Guidelines for the Prevention of Falls in Lower Limb Amputees

To be revised April 2011

Objectives
This guideline is based on current best evidence for the prevention of falls in amputee patients. Due to the paucity of evidence specific to amputees some information has been extrapolated from literature regarding falls in the elderly.

Definition of a Fall
An unintentional event which results in a person coming to rest on the ground, floor, or other lower level, other than as a consequence of loss of consciousness, overwhelming external force, sudden onset of paralysis, stroke or epileptic seizure.

Incidence
Studies found 20% - 53% of amputees experienced at least one fall a year.

Risk Factors
- Presence of Co-morbidities
- Increasing age
- Reduced muscle strength
- Medication
- Environmental hazards
- Gait deficiencies
- Reduced confidence/fear of falling
- Level of Amputation
- Poor functional ability
- Level of activity
- Sensory deficits
- Decreased flexibility
- Length of hospital stay
- Female gender
- Previous Falls

Multi-factorial Falls Prevention Programmes
These should include:
- MDT approach
- Environmental modifications
- Exercise
- Medication review
- Gait training and provision of walking aid
- Education
- Treatment of any acute illness
- A comfortable fitting prosthesis

Overall Grade of Recommendation = B

Other Interventions
Education of healthcare professionals regarding risk factors, safe use of prosthesis and environmental hazards.

Future Research
The current available evidence suggests that a multi-factorial approach with an emphasis on exercise, in particular balance exercises is most effective in reducing falls. Further high quality, large scale studies, specific to amputees are required to determine:
- The most appropriate clinical balance tool for this population
- The most appropriate type, amount and frequency of exercise in reducing falls
- The ideal intensity, frequency and duration of exercise programmes
- The relative value of different components of falls prevention programmes
- Specific interventions to assist in improving balance confidence and therefore quality of life among this population

Additional Good Practice Points
- Teach patients how to get up off the floor in the event of a fall
- Exercise programmes should include adequate intensity frequency and duration, with monitoring of compliance
- Measures to prevent injury should be taken in all patients with a high risk of falling e.g., stump protectors

Target Users of Guidelines
Multi-disciplinary team directly involved in amputee rehabilitation.

Assessment Tools
- Falls Efficacy Scale
- Prosthetic Profile of the Amputee
- Tinetti’s Performance orientated mobility assessment
- Quadiceps Strength
- Timed Stair Climb
- Timed Walk
- Four Square Step Test
- 180° Turn Test

Exercise Programmes
Exercise programmes recommended to reduce the risk of falls include:
- Balance exercises
- Strengthening exercises
- Tai Chi
- Endurance exercises
- Stretching
- Multiple task practice
- Functional floor work
- Co-ordination
- Agility training
- Gait
- Transfers
- Aerobic exercise

Programmes should include a combination of exercises to be effective in reducing falls.

Environmental Modifications
Specific assessment by an Occupational Therapist to check for environmental hazards such as poor lighting, recommendations of modifications and assistance with their implementation.

Overall Grade of Recommendation = B

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Produced as part of the Post-Graduate Certificate in Amputee Rehabilitation
June 2007
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Modified April 2008
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