

## **Dry Eye (Keratitis sicca, Keratoconjunctivitis sicca, Tear deficiency)**

The tear film is a gel overlying the cornea (the clear front part of the eye) and the conjunctiva (the pink membrane lining the eye and eyelids). The tear film protects the eye and eyelids from adhesion of bacteria and helps keep the cornea transparent. The most common symptom of Dry Eye is increased thick ocular discharge, especially in the morning. The cornea may appear opaque and if the disease is chronic, pigmentation of the cornea and vascularization may occur.

Tear film disease may be divided into tear production deficiency (quantitative) and tear quality (quantitative) disease.

Dry Eye is most commonly caused by decreased tear production and the two main tear glands may be affected; one gland is situated behind the eye and one gland is at the base of the third eyelid (protruding membrane in front of the eye).

The treatment options commonly used in dogs with Dry Eye include topical medications (cyclosporine or tacrolimus) or surgery (Parotid duct transposition).

- Cyclosporine and tacrolimus increase tear production by 1) direct stimulation and 2) decrease inflammation within the tear glands. Both medications are available as drops (in oil suspensions) or as an ointment.
- The Parotid gland is a saliva gland at the base of the ear; the duct from this salivary gland is commonly re-routed to the eye if medical treatment fails to increase tear production. Saliva is of a similar composition to tear fluid although mineral deposition on the cornea is a recognized complication to the parotid duct transposition.

Most dogs with Dry Eye need daily treatment for the rest of the dog's life; consistent treatment is necessary as in dogs with diabetes mellitus, where insulin is administered on a daily basis.

Some antibiotics (sulphonamides) and painkillers (etodolac) have been linked to sudden onset of Dry Eye in dogs, although most cases seen by veterinary ophthalmologists are seen in purebred dogs with an inherited risk of having tear gland disease.

Dogs with prolapse of the lacrimal gland of the third eyelid (Cherry Eye) should undergo surgery to reposition this gland. Excision of the prolapsed gland has been linked to decreased tear production.

In cats Dry Eye is commonly associated with infectious disease, and your veterinary ophthalmologist may choose to treat the infectious disease and wait for tear production to normalize.

Tear fluid replacement (tear substitution) is most commonly used in mild Dry Eye cases and provides only symptomatic relief.