

What is dry eye disease and its treatment?

Keratoconjunctivitis sicca, commonly called “dry eye disease” (DED), is a common eye condition with symptoms ranging from mildly irritating to debilitating. This common ocular condition is a major reason for visits to ophthalmologists. Over 10% of the general population suffers from DED of varying severity and its incidence increases with age. While the name implies that the eye is dry with this disease, excessive tearing is a common sign because eye irritation stimulates reflex tears.

DED results from the abnormal breakdown in the natural layer of tears that coats the front of the eye. This stable tear layer provides the cornea and conjunctiva with protection against the constant exposure to air. When the tear film becomes unhealthy and breaks down on the cornea and conjunctiva, symptoms of irritation (burning, stinging, itching, redness, tearing) develop. Blurry and fluctuating vision can also develop because the interface between the tear film and the air is also responsible for a significant amount of the focusing power of the eye. There currently is no cure for DED and available treatments focus on improving the symptoms and reducing the chronic inflammatory changes associated with this disease. Commercial treatments for DED include:

- Over the counter (OTC) comfort agents that include artificial tear or polymer formulations, nutraceuticals, and herbal products. These include antioxidants which have been shown to reduce the effects of inflammation.
- Prescription immunosuppressive therapeutics specifically approved by the FDA for treatment of DED.

The chances of developing dry eye disease increase to 50% in diabetics. Since the reduction of corneal sensitivity in diabetics is linked to the development of DED and inhibition of aldose reductase has been observed to not only increase corneal sensitivity but reduce the progression of DED, the use of aldose reductase inhibitors may represent the first direct treatment for DED in diabetics. The TVI developed Kinostat[®] that has been clinically observed to reduce the development of dry eye in dogs. Studies also suggest that the TVI developed veterinary nutraceutical antioxidant formation that mimics chemical properties of its multifunctional properties redox modulators is beneficial in alleviating dry eye in companion animals and in human volunteers.