

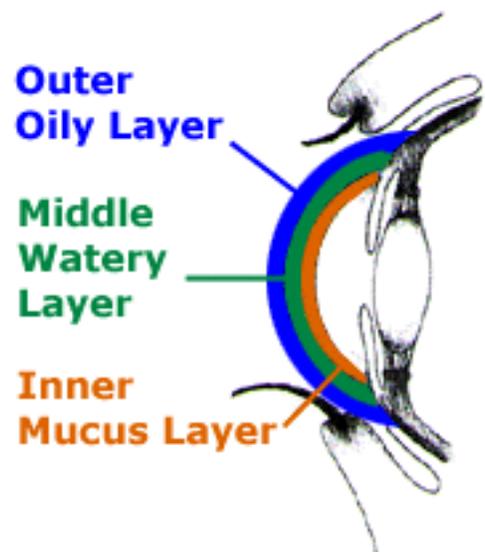
Dry Eye

Dry eye is a condition in which there are insufficient tears to lubricate and nourish the eye. Tears are necessary for maintaining the health of the front surface of the eye and for providing clear vision. People with dry eyes either do not produce enough tears or have a poor quality of tears. Dry eye is a common and often chronic problem, particularly in older adults.

With each blink of the eyelids, tears are spread across the front surface of the eye, known as the cornea. Tears provide lubrication, reduce the risk of eye infection, wash away foreign matter in the eye, and keep the surface of the eyes smooth and clear. Excess tears in the eyes flow into small drainage ducts, in the inner corners of the eyelids, which drain in the back of the nose.

Dry eyes can result from an improper balance of tear production and drainage.

- **Inadequate amount of tears**—Tears are produced by several glands in and around the eyelids. Tear production tends to diminish with age, with various medical conditions, or as a side effect of certain medicines. Environmental conditions such as wind and dry climates can also affect tear volume by increasing tear evaporation. When the normal amount of tear production decreases or tears evaporate too quickly from the eyes, symptoms of dry eye can develop.
- **Poor quality of tears**—Tears are made up of three layers: oil, water, and mucus. Each component serves a function in protecting and nourishing the front surface of the eye. A smooth oil layer helps to prevent evaporation of the water layer, while the mucin layer functions in spreading the tears evenly over the surface of the eye. If the tears evaporate too quickly or do not spread evenly over the cornea due to deficiencies with any of the three tear layers, dry eye symptoms can develop.



The most common form of dry eyes is due to an inadequate amount of the water layer of tears. This condition, called keratoconjunctivitis sicca (KCS), is also referred to as dry eye syndrome.

People with dry eyes may experience symptoms of irritated, gritty, scratchy, or burning eyes, a feeling of something in their eyes, excess watering, and blurred vision. Advanced dry eyes may damage the front surface of the eye and impair vision.

Treatments for dry eyes aim to restore or maintain the normal amount of tears in the eye to minimize dryness and related discomfort and to maintain eye health.

What causes dry eyes?

The development of dry eyes can have many causes. They include:

- **Age**—dry eye is a part of the natural aging process. The majority of people over age 65 experience some symptoms of dry eyes.
- **Gender**—women are more likely to develop dry eyes due to hormonal changes caused by pregnancy, the use of oral contraceptives, and menopause.
- **Medications**—certain medicines, including antihistamines, decongestants, blood pressure medications and antidepressants, can reduce the amount of tears produced in the eyes.
- **Medical conditions**—persons with rheumatoid arthritis, diabetes and thyroid problems are more likely to have symptoms of dry eyes. Also, problems with inflammation of the eyelids (**blepharitis**), inflammation of the surfaces of the eye, or the inward or outward turning of eyelids can cause dry eyes to develop.
- **Environmental conditions**—exposure to smoke, wind and dry climates can increase tear evaporation resulting in dry eye symptoms. Failure to blink regularly, such as when staring at a computer screen for long periods of time, can also contribute to drying of the eyes.
- **Other factors**—long term use of contact lenses can be a factor in the development of dry eyes. Refractive eye surgeries, such as LASIK, can cause decreased tear production and dry eyes.



How are dry eyes diagnosed?

Dry eyes can be diagnosed through a comprehensive eye examination. Testing, with special emphasis on the evaluation of the quantity and quality of tears produced by the eyes, may include:

- **Patient history** to determine any symptoms the patient is experiencing and the presence of any general health problems, medications taken, or environmental factors that may be contributing to the dry eye problem.
- **External examination of the eye**, including lid structure and blink dynamics.
- **Evaluation of the eyelids and cornea** using bright light and magnification.
- **Measurement of the quantity and quality of tears** for any abnormalities. Special dyes may be instilled in the eyes to better observe tear flow and to highlight any changes to the outer surface of the eye caused by insufficient tears.

Using the information obtained from testing, your optometrist can determine if you have dry eyes and advise you on treatment options.

How are dry eyes treated?

Dry eyes can be a chronic condition, but your optometrist can prescribe treatment to keep your eyes healthy, more comfortable, and prevent your vision from being affected. The primary approaches used to manage and treat dry eyes include adding tears, conserving tears, increasing tear production, and treating the inflammation of the eyelids or eye surface that contributes to the dry eyes.



- **Adding tears**—Mild cases of dry eyes can often be managed using over-the-counter artificial tear solutions. These can be used as often as needed to supplement natural tear production. Preservative-free artificial tear solutions are recommended because they contain fewer additives that could further

irritate the eyes. However, some people may have persistent dry eyes that don't respond to artificial tears alone. Additional steps need to be taken to treat their dry eyes.

- **Conserving tears**—An additional approach to reducing the symptoms of dry eyes is to keep natural tears in the eyes longer. This can be done by blocking the tear ducts through which the tears normally drain. The tear ducts can be blocked with tiny silicone or gel-like plugs that can be removed, if needed. A surgical procedure to permanently close tear ducts can also be used. In either case, the goal is to keep the available tears in the eye longer to reduce problems related to dry eyes.
- **Increasing tear production**—Prescription eye drops that help to increase production of tears can be recommended by your optometrist, as well as omega-3 fatty acid nutritional supplements.
- **Treatment of the contributing eyelid or ocular surface inflammation**—Prescription eye drops or ointments, warm compresses and lid massage, or eyelid cleaners may be recommended to help decrease inflammation around the surface of the eyes.

Self Care

Steps you can take to reduce symptoms of dry eyes include:

- Remembering to blink regularly when reading or staring at a computer screen for long periods of time.
- Increasing the level of humidity in the air at work and at home.
- Wearing sunglasses outdoors, particularly those with wrap around frame design, to reduce exposure to drying winds and sun.
- Using nutritional supplements containing essential fatty acids may help decrease dry eye symptoms in some people. Ask your optometrist if the use of dietary supplements could be of help for your dry eye problems.

Avoiding becoming dehydrated by drinking plenty of water (8 to 10 glasses) each day.

-Obtained from the American Optometric Association at www.aoa.org