

INSIGHTS

It's Not a Pirate...It's Amblyopia

If you've ever seen a child walking around your neighborhood with an eye patch—and it's not Halloween—he hasn't just joined a pirate crew. He's probably being treated for a condition called amblyopia.

What is amblyopia?

Amblyopia, sometimes called "lazy eye," is when one or both eyes do not develop normal vision during early childhood. Babies are not born with good vision in each eye. Instead, they must develop it between birth and six to nine years of age by regularly using each eye. If this does not occur, vision may be reduced, resulting in amblyopia. Amblyopia can affect up to 4 percent of all children, and is the leading cause of vision loss in the young.

What are the symptoms?

Symptoms often include decreased vision in one or both eyes, misaligned eyes (strabismus) and/or poor depth perception.

How is it diagnosed?

An annual eye exam recommended by the American Academy of Pediatrics over the course of childhood to detect amblyopia early enough to allow a successful treatment.



How soon should amblyopia be treated?

Amblyopia should be treated as early as possible during infancy or in early childhood to prevent permanent vision loss and to allow for the development of three-dimensional vision. After the ages of approximately six to nine years, treatment may no longer result in vision improvement.

How is amblyopia treated?

Sometimes amblyopia is treated with corrective eyeglasses or contact lenses. Another approach is covering the normal eye with an eye patch to make the amblyopic (weak) eye stronger. Thus, children being treated for amblyopia may walk around looking like little pirates.

How old is too old for treatment?

A recent National Institutes of Health study confirmed that some improvement in vision can be achieved with amblyopia therapy initiated in younger teenagers (through age 14 years). However, better treatment success can be achieved when treatment starts early. An annual eye exam can ensure eye conditions are caught early on.



EYE CANDY

The First Light



The eyes may not only need light to see properly, but also to develop normally during pregnancy, according to a recent study led by scientists at Cincinnati Children's Hospital Medical Center and the University of California, San Francisco.

Based on animal studies, researchers discovered that a light-response pathway controls the number of neurons in the retina. In mice, this pathway must be activated in late pregnancy. The light-response pathway keeps the pre-natal blood vessels that are forming in the retina from becoming too numerous and causing potentially a blinding overgrowth.

This research offers a new basic understanding of fetal eye development and ocular diseases caused by vascular disorders. One disease in particular that it may impact is Retinopathy of Prematurity, an eye condition that can blind premature infants. Prior to this study, scientists assumed that eye development began after birth.

EYE-Q

Q: What is ommatophobia?

(See answer on back.)



Making a Spectacle
Salvino D'Armato degli Armati of Florence, Italy (1284), is credited with inventing the first wearable eyeglasses.



Eyeglasses Through the Lens of History

Eyeglasses were born in Italy between 1268 and 1289, and were worn by monks and scholars. Early versions were held in front of the eyes or balanced on the nose. Rarely seen by the public, eyeglasses became more commonplace with the invention of the printing press in 1452. Growing literacy would steadily increase demand in the coming centuries.

In the early 1700s, the most important contribution to eyeglasses was the invention of temple pieces that rest over the ears. In 1784, Benjamin Franklin invented bifocals. Another innovation was scissors spectacles, held in front of the eye rather than worn.

By the end of the 1800s, eyeglasses were being mass manufactured. Most consumers bought cheap, ready-made glasses sold by traveling peddlers, jewelers and general stores. But eyeglasses were seen as evidence of age and infirmity, so people wore spectacles only when needed. Those who could afford it bought hand-held designs to avoid having glasses on their faces.

The 1900s saw the birth of the eyewear industry. Celebrities began to influence fashion and newer materials became available, especially plastics.

Some popular styles included:

- **1900s:** Pince-nez (French for “pinch nose”) which had no temples, but fit snugly on the bridge of the nose. Made popular by U.S. Presidents Teddy Roosevelt and Calvin Coolidge
- **1920s:** Tortoise shell spectacles with large, round lenses made popular by

Hollywood actor Harold Lloyd which started a fashion craze.

- **1930s:** Sunglasses become commonplace, with further advances in sunglass design to meet the needs of military pilots in World War II (1939-1945)
- **1940s:** Colored eyeglasses are made possible by advances in plastic manufacturing. Women wore frames with an upsweep on the top rim while men sported gold wire frames
- **1950s-1970s:** By the latter half of the 1900s, spectacles evolved into a fashion accessory. In the 1970s, Jacqueline Kennedy Onassis helped to popularize oversized lenses. Starting in the 1980s, technical innovations produced higher quality plastic lenses that were lighter and safer to wear

Today, eyeglasses continue to be a fashion statement while accommodating every eye-care need—from nearsightedness, farsightedness and astigmatism to reading, computers, sports and more.

Stars in his Eyes

Tortoise shell spectacles, made popular by Hollywood actor Harold Lloyd, started a fashion craze in the 1920s.



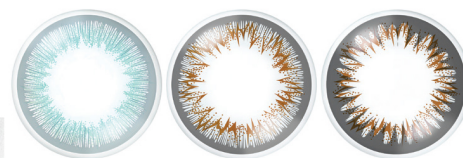
Accentuate the Positive

Not everyone wants to change her eye color. Some people just want to accentuate the color that they already have! Now there's a contact lens that can help you do just that.

1-Day Acuvue® Define is not a colored contact lens. Colored contact lenses usually have opaque and pixelated patterns that mask the natural beauty of the eye. Instead, this lens uniquely interacts with your iris pattern. It combines a dark ring around the colored portion of the eye with a luminous-effect pattern, resulting in a brighter, more memorable look. It's available in three styles to complement all eye colors:

- 1-Day Acuvue® Define in Natural **Sparkle**
- 1-Day Acuvue® Define in Natural **Shimmer**
- 1-Day Acuvue® Define in Natural **Shine**

Instead of covering up your beautiful eyes, 1-Day Acuvue® Define offers subtle, natural-looking enhancement that allows their true color to shine through.



Sparkle

Shimmer

Shine

Watch a fun, new video about the benefits of daily disposable contacts!
<https://vimeo.com/136833405>



Word Scramble

Unscramble these five word scrambles, one letter to each square, to form five ordinary words.

HTSGIS

THMSY

EFLET

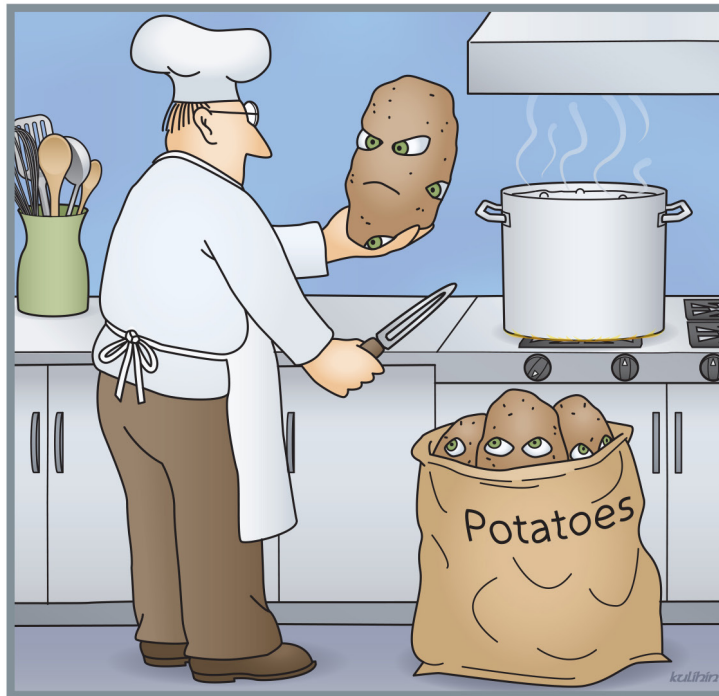
CEAGR

ISNVIO

Now arrange the circled letters to form a clever answer based on the cartoon above.

Answer:

See the scrambles and clever answer on page 6.



The potato made the chef uncomfortable because it was...



Why Is Zinc So Important?

The oldest known pills were made of zinc. They were used for sore eyes and were found aboard the Roman ship Relitto del Pozzino, which sank off the coast of Tuscany, Italy in 140 BC.

Today we know that zinc helps the body absorb vitamin A, which in turn can lower the risk of night blindness. In addition, it helps many antioxidant enzymes in the body reduce the number of free radicals (a substance that can damage cells and DNA). Zinc has also been shown to protect against macular degeneration.

Good food sources of zinc include:

- Cooked oysters, red king crab, abalone and lobster
- Beef and turkey (dark meat)
- Eggs
- Cheese
- Yogurt
- Black-eyed peas
- Tofu
- Wheat germ
- Nuts and seeds (pumpkin)

Avoid taking high doses of zinc without first consulting a doctor. Some nutritionists feel that more than 40 mg a day could be toxic. While zinc is vital to our health in moderation, higher doses have been associated with negative health effects such as reduced immune function.

Have you ever wondered...

Why Is the Sky Blue?

Light from the sun is a form of energy that travels in waves like water in the ocean. Light waves, like waves in water, can be described by the distance between two successive peaks of the wave—a length known as the wavelength. Different wavelengths of light appear to our eyes as different colors. Shorter wavelengths appear blue and longer wavelengths appear red.

When white sunlight reaches the Earth's atmosphere, it is scattered in all directions by all the gases and particles in the air. Some colors of light, like red and orange, travel in longer wavelengths that allow them to pass straight through the air without being scattered. But most of the blue light, because it travels in shorter wavelengths, is scattered in all directions around the sky. When you look up, this blue light reaches your eyes making the sky look blue.

No-Nos for Contact Lens Wearers

Are you living dangerously when it comes to your eyes? An estimated one in six adults in the United States wears contact lenses, and well over one third of them report at least one health-care visit for a red or painful eye while wearing those lenses.

That may be because most contact lens wearers—99 percent to be exact—close their eyes to safety recommendations, according to a recent study by the U.S. Centers for Disease Control and Prevention (CDC). Nearly all of the 41 million Americans who use contact lenses admit that they engage in at least one type of risk behavior that can lead to eye infections, CDC researchers add.

Are you one of them? Read the list below and see if you're guilty of one of these many contact lens high-risk behaviors.

Do you...

- Forget to wash your hands with soap and water, and dry them before touching contact lenses?
- Leave contacts in during sleeping, showering or swimming?
- Fail to rub and rinse your contacts in disinfecting solutions each time you remove them?
- Use tap water to clean your contact lenses?
- After each use, fail to rub and rinse the contact-lens case with solution, dry it with a clean tissue and store it upside down with the caps off?
- Add fresh solution to old solution?
- Neglect to replace contact lens cases at least once every three months?

Daily Disposables No-Nos

Daily disposable contact lens wearers might have a lower risk for infection if contact lenses are disposed of daily as recommended. However, the CDC study found that many daily disposable contact wearers did use a contact-lens case and did so improperly, using tap water to store their lenses.

It's also a good idea for contact wearers to keep a backup pair of eyeglasses should they need to remove their contact lenses for any reason or if they lose their contacts.

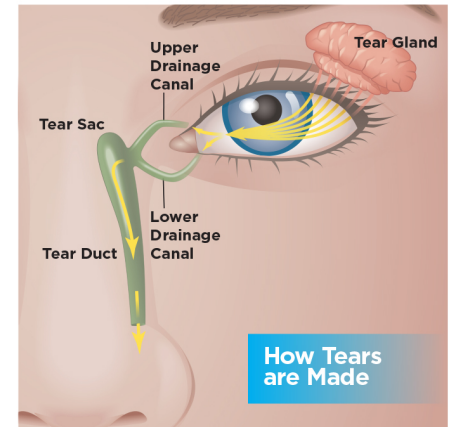
By avoiding these high-risk behaviors, contact lens wearers can enjoy the benefits of their lenses, see at their best and look great. *You'll also have the satisfaction of knowing that you're not guilty of any contact lens no-nos!*

If you have any questions about contact lens care, be sure to ask your eye-care professional.

"That's a No-No!"



Tear Glands and Ducts: Your Eyes' Waterworks



Have you ever wondered how tears are made?

They are created in glands located on your upper eyelids. When you blink, those tears flow into your eyes through tiny tear ducts and spread out in a thin film over your eyeballs, keeping your eyes moist. Sometimes they are formed in response to irritants and help keep your eyes free of pollen, dust and other substances that could bother them. Tears are also created if you feel sad or extra happy. Even when you're asleep, they're still being produced.

Your tears have a tiny bit of salt in them, which is antiseptic and helps to prevent eye infections. Used tears go down two tiny holes in your upper and lower eyelids to the back of your nose, where they are swallowed or later blown out of your nose. If you produce lots of tears, such as when you're crying, there are too many to drain into your nasal cavity, so they may overflow and stream down your cheeks.

10 Best Foods for the Eyes

Have you ever wondered what foods would be best for your eyes? Here's a short list of the top 10 foods that will nutritionally support your vision.



- 1 Eggs:** An excellent source of vitamins A, B-12 and D. Also contain zinc, lutein and amino acid cysteine which all reduce the risk of cataracts and age-related macular degeneration (AMD).



- 2 Leafy Green Vegetables:** Brimming with vitamin C, calcium, beta carotene and the carotenoids lutein and zeaxanthin. Studies have shown that eating foods rich in lutein and zeaxanthin like spinach, kale and collard greens, can increase the pigment density in the macula and lower risk of AMD.



- 3 Garlic:** Garlic is a natural lens protector, rich in sulfur, and is also loaded with important antioxidants.



- 4 Green vegetables:** Broccoli, Bell peppers, and Brussels sprouts all help provide a blast of vitamin C, another key antioxidant shown specifically to protect the eyes.



- 5 Wild salmon and sardines:** Rich in omega-3 fats, which can help protect the tiny blood vessels buried within the eyes.



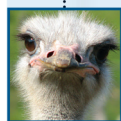
- 6 Carrots:** Carrots are loaded with beta carotene, an antioxidant that helps reduce the risk of cataracts and AMD. Your body converts beta carotene to vitamin A, which is used by the rods and cones to help generate a vision signal.



- 7 Goji berries:** All berries are high in antioxidants and contain vitamin C, vitamin E and fiber. Goji berries additionally are a great source of the carotenoid zeaxanthin.



- 8 Orange peppers:** Contain the carotenoid zeaxanthin, which can increase the pigment density in the macula and lower risk of AMD. Orange peppers have more vitamin C than all other colored peppers, three times the amount of vitamin C as an orange and are the highest vegetable source of vitamin E.



- 9 Ostrich and turkey:** Loaded with zinc—one of the key ingredients for maintaining healthy eyes. Turkey also provides the B-vitamin niacin, which specifically protects against cataracts.



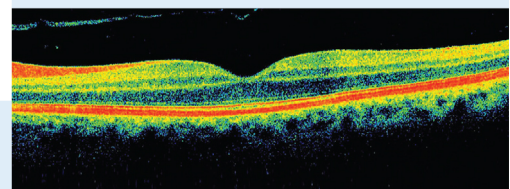
- 10 Sweet potatoes:** Beta carotene to the rescue once again—thanks to the bright-orange flesh. In fact, sweet potatoes are the number-one orange vegetable for beta-carotene.

Fortunately, the foods that feed your vision also happen to be good tasting and come in a wide variety. So, be good to your eyes and make sure you include these foods in your diet.

What Is the Optical Coherence Test?

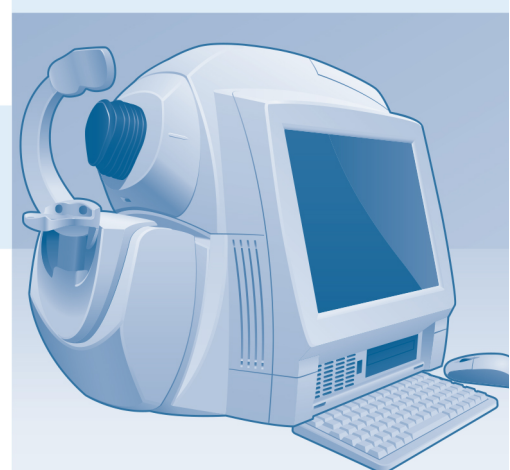
Optical Coherence Tomography (OCT) is a diagnostic test that uses light waves to take cross-section pictures of your retina, the light-sensitive tissue lining the back of the eye.

With OCT, each of the retina's distinctive layers can be seen, allowing your optometrist to map and measure their thickness. These measurements help with diagnosis and provide treatment guidance for glaucoma and retinal diseases, such as age-related macular degeneration and diabetic eye disease. In addition, OCT is often used to evaluate disorders of the optic nerve. The optic nerve is made up of many nerve fibers and sends signals from your retina to your brain, where these signals are interpreted as the images you see.



Layers of Meaning

A 10-layer scan of the retina and macula (above) taken with an Optovue OCT (below).





Q: Age-related Macular Degeneration (AMD) runs in my family. Are there any tests that could offer an early warning? Is there anything I can do to avoid this condition?

A: Yes and yes. At my office, we offer macula pigment density screening. This simple test determines the level of protective yellow pigments in the eye in about three minutes. If patients have low yellow density, they are educated on nutrition, and also may be informed about eye vitamins that contain protective yellow pigments, as well as other ingredients such as zinc, which have been shown to help protect the macula.

Several genes have been identified that may make an individual more susceptible to AMD. However, if the proper lifestyle choices are made, these genetic “switches” may never be turned on. First, smoking is a huge risk factor. If you smoke, quit. Also, good nutrition and avoiding overexposure to short wavelength blue light are helpful.

Carotenoids including lutein, zeaxanthin and meso-zeaxanthin are important to the health of the macula. They are found in green leafy vegetables such as kale, spinach and broccoli. Egg yolks are also a good source.

Yellow carotenoids are concentrated in the macular region of the retina. They act as super anti-inflammatories,

in both the macula and the brain. Studies show that low levels of these yellow pigments in the macula are a risk factor for dementia. This is thought to be because dementia is essentially inflammation of the brain, and low levels of lutein and zeaxanthin in the macula indicates that these anti-inflammatory pigment levels will also be low in the brain.

Carotenoids also passively protect the macula by filtering blue light. These wavelengths are heavily emitted from the sun until about 1 p.m., then the atmosphere absorbs most of it. Dark brown sunglasses help protect the macula from blue light emitted from the sun.

Many of us, however, are exposed to blue light through devices such as computer screens, iPads, and smart phones. Blue-blocking indoor computer lenses are available that protect the eyes from those sources. Also, the free app f.lux, which can be installed on computers and phones, allows users to remove all or some of the blue light emitted from screens.

Measuring Macular Pigment Density

Optometrists can perform a simple screening to help determine the level of protective yellow pigments, called carotenoids, in the eye with either a Macular Densitometer or a Macular Pigment Optical Density device (pictured below).



The Lure of Tiger's Eye

Tiger's Eye is a form of quartz that has melded with other minerals. Quartz becomes imbedded between strips of a fibrous blue mineral called crocidolite, which is comprised of iron and sodium. Crocidolite is better known as asbestos. But don't worry, the crocidolite fibers are completely dissolved when they become imbedded in the quartz stone. When the quartz and crocidolite fibers are compressed, the result is either a blue-colored stone called Hawk's Eye or the golden brown stone called Tiger's Eye.

The dissolved crocidolite fibers create parallel lines within the gem, which give it that ever-shifting luminous play of light and movement that resembles the eye of a cat.

Ancient Roman soldiers used to wear engraved Tiger's Eye stones during battle for protection.

It was also thought to help heal eye disorders. Today, the stone is believed by many to impart power and luck to its owner. Africa and Asia are the two biggest producers of the Tiger's Eye gemstones.

Answer to Eye-Q (from page 1)

A: Fear of eyes

Answer to Word Scramble (from page 3)

A: SIGHTS, MYTHS, FLEET, GRACE, VISION GIVING HIM THE EYE

CONTACT

ALLDocs
Heather Kreidler
3509 Haworth Drive Suite 208
Raleigh, NC 27609
hkreidler@foxyecare.com
919.763.7522 919.263.2020

Eyedeaz LLC
kzierler@comcast.net
908.447.1562

Thank you to our
newsletter sponsor:



CooperVision®