



Halfpoint

The primary care NP’s guide to prevention and management of falls in older adults

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Abstract: Falls are a growing health concern affecting older adults (defined as ages 65 years and older) that can lead to devastating consequences. NPs in primary care settings play an important role in the prevention and management of older adult falls. Methods and resources to screen for fall risk, assess risk factors, and manage falls in older adults are discussed.

Maintaining the safety of patients is a core value of nursing practice. “Minimize risk of harm to patients and providers through both system effectiveness and individual performance” is the definition of safety as a nursing competency.^{1,2} Unfortunately, unintentional falls are a safety issue

affecting a number of community-dwelling older adults (ages 65 years and older). Approximately 36 million older adults fall each year, leading to 8 million fall-related injuries and almost 3 million ED visits.^{3,4} Falls are the leading cause of unintentional injury-related death in individuals ages 65 years and older,

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with more than 36,000 deaths connected to falls in 2020.⁴ Furthermore, the economic medical costs for falls is close to \$50 billion annually, with three-fourths of these costs paid by Medicare or Medicaid.⁵ With the number of older adults in the US projected to reach 71 million by 2030, the burden of falls will increase.⁶ By 2030, unintentional falls are estimated to increase to 53 million falls, 12 million injuries, and 59,000 deaths.^{3,7} The total medical costs of falls will likely top \$101 billion by 2030.⁸

Many serious complications result from falling. Falls are the most common cause of traumatic brain injuries and hip fractures; additionally, falls often lead to “fear of falling.”⁹⁻¹² These conditions often result in a reduction in physical and social activity, leading to further physical decline, depression, social isolation, loss of independence, poorer quality of life, and an increased predisposition for falling again.¹³⁻¹⁶ Numerous risk factors are associated with falling, many of which are commonly seen in the primary care setting. Risk factors include polypharmacy, especially when fall risk-increasing drugs are used, as well as chronic health conditions, including depression, stroke, arthritis, diabetes, and alcohol use disorder.¹⁷⁻¹⁹ Despite these statistics, only a limited number of primary care providers routinely assesses and manages fall risk in their older adult patients.²⁰ Consequently, NPs must play a pivotal role in the assessment and management of older adult fall risks in the outpatient setting.

■ Use practice guidelines

NPs can implement several interventions to prevent outpatient falls. The CDC created the STEADI (Stopping Elderly Accidents, Deaths, and Injuries) initiative to provide clinicians with fall prevention tools and resources.²¹ STEADI was designed to provide a coordinated and standardized process following the 2010 American Geriatrics Society (AGS)/British Geriatrics Society (BGS) clinical practice guideline for the prevention of falls in older adults.^{21,22} Based on the guideline, the STEADI initiative includes screening for fall risk, assessing at-risk patients for modifiable fall risks, and intervening to reduce identified fall risks using multifactorial evidence-based strategies. With a lens on patient safety and an emphasis on providing holistic care, NPs in the primary care setting play a pivotal role in fall risk assessment and fall prevention among community-dwelling older adults.²³ This article discusses methods and resources

for fall risk screening as well as risk factor assessment and management for older adults.

■ Screen for fall risk

According to the AGS/BGS fall prevention guideline, all community-dwelling individuals ages 65 and older should be screened annually to identify those who are at risk for falling and at any time they present with an acute fall.^{21,22} Fall risk screening can be completed as part of a reimbursable Medicare Annual Wellness Visit. Fall risk screening tools endorsed by the CDC include the Stay Independent and the Three Key Questions (3KQ) (Table 1).²⁴⁻²⁶ Both screening tools are simple to use and can be delegated to a medical assistant to administer before the patient is seen by the clinician. Alternatively, since the Stay Independent is validated as a self-administered tool, it could be sent to patients electronically or via postal mail to be completed prior to their office appointments or while in the waiting room.²⁰ During the office visit, the NP should review the results to determine fall risk. Selection of an appropriate screening tool should account for both the tool's reliability and validity as well as its practicality within the NP's practice and/or clinic's workflow.²⁷

■ Assess fall risks

Older adults found to be at risk for falls during screening require further follow-up with a fall history and focused assessments to identify modifiable risk factors during one of their primary care visits. Identifying risk factors aids in creation of an individualized fall prevention plan of care aimed at minimizing the effect of the specific risk factors. There are numerous fall risk factors, and it is common for older adults to have more than one. It is especially important to note that each additional risk factor increases the likelihood of falling.¹³ Major modifiable fall risk factors include gait and balance disorders, lower extremity weakness, use of medications likely to increase fall risk, polypharmacy, orthostatic hypotension, visual deficits, foot health or footwear problems, home hazards, vitamin D deficiency, and comorbidities.^{13,21,28,29}

■ Conduct fall history

A fall history includes uncovering the details surrounding the fall(s) and can provide clues on risk factors and where to focus the fall assessment. A mnemonic to assist with a fall history is the SPLAT'T acronym: review Symptoms experienced at the time of the fall (for example, lightheadedness, palpitations, weakness);

Previous number of falls; Location of the fall (for example, outdoors, bedroom, bathroom); Activity at time of the fall (for example, walking, transferring); Time of fall, including time of day and length of time on the ground; Trauma or injury as a result of falling (for example, bruises, fractures, fear of falling).^{30,31}

Evaluate strength, gait, and balance

Numerous age-related changes contribute to mobility impairments, which can increase the risk of falling.³² Data show that strength, gait, and balance impairments are the most common fall risk factors, demonstrating the importance of mobility evaluations.³³ The AGS/BGS fall prevention guideline advocates for using standardized functional assessments for gait, strength, and balance.²² Recommended evaluations include the Timed Up and Go (TUG), the 30-Second Chair Stand, and the 4-Stage Balance Test. Instructional materials and videos demonstrating how to perform these exams can be found in the clinical resources section of the STEADI website.²¹ The TUG is used to assess a patient's mobility and is the preferred functional test to evaluate deficits in gait and balance. It is suitable to use if time is limited.²³ The 30-Second Chair Stand is used to evaluate lower extremity strength and endurance, whereas the 4-Stage Balance Test is used to assess static balance.²⁷ All three tests are quick, easy to conduct, and can be administered by unlicensed medical staff.

Identify medications linked to falls

Performing a medication review in the primary care clinic is an important part of fall risk assessment. Older adults typically take numerous medications, and taking four or more medications increases the risk of falling.³⁴ Additionally, several medication classes can increase fall risk due to their effects on BP and the central nervous system. These include psychoactive medications (such as

antidepressants, antipsychotics, benzodiazepines, and sedative-hypnotics), antihypertensives, nonsteroidal anti-inflammatory drugs, and diuretics.³¹ Common adverse reactions of these medication classes include dizziness, sedation, confusion, blurred vision, and orthostatic hypotension.²¹ There are several resources to assist in identifying medications linked to falls. The first is the AGS's 2023 Beers Criteria update, which provides a compendium of potentially inappropriate medications for use in older adults and lists specific medications linked to falls.³⁵ Another resource is the CDC's "Medications Linked to Falls" fact sheet, which provides a quick list of medication classes to avoid.²¹ A pharmacist skilled at reviewing and detecting medications linked to falls can also be a good resource. The CDC's "SAFE Medication Review Framework" fact sheet provides clinicians with a framework for conducting medication reviews. As denoted by the SAFE acronym, this process includes Screening for medications that may increase fall risk, Assessing patients to best manage health conditions, Formulating the patient's medication action plan, and Educating patients and caregivers about medication changes and fall prevention strategies.²¹

Measure orthostatic BP

Another common fall risk factor is orthostatic hypotension, which is often the result of an unintended adverse reaction to certain medications or of dehydration. Orthostatic hypotension is defined as a drop in systolic BP of 20 mm Hg or more, a drop of diastolic BP of 10 mm Hg or more, or the sensation of lightheadedness or dizziness during positional changes (supine, sitting, standing).²¹ The STEADI initiative's clinical assessment resource, Measuring Orthostatic Blood Pressure, provides step-by-step guidance on accurate measurement of orthostatic BP. This assessment can be delegated to medical assistants during vital sign evaluations as part of annual primary care wellness visits.

Table 1. Fall risk screening tools²⁴⁻²⁶

Screening tool	Description	URL
Stay Independent	A validated, self-administered 12-item checklist to identify fall risk factors. A score of 4 or more (range 0-14) and/or a reported fall within the past year signifies increased risk of falling and a need for further evaluation of risk factors.	https://www.cdc.gov/stead/pdf/STEADI-Brochure-StayIndependent-508.pdf
Three Key Questions (3KQ)	A shorter screening tool with three questions. A "yes" response to any of the following indicates increased fall risk: <ul style="list-style-type: none"> • Have you fallen in the past year? • Do you worry about falling? • Do you feel unsteady when standing or walking? 	https://www.cdc.gov/stead/pdf/stead-algorithm-508.pdf

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■ Check visual acuity

Alterations in vision are common in older adults and have been found to increase the likelihood of falling.³⁶ Visual changes can affect coordination and postural stability.³⁷ Common conditions affecting older adult vision include presbyopia, cataracts, glaucoma, and age-related macular degeneration; additionally, adverse reactions of various medications can affect vision.³⁷ Fall prevention guidelines recommend regular eye exams assessing visual acuity and appropriateness of corrective lenses.²⁷ The Snellen chart can be used to assess visual acuity; 20/40 vision indicates visual impairment.^{27,38} Inquiring about the use of multifocal lenses, especially when walking outdoors, is also recommended, as this has been linked to an increased risk of falling.^{27,39}

■ Assess foot health and footwear

Foot disorders, which can impair mobility and balance leading to an increased risk of falling, are common in older adults. Common foot problems include foot pain, hallux valgus, lesser toe deformity, and plantar fasciitis, as well as reduced mobility and strength of the ankle or toes.⁴⁰ Unsupportive or ill-fitting shoes can also increase the risk of falling.²⁷ To evaluate foot health, clinicians should examine feet for altered sensation, pain, or deformities affecting gait and balance and identify common diseases potentially affecting feet, including gout, diabetes, neurologic disorders, and arthritis.^{27,41} Assessing for unsafe footwear includes identifying shoes with high or narrow heels; shoes with smooth soles; or loose shoes without laces, straps, or buckles.⁴¹

■ Ask about potential home hazards

Various items in the environment can increase the chances of falling. Common potential hazards include throw rugs, power cords, poor lighting, lack of handrails, clutter, and slippery surfaces.⁴² The CDC's "Check for Safety: A Home Fall Prevention Checklist for Older Adults" brochure can be given to older adults to identify and correct potential home hazards.²¹ The National Institute on Aging's website houses an online resource, Preventing Falls at Home: Room by Room, which also provides guidance on making homes safer.⁴²

■ Assess vitamin D intake

Insufficient vitamin D intake can impair muscle strength and reduce physical performance, leading to an increased risk of falling.^{21,43,44} To determine the adequacy of vitamin D intake, clinicians should inquire about

vitamin D supplementation and review dietary vitamin D intake (for example, fortified foods, fatty fish, liver, and egg yolks). Obtaining vitamin D blood levels is not necessary unless clinically warranted.²⁸

■ Identify comorbidities

The presence of chronic health conditions can increase the risk of falling.⁴² Common conditions linked to falling in older adults include cognitive impairment, stroke, Parkinson disease, cancer, kidney failure, arthritis, depression, diabetes, urinary incontinence, and cardiac issues affecting heart rhythm or rate.^{27,45} A health history and physical exam should be conducted to determine if any of these health issues exist and whether further evaluation is necessary.

■ Intervene in and manage fall risk factors

After fall risk factors have been identified, the next step is to create a tailored fall prevention plan utilizing effective strategies to target each identified modifiable risk factor. To aid in plan adoption, patients and caregivers should be educated on their personal risk factors and included in developing a personalized fall prevention plan that is feasible for them and that includes follow-up.

■ Manage gait, strength, and balance impairments

Patients with mobility impairments should be referred to physical therapy, an evidence-based exercise (for example, tai chi, Stepping On), or an evidence-based community fall prevention class to improve strength and balance.^{21,31} Physical therapy should be utilized to assess and treat mobility impairments and/or to recommend and train patients on the proper use of mobility devices. The National Council on Aging (NCOA) is a good resource for finding evidence-based community fall prevention programs.⁴⁶

■ Manage medication

Medication management should focus on minimizing polypharmacy and stopping, switching, or reducing dosages of drugs that increase fall risk. The indication and necessity of each medication should be considered, and medications should be discontinued or switched to safer alternatives when possible. The AGS provides suggested substitutes for common medication classes listed in the Beers Criteria.⁴⁷ For medications that increase fall risk and that cannot be discontinued or switched to an alternative option, reducing them to their lowest effective dose can be beneficial. Guidelines, tools, and support for

clinicians can be found on <http://deprescribing.org> and in the STEADI resources list; collaboration with a pharmacist can also be helpful. When possible, nonpharmacologic approaches should be utilized to manage symptoms of common conditions.²¹

■ Manage orthostatic hypotension

For patients with orthostatic hypotension, clinicians should discontinue, switch, or decrease the dosage of medications that affect BP whenever possible. Educating patients on the importance of adequate hydration (50 oz daily), unless otherwise contraindicated, and on the importance of exercises (for example, foot pumps 20 times prior to standing) is essential.²¹ Clinicians should consider recommending compression stockings and educating patients on standing slowly and refraining from walking if feeling dizzy. The CDC's patient handout "Postural Hypotension: What it is & How to Manage it" provides effective education.

■ Manage visual impairments

Patients with reduced visual acuity should be referred to an ophthalmologist or optometrist to diagnose and treat visual impairments and to update corrective eyewear. Medications known to affect vision, such as anticholinergics, should be reduced, switched, or discontinued when possible.³⁷ Clinicians should recommend the use of single distance lenses when walking outside the home to decrease fall risk.^{27,39}

■ Manage foot health and footwear concerns

Clinicians should refer patients with foot or footwear issues to podiatry to analyze and treat foot disorders and/or to prescribe safe footwear. Patients should be counseled on the importance of wearing indoor and outdoor shoes that fit well with good heel and arch support and good traction. Safer shoe alternatives have adequate fixation (laces, straps, or buckles), heel heights of less than 4.5 cm (about 1.75 inches), wide heels, and increased contact area of the sole, and they are not heavy.⁴¹

■ Suggest home hazard modifications

Clinicians should review patient responses to the CDC's "Check for Safety" checklist and encourage patients to make suggested home modifications. Clinicians can also make a referral for an occupational therapy (OT) home visit to perform a home safety evaluation and recommend home modifications (for example, installation of grab bars and improvements in lighting). Other resources

include the Home Hazard Removal Program (HARP), an evidence-based program that provides home hazard assessment and interventions by OT for those at high risk of falling, and CAPABLE (Community Aging in Place—Advancing Better Living for Elders), a program developed to improve the safety of older adults at home and that includes visits by a handyworker to provide home repairs and modifications.^{48,49}

■ Recommend vitamin D

Patients with insufficient dietary vitamin D intake should take a daily vitamin D supplement. Recommendations are to take vitamin D3 800 international units per day combined with calcium for fall and fracture prevention.^{44,50}

■ Manage comorbidities

It is important that clinicians manage any identified health conditions associated with falls and collaborate with other healthcare professionals and specialists as needed.

■ Talk about falls

Older adults frequently have misconceptions about falls. Many deny being at risk for falling, believe that falls are an inevitable part of aging, or believe that fall prevention strategies are for other people.⁵¹ Although older adults generally believe falls can be prevented, many are not familiar with evidence-based fall prevention strategies.⁵² Fall prevention strategies often require behavior change on the part of the older adult, which is unlikely if the older adult does not recognize the risks of falling. Clinicians should counsel patients about their risk of falling and encourage them to take action to prevent falls. To assist clinicians with this dialogue, the CDC offers tools with discussion topics and guidance on motivating patients and also provides patient and caregiver educational handouts.²¹


■ Know the challenges of fall prevention

There are many challenges to addressing older adult falls. Because older adults generally have multiple fall risk factors, assessing and managing fall risk can be complex as well as challenging. Common clinician barriers to addressing falls include competing demands for attention, such as other health issues; office visit time constraints; increased time needed to conduct some of the fall risk assessments; and reimbursement concerns.⁵³⁻⁵⁵ Strategies to address these barriers include starting small and focusing on areas identified in the screening tools, in addition to collecting a fall history. Incorporating fall

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prevention into the clinic's workflow, identifying components of the fall risk assessment that can be delegated to office staff, and referring patients to specialists when needed (for example, optometry, podiatry, or pharmacy) can also help. For appropriate reimbursement, fall risk assessment should be conducted as a "review of functional ability and level of safety" during the Welcome to Medicare visit and Medicare Annual Wellness Visit.²⁷

Conclusion

Unintentional falls are a growing health concern affecting older adults, leading to devastating effects. Evidence-based approaches targeting modifiable risk factors can reduce falls and fall-related injuries. With the goal of ensuring patient safety, NPs are primed to play an important role in fall risk factor identification and management as well as fall prevention for older adults. Tools and resources to assist clinicians with their fall prevention efforts can be found on the CDC's STEADI website including an algorithm, clinical resources, clinician training, patient educational materials, case studies, and success stories.²¹ Guidelines on developing a fall prevention program in inpatient and outpatient settings are also available. Other fall prevention resources include the NCOA's National Falls Prevention Resource Center for Professionals and Age Well Planner.^{56,57} 

REFERENCES

1. QSEN Institute. Graduate QSEN competencies. QSEN website. www.qsen.org/competencies-graduate-ksas. Accessed July 3, 2023.
2. American Association of Colleges of Nursing. The essentials: core competencies for professional nursing education. www.aacnursing.org/essentials/tool-kit/domains-concepts/quality-and-safety. Accessed July 3, 2023.
3. Moreland B, Kakara R, Henry A. Trends in nonfatal falls and fall-related injuries among adults aged ≥65 years - United States, 2012-2018. *MMWR Morb Mortal Wkly Rep.* 2020;69(27):875-881. doi:10.15585/mmwr.mm6927a5.
4. Centers for Disease and Control and Prevention. Web-based injury statistics query and reporting System (WISQARS). 2020. https://wisqars.cdc.gov/data/lcd/home. Accessed July 3, 2023.
5. Florence CS, Bergen G, Atherly A, Burns E, Stevens J, Drake C. Medical costs of fatal and nonfatal falls in older adults. *J Am Geriatr Soc.* 2018;66(4):693-698. doi:10.1111/jgs.15304.
6. United States Census Bureau. 2023 National Population Projections Tables: Main Series. www.census.gov/data/tables/2023/demo/popproj/2023-summary-tables.html. Accessed December 1, 2023.
7. Burns E, Kakara R. Deaths from falls among persons aged ≥65 years - United States, 2007-2016. *MMWR Morb Mortal Wkly Rep.* 2018;67(18):509-514. doi:10.15585/mmwr.mm6718a1.
8. Houry D, Florence C, Baldwin G, Stevens J, McClure R. The CDC Injury Center's response to the growing public health problem of falls among older adults. *Am J Lifestyle Med.* 2016;10(1):74-77. doi:10.1177/1559827615600137.
9. Haddad YK, Shakya I, Moreland BL, Kakara R, Bergen G. Injury diagnosis and affected body part for nonfatal fall-related injuries in community-dwelling older adults treated in emergency departments. *J Aging Health.* 2020;32(10):1433-1442. doi:10.1177/0898264320932045.
10. Peterson A, Xu L, Daugherty J, Breiding M. Surveillance report of traumatic brain injury-related emergency department visits, hospitalizations, and deaths—United States, 2014. www.cdc.gov/traumaticbraininjury/pdf/TBI-Surveillance-Report-508.pdf. Accessed July 5, 2023.

11. Parkkari J, Kannus P, Palvanen M, et al. Majority of hip fractures occur as a result of a fall and impact on the greater trochanter of the femur: a prospective controlled hip fracture study with 206 consecutive patients. *Calcif Tissue Int.* 1999;65(3):183-187. doi:10.1007/s002239900679.
12. Lach HW. Incidence and risk factors for developing fear of falling in older adults. *Public Health Nurs.* 2005;22(1):45-52. doi:10.1111/j.0737-1209.2005.22107.x.
13. Centers for Disease Control and Prevention. Facts about falls. www.cdc.gov/falls/facts.html. Accessed July 13, 2023.
14. National Council on Aging. Get the facts on falls prevention. 2023. https://ncoa.org/article/get-the-facts-on-falls-prevention. Accessed July 13, 2023.
15. Vellas BJ, Wayne SJ, Romero LJ, Baumgartner RN, Garry PJ. Fear of falling and restriction of mobility in elderly fallers. *Age Ageing.* 1997;26(3):189-193. doi:10.1093/ageing/26.3.189.
16. Asai T, Oshima K, Fukumoto Y, Yonezawa Y, Matsuo A, Misu S. The association between fear of falling and occurrence of falls: a one-year cohort study. *BMC Geriatr.* 2022;22(1):393. doi:10.1186/s12877-022-03018-2.
17. Bergen G, Stevens MR, Kakara R, Burns ER. Understanding modifiable and unmodifiable older adult fall risk factors to create effective prevention strategies. *Am J Lifestyle Med.* 2021;15(6):580-589. doi:10.1177/1559827619880529.
18. Xue L, Boudreau RM, Donohue JM, et al. Persistent polypharmacy and fall injury risk: The Health, Aging and Body Composition Study. *BMC Geriatr.* 2021;21(1):710. doi:10.1186/s12877-021-02695-9.
19. Zia A, Kamaruzzaman SB, Tan MR. The consumption of two or more fall risk-increasing drugs rather than polypharmacy is associated with falls. *Geriatr Gerontol Int.* 2017;17(3):463-470. doi:10.1111/ggi.12741.
20. Phelan EA, Aerts S, Dowler D, Eckstrom E, Casey CM. Adoption of evidence-based fall prevention practices in primary care for older adults with a history of falls. *Front Public Health.* 2016;4:190. doi:10.3389/fpubh.2016.00190.
21. Centers for Disease Control and Prevention. STEADI-older adult fall prevention. www.cdc.gov/steadi/index.html. Accessed July 5, 2023.
22. Panel on Prevention of Falls in Older Persons, American Geriatrics Society and British Geriatrics Society. Summary of the updated American Geriatrics Society/British Geriatrics Society clinical practice guideline for prevention of falls in older persons. *J Am Geriatr Soc.* 2011;59(1):148-157. doi:10.1111/j.1532-5415.2010.03234.x.
23. American Association of Nurse Practitioners. What's a nurse practitioner (NP)? Discover why Americans make more than 1.06 billion visits to NPs each year. www.aanp.org/about/all-about-nps/whats-a-nurse-practitioner#:~:text=With%20a%20focus%20on%20health,out%20of%20pocket%20costs. Accessed July 17, 2023.
24. Rubenstein LZ, Vivrette R, Harker JO, Stevens JA, Kramer BJ. Validating an evidence-based, self-rated fall risk questionnaire (FRQ) for older adults. *J Safety Res.* 2011;42(6):493-499. doi:10.1016/j.jsr.2011.08.006.
25. Burns ER, Lee R, Hodge SE, Pineau VJ, Welch B, Zhu M. Validation and comparison of fall screening tools for predicting future falls among older adults. *Arch Gerontol Geriatr.* 2022;101:104713. doi:10.1016/j.archger.2022.104713.
26. Stevens JA, Phelan EA. Development of STEADI: a fall prevention resource for health care providers. *Health Promot Pract.* 2013;14(5):706-714. doi:10.1177/1524839912463576.
27. Eckstrom E, Parker EM, Shakya I, Lee R. *Coordinated Care Plan to Prevent Older Adult Falls.* National Center for Injury Prevention and Control, Centers for Disease Control and Prevention; 2019. www.cdc.gov/steadi/pdf/Steadi-Coordinated-Care-Plan.pdf. Accessed July 5, 2023.
28. Ambrose AF, Paul G, Hausdorff JM. Risk factors for falls among older adults: a review of the literature. *Maturitas.* 2013;75(1):51-61. doi:10.1016/j.maturitas.2013.02.009.
29. Rubenstein LZ, Josephson KR. Falls and their prevention in elderly people: what does the evidence show? *Med Clin North Am.* 2006;90(5):807-824. doi:10.1016/j.mcna.2006.05.013.
30. Ang GC, Low SL, How CH. Approach to falls among the elderly in the community. *Singapore Med J.* 2020;61(3):116-121. doi:10.11622/smedj.2020029.
31. Phelan EA, Mahoney JE, Voit JC, Stevens JA. Assessment and management of fall risk in primary care settings. *Med Clin North Am.* 2015;99(2):281-293. doi:10.1016/j.mcna.2014.11.004.
32. Berry SD, Lee DS. Gait, balance, and falls. In: Sinclair AJ, Morley JE, Vellas B, Cesari M, Munshi M, eds. *Pathy's Principles and Practice of Geriatric Medicine.* 6th ed. John Wiley & Sons Ltd.; 2022. doi:10.1002/9781119484288.
33. Bhasin S, Gill TM, Reuben DB, et al. A randomized trial of a multifactorial strategy to prevent serious fall injuries. *N Engl J Med.* 2020;383(2):129-140. doi:10.1056/NEJMoa2002183.
34. Ming Y, Zecevic A. Medications & polypharmacy influence on recurrent fallers in community: a systematic review. *Can Geriatr J.* 2018;21(1):14-25. doi:10.5770/cgj.21.268.

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35. By the 2023 American Geriatrics Society Beers Criteria® Update Expert Panel. American Geriatrics Society 2023 updated AGS Beers Criteria® for potentially inappropriate medication use in older adults. *J Am Geriatr Soc*. 2023;71(7):2052-2081. doi:10.1111/jgs.18372.

36. Gupta P, Man REK, Fenwick EK, et al. Associations between visual impairment, incident falls and fall frequency among older Asians: longitudinal findings from the Singapore Epidemiology of Eye Diseases Study. *Br J Ophthalmol*. 2022;107(11):1590-1596. doi:10.1136/bjoo-2021-320873.

37. Reed-Jones RJ, Solis GR, Lawson KA, Loya AM, Cude-Islas D, Berger CS. Vision and falls: a multidisciplinary review of the contributions of visual impairment to falls among older adults. *Maturitas*. 2013;75(1):22-28. doi:10.1016/j.maturitas.2013.01.019.

38. Viment C. All about the eye chart. American Academy of Ophthalmology. 2022. www.aao.org/eye-health/tips-prevention/eye-chart-facts-history. Accessed July 17, 2023.

39. Chang DH. Multifocal spectacle and monovision treatment of presbyopia and falls in the elderly. *J Refract Surg*. 2021;37(S1):S12-S16. doi:10.3928/1081597X-20210408-02.

40. Menz HB, Auhl M, Spink MJ. Foot problems as a risk factor for falls in community-dwelling older people: a systematic review and meta-analysis. *Maturitas*. 2018;118:7-14. doi:10.1016/j.maturitas.2018.10.001.

41. Cox-Roush D. Fall prevention for older adults: how the right shoes can protect you from falling. National Council on Aging. 2022. https://ncoa.org/article/how-the-right-shoes-can-protect-you-from-falling. Accessed July 17, 2023.

42. National Institute on Aging. Preventing falls at home: room by room. www.nia.nih.gov/health/preventing-falls-home-room-room.

43. Aspell N, Laird E, Healy M, Lawlor B, O'Sullivan M. Vitamin D deficiency is associated with impaired muscle strength and physical performance in community-dwelling older adults: findings from the English Longitudinal Study of Ageing. *Clin Interv Aging*. 2019;14:1751-1761. doi:10.2147/CIA.S222143.

44. National Institutes of Health. Vitamin D: fact sheet for health professionals. https://ods.od.nih.gov/factsheets/VitaminD-HealthProfessional/. Accessed July 25, 2023.

45. Paliwal Y, Slattum PW, Ratliff SM. Chronic health conditions as a risk factor for falls among the community-dwelling US older adults: a zero-inflated regression modeling approach. *Biomed Res Int*. 2017;2017:5146378. doi:10.1155/2017/5146378.

46. National Council on Aging. Evidence-based programs for professionals: evidence-based falls prevention programs. 2023. www.ncoa.org/article/evidence-based-falls-prevention-programs. Accessed December 6, 2023.

47. HealthinAging.org. Alternatives for medications listed in the AGS Beers Criteria® for potentially inappropriate medication use in older adults. 2023. www.healthinaging.org/sites/default/files/media/pdf/HIA-LearnMore-BEERS-alternatives23.pdf. Accessed December 6, 2023.

48. National Council on Aging. Evidence-based programs for professionals: Home Hazard Removal Program (HARP). 2023. www.ncoa.org/article/evidence-based-program-home-hazard-removal-program-harp. Accessed December 6, 2023.

49. National Council on Aging. Evidence-based programs for professionals: CAPABLE. 2023. www.ncoa.org/article/evidence-based-program-capable. Accessed December 6, 2023.

50. Thanapluetiwong S, Chewcharat A, Takkavatakarn K, Praditpornsilpa K, Eiam-Ong S, Susantitaphong P. Vitamin D supplement on prevention of fall and fracture: a meta-analysis of randomized controlled trials. *Medicine (Baltimore)*. 2020;99(34):e21506. doi:10.1097/MD.00000000000021506.

51. Stevens JA, Sleet DA, Rubenstein LZ. The influence of older adults' beliefs and attitudes on adopting fall prevention behaviors. *Am J Lifestyle Med*. 2017;12(4):324-330. doi:10.1177/1559827616687263.

52. Henry A, Haddad Y, Bergen G. Older adult and healthcare provider beliefs about fall prevention strategies. *Am J Lifestyle Med*. 2022. doi:10.1177/15598276221100431.

53. Jones TS, Ghosh TS, Horn K, Smith J, Vogt RL. Primary care physicians perceptions and practices regarding fall prevention in adult's 65 years and over. *Accid Anal Prev*. 2011;43(5):1605-1609. doi:10.1016/j.aap.2011.03.013.

54. Smith ML, Stevens JA, Ehrenreich H, et al. Healthcare providers' perceptions and self-reported fall prevention practices: findings from a large New York health system. *Front Public Health*. 2015;3:17. doi:10.3389/fpubh.2015.00017.

55. Tinetti ME, Gordon C, Sogolow E, Lapin P, Bradley EH. Fall-risk evaluation and management: challenges in adopting geriatric care practices. *Gerontologist*. 2006;46(6):717-725. doi:10.1093/geront/46.6.717.

56. National Council on Aging. Center for Healthy Aging: National Falls Prevention Resource Center for Professionals. 2023. www.ncoa.org/professionals/health/center-for-healthy-aging/national-falls-prevention-resource-center. Accessed December 6, 2023.

57. National Council on Aging: Age Well Planner. www.ncoa.org/age-well-planner/assessment/general-assessment.

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