Falls Risk Reduction In Older Adults

PFSP
Physical Fitness for Special Populations

Physical Fitness and Falls Risk Reduction Based on Best Available Evidence

Falls Risk Reduction and Promotion of Physical Fitness

Fall: An unexpected event in which the participants come to rest on the ground, floor, or lower level.[1]

Falls are a major health concern among older adults. More than one third of older adults fall each year and fall rates increase with advancing age.[2] Falls are the leading cause of injury deaths, the most common cause of non-fatal injuries, and the most common reason for hospital admission due to trauma in older adults.[3] Every hour, there is one death and 183 emergency department visits for falls-related injuries among older adults.[4] More than 95% of hip fractures are caused by falls.[4]

APTA's initiative, Physical Fitness for Special Populations, focuses on the role of physical therapy in addressing physical fitness needs of individual populations, including those at risk for falls.

Risk Factors for Falling[6]

Research shows that a cumulative effect of multiple interacting factors increases fall risk in any one individual.

Muscle weakness	Arthritis
History of falls	Impaired ADLs
Gait deficit	Depression
Balance deficit	Cognitive impairment
Use of assistive device	Age > 80 years
Visual deficit(s)	Medications*
Neurologic deficits#	Cardiovascular deficits^

*Greater than 4 meds, psychotropic or antiarrhythmic meds, digoxin, or diuretics

#Such as deficits affecting mental status, lower extremity peripheral nerves, proprioception, reflexes, and extrapyramidal and cerebellar function

^Such as deficits affecting heart rate and rhythm (bradycardia), abnormal blood pressure and pulse responses to postural changes, and carotid sinus syndrome

Tests and Measures

Physical therapists can use a number of tests and measures to determine a patient's/client's risk of falling. Listed below are some commonly used examinations/tools. It is important to match the correct tool(s) with the correct patient/client and setting to aptly measure falls risk. This may require using more than one tool to take into account the multiple factors that may contribute to the patient's/client's falls risk.

Within the examination, include tests that focus on **range of motion**, **muscle strength**, and **sensory integrity**. Foot and ankle deficits in tactile sensitivity, ankle flexibility, and toe strength are important factors in balance and functional ability in older adults.[7] Weakness around the knee and ankle relate to increased incidence of falls.[8]

Balance and Gait

Berg Balance Scale[9]:

14-item scale designed to measure balance. Predicts multiple falls in community dwelling and institutionalized older adults.[10] Score of < 45: older adults at risk of falling.[11]

Timed Up and Go Test[12]:

Used to screen individuals prone to falls; requires the client to be able to follow directions. Score of 13.5 seconds: Fall risk in older adults.[13]

Tinetti Performance Oriented Mobility Assessment: Balance Test, Gait Test[14]:

Task-oriented test that measures gait and balance abilities. A combined mobility score of less than 19/28 was significantly predictive of multiple falls in the high-risk group.[15]

Dynamic Gait Index[16]:

To assess the ability to modify gait to changes in task demands in the older adult at risk for falling.[5] Score of ≤19: predictive of falls in older adults.[17]

Falls Efficacy Scale (FES)[18]:

To assess confidence in the older adult in performing daily activities without falling. Appropriate for older adults who are homebound and have low mobility.[19] The higher the score, the lower the falls self-efficacy (confidence).

Activities-specific Balance Confidence Scale[20]:

16-item scale designed to detect loss of balance confidence for older adults with higher functioning. Requires that the patient/client be able to follow directions. Score of ≥80% is indicative of high functioning, usually physically active older adults; 50%–80% is indicative of a moderate level of physical functioning; ≤50% is indicative of low level physical functioning.[21] <67% classifies older adults at risk of falling; predictive of future fall.[11]

Other Applicable Tests and Measures:

Functional Reach,[22] Multi-directional Reach,[23] Physical Performance Test,[24] Romberg,[25] Four Square Step Test (FSST),[26] and stance tests that include eyes open, eyes closed, semi-tandem, tandem, and standing on one leg.

Nearly one third of persons over the age of 65 fall each year, and that figure increases to 50% by age 80.

For seniors, falls in and around the home are the most frequently occurring accident.

In fact, falls are the seventh leading cause of death in persons over age 65.

A study reported in *The New England Journal of Medicine* found that preventing falls and the resulting injuries can reduce or delay the need to move to a long-term care facility.[1]

After a disabling fall the longer you wait for help the greater the risk of serious complications and even death.

Studies confirm that getting help quickly after a fall reduces the risk of:

- Hospitalization by 26%[2]
- Death by over 80%[3]

There are TWO major causes of falls in and around the home:

Health and age-related changes, such as:

- Use of certain medications
- Slow reflexes
- Poor eyesight
- Problems with balance

Dangerous situations in the home, such as:

- Slippery floors
- Poor lighting
- Electrical cords in pathways
- Loose rugs
- Raised thresholds
- Clutter

Most falls in the home occur in bathrooms, bedrooms and on stairs.

The following Checklist is designed to help you minimize the risk of falling in your home.

1. Tinetti ME, Williams CS. Falls, injuries due to falls, and the risk of admission to a nursing home. N Engl J Med 1997;337:1279-1284.

2. Rauch RE, Teasdale TA, Murphy JR, Kirk ML. Impact of a personal emergency response system on hospital utilization by community-residing elders. South Med J. 1995;88(9):917-922.

3. Gurley RJ, Lum N, Lo B, Katz MH. Persons found in their homes helpless or dead. N Engl J Med. 1996;334:1710-1716.

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Getting up after a fall

How to get up from a fall

1 PREPARE

Do NOT get up quickly. If hurt, call for help using Lifeline or a telephone.

Find something sturdy such as a piece of furniture.

Roll onto your side, turning your head, shoulders, hips, then leg.

2 RISE

Push your upper body up. Lift your head, pause, and steady yourself.

Rise slowly onto your hands and knees. Crawl to something sturdy you can hold on to.

Slide one foot forward so it is flat on the floor.

3 SIT

Keep the other leg bent with your knee on the floor.

Rise slowly and turn your body to sit in the chair.

Sit for a few minutes before trying to do anything else.

Talk to your primary care provider about having a fall-risk evaluation.

The fact that you have fallen once means you have a high risk of falling again.

Source: Baker, Dorothy, Ph.D., RNCS, Research Scientist, Yale University School of Medicine New Haven, Connecticut; *Connecticut Collaboration for Fall Prevention.*

Call for more information

1-800-LIFELINE

PHILIPS Lifeline

"I thought I was too old to learn Tai Chi. But I enjoy the classes and my balance is much better."

Four things **YOU** can do to prevent falls:

❶ Begin a regular exercise program

Exercise is one of the most important ways to lower your chances of falling. It makes you stronger and helps you feel better. Exercises that improve balance and coordination (like Tai Chi) are the most helpful.

Lack of exercise leads to weakness and increases your chances of falling.

Ask your doctor or health care provider about the best type of exercise program for you.

❷ Have your health care provider review your medicines

Have your doctor or pharmacist review all the medicines you take, even over-the-counter medicines. As you get older, the way medicines work in your body can change. Some medicines, or combinations of medicines, can make you sleepy or dizzy and can cause you to fall.

❸ Have your vision checked

Have your eyes checked by an eye doctor at least once a year. You may be wearing the wrong glasses or have a condition like glaucoma or cataracts that limits your vision. Poor vision can increase your chances of falling.

❹ Make your home safer

About half of all falls happen at home. To make your home safer:

- ☐ Remove things you can trip over (like papers, books, clothes, and shoes) from stairs and places where you walk.
- ☐ Remove small throw rugs or use double-sided tape to keep the rugs from slipping.
- ☐ Keep items you use often in cabinets you can reach easily without using a step stool.
- ☐ Have grab bars put in next to your toilet and in the tub or shower.
- ☐ Use non-slip mats in the bathtub and on shower floors.
- ☐ Improve the lighting in your home. As you get older, you need brighter lights to see well. Hang light-weight curtains or shades to reduce glare.
- ☐ Have handrails and lights put in on all staircases.
- ☐ Wear shoes both inside and outside the house. Avoid going barefoot or wearing slippers.

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Outdoor and Winter Safety Tips

1. Proper footwear: Good non-slip soles or overshoes are essential for snow and ice.

2. Take extra time and caution on slippery surfaces.

3. Uneven ground/walkways can cause you to trip.

4. When outdoor conditions are snowy or wet and you then go inside, be on the lookout for wet spots on tile.

5. In grocery stores, use the grocery cart. It serves like a wheeled walker with a nice basket.

6. Be sure someone keeps walkway and driveway areas clear of ice and snow.

*STAY ACTIVE – EXERCISE