

MASTERING TEAR SUPPLEMENTS

The following step-wise approach should help you choose the right tear supplement and the right frequency of supplement use for your specific needs.

1. Understand what is a tear supplement and what is not.

- Tear supplements are meant to lubricate the eye, nothing else.
- Drops available over-the-counter without prescription designed to “take the red out” are NOT tear supplements and should generally NOT be used without the explicit instruction of an eye doctor. If you are having a “red” or irritated eye, the cause of the inflammation needs to be determined and managed. Shrinking the blood vessels on the surface of the eye does NOT treat the underlying cause of the “red eye,” and using such drops can be dangerous for the eyes.
- With rare exceptions, prescription eye drops are NOT tear supplements. Restasis, appropriate for a particular type of “dry eye” problem, is a chemotherapy drug, not an eye lubricant.
- A tear supplement is NOT an eye rinse or eye wash. Modern tear supplements are designed to bind to the surface of the eye and are not most appropriate to rinse out allergens, eye irritants, or even other thicker tear supplements used over night. People who have “posterior lid margin disease blepharitis,” “meibomitis,” “sebaceous hyperplasia,” or “ocular rosacea;” have been instructed to perform warm compresses to melt or thin the oil component of their natural tears; and are in the first few weeks of treatment may wish to use an EYE RINSE or EYE WASH to rinse out the “toxic tear” components of their own tears BEFORE using a tear supplement.

2. Understand what is in a tear supplement.

There are four important components of modern tear supplements: the preservative, the type of gel, the gel, and other “protective” factors.

- **Preservative**

Preservatives prevent bacterial contamination of tear supplements. Common preservatives include Benzalkonium Chloride, Chlorobutanol, Oxyborate compounds, Polyhexamethylene Biguanide, Polyquad, Polyquaternium, Purite, Sodium Chlorite, Sodium Perborate, Sodium Silver Chloride, and Sorbic Acid. Preservative free drops are available, and generally the most widely tolerated, but they also tend to be the most expensive.

- **Gel Type**

Broadly speaking, the gel is the material that allows the supplement to stay on the eye longer than just salt water and is the most important component of an eye lubricant. The supplements below are organized by the type of gel they contain. Some gels may be more or less comfortable for different people, and some people find that mixing supplements containing different gels is most effective for them.

- **Carboxy Methyl Cellulose (CMC) – Based**

Optive*, Refresh Liquigel, Refresh Tears, Thera Tears*

- **Glycerin – Based**

Advanced Eye Relief, Computer Eye Drops, Moisture Eyes, Optive, Similasan* Dry Eye, Soothe*, Tears Natural Forte

- **Hydroxypropyl Methylcellulose (HPMC) – Based**

Bion Tears*, Genteal*, Genteal Mild, Tears Natural II, Tears Natural Free, Tears Natural Forte

- **Oil – Based**

Refresh Endura, Soothe XP Emollient Eye Drops,

- **Polyethylene Glycol – Based**

Blink Tears, Systane, Systane Ultra*

- **Polyvinyl Alcohol – Based**

Akwa Tears, Hypotears, Murine Tears, Tears Again

* = drops most frequently mentioned by our patients as being good choices.

- **Gel Concentration / Percentage**

The higher the percentage of gel, the longer the supplement protects the eye, but the more likely it is to temporarily blur vision. Mixing supplements of different gel percentages by sequentially placing different supplements in the eyes is another option, allowing the creation of unique gel percentages. For example, a 0.2% gel may be combined with a 0.6% gel to create a 0.4% gel supplement.

Some of the thickest gels/ointments best for night time use include: Genteal Gel, Lacri-lube ointment, Refresh PM ointment, Tears Again Night and Day Gel, Tears Naturale PM ointment, Duralube ointment, and Puralube ointment. Even Vaseline may be used in people who have no reaction to petroleum jelly and do not mind the arduous eye rinsing in the morning.

- **Other Protective Factors**

Some manufactures add ingredients which they believe confer greater comfort and supplement stability. Examples include Hyaluroinc acid in Blink Tears, hyper-osmolar salts in Optive, hypo-osmolar salts in Hypotears or Akwa Tears, and HP-guar in Systane Ultra. The benefits of such "protective" factors is mostly personal preference and not necessarily substantiated by study.

3. Choose a Tear Supplement

Select a tear supplement. One of the * choices above may be a reasonable starting choice.

- If eye irritation (such as itching or burning) is experienced, the preservative is the most likely culprit and choosing a supplement containing another preservative or no preservative (preservative free) is a reasonable next step.
- If the tear supplement feels gritty, slimy, or leaves a "sticky residue," choose a supplement with a different gel.
- If the tear supplement is too thin, requiring too frequent application, or too thick, blurring the vision unduly, then selecting another supplement with a different gel concentration may be appropriate. The higher the gel concentration, the longer the supplement lasts, but the more likely it is to cause blurry vision. Recall that supplements of different thickness may be applied to the two eyes; or the same supplement may be applied to both eyes at different times, avoiding prolonged blurring of both eyes simultaneously. Finally, supplements of different gel concentrations may be combined by rapid sequential instillation to create unique gel concentrations.

4. Determine When and How Often to Use Tear Supplements

- If the eyes are not dry or irritated in the middle of the night or upon awakening, a tear supplement at bedtime is probably not necessary. If a supplement is needed, a thick gel is probably warranted. Avoiding sleeping directly under a ceiling fan or heating vent is often useful.
- Following a timed schedule of tear supplement installation is not nearly as useful as activity-based use. For example, such activities as applying makeup, reading, working at the computer, watching TV or a movie, and driving require visual concentration and in most people decrease the natural blink rate by at least 3 fold. Decreased blinking means decreased eye lubrication, and use of tear supplementation before and during such activities is often helpful. Any factor which increases the rate of natural

tear evaporation (such as stepping out into a brisk wind, cold weather, indoor heating) will require more frequent tear supplementation. Once the eyes are irritated from drying out, tear supplementation is less effective at providing comfort. So identifying drying factors and using the tear supplements BEFORE exposure to such drying influences is desirable.

- Excessive tearing may be the reaction of the eyes to severe drying. Instilling tear supplementation BEFORE engaging in activities which regularly lead to excessive tearing may resolve this symptom. Other common "dry eye" symptoms include burning, gritty feeling, eyelid heaviness, and eye fatigue.
- Most tear supplements may be used as often as desired. Slow, frequent blinking may be just as effective for many people as the use of tear supplements.

An excellent reference for determining the composition of many additional tear supplements is the following link:

<http://www.dryeyezone.com/encyclopedia/lubricants.html>