

Medicine for Managers

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The Red Eye

The red eye is a common presenting feature in GP surgeries, out-of-hours units and accident and emergency centres. Many of them are minor and self-limiting but, like so many problems in medicine, it is very important to identify the more serious ones and to manage them effectively. Red eye may be the result of injury or infection, and may occur secondary to disease or disorder or spontaneously.

There are a variety of causes of parts of the eye becoming red and they can be classified in a number of ways. Usually they are easiest to assess by whether they are associated with pain or not. They can then be reviewed according to whether the changes are associated with impaired vision (***visual acuity***) and evaluated by what, if any, other signs may be present.

The Painless Red Eye

The commonest cause of a painless red eye is ***conjunctivitis*** which may be the result of infection, allergy or irritant.



Bacterial Conjunctivitis

Infective Conjunctivitis

Common in small children. With bacterial infection, the eye is markedly red and appearing bloodshot, with pus, usually in the corners of the eyes, and the eyelashes matted together. It may feel gritty.

With viral infections the eyes are also red but usually infection starts in one eye and spreads to the other a few days later. Watering of the eyes is very common. There is no pus.

Treatment will depend on the type of infection. Commonly the bacterial infections are treated with ***chloramphenicol eye drops*** which are an antibiotic.

Such drops will not help viral conjunctivitis. Other measures should be the avoidance of touching or rubbing the eyes which may spread the infection from one to the other.

A damp cloth may be soothing. If wiping the eyes, it is very important to use a clean tissue in a single stroke *from the outside inwards,* because that is the normal direction of flow of tears which drain on either side of the nose.

Eye makeup should be avoided during infection.

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Allergic Conjunctivitis

Characterised by profound watering and intense itching. It is associated with hay fever and other allergens. It can be treated with ***cromoglicate eye drops*** which can be purchased from pharmacies.

Irritant Conjunctivitis

Occurs when the patient is exposed to irritant fumes such as ammonia or chlorine. Redness and watering are features but the eyes may be uncomfortable or painful. The best treatment is to avoid or to remove oneself from the exposure.

Sub conjunctival Haemorrhage.

This occurs when a small conjunctival blood vessel bursts causing a bright red area which gradually sinks under gravity. Over a period of days, the area undergoes the same colour changes as a bruise and gradually disappears as the body's white blood cells (***macrophages***) clear the old blood. It may follow a bout of coughing or straining. It is painless and may look more serious than it is.



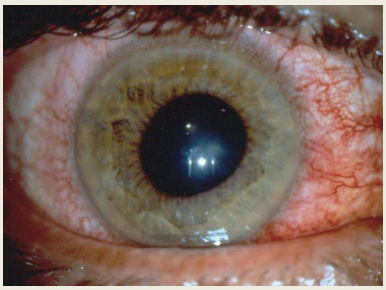
Sub conjunctival haemorrhage

Episcleritis produces mild discomfort but otherwise little in the way of symptoms. It is benign and self-limiting and affects the episclera, which lies between the conjunctiva and the sclera (the white of the eyes). It may require no treatment, but can be treated with steroid drops. It usually resolves in 7-10 days.

The Acute Painful Red Eye

Acute Angle-Closure Glaucoma.

This is a serious medical emergency. It occurs when the pressure inside the eyes rises quickly. The mechanism is complicated to explain, *but here goes*.



Classic fixed semi-dilated pupil

The shape of the eye is maintained by fluid within it. The fluid behind the lens is jelly like and called the ***vitreous humour***. The fluid in front of the lens is more watery and is called the ***aqueous humour***.

The eye makes aqueous humour continually and it circulates round the front of the eye and then drains away through a sieve (called the ***trabecular network***) at the base of the iris. Therefore fluid is produced and drains away.

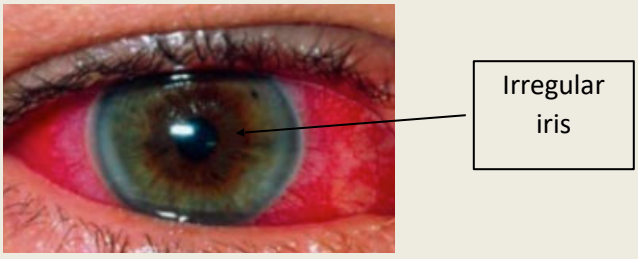
If the trabecular network becomes blocked, the pressure rises quickly. If not treated quickly the consequence may be blindness.

The eye becomes painful and red, haloes form round lights, the patient may develop ***photophobia*** (dislike of light) and suffer headaches, nausea and vomiting. There is decreased visual acuity and a classic diagnostic sign is that the pupil becomes semi-dilated and fixed (i.e. stops moving). Referral to hospital is urgent and treatment is initially with pressure lowering drugs and subsequently surgery to re-establish the drainage from the front of the eye.

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Acute Anterior Uveitis.

Also known as ***iritis*** it is



an inflammation of the iris. Various types are recognised according to the speed of onset and the part of the iris or surrounding structures that are affected.

It may be caused by inflammation, infection and trauma, although often the cause is unknown. Blurred vision, photophobia (dislike of light) and pain when trying to alter focus from near to distant objects (and vice versa) are common, visual acuity may be reduced and the iris looks irregular.

Sometimes white blood cells clump together on the inside of the lower part of the inside of the cornea to produce spots called ***keratic precipitates***.

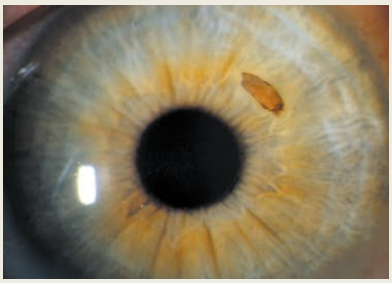
Referral to a specialist is essential because blindness can occur. Treatment is with corticosteroids by any route together with treatment of the underlying cause (e.g. antibiotics).

Keratitis is an inflammation of the cornea of the eye, marked by reddening of the eye, moderate or sometimes severe pain, photophobia, a gritty sensation and reduced visual acuity.

The cornea may become dry, lumpy, or infected and indeed it often follows the wearing of contact lenses.

The treatment of keratitis depends on the causes and should be managed following urgent referral to secondary care. Contact lens wearers are instructed to keep the lenses out until the eye has recovered and to ensure that clean lenses are used afterwards. Infections will be treated, depending on type, by anti-bacterial or antiviral agents.

Corneal Abrasions usually occur through trauma which may be from a foreign body which may be on the surface of the conjunctiva or which may penetrate the eye.



The eye may be red and sore and may be very painful because the cornea is a very sensitive structure. Sometimes, strangely, it may be relatively symptom free.

The abrasion may take the form of a small scratch or laceration which will usually heal within about three days and may be treated with an antibiotic ointment to prevent secondary infection.

Lubricant eye drops are also often useful.

Of more serious consequence is an injury caused by a small flying particle which can penetrate the eye. It may be associated with fast moving machinery such as drilling, grinding or lawn mowing.

The cornea may also be damaged by chemical burns which may occur when chemicals splash and a droplet lands in the eye. In such situations copious washing with water is a key immediate action.

Anyone who believes that the eye may have been struck by any sort of flying object which

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could have damaged the cornea should attend an A&E department for a complete eye examination. In the event of a penetrating injury the management depends on the nature and location of the damage.

In addition there are a variety of causes of a ***non-acute red eye***. They may be associated with the structures surrounding the eye, for example:

- The eyelids which may become red and swollen with itchy and sore eyelids which may stick together and lashes that are crusted and greasy. The condition, which may be caused by a staphylococcal infection, or dermatitis or rosacea is called ***blepharitis*.**

- Sometimes the eyelids grow inwards irritating the eye and making it red and sore, a condition called ***trichiasis***.

- There are ducts (***canaliculi***) which collect tears made by the lachrymal (tear) glands and they drain into a sac which sits alongside the upper part of the nose. They drain into the nose itself. If the sac gets infected it is called ***dacryocystitis*** **(da-cry-oh-sis-tight-iss)**.
- Sometimes there is an overgrowth of tissue from the conjunctiva towards the pupil usually from the nasal side of the eye. It is benign and believed to be caused by sunlight or irritation from dust. The condition is called a ***pterygium*** (tee-ridge-ee-um).



Pterygium

The list is not exhaustive and there are many other causes, some quite rare, of red eye. The message is, if unsure about the nature of a red eye, particularly if it is painful or if vision is diminished, get it seen and checked quickly.

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