

# Reducing Falls and Severity of Falls in Older Adults

## APPROXIMATELY 30% OF OLDER COMMUNITY-DWELLING PEOPLE FALL EACH YEAR

Falls can result in adverse outcomes including hip fracture, fear of future falls, and nursing home admission.<sup>1,2</sup> This JAMA Clinical Evidence Synopsis summarizes a recent Cochrane systematic review of 159 randomized controlled trials testing interventions to reduce the incidence of falls in community-dwelling older people.

Pooled results from trials testing similar interventions showed a significant reduction in falls from several types of interventions.

Participants randomized to group and home-based exercise programs with multiple components including muscle strengthening and balance retraining had fewer falls than control groups. Tai Chi classes were associated with a lower rate of falling. Pooled data from 6 studies demonstrated that an exercise program was associated with a lower risk of a fall-related fracture.

Individually targeted multifactorial interventions were associated with reduced fall rates. Multifactorial interventions are complex, usually require a multidisciplinary team, and include various types of assessments, treatment combinations, and referral processes.

Overall, vitamin D supplementation was not associated with lower fall rates in older community-dwelling people. However, 2 trials demonstrated that vitamin D supplements were associated with lower fall rates in people with lower vitamin D levels.

Home safety interventions were associated with a reduced rate of falls. These interventions were more effective in people at higher risk of falling and when delivered by an occupational therapist.

Cardiac pacing in people with carotid sinus hypersensitivity and a history of syncope and/or falls was associated with lower fall rates.

Expedited cataract surgery was associated with a lower fall rate compared with remaining on a waiting list for 12 months. However, an intervention that combined assessment by an optometrist with provision of new eyeglasses, a home visit with an occupational therapist, glaucoma management, or cataract surgery if indicated was associated with an increase in fall rates.

Gradual withdrawal of psychotropic medications and an educational program for primary care physicians and their patients to improve medication prescribing practices were associated with a lower rate of falls and risk of falling, respectively.

One study showed a lower rate of falls in people with disabling foot pain who received customized orthotics, footwear review, foot and ankle exercises, and fall prevention education in addition to usual podiatry care.

There is no evidence of benefit for cognitive behavioral interventions. Evidence for interventions that provide educational materials alone is inconclusive.

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## Effective Interventions to Reduce Falls

- Multiple-component group exercise was effective in reducing falls.
- Multiple-component home-based exercise also effective in reducing falls.
- Safety modifications and behavioral changes in the home were effective at reducing falls, particularly when based on an evaluation by a qualified occupational therapist and for people with severe visual impairments.
- Pacemaker implantation for people with carotid sinus hypersensitivity reduced fall rate but not risk for falling.
- Cataract surgery on the first affected eye in women also reduced falls. However, cataract removal from the second eye had no additional benefit.
- Gradual withdrawal of psychotropic medication and patient-specific modification of drug prescription by general practitioners both reduced falls.
- Finally, tai chi significantly reduced fall risk, although the reduction in fall rate only bordered on statistical significance.

## Ineffective Interventions to Reduce Falls

- New use of multifocal eyeglasses did not reduce fall risk. In fact, fall risk actually increased when older people were adjusting to new glasses or to significant changes in prescriptions, but this risk declined with the substitution of single-focal lenses for activities outside the home.
- Overall, vitamin D supplementation did not lower fall rate, but it trended in that direction for participants who were vitamin D deficient at trial enrollment.
- Cognitive behavioral interventions and education regarding fall prevention also did not lower fall rate.

## Cost-Effective Interventions to Reduce Falls

- Home-based exercise in persons older than 80 years was a cost-effective method of reducing falls.
- Home safety evaluation and modification after a fall also reduced falls inexpensively.
- In addition, a multifactorial program directed at 8 specific risk factors was successful in reducing fall rate.

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