

Participant Testimonial

Bill was a bachelor. He said his home was just fine — except out in the backyard, where he spends most of his time. He realized his shed was quite hazardous and needed a lot of reorganization. He had worked out a plan to do this.

4.4 Vision and falls (35 min)



Our guest speaker will complete this section — Vision Specialist:

Vision is a neglected area in falls prevention. People are often unaware of declining vision and tend to adapt unconsciously to changing vision. This may not always be safe. It is important to raise awareness about the implications of vision impairment, introduce safety strategies, and encourage them to plan regular eye check-ups.

The major vision and falls messages from the research are:

- Eye tests at least every two years
- Wear glasses and have them checked regularly
- Timely cataract surgery
- Referral to a low-vision clinic, if required
- Adaptations when negotiating the home and community environments to cope with vision loss

(See Session 4 Background Information section — Vision and Falling.)

Invite the guest expert to lead an interactive discussion on vision and falls. This vision expert needs to be able to answer specific questions about individuals' eye conditions and provide some resources.

- Suggestions for guest vision experts are: someone from a vision organization such as **Services for the Blind and Visually Impaired** (this is the name of such organizations in most states), an optometrist with geriatric experience, or an ophthalmologist interested in the issue.

Encourage your guest to use a range of ways to illustrate the major points. For example, pictures of views simulating different eye conditions have been particularly useful for our participants. Comparing the vision-impaired view with the unimpaired view can give a clear understanding of the impact that vision has on our ability to avoid trip and slip hazards. Having a range of sunglasses to show is another useful prompt.



The format of the vision expert's interactive session on vision and falls:

1. **Introduction.** Briefly introduce the types of visual conditions and their fall risk.

Ask people about their vision conditions and help them to make the link to potential fall situations. Invite questions and use visual illustrations — note that this is not a presentation of all possible conditions. Consider discussing changes accompanying aging, such as not clearly seeing edges with contrast sensitivity, being more aware that glare affects the ability to see things in the pathway, or problems associated with a



specific condition (e.g., macular degeneration — only use if someone in the group can relate to this condition).

Briefly discuss some of the side effects of those conditions mentioned. Be as interactive as possible, encourage the participants to relate their personal experiences, or use a story from a typical case study.

Use visual illustrations, e.g., photographs of different conditions, to show impaired versus normal vision; this can help to raise awareness.

Timely cataract surgery — photos demonstrating cataract conditions can highlight how cataracts can make it difficult to see edges. Falls research recommends surgical intervention for cataracts as soon as possible.

Say/Paraphrase: *If you have cataracts and have had a fall, it would be beneficial to see your doctor to initiate an early referral for cataract treatment.*



Session 4

- The aim here is to make people aware of difficulties in getting around, such as getting up and down steps and curbs when wearing bifocals, or the way conditions like cataracts make it harder to see trip hazards or changes in levels.

There are some relatively simple and straightforward things that can be done to reduce the risk of falls associated with visual loss — for example, having regular eye checks, walking defensively, using visual aids, or simple functional adaptations like wearing a hat to reduce glare.

2. **Regular eye check-ups. Say/Paraphrase:** *When was the last time you had your vision checked?* Many people could greatly benefit from a change in glasses. Regular eye check-ups with an eye specialist or optometrist are essential. This is highly recommended by researchers in falls prevention. Discuss what financial support is available. Medicare allows free check-ups every two years for older adults.

Say/Paraphrase: *Wear your glasses. We all get used to living with “not quite” perfect eyesight. Many of us could see much better with new glasses. Regular eye checks can lead to diagnosing more severe conditions.*

Participant Testimonial

Gerry came back to many of our groups to discuss his experiences. He had undiagnosed glaucoma for a long time and now has tunnel vision. He emphasized that this would have been avoidable with regular check-ups.

3. **Safe mobility outside.** Demonstrate where possible. Relate the following to prevention:
 - Defensive walking — scanning ahead for hazards, “eye balling” the drivers when crossing roads, and using other strategies. These are strategies used by people with vision impairment but have relevance to all participants.
 - Using a cane. Show the different canes, demonstrating the low-vision kinds first. (The long cane and mobility techniques for blind people are not relevant for the group, but demonstrate the technique briefly.) Often the most relevant is the regular cane with light-colored markings. The presenter can show how to add light and iridescent markings to a cane. You can purchase some reflective fluoro Velcro tapes from a bicycle shop for this purpose.



- Wearing light-colored clothing to be seen when outside, particularly on dull or wintry days.
4. **Sunglasses.** The aim of sunglasses is to protect the eyes from UV rays and reduce glare. Explain why there are different tints for different needs and that both a variation of colors and tint percentages are available. For example, amber or gray are best following a cataract operation and yellow is best for computer glare. Wearing sunglasses with the correct tint, rather than the dark sunglasses we all tend to use, gives much clearer vision, and there is a better chance of noticing curbs and other hazards when moving around outdoors. A simple alternative for coping with glare is to wear a hat.
 5. **Services available.** Regular eye checks with an eye specialist or optometrist. People generally are not aware of the kinds of extra help available to those with low-vision problems. Many optometrists specialize in low vision. Be aware of resources from the nearest office for Services for the Blind and Visually Impaired, as well as specialized low-vision clinics and services from major vision organizations. The low-vision clinic aims at coping functionally with a person's vision rather than fixing the problem. Some organizations, like the American Foundation for the Blind, provide information on low-vision services by state (available at: www.afb.org; or 1-800-232-5463).
 6. If time permits, discuss **functional vision inside the home**. Often only lighting options are discussed, as the more general issues have been covered in the Home Fall Hazards Session. Let participants know that one of the handouts on the display table, **Vision and Falling**, lists some handy hints.
 7. **Cleaning glasses on a regular basis.** If time allows, demonstrate with a bowl of water and detergent and a pair of dirty glasses. This reinforces that we all find it difficult to be aware of poor vision, since we tend to adapt and learn to live with reduced vision. Ask how others clean their glasses and how often.
 8. The break presents an opportunity for individuals to **ask specific questions** of the guest speaker and for reinforcing major points during conversations with participants. Make sure that there are brochures on the display table for those who want them.



Alternative suggestions:

- Encourage people to talk about their functional vision so that they become aware of how visual decline can affect their ability to get around in the environment (see functional vision questions, Clemson, 1997, p. 45).
- Use glasses that simulate visual problems (e.g., cataracts). Use pathway hazards to demonstrate the effects of reduced vision. This may raise people's awareness of the risks of poor vision and falling. The connection is not always obvious.
- Use pictures to demonstrate environmental hazards that can occur in combination with visual impairment — such as pictures showing a lack of contrast between furniture, floor, and walls, or situations producing glare.

Remind participants about handouts on vision and falls on the table and also provided by the vision expert.



Announce a 15-minute break. Put out the beverages and snacks and make sure there is an opportunity for the guest expert to work with participants who have questions or need additional assistance. Also, encourage people to look at the display table items.

4.5 Footwear audit (25 min)

Demonstration of hazardous and safe footwear features:

First use a selection of your own shoes to demonstrate the shoe audit and the hazardous and safe features. Then use a collection of “wacky” and other assorted shoes and slippers for participants to audit. Following this, participants are then more willing to talk about the shoes they're wearing, even if they're unsafe. The purpose is to encourage them to identify and learn the features of a safe shoe and then apply this knowledge by doing a shoe audit. Clean and sterilize (in the sun) all second-hand shoes and let people know you've done so.



Distribute and review the handouts **What Is a Safe, Comfortable Shoe?** and **Safe Footwear** with the group.

- Display a selection of footwear that you currently wear (or have replaced) and ask the group to list unsafe and good features about



BACKGROUND INFORMATION

Vision and Falling

The facts

- People with poor vision are more likely to fall than those with good vision (Campbell et al., 1981; Ivers et al., 1998). Half of those people with impaired vision could correct the problem with new glasses (Ivers et al., 1998).
- Research (Ivers et al., 1998, 2000) has shown that the following have been significantly associated with falling:
 - Poor visual acuity (our ability to see detail, such as signs or reading material). This is tested by those familiar eye charts
 - Impaired ability to see contrast sensitivity (our ability to see the edges of borders and objects, or the contrast between light and dark). Loss of contrast means that it is difficult to see the edges of objects, paths, obstructions, and clutter. It is also the type of visual problem that can have an effect on postural control. Loss of contrast sensitivity is associated with many types of vision problems, including:
 - Stereopsis (poor vision in one eye)
 - Reduced visual fields
 - Cataracts (posterior subcapsular cataracts)
 - Eye disease (age-related macular degeneration, glaucoma, or diabetic retinopathy) — macular degeneration is the most common eye disease in older people
- There is a range of common visual difficulties, among them:
 - Impaired contrast sensitivity
 - Fields of vision changes — for example, loss of central vision in conditions like macular degeneration and the tunnel vision associated with untreated glaucoma
 - Reduced depth perception — often from poor vision in one eye
 - Impaired dark adaptation — this can affect spatial orientation at night or when moving between dark and light places
 - Reduced color perception typically affects blues, greens, and purples; this indicates that it may be useful to consider halogen, broad-spectrum fluorescent, or warm incandescent lighting to enhance contrast sensitivity



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- Improving illumination at home can improve visual ability. Research (Cullinan et al., 1979) has shown that half of the people tested for distance vision and visual acuity in a clinical situation performed more poorly at home. Visual ability improved with better illumination.

Regular eye tests

Have eyes checked at least once every two years. When first wearing new glasses, take extra care until you adjust to the change.

To cope with visual loss, consider changes and modifications, such as adding color strips at step edges and other changes of levels and ensuring adequate lighting to match vision needs.

Cataracts

A major message from research recommends early cataract surgery. In addition, be aware of the effect of cataracts on:

- Vision and mobility
- Perception of lighting and glare

Vision and balance

A major aim here is to understand the link between vision and balance. Talk about or demonstrate how people will sway more if they stand with their eyes closed and arms held up. Suggest that balance can be worse at night if vision is worse (e.g., not having glasses on or no lighting) and that this can add to the danger of falling.

This is another opportunity to reinforce the importance of muscle strength and balance exercises/activities in reducing the risk of falling.

Lighting

Lighting considerations include the type of eye condition, the environment itself, and the particular circumstances.

Increase the wattage of light bulbs used at home. This seems to be the more frequent lighting change needed. Enhancing the lighting in dimly lit areas increases visual acuity and the ability to detect contrasts and edges. Increased wattage does not mean that the electricity bill will be higher.

- If your vision is very poor, try changing to broad-spectrum fluorescent lighting. This gives a more natural light and is more often preferred by older people. The new compact fluorescent light bulbs last 8 times longer than normal bulbs and use up to 80% less energy.



- Make the most of natural light in the home. This may involve structural changes, such as installing a skylight, or could be as simple as opening the curtains. Lighter colored walls and furnishings will also enhance illumination, although be sure to maintain some color contrast between floor coverings and furniture.
- Halogen lighting gives a bright but soft light and therefore can reduce glare. This is most suitable for task lighting.
- Modify situations that cast shadows.
- If glare is a problem, check for reflective surfaces and unshielded light bulbs.
- Consider lighting at different times of the day, seasonal variations, and at specific areas, such as doorways, step landings, and routes to the bathroom at night.

Environment and behavior

Tobis (1985) found that people who fall also tend to rely more on visual cues from the environment when walking. The environment needs to provide maximum visibility, be uncluttered, and have safe pathways. Other considerations would be safe footwear and use of safe procedures when climbing and reaching.

In addition to lighting, the following are some examples of environmental adaptations:

- Clear up clutter, which can make it more difficult to see objects in the way and contribute to tripping hazards.
- Be aware of furniture, such as table legs and mobile TV stands with casters, that can intrude into the pathways.
- The eyes need time to adapt to sudden changes (e.g., when going from outside to inside). Rushing around can contribute to difficulties. It may require concentration to change habits.
- Use color contrast and safety strips to highlight step edges and changes in level, making them safer.
- Ensure contrast between furniture and walls/curtains.
- When moving about outdoors, scan ahead for hazards. Look ahead about four to six steps (about a car length). Also, remember to look down when you reach the hazard. The distance to scan ahead will depend on the person's vision and his or her physical capacity to adjust a step to avoid the hazard.
- Be careful of pets. Feed them away from doorways and pathways.
- Wipe up spills right away and remove slippery moss from pathways.



Bifocals

Although research has not yet proven it, there is some evidence that bifocals, multifocals, and progressive lenses have been implicated in falls. Be wary of multifocal lenses. They can distort depth perception and diminish the ability to see obstacles and tripping hazards, gutters, curbs, and step edges. When first wearing bifocals, take the time to adjust to them by learning to move the head when negotiating changes of level and scanning ahead.



Vision and Falling

Have your eyes checked at least every two years

Vision

We all get used to living with ‘not quite’ perfect eyesight — we learn to live with it. So:

1. Have your eyes checked by an eye specialist or optometrist. Many of us would see much better with new glasses.
2. Clean your glasses regularly. They get very dirty just by being used. This can be done with soap or detergent in the kitchen, sink, or even in the shower. You’ll be amazed at the difference.

Moving Around

1. When walking, look about 6 steps ahead to give you time to adjust your steps to potential hazards.
2. When coming in from outside, pause to let your eyes adjust. Take off your sunglasses when coming inside.

Lighting

Buy 75 or 100 watt bulbs or compact fluorescent bulbs that match this higher wattage.

At Home

1. Clutter can make it harder to see hazards. Make sure your hallways, porches, and verandas are free from unnecessary items. Don’t use thoroughfares as storage areas.
2. Get rid of furniture with casters, such as mobile TV stands, or furniture with wide legs that stick out and intrude into the traffic ways where you walk.
3. Check that there is enough color contrast between furniture and walls/curtains. For example, a white coffee table on a white carpet is easy to trip over.



Cataracts

If you have cataracts and have had a fall, see your doctor and talk about an early referral for treatment. Cataracts can make it difficult to see when moving around, and research shows a link between cataracts and falls. Some lighting conditions, such as glare, also can make it harder to see with cataracts.

Bifocals & Multifocals

Bifocals are good for seeing long and short distances at the same time but also can make it harder to see sidewalk and step edges. Be cautious and learn to adjust the angle of your head to help you see better.

Night Vision

Everyone's vision is worse in the dark. At night, because your vision is worse, your balance may worsen too. You may also become disoriented in the dark. It is important to use some kind of lighting at night. Photosensitive lights that plug into the outlet are a good idea. Install light switches at both the top and bottom of stairways. When going outside at night, go slowly to give your eyes time to adjust, and use a cane or walking stick.

If Glare Is a Problem:

1. Buy inexpensive shades or lace curtains to cover windows to shield from the sun in the summer.
2. Reduce glare by checking for reflective surfaces and unshielded light bulbs.
3. Halogen lighting gives a bright but diffuse lighting and can reduce glare.
4. Wear a hat outside and sunglasses that are suitable for you.

An eye specialist can give you low-vision aids to make the best use of your vision.

Wear your glasses and have regular check-ups.

