

Fall Prevention: Statistics and Strategies

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Falls are a common cause of morbidity and the leading cause of nonfatal injuries and trauma-related hospitalizations in the United States. In a recent study, fall-related injuries accounted for **6 percent of all medical expenditures** for people age 65 and older in the U.S.¹ And according to the Centers for Disease Control and Prevention (CDC), in the year 2000, falls among older adults cost the U.S. health care system more than \$19 billion. With the population aging, the **number of falls and the costs to treat** fall-related injuries are both expected to increase.²

One in three adults age 65 and older falls each year.^{3,4} Of those who fall, 20 percent to 30 percent suffer moderate to severe injuries that make it hard for them to get around or live independently, and increase their risk of early death. Older adults are hospitalized for fall-related injuries **five times more often** than they are for injuries from other causes.⁵ The costs of fall injuries increase rapidly with age, and in 2000, medical costs for women (who comprised 58 percent of older adults) were two to three times higher than for men.²

Risk Factors for Falling

While some factors that increase the risk of falling, such as age, gender and previous falls, are obviously beyond our reach, there are some risk factors that can be addressed. The known treatable risk factors for falling include:

- problems with walking or movements;
- postural hypotension;
- use of four or more medications or any psychoactive medications;
- unsafe footwear or **foot problems**;
- visual problems; and
- environmental hazards.

Clinical assessment of **patients at risk for falling** includes observation for problems with performance of one or more of the following

movements:⁶

- steadiness standing on one leg for at least 5 seconds;
- steadiness getting up from a chair;
- sitting down in a chair without plopping;
- lurching and walking in a straight path;
- steadiness while turning;
- normal step length (swing foot always passes the stable foot by at least a foot length); and
- heel of the swing foot always hits the floor first.

Tips to Prevent Slips, Trips and Falls

Falls can be prevented by simple fall-prevention measures, from reviewing medications to hazard-proofing the home. Tips you can provide to patients to help them avoid falls include the following:

Review of all medications including prescription, over the counter, and supplements for side effects and interactions that can increase the risk of falling. Drugs that may increase the risk of falling include sedatives and antidepressants or any drug that may cause dizziness.

Evaluation for eye and ear disorders that may increase the risk of falls. The right glasses should be worn for the task at hand (bifocals may make it difficult to see the floor when walking and can be hazardous when going down stairs). Ear infections and other ear disorders can have a profound effect on balance.

Assessment of previous falls to identify specific fall-prevention strategies and to promote mindfulness. Focusing attention when walking with awareness of how the feet are placed, looking at the path ahead, and paying attention to the journey with avoidance of thinking about the destination even if its only walking from the kitchen to the living room are important strategies. When outside, watching for tree roots, uneven pavement, trash, slippery leaves, fallen branches, and children's toys (not to mention sidewalks slippery from rain, ice or snow) are important factors to consider in fall prevention.

Participating in physical activity, which reduces the risk of falls by improving strength, balance and walking style (gait). Fear of falling can make a fall more likely and it is important that physical activity not be curtailed because of fear of falling. This can become a downward spiral when activities that improve strength, balance and gait are avoided because of fear of falling. A supervised exercise program may be beneficial, as are walking, water workouts and *tai chi*. Weight-bearing exercises should be included regularly to maintain healthy bones and muscles.

Wearing sensible shoes. Even 20-something models teetering on 6-inch heels can suffer serious falls that can be prevented by less fashion and more common sense.

Keeping the home free of trip hazards including clear hallways, stairs, and living area floors. This includes extension cords, books and newspapers, shoes, small area rugs, and low tables. Install grab bars and handrails in key locations including the stairs, by the toilet, and in the tub to help prevent falls by those at risk. Hallways and other high-traffic areas should have bright lights, and lights should always be utilized when moving about when it's dark. Outdoor walkways should be kept clear of leaves, rocks, holes, snow and tools.

Reduction of loads when carrying items (e.g., carrying a less-loaded laundry basket down the stairs) can prevent loss of balance.

Use of step stools when reaching overhead can prevent falls caused by overreaching

Asking for assistance as needed. Many individuals are reluctant to ask for assistance when engaging in activities that put them at risk.

Use of assistive devices such as canes and walkers can prevent falls when used in high-risk situations.

Fall Prevention Programs

A number of fall prevention programs have been [initiated by the CDC](#).⁷ Collaborative activities with the Administration on Aging (AoA) include three initiatives related to older adults: 1) The National Council on Aging (NCOA), the Archstone Foundation, the Home Safety Council and other partners formed the Falls Free Coalition in 2004 to address the growing problem of falls and fall prevention among adults age 65 years and older. It now includes more than 55 organizations and employs a collective approach to promoting a national fall prevention action program. 2) Assessment of the long-term impact of *Matter of Balance*, a program designed to reduce fear of falling, increase in self-sufficiency and a sense of control in relation to fall risk, and increase physical and social activity.⁸⁻⁹ 3) Estimating the average program implementation and maintenance costs and comparing these costs across three AoA-funded fall prevention programs: *Matter of Balance*, *Moving for Better Balance*, and *Stepping On*.

Collaborative activities with the Center for Medicare and Medicaid Services are focused on expanding current knowledge and inform public policies related to older adult fall prevention. They have a shared interest in analyzing data from the Medicare Current Beneficiary Survey (MCBS) to better understand the magnitude of the problem of older adult falls, to determine the impact fall injuries have on our health care system, and to identify factors that could be modified to reduce falls in this population.

A fall risk perception program was funded in 2005 through a grant to the Veterans Affairs greater Los Angeles Health Care System, a partner in the [Fall Prevention Center of Excellence](#).¹⁰ In addition to learning about older people's perception of their risk for falls, the study also seeks to understand whether older people are willing and able to implement specific strategies to reduce their fall risk.

Dissemination of a Community *tai chi* fall prevention program¹¹ funded a researcher at Oregon Research Institute for three years to translate evidence based *tai chi* intervention in a user-friendly community to be used by adults 60 years and older. The 12-week program *Moving for Better Balance* has been implemented in six local senior centers. The program consists of one-hour classes given twice a week. Studies around the world have demonstrated the positive effects of *tai chi* on balance and fall prevention.¹²⁻¹⁴ The [biomechanical characteristics of tai chi chuan](#) have been studied, providing an understanding of its effects on balance, flexibility, strength and overall health.¹⁵ Indirectly, *tai chi* has been shown to enhance bone mineral density in active seniors.¹⁶ Commonly, falls take place in osteoporotic individuals when a hip fracture occurs, rather than the person falling and then fracturing the hip.

Fall Prevention for the Young

Activities taught to the young can stress safe falling by rolling that dissipates forces and reduces the chances of serious injury from a fall. Taught in many classes including martial arts, gymnastics, volleyball and basketball, the carryover value of such training is immeasurable when it comes to preventing injury from falls in later life. In addition to absorption of forces, relaxation is necessary to prevent injury from a fall.

Improved Balance and Fall Prevention With Chiropractic Care

[A pilot study](#) of the effects of a limited and extended course of chiropractic care on balance indicates that further study may be warranted.¹⁷ Further study of pain-related disability including further investigation of the possible benefits chiropractic maintenance care (extended schedule) offers for

reduction of chronic pain and relief of dizziness in older adults is feasible and warranted, as well as both limited and extended schedules for patients with idiopathic dizziness. Pain and disability decreased and remained at a lower level in the extended care group than for the limited care schedule for the year the patients were followed. This study provides preliminary support for chiropractic maintenance care for older adults with chronic pain. Less striking, yet still warranting further investigation, was the decrease in dizziness over time with both limited and extended chiropractic care schedules.

Falls and fall injuries are one of the most common health problems among older adults. Clinicians need to recognize falling as a preventable/manageable health issue, not an event to be dealt with after the fact. The consequences of untreated falls and risk factors can be just as serious as those of other untreated chronic diseases. The risk of falling increases with the number of risk factors an older person has for falling. The seeds for fall prevention can be sown early when strategies for fall prevention are taught early through physical education activities and at any age when risk factors for fall prevention are addressed by doctors of chiropractic.

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