



Introduction

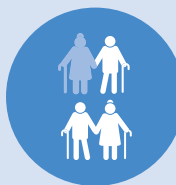
Falling is a syndrome characterized by the standing position, resulting in a person's sudden, unintentional relocation either to the ground or into contact with another object below their starting point.

The risk of falling and fall-related injuries increases with age. Each year, more than one in four older adults fall, according to the CDC. And the incidents are the leading cause of fatal injuries and non-fatal trauma-related hospital admissions among older adults.

The effects of a fall, even one that does not cause serious injuries, can have a significant impact on a senior's life, limiting their activities, independence and social engagements. All these outcomes can lead to a decline in residents' health and well-being.

While there are various underlying causes of falls among older adults, many of them can be treated or corrected. Assisted living communities can help by encouraging residents to assess their risk and staging appropriate interventions.

Fall Facts



- One in four Americans over the age of 65 falls each year.
- Thirty million older adults fall each year.
- Each year, three million older adults are treated for a fall injury.



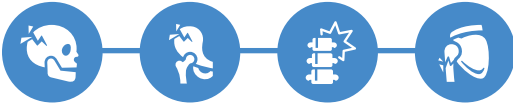
- Every 11 seconds, an older adult is treated in the emergency room for a fall.
- Every 19 minutes, an older adult dies from a fall.



- Falls are the leading cause of fatal injury among older adults.
- Falls are the second leading cause of unintentional injury death worldwide.¹
- Adults older than 60 years of age suffer the greatest number of fatal falls.²



- More than 300,000 people are hospitalized each year from broken hips, and 95% are the result of a fall.
- In adults aged 65+, falls are the leading cause of head injuries.
- Falls are the number one cause of fractures.³



Unfavorable Outcomes

The majority of falls result in minor injuries. But due to pre-existing health issues, lower bone and muscle strength and other factors, the elderly tend to have worse outcomes from falls than the general population. Some of the unfavorable outcomes seniors experience from falling include:

- Traumatic brain injury
- Fractures, particularly of the hip, forearm, humerus and pelvis
- Joint dislocation
- Hematoma
- Laceration
- Fear of falling, resulting in inactivity and reduced independence
- Caregiver stress
- Diminished function
- Death

DID YOU KNOW?

- Falls are the most common cause of traumatic brain injuries for people in every stage of life.
- About 30%–50% of these falls result in minor injuries, but about 10% sustain major injuries. About 1% of all falls in the elderly result in hip fractures, which pose a significant risk for post-fall morbidity and mortality.
- After a hip fracture, an elderly person has a 27% chance of dying within one year.⁴
- Up to 50% of those who fear falling limit or exclude social or physical activities because of the fear.



Risk Factors

The frequency of falls increases with age and frailty level. While the elderly with multiple health impairments are at greatest risk, healthy older persons also fall each year. Although falls among older adults are common, many can be prevented by understanding their causes.

The causes of falls can be categorized into two general types: intrinsic and extrinsic factors.

Intrinsic Factors

- Advanced age
- Acute/chronic conditions
- Impaired vision
- Orthostatic hypotension
- Poor gait
- Previous fall
- Reduced cognition
- Urinary incontinence

Extrinsic Factors

- Environmental hazards
- Psychoactive medications
- Inappropriate footwear
- Recent hospitalization
- Use of assistive devices
- Medications and polypharmacy

Many falls in the elderly are likely multifactorial, resulting from the convergence of several risk factors.

DID YOU KNOW?

- Fatal falls rates increase exponentially with age for both sexes, highest at the age of 85 years and over.⁵
- Vascular diseases, chronic obstructive pulmonary disease, depression, and arthritis are each associated with a 32% increased risk of falls among the elderly.
- In the elderly living in the community, 30%–50% of falls are due to environmental causes.



The Impact of Medications

Four out of every five older adults take at least one prescription medication daily. In assisted living facilities, on average, residents are on nine to 10 simultaneous medications.

The **side effects** from these drugs can cause several changes in the way a resident feels or thinks that can increase the risk of falling, such as:

- Drowsiness
- Depresses psychomotor functions
- Dizziness
- Loss of balance
- Vision changes
- Slowed reaction times

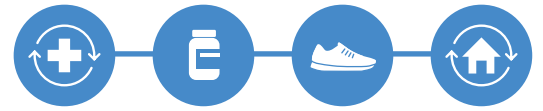
Monitoring of medication use is particularly important among those **drugs that are considered high-risk** for falls in the elderly, including:

- Anticholinergic (Ipratropium, Diphenhydramine)
- Antidepressants (Sertraline, Trazodone)
- Antidiabetic (Insulin)
- Antihypertensives (Lisinopril, Atenolol)
- Antiparkinson agents (Amantadine, Levodopa/Carbidopa)
- Antipsychotic medications (Quetiapine, particularly at low dose, Olanzapine)
- Benzodiazepines (Clonazepam, Lorazepam)
- Cholinesterase inhibitors (Donepezil, Memantine)
- Opioid analgesics (Oxycodone, Fentanyl)
- Sedative hypnotics (Zolpidem, Temazepam)
- Urinary antispasmodics (Oxybutynin, Tolterodine)
- Vasodilators (Hydralazine, Nitroglycerin)

Inappropriate polypharmacy — the use of excessive or unnecessary medications — increases the risk of adverse drug effects, including falls and cognitive impairment, harmful drug interactions, and drug-disease interactions, in which a medication prescribed to treat one condition worsens another or causes a new one.⁶

While any one of these drugs increase fall risk, there is an even greater hazard when an older adult is on more than one medication that potentiates a fall.

Residents should consult with their physician or pharmacist about adverse drug effects as well as any high-risk drugs they may be taking. There may be options to lower the doses or discontinue drugs associated with falls in favor of safer therapeutic alternatives as well as reduce the total number of medications overall.



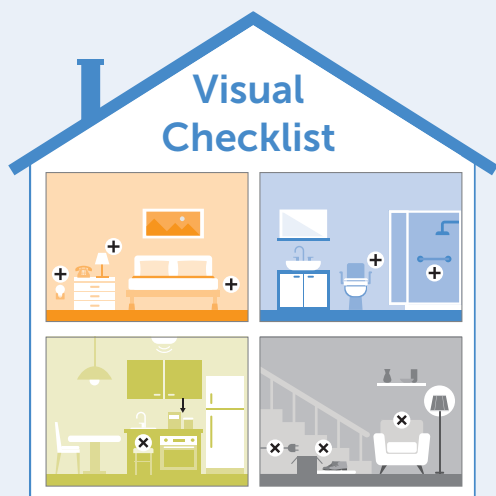
Prevention

As people age, physical changes can make it harder to get around or to do so safely. In fact, slipping, tripping and stumbling are the primary ways elders fall. But falls are not inevitable, even as residents get older. There are steps residents can take to maintain their mobility and reduce the risk of falling. Encourage residents to:

- **Get a Physical:** A physician can identify health issues that may increase the risk of falling such as diabetes or drops in blood pressure when standing up, and advise residents of specific things they can do.
- **Review Medications:** Since some medications can impact an individual's ability to walk or move around safely, residents should routinely request a review of medications and ask about non-pharmacological interventions and medication tapering and/or discontinuation. The reviews should include both prescription and over-the-counter medications.
- **Have a Yearly Eye Exam:** Eye problems can increase the risk of falls so residents should have a medical eye exam each year, address any issues and update eyeglasses, if necessary.
- **Maintain Strength and Balance:** Residents should take part in a regular exercise program with strength and balance activities such as Tai Chi to help improve stability.
- **Live a Healthy Lifestyle:** Not smoking, moderate alcohol consumption, and maintaining weight within normal ranges can protect older people from falling.
- **Modify the Home:** Residents can protect themselves in their units by reducing fall hazards.

DID YOU KNOW?

- Each time a new medication is added to a resident's regimen, check with a doctor, pharmacists or other medical provider to see if medications can be reduced, switched or even stopped to reduce fall risk.⁷
- Benzodiazepines in older people is associated with a 44% increase in risk of hip fracture and night falls.



✓ Fall Prevention AROUND THE HOUSE

- Keep objects off the floor.
- Remove or tape down rugs.
- Coil or tape cords and wires next to the wall and out of the way.

✓ Fall Prevention KITCHEN

- Put often-used items within easy reach (about waist level).
- For items not within easy reach, always use a step stool and never use a chair.

✓ Fall Prevention BEDROOMS

- Use bright light bulbs.
- Place lamps close to the bed where they are within reach.
- Put in night-lights to be able to see a path in the dark. For areas that don't have electrical outlets, consider battery-operated lights.
- Ensure proper bed height (when sitting on edge of bed, knees should be 90 degrees, with both feet flat on the floor).
- Provide stable chairs with armrests to help people with weak arms stand up safely.
- Position closet shelves between waist and shoulder high to avoid excessive bending/reaching.

✓ Fall Prevention STEPS

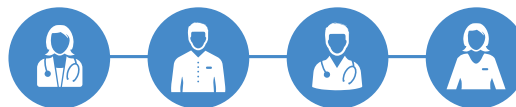
- Check for loose or uneven steps. Repair if needed.
- Make sure carpet is firmly attached to every step, or remove carpet and attach non-slip rubber treads.
- Check for loose or broken handrails. Repair if needed.
- Consider installing handrails on both sides of the stairs.
- Use bright overhead lighting at the top and bottom of the stairs.
- Consider putting light switches at both the top and bottom of the stairs.

✓ Fall Prevention BATHROOMS

- Put non-slip rubber mats or self-stick strips on the floor of the tub or shower.
- Consider installing grab bars for support getting in or out of the tub or shower, and up from the toilet.
- Shower chairs/transfer benches/toilet riser if needed.

DID YOU KNOW?

- 70% of falls in the home occur in the bathroom.



Community Interventions

Considerable evidence shows that most falls among older persons are associated with identifiable and modifiable risk factors. Assisted living communities can stage interventions to help residents identify if they are at a high risk for a fall so they can take steps to protect themselves.

Communities can ask several important questions to assess the risk:

- Are you taking four or more medications?
- Do you suffer from weakness?
- Are you depressed?
- Do you have any gait/balance abnormalities?
- Is your vision impaired?
- Do you have a history of falls?

The CDC has developed the Stopping Elderly Accidents, Deaths, and Injuries (STEADI) initiative to guide nurses and other healthcare providers in (1) screening older adults for fall risk, (2) assessing modifiable risk factors, and (3) intervening to reduce risk by using effective clinical and community strategies.

Communities can also help by educating residents and their caregivers on fall risk and prevention, keeping in mind the importance of shifting the conversation from strictly fall prevention, which can be perceived as an "elderly person's issue," to maintaining independence, confidence, and engagement.

**To learn how PharMerica can help
your community to reduce fall risk,
contact your Consultant Pharmacist.**

Sources:

^{1, 2, 5} WHO

³ NIHSeniorHealth

⁴ Cenzer IS, Tang V, Boscardin WJ, et al. One-year mortality after hip fracture: development and validation of a prognostic index. *J Am Geriatr Soc.* 2016 Sep;64(9):1863-8. PMID: 27295578

⁶ The dangers of polypharmacy and the case for deprescribing in older adults | National Institute on Aging (nih.gov)

⁷ CDC