

FALL PREVENTION

INTRODUCTION

- Most falls (80%) occur indoors in the person's own environment during usual activities.³
- Most falls occur during the day, only 20% occur at night.
- Each year, more than 1.6 million older adults in the U.S. go to emergency departments for fall related injuries.⁴
- 30% of all falls result in moderate to severe injuries that significantly change a person's quality of life.¹
- Increased number of falls leads to increased number of fractures.
- The most common fractures resulting from a fall are at the hip, wrist, shoulder, and spine.
- 95% of hip fractures are caused by a fall.
- 25% of people with hip fractures from a fall will die within one year.¹
- Other injuries resulting from a fall may include head injury and soft tissue injuries requiring immobilization.
- Repetitive falling predisposes an elderly person to deficits in ADLS and are at a higher risk for hospitalization, further disability, and death.
- These rates may be an underestimation, as many falls do not result in injury or necessitate medical attention, and many elders fear institutionalization or a loss of independence thereby under-reporting.
- Despite these statistics, falling is not a normal part of aging.
- The good news is that 2/3 of falls are potentially preventable. Please note, despite all precautions, not all falls are preventable. Studies show that falls can be reduced as much as 60%. It's not perfect, but it's a lot better.⁴

FEAR OF FALLING

- Research suggests that this is a legitimate fear. People, who have a higher fear of falling, actually do fall more.²
- When you have a fear of falling, your functional activity level declines. This leads to a decrease in endurance, flexibility, strength, general mobility, and balance, therefore increasing your risk of falling. It can be a self-fulfilling prophecy.
- Fear of falling, which may predispose an elderly person to lose confidence and decrease activity causing further disability secondary to inactivity/deconditioning.
- The fear of falling should be respected, but should not control every aspect of your life.

RISK FACTORS

Falls are commonly a result of intrinsic (internal) and extrinsic (external) factors.

• Intrinsic Factors:

- Components of Balance – A person's ability to balance is controlled by 3 different body systems:

Inner ear, vision, and proprioception

✓ Inner Ear

- Regular complaints of dizziness, the room spinning, and the ground moving like you are on a boat when you are standing still, can be from inner ear issues. See an ear/nose/throat (ENT) specialist for proper testing.
- Changes in hearing can occur as we age. Sounds help us to orient us to where we are and when we are in danger.
- If you do not hear as well as you used to, or if you are always asking those around you to repeat themselves, it is time to have a hearing test.
- If you already have a hearing aid, wear it consistently.

✓ Vision

- Many eye conditions such as cataracts, glaucoma, macular degeneration, blindness due to diabetes and, vision issues due to a stroke, will all affect your ability to navigate obstacles and uneven surfaces safely.
- With aging, the eyes take more time to adjust to changes in light and glare increasing your risk of falling especially when entering/exiting a building.
- Changes in depth perception and peripheral vision can decrease your ability to judge the steepness of stairs or curbs or to avoid obstacles in your path.
- Recommend see your eye doctor regularly. Have all your glasses (reading, driving, sunglasses, and regular everyday glasses) checked regularly.
- Wear your eyeglasses consistently, as recommended by your eye doctor.
- Make sure your eyeglasses are kept clean.
- Provide proper lighting throughout your home.
- Provide night-lights for nighttime toileting.
- Communicate with your physician and recommend referral to occupational therapy for specific low vision training.



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✓ Proprioception

- **Definition:** your body's ability to know where it is in space without having to look at it. For instance if I close my eyes, my body knows that my hand is in a fist and now my hand is open. The same way my foot knows if I have stepped on a rock without actually seeing myself step on the rock.
- Intact proprioception is particularly important in the lower extremity, the hip, knee, ankle and foot, to prevent falls.
- Diminished proprioception can result in increased risk of falls.
- Diminished proprioception can be caused by:
 - > Anything that causes pain or numbness in your legs and feet
 - > Diabetes: decreased sensation in your feet and legs
 - > Neurological conditions: stroke, Parkinson's, multiple sclerosis

– Other Intrinsic/Internal Risk Factors:

- ✓ Medical conditions that affect your ability to sense, and adapt/recover from a loss of balance.
- ✓ Arthritis, especially if pain and swelling in joints resulting in altering the way you normally walk.
- ✓ Cardiovascular diseases such as CHF/congestive heart failure that causes swelling in your feet and ankles.
- ✓ Orthostatic hypo-tension: decreased ability to adapt to changes in blood pressure from supine (lying down) to sit, and sit to stand, resulting in a drop in blood pressure and blood supply to the brain with complaints of lightheadedness. To avoid falls and decrease dizziness, sit on the edge of the bed for one minute before standing and move feet/ankles up and down. Report this to your doctor. Have the doctor check your blood pressure, lying down, sitting, AND standing.
- ✓ Any change in your posture and gait, for any reason, increases the risk of falls.
- ✓ Osteoporosis, by itself, does not influence your risk of falling. It does significantly increase your risk of fractures. Remember 25% of people with hip fractures die within one year. Another 60% have a significant change in the quality of their life and are unable to return to their prior level of function in some way. Falls combined with fractures is serious stuff.¹

- ✓ Posture changes due to spinal compression fractures resulting from osteoporosis, does increase the risk of falls. Recommend visit your physician regularly to properly monitor and manage your osteoporosis (bone scan, well balanced diet, moderate exercise program, vitamin supplements such as calcium and vitamin D).

• Extrinsic/External Factors:

– Medications

- ✓ Age related changes including slowing of bodily organ functions affect how medications work and make the older person more prone to adverse reactions.
- ✓ The use of more than 4 medications daily doubles the risk of falls.
- ✓ Commonly used medications can have side effects including dizziness, blurred vision, lethargy, fatigue and confusion.
- ✓ Medications for depression, sleep, high blood pressure and other heart problems can cause orthostatic hypotension and increase your risk of falling every time you stand up.
- ✓ Be knowledgeable about your medications, read and be aware of the potential side effects. Sometimes you can be taking three or four medications with dizziness as a side effect. Your risk of falls just went up exponentially.
- ✓ See your physician regularly: take ALL your medications and vitamin supplements with you to your doctor visit EVERY time. Have the doctor review to see if any can be reduced or stopped. DO NOT reduce or stop a medication on your own—ask your doctor first.
- ✓ Keep an updated medication list with correct names, doses and time of day that you take them. Include over-the-counter, vitamins and herbal medicines.

• Environment/Home Safety

– Lighting

- ✓ Ensure that all common areas and individual room are well lit
- ✓ Use night lights for toileting at night, avoid glare

– Remove obstacles

- ✓ Clear clutter to reduce risk of tripping over objects
- ✓ Clear pathways in room and common areas for flow of walking traffic
- ✓ Carpets/Rugs: avoid throw rugs (especially with the use of a rolling walker)



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- Cabinets/Shelves: keep frequently used items at waist level.
- Bathroom
 - ✓ Use approved grab bars for support rather than towel bars/sink
 - ✓ Use elevated toilet seat if too low
 - ✓ Provide a skid resistant surface (strips or pad) in showers
 - ✓ Use shower chair
 - ✓ Ensure that floor and feet are dry after showering
- Use of assistive devices
 - Reacher/grabber to pick things up from the floor
 - Devices to make dressing easier: Sock donner, Velcro shoes, slip on shoes, shoes with elastic laces
 - Cane/Walker: should be adjusted and fitted for each individual person according to height and size
 - Is the cane/walker working properly?
 - Are the tips worn and need to be replaced?
 - Are you using it properly?
- Footwear
 - Any foot pain can alter the way you walk and increase your risk of falls
 - Recommend regular podiatry visits
 - Recommend consistent use of properly fitted, supportive, flat-soled, skid-resistant soles.
 - Discourage walking in socks, slippers, and shoes without backs
 - If diabetic, Medicare will pay for one pair of custom shoes per calendar year. Take advantage of it and get proper fitting shoes
 - High-heeled shoes may increase risk of falls

- Assessment of current equipment and ordering of required new equipment
- Environmental modifications

FALL PREVENTION TIPS

- Hearing/Inner Ear
 - If appropriate, see an ear/nose/throat (ENT) specialist for proper testing
 - If you do not hear as well as you used to, or if you are always asking those around you to repeat themselves, it is time to have a hearing test
 - If you already have a hearing aid, wear it consistently
- Vision
 - Recommend see your eye doctor regularly. Have all your glasses (reading, driving, sunglasses, and regular everyday glasses) checked regularly.
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 - Make sure your eyeglasses are kept clean.
 - Provide proper lighting throughout your home.
 - Provide night-lights for night-time toileting.
 - Communicate with your physician and request referral to occupational therapy for specific low vision training.
- Proprioception/Other Medical Conditions
 - See a doctor regularly to manage any existing conditions and prevent them from getting worse.
 - Visit your doctor regularly to manage cardiac conditions including CHF and Orthostatic Hypo-tension. Have the doctor check your blood pressure lying, sitting and standing.
 - Visit your physician regularly to properly monitor and manage your osteoporosis (bone scan, well balanced diet, moderate exercise program, vitamin supplements such as calcium and vitamin D).
 - Manage diabetes appropriately.
- Medications
 - Be knowledgeable about your medications, read and be aware of the potential side effects.
 - See your physician regularly: take ALL your medications and vitamin supplements with you to your doctor visit EVERY time. Have the doctor review to see if any can be reduced or stopped. DO NOT reduce or stop a medication on your own – ask your doctor first.

WHAT CAN PHYSICAL AND OCCUPATIONAL THERAPY DO TO HELP PREVENT FALLS?

- Home safety assessment
- Balance evaluation and training
- Gait/walking evaluation and training
- Instruction in a safe, moderate exercise program including strengthening, flexibility, and balance exercises



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