

The Cornea

from [Dog Owner's Home Veterinary Handbook](#)

The Cornea is the clear part of the eye. Corneal injuries are extremely painful and require immediate veterinary attention. Affected dogs will squint, tear and avoid light. The third eyelid often comes out to protect the injured eye. Breeds with bulging eyes, such as the Pekingese, Maltese, Boston Terriers, Pugs and some spaniels, are particularly susceptible to corneal injuries.

Corticosteroids incorporated into many common eye preparations used in treating conjunctivitis should not be used in an eye suspected of having a corneal injury, because of the danger the cornea will rupture into the anterior chamber.

Corneal Abrasion

The cornea is covered by a protective surface layer of epithelial cells. Any irritation, such as a scratch or foreign body, damages this surface layer. Swelling at the site of the injury causes the area to appear hazy and opaque when viewed under magnification. The opaque area also stains positive with fluorescein dye.

Corneal abrasions in the upper part of the cornea may be caused by misdirected eyelashes. Lower corneal opacities suggest an imbedded foreign body. Abrasions near the inner corner of the eye suggest a foreign body beneath the third eyelid.

A corneal abrasion heals in about three to five days by a process in which adjacent epithelial cells enlarge and migrate over the defect. The injury will not heal, however, if a foreign body is imbedded in the cornea or beneath one of the eyelids. It is important to check for a foreign body in all cases of corneal abrasion.

Treatment: All corneal injuries must be seen and treated by a veterinarian to avoid complications, including keratitis and corneal ulcer. Broad-spectrum topical antibiotic drops or ointments are prescribed every four to six hours to prevent infection. A topical atropine preparation is used to keep the pupil dilated, which reduces eye pain. The eye is examined periodically to monitor progress. Treatment is continued until the abrasion is healed.

Corneal Ulcer

An ulcer is similar to a corneal abrasion, except that an ulcer is deeper and involves the middle and sometimes the inner layer of the cornea.

Most corneal ulcers are caused by trauma, but some are associated with keratoconjunctivitis sicca, corneal dystrophy, diabetes mellitus, Addison's disease and hypothyroidism.

Corneal ulcers are extremely painful and cause severe tearing, squinting and pawing at the eye. Dogs frequently avoid light. Large ulcers are visible to the naked eye as dull spots or dished-out depressions on the surface of the cornea. Small ulcers are best seen after the eye has been stained with fluorescein.

Treatment: Early veterinary consultation and treatment is vital to prevent serious complications and even loss of the eye. Medical treatment is similar to that described for a corneal abrasion, except that ulcers take more time to heal. Your veterinarian may recommend injecting antibiotics directly into the eye beneath the conjunctiva.

Surgical treatment involves suturing the third eyelid or a flap of conjunctiva over the surface of the eye to protect the cornea during healing. Soft contact lenses and collagen shields are other methods of protecting a damaged cornea. The advantage of a contact lens is that it can be changed weekly to observe and treat the ulcer. Collagen shields need to be replaced periodically because they degrade and disappear within a few days.

Rupture of the eye into the anterior chamber can be anticipated if the cloudy central portion of a deep ulcer begins to clear, or the endothelial layer protrudes like a bulging tire. This can be recognized by your veterinarian. It is an emergency. Immediate surgery is necessary to prevent loss of the eye.