

Preventing Falls in Adults with Mild to Moderate Cognitive Impairment

A systematic review and meta-analysis



DID YOU KNOW?

- Older adults with cognitive impairment **fall 2-3 times more** than cognitively healthy adults.
- Falls cost our public health system as they are the leading cause of injury-related admissions to acute care hospitals and in-hospital deaths.
- With an aging population the cost of fall injuries to seniors in Canada is estimated to rise from \$2.4 billion a year in 2021 in direct healthcare costs to \$240 billion by 2040.



Practitioners and clinicians asked, What evidence is available to guide decision-making about how to prevent falls in cognitively impaired adults?



AIM

To identify the effectiveness of primary and secondary fall prevention interventions in community-dwelling adults with mild to moderate cognitive impairment.

METHODS

1. Define **search** strategy and PICO criteria

P: 50+ years old w/ mild or moderate CI
I: primary or secondary fall prevention
C: treatment as usual
O: See step #2



2. Rank **outcomes** selected by interdisciplinary research team based on anonymized voting process



Falls
Fear of Falls
Balance
Gait speed & control
Functional Mobility
Mortality



3. Searched 7 databases in April 2020 and **screened 42,147** articles based on eligibility criteria



4. **Data extraction**, risk of bias, certainty of evidence (GRADE), and statistical analysis of **12** included studies



RESULTS

- 8** exercise interventions
- 3** multifactorial interventions
- 1** medication intervention
- >50%** unclear risk of bias
- 509** adults aged 67.5 to 84 yrs

Fall prevention interventions had **significant** effects on...

Outcome	# studies N	SMD (95% Confidence interval)	GRADE rating
<input checked="" type="checkbox"/> Falls (# events)	4 224	RR 0.99 (0.60, 1.65)	LOW
<input checked="" type="checkbox"/> Falls (incidence)	4 209	IR 0.90 (0.47, 1.71)	LOW
<input checked="" type="checkbox"/> Fear of Falls	8 263	Medium; -0.73 (-1.10, -0.36)	MODERATE
<input checked="" type="checkbox"/> Balance	9 318	Medium; 0.66 (0.19, 1.12)	MODERATE
<input checked="" type="checkbox"/> Gait speed and control	6 194	Small; 0.26 (0.08, 0.43)	MODERATE
<input checked="" type="checkbox"/> Timed up and go test	5 151	Medium; -0.56 (-0.94, -0.17)	MODERATE
<input checked="" type="checkbox"/> Chair sit stand test	2 70	No effect; 0.34 (-1.73, 1.06)	VERY LOW

Sub-analysis: **Exercise** and **LOW Risk of Bias** remained significant for **fear of falls** and **balance**

KEY MESSAGES

- There **remains a gap** in terms of effective fall prevention interventions for older adults with cognitive impairment; **High quality studies** with **longer** follow-up and adequate **sample sizes** are needed to determine their effectiveness on falls directly.

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