

Dry Eyes explained

Written by Tessa Jupp RN

This is what has been said about the **Dry Eye** problem.

"Dry eyes, is possibly the most frequent complaint patients bring to their eye doctors. It occurs when the coating over the eye's surface called "**tear film**" **loses its protection**, causing inflammation in the tear glands. An oily layer in this film acts like a biological plastic wrap protecting the moist layer beneath. But when a person eats scant **Omega-3 fatty acids** and too many Omega-6 fats, it appears that the oily layer can't do its job as well, resulting in inflammation and the symptoms of dry eye.

Dry eyes are **often due to a lack of vitamin A** but other causes include a lack of essential fatty acids ie **fish oils** which can cause the tear glands to wither. Trans-fats raise blood levels of LDL ("bad" cholesterol), which increases the risk of heart disease and other conditions, including eye problems. This is because trans-fats interfere with the body's absorption of beneficial Omega-3 fatty acids, which appear to help protect against dry eyes and macular degeneration.

There are two reasons why vitamin A is needed for vision:

1. The retina of the eye needs A to **absorb light** and communicate it to the brain.
2. The eye's cornea needs A to keep its cells healthy. Damage to the cornea due to a **lack of vitamin A causes dryness, xerophthalmia (dry eye), scarring, and eventually blindness.**

A **lack of Vitamin A** causes the **cornea to become very dry**, leading to clouding of the front of the eye, corneal ulcers and vision loss. Vitamin A deficiency also causes damage to the retina, which contributes to blindness. Lack of Vitamin A causes dryness of mouth, skin, sinus, lungs, gut. (Glare intolerance is usually an indicator. Take **4-5 cod liver oil** capsules with zinc.)

Vitamin B2 deficiency can cause **red, itchy, burning, bloodshot, gritty, sore, oversensitive eyes.** (B2 reduces engorged blood vessels back to normal size within 48 hours. Eyes often feel better within hours. Usual dose is **4 by 100mg** when problems.)

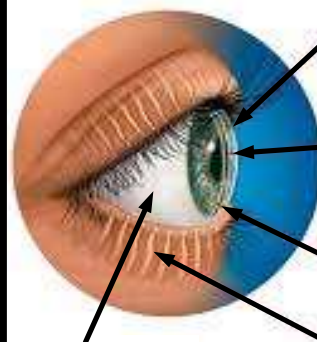
Most people with dry eyes are also **dehydrated** - ie not drinking enough good quality water and **drinking too much coffee, sodas and alcohol.** Increase water consumption and **drink only spring water** not reverse osmosis or distilled water due to the acidic pH and the lack of minerals. (If you are using filtered or rain water, add a pinch of good quality **Celtic sea salt** to improve the "good" mineral content but not enough that the water tastes salty. Salty water is not good to drink.)

A **potassium** deficiency can also be a **cause of dry eye.** This is another reason it is recommended dry eye patients drink a few glasses of coconut water a day. **Coconut water** is very high in potassium and is one of the best ways to hydrate. (We get potassium from the **water we boil veggies in** too. Don't throw it away - use to make **soup, gravy, white sauce** or just drink it! It can be tasty.)

It is also important to practice good eyelid hygiene if you are a dry eye sufferer. Try warm compresses on closed eyes with a **warm wash cloth** for 15 minutes three times a day to bring the blood flow in."



"I think your intra-ocular pressure is very high."



Lipid (oil) layer

lubricates and prevents evaporation

Aqueous (water) layer

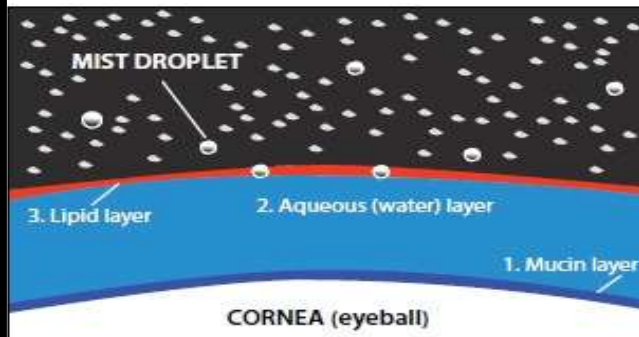
nourishes and protects the cornea

Mucin (mucous) layer

adheres tears to the eye

Meibomian glands

creates the lipid (oily) layer of the tear film



The tear film is made up of three different layers:

- (1) the **mucin** or **mucus** layer, which nourishes the front of the eye and sticks to the eyeball.
- (2) the **aqueous** or water layer which provides moisture, oxygen and nutrients.
- (3) the **lipid** or outer fat layer which protects the tears from evaporating and creates a smooth surface for light to pass through so we can see.

Each layer has special requirements to do its individual job:

1. The **mucin layer** requires **Vitamin A** (in retinol not beta-carotene form) which plays a central role in the development of the mucin of the tear film. Vit A deficiency is a cause of goblet cell atrophy and loss of the important, innermost lubricating mucin layer.
2. The **lacrimal gland's** secretions are promoted by micronutrients like **zinc, magnesium and vitamins C, B6 and B3.** Amazingly, the lacrimal gland has hormone receptors in it and the **watery tear film** is influenced by hormonal fluctuations. (why we cry.)
3. The **outer oily layer** needs **essential fatty acids** (including **Omega-3** from flax, **fish oils** and/or algae, and Omega-6 but we are usually getting enough Omega-6 in our normal diet these days.)

Zinc is vital in the construction of a healthy corneal surface, having the highest concentration in the entire body in the cornea of the eye and it synergizes well with **Vitamin A.** In fact zinc is needed as the carrier to transport Vit A and Vit D around the body and into the cells. **B1** is needed for the cornea too.

Diabetics typically have about 30% less circulating **Vitamin C** than non-diabetic individuals and less **magnesium** as well. They are already compromised in vitamins and minerals unless they are taking supplements or eating exceptionally well.