

See

Celebrating
a World
of Vision

INSIGHTS

The Real Role of Vision Screenings



As patients, it's important to recognize the difference between diagnostic tests and screening tests. A screening test is used to identify people with a given problem, but it won't measure the extent of the problem. On the other hand, a diagnostic test by an eye care professional is done to identify and quantify the severity of a condition.

Are Screenings Effective?

Vision screenings are often given to detect early signs of disease. The belief is that the sooner that a disease is detected, the sooner a disease can be treated. While the hope is screening tests would be specific, sensitive, and predictive of future disease, the reality is there are no known vision screenings with this level of accuracy. Screenings can be performed in many different settings (eg, schools, pharmacies, shopping malls, and community centers), but they are not a substitute for regular contacts with healthcare providers, who can validate findings from exams and analyze trends over time.

Research shows that vision screenings are largely ineffective. For example, impaired visual acuity is common in older adults, meaning early identification of people with these problems may help healthcare providers use interventions earlier to prevent future problems. How-

ever, studies show that screening older adults for impaired visual acuity in a doctor's office is not effective for preventing vision problems later in life. Another problem with visual acuity screenings is that they fail to detect children who have reading problems, hyperopia, or astigmatism.

Further complicating matters is visual acuity screening results can vary depending on who conducts the screening and how it was performed. The problem is there are widespread differences in opinion on the best way to conduct these tests, even among experts. Other factors that can reduce the reliability of visual screenings include:

- Variability in how vision screeners deal with children who are unable to complete screenings
- Assumptions that patients with eyeglasses have recently received a necessary eye exam
- Failure to consider societal and cultural factors when conducting screenings and assessing vision

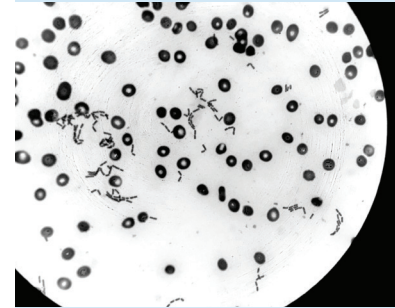
Doctors' Visits Still Required

At best, visual acuity screenings can detect nearsightedness or farsightedness. But if you don't have a visual impairment that affects distance vision, you could still have other eye conditions that need to be diagnosed and treated by an eye doctor. This includes cataracts, glaucoma, and diabetic retinopathy, among others. Anyone who receives a visual acuity screening must still be referred to an eye doctor for a complete eye exam. Just because you've been told you "passed" a vision screening doesn't negate the need to get a comprehensive eye exam. You should return regularly for a comprehensive eye exam with an eye doctor because visual screenings alone won't lead to an essential diagnosis or treatment you may need.



EYE HEALTH

Bacteria Engineering to Battle Eye Diseases



Your eyes are home to a collection of microbes—fungi, bacteria, and viruses—that help keep them healthy. When the microbes in your eyes are out of balance, eye diseases may pop up. Scientists are beginning to discover microbial factors that may be exploited to create new therapies for a range of eye disorders, including dry eye disease, Sjogren's syndrome, and corneal scarring.

It may one day be possible to engineer bacteria to treat eye diseases in humans. The first step is to figure out how bacteria colonize the eye. Testing is underway in mice to identify specific factors for which certain microbes colonize on the eye surface. From there, the goal is to develop diagnostic tools to find microbes that cause eye disease and then genetically engineer bacteria to help balance microbes in your eyes to reduce eye disease symptoms. The field is in its infancy but there is huge potential for these advances. Stay tuned!

EYE-Q

Q: How many different objects do your eyes focus on per second?

See answer on back.



Relieving PTSD: Eyes to the Rescue?

After experiencing a serious traumatic event, people sometimes develop post-traumatic stress disorder (PTSD), a condition characterized by terrible debilitating memories that get stuck in the brain. In PTSD, traumatic events are so severe that the brain becomes unable to process what happened in a healthy way, leaving painful memories that never truly heal.

What if the eyes could help in the fight against PTSD? Scientists have been testing if a therapy called eye movement desensitization and reprocessing (EMDR) can aid in people suffering from PTSD. EMDR helps the brain process traumatic memories so that they no longer hold power over the patient. It helps soften memories by making disturbing images and emotions less vivid. Patients learn to take what is useful about traumatic events and store these memories in such a way that they are no longer distressing.

How It Works

During an EMDR session, a psychotherapist will move their finger back and forth in front of the eyes and track eye movements. During this time, patients are asked to think about the traumatic event and the feelings and bodily sensations that accompany it. Over the course of several sessions, the psychotherapist guides patients to replace painful thoughts with more positive ones (see Table).

Early Positive Results

Although EMDR is still in its infancy, small studies have suggested that the therapy works quickly to resolve PTSD. In a few sessions, EMDR may be able to

achieve results similar to that of talk therapy or cognitive behavior therapy but in a much shorter time frame. One study found that all its patients who suffered a single trauma and nearly 80% of those who experienced multiple traumas no longer had PTSD after six 50-minute sessions. Two other studies found that nearly 90% of single-trauma victims were PTSD-free after three 90-minute sessions.

More to Come

Although results with EMDR have been encouraging in recent studies, it's still not entirely clear how it works in the brain. Proponents suggest it synchronizes the right and left hemispheres of the brain. Others believe it mimics rapid eye movement sleep. Research on EMDR is ongoing, particularly for treating PTSD, but it's also being tested as therapy for anxiety, depression, addiction, and eating disorders. Stay tuned!

Table: The Phases of EMDR	
Phase	Description
History taking	The first meeting involves talking to the psychotherapist about the trauma and establishing if EMDR should be used.
Preparation	Patients are briefed on what to expect during a typical EMDR session. Stress management techniques are provided to help patients deal with any mental anguish that may occur between sessions.
Assessment	The psychotherapist determines which memories will be targeted during EMDR sessions, including negative beliefs when thinking about the trauma and positive beliefs that are preferred.
Treatment and evaluation	The psychotherapist begins EMDR techniques.

Discover Free Eye Programs for Veterans



A program from the National Library Service and the Library of Congress is now providing free talking books, audio magazines, and digital talking-book players for any honorably discharged military veteran who is blind, has low vision, or has a disability that prevents them from reading traditional materials. Veterans can choose from several ways to have their selected reading materials delivered. These include:

- Delivery from the United States Postal Service
- Downloading materials from the Braille and Audio Reading Download (BARD)
- Utilizing the BARD mobile app for smartphones and tablets

The National Library Service keeps a vast catalog of titles and publications, ranging from the latest best-sellers to timeless classics. Plus, Veterans have preferential status in the lending of materials and equipment. Veterans can also apply for the Braille and Talking Books Program by calling the National Library Service at 1-888-NLS-READ (1-888-657-7323) or visiting them on the web at www.loc.gov/Tha-tAllMayRead.





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Eye Pressure & Sports-Related Anxiety

Intraocular pressure (IOP) may provide important clues about the anxiety athletes can experience during athletic competitions. Previous studies have shown that athletes experience high levels of anxiety when participating in sports. IOP can reflect nervous system changes during mentally demanding situations. A new study tested whether different levels of anxiety during basketball free throw shooting had an impact on IOP.

For the study, 18 amateur basketball players shot 100 free throws in 3 different sessions. These sessions were developed so that levels of induced anxiety would be low, medium, or high. As the level of induced anxiety increased, so too did IOP levels as these athletes shot their free throws. The findings suggest a correlation between anxiety and IOP.

The study findings may be particularly relevant because of their potential applications for controlling anxiety levels in athletes. In the future, IOP may be a promising tool for assessing the level of anxiety in certain sports situations.



*Mystic Green has a less-defined outer ring as compared to the other colors. Mystic Green is also available as Green within the FreshLook® One-Day Color Contact Lenses portfolio.
**Eye exam may be required before lens trial. Professional fees may apply. One pair of non-corrective DAILIES® COLORS contact lenses or AIR OPTIX® COLORS contact lenses for wear in-office only. Offer available at participating offices.

Important information for DAILIES® COLORS (lululemon A) contact lenses: For daily wear, single use. Contact lenses, even if worn for cosmetic reasons, are medical devices that must only be worn under the prescription, direction and supervision of an eye care professional. Serious eye health problems may occur as a result of sharing contact lenses.

Important information for AIR OPTIX® COLORS (lululemon B) contact lenses: For daily wear only for near/far-sightedness. Contact lenses, even if worn for cosmetic reasons, are prescription medical devices that must only be worn under the prescription, direction and supervision of an eye care professional. Serious eye health problems may occur as a result of sharing contact lenses. Although rare, serious eye problems can develop while wearing contact lenses. Side effects like discomfort, mild burning or stinging may occur. To help avoid these problems, follow the wear and replacement schedule and the lens care instructions provided by your eye doctor.

Ask your eye care professional for complete wear, care and safety information. © 2019 Alcon Inc. 05/19 US-DOC-19-E-0799

Eyes Twitching? Discover Common Causes & Remedies



For most people, eye twitching is an irritating nuisance that is relatively harmless. Most eye twitching lasts only a few minutes, but others can have the condition for days or even longer. Here are some common causes and potential solutions to these problems:

1. Stress

Stress is one of the most common causes of eye twitching. To overcome stress, try yoga or breathing exercises. Other stress relievers may include spending time with friends or pets and getting more down time into your schedule.

2. Fatigue

Lack of sleep can lead to fatigue, which in turn can trigger eye twitching. Catching up on your sleep and having a consistent sleep schedule can help.

3. Eye strain

Eye strain—especially straining from overuse of computers and smartphones—is an increasingly common cause of eyelid twitching. Try using digital devices with the “20-20-20 rule.” In 20-minute increments, look away from your screen and focus your eyes on a distant object at least 20 feet away for 20 seconds or longer. Also, ask your eye doctor if you should use computer eyeglasses.

4. Caffeine

Too much caffeine can cause eye twitching. Cut back on coffee, tea, and caffeinated soft drinks for 1-2 weeks and see if the problem disappears.

5. Alcohol

If you experience eye twitching after drinking beer, wine, or liquor, try ab-

staining for a while. Alcohol consumption may cause eyelids to twitch.

6. Dry eyes

Dry eye is common for many adults, especially when you reach age 50. If you have twitching eyelids and your eyes feel gritty or dry, see your eye doctor for a dry eye evaluation. Restoring moisture to the eye surface may stop the twitching and decrease risks for future eye problems.

7. Nutrition problems

Some studies suggest a lack of certain nutritional elements, such as magnesium, can trigger eyelid spasms. Talk to your doctor to see if you should try nutritional supplements.

8. Allergies

Rubbing your eyes because of allergy symptoms releases histamine into eyelid tissues and tear film. This may cause eye twitching. Allergy eye drops might work but talk to your doctor before using them to make sure they are right for you.

When to See an Eye Doctor

If you experience persistent eye twitching that won't go away after trying these remedies, you should see an eye doctor for treatment. If you have sudden changes in appearance or movement of half your face (including your eyelids) or if both eyelids clamp down so tight that you can't open your eyes, see a doctor immediately. These can be signs of a serious neurological condition. Fortunately, these instances are rare. Eye twitching will usually go away after you make a few minor lifestyle changes.



Dark Chocolate Sweetens Vision

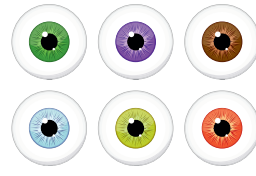


A study suggests that a little bit of dark chocolate might offer a slight and temporary improvement in vision quality. Dark chocolate contains flavanols, which are considered heart-healthy compounds but also appeared to sharpen eyesight for 30 healthy young adults who participated in the research.

For the study, participants ate either a 1.5-ounce 72% cacao dark chocolate bar or a similar-sized crispy rice milk chocolate bar. About 2 hours later, they underwent vision testing using standard letter-based eye charts. When compared with people who ate the milk chocolate bar, those who ate the dark chocolate showed small enhancements in visual acuity and large-letter contrast on the vision test.

The study authors noted that the changes in vision were small but significant. However, they stressed it's too early to recommend chocolate as medicine for the eyes. The duration of the effects and their influence in a real-world setting await further testing.





How Eye Color Develops & Why It Changes



Eye color is a trait that largely depends on the genetic material that each parent contributes to a child. The genes of parents can mix and match in many different ways, and the influences from each parent are unknown until a child is born.

A Complex Phenomenon

Human eye color originates with 3 genes, 2 of which are well understood. These genes account for the most common colors: green, brown, and blue. However, other colors like gray, hazel, and multiple combinations are not fully understood or explainable. Brown eye color was once considered dominant while blue eyes were considered a recessive trait, but studies now show that eye color is not this simple. Darker colors tend to dominate, so brown tends to be more common than green, and green tends to be more prevalent than blue.

Children can have completely different eye colors than both of their parents. If either parent has brown eyes, it's most likely that their children also will have brown eyes. That said, a scenario where one parent has brown eyes and the other has blue eyes doesn't automatically produce a brown-eyed child.

Changing Colors

To make things more complex, eye color can change early in life. For example, most non-Hispanic Caucasian

babies are born with blue eyes that can darken in their first 3 years of life. Darkening occurs if melanin, a brown pigment usually not present at birth, develops with age. In adults, eye color can also change with age. This happens in 10% to 15% of the Caucasian population. If adult eye color changes are dramatic or if one eye changes from brown to green or blue to brown, see your doctor. These changes may be warning signs of certain diseases.

In addition, some children are born with irises that do not match in color, a condition called heterochromia. This is caused by faulty developmental pigment transport, local trauma (either in the womb or shortly after birth), or a benign genetic disorder. If you notice an unusual appearance to eye color, see an eye doctor for an evaluation.

Enhancement Options

You can change your eye color with colored contact lenses. However, it's important to remember that colored contact lenses must be prescribed and monitored by an eye doctor. If you wear eyeglasses, choose lenses with anti-reflective coating. These lenses eliminate reflections in your glasses that prevent others from seeing your eyes. Ask your optometrist for details and a demonstration of anti-reflective lenses. You may also want to ask about how to choose eyeglass frames that highlight and enhance the color of your eyes and skin tone.



Lazy Eye Helped da Vinci With Masterpieces



Italian artist Leonardo da Vinci (1452-1519) may have painted the Mona Lisa and The Last Supper while enduring an untreated lazy eye, according to Christopher Tyler, a British professor. Amazingly, the fact that da Vinci didn't have the eye treated may have helped the Renaissance painter perfect his masterpieces.

For the study, a series of paintings and sculptures thought to depict the likeness of da Vinci were analyzed. Tyler concluded that the artist appeared to have suffered from chronic or intermittent lazy eye due to a misalignment of the eyes.

Rather than undermine his abilities, it's theorized that the lazy eye would have forced da Vinci to occasionally rely on just one eye. This would compromise normal 3-D vision, but the reliance on 2-D vision may have enhanced his ability to render multiple 2-D applications of paint across a flat canvas. The end result of this distorted vision is richly layered masterpieces that are packed with subtlety.

Stop and Smell the Roses

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EYE HEALTH



Beat the Nightly Eye Discharge

Eye discharge—also known as “sleep” in your eyes or eye gunk—is a combination of mucus, oil, skin cells, and other debris that gather in the corner of your eye while you sleep. It can be wet and sticky or dry and crusty. A small amount of eye discharge is harmless but talk to your doctor if you see changes in the color, frequency, consistency, and amount.

Here are some tips to avoid or manage eye discharge:

- Don't touch your eyes to avoid the onset or spread of an eye infection
- Wash your hands frequently, especially if you have pink eye
- Remove contacts if you get eye discharge after wearing them or ask about switching to daily disposable contacts
- If you have an eye infection, throw away any possibly contaminated cosmetics (eg, mascara and eyeliner)
- If allergies cause watery eyes, remove or minimize your exposure to irritants.; if you're sensitive to eye drops, try using preservative-free drops



EYE DROPS

Your **retinas** see the world upside down, your brain flips the image around for you.



EYE DROPS

Your **iris** (the colored part of your eye) has **256 unique characteristics**; your fingerprint has just 40.



EYE DROPS

Are you one of those people who thinks “green is green?” **Your eyes don't!** Our eyes can distinguish approximately **10 million different colors!**



EYE-Q

Answer to Eye-Q (from page 1)

A: 50

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