

n as keratoconjunctivitis sicca or KCS)

We can all imagine the discomfort of dry, irritated eyes and the soothing provided by eye drops. Tears are essential to the comfort of our eyes but they do more than just provide lubrication. Tears contain anti-bacterial proteins, salts, sugars, and even oxygen to nourish the eye.

Tears flush away irritants and infectious agents that are constantly getting in our eyes. Since the outer portions of the eye do not have a blood supply, the tears must bring sugars and oxygen and must remove metabolic waste. Tears consist mostly of water, but also of oil secreted by the eyelid glands, and mucus. Tears are secreted by two lacrimal glands in dogs and cats: one just above the eye and another in the third eyelid (or so-called nictitating membrane).

Common causes of insufficient tears:

- There could be a congenital lack of tear-producing gland tissue (as described in certain lines of Yorkshire terrier).
- Anesthesia will reduce tear function temporarily (thus eyes are lubricated with ointment by the attending nurse).
- A knock on the head in the area of one of the tear-producing glands can lead to KCS.
- *The most common cause of KCS appears to be immune-mediated destruction of the tear-producing gland tissue. We do not know what causes this type of inflammatory reaction but certain breeds are predisposed.*

Not that long ago, all we had to treat this condition was tear replacement formulas and mucus-dissolving agents. These are still helpful but require an impractical frequency of administration. A breakthrough came with the discovery of cyclosporine topical therapy to control the immune-mediated gland destruction. A second drug sometimes used is Tacrolimus ointment.

Dogs with Schirmer tear tests as low as 2mm still have an 80% chance of responding to cyclosporine. This medication has been a miraculous breakthrough in the treatment of KCS. Unfortunately, it is relatively expensive as eye medication goes but after messing around with less effective treatments requiring more frequent administration for less predictable results, cyclosporine is worth it.

Occasionally patients simply do not show a good response to cyclosporine ointment but will respond when the concentration is increased. Higher concentration products can easily be formulated by compounding pharmacies.

Artificial tears can be combined with other treatments and are certainly very soothing. The problem is that they are typically recommended for use 4 to 6 times a day.

Kind Regards,

Scott & Chris