

Dry Eye, Tearing & Blepharitis



**Department of Ophthalmology
Kaiser, San Rafael**

DEDICATION

This class and handout are dedicated to you, our patients, whose well-being is of utmost importance to us and for whom, we are constantly striving to provide the best health care possible.

No matter how knowledgeable, attentive, and well-intentioned a health care practitioner may be, there will never be an advocate for your health that is as effective as you. This is because only you know the intimate details of your life and activities: what you eat, how you sleep, how you spend the day, what the environment is like in your home and community.

We hope that you find in this material a series of tools that will empower you to become a more active participant in your own health care.

We are confident that if you take the 15 minutes required to review this handout and implement the recommendations that seem most relevant, you will find a significant improvement in the comfort of your eyes, the quality of your vision, and the quality of your life. That to us seems like a worthy investment!

Happy Reading!

***The Department of Ophthalmology
Kaiser- San Rafael***

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SUMMARY OF TREATMENT RECOMMENDATIONS

Please note: 90% of patients will achieve resolution of their Dry Eye symptoms by implementing the relevant lifestyle changes and following these daily treatment recommendations.

Lifestyle Changes

- Sleep 8 hrs per day
- Drink 2 liters of water per day
- Blink more often and completely
- Use a humidifier
- Stop smoking
- Remove makeup at night
- Try wrap-around glasses
- Decrease use of allergy and redness relieving eye drops

Daily Treatments

- Use warm compresses twice daily
- Do lid scrubs when you wash your face
- Use preservative-free artificial tears 4 to 6 times per day and a few extra drops before reading, watching TV, or using the computer
- Take Flaxseed Oil

If doing the above is not enough, ask your physician about:

- Punctal Plugs or Cautery
- Restasis
- Steroid and Antibiotic Eye Drops
- Oral Antibiotics

What is Dry Eye?

Dry Eye is a condition in which the tear film that protects your eyes is inadequate for the health and comfort of your eyes. It is a very common condition and affects 15% of the population in the United States and approximately 5 million people over the age of 50.

Dry Eye is not a deadly or life-threatening condition but it is a chronic condition which can significantly impact one's quality of life by affecting vision and making the eyes uncomfortable. The good news is that Dry Eye is treatable! However, since it is a chronic condition and never completely goes away, treatment requires daily intervention to maintain the health and comfort of your eyes.

What are the symptoms of Dry Eye?

- Fluctuating vision which is often worse first thing in the morning or towards the end of the day
- Tearing, burning, itching, irritation, foreign body sensation, redness, pain

How does Dry Eye work?

Your tear film is made up of three main layers:

- A water layer which is produced by your lacrimal gland. The lacrimal gland sits just underneath the upper outer part of your eye socket.
- An oil layer which is produced by your oil glands. The oil glands run all along the inside of your upper and lower eyelids.
- A mucus layer which is produced by cells on your conjunctiva. Your conjunctiva is the white part of your eye.

If any of these layers is not functioning correctly, your eyes will feel dry. For example, if you do not produce enough of a water layer, your eyes will feel dry. The oil layer protects the water layer so if you do not produce enough of an oil layer, the water layer will evaporate and your eyes will feel dry. These are two of the main causes of Dry Eye.

My eyes are always tearing, how can they be dry?

Excess tearing from dry eyes may sound illogical but it isn't. When your eyes are dry, they become irritated. When your eyes are irritated, your lacrimal gland produces lots and lots of tears to try and soothe or eradicate the irritation. The large amount of tears that are produced by this reflex tearing mechanism overwhelm the tear drainage system and overflow from your eyes causing tearing.

What are some things that make the condition of Dry Eye worse?

- **Age:** Tear production decreases as we get older. At age 65, the eye produces 60% fewer tears than it did at age 18.
- **Menopause:** After menopause, there is a decrease in the production of hormones called androgens. Androgens are critical to the production of water by the lacrimal gland and oil by the oil glands both of which contribute to a healthy tear film.
- **Lack of sleep**
- **Not drinking enough water**
- **Not blinking enough:** The normal blink rate is approximately 15 times per minute. However, our blink rate decreases to 5 times per minute when we are doing an activity that requires concentration such as reading, watching TV, or working on the computer. Not blinking enough leads to an increase in the evaporation of the tear film
- **Incomplete blink:** 80% of our blinking is incomplete. An incomplete blink also leads to an increase in the evaporation of the tear film.
- **Environment:** A dry or windy environment can make your eyes dry. Many people notice that they have more symptoms of dry eye in the winter. This is because the heater is running in the house and makes the air very dry.
- **Smoking**
- **Heavy makeup:** The use of heavy makeup around the eyes can lead to clogging of the oil glands which results in an inadequate oil layer to protect the water layer of the tear film. This problem can get worse over time if you do not thoroughly remove your makeup at night before going to sleep.
- **Contact lens use**
- **Prior eye surgery such as LASIK or eyelid surgery**
- **Autoimmune diseases** such as Rheumatoid Arthritis, Sjogren's Syndrome, or Thyroid Disease
- **Medications**

What are some medications that can make Dry Eye worse?

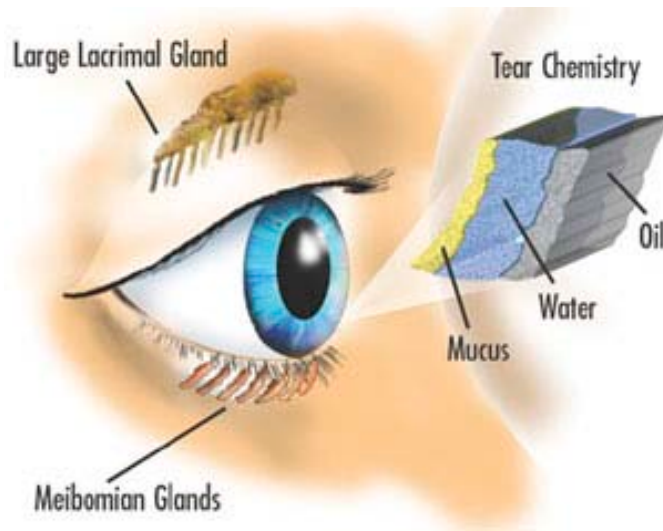
Many eye drops such as those taken for allergy, inflammation, or redness have preservatives in them. These preservatives can be irritating to the eyes and make the symptoms worse. Often, just stopping these medications and using preservative free artificial tears will lead to an improvement in your symptoms.

There are several medications taken by mouth that can make Dry Eye worse by decreasing tear production. The most common ones are:

- Anti-histamines
- Decongestants
- Anti-depressants
- Anti-anxiety meds
- Sleeping pills
- Sedatives
- Pain relievers
- Anti-hypertension meds such as beta-blockers, alpha-blockers and diuretics
- Birth control pills

If you are on any of these medications, it does not mean that you have to stop them. You can discuss their use with the prescribing physician and see if there are reasonable alternatives.

Sometimes just knowing that you are on a medication that may be contributing to your Dry Eye can be helpful as you formulate a plan of treatment.



What is Blepharitis?

Blepharitis is one of the most common, if not the most common, causes of Dry Eye. Blepharitis means inflammation of the eyelids. Over time the oil glands on your lids get clogged with dirt, oil, debris from make-up etc. Once they are clogged, bacteria tend to accumulate and shed toxins which cause inflammation and irritation which affects the tear film.

What is a sty and why does it occur?

Blepharitis is the most common reason that people develop “styes” or “chalazion”.

A sty is a group of oil glands that have become blocked. Internally, the oil glands keep on secreting oil and bacteria in the oil glands cause inflammation. This results in the development of an elevated and inflamed bump on the eyelid.

How do I treat a sty?

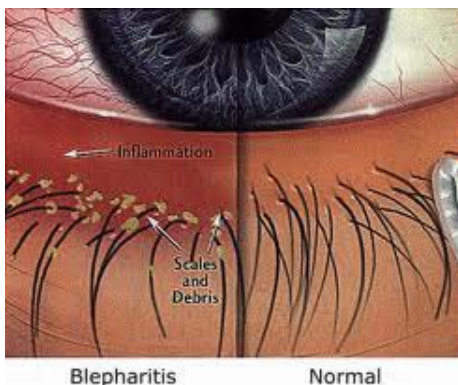
Styes are not contagious and will resolve with conservative measures to unclog the glands.

The most effective intervention is the use of warm compresses twice a day for 5-10 minutes for 4-6 wks.

More than 90% of styes will resolve with the use of warm compresses.

If the sty does not resolve with warm compresses, you can see your doctor about surgical excision or steroid injection. However, surgical excision has the risk of scarring or notching of the eyelid and steroid injections have a risk of skin depigmentation.

If the sty interferes with your vision, gets worse despite your treatment, or if the inflammation spreads to involve the entire lid, you should call your doctor.



PRINCIPLES OF TREATMENT

The most important thing to understand regarding the treatment of Dry Eye is that it is a chronic condition and will never go away completely. You cannot “cure” Dry Eye but you can treat it so that your eyes remain comfortable.

Treating your Dry Eye is like brushing your teeth or washing your face, you have to do it everyday in order for it to be effective!

For more than 90% of patients with Dry Eye, minor behavioral changes, modifications in the environment, and a daily maintenance regimen using conservative measures will result in the eyes being quite comfortable and a significant improvement in their quality of life.

In this handout, you will find a thorough review of treatment recommendations going from more conservative measures to less conservative measures. You should experiment with them to see which are most relevant and effective for you.



Lifestyle Changes

- **Sleep:** Most people do very well when they get 8 hours of sleep per night. An adequate amount of sleep gives your eyes time to rest in the moist environment produced by eyelid closure and gives your tear production system a much needed rest.
- **Water:** Most people should drink 2 liters of water per day or 8 glasses per day (64 oz). You need to be well hydrated to produce enough tears.
- **Blink:** Most people do not blink completely and when doing activities which require concentration, tend to blink less often. Making a conscious effort to blink more often and completely and/or take breaks when doing such activities can be helpful.
- **Extra artificial tears:** It may also be helpful to use a few drops of artificial tears in each eye just before you sit down to read, watch TV, use the computer or do something else which requires prolonged concentration.
- **Humidifier:** Keeping a humidifier in your bedroom or other rooms in which you spend a great deal of time can be helpful. This is especially true in the winter when using the heater tends to dry out the air.
- **Stop smoking:** Cigarette smoke is very irritating to the eyes and can make the symptoms of Dry Eye much worse.
- **Clean your makeup thoroughly:** Makeup can clog the oil glands. Doing a thorough clean up every night, especially of the makeup used around the eyes, will allow your oil glands to flow freely.
- **Wrap-around glasses:** Wearing glasses tends to protect the tear film from evaporating as quickly, especially outdoors or in a car where ventilation causes drying of the eyes. Using wrap-around glasses protects the eyes from drying out to a greater extent than regular glasses. You can ask your optician for suggestions on frames that have a wrap-around style.
- **Use fewer eye drops:** Many eye drops such as anti-allergy drops or “redness reliever” drops have preservatives in them that are irritating to the eyes. It is not unusual for patients to get caught in a vicious cycle of using more and more drops to treat the side effects caused by other drops and actually making their symptoms worse. Often, just stopping these medications and using preservative free artificial tears will lead to an improvement in your symptoms

Warm Compresses

Warm compresses are the most effective means of treating Dry Eye. The key to treatment is that it is done regularly. Warm compresses should be used twice a day for 5 to 10 minutes each time. With regular and daily use, you may be able to decrease the treatment time even further.

Warm Compresses work because heat results in the opening of the oil glands and the softening of the oils that have become hard and are clogging the glands. This allows the oil to flow more freely and prevent the water layer of your tear film from evaporating.

There are several ways to apply warm compresses:

Washcloth

- Take a clean washcloth and wet it with warm water. The water should not be scalding hot. Place the washcloth over your closed eyelids for 5 to 10 minutes. Rewet as necessary to maintain the desired temperature.

Rice in a sock

- Fill a cotton sock with uncooked rice and tie a knot so the rice does not fall out. Do not use polyester as it can melt. Place the rice-filled sock in the microwave for approximately 30 seconds. Warming time may vary depending on your microwave but again, the sock should be warm not scalding hot. Some people feel that this method holds heat better than a washcloth.

Facial Steamer

- You can buy a facial steamer at a department store or online. They cost between \$20 and \$40. You fill the tank of the steamer with water and plug it in. It will turn the water into steam and funnel it through a cone close to which you place your face. The nice thing about this method is that the heat opens up your oil glands and the moisture adds to the water layer of your tear film.
- Many people like this method because it has many other advantages. The steam is excellent for your skin and it is like getting a mini-facial twice a day. The steam also helps clear your nasal passages, throat, and sinuses.

Commercial Hot Packs

- You can buy ready made gel packs, warm compresses, or goggles. These are available online or at some pharmacies.

Lid Scrubs

Lid scrubs are helpful because they help get rid of the dirt and debris that collect on the eyelashes and block the oil glands. This treatment is particularly helpful if you tend to wear makeup on a regular basis. Lid scrubs should be done twice a day on a daily basis. Lid scrubs can be incorporated into your daily routine of washing your face in the morning and before going to sleep at night.

There are several ways of doing lid scrubs:

Washcloth

- Take a clean washcloth. Run it under warm water and then put a few drops of Baby Shampoo on the washcloth. Rub the washcloth together so it gets foamy. Wrap the washcloth around your fingers and clean along the base of the eyelashes with your eyes closed for approximately 15 seconds on each eye. You should do this gently and make sure your eyes are closed so that you don't rub against the cornea.

Commercial Lid Scrubs

- You can buy commercial lid scrubs that are disposable and single use at any pharmacy. They should be used as outlined above.
- Some examples of commercially available lid scrubs include:
 - Ocusoft Lid Scrubs
 - Cliradex
 - Sterilid by Theratears

Artificial Tears

The use of artificial tears is one of the cornerstones of the treatment of Dry Eye. As we get older, our ability to produce tears decreases. By the age of 65, our tear production is 60% less than what it was at the age of 18. Therefore, it becomes necessary to supplement our natural tear production with artificial tears.

How often should I use artificial tears?

One of the most important points about using artificial tears is that **if you are using artificial tears when your eyes feel dry, it is already too late.** You should use artificial tears daily with a frequency that prevents your eyes from feeling dry. It is like watering your plants. You don't wait until your plants turn brown before you water them. Rather, you water them often enough when they are green to prevent them from turning brown.

It is often useful to start by using artificial tears 4 to 6 times per day. If your eyes are comfortable at this frequency, you can decrease the frequency to see if your eyes stay comfortable. If your eyes still feel dry at 4-6 times per day, you can increase the frequency. You should experiment until you find the minimum frequency that you need to keep your eyes comfortable. It is important that you not make changes based on just one or two days of experience. Use the same frequency consistently for a week before you decide if it is working or not working for you.

Which type of artificial tear should I use?

There are many brands of artificial tears and most of them are safe and effective. The brand is not important but if you use artificial tears more than 4 times per day, it is best to use a preservative free variety because the preservatives themselves can contribute to eye irritation. Most brands make a preservative-free variety of artificial tears.

Refresh, Theratears and Genteal are examples of brands that make good quality products

Can I overdose or hurt my eyes by using artificial tears too much?

If you are using preservative-free artificial tears, you can never use "too much". You can use preservative-free artificial tears every hour or more and it will not damage your eyes.

Artificial Tears cont.

There are so many types of artificial tears. Some are thicker and others are more watery. How do I know which is right for me?

The type of artificial tear product that is best is an individualized decision based on the severity of symptoms and other factors.

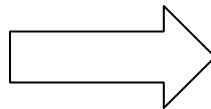
The thicker or more viscous tear products are helpful in cases of severe dry eye but they tend to make the vision blurry. The thinner or more liquid artificial tears tend not to blur the vision but do not lubricate the eyes as much.

You will have to experiment with different products to find what works best for you.

Suggested Regimen:

An approach that many patients have found helpful is to use a thick lubricant in the morning and at night and a thinner product during the day:

- Genteal Gel, Refresh Liquigel, Refresh PM, and Celluvisc are examples of thick lubricants. You can use them just before going to bed at night and first thing in the morning when you wake up.
- These thicker lubricants tend to have preservatives in them but that is fine since you are not using them multiple times a day.
- You can complement the use of the thick lubricant with a preservative-free artificial tear product which you can use multiple times throughout the day.
- With this approach, you are giving your eyes an intensive amount of lubrication but also avoiding having your vision be blurred throughout the day.



Flaxseed Oil

What is flaxseed oil?

Flaxseed oil is a polyunsaturated plant oil that carries vitamins A, D, E, and K. It is the most concentrated vegetarian source of Omega 3 fatty acids in nature.

Flaxseed oil helps suppress inflammation and keeps your oil glands healthy. It can take a few months to work after incorporating it into your diet so you will have to be patient.

Flaxseed oil also contributes to smoother skin, better hormonal balance, less stress, improved cholesterol levels, reduced arthritic symptoms, improved immune function, better wound healing, improved digestion, increased energy, healthy blood tissue as well as anti-cancer properties.

How much flaxseed oil should I take?

There is no consensus on how much flaxseed oil you should take but many experts recommend 1-2 grams per day or 1 tablespoon per day.

What is the best way to take flaxseed oil?

You can buy ground flaxseed or flaxseed oil at the grocery store. It has a nutty flavor and goes well with many dishes. You can stir it into yogurt, sprinkle it on salads, cereal, smoothies or soups. You can also add it to your favorite salad dressing or drizzle it onto stir fry, steamed vegetables, rice or pasta. You should not cook with flaxseed oil because the high heat can turn this healthy fat into a harmful one. It is better to add flaxseed oil after cooking.

You can also buy capsules that can be taken as a nutritional supplement. This is more expensive than ground flaxseed or flaxseed oil but may be more convenient.

Are there any medications that I may be using that I should discuss with my doctor before I start to use flaxseed oil?

Flaxseed oil can affect the clotting of your blood. You should talk to your doctor if you are using Coumadin, Warfarin, Plavix or other blood thinners prior to starting flaxseed oil. It is fine to use aspirin.

Are there any side effects to the use of flaxseed oil?

Flaxseed oil is generally pretty well tolerated and does not have a lot of side effects. One common side effect is an increase in intestinal gas symptoms.

FURTHER INTERVENTIONS

Most people will do very well with the recommendations we have already mentioned. However, if your eyes are still uncomfortable after trying these more conservative measures, please see your doctor to discuss further interventions that may be helpful. Options for further intervention include:

Punctal Plugs or Cautery

- Your doctor can place small plugs into the puncta or use cautery to close the puncta. The puncta are where tears drain and are located on the nasal aspect of your eyelids. Closing them with plugs or cautery results in the tears staying on the surface longer and making your eyes feel less dry. The placement of punctal plugs and cautery to close the puncta are relatively straightforward procedures that can be done in the office. The placement of punctal plugs is reversible but cautery is not.

Some people complain of excessive tearing after the placement of plugs or cautery because their tears are not draining as effectively and overflow from their lids.

Restasis

- Restasis is a prescription medication that is a very dilute form of cyclosporine which is an immune suppressant. It is used twice a day and helps reduce inflammation and also increases tear production. It must be used for at least 3 months before you know whether or not it is really working.

Some people complain that Restasis stings when you use it.

Steroid and Antibiotic Eye Drops or Oral Antibiotics

- Steroid and antibiotic eye drops or oral antibiotics can provide temporary relief from the symptoms of Dry Eye. However, they cannot be used long term because of side effects.

Long term use of steroid eye drops can cause cataract and glaucoma.

Long term use of antibiotic eye drops or oral antibiotics can cause the build up of resistant bacteria in your body and in the community.

OTHER RESOURCES

Kaiser Health Encyclopedia:

<https://members.kaiserpermanente.org/kpweb/healthency/entrypage.do>

Mayo Clinic Website:

www.mayoclinic.com/health/dry-eyes

