Dry Eyes / Tear Deficiency

A tear deficiency occurs when the tears your body is producing do not adequately keep the front of the eye moist. Tear deficiencies can occur for a variety of reasons. Most tear deficiencies are chronic, which means we can manage the symptoms and make the eyes feel better, but the underlying problem never really goes away.

What causes the tears to become inadequate?

There are many causes. The tear surface on the front of the eye naturally becomes more thin with age. Hormonal changes can cause the tears to become thinner. Other causes include systemic disease, such as, rosacea, rheumatological diseases, such as, rheumatoid arthritis, Sjogren's syndrome, superficial eye infections, and meibomian gland dysfunction. Medications can cause the tears to be more thin including antihistamines, hormone replacements, SSI inhibitors, drug reactions, such as, Stevens-Johnson syndrome, and diuretics.

What are the symptoms of dry eyes?
People with dry eyes or tear deficiency will typically complain that their eyes feel tired, especially towards the end of the day. In addition, vision will commonly become blurry when reading. As the symptoms get worse, the eyes begin to feel scratchy as if there is "trash" or "sand" in the eyes. Itching or feeling the need to rub the eyes may also become a factor.

Commonly, thin watery tears will roll out of the corner of the eyes and down the cheek. The eye surface remains dry even though tears are pouring out. Patients will also protest "How can my eyes be dry? I have tears flowing down my cheek." Dry eye, wet cheek.

**Treatment of tear deficiency.**

Since there is no cure for tear deficiency, we manage the symptoms. The symptoms may be totally absent at times and other times may be quite severe. The object of treatment is to keep the front surface of the eye moist, so that the eye can heal. Healing is not immediate and usually takes several days or even several weeks after adequate moisture has been consistently achieved.

The mainstay of treating tear deficiency is the use of artificial tears. Most people find using an artificial tear 4 X per day is all that is necessary. For more severe cases, tears can be used much more frequently.

When you look at the vast array of tears in the drugstore, the question immediately arises as to
which tear is best. Not an easy answer since each patient's needs are different. Artificial tears are not just salty water, but are complex chemical formulations. Many of the actual chemical ingredients are completely different in the different brands, though several brands may use the same ingredients.

As a guideline:

• If your doctor recommends a particular brand for you, that usually is a pretty good bet it will be good for you.

• Unfortunately, the more expensive drops tend to be the better drops.

• Some drops are thinner (less viscous) and some thicker (more viscous). Thinner drops may feel better when they first go in, may not blur your vision, but they do not last as long between drops. Thicker (more viscous) drops may feel gummy when they go in, blur your vision for several minutes, but lasts longer. In general, people with a milder tear deficiency, prefer the thinner drops and people with more severe deficiency prefer the thicker drops.

• If eye discomfort wakes you up at night, use a tear gel or an eye ointment before you go to bed at night.

What is a non-preserved tear?

Most eye drops in a bottle have a preservative, since germs will grow in the bottle, if no
A preservative is present. These preservatives are mildly irritating to the eye, but if you only use the drops 4 times a day, it doesn't seem to make much difference. However, if you were using the drops more than that, the tear drop may be helping, but the preservative may be irritating your eye. If that is the case, either use a product with a "disappearing preservative", or use a drop with no preservatives. Non-preserved tears come in single use vials where you pop-open the top, put the drop in, and throw the rest of the tiny vial away. As you might expect, these are more expensive, but are also more comfortable.

If there anyway I can force my body to make better quality tears?

• Taking fish oil tablets by mouth or eating a diet that has lots of fish can be helpful.

• Use of cyclosporin (Restatsis) or topical steroids can be helpful in reducing the inflammation associated with dry eyes. Restasis can be used for prolonged periods of time. Topical steroids are generally not used, except in a burst since if they are used for prolonged periods of time, they can be associated with the development of cataracts or glaucoma.

• There are some medications called sialogogues which increase the quantity of tears. In some cases of extreme dry eyes, they can be useful, though for many people they also cause stomach cramps.

Environmental factors
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• Air-flow across the eyes causes the tears that are present to quickly evaporate leaving the eye very dry. For this reason, patients who are having difficulty with tear deficiency should avoid being under a fan. Likewise, driving with the air conditioner blowing in your face, or driving with the windows down can also be uncomfortable.

• Using a C-Pap for sleep apnea is a frequent problem with people with dry eyes. Since the masks rarely fit tightly, there is a constant flow around the mask and into the eye while the patient is asleep. The eyes remain chronically dry as a result. The best method for dealing with this is to tape the eyes closed and leave them taped all night long, so that they will not be opened at all during the night. Some people also as an alternative will wear an eye patch or a sleep mask that keeps the air away from the eyes.

• Smoke and fumes are very irritating to people with tear deficiencies. It is helpful to not allow people to smoke in your house and to avoid industrial or cleaning solutions.

• Cosmetics. Eye liner and mascara release particles which end up in the tears. These gritty particles can make the eye more uncomfortable.

Are there any other ways to help if my tear deficiency is severe?

• Normally, your tears flow from your eyes, through a small passageway into the nasal cavity. It is relatively easy for your eye doctor to put a small plug into the entrance to this passageway in order to keep the tears that you are making on the surface of the eye.
This is helpful for many people.

- If extremely severe tear deficiencies occur, then the eye lids can be partially sewed together. This is very helpful in extremely severe cases.

**Are there other remedies that doctors don’t know about that may be helpful?**

From time to time, we hear things from our patients which are not scientifically proven, but have worked for a particular patient. Some of these we dismiss with a smile (My eyes are better since my mother-in-law moved out of the house) and some are just commercial enterprises that are expensive, but really don't work. Since the symptoms tend to come and go, it is difficult for a particular patient to evaluate what may be helpful.