

# Dry Eye and Tear Film Deficiencies

Keratoconjunctivitis Sicca (KCS)



## What is Dry Eye?

Keratoconjunctivitis sicca, otherwise known as 'KCS' or 'dry eye' is a common condition of dogs (very occasionally cats) caused by an insufficient amount of tears, or change in tear film quality.

## What causes dry eye?

**The majority of canine cases are auto-immune disorders, where the animal's own immune system attacks the lacrimal (tear) gland and reduces tear production.**

**Other causes of dry eye include:**

- Abnormal development of the lacrimal glands, eyelids, conjunctiva
- Diseases affecting the body metabolism (e.g diabetes, hypothyroidism, inflammation of the meibomian glands)
- Removal of the third eyelid gland ("cherry eye")
- Infections (e.g herpes virus or Canine Distemper virus)

## What are the clinical signs?

The most common clinical signs are a green tacky ocular discharge, discomfort, rubbing at eyes, recurrent corneal ulcers, dry nostril on the same side as the affected eye or recurrent redness of the conjunctiva.

## Which breeds get dry eye?

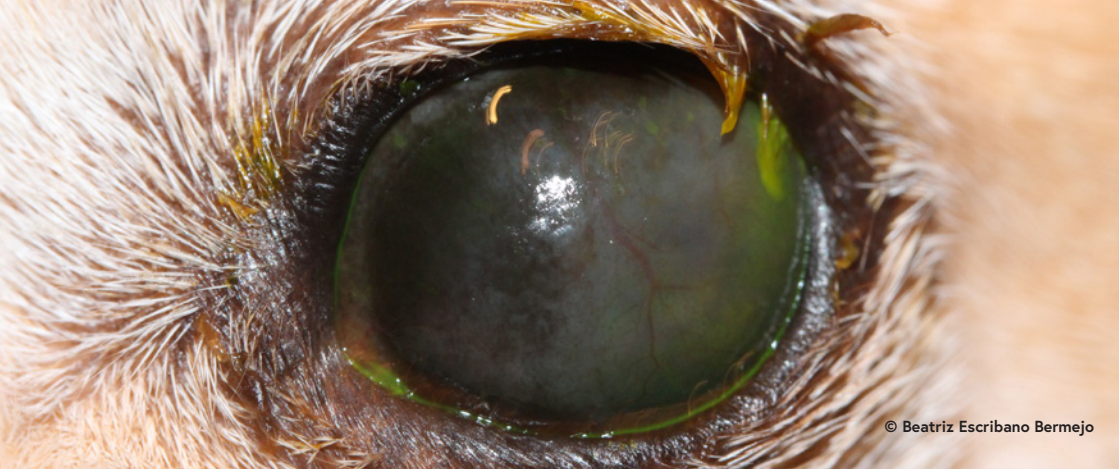
Any patient can develop dry eye however some specific breeds are overrepresented. These include the West Highland White Terrier, Cocker Spaniel, Shih Tzu, Lhasa Apso, Bulldog and Schnauzer.



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## How is dry eye diagnosed?

A small strip of paper called a Schirmer Tear Test (STT) is placed into the lower eyelid. The tears wet the paper strip, which is marked in millimetres along its edges. The test strip is kept in place for 60 seconds and the wetness of the paper is then read. This detects reduction in the watery (aqueous) part of the tear film.

Normal tear readings for dogs and cats = 15-25mm per minute  
Readings below 15mm/min require treatment

For changes in the other components of the tear film, we use a device called an ocular surface analyser (OSA). This is a non-invasive method of measuring the stability of the tear film and the health of the eyelid glands. This can often be performed conscious depending on the tolerance of the patient. However it may be necessary to give your pet a light sedation in order to perform the procedure.

## How is dry eye treated?

If your pet is diagnosed with dry eye, treatment is for life. You need to continue to put drops in for the rest of your pet's life.

Treatment goals for dry eye include stimulation of tear production, lubrication, and reducing the production of scar tissue.

1. Immunomodulating agents (e.g Cyclosporine, Tacrolimus). This medication stimulates the production of tears.
2. Lubricants – (e.g Optixcare, Clinitas). This medication helps to keep the eyes from drying out.

## If eye drops fail to work, are there other options?

### Cyclosporin implants

Implants which secrete cyclosporin can be surgically placed beneath the conjunctiva under general anaesthetic. Patients usually do well after cyclosporin implants. It is important to note that repeat procedures will be needed as the implants need to be replaced every 12 months, and topical lubrication will still need to be applied.

### Parotid duct transposition

This surgery is performed under general anaesthesia and involves moving the tiny parotid salivary gland duct from its position opening into the mouth, and placing it under the eyelid so that the eye is lubricated by saliva.

Whilst this delicate surgery is usually successful there can be complications:

- The salivary gland may not make enough saliva to wet the eye.
- The surgery involves moving a tiny tube which can get blocked.
- Some dogs can make too much saliva and this runs down the face creating periocular inflammation, redness and pyoderma. This may require reversal of the surgery.

As saliva has a different composition to tears, it can result in crystals forming on the surface of the eye which may then cause irritation. This may require a change of diet in some cases.

Please do not hesitate to contact Eye Vet should you have any concerns following treatment.