

AOA Fact Sheet

Comprehensive Eye Exam

Periodic eye and vision examinations are an important part of preventive health care. Many eye and vision problems have no obvious signs or symptoms, so you might not know a problem exists. Early diagnosis and treatment of eye and vision problems can help prevent vision loss. A full overview can be found on the [Comprehensive Eye Exam](#) section of AOA.org

A comprehensive adult eye examination includes:

- **Patient and family health history:** The doctor will ask about any eye or vision problems you are currently having and about your overall health.
- **Visual acuity measurement:** [Visual acuity](#) measurements evaluate how clearly each eye is seeing. Reading charts are often used to measure visual acuity. As part of the testing, you will read letters on charts at a distance and near.
- **Preliminary tests:** A doctor of optometry may first want to look at specific aspects of the patient's visual function and eye health. Preliminary tests can include evaluations of depth perception, color vision, eye muscle movements, peripheral or side vision, and the way your pupils respond to light.
- **Keratometry/topography:** These tests measure the curvature of the cornea (the clear outer surface of the eye) by focusing a circle of light on the cornea and measuring its reflection. This measurement is particularly critical in determining the proper fit for contact lenses.
- **Refraction:** Refraction determines the lens power needed to compensate for any refractive error (nearsightedness, farsightedness or astigmatism). Using an instrument called a phoropter, the doctor places a series of lenses in front of your eyes.
- **Eye focusing, eye teaming and eye movement testing:** To see a clear, single image, the eyes must effectively change focus, move and work in unison. An assessment of accommodation, ocular motility, and binocular vision determines how well your eyes focus, move and work together.
- **Eye health evaluation:** A wide variety of microscopes, lenses, and digital technology will be used to assess the health of all the structures of the eye and the surrounding tissues. Dilating eye drops are often used to temporarily widen the pupil for better views of the structures inside the eye. This also is part of the eye exam where a doctor of optometry can detect otherwise unknown eye and systemic diseases.

Additional testing may be needed based on the results of the previous tests to confirm or rule out possible problems, to clarify uncertain findings, or to provide a more in-depth assessment.

Difference between a comprehensive eye exam and vision screening programs (commonly conducted in schools)

- A vision screening only indicates a potential need for further evaluation. Even the most sophisticated vision screening tools, administered by the most highly trained screeners, miss one-third of children with eye or vision disorders, according to the AOA's Evidence-Based Clinical Practice Guideline: [Comprehensive Pediatric Eye and Vision Examination](#).



- Only a doctor of optometry or ophthalmologist can conduct a comprehensive eye and vision examination. These doctors have the specialized training necessary to make a definitive diagnosis and prescribe treatment. Comprehensive eye examinations are the only effective way to confirm or rule out any eye disease or vision problem.

Are online vision tests or apps accurate?

- Online vision tests may give inaccurate or misleading information, and can give patients a false sense of security. In fact, patients may delay essential, sight-saving treatment. Comprehensive eye exams with your doctor of optometry are one of the most important, preventive ways to preserve vision, and the only way to accurately assess eye health, diagnose an eye disorder or disease, and determine the need for corrective lenses.
- You may have seen apps advertised that can ‘replace going to the eye doctor.’ However, online vision tests attempt to replace one element of an eye examination, the refraction, to yield a prescription for glasses or contacts. It is not unlike taking a blood pressure reading at a kiosk and expecting a prescription – the reading does not provide sufficient information to determine a patient's needed course of therapy, including the prescription of glasses or contact lenses.

Common/interesting health conditions that can be found during an exam

- A doctor of optometry may detect early signs of [conditions or diseases](#) such as high blood pressure, high cholesterol, diabetes, glaucoma, macular degeneration, Graves’ disease, autoimmune disorders, cancer and tumors. In fact, getting a comprehensive eye exam is *the only way to visualize the blood vessels behind the eye for issues without an x-ray, CT scan or invasive surgery.*
- [Concussions](#) - A concussion is a type of traumatic brain injury (TBI) that affects your brain function, including your vision. Symptoms can include headaches and problems with vision, concentration, memory, balance and coordination. 90% of patients with traumatic brain injuries will suffer visual symptoms.
- [Pterygium](#) - Also known as “Surfer’s Eye”, Pterygium is an abnormal growth of tissue on the conjunctiva (the clear membrane that covers the white of the eye) and the adjacent cornea (the clear front surface of the eye). It is associated with chronic sun (UV) exposure.

Exam frequency recommendations

Recommended examination frequency for the PEDIATRIC patient		
Patient age (years)	Asymptomatic/low risk	At-risk
Birth through 2	At 6 to 12 months of age	At 6 to 12 months of age or as recommended
3 through 5	At least once between 3 and 5 years of age	At least once between 3 and 5 years of age or as recommended
6 through 17	Before first grade and annually thereafter	Before first grade and annually, or as recommended thereafter
Recommended examination frequency for the ADULT patient		
Patient age (years)	Asymptomatic/low risk	At-risk

18 through 64	At least every two years	At least annually, or as recommended
65 and older	Annually	At least annually or as recommended

Computer Vision Syndrome/Digital Eye Strain/Blue Light

- [Computer vision syndrome](#), also referred to as digital eye strain, describes a group of eye- and vision-related problems that result from prolonged computer, tablet, e-reader and cell phone use.
- The average American worker now spends over 13 hours a day on the computer either in the office or working from home [Source: [Eyesafe](#)]. To help alleviate digital eyestrain, follow the [20-20-20 rule](#); take a 20-second break to view something 20 feet away every 20 minutes.
- Blue light from LED and fluorescent lighting, as well as monitors, tablets and mobile devices, can negatively affect vision over the long term. Special lens tints and coatings can reduce the harmful impact of blue light. Minimize glare on the computer screen by using a glare reduction filter, repositioning the screen or using drapes, shades or blinds. Also, keeping screens clean; dirt-free and removing fingerprints can decrease glare and improve clarity.

Difference Between Optometrist, Ophthalmologist and Optician

Optometrist

An **optometrist** is an eye doctor who has earned the Doctor of Optometry (OD) degree and specializes in eye and vision care, including the eye's many connections to other vital organs and systems; including but not limited to the nervous and vascular systems of the body. Optometrists can perform comprehensive eye exams, prescribe eyeglasses and contact lenses, diagnose eye health problems and medically manage many eye diseases, infections and injuries. They also prescribe therapeutic exercises and certain medications, and, depending on the state in which they practice, perform minor eye surgery.

Ophthalmologist

An **ophthalmologist** specializes in eye surgery (ophthalmology)—the branch of medical science dealing with the structure, functions, and diseases of the eye most often requiring surgery. Ophthalmologists can do vision tests and prescribe corrective lenses just like optometrists. But their chief specialty training is in diagnosing and treating ailments, such as advanced glaucoma or cataracts, and they perform surgery.

So, think of the *optometrist* as the internist of the eye, diagnosing and treating early disease and the *ophthalmologist* as the surgeon treating more advanced diseases of the eye.

Optician

An **optician** is a professional who helps fit eyeglasses, contact lenses, and other vision-correcting products.

About the American Optometric Association

The American Optometric Association (AOA) is the leading authority on and advocate for quality eye health care, representing more than 44,000 doctors of optometry, optometry students and optometric



professionals. As the sole primary eye care provider in many communities across America, doctors of optometry are often a patient's first entry point into the health care system, and have extensive, ongoing training to examine, diagnose, treat, and manage disorders, diseases, and injuries that affect the eye and visual system.

Doctor Locator: [Find a doctor of optometry](#) near you for more information on eye health and vision topics.

###