



Falls and Older Adults

June 2017



References

Burns, E. R., Stevens, J. A., & Lee, R. (2016). The direct costs of fatal and non-fatal falls among older adults—United States. *Journal of Safety Research*, 58, 99-103.

Karlsson, M. K., Magnusson, H., von Schewelov, T., & Rosengren, B. E. (2013). Prevention of falls in the elderly—a review. *Osteoporosis international*, 24(3), 747-762.

Kirch, W. (Ed.) (2008). *Encyclopedia of Public Health* (Vol. 1). New York: Springer Science & Business Media.

Peterson, M. J. (2010). Universal kitchen and bathroom planning: Design that adapts to people. New York: McGraw-Hill.

Stevens, J. A., Corso, P. S., Finkelstein, E. A., & Miller, T. R. (2006). The costs of fatal and non-fatal falls among older adults. *Injury Prevention*, 12(5), 290-295.

Tinetti, M. E., Speechley, M., & Ginter, S. F. (1988). Risk factors for falls among elderly persons living in the community. *New England Journal of Medicine*, 319(26), 1701-1707.

Tromp, A. M., Pluijm, S. M. F., Smit, J. H., Deeg, D. J. H., Bouter, L. M., & Lips, P. T. A. M. (2001). Fall-risk screening test: A prospective study on predictors for falls in community-dwelling elderly. *Journal of Clinical Epidemiology*, 54(8), 837-844.

U. S. Census Bureau. (2015). Projections of the size and composition of the U.S. population: 2014 to 2060. Retrieved from <http://www.census.gov/content/dam/Census/library/publications/2015/demo/p25-1143.pdf>

Oklahoma Cooperative Extension Fact Sheets are also available on our website at: <http://osufacts.okstate.edu>

Mihyun Kang
Professor

Aditya Jayadas
Assistant Professor

Gina Peek
Associate Professor

What is a fall?

A fall is when someone unintentionally goes to the ground. Tinetti, Speechley and Ginter (1988) defined a fall as “an event which results in a person coming to rest unintentionally on the ground or lower level, not as a result of an intrinsic event (such as a stroke) or overwhelming hazard.”

Who is likely to fall?

By 2030, one in five adults is projected to be over 65 years of age (U. S. Census Bureau, 2015). Anyone age 65 and older is considered an older adult. It has been reported that older adults fall at least once a year (Tromp et al., 2001).

Falls and injury, illness, and death

For most older adults, falls can result in injury. Injuries can include a sprained ankle, hip fracture and head injury. Falls can result in long term illness, including disability. Some falls require nursing home admission. Serious falls can result in death. You can prevent injury, illness and death by reducing falls risk.

Falls and quality of life

Falls can cause injuries that affect quality of life. Fear of falling can also affect quality of life. Fear of falling may make people feel less confident. When someone does not feel confident, they may limit physical activity and social interactions.

Falls are expensive

Health related costs due to falls are estimated to be around \$20 billion annually.

Direct medical costs

Direct medical costs are defined as “all costs due to resource use that are completely attributable to the use of a health care intervention or illness”(Kirch, 2008). Direct costs can include health care interventions, follow-up costs, medication, interventions in ambulatory, inpatient and nursing care.



Typical costs include:

- Emergency room visits
- X-ray and Magnetic Resonance Imaging (MRI)
- Orthopedic doctor visits
- Surgery
- Rehabilitation
- Long term care

Table 1. The cost of falling.

Cost	Non-fatal falls	Fatal falls
Total direct medical costs	\$19 billion*	\$0.2 billion*
Average cost of a fall-related injury per person	\$9,463.00**	\$25, 487.00**

*(Stevens, Corso, Finkelstein & Miller, 2006)

** (Burns, Stevens & Lee, 2016)

a comfortable position, if possible. Consider using a life alert system in the future.

Summary

Falls continue to be a growing problem with older adults. Falls can cause varying levels of injury from a simple strain to severe fracture. Taking care of injuries can be expensive. Steps can be taken to help reduce the risk of falling. Be proactive and address intrinsic and extrinsic factors that cause falls. Preventing falls is important to enhance the quality of life of older adults.

Reviewers:

James Smith, Texas Tech University
Cindy Conner, Oklahoma State University
Jean Bailey, Oklahoma State University
Patsy Thibodeau, Oklahoma Home and Community Education, Inc.



Oklahoma State University, in compliance with Title VI and VII of the Civil Rights Act of 1964, Executive Order 11246 as amended, and Title IX of the Education Amendments of 1972 (Higher Education Act), the Americans with Disabilities Act of 1990, and other federal and state laws and regulations, does not discriminate on the basis of race, color, national origin, genetic information, sex, age, sexual orientation, gender identity, religion, disability, or status as a veteran, in any of its policies, practices or procedures. This provision includes, but is not limited to admissions, employment, financial aid, and educational services. The Director of Equal Opportunity, 408 Whitehurst, OSU, Stillwater, OK 74078-1035; Phone 405-744-5371; email: eeo@okstate.edu has been designated to handle inquiries regarding non-discrimination policies: Director of Equal Opportunity. Any person (student, faculty, or staff) who believes that discriminatory practices have been engaged in based on gender may discuss his or her concerns and file informal or formal complaints of possible violations of Title IX with OSU's Title IX Coordinator 405-744-9154.

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Director of Oklahoma Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Vice President for Agricultural Programs and has been prepared and distributed at a cost of 20 cents per copy. 0617 GH.

What causes falls?

Understanding the causes of falls can help reduce risk. Falls may be caused by extrinsic or intrinsic factors.

Extrinsic factors

Extrinsic factors are related to the environment. For 50 to 80 percent of falls, at least one environmental risk factor is involved (Karlsson, Magnusson, von Schewelov & Rosengren, 2013). Extrinsic factors can also be related to actions.

Extrinsic factors can be on, above or below you:

- On you: Wearing worn out shoes, wearing shoes that do not fit, wearing pants that are too long
- Above you: working under inadequate lighting
- Below you: walking on slippery surface, tripping on an object, stepping on uneven surface

Extrinsic factors found in the home environment:

- Slipping or tripping inside and outside
- Books, magazines or papers on the floor
- Leaves
- Rocks
- Wet, icy or snowy surfaces
- Slippery floor
- Tripping on loose carpets and rugs
- Tripping on electrical cords
- Falling over crowded furniture



Doing activities that might cause you to lose balance

- Reaching for items located on high shelves
- Falling off of an unstable chair or using an unstable table for balance
- Falling out of a high bed
- Stumbling while using a low toilet seat
- Losing balance in the bathroom due to lack of rails near the toilet and shower
- Trying to maneuver using poor lighting

Intrinsic factors

Intrinsic factors are issues within individuals. These factors often have a physiological origin. Intrinsic factors can be associated with age related changes. Some examples include:

- Change in vision
- Loss of balance
- Change in muscle strength
- Increased fear of falling



Intrinsic factors can include medical conditions. Individuals with certain medical conditions need more attention as they are prone to falling:

- Diabetes
- Alzheimer's
- Parkinson's
- Stroke
- Arthritis
- Blood pressure
- Heart disease
- Vertigo

Medication is another intrinsic factor. Older individuals often take medications that might cause falls. The following related conditions could lead to falls:

- Drug interaction and side effects
- Sedatives
- Diuretics
- Antidepressants

What to do after a fall

If you fall and are conscious, try to relax and take deep breaths. Try not to move too much for a moment. Determine if you can get up. If you can, first roll to your side. Then slowly get up on your hands and knees. Crawl to a nearby chair or another stable object. Slowly rise and sit in the chair. If you cannot get up, ask others for help. Call 911. Wait for help in



Extrinsic factors: Checklist to prevent falls

	No	Maybe	Yes
Clothing			
I wear shoes that are in good condition	_____	_____	_____
I have my feet measured when buying shoes to ensure proper size	_____	_____	_____
My pants hems do not drag on the floor (1/2 inch from floor)	_____	_____	_____
My pants have a moderately wide leg opening	_____	_____	_____
Inside the house	No	Maybe	Yes
My home has adequate lighting	_____	_____	_____
I store heavy objects on low shelves	_____	_____	_____
My home has clear walking paths	_____	_____	_____
I have secure area rugs	_____	_____	_____
I keep the floor clean	_____	_____	_____
My dining tables and chairs are stable	_____	_____	_____
The toilet seat in my house is 17 to 19 inches or less from floor ***	_____	_____	_____
The toilet seat in my house is a different color than the rest of the bathroom	_____	_____	_____
The bathrooms in my home have grab bars near the toilet and shower	_____	_____	_____
*** (Peterson, 2010)			
Outside the house	No	Maybe	Yes
The sidewalk and paths outside of my home are intact and even	_____	_____	_____
The sidewalk and pathway outside my house are clear of leaves, snow and/or trash	_____	_____	_____
The porch and deck outside my house are in good condition	_____	_____	_____
I use hand rails for steps	_____	_____	_____
I use a walker or cane if necessary	_____	_____	_____

Intrinsic factors: Checklist to prevent falls

	No	Maybe	Yes
Exercise			
I exercise for balance (ex. walking, Tai Chi, Yoga, Virtual Reality Gaming)	_____	_____	_____
I exercise for muscle strength	_____	_____	_____
Healthcare			
I get regular physical check ups	_____	_____	_____
I get regular vision check ups	_____	_____	_____
I take medications according to the directions	_____	_____	_____