



Healthy Aging in Neighborhoods of Diversity across the Life Span

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The Healthy Journey

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Vision Testing and HANDLS

By Allison Udris M.S. LCPC

Why is HANDLS studying vision?

Vision loss and eye diseases have become a public health concern in the United States. As people age, they are more likely to experience vision loss from eye diseases such as glaucoma, cataracts, age-related macular degeneration, and diabetic retinopathy. People may also experience “refractive errors,” which include nearsightedness and farsightedness. According to the National Eye Institute, 4.2 million Americans 40 and older experience vision problems, and over 3.4 million Americans 40 and older are legally blind.

Nearsighted vision means distant things appear blurry. Farsighted vision means close objects may be clearer than things further away.

Vision is an important sense because it affects how people learn and interact with the world. When people have vision problems, they may have difficulty with daily activities such as cooking, driving, and reading. People with vision impairments are at a greater risk of injury from falls because they are unable to see obstacles and other hazards. Additionally, people with uncorrected vision problems may have difficulty reading prescription labels, utility bills, or other important documents.

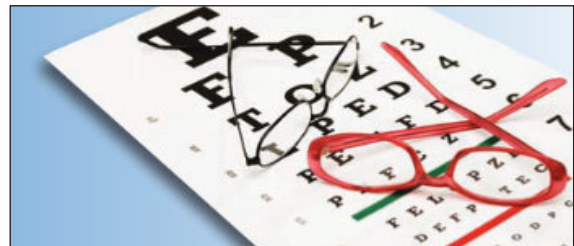
HANDLS offers two vision tests in Wave 5: Visual Acuity Screening and the Fundus Test.

Visual acuity screening

If you have nearsighted vision (*myopia*), close objects appear clearly while distant objects appear blurry. Symptoms of nearsighted vision include headaches, squinting, and difficulty seeing distant objects such as the television from across the room or road signs.

If you have farsighted vision (*hyperopia*), distant objects are clear while close objects appear blurry. Symptoms

of farsighted vision also include headaches and squinting, as well as blurry vision for close objects such as this text.



According to the National Eye Institute, 34.1 million Americans are currently nearsighted and 14.1 Americans are currently farsighted. Both nearsightedness and farsightedness can be corrected with eyeglasses or contact lenses.

The visual acuity test we offer informs you if there is a problem with your vision such as nearsightedness or farsightedness. During this test, you will be asked to sit down and read several rows of letters on a monitor, once with your right eye and once with your left eye. The rows of letters vary in size. You may perform this test with or without corrected vision. This means you can do this test with or without your glasses or contacts. After you complete this test, you will receive a report with your results. You are welcome to share this information with your eye doctor.

The results you will receive from the visual acuity screening will appear as a fraction. This fraction explains how clearly and sharply you saw the letters on the monitor. Your results can range from 20/20 to 20/200. The 20 refers to the distance you are from the monitor. The number following the 20 refers to the last line you read correctly. 20/20 is considered normal, and all other results (20/30 to 20/200) reflect vision impairment such as nearsightedness or farsightedness. 20/30 is mild vision impairment; 20/200 is severe. In Maryland, 20/40 vision in each eye is required to drive a vehicle. If your vision is 20/40 or greater, you will need eyeglasses or contact lenses in order to drive. If your visual acuity is 20/200 or greater, you are considered legally blind.

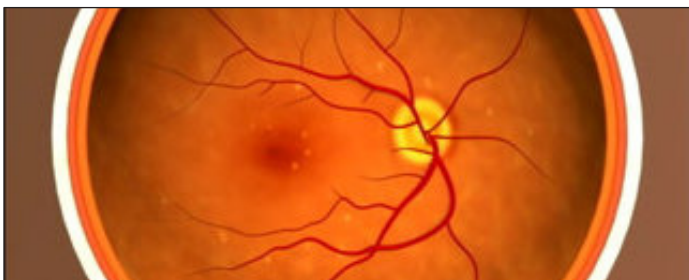
The visual acuity screening is not the same thing as an examination by your eye doctor. The visual acuity test is useful for showing whether you are nearsighted or farsighted. If you wear glasses or contacts it can show if you may need a new prescription from your eye doctor. After you complete an eye exam from an optometrist, you will receive a prescription you can use to get new eyeglasses or contact lenses.

Fundus test

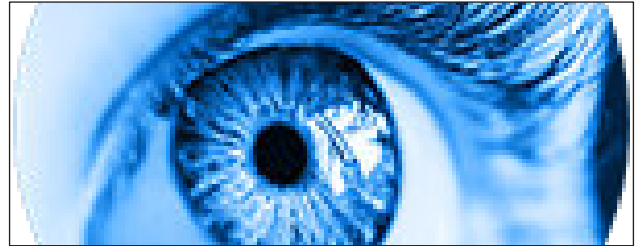
According to the National Eye Institute, 2.1 million Americans have advanced age-related macular degeneration (AMD). AMD is an eye condition among adults who are 50 and older. This condition causes damage to the macula, a tiny spot on your retina in the back of your eye. Damage to the macula causes a loss of central vision, which is seeing objects that are straight ahead. People with this condition have a blurred area at the center of vision but can see more clearly around the edges of vision. The loss of central vision can make it very difficult to complete activities of daily living, such as recognizing people, driving, reading, or cooking. AMD can progress over time, from early to intermediate and late stages. It can affect only one eye or both eyes. The picture below explains what an image might look like for someone who has AMD.



HANDLS is offering the fundus test to all Wave 5 participants. This test uses a camera to take high-resolution pictures of your eyes in a dark room. It does not require eyedrops or puffs of air. This is a useful test because early and intermediate age-related macular degeneration can start without noticeable symptoms. The HANDLS fundus test can detect early stages of this disease. Images from this test will look like the photo below.



The vein you see in the photo is called the optic nerve. The yellow circle where the optic nerve is located is called the optic disc. The dark spot is your macula. The pink background of the image is your retina. This picture shows a normal eye. However, if many medium-to-large yellow spots (called "drusen") appear on the image, you may have AMD. Drusen is made up of fatty deposits in the eye. Small drusen are associated with normal aging and do not mean you have AMD.



HANDLS is working in collaboration with the National Eye Institute in Bethesda, Maryland. Eye care professionals at the National Eye Institute will assess the images of your eyes and will contact the HANDLS physician if there is an abnormality. Afterward, the HANDLS physician will contact you to inform you of the abnormality. If you do not receive a phone call about your results from the fundus test, this means your test results were normal and that you do not have signs of AMD at this time.

How can I keep my eyes healthy?

There are many things you can do to protect your eyes from damage. The following tips will help you to keep your eyes healthy.

Eat a healthy diet. Did you know that diets rich in beta-carotene and omega-3s are especially good for your eyes? Examples of eye-healthy foods rich in beta-carotene are carrots, kale, spinach, sweet potatoes, and squash. Examples of eye-healthy foods with omega-3s are salmon, tuna, and walnuts.

Avoid smoking. According to the National Eye Institute, smoking doubles your risk of getting age-related macular degeneration.

Maintain healthy blood sugar. Diabetics are at a higher risk for vision loss than people without diabetes. High blood sugar can damage the blood vessels in your retina and distort your vision.

Exercise. Moving your body is a great way to maintain a healthy weight, manage your blood sugar, and live a healthy lifestyle. Exercise can help protect you from eye

diseases linked to conditions like diabetes, high blood pressure, and obesity.

Wear sunglasses. Sunglasses protect your eyes from ultraviolet radiation, or UV rays from the sun. We often wear sunscreen to protect our skin from UV rays. Protecting our eyes with sunglasses is important because exposure to UV rays can increase the risk for cataracts and other eye conditions.

Limit screen time. Looking at screens frequently, such as the television, a computer, or smartphone, can cause eye strain. Many eye professionals recommend looking about 20 feet away for 20 seconds to give your eyes a break from staring at screens.

Schedule an eye exam. Comprehensive eye exams can ensure that your prescription for eyeglasses and contact lenses is correct. Also, eye exams can screen for eye conditions and diseases that HANDLS does not currently screen for, such as diabetic retinopathy, glaucoma, and cataracts. Eye care professionals recommend scheduling eye exams every one to two years. If you have Medicare Part B (Medical Insurance), preventive and diagnostic eye exams for diabetic retinopathy are free if you have diabetes. You can visit <https://www.medicare.gov/coverage/eye-exams> or call 1-800-MEDICARE 800-633-4227) for more information about eye care services provided under your insurance plan.

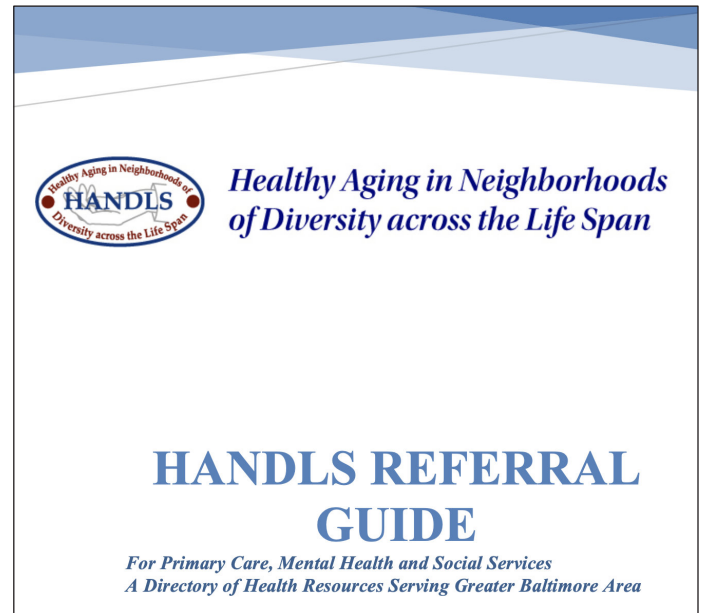


Cope with vision loss. There are many tools to help you with daily activities, even if you have vision problems. Prescription eyeglasses, contact lenses, magnifying glasses, reading glasses, and large-print materials can help you perform daily activities with less difficulty.

Vision referrals

After your Wave 5 HANDLS visit, you will receive a participant report packet. This packet includes your test results, as well as a referral guide that lists healthcare

providers and facilities if you would like follow-up care. This guide includes information about vision services. The referral guide can also be accessed online at



<https://handls.nih.gov/ReferralGuide.pdf>

References and resources

<https://nei.nih.gov/nehep/lvam>

https://www.cdc.gov/visionhealth/basic_information/vision_loss_burden.htm

<https://nei.nih.gov/healthyeyes/myopia>

<https://nei.nih.gov/healthyeyes/hyperopia>

https://nei.nih.gov/health/maculardegen/armd_facts

https://nei.nih.gov/sites/default/files/nei-pdfs/NEI_Eye_Disease_Statistics_Factsheet_2014_V10.pdf

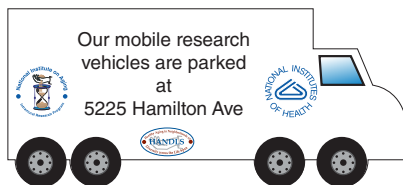
<https://medlineplus.gov/ency/article/003396.htm>

https://nei.nih.gov/hvm/healthy_eyes

<https://www.medicare.gov/coverage/eye-exams>

Photo Credits: National Eye Institute

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Newsletter for the HANDLS community

The purpose of this study is to learn about changes in health over time. Using our medical research vehicles, we want to study as many people with different backgrounds as we can. We want this study to help us understand healthy aging by examining the affects of different backgrounds on changes in health over time. The information we gather will help improve health and prevent disabilities. We want to do this for people from all backgrounds, particularly those in poor and minority communities.

For information about our study call 877-677-9538 or visit our website <https://handls.nih.gov>.