

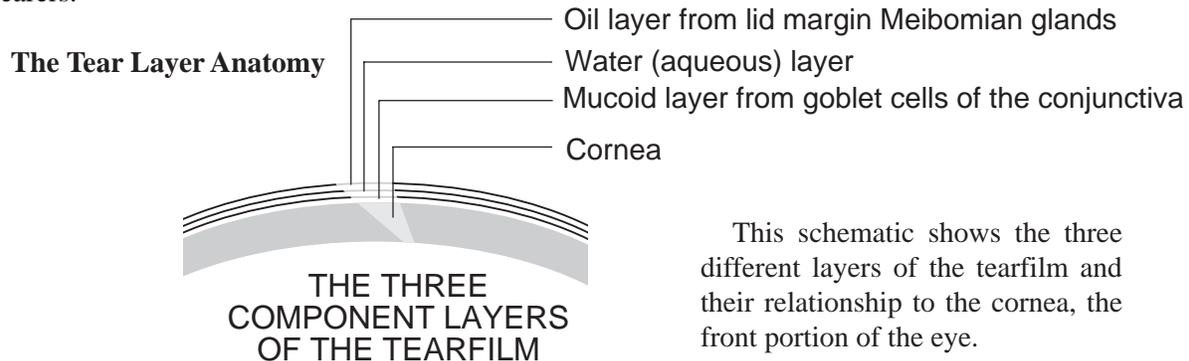
# Do YOUR CONTACTS FEEL DRY?

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The term "dry eye" includes many variations of clinical signs and patient symptoms, with varying degrees of severity and frequency and with many underlying causes. It is interesting that many ocular irritations are described by patients as feeling like dryness even though their eyes are not clinically dry. This means that the symptom of dryness does not necessarily mean that the eye is dry. Ocular dryness is a complex syndrome that leads to frustration for, not only the patient, but also for practitioners and researchers. An accurate diagnosis and determination of the cause or causes is the key to effective treatment.

We use the term "marginal dry eye" to describe a condition where patients have the symptoms of dryness without consistent signs of dry eyes. The dryness may occur during certain activities, specific times of the day, or with special environments or conditions. We frequently make the diagnosis of marginal dry eye with patients who wear contacts.

This newsletter focuses primarily on the management of dry eyes and dry eye symptoms in contact lens wearers.



## The Pre-Contact Lens Fitting Evaluation

If a patient has the clinical signs and symptoms of a dry eye, we do not fit them with contact lenses until the signs and symptoms are improved or eliminated. Contact lens success in these patients is always more difficult and marginal unless we find treatable causes of dry eye symptoms such as Meibomian gland dysfunction or blepharitis. Blepharitis is a common eyelid margin condition, like seborrhea of the scalp, where the lid margins become red and exhibit crusts and scales at the bases of the eyelashes. In a few cases, severe dry eye problems may even be treated with a bandage soft contact lens that protects the corneal surface in cases of ocular surface disease, aqueous deficiency, or evaporative dry eye.

If a patient is already wearing contact lenses and is having dry eye symptoms, we try to treat or manage the contributing factors.

## Things That Always Help

**No contact lens wear** — Actually, this is a reasonable option for patients with significantly dry eyes and for those where all treatments have failed to provide healthy and comfortable contact lens wear. This usually means prescribing glasses as the main alternative. Keratorefractive surgery, such as PRK and LASIK are another option. Even if the patient has dry eye symptoms, the absence of a contact lens rubbing against the cornea usually results in either symptom-free eyes or eyes that are easily treated with artificial tears.

**Treat eyelid problems first** — The oils of the Meibomian gland are extremely important for preventing the evaporation of the tearfilm. Meibomian gland dysfunction can be treated with the use of warm compresses and eyelid cleansing, either with a wash cloth or with commercially available lid scrubs.

Lid margin infections, especially from chronic staphylococcal blepharitis, can disrupt the tearfilm and cause dry eye symptoms. We temporarily stop contact lens wear and treat the blepharitis with lid hygiene — similar to what we recommend for Meibomian gland dysfunction— along with an antibiotic ointment.

**Treat Allergy Problems** — Allergy problems are very common in our part of the country. The most common symptoms are tearing, redness, itching, and swelling. However, many patients who wear contacts do not experience any of these symptoms. They will complain of discomfort, roughness, or dryness when wearing their contacts. There are several steps to reduce these symptoms:



Acuvue lenses are especially thin and oxygen permeable.

1) daily wear, not extended wear, use of contacts, 2) convert all soaking solutions to preservative-free saline, 3) no enzyme cleaning of contacts, 4) hand rubbing the front and the back of the contact lens with a daily cleaner for the cleaning regimen, 5) converting to thinner, high oxygen transmitting disposable contacts, 6) antihistamine decongestants used in the morning and at night, and/or 7) long-term histamine suppression with prescription Sodium Chromalyn preparations. These steps reduce most contact-lens related symptoms of dryness.



**Artificial Tears** — The intermittent use of artificial tears will rehydrate the contact lenses and soothe the eyes. Refresh Tears and GenTeal are artificial tear preparations that are preserved in the bottle, but are preservative-free in the eye. Preservative-free preparations are always better and reduce the chance of preservative sensitivity problems.

**Midday re-soaks** — Patients who experience dry eye symptoms later in the afternoon or in the evening will find significant relief by removing their soft lenses during the day for a five-minute re-soak in the contact lens case. This allows the lens to rehydrate and gives the eyes a short break from contact lens wear. Patients can then reinsert their lenses for many more hours of comfortable wear. Many patients will use this option for that occasional day when their contacts have to be worn for a longer than normal period of time.

Another option is to have a spare pair of contact lenses ready for switching in the middle of the day, although this doubles the number of contact lenses that require care at the end of the day.

**Clean lenses** — Careful compliance with contact lens care or changing to a more effective cleaning system usually decreases dry eye symptoms and increases contact lens wearing comfort. This works for both RGP (rigid gas permeable) and soft contact lenses. Interestingly, many RGP contact lenses have a surface build up of coatings or scratches that destabilize the tearfilm, but don't seem to trigger what patients report as dry eye symptoms. Most RGP contact lens wearers who routinely have their lenses cleaned and polished at their annual contact lens checkup comment on how much better their lenses feel after the cleaning.

**More complete and more frequent blinking** — Infrequent and incomplete blinking may be an obstacle to contact lens wearing success, especially with soft lenses. Counseling patients about their blinking habits and encouraging them to blink fully and frequently can occasionally help, especially for the many patients who use computers or who do close work for extended periods of time. Concentration on any near task decreases blink rate and blink fullness and increases tear evaporation. When a soft lens loses moisture, it draws the aqueous component of the tears into the lens, leaving the ocular surface less moist and sensitive to symptoms of dryness.

A good blinking technique may also be important with RGP lens wearers because an RGP contact lens that is

not centered or that is low in its position is often associated with drying of the peripheral cornea, as shown by 3 and 9 o'clock corneal roughness and conjunctival redness. Artificial tears will also benefit RGP contact lens wearers with dry eye symptoms. A well-counseled and motivated patient may have some benefit from blink training. Unfortunately, blinking is such an inherent (and subconscious) component of a patient's normal reflexes, it is very difficult to reduce the drying effects caused by incomplete or reduced blinking.

**Environmental "control"** — Frequently, it is possible to alter a patient's environment and increase the humidity. The higher the humidity, the higher is the contact lens wearing comfort. When humidity is low, as in aircraft cabins, high altitudes, and winter weather, soft lenses are especially susceptible to causing marginal dry eye symptoms. We recommend that our patients do not wear their contact lenses for long airline flights and that they increase their use of artificial tears during the winter weather season.

Air drafts increase dehydration of contact lenses through evaporation, so calm air is an advantage. We tell patients to keep their car heater or air conditioner from blowing in their faces and to turn their ceiling fans down. Contact lenses are also affected by particulate matter in the air — it gets under RGP lenses and it gets absorbed in soft lenses. Avoiding air contaminated with smoke or other pollutants will improve contact lens comfort.

**Drying Medications** — There are a large number of medications that will dry the ocular surface and cause dry eye symptoms. These medications include antihistamines, decongestants, diuretics, anti-hypertensives, tranquilizers, ulcer and stomach preparations, urinary preparations, and many others. Your health always comes first. However, occasionally, medications can be changed to help with dry eye symptoms. Most of the time, we have to add the use of artificial tears or try other approaches to relieve the dry eye symptoms.

### Things That May Help

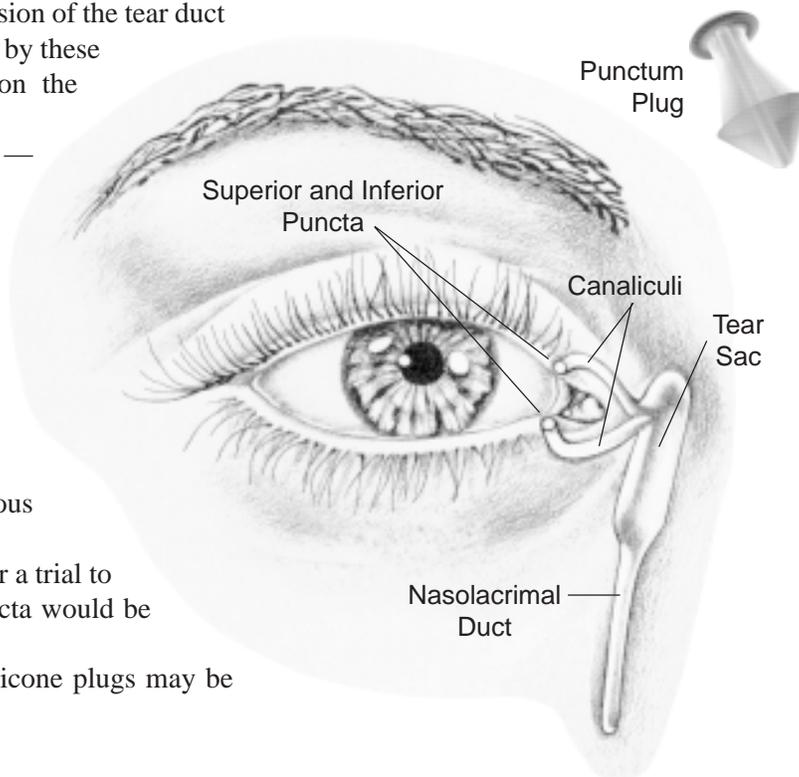
**Tear Supplementation** — Supplementing the normal tears always soothes the eye and rehydrates the contact lens. This is universally effective, although the short duration of the improvement can be discouraging to some patients if they find that they are reaching for their artificial tears many times each hour.

Artificial tears and lens lubricant drops are many and varied. Probably the most important feature is whether the product is preserved or not. Patients who are sensitive to preservatives or who have allergies will do better with non-preserved products. Occlusion of the tear duct drainage system can extend the relief given by these drops by extending tear retention time on the ocular surface.

**Tear preservation with punctal plugs** — The punctum is the opening on the edge of the eyelid that drains tears into the tear duct drainage system. Punctal occlusion is effective and helpful in preserving the normal tears. It provides relief for many soft lens patients who have dry eye symptoms, especially those who are diagnosed with borderline or marginally dry eyes. This approach works best when the dry eye symptoms result from an aqueous tear deficiency.

Dissolvable collagen plugs are often used for a trial to determine if permanent closure of the puncta would be beneficial.

Punctal occlusion using non-dissolvable, silicone plugs may be



more effective than occlusion using collagen plugs because of the stability of the silicone material. Silicone punctal plugs are inserted into the punctal opening, are visible and may occasionally induce a foreign body sensation. Silicone intracanalicular plugs are inserted down within the canaliculus (the channel that leads from the tear duct opening, the punctum, to the tear sac); and they leave no outward evidence of their presence and do not cause a foreign body sensation. Intracanalicular plugs improve dry eye symptoms for soft lens wearers. Effective lacrimal drainage occlusion improves the benefits that artificial tears afford.

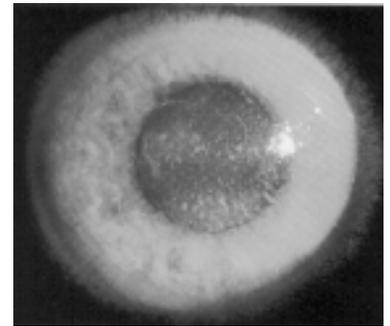
**Lens Materials** — If the lens polymer loses water, it will take moisture from the aqueous phase of the tears and leave the eye with relatively less moisture and the patient with symptoms of dry eyes. One option is to prescribe a soft lens of lower water content and thicker design, since they are better for reducing dry eye symptoms. The reasoning is that the lower water content lenses have a lower percentage of water to lose and that the thicker dimensions actually hold more moisture than thinner contacts. If multiple soft lens trials fail, we may consider a change to RGP lenses since they are much less susceptible to dehydration. However, it can take an extended period of time before the patient becomes adjusted to the sensation of edge awareness with RGP contacts.

The U.S. Food and Drug Administration has recently permitted the product labeling for Omafilcon A material to say that the material may provide improved comfort for contact lens wearers who experience mild discomfort or who have dry eye symptoms during contact lens wear. The lens material incorporates the water-retaining polymer phosphorylcholine and is available with the Proclear line of contact lenses. This material is beneficial to dry eye symptoms caused by an evaporative type of dry eye or from an aqueous tear deficiency. They are not beneficial with metabolic causes of dry eyes such as Sjögren's syndrome. These lenses may not help every dry eye patient, but they add a new and strong tool for our dry eye management program. We have several patients who have had significant relief of their dry eye symptoms with these special lenses.

**More frequent replacement of soft lenses** — It is true that a shorter lens life is better. Newer lenses are cleaner, and cleaner lenses wet better and feel better. There are numerous disposable soft contacts that vary in thickness, curvature, oxygen transmission, and water content. However, if a patient has significant dry eye symptoms, even a one-day disposable contact lens may not improve their symptoms if the contact lens does not hold enough moisture.

**Drinking more** — Many people do not drink enough water and this results in a relatively dehydrated body state. Some practitioners recommend a quota for the daily water intake of eight 8-oz. glasses plus one 8-oz. glass for every 10 pounds over normal weight. Most ophthalmologists do not believe that this has any benefit on improving tear production. You may consider trying this approach. However, drinking large amounts of water also does not stop dry skin from being dry. For the most part, these forms of dryness are metabolic or age-related in nature.

Symptoms of dryness, whether due to a frank dry eye or just from that occasional marginal dry eye, will continue to be a clinical challenge for those of us who fit contacts. Keep in mind that a careful diagnostic workup is the best place to start if you have symptoms. We then consider the management steps offered here — those that always work and those that may work — to minimize dry eye symptoms and improve our patient success with contact lens wear.



Note the marked irregular loss of surface epithelial cells in this case of Sjögren's Syndrome



Several popular brands of disposable soft contacts