

## Household Tips for People with Low Vision

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**What is low vision?** As we age, most of us experience a decline in our ability to see well. Often, the deficiency is corrected by wearing glasses. Some of us, however, will experience “low vision”, vision loss that cannot be corrected with glasses, surgery or other medical treatment. Low vision is caused by eye diseases, such as glaucoma, macular degeneration, diabetes, and cataracts.

**Daily challenges.** People with low vision can experience difficulty performing everyday tasks, such as reading text on medicine bottles, appliances, or utility bills or recognizing familiar faces or the edges of steps. Low vision increases fall risk, threatening independent living. Low furniture, a footstool for example, or a raised surface like a doorsill, easily becomes tripping hazards.

**Solutions to enhance remaining vision.** Along with good medical care, most people with low vision can enhance their remaining vision. Smart home management techniques such as new lighting, bright contrasting colors, and specialty products such as magnifiers and talking devices, can help a person function better and remain independent.

**Using The Guide.** This guide offers practical solutions for daily living, from tips on getting started to household and lighting solutions. You can either read the entire guide or go right to the topic that you are currently dealing with. For example, if you are having difficulty reading or engaging in close-up work, read the section on lighting and test some of the recommended suggestions. “Ten Action Steps” is also included if you are short on time and need a condensed version of design ideas. A resource section is included at the end to help you locate special products.

Losing sight can be a frightening experience, but there are many things you can do to remain as active as possible. Whether you are seeking solutions for yourself or for a loved one, it is our sincere hope that this guide offers you strategies and resources to enhance your quality of life.

## Table of Contents

### Ten Action Steps

### Household Tips for Main Areas of the Home

Living Areas – Indoors and Outdoor

Kitchen

Bathroom

Bedroom

### Frequently Asked Questions on Lighting

Do people with low vision need higher levels of lighting than people with normal vision?

What is glare and how do I control it?

What are the best lamps or light fixtures to use for people with low vision?

What is the best light bulb for people with low vision?

- Standard Incandescent Bulbs
- “Chromalux” Incandescent Bulbs
- Full-Spectrum Fluorescent Bulbs
- Compact Fluorescent Bulbs
- Halogen Bulbs

### Resource List

### Bibliography

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## Ten Action Steps

1. **Start small.** It is not uncommon to feel overwhelmed when first attempting to make your home safer and more functional, so start small. Begin with an area you use the most. For example, if you are having trouble reading, start with your favorite reading chair and replace a small table lamp with a floor lamp that has a flexible neck.
2. **Create clear walkways.** As low vision increases fall risk, make sure to have 3-foot clear walking paths through each room, with no holes or rips in the carpet or other floor irregularities.
3. **Use bright contrasting colors throughout the home.** Use color to enhance your ability to see important objects or areas. Outline the edges of steps, coffee tables, doorways, and bathtubs with colored plumber's tape. Use bright red or white against dark wooden steps, for example, or dark blue against a white wall.
4. **Use a variety of textures, such as** Velcro, rubber bands, and raised dots, to provide tactile clues. Apply to the on/off controls on appliances, at the end of the banister, or on medicine bottles.
5. **Increase general lighting.** Use several lamps to light a room to create even light levels. Choose warm white compact fluorescent bulbs or standard incandescent bulbs. Make sure lighting is adequate at night.
6. **Increase task light.** Try a lamp with a flexible neck so you can direct the light exactly where you need it. Experiment with a full-spectrum bulb or a Chromalux bulb. (See FAQ).
7. **Control glare.** Cover windows with blinds or drapes, use shades on all lamps, and choose only matte (not polished) finishes on furniture or floors.
8. **Use large-print.** Ask your pharmacist for large-print on your medicine bottles. Make On/Off labels in large black print on a white background and apply on appliances. Choose large-print cookbooks, playing cards, and newspapers.

9. **Check with your health care provider** for information on visual aides and magnification. Policies vary by state, but generally Medicare will cover low vision examinations and rehabilitation services performed by eye care professionals. Choose professionals who have training in low vision.
10. **Obtain more information!** Use the guide for more in-depth information
  - for each room of the house
  - on choosing lighting just right for you
  - on locating specialty products

## Household Tips for Main Areas of the Home

### Living Areas – Indoors and Outdoors

#### Lighting

- Even levels of light both inside and outside the home will make it easier for your eyes to adapt from one space to another. For example, entering a dark house on a sunny day can cause temporary blindness, but a well-lit foyer will make it easier for your eyes to adjust to the change in light levels.
- Outdoor paths and walkways should be well lit at night.
- Light all stairs well, particularly the top and bottom steps. For interior stairs, install a 3-way switch so you can turn the light on and off from either direction.
- Have a lamp with a flexible neck by a favorite chair for reading or close-up work.
- Install dimmer switches or use 3-way bulbs for controlling the amount of light in the room.
- Use several fixtures to light a room to even light levels and minimize glare. For general room lighting, select lamps that provide light over a broad area.

#### Color and Texture

- Contrast switch plates with the wall color or use lit switch plates. If this is not possible, highlight existing outlets with colored paint or tape.
- Use color to enhance your ability to see important objects or areas. For example, to help avoid a fall, paint your doorsills white if your flooring is dark or add brightly colored flowers along the walkway to the front door.
- Use a variety of textures, such as Velcro, rubber bands, and raised dots to help identify edges, objects, or controls within the environment. For example, they can be applied to the on/off controls on appliances, at the end of a banister, or on medicine bottles.

- Apply large-print labels using large black typeface on a white background or vice versa.

## Furniture

- Eliminate low furniture that is easy to trip over such as coffee tables and footstools.
- Move furniture against walls to create a large area of uncluttered space in the center of the room. However, if you are rearranging a room for someone else, discuss it beforehand with that person. Many individuals rely on specific location of furniture to find their way around a room.
- It is easier to see the sofa or chair when its color contrasts with that of the flooring. Choose a fabric that contrasts with the floor material or use a bright colored piping along the edges of the seat cushion.
- Reduce glare on polished furniture by covering it with a large doily or tablecloth.

## Flooring

The following suggestions can help reduce the risk of a fall:

- Repair or replace torn carpet because a foot, cane or walker can easily get caught.
- Remove area carpets or throw rugs, especially if your loved one has a shuffling gait or uses a walker.
- When rugs or carpeting cannot be eliminated, place non-skid padding under rugs or secure to floor with double-sided tape. Area carpets without padding or tape can easily buckle underneath when walked on, causing a person to slip and fall.
- Use only matte, non-shiny finishes on the floor.
- Doorsills can be tripping hazards. Remove them whenever possible or paint them in a contrasting color.

## Window Treatment

- To reduce glare, hang sheer curtains, blinds, or light filtering shades that maintain privacy but allow light through.
- Paint or apply tape in a bright color on the wand or knob controls.

## Communication Systems

- An intercom system at the door allows visitors to identify themselves, even if they can't be seen well.
- Use a telephone with large numbers.
- Check with your local telephone service to see if they offer voice dialing, which allows you to speak the telephone number instead of pushing the buttons. Or purchase a special phone that announces the numbers as you dial.

## Magnifiers

- Keep an illuminating magnifying glass near any area where you read or take medications; a free-standing unit is particularly useful if your hands are not steady.
- An electronic magnifier can help a person with severe vision loss to view print or pictures, magnifying them up to 50 times. Check with your health care provider for more information.

## Stairways

- Install a handrail, painted a different color than the background wall, on both sides of the stairs.
- Since many individuals have problems with depth perception, mark the edges of steps with a 1 - 2 inch strip of bright paint or reflective tape, especially the bottom step, where many falls occur.
- To help locate the bottom step, place a strip of Velcro at the end of the handrail.

## Kitchen

- Install fluorescent lighting under the upper cabinets.
- Outline the edge of the countertops with colored plumber's tape or paint in a color that contrasts with the work surface.
- If you have glaucoma and experience tunnel vision, remove cabinet doors or replace with sliding doors.
- Mark common or important settings on appliances (such as on/off, 375 degrees) with bright nail polish color or raised bump dots.
- Purchase large-print cookbooks and a timer with large numbers.
- If reading large-print labels is difficult, purchase a microwave with a sensor reheat feature, which automatically reheats the food to the appropriate temperature.
- Choose the colors of your kitchenware to contrast against the background color. For example, use
  - forest-green dish towels against a white counter
  - white cups for coffee or black mugs for milk
  - white chopping boards for carrots and black chopping boards for onions
- Place rubber bands around the milk carton so it can be distinguished from the juice carton.
- Use dinner plates with a raised lip - ideally color banded around the edge - and differently colored than the table on which they are placed.
- Use an automatic coffee maker that makes a single cup of coffee eliminates the need to pour boiling liquids and risk burns.
- To avoid overflows when pouring liquid into a cup, use a "liquid level" indicator that hooks onto the cup's edge and plays a tune once the liquid reaches  $\frac{3}{4}$  inches from the top.

## Bathroom

- Use bright tape to outline the toilet paper dispenser, the rim of the tub, and edges of the counter or vanity.
- Select a toilet seat that is a different color than that of the floor color.
- Choose a brightly colored tub mat.
- Replace clear glass light fixtures or ones with exposed bulbs with fixtures that shield the bulbs.
- Color-contrast grab bars and towels from the background wall.
- Choose soap and shampoo that have colors that contrast from those of the tub and sink areas.
- Add a waterproof light in the shower or the tub.
- Use illuminated wall plates.
- Put automatic night-lights in the pathway from the bedroom to the bath or install a dimmer switch and leave lights on low.
- Hang a magnifying glass near the medicine cabinet that can be used to read labels.

## Bedroom

- Choose a bright bedspread that contrasts with the floor or sew a colorful ribbon around the edge of an existing spread to help distinguish the edge of the bed from similarly colored flooring or carpeting.
- Use a talking alarm clock or one with very large numbers.
- Add lights in the closet that automatically turn on with the door is opened. Arrange clothes according to color.
- Install a light switch, table lamp or an automatic nightlight by the bedroom door so you never walk through a dark room.
- Have a lamp that can be turned on/off from the bedside.
- Hang sheer curtains or blinds on windows to reduce glare.
- Attach contrasting molding or colored tape to furniture edges.

## Frequently Asked Questions on Lighting

### Do people with low vision need higher levels of lighting than people with normal vision?

Vision specialists offer general guidelines on the amount of light a person needs, depending on the type and severity of vision loss.

General guidelines:

- People with macular degeneration almost always require much higher light levels, especially for reading and close-up work.
- People with glaucoma usually benefit from higher light levels.
- Less light may work better for those with central cataracts (cortical or subcapsular).

People with the same type of low vision, however, can respond differently to varying light levels, so you should experiment with different types of bulbs, wattages, and lamps to find out what is most comfortable for you.

The quality of light is just as important as the quantity. An overly bright room, a bright light in a dark room, or exposed bulbs in a chandelier will cause discomfort for most people with low vision. That is why just replacing low wattage bulbs with higher wattage bulbs will not work if it also increases glare.

### What is glare and how do I control it?

Glare results when light shines directly into the eyes or reflects off polished surfaces such as tabletops and floors. Glare is a problem for many people; it not only causes eye discomfort, but it also interferes with the ability to see. Glare can be controlled by covering windows with blinds or drapes, covering bulbs with lamp shades, using even levels of light throughout a room, and using only matte, not polished, finishes on furniture or floors.

## What are the best lamps or light fixtures to use for people with low vision?

There are many different kinds of lamps to choose from, depending on whether you need general “walking around” light or close-up, task lighting.

### 1. For general lighting to light a room, choose:

- Tall table lamps with light-colored shades and wide brims at the bottom.
- Regular floor lamps or “torchieres” with *fluorescent* bulbs (floor lamps that direct light toward the ceiling).
- 3-way bulbs to offer flexibility in light levels.

### 2. For close-up task lighting aimed directly on an object, such as a book or needlepoint, invest in a quality lamp with:

- A flexible neck that allows you to move the light down close to your task. The placement of the task lamp is critical. To reduce glare, make sure the bulb is below eye level.
- An internal reflector (a double shade) to reduce the heat. These lamps are more expensive but reduce the heat significantly, allowing you to sit more comfortably when the lamp is closer to you.

Be cautious about purchasing an inexpensive task lamp. Users complain that

- It is harder to position the light exactly where it is needed.
- More glare is created because heat-venting slots on the shade allow harsh light to shine through.

## What is the best light bulb for people with low vision?

New technologies have created a variety of high quality light bulbs, including incandescent, full spectrum, compact fluorescent and halogen. No one light bulb is best for everyone or for every activity, so test various bulbs until you find what works for you. Some individuals choose full spectrum bulbs for close-up tasks and incandescent or compact fluorescent bulbs for general room lighting. Others prefer regular incandescent bulbs for reading.

Finding the right bulb can also be a confusing task given the numerous types on the market today. It helps to be equipped with a bit of technical information so you can choose wisely. Below is a brief description of the various bulbs and what to look for before purchasing.

### 1. Standard Incandescent Bulbs

Incandescent bulbs are the most common light bulbs used in homes today.

#### Pros:

- Warm, yellow, and direct light that is good for close work, like sewing or reading.
- Inexpensive to purchase.
- Easily available.

#### Cons:

- Bulb produces a lot of heat. Thus, if you engage in close-up work for an extended period of time, you may want to try a full-spectrum fluorescent bulb.
- Expensive to operate. Only 10% of the electricity is actually used to produce light; 90% produces heat.

#### Types:

Incandescent bulbs are available in various finishes, including clear, frosted, soft white, and pink.

- Even though clear bulbs are less expensive, they are very harsh on the eyes because they produce a lot of glare. A better choice is a frosted or soft-white finish.
- Some individuals prefer bulbs with a pink coating on the outside. The light, however, does not appear pink when turned on. Some people report that the light is softer than frosted or soft white bulbs, with reduced glare.

## Wattages

Experiment with different wattages, depending on whether the light is for general room light or for task lighting.

### General Lighting

For a floor lamp, you may need a 150-to 300-watt bulb to light a room, depending on the room size and the number and type of additional lamps in the room.

- For a table lamp, you may need a 75-to 150-watt bulb to light a room, depending on the number and type of fixture.

### Task Lighting

- For reading and or other tasks, many specialists recommend a 60-watt bulb placed approximately 12 inches away from the task.
- Some bulbs have a “reflector” coating on the top, which helps direct the light to where you want it. A 50-to 65-watt bulb may be adequate, depending on the task.

## Safety Note

Some lamps are only rated to hold a 60-watt bulb and using a higher wattage is a fire hazard. If you do not know your lamp's rating and you need wattage over 60-watts, consider using one of the newer compact fluorescent bulbs. A 32-watt compact fluorescent bulb gives the same amount of light as a 100-watt incandescent bulb.

## 2. “Chromalux” Incandescent Bulbs

Chromalux bulbs contain a rare earth element, neodymium, which filters out the yellows in the color spectrum, making colors appear more vibrant. Its shape is very similar to the standard incandescent bulb, but the neodymium makes it blue when unlit. These bulbs are often manufactured under a variety of names in addition to Chromalux (for example, “Reveal”, and “Verilux”). Sometimes these bulbs are incorrectly advertised as “full-spectrum bulbs;” however, they do not meet the standard industry definition (see full spectrum bulbs). They are available in both single wattage (from 40-to 150- watts) and 3-way bulbs.

### Pros

- Can be used successfully by many individuals with low vision, especially those with macular degeneration.
- Good for close-up work like quilting, painting and reading as colors appear more accurately. Black type on book pages and newsprint is also enhanced.
- Less glare is produced.
- Easily fits into standard incandescent sockets.

### Cons

- Purchase price is substantially higher than a regular incandescent bulb, although manufacturers state they last from 2 to 6 times longer.
- Available mainly at special home centers and through mail order.

## 3. Full-Spectrum Fluorescent Bulbs

Many eye specialists believe that full-spectrum fluorescent bulbs to offer the most comfortable light source for close-up tasks for people with low vision. This cool white light (with a bluish tinge) is excellent for visual tasks because it enhances colors and contrast. Several major lighting companies manufacture these full-spectrum bulbs under different names, including the “Ott Light”, “Ultralux” and “True Sun” lamps.

## Pros

- Available in a variety of shapes to fit table, floor, and ceiling lamps, though mostly used in task lamps for reading and hobby activities.
- Used successfully by many individuals with low vision, especially those with macular degeneration.
- Enhances ability to tell colors apart, especially important for close-up work like quilting and painting. Black type on book pages and newsprint is also enhanced.
- Because it generates less heat than a standard incandescent bulb, it is more comfortable for close-up tasks, especially those of long duration.
- Produces less glare.
- Uses up to 75% less energy.

## Cons

- Purchase price is substantially higher than that of a regular incandescent bulb. However, significant savings result over the life of the bulb because it is more energy efficient.
- Available primarily through mail order.
- The screw-in bulb that replaces a standard incandescent bulb may not fit into an existing lamp. Full-spectrum florescent bulbs are 1/2 to 2 inches longer than an incandescent bulb. The higher the wattage, the bigger the fluorescent bulb. This may not be a problem for table lamps with harps: a “harp extender” can increase the height and width of the harp by 1-1/2 inch.
- For task lamps, it is often necessary to purchase a new lamp that accommodates the rectangular tubular bulb.

## Purchasing Tips

- **Check that the “CRI” number is at least 91.** Ranging from 0 to 100 (100 is the color of daylight at noon), the Color Rendering Index (CRI) measures how a bulb makes the color of objects appear in comparison to daylight. The higher the CRI rating, the more natural colors look. For example, a bulb with a CRI of 91 (the minimum number for a bulb to be considered full spectrum) shows colors more accurately than a bulb with a CRI of 65.
- **Check that the “K” number is at least 5100K.** Different light bulbs produce different colored light, referred to as the bulb's color temperature. For example, noon daylight, a bright white light with a bluish tinge, is approximately 5500 “K” degrees (the letter “K” follows the number). Most industry experts agree that the minimum color temperature for a bulb to be considered full spectrum is 5100 K.
- **Wattage.** The general rule of thumb is to choose a fluorescent bulb that has 1/3 the wattage of the standard incandescent bulb that you want. Below is a list of several wattage comparisons.

20-watt fluorescent bulb = 60-watt incandescent bulb  
25-watt fluorescent bulb = 75-watt incandescent bulb  
32-watt fluorescent bulb = 100-watt incandescent bulb

## 4. Compact Fluorescent Bulbs (CFLs)

CFLS are small diameter bulbs that are available as a screw-in replacement for incandescent bulbs in some table lamps.

### Pros

- CFLs are very different than the fluorescent bulbs of the past. Instead of harsh, cold, blue tones, these newer bulbs provide a warm color similar to the standard incandescent bulb, give off very little heat, and do not flicker or hum. They can be used for general room lighting or close-up work.

- CFLs use 66% less energy than a standard incandescent bulb and last up to 10 times longer.
- Because less heat is generated than a standard incandescent, CFLs are more comfortable for close-up tasks, especially those of long duration.

## Cons

- Purchase price is substantially higher than that of a regular incandescent bulb. However, significant savings result over the life of the bulb because they are more energy efficient. Less expensive bulbs do not last as long as good quality bulbs and give inferior light.
- Available primarily at special home centers and through mail order.
- The screw-in bulb that replaces a standard incandescent bulb may not fit into an existing lamp. CFLs are 1/2 to 2 inches longer than an incandescent bulb. The higher the wattage, the bigger the fluorescent bulb. This may not be a problem for table lamps with harp -- a "harp extender" can increase the height and width of the harp by 1-1/2 inch.

## Purchasing Tips

- **Warm Color.** Choose a bulb that has a color temperature of 2700K to 3500K and a color-rendering index (CRI) of at least 80. Often these bulbs are referred to as "warm white" or "white."
- **Wattages.** Select a compact fluorescent bulb that is about 1/3 the wattage of the incandescent bulb that it replaces. For example, a 25-watt CFL is similar to a 75-watt incandescent bulb.
- **3-way bulbs.** Choose a 3-way CFL if you have a lamp with a 3-way socket.
- **Dimmable.** If you have the lamp on a dimmer switch, make sure to purchase a dimmable CFL. Standard CFLs will not operate if you attempt to dim them.
- **Size.** Not all CFLs will fit existing lamps, however, so make sure that the bulb is the right size before you purchase. The standard

incandescent is 4-1/2 inches high. CFLs range from 4-5/8 to 6-1/2 inches. The higher the wattage, the bigger the CFL. This may not be a problem for table lamps with harps -- a “harp extender” can increase the height and width of the harp by 1-1/2 inch.

## 5. Halogen Bulbs

Halogen Bulbs are a type of incandescent bulb with a bright, white light.

### Pros

- Some specialists state that halogen bulbs can enhance the contrast between print and background.

### Cons

- Some specialists report that halogen bulbs cause bright spots on reading materials and too much glare.
- These bulbs burn at very high temperatures and generate a lot of heat, causing discomfort if positioned close to the user's face or body. Moreover, if used incorrectly, halogen bulbs can be a potential fire hazard.
- Halogen bulbs have caused many fires when used in floor lamps called torchieres (lamps that direct light up to the ceiling). Torchieres offer very good general room lighting, but any torchiere lamp with halogen bulbs should be replaced. New, energy-efficient torchieres on the market today use compact fluorescent bulbs. Operating at much lower temperatures, they are not only safer than the halogen lamp, but they use just a fraction of the energy.

## Resource List

The listing of companies and products does not constitute endorsements or recommendations by the New York Presbyterian Hospital - Weill Medical College of Cornell University. The Resource List is a consumer service to help individuals access needed resources and to improve their living environments.

### Dynamic Living

888-940-0605

<http://www.dynamic-living.com>

Products include talking products, voice-activated phone dialer, large-print books, games, large-print TV remote controls, kitchen equipment, liquid level indicators, and large-print thermostats.

### Energy Dimensions Lights & Magnification

800-600-3070

<http://www.energydimensions.com>

Products include full-spectrum bulbs, lamps, and harp extenders.

### ENERGYguide

ENERGYguide is an affiliate of the ENERGY STAR program of the Environmental Protection Agency. The ENERGY STAR certification is awarded to products that meet a threshold of energy efficiency. On this website, you can purchase ENERGY STAR table and floor lamps and compact fluorescent light bulbs.

<http://www.energyguide.com>

### Full Spectrum Solutions

888-574-7014

<http://www.fullspectrumolutions.com>

Products include compact fluorescent full-spectrum bulbs and floor and table lamps.

### Hitec Assistive Communication Products

800-288-8303

<http://www.hitec.com>

Products include talking telephones, voice-dialing attachments, talking watches, and large-print books.

### **ILA Inc.**

800-537-2118

<http://www.independentliving.com>

Products include talking telephones, voice-dialing attachments, talking watches and scales, large-print books, light bulbs, kitchen equipment, large-print thermostats, and full-spectrum lamps.

### **Learning Sight and Sound (LS &S)**

800-468-4789

<http://www.lssproducts.com>

Products include voice-activated phone dialers, large button phones, full spectrum lamps, kitchen equipment, raised bump dots, talking products, and large print thermostats.

### **Maxi Aids**

800-522-6294

<http://www.maxiaids.com>

Products include voice-activated phone dialers, large-button phones, full-spectrum lamps, kitchen equipment, talking products, raised bump dots, and large-print thermostats.

### **National Association for the Visually Handicapped**

212-255 2804

<http://www.navh.org>

Products include full-spectrum lamps, light bulbs, writing aides, magnifiers, and electronic devices.

### **Ott-Lite Technologies**

800-842-8848

Products include full-spectrum lamps and light bulbs.

<http://www.otllite.com>

### **Sight Connection**

800-458-4888

<http://www.sightconnection.com>

Products include liquid level indicators, games, books, household items, electronic items, talking products (watches, scales, telephones, etc.), writing aides, raised bump dots, and lamps, including full-spectrum.

## Bibliography

Figueoro, M. Lighting the Way: Key to independence. Rensselaer Polytechnic Institute; 2001. Available online at <http://www.lrc.rpi.edu/programs/lightHealth/AARP/senior/index.asp>

Low Vision Institute. The Right Lighting Can Enhance Your Vision; 2001. Available online at <http://www.lowvisioninfo.org/rghtlite.html>.

Perski, T. Getting the Most Out of Your Low Vision Experience. Macular Degeneration International. Available online at <http://www.maculardegeneration.org/lvarticle3.html>.

Rosenthal, B. Illuminating Solutions: Tips for lighting and low vision Lighthouse International; 1995. Updated 2003, Faye, E., Lloyd, S. Available online at [http://www.lighthouse.org/resources\\_lighting.html](http://www.lighthouse.org/resources_lighting.html).

Tideiksaar, R. Increased Risk of Falls: A consequence of vision impairment. Aging and Vision News, Lighthouse Inc; Spring 1993. Available online at [http://www.lighthouse.org/aging\\_vision/spring2003/risk\\_of\\_falls.html](http://www.lighthouse.org/aging_vision/spring2003/risk_of_falls.html).

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