

Comparisons of Interventions for Preventing Falls in Older Adults: A Systematic Review and Meta-analysis

Summary

Falls and fall-related injuries are a substantial burden to patients and health care systems. The incidence of falls is expected to rise as the population ages, making falls prevention among older persons an increasingly important issue. Previous randomized controlled trials (RCTs) and systematic reviews have only selectively examined fall-prevention interventions. Comparing more than two interventions in conventional meta-analysis has major limitations, and as such, the effective components of fall-prevention programs remain unclear. This review aimed to conduct a network meta-analysis ranking all available fall-prevention interventions.

Implications

Exercise alone and various combinations of interventions were associated with lower risk of injurious falls compared with usual care. However, the results indicate the need for a tailored approach. Choice of intervention may depend on patient and caregiver values and preferences.

Reference: Tricco AC, Thomas SM, Veroniki AA, et al. Comparisons of Interventions for Preventing Falls in Older Adults: A Systematic Review and Meta-analysis. *JAMA*. 2017 Nov 7;318(17):1687-1699.

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What is the current situation?

- Falls are a substantial burden to patients (causing injury, depression, reduced quality of life) and health care systems (increasing costs).
- Although previous RCTs and systematic reviews have selectively examined fall-prevention interventions, the effective components of fall-prevention interventions is unclear, hampering implementation of effective falls prevention programs

What is the objective?

- To assess the potential effectiveness of interventions for preventing falls in older adults.

How was the review conducted?

- MEDLINE, Embase, Cochrane Central Register of Controlled Trials, and Ageline databases were searched from inception until December 1, 2015. Reference lists of included studies were scanned. An updated search was conducted on April 19, 2017.
- All types of RCTs examining fall-prevention interventions (whether single or multifactorial) for adults aged 65 years or older in all settings (eg, community, acute care) were included.
- Independent pairs of reviewers performed study selection, data abstraction, and risk-of-bias appraisal, while a third reviewer resolved discrepancies. Interventions were coded independently by a clinician and a methodologist, using a pre-established coding guide.
- Random-effects network meta-analysis was conducted for connected networks including 10 or more RCTs. Pairwise random-effects meta-analysis was conducted across all outcomes.

What did the review find?

- Combinations of interventions, including exercise, vision assessment and treatment, environmental assessment and modification, multifactorial assessment and treatment, and vitamin supplementation were associated with preventing injurious falls compared with usual care.
- The combination of exercise and vision assessment and treatment was probably the intervention most strongly associated with reduction in injurious falls.
- However, exercise may increase fall risk in some individuals because these people become more mobile as their strength increases. This also raises the issue of the type of exercise to recommend and indicates the need for a tailored approach.
- As well, the results suggest focussing on patient-level and clinician-level QI strategies to increase evidence uptake.