by dysfunctional meibomian glands, which are responsible for generating the lipid component that provides a barrier and minimizes evaporation. In addition, evaporative loss may be caused by a decreased blink function, use of certain preserved eye drops, contact lens wear, and ocular allergies.¹¹

Clinical Diagnosis and Primary Care Evaluation

Symptoms

This condition is commonly related to long working hours in a low-humidity environment, and the use of computers for a long time may exacerbate the symptoms. General irritation, red eye, burning, foreign body sensation, fatigue, light sensitivity, and blurred vision are common, usually at the end of the day. Paradoxically, epiphora or

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