Dr Cathie Sherrington is a physiotherapist and NHMRC Senior Research Fellow at The George Institute for International Health at The University of Sydney. She has conducted a variety of research into falls in older people and here she describes how physiotherapists are uniquely situated to prevent these common and costly accidents.
Falls in older people: an increasingly important problem
Falls and fractures have a major impact on older individuals, their carers, health services and the community. This impact will grow substantially in the near future because the proportion of older people is growing, in Australia and abroad. The latest treasury intergenerational report predicts that the proportion of Australians aged 65 years or over will increase from 13 per cent (1.1 million people) in 2010 to 23 per cent (8.1 million people) by 2050.

Clear evidence that exercise can prevent falls
Randomised trials and systematic reviews now provide clear evidence that falls in older people can be prevented with well-designed intervention programs. Although many different risk factors for falls have been identified, intervention trials have found that the effects of exercise on falls prevention are as large as those from multifaceted interventions. Therefore, widespread implementation of exercise seems to be the best approach to falls prevention at a population level.

Physiotherapists have a lot to offer in this area.

But what sort of exercise?
I lead a meta-analysis that was published in the Journal of American Geriatrics Society in 2008 (‘Effective exercise for the prevention of falls: a systematic review and meta-analysis’). Our study found that up to 42 per cent of falls can be prevented by well-designed exercise programs. The exercises that had the biggest effect on fall rates involved challenging balance abilities and they were undertaken frequently (e.g. more than two hours a week over a six month period).

What do we mean by exercise that challenges balance?
We defined exercise that challenges balance as exercise in standing which:
- involved controlled movement of the body’s centre of mass (like Tai Chi, or leaning/reaching while standing)
- aimed to decrease the base of support (e.g. by standing with the feet closer together or on one leg)
- aimed to lessen arm support (e.g. exercise that progressed from holding a chair or rail to unsupported exercise).

We found similar effects from group-based programs and home-based programs (such as the Otago Exercise Programme; see sidebar). So we don’t need rocket science to make a difference, just individually-prescribed, functionally-relevant exercises. Of course, to be effective these exercises must be performed safely, otherwise they may cause the falls they are designed to prevent.

What about other forms of exercise?
Older people (like everyone else) will also benefit from other exercises that enhance muscle strength and fitness. The latest American College of Sports Medicine statement outlines the evidence for this. Its recommendations are shown in the box above.

Physiotherapists already deliver exercise for older people
Physiotherapists are extremely well placed to deliver exercise to prevent falls and enhance balance and physical abilities in older people. Many therapists already run exercise classes for older people; they individually prescribe exercise likely to prevent falls. Another good way to get involved in this area is to find out more about exercise opportunities for older people in your local area. Many pools, gyms and community centres now offer suitable programs. By building links with these providers you can gain referrals for participants who need some individual input. You also get a place to refer people who are completing physiotherapy intervention. The need for suitable exercise to prevent falls is so large that it requires providers from a range of backgrounds.

Prevention rather than treatment
The prescription of exercise to prevent future events requires a mind shift for some physiotherapists, clients and funders. The aim of intervention, in this context, is to prescribe and monitor an ongoing exercise program to maximise a person’s physical abilities and prevent future adverse events. That is something very different from delivering a course of treatment with short-term benefits.

Email inmotion@physiotherapy.asn.au for a referenced version of this article.

Useful fall prevention websites
- Australia and New Zealand Falls Prevention Society http://www.anzfallsprevention.org
- Cochrane review on falls prevention http://preview.tinyurl.com/y8y65g
- Otago Exercise Programme manual available for purchase http://preview.tinyurl.com/y9er8oz

American College of Sports Medicine recommendations for adults over age 65 and adults 50-64 with chronic conditions
Do moderately intense aerobic exercise 30 minutes a day, five days a week
Or
Do vigorously intense aerobic exercise 20 minutes a day, three days a week
And
Do eight to 10 strength-training exercises, 10-15 repetitions of each exercise two to three times per week
And
If you are at risk of falling, perform balance exercises
And
Have a physical activity plan.