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[Intervention Review]

Interventions for preventing falls in older people living in the community

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ABSTRACT

Background

Approximately 30% of people over 65 years of age living in the community fall each year.

Objectives

To assess the effects of interventions to reduce the incidence of falls in older people living in the community.

Search methods

We searched the Cochrane Bone, Joint and Muscle Trauma Group Specialised Register, CENTRAL (*The Cochrane Library* 2008, Issue 2), MEDLINE, EMBASE, CINAHL, and Current Controlled Trials (all to May 2008).

Selection criteria

Randomised trials of interventions to reduce falls in community-dwelling older people. 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 111 trials (55,303 participants).

Multiple-component group exercise reduced rate of falls and risk of falling (rate ratio (RaR) 0.78, 95%CI 0.71 to 0.86; risk ratio (RR) 0.83, 95%CI 0.72 to 0.97), as did Tai Chi (RaR 0.63, 95%CI 0.52 to 0.78; RR 0.65, 95%CI 0.51 to 0.82), and individually prescribed multiple-component home-based exercise (RaR 0.66, 95%CI 0.53 to 0.82; RR 0.77, 95%CI 0.61 to 0.97).

Assessment and multifactorial intervention reduced rate of falls (RaR 0.75, 95%CI 0.65 to 0.86), but not risk of falling.

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Overall, vitamin D did not reduce falls (RaR 0.95, 95%CI 0.80 to 1.14; RR 0.96, 95%CI 0.92 to 1.01), but may do so in people with lower vitamin D levels.

Overall, home safety interventions did not reduce falls (RaR 0.90, 95%CI 0.79 to 1.03; RR 0.89, 95%CI 0.80 to 1.00), but were effective in people with severe visual impairment, and in others at higher risk of falling. An anti-slip shoe device reduced rate of falls in icy conditions (RaR 0.42, 95%CI 0.22 to 0.78).

Gradual withdrawal of psychotropic medication reduced rate of falls (RaR 0.34, 95%CI 0.16 to 0.73), but not risk of falling. A prescribing modification programme for primary care physicians significantly reduced risk of falling (RR 0.61, 95%CI 0.41 to 0.91).

Pacemakers reduced rate of falls in people with carotid sinus hypersensitivity (RaR 0.42, 95%CI 0.23 to 0.75). First eye cataract surgery reduced rate of falls (RaR 0.66, 95%CI 0.45 to 0.95).

There is some evidence that falls prevention strategies can be cost saving.

Authors' conclusions

Exercise interventions reduce risk and rate of falls. Research is needed to confirm the contexts in which multifactorial assessment and intervention, home safety interventions, vitamin D supplementation, and other interventions are effective.

PLAIN LANGUAGE SUMMARY

Interventions for preventing falls in older people living in the community

As people get older, they may fall more often for a variety of reasons including problems with balance, poor vision, and dementia. Up to 30% may fall per year. Although one in five falls may require medical attention, less than one in 10 results in a fracture. Fear of falling can result in self-restricted activity levels. It may not be possible to prevent falls completely, but people who tend to fall frequently may be enabled to fall less often.

This review looked at which methods are effective for older people living in the community, and includes 111 randomised controlled trials, with a total of 55,303 participants.

Exercise programmes may target strength, balance, flexibility, or endurance. Programmes that contain two or more of these components reduce rate of falls and number of people falling. Exercising in supervised groups, participating in Tai Chi, and carrying out individually prescribed exercise programmes at home are all effective.

Multifactorial interventions assess an individual person's risk of falling, and then carry out or arrange referral for treatment to reduce their risk. They have been shown in some studies to be effective, but have been ineffective in others. Overall current evidence shows that they do reduce rate of falls in older people living in the community. These are complex interventions, and their effectiveness may be dependent on factors yet to be determined.

Taking vitamin D supplements probably does not reduce falls, except in people who have a low level of vitamin D in the blood. These supplements may be associated with high levels of calcium in the blood, gastrointestinal discomfort, and kidney disorders.

Interventions to improve home safety do not seem to be effective, except in people at high risk, for example with severe visual impairment. An anti-slip shoe device worn in icy conditions can reduce falls.

Some medications increase the risk of falling. Ensuring that medications are reviewed and adjusted may be effective in reducing falls. Gradual withdrawal from some types of drugs for improving sleep, reducing anxiety and treating depression has been shown to reduce falls.

Cataract surgery reduces falls in people having the operation on the first affected eye. Insertion of a pacemaker can reduce falls in people with frequent falls associated with carotid sinus hypersensitivity, a condition which may result in changes in heart rate and blood pressure.