

Fall Prevention for Older Adults

"Falls" are the leading cause of injury-related deaths among people 65 years old and older. Though the probability of a fall increases with age and the decline of physical status, falls are not any more of a normal part of aging, as are heart disease and cancer! There are strategies available to help prevent falls.

A sedentary lifestyle and a poor diet, both promote a deterioration of the body. For older adults, in many instances, a deterioration of the body's systems, puts them at risk for falling. So it follows, that increasing the activity level and physical condition—specifically strength and balance, and improving the diet, are important fall prevention strategies.

Improving home safety is another critically important strategy. Please post the "Extrinsic Risk Factors for Falling" handout in a visible place, bulletin board, refrigerator, etc... Realize the importance of using information like this to make your home a safer place for you and your loved ones.

Maintaining balance requires a successful interaction of the body's physiological systems. Vision and hearing are parts of this, so please do not neglect their care, and get them checked at the proper times. Some other fall prevention strategies are:

1. Effectively managing medications
2. Receiving fall safety education.

Even if falls are not yet a problem, it is very important for the older adult to consider strategies to prevent falls. The internet can be a tremendous resource for research. One suggestion is to use the huge search engine "google.com", and type in "fall prevention", "balance training", "strength training", "nutrition", etc... Some other helpful websites are:

1. cdc.gov/ncipc/default.htm - search "fall prevention"
2. co.hennipen.mn.us/commhlth/reports/SeniorHealth.htm
3. osteoporosis.ca/newsvol2no1.html
4. temple.edu/older_adult
5. hc-sc.gc.ca
6. cdc.gov/ncipc/factsheets/falls.htm
7. mayohealth.org - Type in "Balance Exercises: Staying Steady on Your Feet"

The websites of "The National Institutes of Health", "Centers for Disease Control", and the "National Institute of Aging" also provide extensive material for study.

Some helpful books include:

1. Physical Dimensions of Aging - By Waneen W. Spirduso
2. Balance Training, A Program for Improving Balance in Older Adults - Susan Bovre
3. Designing Fall Prevention Workshops - Susan Bovre
4. Strength Training for Seniors - Wayne Westcott & Thomas Baechle

EXTRINSIC RISK FACTORS FOR FALLING

Flooring

Variations in frictional properties

- slippery or wet surfaces
- risk of sticking
- risk of sliding

Transitions between tiled and carpeted areas

- patterns in flooring that give the illusion of, or prevent the observance of, level changes
- difficult visual transition
- risk of tripping

Thick carpets

- softness reduces feedback from feet
- uneven surface
- risk of tripping

Steps

- slippery or wet surfaces
- unmarked edges
- in poor repair
- lack of railings
- lack of lighting
- uneven spacing

Lighting

- areas that are too bright or too dim
- lack of uniformity of lighting
- lamps that can tip when handled
- cords from lamps and other lighting that can be in walking path

Furnishings

- small items such as footstools placed in walking path
- soft chairs that are difficult to get out of
- lightweight chairs that move easily
- chairs without armrests
- furniture with sharp corners
- throw rugs and loose items that can cause tripping
- chairs with wheels

Footwear and Clothing

Loose fitting footwear

- sandals or slippers that can cause tripping or misstep
- shoes with excessive cushioning, thick, soft soles
- high heels

Loose fitting clothing

- clothing that can catch on furniture or door handles
- clothing such as bathrobe ties that can hang down

Other Extrinsic Risk Factors

- doors that swing or latch incorrectly
- elevator thresholds, speed of door closing
- wheelchair and walker brakes and footrests
- pets

INTRINSIC RISK FACTORS FOR FALLING

Mary Tinetti, M.D., professor of medicine and public health at Yale's School of Medicine, has conducted numerous studies that has provided a major source of fall risk information. Go to "google.com" to search her name, and access the wealth of information that she has contributed. One of her studies identified five major intrinsic risk factors for falling:

1. The use of at least four prescription drugs.
2. The use of sedatives or tranquilizers.
3. Postural or orthostatic hypotension
4. Weakness in the muscles of the arms or legs and impairment of range of motion.
5. Difficulty transferring from bed to chair, from chair to standing, or gait problems.

Below is a thorough list of risk factors from the book, "Designing Fall Prevention Workshops". See which risk factors may apply to you, then seek help.

Changes in the visual system

- reduced visual keenness
- reduced depth perception
- reduced adaptation to changes in lighting
- reduced contrast sensitivity

Changes in the somatosensory system

- reduced sensations of the skin
- reduced muscle strength and muscle mass leading to increased muscle fatigue
- reduced proprioception
- increased joint stiffness
- decreased joint range of motion
- changes in posture and alignment
- reduced postural control
- slowed reaction time
- slowed and impaired ability to process information and inappropriate responses to disturbances in balance

Changes in the vestibular system

- sudden dizziness
- vertigo
- orthostatic hypotension

Changes in hearing

- diminished auditory feedback from the environment
- diminished ability to determine direction of sound

Changes in balance and gait

- lateral instability with postural sway
- larger and slower response to disturbances
- altered base of support
- increased stride width
- smaller stride length
- slower walking speed
- more time in gait cycle spent on double support

Psychological and emotional factors

A fear of falling that results in

- gait and posture changes
- stiffness as an inappropriate response to disturbances of balance
- reduced activity

Depression and anxiety that

- reduce the awareness of the environment
- detract attention from the skills needed for walking and balancing

Chronic disease conditions and disorders

- neuropathy
- cataracts
- macular degeneration
- glaucoma
- labyrinthitis
- vestibular neuritis
- Meniere's disease
- Parkinson's disease
- Stroke (hemiplegia)
- Dementia
- Peripheral neuropathy
- Cardiac arrhythmia
- Transient ischemic attack (TIA)
- ocular ischemia
- orthostatic or postprandial hypotension
- foot abnormalities
- acute illness
- seizure
- syncope
- incontinence
- arthritis
- joint replacement
- acute and chronic injuries

ASSESSING RISK FACTORS AND PROVIDING INTERVENTIONS

Identifying people who are at risk for falling, can help to prevent falls before they occur. A fall risk assessment identifies an individual's intrinsic and extrinsic risks for falling, and helps to determine the appropriate intervention. Because people are likely to present more than one risk factor, a multidimensional approach is needed to assess their risk for falling. A wide variety of balance and fall risk assessment tools are available to do this. I suggest only allowing qualified individuals to do the assessments.

A complete health history should be obtained from each participant prior to administering any fall assessment. A health history should provide information about illness, orthopedic conditions, medications, past falls, unsteadiness or dizziness, or any other relevant factors. If significant medical factors are noted, refer the client to a physician for clearance to participate in a fall assessment. Furthermore, the assessment should be stopped if any signs of overexertion are observed.

The names of some of the assessments are:

- Functional reach test
- Modified clinical test for sensory integration
- 8-foot up-and-go test
- 30-second chair stand test
- Romberg and Sharpened Romberg
- Single-leg stance test

Ph.D Debra Rose stated, "The more risk factors a person has, the greater the likelihood that they will fall." In addition, a home safety assessment can be used to identify and correct problem areas. The most common locations for falls within the home are stairways, the bedroom, and the pathway to and from the bathroom. Incontinence (especially at night) and the rush to the bathroom contribute to the high incidence of falls occurring in the bathroom and bedroom. Home safety checklists can be obtained from some of the websites I listed earlier.

Information collected from the assessments will identify the particular focus for interventions that can reduce fall risks. In some cases, interventions should be addressed through a team of professionals; physician, nurse, exercise specialist, etc... In other cases, the fitness professional alone may be able to provide the necessary intervention. Some interventions are:

- Education
- Exercise
- Fall-proof the home environment
- Medications
- Assistive devices
- Encouraging exercise and change

You may use some of the books and websites I've given you earlier, and the internet in general, to get detailed information about assessments for fall risks and interventions.