ALL DOCS

See

Celebrating a World of Vision

PATIENT NEWSLETTER DECEMBER 2015

INSIGHTS

Myopia: Up Close And Personal

If you have problems seeing objects in the distance, you're not alone. People in the United States with nearsightedness, or myopia, have grown from one in four people in the early 1970s to almost one in two in recent years.

While no one really knows for certain why this condition has increased so dramatically in such a short time, many eye doctors speculate it has something to do with eye fatigue from computer use and other extended near vision tasks.

What are the symptoms?

If you are nearsighted, you typically will have difficulty reading road signs and seeing distant objects clearly, but will be able to see well for close-up tasks such as reading, computer and digital device use.

Other signs and symptoms of myopia include:

- Squinting
- Eye strain
- Frequent headaches
- Eye fatigue

What causes myopia?

Myopia occurs when the eyeball is too long or too curved on the surface, affecting the eye's ability to focus properly. Myopia typically begins in childhood and you may have a higher risk if your parents are nearsighted. In most cases, nearsightedness stabilizes in early adulthood but sometimes it continues to progress with age.

How is it treated?

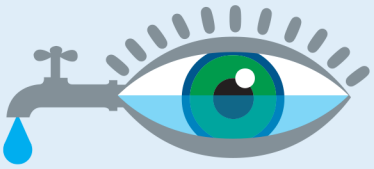
Nearsightedness can be corrected with glasses, contact lenses or refractive surgery. There are many different causes of myopia and if it's caused by visual fatigue then eye exercises can be very helpful for you. If myopia is genetic, eye exercises will probably be less effective. However, it doesn't necessarily mean that exercises won't have any benefit for your vision. Ask your optometrist about Vision Training to determine if it is right for you.

Another nonsurgical option is ortho-keratology, in which you wear rigid gas permeable contact lenses at night that reshape your cornea while you sleep. When you remove the lenses in the morning, your cornea temporarily retains the new shape, so you can see clearly during the day without glasses or contact lenses.

Limited World View
People with myopia can clearly see objects close up, but have problems focusing on objects that are farther away.

EYE CANDY

Three Types of Tears



Did you know that your eyes create three types of tears? They have different purposes, but they are all produced by your tear ducts. They are:

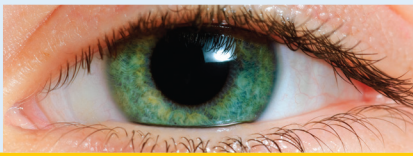
- **Basal tears** that constantly form to keep our eyes moist
- **Irritant (or reflex) tears** that form to protect the eyes in response to wind, sand or other foreign objects
- **Emotional tears** that result from stressful or intense emotions such as sorrow, frustration or joy

Basal and irritant tears are mostly made up of water and salt in much the same balance as the rest of the body. They also have antibodies and enzymes that destroy any bacteria that invade the eye.

Emotional tears also serve a purpose. They contain a high concentration of hormones that build up in the body when there are intense emotions. The tears discharge those chemicals like a release valve so they do not build up to toxic levels and weaken the body's immune system.

EYE-Q

Q: What percentage of the world population has green eyes?
(See answer on back.)



Avoid a Glaring Hazard in Eye Health

In many areas of the country, winter means cold weather, and with it, snow. It's a great time for skiing, snowshoeing and hiking. While most cold-weather athletes are careful to protect their bodies with layered clothing, snow boots and earmuffs, many forget that eyes also need special care to prevent snow blindness.

What is snow blindness?

Snow and ice are bright because they reflect the sun's rays like mirrors. The resulting glare can cause snow blindness. Called photokeratitis, snow blindness is like a sunburn of the cornea and conjunctiva—the clear outer layers of the eyes.

Fresh snow reflects about 80 percent of the ultraviolet (UV) radiation from the sun compared to 15 percent on a dry, sandy beach. Ozone in the Earth's atmosphere usually filters most harmful UV radiation after a very short exposure at low altitudes. However, those traveling in snowy conditions who are not wearing any eye protection—especially at high altitudes—are at risk for snow blindness. In fact, with every 1000 feet of elevation above sea level, the intensity of UV rays increases by four percent.

What are the symptoms?

- Increased tearing of the eyes
- Bloodshot eyes
- Uncontrollable eyelid twitching
- Eye pain
- Burning sensation (like sand or even broken glass sprinkled in your eyes)
- Eyes swelling shut (in extreme cases)

What is the treatment?

Snow blindness may cause a temporary loss of vision, or even permanent vision loss in extreme cases of repeated exposure. If snow blindness occurs, apply cool, wet compresses over the eyes and artificial tears or nonsteroidal anti-inflammatory drug eye drops. If you wear contact lenses, remove them, and do not rub your eyes. Healing is usually rapid (24 to 72 hours).

How can it be prevented?

The best approach for winter athletes is prevention by wearing polarized sunglasses or snow goggles. Glasses should have large polarized lenses and side shields to avoid incidental light exposure. UV rays do pass through clouds, so sunglasses should always be worn, even under overcast skies.

Swimming in Contacts

Are swimming and contact lenses compatible? It depends.

To prevent eye infections, the FDA recommends that contacts should not be exposed to any kind of water, including water in swimming pools, oceans, lakes, hot tubs and showers.

Safe option: If you do decide to swim with contact lenses, wear daily disposable lenses. Discard them immediately after swimming, rinse your eyes with rewetting drops approved for use with contact lenses, and then replace the lenses with a fresh pair.

Safer option: If you're going to swim while wearing contact lenses, wear waterproof swim goggles. In addition to protecting your eyes from waterborne contaminants, swimming goggles reduce the risk of your contact lenses dislodging from your eyes.

Safest option: Get prescription goggles. Prescription goggles are custom-made like eyeglasses or contact lenses, enabling you to see clearly underwater without any of the risks associated with swimming with contacts.

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

Another Feast for the Eyes!

Dr. Laurie Capogna and Dr. Barbara Pelletier, two optometrists from Ontario, Canada, developed a cookbook called *Eyefoods, A Food Plan for Healthy Eyes*, with recipes that prevent eye disease. Their recipes feature foods that contain the nutrients lutein, zeaxanthin and omega-3 fatty acids, all of which contribute to good eye health.

Lentil and Orange Salad

(Makes two cups. Serves one as a meal or two as a side dish).

Ingredients:

1/2 cup green lentils

3/4 cups low sodium chicken broth

1 orange

1/2 red pepper, sliced

2 green onions, thinly sliced

1/4 cup fresh mint or 2 tsp dried, divided

1 tbsp olive oil

1 tbsp lime juice

1 tbsp apple cider vinegar

Salt & pepper

Directions:

1. Cook lentils. Bring chicken broth to a boil. Add just under 1/2 cup raw lentils, rinsed well. Return to boil, lower heat and simmer partially covered for approximately 30 minutes or until cooked through. Drain if necessary.
2. While lentils are cooking, prepare the dressing. With the back of a spoon, smash half of the mint leaves with the lime juice, apple cider vinegar and salt and pepper. Add olive oil slowly, whisking briskly.
3. Using a fine grater, zest the orange.
4. Remove the rest of the orange peel using a knife, then chop the orange into bite sized pieces.
5. Mix lentils with orange, orange zest, pepper, green onion and the remaining mint. Gently toss with the dressing. Enjoy immediately or chill for up to two days.

Dr. Barb's Green Smoothie

(Makes one glass).

Ingredients:

2 cups packed kale leaves, washed and coarsely chopped

2 ripe kiwis, peeled and quartered

1 cup sweet green grapes (or 1 banana)

Juice of one lime

1 cup filtered water

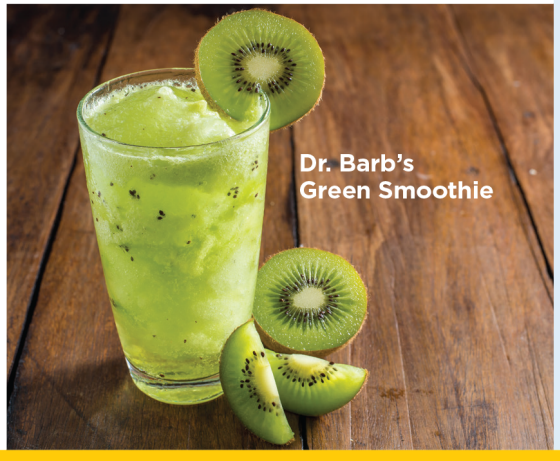
Directions:

1. Put grapes in the blender.
2. Add kiwis, kale and water. Blend until smooth.
3. Check consistency and add water as needed.
4. Taste; flavor will vary depending on how sweet the kiwis and grapes are. Adjust accordingly: If too tart, omit the lime juice and add grapes. If too sweet, add lime juice.

Tip:
If kiwis are quite sweet, you will get more eye nutrients by using more kiwis and less grapes or bananas.

Tip:
If using bananas, using lime juice is essential to reduce oxidation (browning) of the smoothie.

Tip:
Enjoy immediately and keep any leftovers in individual reusable bottles in the fridge for up to four days. Before drinking leftovers, shake well.



Recipes come from: http://www.eyefoods.com,
Eyefoods, A Food Plan for Healthy Eyes
by Dr. Laurie Capogna and Dr. Barbara Pelletier.

Why Is Resveratrol So Important?

You may not be familiar with resveratrol or its potential effects on eye health, but chances are you have it in your diet. Peanuts, pistachios, grapes, red and white wine, blueberries, cranberries and even dark chocolate and cocoa contain this nutrient. Plants produce resveratrol to fight fungal infection, ultraviolet radiation, stress and injury.

Recent animal studies suggest resveratrol may reduce the risk of diabetic retinopathy and age-related macular degeneration (AMD). That's because it has been shown to reduce the abnormal formation of blood vessels in the retina that can damage eyesight.

A great deal of research has identified resveratrol as an anti-aging compound based on its effects on blood vessels in other parts of the body. Because the amounts of resveratrol used in studies exceeded that of what might be eaten in a normal diet, resveratrol supplements may offer additional benefits.

The Anatomy of Eyeglasses

The Italians and Chinese are credited with the invention of spaghetti, but did you know that they also invented eyeglasses? Marco Polo reported seeing many pairs of glasses in China as early as 1275, and may have brought back the ideas for both eyeglasses and pasta from that trip. By 1301, there were guilds in Venice regulating eyewear.

Over the years, eyeglass parts were given names. Here is a handy glossary that can help you identify the anatomy of your eyewear.

Bridge: Section that arches up and over the nose area and supports most of the weight of the glasses.

End Piece: Temple arms get attached to this section of the frame, which extends out from the eye wire/rim area.

Hinge: Connects the temples to the front of the frame using a very small screw. This allows the temples/arms to open and close.

Lens Glass: Plastic or polycarbonate lenses ground to the wearer's eyeglass prescription and inserted into the eyeglass frame.

Nose Pad: Soft silicone or vinyl pieces attached to the frame that offer a snug, yet comfortable fit around the nose area.

Pad Arms: Help hold the nose pad in place, usually made of adjustable metal. Also called pad plate.

Rims: The lenses get inserted into this part of the frame, also called eye wire.

Rimless Frame: The temples and bridge attach directly to the lenses as there is no eye wire or rim to keep the lenses in place.

Screws: Very small screws used to hold the parts of the eyeglass frame together.

Spring Hinge: Have a hidden spring in the hinge to keep the frame from slipping off your face.

Temple: Also called arms. Part of the glasses that projects past your temple and behind your ears to keep them securely in place.

Temple Bend: The part of the temple that goes over your ears. Also called earpiece.

Temple Tips: Small plastic or rubber pieces that cover the end of the temples. Often used on metal frame glasses as a comfort feature. Also called temple covers.

Top Bar: A second bar above the bridge, often seen on aviator-style eyeglasses.

Take a Closer Look
A pair of eyeglasses is made up of many different parts.

Eyelashes: More Than Just Pretty?

Scientists at the Georgia Institute of Technology recently decided to explore why mammals have eyelashes. The idea to do this came from lead study author, David Hu, whose baby daughter was born in 2012. When he looked at her long eyelashes, he found himself wondering if they served some biological purpose.

His team of researchers measured the dimensions of nearly two-dozen mammal eyes—including a chimpanzee, red panda, cougar, porcupine and camel. They also performed a series of wind tunnel experiments using reproductions of eyes and eyelashes.

Here's what they found:

- Most mammal eyelashes are one-third the length of their eyes—just the right length to minimize the flow of air over the eyeballs so they won't dry out and can repel dust from landing on them
- The curviness of an eyelash, while visually attractive, does not affect its function
- Thick eyelashes offer more effective blocking of airflow across the eye, but they also limit access to light. This may explain why giraffes and kangaroos that live in bright, dusty climates have several rows of eyelashes, while other mammals do not

Are You 20-20?

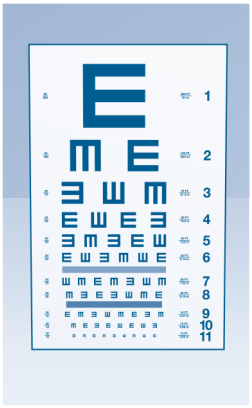
Have you ever wondered what 20/20 vision means?

This visual acuity score compares your distance vision with that of people considered to have normal vision. Each eye's score is expressed as two numbers, such as 20/20. The first number is the distance you stand from the eye chart—usually 20 feet. The second number is the distance from which people with normal eyesight can read the same line on the eye chart.

The most common eye chart is the Snellen **(a)** with its familiar large E at the top. If you can read the big E at the top but none of the letters lower than that, your vision is considered 20/400. That means you can read at 20 feet a letter that people with normal vision can read at 400 feet. In the United States, you are considered legally blind if your best-corrected visual acuity (meaning, your best distance vision with eyeglasses or contact lenses) is 20/200 or worse. To get a driver's license in most U.S. states, your best-corrected visual acuity must be at least 20/40.

Sometimes a Snellen eye chart cannot be used, such as when a young child doesn't know the alphabet. So a "tumbling E" chart **(b)** may be used. The tumbling E chart has the same scale as a Snellen chart, but all of the characters on the chart are a capital letter "E" rotated in increments of 90 degrees. The eye doctor asks the patient being tested to use either hand with their fingers extended to show which direction the "fingers" of the E are pointing: right, left, up or down.

To evaluate near vision, your eye doctor may use a small hand-held card called a Jaeger eye chart. The Jaeger chart consists of short blocks of text in various type sizes. The Jaeger type scale ranges from J1 to J11 or larger, with J1 being the smallest type. J2 is considered the equivalent of 20/20 distance visual acuity at the reading distance indicated on the card—usually 12 to 14 inches from your eyes.



(b)

Tumbling E Chart
An eye chart often used for young children who do not know the alphabet.

What Is the Stereopsis Test?

Our two eyes see objects from slightly different angles. When the brain combines those images, the result is 3D vision. The stereopsis test assesses depth perception (3D vision) and determines if the eyes are working together. It is especially useful for identifying lazy eyes—a condition where the eyes don't work together—in children, which can be treated if identified while they are young.

There are two types of common stereopsis tests: random-dot stereotests and contour stereotests. Both tests use special 3D glasses.

Random-dot stereotests

Patients' 3D eyesight is measured by their ability to identify geometric forms from random-dot backgrounds.

Contour stereotests

The most well-known example of a contour stereotest is the Titmus Fly Stereotest, where a picture of a fly is displayed. The patient's ability to see a 3D image is measured.

Stereopsis tests are designed to assess a patient's depth perception

(a)

ASK THE DOCTOR

Dr. Bill Fox
Guest Optometrist

Q: I love sleeping in my contact lenses, but I heard safety can be an issue. What can I do to help ensure that my eyes remain healthy and comfortable?

A: Contacts lenses are great and continuous wear contacts are the ultimate in convenience. That's why they are increasing in popularity. However, they do carry a higher degree of risk for ocular complications like infections than not sleeping in contacts. In some unusual instances they can even threaten your vision. That said, continuous wear contacts are safer than Lasik surgery (a surgical procedure that uses a laser to correct nearsightedness, farsightedness or astigmatism). Our offices have been in practice for over thirty years and we have fit over 18,000 patients in continuous wear lenses without serious vision-threatening complications. Still statistically, complications are out there and as they say "*It's not rare if it's you in the chair.*"

However if sleeping in lenses makes you feel the love, or work or lifestyle demands it, then here are ways to dramatically minimize risk and better enjoy its benefits:

1. Make sure you have a discussion with your optometrist about sleeping in contacts. That will influence what type of lenses are recommended. Sleeping in lenses without consulting your optometrist can be risky.

2. Compliance is so important in continuous overnight wear. Try to be diligent in replacing your contacts according to their proper schedule.

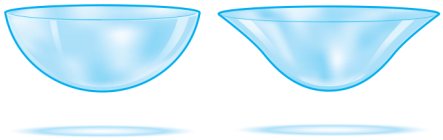
3. Never sleep in contacts if your eyes are red and irritated, or if your vision is not clear. If eye irritation lasts for any length of time after removing lenses, go to your doctor's office as soon as possible. Early treatment is critical.

4. Consider trying the new weekly continuous-wear overnight contact lenses. Throwing lenses out on a weekly basis instead of monthly reduces risk for infection. This new way of wearing overnight lenses is better than sleeping in them all month long or taking them out and cleaning them on a weekly basis. Handling and reapplying a used lens increases chances of picking up bacteria from your hands, lids and eyelashes.

So if you plan on wearing contact lenses overnight follow these simple rules and you will sleep better...and safer!

Contacts On Call
Healthcare employees, firefighters and law enforcement officers often prefer sleeping in contact lenses when they are on call, so they can respond more quickly.

EYE DROPS



Right Wrong

The Ins and Outs of Contact Lenses

Soft contact lenses are very flexible, so sometimes it can be confusing to figure out if they are inside-out. Here are some tips on how you can tell:

- Place the lens on your finger so that a cup is formed. Hold the lens up to your eyes and look at it from the side. The lens should look like a half ball (correct) not like a soup bowl (inside-out)
- For tinted contacts, place the lens on your fingertip and look down at it. The edge should look very blue (or green, depending on the tint); that won't be the case if the lens is inverted
- Some contact lenses have a laser marking, such as the brand name, on the edge. If you can read it, the lens is not inside out

It's not unusual for people just beginning to wear contacts to be confused about which way is up with their soft contact lenses. With time and practice, right-side-up will become second nature to you!

Answer to Eye-Q (from page 1)

A: Approximately 2 percent of the world population has green eyes.

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