

What You Should Know About:

► *Unintentional Fall Injury*

National

Falls are the second leading cause of unintentional injury deaths and the most common cause of injuries and of hospital admissions for trauma.¹ In 2001, 15,764 persons died as the result of falls (10% of all injury deaths).² Falls are the leading cause of nonfatal injury in the United States, accounting for 783,357 hospitalizations and an estimated 11.5 million minor injury cases that are not hospitalized.³



One of every three adults aged 65 years old or older suffers a fall each year.^{4,5} Of those who fall each year, two thirds fall again within six months.⁶ The majority of falls occur in the home with the highest proportions among young children and the elderly.⁷

The Centers for Disease Control and Prevention reports that each year in the United States, more than 200,000 children 14 years of age and younger are treated in emergency departments for playground-related injuries. About 15 children age 14 and younger die from playground-related injuries each year.¹ Almost half of these deaths result from strangulation, and about one-quarter are from falls to the playground surface.¹ More than one-third of all playground-related injuries are severe—fractures, internal injuries, concussions, dislocations, and amputations.¹ Almost 70% of injuries related to playground equipment occur on public playgrounds.¹ Most injuries that occur on playgrounds are associated with climbing equipment, slides and swings.¹ In schools, most injuries to students ages 5 to 14 occur on playgrounds.¹ In 1995, costs associated with playground-related injuries among children under 15 were estimated at \$1.3 billion.¹

Oklahoma

In 1999, 224 Oklahomans died from falls (death rate 6.8 per 100,000); 82% were 65 years and older (death rate 45.0 per 100,000) and 53% were female (death rate 13.8 per 100,000). Although data on all fall injuries that

occur each year in Oklahoma are not available, a total of 3,597 people were hospitalized for falls during 1999.

Persons aged 80-99 years comprised 49% of hospitalized cases (rate 1505.7 per 100,000 population) followed by 23% for persons 70-79 years (rate 409.5 per population). Children under 10 years and adults 20-29 years each comprised 1% of fall injuries (rates 8.7 and 11.6 respectively).

► What Works

Regular Exercise

Increasing physical activity can be an effective component of fall prevention programs. Lack of exercise leads to weakness and increases a person's chances of falling. An exercise program for older adults that addresses the three major areas of strength, balance and endurance appears to lower the risk of falling.^{8,9} Exercises that improve balance and coordination, like Tai Chi, are the most helpful. In some populations, when used as the only intervention, Tai Chi appears to reduce fall risk.⁸ Individuals should consult with a physician before starting any type of exercise program.

Medication Review

As a person ages, the way some medicines work in the body can change. Additionally, some medicines, alone or in combination with others, may cause drowsiness or lightheadedness, which could lead to a fall. Taking more than four medications or using psychoactive medications is a frequently reported risk factor for falling.¹⁰ A physician should review all medicines taken by a patient (prescription and nonprescription).

Medical Evaluation & Vision Testing

Studies have shown that some other important fall risk factors are Parkinson's Disease,^{11,12} history of stroke,¹² chronic disease,¹³ neuromuscular disease,¹⁴ urinary incontinence,¹⁵ postural hypotension,¹⁶ cognitive impairment,¹⁵ and visual impairment.^{17,18} To reduce these risks, seniors should see a health care provider regularly for chronic conditions and have an eye doctor check their vision at least once a year. The wrong glasses or a condition such as glaucoma or cataracts that limits vision could increase the risk of suffering a fall-related injury. The multifaceted programs that combine exercise, medication review, vision correction and environmental changes in the



home are shown to have an impact in trials, but further study is needed to learn how best to provide these on a broad scale.¹⁹⁻²¹

Environmental Modifications in the Home

Because seniors spend most of their time at home, one-half to two-thirds of all falls occur in or around the home.^{22,23} Most fall injuries are caused by falls on the same level (not from falling down stairs) and from a standing height (for example, by tripping while walking).²⁴ Therefore, it makes sense to make the home environment safer to enter and exit and to move around safely within. Installing stair railings, ramps, and grab bars (such as in the bathroom) are simple but effective modifications. However, these are most successful when combined with other fall-related interventions.

Hip Protectors

Padded hip protectors are known to reduce the incidence of hip fracture during a fall. A study in Finland found that hip fractures could be reduced by 80% with the use of a hip protector if worn at the time of fall.²⁵

Approved Playground Surfacing

The Consumer Product Safety Commission recommends that playground surfaces have at least 12 inches of wood chips, mulch, sand, or safety-tested rubber mats. The protective surfacing should extend at least six feet in all directions from equipment. In addition, all platforms should have guardrails to prevent falls. According to the Centers for Disease Control and Prevention and the National Program for Playground Safety, shredded rubber performed best in a test of loose-fill playground surfacing materials. Sand, wood fibers and wood chips also performed adequately, with little difference among the three.

► What You Can Do

Conduct Home Assessments

Falls in the home may be prevented by conducting home assessments. Home assessments can be performed by individuals on behalf of a family member, or working collaboratively with community groups to canvas high risk households. The Centers for Disease Control and Prevention has provided a checklist to help locate and remove such hazards, and can be found at <http://www.cdc.gov/ncipc/pub-res/toolkit/brochures.htm>. The checklist suggests removing things that can be tripped over (such as papers, books, clothes, and shoes) from stairs and paths where people walk, removing small throw rugs or using double-sided tape to keep the rugs from slipping, keeping items often used in cabinets that are easily

reached and accessible without a step stool, installing grab bars next to the toilet and in the tub or shower, using non-slip mats in the bathtub and on shower floors, improving lighting in the home, installing handrails and lights on all staircases, wearing shoes that give good support and have thin non-slip soles, and avoiding wearing slippers and athletic shoes with deep treads.

Promote Exercise Programs Among Seniors

Exercise programs can be administered on-site by trained health care professionals at hospitals, nursing homes and other senior care facilities under the supervision of a physician. Walking programs to increase physical capacity could also complement the strength and balance programs.

Implement Comprehensive Fall Prevention Programs

Fall prevention programs should be multifaceted in order to address a range of fall-related causes and risk factors. Strategies to prevent falls among older adults include exercises to improve strength, balance, and flexibility; reviews of medications that may affect balance; and home modifications that reduce fall hazards such as installing grab bars, improving lighting, and removing items that may cause tripping. A complete review of comprehensive fall prevention programs can be found at www.cdc.gov/ncipc/falls/fallprev.pdf. In addition, *A Tool Kit To Prevent Senior Falls* is available <http://www.cdc.gov/ncipc/pub-res/toolkit/brochures.htm>. The Tool Kit has current technical information and materials about falls and fall-related injuries that can be used on an individual basis or incorporated into health promotion activities aimed at reducing falls among older adults.

Implement A Playground Action Plan

The National Program for Playground Safety (NPPS) recommends the following strategies to prevent playground injuries: 1) Improve adult supervision of children on playgrounds. 2) Educate the public about age-appropriate playground equipment. 3) Build playgrounds with surfaces—such as shredded rubber, wood chips, wood fiber, and sand—that reduce injuries related to falls.²⁶ 4) Improve maintenance of equipment and surfacing.

Information can be obtained through NPPS regarding safety surveys and playground design, as well as *Playground Safety School* to promote playground safety and advocacy at the community level. For more information contact NPPS at <http://www.uni.edu/playground/home.html>.

► Where You Can Go

State

- Injury Prevention Service
Oklahoma State Department of Health
405/271-3430
www.health.state.ok.us/PROGRAM/injury
- Oklahoma SAFE KIDS Coalition
405/271-5695
www.oksafekids.org
- Indian Health Service, Oklahoma City Area
405/951-3800
www.ihs.gov/FacilitiesServices/AreaOffices/oklahoma/index.asp

National

- National Fire Protection Agency
617/770-3000
www.nfpa.org
- National Program for Playground Safety
www.uni.edu/playground/home.html
- National Center for Injury Prevention and Control
www.cdc.gov/ncipc
- Indian Health Service
www.ihs.gov/MedicalPrograms/InjuryPrevention/index.cfm

Local

County Health Departments
Hospitals

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