



Fact-sheet - Dry Eye

Tears serve to lubricate the eye and they are produced around the clock, but when insufficient moisture is produced stinging, burning, scratchiness and other symptoms are experienced and may be referred to as Dry Eye, Keratitis Sicca, Keratoconjunctivitis Sicca (KCS) or Xerophthalmia.

When we blink, tears form a film, which spreads over the eye, making the surface smooth and optically clear and enabling good vision. There are three layers in the thin film of tears: an oily layer, a watery layer and a layer of mucus, each with specific function.

Small glands at the edge of the eyelid (Meibomian glands) produce the outermost, oily layer and the main purpose of this layer is to smooth the tear surface and reduce evaporation. The large lacrimal (tear) gland produces the middle, watery layer. This layer cleanses the eye and washes away foreign particles or irritants. The innermost layer consists of mucus, which is produced by small glands scattered through the conjunctiva, (the delicate membrane lining the inside of the eyelid) and allows the water layer to spread evenly over the surface of the eye. Without mucus, tears would not adhere to the eye.

What causes it?

Dry eye is caused when the tear glands produces insufficient tears or if the tears do not remain in position between blinks. This can happen as part of the normal ageing process, and is more common among women. Although the condition is not common it tends to occur with increasing age when it is not always noticed because the effect of dry eye tends to balance another age-related change; poor tear drainage. The result of this is a balance between not making enough tears and not being able to drain away enough tears.

The main causes of an insufficient film of tears are deterioration of lacrimal tissue, dysfunction of the Meibomian glands destabilising the film of tears or a blockage in the excretory ducts of the lacrimal gland. People with Sjogren's syndrome are at risk of dry eye as part of a more systemic problem involving salivary glands and other sites of mucous membrane. Salivary gland

involvement produces a dry mouth as well. This syndrome and dry eyes generally, may be found in people with rheumatoid arthritis.

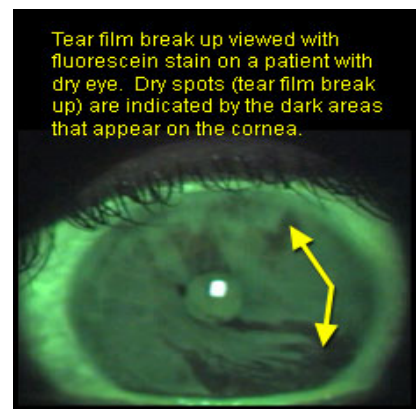
Effects of the condition

In the early stages there is an increase in mucus strands and as the tear film breaks down, the mucin layer becomes contaminated. Where this contaminated matter cannot be dispersed it tends to move with blinking. Mucin is a substance that dries very quickly and rehydrates very slowly.

People with dry eye rarely have a sensation that the eye is dry, but instead experience irritation, burning, a sensation of having a foreign body in the eye, mucus discharge and possible temporary blurring of vision. Blinking may cause pain to people with severe forms of keratitis.

Treatment

There is a series of tests designed to identify the cause and type of dry eye and these include Fluorescein staining, Rose Bengal staining and a Schirmer's test. Most tests are comfortable, but a topical anaesthetic may be used in some circumstances in the form of eye drops.



Tear film break up viewed with fluorescein stain on a patient with dry eye. Dry spots (tear film break up) are indicated by the dark areas that appear on the cornea.

The aim of treatment will be to relieve discomfort and prevent corneal damage. In some situations relief may be found by blinking consciously when doing close or continuous work. It is also helpful to close the eyes for a spell from time to time.

Eye drops may be prescribed or purchased over the counter and since there is a variety, it may be helpful to try others if your present product does not suit you. Some drops contain preservative, which means they are safe to use for a month after opening, but although these drops are cheap and suitable for most sufferers, some people do not tolerate the preservative and may need to get prescription for a preservative free medication. Lubricant ointments are also helpful, particularly at night. These are also available without preservative.

New evidence has suggested reducing your Omega 6 intake and increasing your Omega 3 intake. This is possible by eating more oily fish such as Tuna (Fresh or tinned) or taking Cod Liver Oil supplements.

Some women benefit from hormone replacement therapy (HRT), especially whose dry eye problems began around or after the menopause.

Antihistamines and some travel sickness pills inhibit tear secretion and symptoms can vary from day to day and be affected by general health.

Surgical procedures may be indicated if symptoms are severe despite drops. It involves partially closing the tear drainage holes in the eyelids permanently. It is a minor operation that is suitable for some patients.

Help for people with Dry Eye

Avoiding the following situations will minimise your risk of Dry Eye.

- ü Reduce the dry atmosphere caused by central heating by using a humidifier
- ü Avoid car heaters, particularly at face level
- ü Sit away from direct heat such as gas or electric fires
- ü Use eye-drops just before activities, which cause additional pain or discomfort such as television, reading, sewing and writing
- ü Remember to blink regularly, particularly when doing close or concentrated work. Blink properly with full lid closure, not "half" blinking.
- ü Avoid smoky atmospheres.
- ü Reduce your alcohol intake or drink more water along with alcohol.

Prognosis

Prognosis varies considerably and may depend in part upon individual lifestyle choices and overall health as well as the severity and cause of the condition. There is no definite cure, but people can usually be made more comfortable.

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