

INSIGHTS

Suffering From a Dry Eye Spell?

If your eyes often feel dry, you're not alone. Nearly five million Americans age 50 years and older are estimated to have dry eye syndrome, which occurs when the eye doesn't produce tears properly, or when the tears are of poor quality, evaporating too quickly to lubricate the eye. People who have dry eye may experience a burning, stinging, or scratchy sensation in their eyes, tired eyes and sensitivity to light.

Tears keep the surface of the eye moist, wash away dust and debris and protect the eye from infection. They have three layers that are necessary to lubricate the eyes:

- 1. Outer, oily layer:** keeps the surface of tears smooth and prevents them from drying too fast.
- 2. Middle, watery layer:** washes away particles from the eye.
- 3. Inner, mucous layer:** helps keep the eye's surface moist.

Tears drain from the eyes through small openings, called puncta, in the inner corners of the eyelids. If the puncta become blocked, they can affect tear fluid.

Medications, such as antihistamines, can cause a decrease in tear production, and so can changes in hormones in the body. That's why dry eye is more common in women after menopause. People who have had LASIK surgery, which changes the shape of the cornea that covers the eye, may experience dry eye. Sometimes, the elasticity in our eyelids diminishes with age, making



it difficult to hold tears, which causes them to run down the face instead of lubricating the eye.

Seasonal allergies can be associated with dry eye, and infrequent blinking from staring at computer screens, can lead to dry eye. People who wear contact lenses tend to blink less often, exacerbating symptoms.

Your optometrist can diagnose dry eye and recommend treatments to ease symptoms, including over-the-counter eye drops that lubricate the eyes or prescription medications that increase tear production. Sometimes, surgery to unblock the puncta is recommended.

You can help alleviate symptoms of dry eye by blinking more often, especially when you're using your computer, tablet or smartphone, and by reducing the number of hours you wear contact lenses. You may wish to talk to your doctor about switching your seasonal allergy medicine to relieve dry eye.

EYE CANDY

Sharksighted



If you "swim with the sharks," you'd better be able to see like they can. Though shark's eyes are built much like ours—with a cornea, lens, pupil and iris—they can see better in dark or murky water. This is because their eyes, like a cat's, have a tapetum lucidum, a layer of mirrored crystals behind the retina that allow light to pass through the retina a second time. As a result, sharks have an increased low-light sensitivity—10 times better than we do.

Like the human eye, a shark's eye has a light-sensitive retina with both rods to detect light and darkness and cone cells to detect colors. Like ours, the shark's pupils open and close in response to light, something most fish's pupils don't do. Because their eyes are so similar to ours, their corneas have been used in cornea replacement surgeries.

Sharks are the only fish with eyelids, in their case, a "third eyelid" that covers the eye to protect it when attacking prey. Great Whites, however, don't have this membrane. Instead, they roll their eyes back in the sockets for protection while feeding.

EYE-Q

Q: Are your eyeballs the same size throughout your life?

See answer on back.



Is the Menu Getting Blurry?

If you go to a restaurant with people over age 40, you may notice that their arms aren't long enough to hold their menus far enough to read them. That's because they likely have presbyopia, an age-related change in vision that makes objects that are close-up appear blurry.

As you age, the lens in the eye can harden, making it difficult to focus light onto the retina in the back of the eye. Plus, tiny muscle fibers around the lens have problems reshaping it to focus on close objects. As a result, it gets harder to read small print and see objects that are close to you.

More than a billion people worldwide are presbyopic, according to the World Health Organization. In fact, the National Eye Institute says that everyone may experience some loss of focusing power on near objects as they approach middle age, but some notice it more than others. It typically occurs in your early to mid-40s and can worsen until your mid-60s. Not only does it make nearby items appear blurry, it can also cause eyestrain and headaches.

People with diabetes, multiple sclerosis or cardiovascular disease are more likely

to develop presbyopia before the age 40, and some medications, such as antidepressants, are associated with presbyopia.

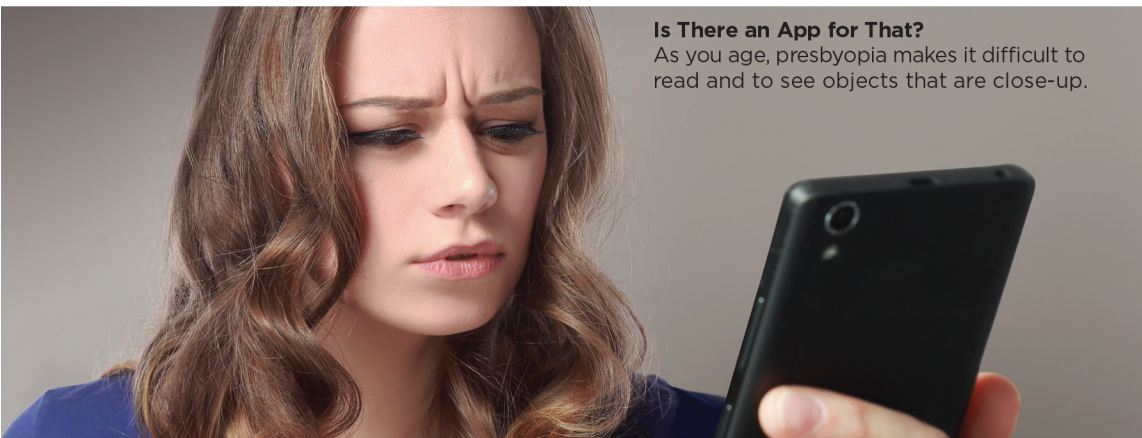
Your optometrist can determine if you have presbyopia through an eye exam. Even if you have mild presbyopia, your doctor can prescribe glasses to help you see more clearly. If you also require corrective lenses for nearsightedness, farsightedness or astigmatism, your doctor can recommend bifocals, which correct your vision both close-up and far, or trifocals, which correct your middle-distance vision as well as near and far vision.

If you wear contact lenses to see far distances, you may wish to also wear eyeglasses to help you read, or try bifocal contacts. Some people wear one contact lens for distance vision and a different prescription for close-up vision. Your eyes will adjust as needed. Your optometrist can determine what's best for you.

Some people opt for surgery to change the shape of the cornea, improving close-up vision. Note that you may still need to wear eyeglasses after the surgery.

Is There an App for That?

As you age, presbyopia makes it difficult to read and to see objects that are close-up.



Flipping Their Lids



If you didn't have hands to help remove dust or debris from your eyes, what would you do? You might wish you were a bird, a dog, a cat or even a sea lion. Though they don't have hands, they do have a "third eyelid," called a nictitating membrane, that functions as a windshield wiper for the eye.

This transparent or translucent inner eyelid can be drawn across the eye to protect it and moisten it. It also contains lymphoid tissue which produces antibodies to help fight infection.

Woodpeckers can use their third eyelids as safety goggles while they peck away at tree bark. For cats, the third eyelid can protect their eyes as they chase prey through long grass or weeds. For falcons, it keeps their eyes from drying out as they fly at high speeds during hunting. Sea lions use their third eyelids to help wipe away sand while on land.

Some dog breeds have clear third eyelids, while others have cloudy ones. It produces about a third of a dog's tears and, as in other animals, helps fight infection and protects the eye. So, the next time your dog sticks his head out the car window, look for his third eyelid!

Find The Hidden Eye Pictures



Illustration by Vic Kulihin

FIND THE FOLLOWING EYE-RELATED IMAGES IN THIS AUTUMN SCENE:

BROCCOLI	EGGS	EYEGLASSES	SUNGLASSES
CARROTS	EYE	GARLIC	SWEET POTATO
CLARIFYE SM DEVICE	EYE CHART	OPHTHALMOSCOPE	TURKEY
COLOR TEST	EYE DROPS	ORANGE PEPPERS	WILD SALMON



Oh, Avocado!

The next time you're dipping a carrot into guacamole, consider this: the carrot isn't the only food that's healthy for your eyes. Avocados, the main ingredient in guacamole, are rich in antioxidants that are good for your eye health.

Avocados are loaded with lutein and zeaxanthin, carotenoids that have been shown in studies to reduce the risk of cataracts and macular degeneration. The American Optometric Association reports that lutein and zeaxanthin filter harmful blue light, which is emitted both by the sun and digital devices, like smartphones. Blue light is associated with damage to the retina, the light-sensitive tissue in the back of the eye, and the development of cataracts and macular degeneration.

But the body doesn't make the lutein and zeaxanthin it needs to protect the eyes. Eating foods like spinach, broccoli and avocado can increase your intake of these important nutrients. In fact, just one-third of a medium-sized avocado has more than 136 mg of lutein and zeaxanthin—among the highest levels per serving of any other fruit or vegetable.

So add some avocado to your diet. It's a really tasty way to help protect your eye health!

Myopia: As Far as the Eye Can't See

Are street signs or the TV starting to look blurry to you? You may have myopia, a condition in which objects that are close-up appear in focus, but those in the distance appear blurred.

Also called nearsightedness, myopia is caused by a natural change in the shape of the eyeball. This prevents light rays from focusing on the retina, which sends signals of what the eye sees to the brain. Myopia is not a disease, but a refractive error, meaning that the eye doesn't refract, or bend, light properly.

Myopia is often inherited. Most people discover they are becoming nearsighted between the ages of eight and 12, and, as they grow into their teens, it often worsens until it levels out in their twenties.

Recent studies have shown an increase in myopia—up to 40 percent of American adults compared to about 25 percent in the 1970s. In parts of Asia, up to 80 percent of adults are myopic. Researchers believe that spending too much time indoors is a major factor in this increase. They speculate that an increase in near-range activities, such as reading and using digital devices like smartphones and computers, as well as a decrease in exposure to natural light, may help

contribute to this increase in cases of nearsightedness.

People with moderate to high myopia may have a higher risk for developing cataracts, glaucoma and a retinal detachment. Cataracts are a clouding of the eye's lens, which focuses light rays onto the retina. Glaucoma is associated with elevated eye pressure, which can cause damage to the optic nerve that carries information to the brain. Retinal detachment is an emergency situation in which the retina pulls away from the back of the eye.

The most common way to treat myopia is to prescribe eyeglasses or contact lenses. Refractive surgery, once the eyes have stopped growing, has become another option for many people.

Be sure to visit your optometrist once a year for a comprehensive eye exam, which not only measures changes in your eyesight, but also checks for signs of disease such as diabetes, high blood pressure, cardiovascular problems and stroke. Your optometrist can also tell you about corneal refractive therapy, or ortho-k lenses, which can temporarily reshape the cornea to help eliminate myopia while you sleep.

It's All a Blur

People with myopia (nearsightedness) often have trouble seeing objects in the distance clearly.



What is the Macula?

Though the macula is only about as big as the thickness of your fingernail, it has a very important job. Located in the center of the retina on the back of the eye, the macula is responsible for clear, central vision that allows us to see what is in front of us.

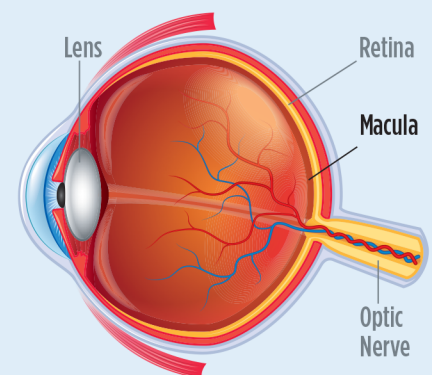
When light is focused onto the macula, it's changed into nerve signals that are sent along the optic nerve to the brain, allowing us to see clearly for daily activities, such as reading, driving a car and recognizing faces.

Unfortunately, the macula can deteriorate over time, leading to age-related macular degeneration (AMD), which makes it increasingly difficult to clearly see objects in front of the eyes.

You can protect your macula by taking supplements with the carotenoids lutein, zeaxanthin, and meso-zeaxanthin, wearing polarized, UV-blocking sunglasses and getting regular eye exams.

The Macula is Centrally Located

Located in the center of the retina, the macula is responsible for clear central vision that allows us to see what is in front of us.



Pink Eye: It's Not Pretty

If your child comes home from school with a “pink eye,” beware. Pink eye, or conjunctivitis, is an inflammation of the thin, clear membrane that lines the inside of the eyelid and covers the white part of the eyeball, and it can be contagious. It can spread by shaking hands that have touched an infected eye, sharing infected towels or makeup, and swimming in contaminated pools.

Pink eye makes the eye appear pink or red and causes pain, itching and swelling, which can make it feel like something is in the eye. It can also cause a sensitivity to light and a crusty discharge that can make the eyelid hard to open in the morning. Wearing contact lenses with pink eye can feel very uncomfortable.

Each year, about three million children and adults get pink eye in the United States. Usually, it's caused by a bacterial or viral infection, but allergies—both seasonal and allergic reactions to air pollutants or chemicals in soaps or chlorine—can cause conjunctivitis, too. Viral pink eye typically causes a watery discharge, while bacterial pink eye can cause a thicker, yellowish-green discharge. Children usually get bacterial pink eye and spread it by not washing their hands well or by sharing infected items. Newborns with pink eye should see a doctor right away because it may be caused by bacteria transferred during childbirth.

If you or your child has pink eye, make an appointment to visit your optometrist. Though viral pink eye can go away without treatment in one or two weeks, your doctor can determine if your pink eye is caused by a bacterial infection, which can be treated with antibiotic eye drops or ointments. For pink eye caused by seasonal allergies, your

doctor may prescribe antihistamines or mast cell stabilizers, which can reduce symptoms when taken regularly over a period of weeks. Your doctor can tell you how long to stay home from school or work during infection.

You can help relieve symptoms of pink eye by using a cold or warm compress or artificial tears on the infected eye and removing contact lenses. During the infection, avoid touching or rubbing your eyes, and throw away any makeup or applicators used while your eye is infected. Sterilize contacts or, if they are disposable, throw them away and avoid wearing any contacts until the infection is gone. Wash pillowcases and towels in hot water and detergent, clean your eyeglasses, and don't use swimming pools. This will help you prevent re-infection and infecting others.

To help your kids avoid pink eye, show them the proper way to wash hands—with soap for 15 seconds—and remind them often to wash their hands. Teach them not to share eye drops, makeup, eyeglasses, or washcloths.

If the symptoms of pink eye worsen or fail to improve after just a few days of treatment, contact your eye doctor.

In the Pink

Pink eye can be contagious, so it's important not to rub your eyes and avoid wearing contact lenses.



Cleaning Eyeglasses

The Do's and Don'ts



DO:

Use eyeglass spray cleaners.

Spray cleaners are available from your optometrist or at your local drug store. These can be helpful if you are traveling or don't have gentle, lotion-free soap and clean tap water available. Always be sure to clean your glasses with moisture to avoid scratches.

Use lens wipes. Prepackaged wipes clean lenses quickly and effectively and are easy to carry with you throughout the day.

Use a storage case. This will help prevent scratches when you're not wearing your glasses. Never put your glass lenses face down on a counter.

DON'T:

Use your shirt. Clothing, paper towels and tissues contain dust particles that can damage lenses. Not only aren't they hygienic, they cause permanent scratches.

Use glass or surface cleaners. Household cleaning products such as Windex® have ingredients that can damage lenses and any anti-reflective coatings.

Use saliva. Your saliva is filled with germs, so you're not really cleaning your eyeglasses!



Dr. Daniel Ogata
Guest Optometrist
Portland, Oregon

Q: How do I know if my child should have a back-to-school eye check-up?

A: Whether your child wears glasses or contacts or not, a back-to-school eye exam is a good idea. Kids can have vision issues that they don't recognize or express. They might compensate for bad vision in one eye by using the other, which can be a sign of amblyopia, or lazy eye, when one eye develops to focus better than the other. Left untreated, it can lead to long-term vision problems.

Undiagnosed farsightedness or nearsightedness can cause eye strain or headaches, as well as learning issues that may be mistaken for a learning disability. So, it's important to rule out any vision problems as a piece of that puzzle. Note that if one or both parents have a history of nearsightedness or lazy eye, their children are at a higher risk.

For children who wear glasses—especially nearsighted kids—vision often worsens within a year or less of correction. This is because kids grow fast from elementary through high school, often affecting the eyes. If your child is having trouble seeing the board at school, it could impact learning. So if your child's vision hasn't been checked in at least a year, it's important to come in for a recheck to keep their prescription up to date.

For teenagers, make sure they can see clearly when driving, especially at night.

Good vision affects reaction time on the road, so for peace of mind, get your teenager a comprehensive eye exam when they're getting their driver's permit or license.

Contact lenses can be a great option for some kids, especially athletes who play contact sports. But it's up to parents to decide if their kids are responsible enough to use the good hygiene necessary to maintain their contacts. If not, they could wind up with an eye infection or scratch an eye. Sports eyeglasses such as those made by Liberty Sport (www.libertysport.com) are a good option for children who aren't quite ready for contact lenses or those with prescriptions that are too high for contacts.

Back-to-school is one of the busiest times at our optometry office, and with very good reason. Giving your children the gift of comfortable, corrected eyesight helps give them a real shot at the brightest future—with two good eyes!

Focused on Safety

Sports glasses are a good option for children who aren't quite ready for contact lenses or those with prescriptions that are too high for contacts.



A Daily Dose of Safety

These days, contact lenses come in different colors and are made with different materials. Some can reshape your cornea and others correct astigmatism. But how do you know which contacts are safe?

More than 30 million Americans wear contacts. About 80 percent wear soft contact lenses, which are made from a polymer that allows oxygen to pass through to your cornea, reducing dry eye and making them more comfortable than gas-permeable lenses, which are made from silicone.

Many wear daily disposable soft contacts which help reduce the risk of infection by preventing the build-up of protein and bacteria. You start with a fresh lens every day, and never wear them while sleeping.

Though daily disposable contacts can cost more than reusable lenses, you save money on lens solutions that clean and disinfect longer-wear lenses, and you save time. More convenient than reusable lenses and more comfortable than gas-permeable contacts, daily disposables are available in tinted colors and bifocals.

Answer to Eye-Q (from page 1)

A: Eyes stay the same size from birth until death, while the nose and ears continue to grow.

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