

Canadian Task Force on Preventive Health Care

RECOMMENDATION STATEMENT: Prevention of Falls in Long-Term Care Facilities

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RECOMMENDATIONS

- The CTFPHC concludes that there is fair evidence to recommend programs that target the broad range of both environmental and resident-specific risk factors to prevent falls and hip fractures for **all** persons admitted to long-term care (LTC) facilities. (**B Recommendation**). While there is no research to date investigating the optimal schedule for ongoing monitoring of fall risk, post-fall assessments, as a component of a comprehensive program, may detect previously unrecognized health concerns. Adequate staff support and safety measures should be incorporated when increased activity and exercise are encouraged.
- The CTFPHC concludes that there is insufficient evidence to recommend for or against prevention programs targeted exclusively to high-risk LTC residents, e.g., those who already have a history of falling (**I Recommendation**).
- The CTFPHC concludes that there is insufficient evidence to recommend selective interventions that address one domain of risk, e.g., exercise or physiotherapy alone to improve muscle weakness. (**I Recommendation**)

BACKGROUND

Residents in long-term care facilities (LTC), i.e., facilities that provide communal dwelling, 24 hour supervision, health care and have a minimum of 4 beds, are predisposed to falls and fractures by factors directly attributable to their age, progressive disabilities and frailty. One estimate suggests that approximately half of nursing home residents fall in any one-year period.¹ Ninety percent of hip fractures are caused by falls² and even non-injurious falls can result in post-fall anxieties that inhibit day-to-day activities.³⁻⁴

LTC residents' risk profiles can be a complicated array of intrinsic patient-related factors such as chronic or acute illnesses, muscle weakness, medication effects and cognitive decline, and extrinsic environmental hazards created by unexpected obstacles, slippery floors, and ill-fitting footwear. It is the accumulation of these various factors that determines the risk at any one time. The predicted 1-year risk of falling ranges from 12% in LTC residents having none of the three strongly associated risk factors (hip weakness, poor balance, and number of prescribed medications) to 100% for those having all three.⁵

This review examined the effectiveness of fall prevention programs for LTC facilities; it did not evaluate the financial costs of implementing prevention programs or trials that addressed very limited interventions, e.g. as vitamin or dietary supplementation alone.

MANEUVERS

- Comprehensive and individualized assessment of the broad range of extrinsic and intrinsic risk factors for all persons admitted to LTC
- Multi-factorial intervention program, tailored to reduce extrinsic and intrinsic risk factors optimally for each resident.

POTENTIAL BENEFITS & HARMS

Benefits

- Reduce falls, injuries, fear of falling, and maintain physical and social function.

Potential Harms

- Labelling and restrictions of an individual's activities and autonomy
- Increased activity, physiotherapy or exercise may increase physical discomfort, risk-taking behaviour and falls

EVIDENCE & CLINICAL SUMMARY

- All residents of LTC are at risk for falls; the factors that lead to admission to LTC parallel those that predispose older adults to falls.⁶ It is the accumulation of risks across a broad range of intrinsic and extrinsic factors that determines an individual's risk at any one time.⁵
- In-depth assessment of medical history, cognition, strength and balance, nutrition, medications, and environmental hazards requires a multi-disciplinary approach. Quick screening procedures or risk scales are not sufficient for LTC settings.⁷
- Unless adequate staffing and resources are provided, the implementation of programs to encourage mobility and activity may actually increase the risk of falls.⁸
- Wearing hip protectors, a form of harm reduction designed to protect those at highest risk for hip fractures, was a component of the most comprehensive programs.^{6,9} However, the absolute reduction in fracture risk due to their use could not be determined from these multi-component trials. A Cochrane systematic review concluded that hip protectors can be effective in selected populations but that usability and compliance are problematic and adequate staff support is needed for their use in LTC.^{9,10} The Canadian Task Force is conducting a separate systematic review of the effectiveness of hip protectors in both community and institutional settings.
- A post-fall consultation service failed to reduce the incidence of falls but did lead to subsequent detection of acute and chronic health conditions and reduced hospitalization rate.¹¹
- Prevention programs, directed to LTC residents considered to be at highest risk for falling showed only modest or inconclusive effectiveness in reducing injuries or the number of patients suffering more falls. In one such study there was a reduction in recurrent falls, i.e., >2 falls / year, but no reduction in injuries.^{8,1,11} A comprehensive, multi-factorial intervention for cognitively impaired elderly who came to the emergency room because of a fall failed to reduce subsequent falls and injuries.¹²
- Combinations of physiotherapy and/or exercise alone have not proven effective in reducing falls although improvement in physical functions may occur.¹³⁻¹⁶

CONCLUSIONS

The body of RCT evidence portrays some consistent messages. All residents of LTC are at risk for falls and injuries. To be effective, prevention programs must assess the wide array of environmental and individual-specific risk factors and tailor interventions plans for each resident. There must be adequate staff and resources to implement a program safely and effectively. Trials that targeted preventive manoeuvres to selected high-risk groups only were less successful in reducing fall and injuries. Further research to investigate optimal strategies for frail elderly most at risk for hip fractures, e.g., hip protectors, is required. Similarly, more research is needed to develop and evaluate strategies for those with specific conditions such as cognitive impairment. Few adverse effects of intervention were reported in the literature, however, the potential for labelling and unnecessary restrictions or restraint must be acknowledged; autonomy and personal choice must be preserved.

RECOMMENDATIONS OF OTHERS

Prior to the newer paradigm studies of 2002-3 that investigated comprehensive facility-wide programs to prevent falls, research evidence was limited to the effectiveness of actions directed to the highest risk elderly in institutions, or to attempted remediation of muscle weakness or balance problems. This guideline therefore represents the most current and comprehensive synthesis of the research literature on fall prevention in LTC. Recommendations from other groups, made prior to 2003, can be viewed on the National Guidelines Clearinghouse website at <http://www.guideline.gov/index.asp>.¹⁷

Authorship Contributions:

Mireille Norris initiated the original systematic review and developed the analytic framework. She and Ruth Walton, conducted the literature searches, reviewed and evaluated the quality of included studies and co-authored the technical report and this statement. Christopher Patterson and John Feightner evaluated the quality of included studies, reviewed, revised and edited draft manuscripts of both documents.

The Canadian Task Force on Preventive Health Care critically reviewed the evidence and developed the recommendations according to its methodology and consensus development process.

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