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Dealing with Dry Eye

By *Michelle Meadows*

Tears serve as a protective coating for the eyes. They keep the eyes moist, provide essential nutrients, and wash away dust and other particles. When the eyes don't produce enough tears or the right quality of tears, the result is a condition that doctors call keratitis sicca, popularly known as "dry eye."

Just as the name suggests, this condition makes the eyes feel dry, scratchy, and gritty. Other symptoms include burning, stinging, itching, pain, sensitivity to light, redness, blurry vision, and the feeling that there is a speck of dirt in the eye. There may also be a stringy discharge from the eyes. And though it may seem strange, dry eye can cause the eyes to water. "This can happen because the eyes are irritated," says Carolyn Begley, O.D., a professor of optometry at Indiana University in Bloomington. "You may experience excessive tearing the same way you would if something got in your eye."

But these tears won't necessarily make the eyes feel better. Reflex tears--the watery type that are produced in response to injury, irritation, or emotion--don't have the lubricating qualities necessary to prevent dry eye. Tear film is made of water, oil, and mucus, all of which are important for maintaining good eye health. The cornea, which covers the front of the eye, needs these tears continuously to protect it against infection. Most people who have dry eye experience mild irritation with no long-term effects, Begley says. But if the condition is left untreated or becomes severe, eye damage and vision loss can occur. Severe problems with dry eye can cause eye inflammation, corneal infection, and scarring.

"When dry eye symptoms are severe, they can interfere with quality of life," Begley says. "Some people may have trouble keeping their eyes open or they may not be able to work or drive." Fortunately, identifying the cause of the problem and seeking treatment early can make a big difference in easing the discomfort.

Common Causes

Aging is one of the most common causes of dry eye because tear production decreases as we get older. Dry eye affects more women than men because hormonal changes, such as those that occur in pregnancy, menstruation, and menopause, can decrease tear production. Environmental conditions also can play a role. Wind, heat, dust, air conditioning, cigarette smoke, and even hair dryers can make the eyes dry. Some people benefit from avoiding dusty, smoky areas, wearing sunglasses, and using a humidifier to moisten the surrounding air.

Another common culprit is not blinking enough, which happens during activities such as watching TV and computer use. "Each time you blink, it coats the eye with tears," Begley says. "You normally blink about every 12 seconds. But we've done studies of people playing computer games, and found that some people blinked once or twice in three minutes."

Begley says that about half of all people who wear contact lenses complain of dry eye. That's because soft contact lenses, which float on the tear film that covers the cornea, absorb the tears in the eyes. Dry eye also occurs or gets worse after LASIK and other refractive surgeries, in which the corneal nerves are cut during creation of a corneal flap. The corneal nerves stimulate tear secretion. Begley says, "If you've had dry eyes from wearing contact lenses or for any other reason and you are thinking about refractive surgery, this is something to consider."

Dry eye also can be caused by certain medications, including antihistamines, some antidepressants, birth control pills, nasal decongestants, and the prescription acne drug Accutane. And some autoimmune diseases, such as lupus, rheumatoid arthritis, and Sjögren's syndrome, can attack the tear glands.

Other diseases can also cause dry eye. For example, certain types of thyroid disease can interfere with blinking. Blepharitis, an inflammation of the eyelids, can interfere with the oil glands in the eyes.

Diagnosis and Treatment

Even though many treatments for dry eye are available without a prescription, it's wise to see a health care professional to evaluate the cause of the condition and to help you pick the best treatment.

Eye doctors use a combination of routine clinical exams and other specific tests for dry eye. For example, the Schirmer test uses a tiny strip of paper placed on the edge of the lower eyelids. "This measures how much moisture is in the eye, and it's also useful for determining the severity of the problem," Begley says. Doctors may also use dye, such as fluorescein or rose bengal, which is placed on the eye to stain the surface. This is to see how much the surface of the eye has been affected by dryness. Another test, tear break-up time (TBUT), measures the time it takes for tears to break up in the eye.

The first line of treatment for dry eye is usually over-the-counter demulcent drops, also known as artificial tears. These lubricate the eye and ease symptoms. Commonly found ingredients in these products include hydroxypropyl methylcellulose, the ingredient in Bion Tears and GenTeal, and carboxymethylcellulose, contained in Refresh Plus and Thera Tears. Always read the directions, but these products can generally be used as often as needed throughout the day.

Your health care professional can guide you in choosing the right one for you. "Some people use drops for red eyes, but that can make the eyes even more dry," Begley says. Red eyes could be caused by numerous factors, from allergies to an eye infection, which is why a proper diagnosis is important. If you wear contact lenses, use rewetting drops specifically for contact lenses. Other types of drops may contain ingredients that damage the lens.

Restasis (cyclosporine ophthalmic emulsion) is the only prescription product for chronic dry eyes. Approved by the Food and Drug Administration in 2002, the drug increases tear production, which may be reduced because of inflammation on the eye surface. In a clinical trial involving 1,200 people, Restasis increased tear production in 15 percent of patients, compared with 5 percent of patients in the placebo group, says Wiley Chambers, M.D., deputy director of the FDA's Division of Anti-Inflammatory, Analgesic and Ophthalmologic Drug Products.

Restasis is usually given twice a day, 12 hours apart. It should not be used by people with eye infections or hypersensitivity to the ingredients. It has not been tested in people with herpes viral infections of the eye. The most common side effect is a burning sensation. Other side effects may be eye redness, discharge, watery eyes, eye pain, foreign body sensation, itching, stinging, and blurred vision.

For people who have not found dry eye relief with drugs, punctal plugs may help. "These are reserved for people with moderate or severe dry eye when other medical treatment hasn't been adequate," says Eva Rorer, M.D., a medical officer in the FDA's Division of Ophthalmic and Ear, Nose, and Throat Devices.

In each eye, there are four puncta, little openings that drain tears into the tear ducts. Punctal plugs are inserted into the puncta to block tear drainage. Some doctors try out temporary ones made of collagen first to make sure that permanent ones will not cause excessive tearing. Permanent plugs are usually made of silicone. In recent years, Rorer says, some plugs have been approved that are made of thermally reactive material. "Some of these are inserted into the punctum as a liquid and then they harden and conform to the individual's drainage system." Others start out rigid and become soft and flexible, adapting to the individual's punctal size after they are inserted. Artificial tears are usually still required after punctal plug insertion.

"The risks of punctal plugs are fairly minimal," Rorer says. "There is a risk of eye irritation, excessive tearing, and, in rare cases, infection."

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