

### INSIGHTS

## Digital Dangers to Children's Development

We live in an ever-growing digital world—from smart phones and tablets to large-screen televisions. On the positive side, educational apps and television shows help children sharpen their thinking and polish communication skills. Unfortunately, too much time on today's digital devices can do just the opposite. This is particularly troubling in view of recent statistics that suggest children as young as two regularly play computer tablet games and have touch-screen toys.

### Too Much, Too Soon

Too much digital screen time can often hamper a child's ability to focus, concentrate, sense people's attitudes and communicate with them, and build a large vocabulary, according to the British Psychological Society. That means that parents who rush to expose children to screen time for an educational edge may actually be doing a lot more harm than good.

Most critical are children between the ages of birth and three. Brains develop quickly and are particularly sensitive to the surrounding environment. When a young child spends too much time in front of a screen at the expense of receiving stimuli from the real world, development becomes permanently stunted. The reason is overstimulation.

For instance, a smartphone-told story provides images, words and pictures all at once. Normally, when a mother reads a book to a child, there is time to process the mother's voice into words, visualize complete pictures and

exert a mental effort to follow a storyline. Young readers who follow stories on their smartphones can become lazy; the device does the thinking for them, and as a result, their cognitive abilities remain weak.

### Moderation Key at Any Age

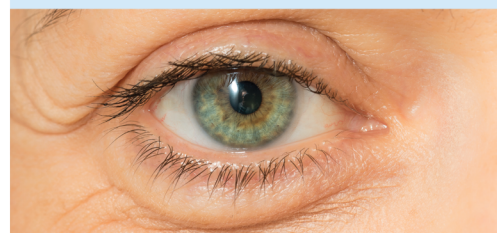
While particularly harmful during early childhood, overexposure to digital devices can be harmful in older children as well. American children spend an average of seven hours a day in front of electronic media, according to the U.S. Department of Health and Human Services. A recent university study found that, for 10-year-olds, each extra hour per day spent watching television, using the Internet or playing computer and video games was associated with poorer grades on standardized tests at age 16.

What these studies suggest is that while some digital activity is helpful to children, moderation is key to ensuring too much screen time does not impair learning and brain development.



### EYE CANDY

## Bags Under Your Eyes?



Most people experience puffy eyes at some point in their lives. The causes can vary. They include:

1. Too much salt in your diet
2. Certain allergies
3. Sinus problems
4. Dehydration
5. Lack of sleep
6. Inherited facial features
7. Crying
8. Aging
9. Stress

Ordinary swelling means you have an excessive amount of fluids in the skin tissue surrounding the eyes. Because the skin around the eyes may be the thinnest skin in the body, swelling is quite noticeable.

Sometimes eyes are puffier in the morning because while you sleep, you don't blink. So water wells up around the eyes. This should go away an hour or so after you wake.

If puffy eyes persist and cannot be explained by the above reasons, it may make sense to see your eye doctor to ensure the swelling is not related to an underlying medical condition such as thyroid-related Graves' disease or a simple-to-treat pink-eye infection.



**Q:** What do you call the space between your eyebrows?

See answer on back.

## What Is Diabetic Retinopathy?

People who have diabetes are at risk of developing an eye disease called diabetic retinopathy. This is when high blood sugar levels cause damage to blood vessels in an area at the back of the eye called the retina. These blood vessels can leak and swell, or they can close up, stopping blood from passing through. Sometimes abnormal new blood vessels grow on the retina. All of these changes can threaten your vision.

Diabetic retinopathy is the leading cause of blindness among working-age Americans. The two main types of diabetic retinopathy are:

- Non-proliferative diabetic retinopathy (NPDR)
- Proliferative diabetic retinopathy (PDR)

With NPDR, tiny blood vessels leak or close up. When the center of the retina, called the macula, leaks and swells, it is called macular edema. Macular edema

is the most common reason people with diabetes lose their vision. Less common is when blood vessels in the retina close up, starving the macula for blood. That condition is called macular ischemia. NPDR causes vision to be blurry.

PDR, the more advanced stage of diabetic eye disease, is when the retina starts growing new blood vessels. These new vessels often bleed into the other sections of the eye. If they bleed a little, dark floaters appear in the field of vision. If they bleed a lot, scars may form on the macula, leading to a detached retina, which can cause blindness. PDR is very serious, and can steal both central and peripheral (side) vision.

Fortunately, diabetic retinopathy often can be prevented with early detection, proper management of diabetes and routine eye exams performed by your optometrist.



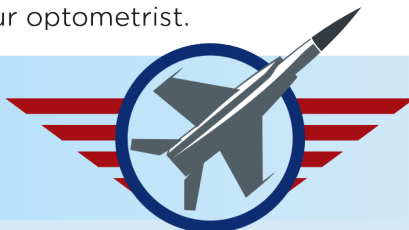
## Steampunk Eyewear

CYRUS KABIRU ○ KENYA

Steampunk eyewear is alive and well in Kenya thanks to Nairobi artist Cyrus Kabiru. The self-taught sculptor digs through household trash and old electronic refuse to find metal, transforming those materials into different wearable forms—from elaborate eyeglasses to ornate facemasks.

His popular eyewear creations have been described as performance art, sculpture and fashion. His work offers the ultimate in recycling by processing trash into sustainable creativity. Kabiru considers his popular eyewear art a way to give trash a second chance.

## Top-Gun Vision Required for the Air Force



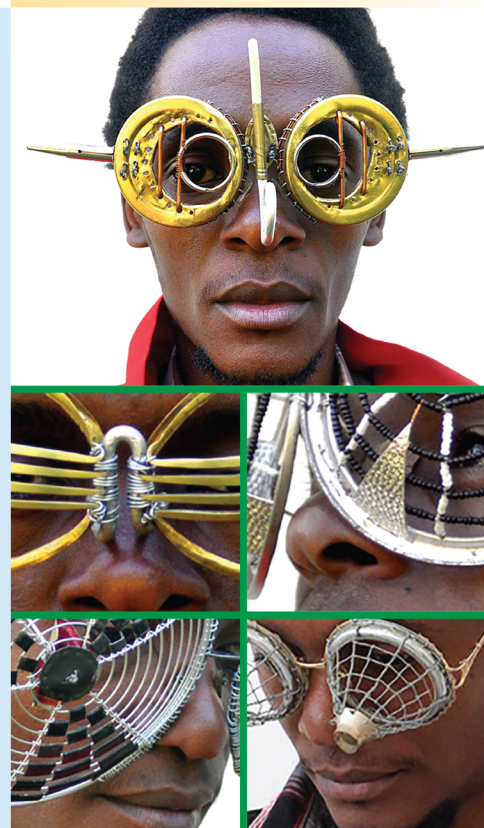
If you want to join the U.S. Air Force as a pilot, good eyesight is essential. Pilots must have normal color vision, normal depth perception and must also meet eyesight refraction and astigmatism requirements:

- Distant vision must be at least 20/70 uncorrected
- Near vision must be 20/30 uncorrected
- Both distant and near vision must be corrected to 20/20
- Corrective eye surgery could disqualify a candidate from flying

Pilots cannot have a history of hay fever, asthma or allergies after age 12.

If you'd prefer to be a navigator, rather than a pilot, there are specific vision standards for those candidates as well. Vision can be no worse than 20/200 in each eye (correctable to 20/20).

After flight school, pilots and navigators who have already graduated flight training can remain fliers as long as their vision doesn't become worse than 20/400 in each eye (correctable to 20/20).







## Sunglasses: Beyond the Fashion Statement

Sunglasses are not only a fashionable accessory, but also are the first line of defense for your sensitive eyes when you expose them to hours of sunlight. When choosing sunglasses, look for ones that provide 100 percent UVA and UVB protection. This shields your eyes from the sun's damaging ultraviolet rays. If you're spending time on the water, polarized sunglasses can help reduce glare. Sunglasses work best if they fully cover your eyes. Wrap-around lenses are the best because they block out light and glare from the sides, as well as the front.

### Protecting Against Eye Conditions

If you like the great outdoors, wearing protective eyewear is essential to your health. Here's why:

- The skin around your eyes is sensitive to sunlight. That's why one in ten skin cancers are found around the eyes
- Cataracts, cloudy areas on the eye's lens, can result from prolonged, long-term exposure to the sun's UV rays
- Ultraviolet exposure may worsen the symptoms of glaucoma, an eye condition in which fluid buildup increases eye pressure. Untreated, it can result in blindness
- Macular degeneration is a condition where the part of the retina called the macula deteriorates, impairing central vision, and in many cases, causing eventual blindness. UV radiation can speed up this process
- Pterygium, sometimes called surfer's eye, is a growth on the eyeball itself. It's usually not serious, but it can be painful and annoying

To reduce the chances of developing the conditions listed, optometrists recommend wraparound sunglasses with UV protection, especially on cloudy days when the sun isn't visible, but its UV rays can still damage the eyes.

### Protecting Against the Elements

Sunglasses also serve to shield your eyes from the elements. When you're hiking, skiing or participating in other outdoor activities, eyewear can protect against sand, dust, wind and even snow.

- Light reflected from snow can damage your eyes. Snow reflects 80 percent of UV rays from the sun and can result in snow blindness, a condition where glare from the sun actually burns the cornea
- Windy, dusty areas can irritate and harm your eyes. That's because tiny grains of sand can scratch the eye and can cause permanent damage

Fortunately, there is a large variety of sunglasses for every taste and need. So before you venture out into the great outdoors, remember to bring along a high-quality pair of protective sunglasses.

### Be Protected

When choosing sunglasses, look for the wraparound style that provides maximum protection from UVA and UVB rays, as well as protection from the elements.

LensCrafters® carries wraparound-style sunglasses like the Oakley® Turbine (left) and Gascan (right).



### Stick With Cinnamon

Cinnamon is a delicious spice sprinkled atop oatmeal or on fancy coffees. Its first recorded use was in 2800 BCE by Emperor Shen Nung, the Father of Chinese medicine. In many cultures, the inner bark of the cinnamon tree, from which the cinnamon is extracted, is a traditional medicine.

#### There are two types of cinnamon:

- **Ceylon cinnamon** (*Cinnamomum verum*) comes from Sri Lanka, India, Madagascar, Brazil and the Caribbean
- **Cassia cinnamon** (*Cinnamomum aromaticum*) comes from China, Vietnam and Indonesia

Both forms have high amounts of calcium, fiber and manganese, as well as antibacterial, antifungal, antimicrobial, antiviral and antioxidant properties. Some studies suggest cinnamon may:

- Lower blood sugar in people with diabetes (Cassia cinnamon only)
- Lower cholesterol
- Reduce inflammation
- Fight bacteria

Both cinnamon types look and smell almost the same. However, Cassia cinnamon should be eaten with caution because it contains high amounts of a compound called coumarin, which is a blood thinner. Large doses of coumarin may lead to a higher risk of liver damage, loss of appetite, nausea, diarrhea or blurred vision.

Most people are better off using Ceylon cinnamon, which has a lower coumarin content. When buying cinnamon, look for a label that states that it is Ceylon cinnamon or you may be purchasing the less expensive Cassia version.

## Do You Have Dry Eyes?

When your eyes are dry and irritated, the simplest things that are taken for granted such as using your computer, reading, or driving your automobile can all become challenging.

You are not alone. In fact, dry eye disease is a significant global problem, afflicting over 30 million people in the United States alone.<sup>1</sup> Many Americans go to their eye-care professional to diagnose this common condition. For most people with symptoms of dry eye, there is relief in using an over-the-counter lubricating eye drop.

### Do the Following Symptoms Sound Familiar to You?

- Scratchiness or the feeling of sand in your eyes
- Foreign body sensation
- Redness
- Dryness, burning or itching
- Irritation followed by tearing
- Blurred or changing vision
- Difficulty blinking

### What's Causing Your Dry Eye?

The environment and your general health can cause the symptoms of dry eye as shown below. And, as you become older, you naturally produce less tears. For women, sometimes the cause is hormonal. Besides the environmental and general health factors, you may experience temporary dry eye symptoms after LASIK or other eye surgeries.

### Environmental Factors

- Extended computer and/or TV usage
- Circulating air from heating and air conditioning (HVAC)
- Ceiling fans and vents located above eye level
- Dry weather environments
- Allergies
- Airplane travel

### Health Factors

- Oral medications for high blood pressure, depression, or hormone replacement
- Aging
- Menopause
- Diabetes
- Eyelid disease or complications
- Autoimmune diseases, such as Sjögren's syndrome
- Rosacea
- Pregnancy and breast feeding

### What Can You Do About Dry Eye?

Discuss your dry eye symptoms with your eye-care professional. They can evaluate your eyes to see if more tests are needed. It's important to get treatment as most dry eye symptoms do not go away on their own, but are highly treatable.

**References:** 1. Dry eye redefined conclusions and recommendations of the TFOS DEWS II announced. Press release, May 2017.  
2. Nichols JJ, Mitchell GL, Nichols KK, et al. The performance of the Contact Lens Dry Eye Questionnaire as a screening survey for contact lens-related dry eye. *Cornea* 2002;21:469-75  
© Johnson & Johnson Vision Care, Inc. 2018

### Try Blink® Tears and Blink GelTears® Lubricating Eye Drops for Dry Eye Symptom Relief



Visit [justblink.com](http://justblink.com) for more information and \$3 Off coupon

#### Important Safety Information

Blink® Tears and Blink GelTears® Drops are for the temporary relief of burning, irritation and discomfort due to dryness of the eye or exposure to wind or sun, and may be used as a protectant against further irritation. Patients should stop use if they experience eye pain, changes in vision, continued redness or irritation of the eye, or if the condition worsens or persists for more than 72 hours.

PP2018CN0025

## What Is the Conjunctiva?

Sometimes what you don't see can be important to your eyesight. The "invisible" conjunctiva is a clear, thin membrane that covers part of the outer surface of the eye and the inner surface of the eyelids. It has two parts:

- **Bulbar conjunctiva:** covers the white part of the eyes
- **Palpebral conjunctiva:** covers the inner surface of both the upper and lower eyelids

### The primary functions of the conjunctiva are to:

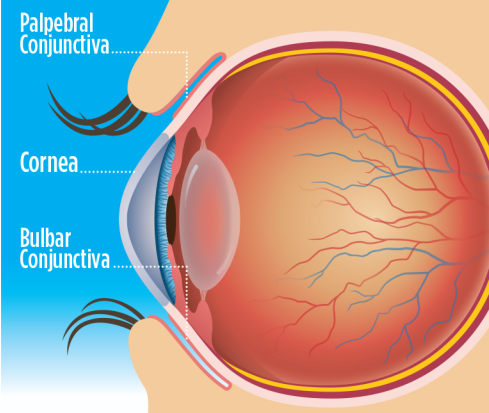
- Moisten and lubricate the outer surface of the eye
- Moisten and lubricate the inner surface of the eyelids so they can open and close without friction
- Protect the eye from dust, debris and infection-causing microorganisms

The tiny blood vessels located in the conjunctiva provide nutrients to the eye and lids. In addition, special cells in the conjunctiva secrete a part of the tear film that helps prevent dry-eye syndrome. The most common type of health problem that can arise with the conjunctiva is conjunctivitis, an easily treated infection also known as pink eye.

The bulbar and palpebral conjunctivas completely surround the eye. As a result, it's impossible for a contact lens (or anything else) to get lost behind the eye.

### A Clear Purpose

The conjunctiva is a clear, thin membrane that covers part of the outer surface of the eye and the inner surface of the eyelids.





## Beware of Online Eye Exams

There are so many activities that can conveniently be done online—from shopping for electronics and pet food to booking vacations. But the American Optometric Association (AOA) is warning consumers there may be risks associated with online refractive eye exams.

Although an online eye exam may seem convenient, according to the AOA, the association is receiving an increasing number of questions about the safety and validity of this type of online test.

The AOA contends that claiming to have performed an eye exam without physically examining a patient may be offering misleading information and may contribute to a patient believing—incorrectly—that his or her eye-health needs have been met.

### Online Versus In-person Exams

Online exam websites sometimes cover liability issues by stating that their refraction tests are only available to patients between the ages of 18 and 40 who are in good health—meaning people with no history of conditions such as hypertension, cataracts, glaucoma or diabetes. This attempts to sidestep the possibility that an online exam may miss critical, underlying health problems or may entirely miss early diagnosis of a particular disease.

For instance, diabetes affects more than 8 percent of the U.S. population, but about 7 million people don't even know they have this condition, according to the Centers for Disease Control and Prevention. Similar to diabetes, many diseases have no symptoms in their earliest and most treatable stages. These are the types of chronic conditions only a trained eye-care professional can catch during a comprehensive eye exam.

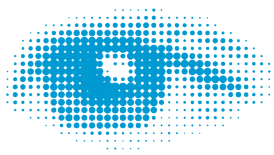
### Only a Partial Exam

Another issue with online evaluations is that the refraction test is only one part of a comprehensive eye exam. Optometrists take the history of their patients and observe them over time. Through direct observation, they can detect if a shift of vision is due to cataracts or other causes. Patients with chronic conditions such as diabetes or hypertension may be at significant risk regarding the proper diagnosis and treatment of potentially sight-threatening diseases if not properly evaluated by an eye doctor. Early diagnosis and treatment can be essential in preserving vision.

The AOA is calling for a more thorough evaluation of online eye-testing sites like “Opternative” currently springing up all over the Internet, and for an assessment of how they might affect patient health. The organization plans to monitor such sites and play an active role in fact-checking their claims.

#### Online Tests Cannot Replace Your Eye Doctor

Your optometrist can spot diseases of the eye like glaucoma, cataracts and AMD. Can your digital device or smartphone do that?



## Using an Amsler Grid

In the 1940s, Swiss ophthalmologist Marc Amsler, invented the Amsler grid to provide a simple way to detect eye diseases affecting central vision.

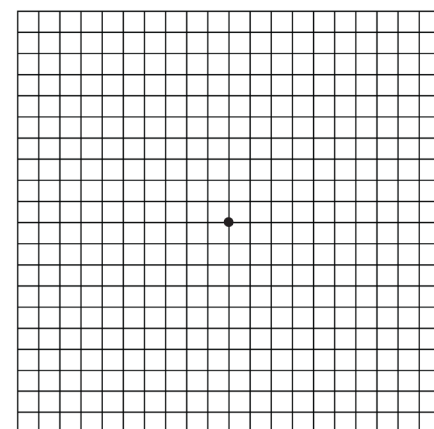
If you are at risk for age-related macular degeneration or other eye diseases, you can use this chart at home to monitor your vision. Early diagnosis and treatment may help to limit vision loss.

The original Amsler grid was black and white. A color version featuring a blue and yellow grid is more sensitive and can be used to test for a wide variety of visual problems, including those associated with the retina, the optic nerve and the pituitary gland.

### To test your eyes:

1. Wear your reading glasses in a room with normal lighting
2. Hold the grid 14 to 16 inches from your eyes
3. Test each eye separately, keeping eye focused on dot in grid center
  - Do any lines or boxes in grid appear wavy, blurred or distorted?
  - Are there any “holes” (missing areas) or dark areas in the grid?
  - Can you see all corners and sides of the grid (while keeping your eye on the central dot)?

### Amsler Grid





(OCT) device that takes detailed images of the inside of the eye to confirm the diagnosis.

As your mother's doctor mentioned, this condition is not really serious and doesn't usually affect eyesight. In rare cases, the vitreous gel may be strongly attached to the retina, and can pull so hard on it that it tears the retina. This can lead to retinal detachment, which can threaten your central vision. That's why your optometrist will ask that you come back for a follow-up visit. If a tear is going to happen, it usually occurs within four to six weeks of symptoms. Fortunately, if caught early, that tear can be repaired by a retina specialist using a special laser.

I recently experienced a posterior vitreous detachment while I was at a professional meeting many miles away from home. Fortunately, I knew what a PVD was, so I wasn't concerned. Most of my patients find it very unnerving because they really don't know what's happening and think that something is drastically wrong with their eye. As their eye doctor I am happy to reassure them that it is perfectly normal and usually nothing to worry about.

**Q:** Our eye doctor recently told my mother that she had PVD and not to worry about it. What is that?

**A:** There's a saying that if you live long enough, you'll have a posterior vitreous detachment, also known as a PVD. That's because most PVDs are considered a normal part of aging.

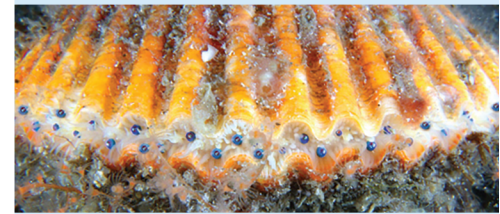
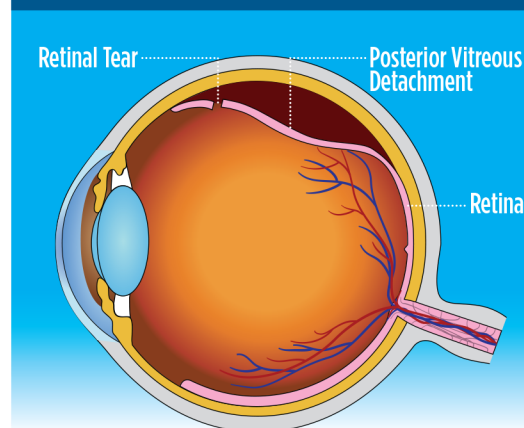
The human vitreous is a clear, jelly-like substance that is located between the iris and the retina at the back of the eye. PVDs happen when this vitreous gel shrinks and separates from the retina. This can begin to happen as early as when you're in your thirties, but it's something you won't feel or notice until you're in your 60s or 70s. It is most common in near-sighted people, because with nearsightedness, the eye is elongated.

Symptoms typically occur suddenly and include flashing lights and squiggly lines or floating specks in one eye. If you have a PVD in one eye, you probably will eventually have it in the other eye as well. If flashing lights occur in both of your eyes at once, you may be experiencing a migraine, not a vitreous detachment.

As an optometrist, I usually diagnose this condition by dilating your eye and examining the retina. I've been practicing for 40 years, and until recently, the diagnosis was done exclusively that way. Today, there is a machine called an Optical Coherence Tomography

## Inside the Eye

PVDs are a normal part of aging. They happen when the vitreous gel shrinks and separates from the retina.



## Many-eyed Sea Creatures

It may seem like something from a sci-fi movie, but there are small creatures lurking in the sea that have hundreds of eyes. Remember that fact the next time you order a plate of scallops at your favorite seafood restaurant.

Scallops are relatively small creatures but they greatly outdo larger animals in one creepy respect—they have 200 eyes. All of those peepers function more like a telescope than by focusing light directly onto the retina the way other animals see, according to a recent study led by researchers in Israel and Sweden.

Scallops have a microscopic mosaic of concave mirrors at the back of their numerous poppy seed-shaped eyes. Light reflects off these concave mirrors onto the retina above. That gives these small sea creatures both central and peripheral vision, helping them control and guide their movement while swimming. It also makes it possible for them to see which things around them are still or moving. Other deep-sea fishes may also share this type of telescopic vision.

## Answer to Eye-Q (from page 1)

**A:** The small space between your two eyebrows is called the nasion.

## CONTACT

**ALLDocs**  
Heather Kreidler  
hkreidler@foxeyecare.com  
919.763.7522 919.263.2020

**Eyedeaz LLC**  
kzierler@comcast.net  
908.447.1562

Thank you to our sponsors:



Johnson & Johnson VISION