

Stand Up to Falling

Vision Impairment and Fall Prevention

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Many people enjoy healthy eyes and eyesight well into old age, but several vision impairments are associated with the typical process of aging. For example, as a person ages, eyesight can become less sharp, distance and depth can become more difficult to judge, older eyes can take longer to focus and adapt to light and dark and may be more sensitive to glare. Such impairments can affect an older person's ability to read, enjoy recreational activities, and accomplish activities of daily living. Whether vision impairment or disease, age-related

trouble with vision increases the risk for falling and fall-related injury. A key to safety, wellness, and fall prevention is to keep your eyes healthy. Have regular eye exams, use appropriate prescriptions for glasses and contacts, and work with a doctor to maximize vision in both eyes.

Impairment

The following age-related visual impairments put older adults at greater risk for falling:

- Increased sensitivity to glare.** Common sources of glare include bright sunlight, exposed light bulbs, and light reflected off shiny floors and walls. Sunglasses, hats, and visors with wide brims, in addition to non-glare surfaces and secure rugs and window coverings can help combat glare.
- Increased sensitivity to light changes.** Older eyes take more time to adjust when going from indoors to outdoors and vice versa. Give eyes time to adapt. Wait at the doorway for the eyes to adjust to the change in light.
- Decreased ability to see in dim light.** By the time a person reaches the age of 40, he/she needs twice the amount of light to see clearly. At the age of 60, a person needs three times as much light as a 20-year-old, and by 80, four times the amount of light is needed to properly see. Task lighting directed at work areas, night-lights, and well lit halls, staircases, entrances, and landings are helpful compensatory measures.
- Decreased ability to see contrast.** Contrast sensitivity is the ability to differentiate an object from its surrounding background. When a person is unable to distinguish between colors and/or shapes, the risk for falling

Falling Facts

The risk of falling and of being seriously injured in a fall increases with age, but older adults (65+) are not falling because they are old. Some older adults may be at increased risk of falling because of a neurological disorder or a disease that causes trouble with walking, posture, and balance. Others may fall because of a number of preventable risk factors including

- Lack of exercise
- Unsafe home environments
- Vision problems
- Lack of balance
- Medication usage

By addressing such risk factors, a person can lower his/her chance of falling or prevent a fall from occurring.

In a given year, one in three older adults can expect to fall. Falls are the leading cause of injury and injury-related death among older adults. Falls are also the leading cause of nonfatal injuries and hospital admissions for trauma among older adults. Men age 65 and older are more likely to die from a fall; older women are more likely to experience a nonfatal fall injury, such as a hip fracture. Regardless of gender, after the age of 60, both the incidence of falling and the severity of fall-related complications increase. Such falls among seniors jeopardize health and independence.

The Kentucky Injury Prevention and Research Center (KIPRC) reports that older patients who are hospitalized for falling are six times more likely than younger patients to be discharged into a nursing home for intermediate or long-term care.

increases because obstacles in or outside the home, such as the edge of a step or curb, pavement cracks, the side of a chair or table, or the top of the toilet seat may not be distinguishable. Using contrasting colors such as light on dark or dark on light, highlighting obstacles or changes in surfaces, and avoiding difficult color discriminations, such as blue/green will help reduce problems.

- **Decreased depth perception.** To safely navigate the environment, a person must be able to judge distances and relationships between objects and space. A person struggling with depth perception is at greater risk for falling due to the increased possibility of stubbing a toe, tripping over furniture, or not properly judging the distance or height of a step or curb. Being familiar with an environment and knowing the landmarks can help reduce the chance of falling associated with faulty depth perception. Taking extra care on stairs and steps is also important.
- **Decreased visual acuity.** Visual acuity refers to the clarity or sharpness of vision. Without visual acuity, the eyes cannot distinguish fine details. Acuity is necessary for a variety of everyday tasks, including reading, recognizing symbols, and working with one's hands. Lack of visual acuity causes difficulty in focusing; the world does not appear clear or bright. Corrective lenses are often prescribed to help correct this problem; however, bifocals and multi-focal glasses can be dangerous because the lower lenses can blur the vision-field used to detect floor-level objects during walking. Use of single-lens distance glasses rather than multifocal glasses is safer in high-risk situations (negotiating stairs, walking outside, getting on or off public transport, or stepping into and out of a car).
- **Vision and balance.** Vision plays a role in stabilizing balance by providing the nervous system with updated information regarding the position and movements of various body parts in relation to each other and the environment. Impaired vision, therefore, leads to increased postural sway and postural instability. When balance is impaired, falls and fall-related injuries are more likely to occur. Balance aids, including canes or walkers may help. Occupational therapists can discuss home safety and assistive devices.

Disease

Certain diseases associated with age decrease the quality of vision and make a person more susceptible to falls.

- **Cataract.** A cataract is the clouding of the lens in the eye. If you have a cataract, you may notice blurred or foggy vision. You may also experience an increased sensitivity to light and glare, halos around light, fading or yellowing of colors, or double or multiple vision in one eye. Surgery is a common solution to remove cataracts. Until surgery is recommended by your eye doctor, be sure that your contact lens or eyeglass prescription is accurate; improve the lighting in your home; wear sunglasses to reduce glare, and limit night driving. In addition to age, risk factors for cataracts include high blood pressure, diabetes, prolonged use of steroids, eye trauma, dehydration, poor nutrition, and excessive exposure to ultraviolet light. To help prevent or slow cataracts, the



Vision with cataract.

Mayo Clinic recommends no smoking; a balanced diet with vitamins A, C, and E; sun protection; and taking care of other health problems. Regular eye exams are a key to early detection.

- **Age-related macular degeneration (AMD).** AMD is a disease that gradually destroys central vision (the part of the eye needed for seeing objects clearly) by creating a blind spot in the center of your vision. There are two types of AMD—dry and wet. Dry AMD accounts for approximately 90 percent of AMD cases and

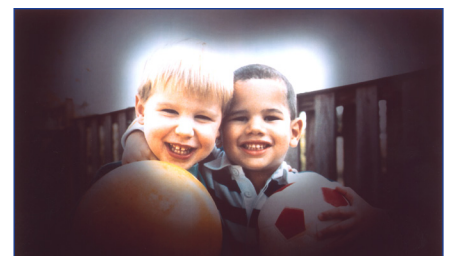


Vision with age-related macular degeneration.

has a gradual onset. Wet AMD causes most severe vision loss. AMD causes no pain, but symptoms may include the need for increasingly bright light when reading; colors begin to appear washed out or dull, printed words appear distorted or increasingly blurred, overall vision grows gradually hazy, and seeing clearly when moving from a bright to dimly lit room becomes difficult.

To help cope with AMD, wear glasses with the proper prescription, use magnifiers, obtain specialized appliances with large numbers, utilize proper lighting, remove tripping hazards from the home/work environment, rely on family and friends for help, and avoid becoming socially isolated. Risk factors for AMD include, age (60+), family history of AMD, Caucasian descent, female gender, and poor nutrition. Additional risk factors include smoking, obesity, light-colored eyes, exposure to sunlight, and cardiovascular disease. To help prevent AMD, eat a diet loaded with antioxidants and vitamins A, C, and E, stop smoking, manage other diseases, and have regular vision screenings and eye exams.

- **Glaucoma.** Glaucoma refers to a group of eye disorders that lead to progressive damage to the optic nerve and cause vision loss. Glaucoma has been nicknamed the “sneaky thief of sight” because the vision loss occurs gradually over a long period of



Vision with glaucoma.

time with no symptoms except gradual vision loss. Therefore, glaucoma is often not recognized until it is in an advanced stage. The two most common types of glaucoma have very different symptoms. With primary open-angle glaucoma, a person may experience gradual peripheral vision loss and tunnel vision. The symptoms of acute angle-closure glaucoma include eye pain, sudden onset of visual problems, blurred vision, halos around light, red eyes. Risk factors for glaucoma include age (60+), elevated internal eye pressure, African American descent, family history of glaucoma, diabetes, high blood pressure, heart disease, hyperthyroidism, other eye conditions, nearsightedness, and prolonged steroid use. Staying hydrated and exercising safely can help keep pressure down and reduce the risk of glaucoma. Mayo Clinic recommends regular eye exams, controlling weight and blood pressure, wearing eye protection to prevent injuries, and treating elevated eye pressure.

- **Diabetic retinopathy.** Diabetic retinopathy is a complication of both Type I and Type II diabetes. Diabetic retinopathy results from damage to the blood vessels in the back of the eye. Early symptoms often



Vision with diabetic retinopathy.

include cloudy vision, or seeing shadowy spots that float about in the field of vision. Eventually, diabetic retinopathy can cause blindness. Risk factors include poor control of blood sugar levels, high blood pressure, high cholesterol, pregnancy, African American or Hispanic descent, and smoking. Early detection is the best way to prevent vision loss associated with diabetic retinopathy; therefore, it is important to seek regular eye exams, manage diabetes, monitor blood sugar, control blood pressure and cholesterol, stop smoking, lower stress levels, and pay attention to vision changes.

Eye Exams

The National Eye Institute recommends eye exams every one to two years after the age of 60. Have your eyes checked if you:

- Notice changes in vision
- Have a family history of eye disease
- Have diabetes
- Are 40 years or older
- Have not had your eyes examined for two years or more

Resources

If you are concerned about visual impairment or fall risk, consult:

- Optometrist
- Ophthalmologist
- General Physician
- Physical Therapist
- Occupational Therapist

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