

# Interventions for preventing falls in older people in nursing care facilities and hospitals (Review)

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[Intervention Review]

# Interventions for preventing falls in older people in nursing care facilities and hospitals

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## ABSTRACT

### Background

Falls in nursing care facilities and hospitals are common events that cause considerable morbidity and mortality for older people.

### Objectives

To assess the effectiveness of interventions designed to reduce falls by older people in nursing care facilities and hospitals.

### Search strategy

We searched the Cochrane Bone, Joint and Muscle Trauma Group Specialised Register (January 2009); the Cochrane Central Register of Controlled Trials (*The Cochrane Library* 2008, Issue 2); MEDLINE, EMBASE, and CINAHL (all to November 2008); trial registers and reference lists of articles.

### Selection criteria

Randomised controlled trials of interventions to reduce falls in older people in nursing care facilities or hospitals. Primary outcomes were rate of falls and risk of falling.

### Data collection and analysis

Two review authors independently assessed trial quality and extracted data. Data were pooled where appropriate.

### Main results

We included 41 trials (25,422 participants).

In nursing care facilities, the results from seven trials testing supervised exercise interventions were inconsistent. This was the case too for multifactorial interventions, which overall did not significantly reduce the rate of falls (rate ratio (RaR) 0.82, 95% CI 0.62 to

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1.08; 7 trials, 2997 participants) or risk of falling (risk ratio (RR) 0.93, 95% CI 0.86 to 1.01; 8 trials, 3271 participants). A post hoc subgroup analysis, however, indicated that where provided by a multidisciplinary team, multifactorial interventions reduced the rate of falls (RaR 0.60, 95% CI 0.51 to 0.72; 4 trials, 1651 participants) and risk of falling (RR 0.85, 95% CI 0.77 to 0.95; 5 trials, 1925 participants). Vitamin D supplementation reduced the rate of falls (RaR 0.72, 95% CI 0.55 to 0.95; 4 trials, 4512 participants), but not risk of falling (RR 0.98, 95% CI 0.89 to 1.09; 5 trials, 5095 participants).

In hospitals, multifactorial interventions reduced the rate of falls (RaR 0.69, 95% CI 0.49 to 0.96; 4 trials, 6478 participants) and risk of falling (RR 0.73, 95% CI 0.56 to 0.96; 3 trials, 4824 participants). Supervised exercise interventions showed a significant reduction in risk of falling (RR 0.44, 95% CI 0.20 to 0.97; 3 trials, 131 participants).

### **Authors' conclusions**

There is evidence that multifactorial interventions reduce falls and risk of falling in hospitals and may do so in nursing care facilities. Vitamin D supplementation is effective in reducing the rate of falls in nursing care facilities. Exercise in subacute hospital settings appears effective but its effectiveness in nursing care facilities remains uncertain.

## **PLAIN LANGUAGE SUMMARY**

### **Interventions for preventing falls in older people in nursing care facilities and hospitals**

Falls by older people in nursing care facilities and hospitals are common events that may cause loss of independence, injuries, and sometimes death as a result of injury. Effective interventions are important as they will have significant health benefits.

This review includes 41 trials involving 25,422 participants, with about three quarters being women and having an average age of 83 years. Many of the participants had cognitive problems.

In nursing care facilities, interventions targeting multiple risk factors were not clearly effective in preventing falls but may be so when these interventions are provided by a co-ordinated team of health workers. The prescription of vitamin D reduces falls, as may a review of medication by a pharmacist. There is no evidence that other interventions targeting single risk factors reduce falls and this includes exercise interventions.

For patients who are in hospital for more than a few weeks, interventions targeting multiple risk factors, and supervised exercise, are effective.

Limitations of the review included the small number of hospital studies, difficulty isolating effects of individual components of treatments that involved multiple components, and the variability of interventions.