The role of exercise in falls prevention for older patients

There are numerous studies examining interventions for the prevention of falls, and these are used to inform the guidance. However, only a few of these trials have been carried out in the UK.

**Interventions with insufficient evidence**

The NICE falls prevention guidance highlights several exercise interventions for which it suggests that there is currently insufficient evidence to recommend that they are successful in falls prevention:

- Brisk walking, despite the possibility that it may have other health benefits, has been shown to increase the risk of falling in post-menopausal women in an un supervised brisk walking trial (Gillespie et al, 2004).
- Exercise combined with health education programmes also has insufficient evidence supporting its effectiveness. The studies informing this recommendation included a programme combining low intensity exercise with continence promotion, which provided no evidence of fall reduction in extended care settings. Also, complex interventions, in which group activities included health education and exercise, were studied (Gillespie et al, 2004).
- Group exercise that is untargeted and not individually prescribed has insufficient evidence to suggest it is effective in falls prevention (Gillespie et al, 2004).

However, a study by Liu-ambrose et al (2004) in Canada has recently found evidence to suggest that group agility training in older women who have a low bone mass can improve postural stability and thus reduce the risk of falls. In addition, Weatherall (2004) has recently published a study that suggests that there is moderate evidence of efficacy for falls prevention with multiple intervention strategies.

**Interventions with good evidence for effectiveness**

The NICE guidance lists the preferred strategies for exercise interventions to reduce falls as:

- A programme of muscle strengthening and balance training, that is individually prescribed at home by a trained health professional;
- A 15-week t’ai chi group exercise intervention.

These recommendations are made from evidence discussed in a Cochrane review (Gillespie et al, 2004) into interventions for preventing falls in older people. The review found that three trials provided evidence that muscle strengthening and balance retraining programmes individually prescribed at home by a trained professional are likely to be effective in reducing falls.

And one trial which consisted of 200 participants undertaking a 15-week t’ai chi group exercise intervention also...
provided evidence that t’ai chi is likely to be beneficial. The reviewers highlight that although there is now evidence regarding interventions to prevent falls, less is known about their effectiveness in preventing fall-related injuries and so further research is needed into this important area.

Other studies support the findings of the Cochrane review regarding the value of t’ai chi. A study by the Hong Kong Polytechnic University in China (Tsang and Hui-Chan, 2004) of 49 older people who volunteered for an intervention programme of either supervised t’ai chi or general education concluded that even four weeks of intensive t’ai chi training was sufficient to improve balance control in older people.

A more unusual approach to exercise for the prevention of falls was taken by Australian researchers. Older people who were at risk of falls were recruited to a programme where subjects’ ability to discriminate between different extents of ankle inversion movements and concluded that training with a wobble-board could provide a simple in-home intervention to improve ankle movements. However, the researchers acknowledge that research on trip and fall frequency after wobble-board use is needed before such training could be recommended.

Another Australian study has investigated a specific balance strategy training intervention presented in a workstation format for small groups of older people (Nitz and Choy, 2004). It concluded that specific balance strategy training intervention presented in a workstation format is superior to traditional workstations. The study was invited to undertake a wobble-board training programme (Waddington and Adams, 2004). The study examined the effects of wobble-board training on subjects’ ability to discriminate between different extents of ankle inversion movements and concluded that training with a wobble-board could provide a simple in-home intervention to improve ankle movements. However, the researchers acknowledge that research on trip and fall frequency after wobble-board use is needed before such training could be recommended.

A further systematic review (Chang et al, 2004) has recently suggested that exercise programmes could be implemented to a general population of older adults and are effective in reducing falls. They also highlight the fact that more research is needed to focus on making these programmes more cost-effective and to establish what particular characteristics of exercise programmes are essential to contribute to falls reduction.

### Practical considerations

Despite the mounting evidence for the use of balance and muscle strengthening exercises such as t’ai chi in the prevention of falls it must be recognised that older people may be reluctant to participate in prevention programmes that have an exercise-based component. The NSF highlights the need for interventions to be agreed with the older person. There is evidence on the factors that appear to be barriers to either initial participation or the long-term maintenance of falls prevention programmes. These are mainly personal issues, rather than a result of the programme format. They include:
- Low self-efficacy or lack of perceived ability to undertake components of the programme;
- Fear of falling;
- Fear of exertion;
- Illness;
- Denial or underestimating personal risk of falling;
- Embarrassment (NICE, 2004).

Factors that have been identified as contributing to an increased likelihood in participation of falls prevention programmes include:
- High self-efficacy or good perceived ability to undertake components of the programme;
- Past exercise history;
- General good health;
- Functional ability;
- Home-based programme;
- Peer role models;
- Low intensity exercise (for example, walking);
- Moderate frequency (two or three times per week);
- Perceived as relevant, beneficial, and fun (NICE, 2004).

Nurses trying to encourage older patients to participate in exercise interventions to reduce the risk of falls should remember that the social aspects of falls prevention programmes are probably their strongest selling point.

### Implications for practice

The incidence of falls in older people, the morbidity and mortality as a result of falls, and the increasing age of the population make falls prevention a key issue for all nurses who work with older people. The NICE guidelines highlight the need to use evidence-based practice in the planning and delivery of health promotion interventions. The guidelines also provide clear information for nurses regarding current research findings in the field and their application to practice.

Exercise is important in falls prevention. However, this should be aimed at muscle strengthening and balance retaining interventions such as t’ai chi. It is vital to consider factors that may be barriers to participation in exercise programmes and ensure that sufficient time is taken to fully discuss the planned intervention and describe its likely benefits to the individual, as well as allaying any fears.

### REFERENCES


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