

# The Effects of a Short-term, Community-based Slow-stream Rehabilitation Program on Falls Rates in Older Adults Transitioning from Hospital-to-Home

Page A, PT, MSc PT, Maximos M, BSc, Virag O, Hon BA, Dal Bello Haas V, PT, PhD  
School of Rehabilitation Science, McMaster University

---

## Contact Information:

Alicia Page  
aliciapage27@gmail.com



Quality Optimal Living and Aging through Rehabilitation



School of  
**Rehabilitation**  
Science  
REACHING FURTHER

## Background

- Falls are leading cause of hospitalization in older adults<sup>1-3</sup>
- Falls place a large financial burden on the healthcare system.<sup>1-3</sup>
- Older adults are at an increased risk of falling due to various changes that occur with aging.<sup>4-6</sup>
- Risk increases after a period of hospitalization due to the negative effects (i.e. immobility, loss of strength) that occur.<sup>4-6</sup>
- Multicomponent exercise (i.e. strength and balance training combined) has been found to decrease the risk of falling, fear of falling and rate of falling in older adults.<sup>7</sup>

## Purpose

To determine if a short-term, community-based, slow stream rehabilitation program decreases the number of falls in older adults transitioning from hospital to home.

## Methods and Analysis

- Older adults, 60 years of age or older taking part in Goldies2Home (G2H) program in Hamilton, ON.
- Completed questionnaire about falls history at 4 time points: entry into program (T0), discharge from program (T1), three-months post-discharge (T2), six-months post-discharge (T3).
- Repeated measures ANOVA used to compare falls rate over time points.
- Independent sample t-tests and correlation analysis used to understand who fell.

## Results

- 64 participants, mean age of 78.5 years (SD=9.7 years) and 62.4% (n=40) female.
- Falls at each time point: 51.6% at T0, 18.8% at T1, 43.7% at T2 and 56.0% at T3.
- Top three reasons for falling at baseline: legs giving out/weakness (n=16), slipped/tripped (n=12) and loss of balance (n=10).
- Fall rate significantly decreased while in G2H program (p=0.02).
- Fall rate significantly increased from discharge from G2H to T3 (p=0.04).
- Lower Short Physical Performance Battery score indicated participants who fell at all time points.
- Younger age indicated participants who fell at T0 and T1.

## Implications/Discussion

- Common causes of falls demonstrate need for multicomponent exercise training.
- Exercise training should be continued after program completion for effects to last in the long-term.
- Potential for self-management techniques to be incorporated in these programs to improve long-term exercise adherence.
- Falls occur in younger older adults who have low physical functioning, therefore need to target this group during rehabilitation for effective falls prevention after discharge from hospital.

## Conclusion

Participation in a short-term, community-based slow-stream rehabilitation program decreased the number of falls in older adults who are transitioning from hospital to home, but this outcome was not sustained over time.

## Acknowledgements

**Partners:** Thank you to our participants for partaking in the study and Shalom Village for their support.

**Ethics:** HiREB #15-089, McMaster University

**Funding:** Labarge Optimal Aging Initiative

## References

1. Buczak-Stec E, Gorynski P. Fall Related Hospital Admissions Among Seniors in Poland in 2010. *Przeg/ Epidemiol.* 2013; 67: 57-62.  
<https://www.ncbi.nlm.nih.gov/pubmed/?term=FALL+RELATED+HOSPITAL+ADMISSIONS+AMONG+SENIORS+IN+POLAND+IN+2010>. Published 2013. Accessed July 23 2018.
2. Billette J-M, Janz T. Injuries in Canada: insights from the Canadian Community Health Survey. Statistics Canada. <http://www.statcan.gc.ca/pub/82-624-x/2011001/article/11506-eng.htm>. Updated November 27, 2015. Accessed July 23, 2018.
3. Zecevic AA, Chesworth BM, Zaric GS, Huang Q, Salmon A, McAuslan D, Welch R, Brunton D. Estimating the cost of serious injurious falls in a Canadian acute care hospital. *Can J Aging.* 2012; 31(2): 139-47. doi: 10.1017/S0714980812000037
4. Hill AM, Hoffmann T, Haines TP. Circumstances of falls and fall-related injuries in a cohort of older patients following hospital discharge. *Clinical Interventions in Aging.* 2013; 8: 765-74. doi: 10.2147/CIA.S45891
5. Sturnieks DL, St George R, Lord SR. Balance disorders in the elderly. *Clinical Neurophysiology.* 2008; 38: 467-78. doi:10.1016/j.neucli.2008.09.001
6. Coker RH, Hays NP, Williams RH, Wolfe RR, Evans WJ. Bed Rest Promotes Reductions in Walking Speed, Functional Parameters, and Aerobic Fitness in Older Healthy Adults. *J Gerontol A Biol Sci Med Sci.* 2015; 70(1): 91-6. doi:10.1093/gerona/glu123
7. Gillespie LD, Robertson MC, Gillespie WJ, Sherrington C, Gates S, Clemson LM, Lamb SE. Interventions for preventing falls in older people living in the community (Review). *Cochrane Database of Systematic Reviews.* 2012; 9: 1-297. doi: 10.1002/14651858.CD007146.pub3.