

THE MANAGEMENT OF DRY EYE

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The term “dry eye” covers a variety of conditions affecting the surface of the eye. These conditions are characterized by either a quantitative or qualitative deficiency in tear production, with a drying effect on the ocular surface. Sometimes dry eyes are associated with dryness in other parts of the body and with systemic inflammation such as in Sjogren’s syndrome. In other cases, however, the dryness is limited to the eyes alone.

The reasons for decreased tearing and its effect on the ocular surface are complex but are beginning to yield to systematic scientific inquiry. Recent evidence has demonstrated a strong relationship between hormonal changes in the body and the body’s immune system in initiating and sustaining changes in the lacrimal glands and other structures such as the oil glands of the eyelids.

Artificial Tears and Ointments

The use of artificial tear solutions has been a mainstay in the treatment of dry eyes for many years. Artificial tears are formulated to mimic the composition of natural tears. Natural tears, however, contain such an array of substances in small amount that it is impractical to formulate artificial tears exactly the way nature produces tears. To be useful, however, artificial tears should closely mimic the composition of natural tears in their electrolyte compositions, their tonicity and their pH. These terms refer to how thick the tears are, how much “salt” they contain, and their acid balance. Most artificial tears meet these criteria; otherwise they would sting and be uncomfortable upon insertion. The main limitation of artificial tears is their relatively short duration of action. Many manufacturers add thickening agents such as polymers in an attempt to prolong the effectiveness of the eyedrops.

All eyedrops which are sold in bottles for multiple use must contain preservatives to protect against contamination of bacteria. Unfortunately, the generally used preservatives are also irritating to the eye and, when used frequently, can cause ocular irritation beyond that experienced from the dry eye itself. Recently manufacturers have begun producing unit dose dispensers (use once and throw away) which can be sterilized at the factory to protect against contamination. The packaging is expensive but preservative-free artificial tears are much gentler on the ocular surface and are, in general, recommended for anyone using an artificial tear more than three or four times per day. A new product, from CibaVision, contains a preservative in a multi-use bottle which is deactivated by ingredients in the natural tears and is reportedly less irritating.

Ointments and Lacriserts

No currently available artificial tear lasts throughout the night, whereas ointments do. Ointments increase the lubricity between the lid and the surface of the eye which can last during the hours of sleep. Some people however, find ointments irritating.

Lacriserts® (Rx) are small pellets which dissolve when placed under the lower lid (in very dry eyes, they must be “started” with a drop of artificial tears) where they release tears over many hours. They can be useful for certain patients with moderate to severe dry

eyes. The drawbacks, however, include formation of a thick tear layer over the lower lid which can interfere with reading. Also, they sometimes fall out of the eyes.

Bandage Contact Lenses and Prescription Medications

In general, contact lenses are contra-indicated for patients with dry eyes as they increase the risk of infection. In some instances, however, particularly where there is a surface problem that needs temporary aid in healing, a special bandage contact lens can be useful in lessening the friction between the upper lid and the surface of the eye allowing the sore area to heal.

In particularly severe forms of dry eyes in which there is a large immunological component, some prescription medicines that decrease inflammation and immunologic activity are indicated. These are strong medications which can have side effects and should only be used under strict supervision of an ophthalmologist thoroughly familiar with their use.

Punctal Occlusion

Blocking of the drainage of tears in order to preserve moisture on the surface of the eye can be highly effective in certain patients with moderate to severe dry eyes. In this procedure either one or two of the openings in the upper and lower eyelids can be surgically blocked. This is usually done by the application of heat or laser. These closures are usually permanent, although they can reopen. Studies have shown that the reopening rate is much higher with laser treatment than with direct heat application.

The use of temporary blocking agents such as silicone plugs or collagen implants can also be helpful. I find the use of silicone plugs, particularly in the inferior puncta, to be an excellent way to assess the effects of tear blockage.

Patient Management

In my experience, people with dry eyes can be effective managers of their condition. The ocular surface is exquisitely sensitive to changes and the patient is frequently the first to recognize that. I believe such self-management, however, should be guided by professional expertise and the development of a treatment plan which includes periodic monitoring. Working with your doctor with periodic visits will maximize your chances for effective management of dry eyes.