



THE OCULAR IMMUNOLOGY  
AND UVEITIS FOUNDATION

*Dedicated to Eye Disease Cure and Education*

## Dry Eye

C. Stephen Foster, M.D.

Dry Eye or Keratoconjunctivitis sicca syndrome (KCS or dry eye) is a problem of major epidemiologic importance. It affects literally millions of people around the globe, with women dramatically over represented, particularly those women who have entered menopause. The problem may accompany dry mouth, and may be found in association with a systemic disease such as rheumatoid arthritis or systemic lupus erythematosus. It is, in many instances, far more than a simple "nuisance" problem. It has the potential for serious ocular consequences, beginning with the formation of dry spots on the cornea, progressing to epithelial defects or "abrasions" which resist healing, and then in some instances eventuating to ulceration of the cornea, sometimes even with frank perforation.

The mainstay of treatment for dry eye syndrome through the years has been replacement of fluid through the use of artificial tears. And while this is an important approach to the treatment of dry eye, it is by no means the only (or perhaps even the most important) approach. Conservation measures are also extremely important: the use of punctum plugs to reduce the loss of fluid from the eye through the nasolacrimal duct into the lacrimal sac and then down the throat, the use of side shield panels to spectacles to reduce the amount of air flow across the cornea and hence reduce evaporation, and the use of humidification techniques at home, again, in an effort to reduce the rate of loss of fluid from the surface of the eyes through evaporation. Additionally, we strongly believe that increasing the flow of oil from the oil ducts in the eyelids that supply a thin film of oil to the precorneal tear film is extremely useful and important in the care of patients with KCS. Almost every patient whom I see with dry eye has a significant contribution from the oil component of the tear film being deficient. The use of warm compresses twice daily with gentle lid massage to dilate the oil ductules in the lids, further liquefy the oil, which sometimes "sets up" like toothpaste inside the oil ducts, promotes continual flow of oil to the tear film, producing a much more stable tear film and a tear film which is much more efficient at keeping the surface of the eye lubricated, retarding evaporation of the liquid from the surface of the eye, and promoting more uniform spreading of the tear film across the entire extent of the ocular surface.

The use of anti-inflammatory and immunomodulatory agents by topical application also play a role in many patients' dry eye care, since inflammation of the lacrimal gland has been shown to be present and to be hindering the normal function of that tear-producing gland in a significant proportion of patients with dry eye disease. Hence, topical Alrex (a weak corticosteroid) and topical Restasis (containing cyclosporin) have been shown to be beneficial in such patients. Xiidra (Lifitegrast) is a new immune mediator drop for management of dry eye shown to be effective as well.

Additionally, dietary supplementation with foods rich in omega 3 free fatty acids, such as cold water fish (eg, salmon) can also help in the restoration of the normal health and functioning of the dysfunctional lacrimal and Meibomian glands. Lipiflow procedure is another option for treatment of Meibomian gland dysfunction and Blepharitis.

Finally, the use of specially constructed scleral lenses can additionally be helpful in retaining a layer of liquid against the cornea in patients who have profound lack of adequate tears.