

# Reducing the Risk of Falling and Injuries From Falls: Research on the Value of Physical Therapy



Falls are the second leading cause of accidental or unintentional injury deaths worldwide. Each year, an estimated 646,000 individuals die from falls globally. Research demonstrates that access to exercise and balance training programs reduces the risk of falling and injuries from falls.

## Research on The Value of Physical Therapy and Physical Activity in Reducing the Risk of Falling

**Gulka HJ, Patel V, Arora T, McArthur C, Iaboni A. Efficacy and Generalizability of Falls Prevention Interventions in Nursing Homes: A Systematic Review and Meta-analysis. *J Am Med Dir Assoc.* 2020;21(8):1024-1035.e4. doi:10.1016/j.jamda.2019.11.012**

Conclusion: Exercise as a single intervention reduced the number of fallers and recurrent fallers by 36% and 41%, respectively, in people living in nursing homes (NHs). Other effective interventions included staff education and multiple and multifactorial interventions. However, more research on exercise including people with cognitive impairment and dementia is needed to improve the generalizability of these interventions to the typical NH resident.

**Goldberg EM, Marks SJ, Resnik LJ, Long S, Mellott H, Merchant RC. Can an Emergency Department-Initiated Intervention Prevent Subsequent Falls and Health Care Use in Older Adults? A Randomized Controlled Trial [published online ahead of print, 2020 Aug 24]. *Ann Emerg Med.* 2020;S0196-0644(20)30591-6. doi:10.1016/j.annemergmed.2020.07.025**

Conclusion: Geriatric Acute and Post-acute Fall Prevention, a post-fall, in-emergency department (ED), multidisciplinary intervention with pharmacists and physical therapists, reduced 6-month ED encounters in 2 urban EDs. The intervention could provide a model of care to other health care systems aiming to reduce costly and burdensome fall-related events in older adults.

**Senderovich H, Tsai PM. Do Exercises Prevent Falls Among Older Adults: Where Are We Now? A Systematic Review. *J Am Med Dir Assoc.* 2020;21(9):1197-1206.e2. doi:10.1016/j.jamda.2020.05.010**

Conclusion: Although results are inconclusive, single interventions, multifactorial interventions, and multiple component interventions involving exercises may prevent falls. Exercises that are individually tailored to participants' capabilities and risks may be the most effective falls prevention interventions. Implementation may reduce medical costs and improve quality of life for older adults who are community-dwelling or are living in long-term care facilities.

**Effect of a Home-Based Exercise Program on Subsequent Falls Among Community-Dwelling High-Risk Older Adults After a Fall: A Randomized Clinical Trial [JAMA. 2019;321(21):2092-2100]**

Conclusion: Older adults who received a home-based strength and balance retraining exercise program as part of care within a falls-prevention clinic after a fall had a significantly reduced rate of subsequent falls compared with usual care provided by a geriatrician.

**Physical Activity Guidelines for Americans Second Edition [US Department of Health and Human Services. 2018. [health.gov/paguidelines/](https://www.health.gov/paguidelines/)]**

Conclusion: Among older adults, physical activity reduces the risk of falling and injuries from falls. Multicomponent physical activity programs—those that include more than one type of physical activity, such as aerobic, strengthening, and balance—are most successful at reducing falls and injuries.

### **Examining the Effects of an Otago-Based Home Exercise Program on Falls and Fall Risks in an Assisted Living Facility [J Geriatr Phys Ther. Apr 2018.]**

Conclusion: An Otago-based strengthening, balance, and walking home exercise program can potentially be used to decrease the number of falls and the risk of falling among older adults residing in an assisted-living facility.

### **The Impact of Implementing a Fall-Prevention Educational Session for Community-Dwelling Physical Therapy Patients [Nurs Open. 2018;5(4):567-574]**

Conclusion: When older adults receive patient education about the risk of falling as part of physical therapist services, a greater number of them use fall-prevention interventions at home, leading to a reduction the number of falls.

### **Comparisons of Interventions for Preventing Falls in Older Adults: A Systematic Review and Meta-Analysis. [JAMA. 2017;318(17):1687-1699]**

Conclusion: Exercise alone and various combinations of interventions were associated with lower risk of injurious falls compared with usual care.

### **A Prospective Cohort Study on the Effect of a Balance Training Program, Including Calf Muscle Strengthening, in Community-Dwelling Older Adults [J Geriatr Phys Ther. 2016;39(3):125-131]**

Conclusion: A balance training program that includes calf muscle strengthening performed twice a week for 5 weeks resulted in significant improvements in calf muscle strength, functional performance, and balance, as well as a significant improvement in balance confidence. The results from this study identify the impact of unilateral calf muscle strength on falls risk among older adults.

### **Understanding the Relationship Between Walking Aids and Falls in Older Adults: A Prospective Cohort Study [J Geriatr Phys Ther. 2015;38(3):127-132]**

Conclusions: Using walking aids is a risk factor for future falls among the older population living in residential settings, much of which could be explained by an altered spatiotemporal gait pattern, increased age, and psychotropic drug intake. This finding supports the aim of extensive training periods and appropriate instructions on the proper use of walking aids in terms of adequate and safe gait patterns.

### **Fall Prevention Among Older Adults; Case Reports Exemplifying the Value of Incorporating Lumbar Stabilization Training During Balance Exercises [South African J Physio. 2013;69(3):25-32]**

Conclusion: The addition of lumbar stabilization exercises during balance training is of value to improve gait speed, balance testing scores in stability in gait, and vertical stability limits.

### **Non-Pharmacological Management of Osteoporosis: a Consensus of the Belgian Bone Club [Osteoporosis Intl. 2011;22(11):2679-88]**

Conclusion: Individually prescribed muscle strengthening and balance retraining exercises can reduce the number of falls and fall-related injuries by 35%. Multifactorial fall-prevention programs are effective on both risk of falling and monthly rate of falling.

### **Physical Therapy Approaches to Reduce Fall and Fracture Risk Among Older Adults. [Nat Rev Endocrinol. 2010;(6)7:396-407]**

Conclusion: The most effective physical therapy approach for the prevention of falls and fractures in community-dwelling older adults is regular multicomponent exercise; in particular a combination of balance and strength training. To be effective, multifactorial preventive programs should include an exercise component accompanied by individually tailored measures focused on high-risk populations.

**Last Updated:** 09/21/2020

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