

FALL PREVENTION

February 22, 2010

A fall is...

An unintentional event that results in an individual coming to rest on the ground or on another lower level

Falls in Older Adults

- 35-40% of community-dwelling older adults fall each year
- Up to 50% of those older than 85 fall each year
- 25% of older adults seen in the ER after a fall were unable to return directly home
- 10-15% of falls result in fracture
- Falls are a significant contributor to 40% of nursing home admissions

Causes of Falls

- Internal risk factors
- External risk factors
- Activity performed

Falls: Internal Factors

- Age >80 years
- Decreased cognition
- Hearing loss
- Loss of joint motion
- Poor posture
- Impaired sensation
- Weakness
- Impaired vision
- Pain
- Poor balance
- Gait changes
- Medications
- History of falls
- Fear of falling

Decreased Sensation

- The ability to sense the body's position in space
- Declines with age
- Significant loss with neuropathy
- Can affect balance when walking on uneven surfaces or in the dark

Weakness

- A weak person is 4.4 times more likely to fall than someone who is strong
- Hip, knee and ankle muscles all affect balance
- It is normal to lose some muscle mass and strength with age
- A great deal of strength is lost with inactivity

Impaired Vision

- Visual acuity
- Contrast sensitivity
- Depth perception
- Glare sensitivity
- Dark adaptation

Foot Pain and Shoes

- Over 75% of older adults have foot pain
- Foot problems can impact alignment, coordination and stability
- High heels and shoes without backs provide little support
- Badly worn or poorly fitting shoes may cause falls



Poor Balance

- Decreased reaction time
- Decreased coordination of movement
- Decreased speed of movement
- Decreased ability to do 2 things at once

Gait Changes

- Shorter step length
- Slower speed
- Less time spent on one leg
- Wider base of support

Medications

- 4 or more medications increase fall risk
- Anti-depressants, sedatives, digoxin and diuretics increase risk of falling
- Side effects include low blood pressure, dizziness, drowsiness and unsteadiness



History of Falls

- Loss of confidence and fear of falling
- 42% of fallers reduce their activity after a fall
- Sedentary lifestyle leads to further functional decline
- 3x greater risk of falling than someone who has not fallen

External Factors: Inside

- Wet floors
- Deep pile carpets
- Low chairs or toilets
- Dim light
- Lamp glare on the floor
- Scatter rugs/floor mats
- Clutter
- Extension cords
- Long bedspreads
- Pets
- Stairs without rails
- Lack of appropriate equipment

External Factors: Outside

- Uneven ground
- Ice
- Wet leaves
- Loose rocks
- Curbs
- Blocked pathways
- Escalators
- Stairs without rails
- Strong sunlight
- Crowded areas
- Street crossings

Falls: Activity Performed

- Activities that are too risky
- Too little activity



The Combined Effect

Imagine walking up the steps:

- In the snow
- Without a railing
- If you have weak legs
- If you can't see well
- If you have shoes that are too big

Fall Prevention

- Internal risk factors
- External risk factors
- Activity performed

Exercise Improves:

- Strength
- Muscle Endurance
- Cardiovascular fitness
- Balance
- Flexibility
- Posture

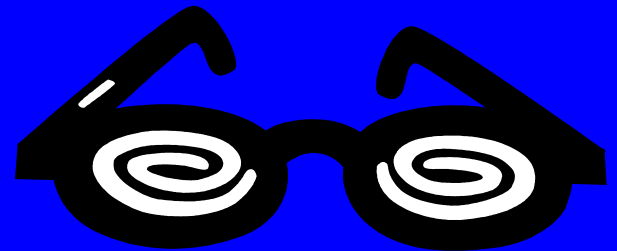


Exercise

- Type
- Intensity
- Frequency
- Duration

Improving Vision

- Get eyes examined annually
- Clean glasses daily
- Increase lighting
- Mark stair edges with bright tape
- Pause with changes in lighting



Hearing

- Have your hearing checked periodically
- Tell your physician if your hearing changes



Foot Pain and Shoes

- See a Podiatrist
- Wear sturdy, wide-soled shoes
- Make sure shoes have good tread
- Replace worn shoes
- Consider using a walker or cane to decrease foot pain

Medications

- Have medications reviewed by MD/NP
- Discuss any side effects
- Have pharmacist change bottle cap for opening

Fear of Falling

- Remain as active as possible
- Gradually increase your activity
- Avoid activities that are very risky
- Consider using a walker or a cane

External Factors: Outside

- Watch for uneven sidewalks
- Check depth of curbs
- Observe for debris
- Observe areas with leaves, ice, snow
- Be careful when walking in crowds
- Watch for short stop lights
- Do not get up if the train is still moving

Home Safety



Floors and Safety

- Secure rugs and mats
- Pick up throw rugs
- Clean up spills as soon as they occur
- Clear away clutter
- Avoid very plush carpet and shiny tile
- Make thresholds visible

Safety on Stairs

- Put colored adhesive tape on edges of stairs
- Repair broken or loose stairs
- Install railings
- Make sure stairs are well lit

The Bathroom

- Install grab bars near toilet and in shower
- Put a mat in the shower
- Consider using a tub seat and hand held shower
- Have soaps/shampoos within reach
- Install a night light
- Consider using an elevated toilet seat

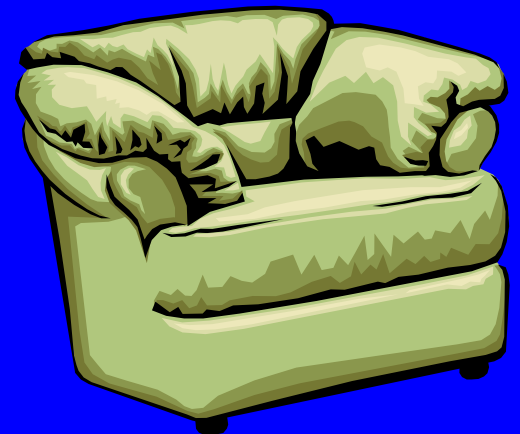
Lighting in Your Home

- Make sure that each room is well lit
- Install night lights
- Keep a flashlight by your bed
- Don't have lamps without shades



Furniture

- Avoid soft and low chairs
- Sit in a chair that has armrests and is high enough to get up
- Consider a bed rail



Additional Tips

- Eat three meals a day
- Make sure to drink plenty of fluids
- Do not drink right before you go to bed
- Focus on one thing at a time
- Avoid becoming too tired
- Watch for pets

Safety in Your Home

- Make sure you have a phone near your bed
- Keep a portable phone close by during the day and charged at night
- Consider Lifeline or daily check-ins at a scheduled time with your friends
- Tell your doctor if you fall

ANY QUESTIONS?

Selected References

- Gill TM, Williams CS; Tinetti ME. Environmental hazards and the risk of nonsyncopal falls in the homes of community-living older persons. *Medical Care* 2000;38(12):1174-1183.
- Guideline for the prevention of falls in older persons. American Geriatrics Society, British Geriatrics Society, and American Academy of Orthopaedic Surgeons Panel on Falls Prevention. *J Am Geriatr Soc.* 2001 May;49(5):664-72.
- Koepsell TD, Wolf ME, Buchner DM, Kukull WA, et al. Footwear style and risk of falls in older adults. *JAGS* 2004;52(9):1495-1501.
- O'Loughlin J, Robitaille Y, Boivin J, Suissa S. Incidence of and risk factors for falls and injurious falls among the community dwelling elderly. *American Journal of Epidemiology* 1993;137:342-352.
- Robbins A, Rubenstein L, Josephson K, Schulman B, Osterweil D, Fine G. Predictors of falls among elderly people. *Arch Intern Med* 1989;149:1628-1633.
- Rubenstein L, Powers C, MacLean C. Quality indicators for the management and prevention of falls and mobility problems in vulnerable elders. *Ann Intern Med* 2001;135:686-693.
- Squadrito AL. Physiologic response to increased load and oxygen demand in the aging adult. In: Cynthia Coffin-Zadai, Scot Irwin, Mary Jane Myslinski, eds. *Clinical Exercise Pathophysiology*. In press.
- Tinetti M, Speechley M, Ginter S. Risk factors for falls among elderly persons living in the community. *NEJM*. 1988;319:1701-1706.

References, cont.

- www.temple.edu/older_adult/
- www.nsc.org/issues/fallstop.htm
- www.cdc.gov/ncipc/pub-res/toolkit/brochures.htm
- www.cdc.gov/ncipc/duip/spotlite/falls.htm