

# Falls prevention and exercise

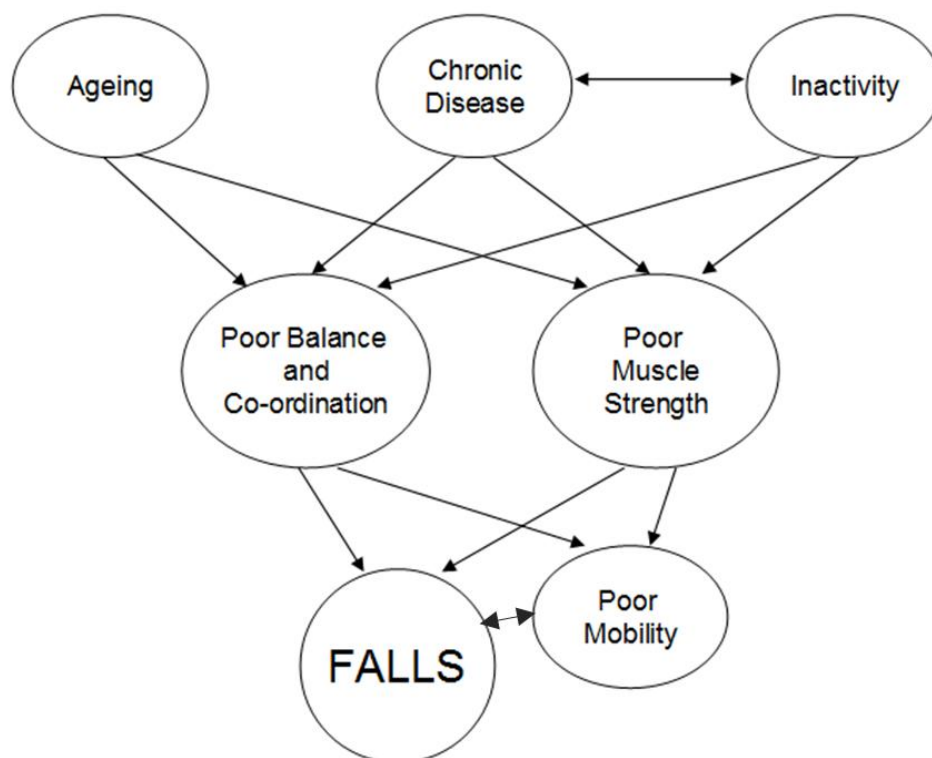
At least one-third of community-living Australians aged 65 years and over fall every year, with even higher rates for people in aged-care facilities and hospitals. Falls are also the leading cause of injury-related death and hospitalisation in these people. An older person is over three times more likely to be admitted to a nursing home after a fall than before, and over ten times more likely after a fall that caused an injury (1). Falls can result in permanent disability, restriction of activity, loss of confidence and fear of falling, all of which reduce quality of life and independence. The economic cost of fall-related injuries is estimated at more than double that of injuries in car accidents (2). By 2051, the annual health bill for fall-related injuries in Australia is expected to be \$1.4 billion (3).

Risk factors for falls include:

- older age;
- a history of falls;
- poor balance;
- slow reaction time;
- muscle weakness;
- poor eyesight;
- reduced sensation in upper and lower limbs;
- limitations in activities of daily living (e.g. feeding and dressing oneself);
- medical conditions (e.g. stroke and Parkinson’s disease); and
- medication use (e.g. drugs that affect the brain, and multiple medications).

Almost three-quarters of people report slips, trips and loss of balance as the cause of their fall — that is, balance-related factors that are amenable to change. Many factors interact to increase the likelihood of falls in older people (Figure 1).

Figure 1



## How can we prevent falls?

Developing strategies to prevent falls and fall-related injuries among older people is an important priority that is recognised by federal and state health departments. Well-designed studies have shown that fall rates are significantly reduced in community groups by:

- exercising, especially programs that include balance training;
- improving vision (e.g. removing cataracts and restricting use of multifocal glasses);
- stopping medication that affects the brain (e.g. psychoactive drugs) ;
- modifying the home (for high-fall-risk groups); and
- improving podiatric treatment, and foot and ankle exercises

## How does exercise prevent falls?

There is now good evidence that exercise prevents falls in older people (4), by decreasing a number of key risk factors. For example, exercise can improve muscular strength, balance, balance confidence and walking speed, as well as psychological factors such as mental ability and mood. Exercise is recommended for all community members. However the benefits of exercise in frailer people are less certain and multifaceted interventions may be necessary for fall prevention in this group (6).

## What is the best kind of exercise to prevent falls?

Exercise programs should include balance training, be performed regularly, be of sufficient duration (at least 2 hours per week) and be ongoing (4). These factors increase the chance of the exercise in preventing falls. Good balance exercises involve controlled body movements while standing with the feet close together (or standing on one leg), with as little arm support as possible. The exercises should be safe, but should challenge balance and develop strength. Tai chi is an effective form of exercise for fall prevention in healthy older people (5). Group-based strength and balance classes can be monitored by professionals and are also a social occasion, but exercises can also be home based. Older and frail people might need individually tailored, home-based programs (6,7).

## References and further information

Exercise is Medicine Australia [www.exerciseismedicine.org.au](http://www.exerciseismedicine.org.au)

Find an Accredited Exercise Physiologist [www.essa.org.au](http://www.essa.org.au)

Exercise Right [www.exerciseright.com.au](http://www.exerciseright.com.au)

Australian and New Zealand Falls Prevention Society [www.anzfallsprevention.org](http://www.anzfallsprevention.org)

1. Tinetti ME, Williams CS. Falls, injuries due to falls, and the risk of admission to a nursing home. *N Engl J Med* 1997; 337(18): 1279–84.
2. Moller J. Changing resource demands related to fall injury in an ageing population. *NSW Public Health Bulletin* 2000; 13(1–2): 3–6.
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4. Sherrington C, et al. Effective exercise for the prevention of falls: a systematic review and meta-analysis. *J Am Geriatr Soc* 2008; 56(12): 2234–43.
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6. Cameron ID, et al. Interventions for preventing falls in older people in care facilities and hospitals. *Cochrane Database Syst Rev*. 2012 Dec 12;12:CD005465.
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