Interventions for improving mobility after hip fracture surgery in adults

Background
Hip fracture mainly occurs in older people. Strategies to improve mobility include gait retraining, various forms of exercise and muscle stimulation.

Objectives
To evaluate the effects of different interventions for improving mobility after hip fracture surgery in adults.

Search strategy
We searched the Cochrane Bone, Joint and Muscle Trauma Group Specialised Register, the Cochrane Central Register of Controlled Trials, MEDLINE and other databases, and reference lists of articles, up to April 2010.

Selection criteria
All randomised or quasi-randomised trials comparing different mobilisation strategies after hip fracture surgery.

Data collection and analysis
The authors independently selected trials, assessed risk of bias and extracted data. There was no data pooling.

Main results
The 19 included trials (involving 1589 older adults) were small, often with methodological flaws. Just two pairs of trials tested similar interventions.

Twelve trials evaluated mobilisation strategies started soon after hip fracture surgery. Single trials found improved mobility from, respectively, a two-week weight-bearing programme, a quadriceps muscle strengthening exercise programme and electrical stimulation aimed at alleviating pain. Single trials found no significant improvement in mobility from, respectively, a treadmill gait retraining programme, 12 weeks of resistance training, and 16 weeks of weight-bearing exercise. One trial testing ambulation started within 48 hours of surgery found contradictory results. One historic trial found no significant difference in unfavourable outcomes for weight bearing started at two versus 12 weeks. Of two trials evaluating more intensive physiotherapy regimens, one found no difference in
recovery, the other reported a higher level of drop-out in the more intensive group. Two trials tested electrical stimulation of the quadriceps: one found no benefit and poor tolerance of the intervention; the other found improved mobility and good tolerance.

Seven trials evaluated strategies started after hospital discharge. Started soon after discharge, two trials found improved outcome after 12 weeks of intensive physical training and a home-based physical therapy programme respectively. Begun after completion of standard physical therapy, one trial found improved outcome after six months of intensive physical training, one trial found increased activity levels from a one year exercise programme, and one trial found no significant effects of home-based resistance or aerobic training. One trial found improved outcome after home-based exercises started around 22 weeks from injury. One trial found home-based weight-bearing exercises starting at seven months produced no significant improvement in mobility.

**Authors’ conclusions**

There is insufficient evidence from randomised trials to establish the best strategies for enhancing mobility after hip fracture surgery.

**PLAIN LANGUAGE SUMMARY**

**Interventions aimed at improving and restoring mobility after hip fracture surgery in adults**

The aim of care after surgery for hip fracture is to get people safely back on their feet and walking again. Initially, people may be asked to rest in bed and restrict weight bearing. Then various strategies to improve mobility, including gait retraining and exercise programmes, are used during hospital stay and often after discharge from hospital.

This review includes evidence from 19 trials involving 1589 participants, generally aged over 65 years. Many of the trials had weak methods, including inadequate follow-up. There was no pooling of data because no two trials were sufficiently alike.

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In summary, the review found there was not enough evidence to determine which are the best strategies, started in hospital or after discharge from hospital, for helping people walk and continue walking after hip fracture surgery.