

A Scoping Review of Strategies for the Prevention of Hip Fracture in Nursing Home Residents

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Background

- Frail older adults in LTC homes are at increased risk of hip fracture.
- However the efficacy of fracture prevention strategies in this population is unclear.

What was the objective?

To perform a scoping review of randomized controlled trials (RCTs) of interventions tested in the long-term care (LTC) setting, examining hip fracture outcomes.

A scoping review is a series of systematic reviews.

What methods were used?

Searched for citations in 6 electronic searches, supplemented by hand searches.

Review categories were:

- Vitamin D or calcium
- Pharmacologic therapies
- Hormonal therapies
- Alternative medicines
- Exercise, behavioral or multimodal interventions
- Hip protectors

Two reviewers independently reviewed all citations and full-text papers.

Consensus was achieved on final inclusion.

What were the studies' characteristics?

Reviewed 22,349 abstracts or citations and 949 full-text papers.

Data from 20 trials were included:

- 7 - vitamin D (n = 12,875 participants)
- 2 - sunlight exposure (n = 522)
- 1 - alendronate (n = 327)
- 1 - fluoride (n = 460)
- 4 - exercise or multimodal interventions (n = 8,165)
- 5 - hip protectors (n = 2,594).

What were the findings?

- Vitamin D, particularly vitamin D3 ≥ 800 IU orally daily, reduced hip fracture risk.
- Hip protectors reduced hip fractures in included studies, although a recent large study not meeting inclusion criteria was negative.
- Fluoride and sunlight exposure did not significantly reduce hip fractures.

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What were the findings? cont'd

- Falls were reduced in three studies of exercise or multimodal interventions, with one study suggesting reduced hip fractures in a secondary analysis.
- A staff education and risk assessment strategy did not significantly reduce falls or hip fractures.
- In a study underpowered for fracture outcomes, alendronate did not significantly reduce hip fractures in LTC.

What did we conclude?

The intervention with the strongest evidence for reduction of hip fractures in LTC is Vitamin D supplementation.

More research on other interventions is needed.

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