Exercise for Falls Prevention in Older People:
Evidence & Questions

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What is a fall?

A fall is defined as an unintentional or unexpected loss of balance resulting in coming to rest on the floor, the ground, or an object below knee level (NICE).
Falls: the scale of the problem

- 30% of people >65yrs fall at least once per year
- 50% of people >80yrs will experience a fracture
- 5% of community dwelling fallers will experience a fracture
- Falls are the most commonly reported patient safety incident in NHS Trusts in England
- Falls affect the faller, family and carers: injury, pain, distress, fear, loss of confidence and independence, reduced quality of life, mortality
- Falls cost the NHS >£2.3b per year
Evidence for falls prevention: the problem of the scale

- Huge number of individual trials and studies globally over more than 2 decades
- Individual trials inform systematic reviews, Cochrane reviews, position statements, NICE guidelines, pt pathways ...
- Outcome measures – Fall rates (falls per person year) or Fall risk (number of fallers in each group of a trial)
- Evidence doesn’t speak for itself – it has to be interpreted for the individual and their context
- Primary versus secondary prevention
  Community versus care settings

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Most recent NICE (2017 update) guideline messages re exercise in falls prevention
Exercise (strength and balance training) offered as a single intervention

Older people living in the community
with a history of recurrent falls and/or an identified gait and balance deficit

should be offered multiple component exercise (strength and balance training) in an individual or group programme (following a multifactorial falls risk assessment) as a single falls prevention intervention individually prescribed and monitored

by an appropriately trained professional

Untargeted group based exercise has not been shown to be effective in these conditions

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NICE 2017
Exercise (strength and balance training) offered as a component of multidisciplinary falls prevention should be offered individually prescribed exercise as a component of multidisciplinary falls prevention intervention.

<table>
<thead>
<tr>
<th>Older people living in extended care settings (e.g. nursing homes)</th>
<th>Older people &gt; 65yrs (or 50-64 yrs judged to be at higher risk of falls) admitted to hospital</th>
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</thead>
<tbody>
<tr>
<td>who are at risk of falling</td>
<td>where any identified muscle weakness or gait/balance problem can be treated, improved or managed with individualised intervention during the patient's expected stay</td>
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should be offered individually prescribed exercise as a component of multidisciplinary falls prevention intervention

NICE 2017

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Considerations when designing and delivering evidence based exercise for falls prevention

| Target group                                                                 | • Previous falls (secondary prevention) versus identified fall risk (primary prevention)  
|                                                                             | • Consider cognitive function                                                       
|                                                                             | • Consider motivation and likely adherence                                             
|                                                                             | • Gender?                                                                             
| Type and setting of exercise                                                | • Strength/resistance exercises                                                       
|                                                                             | • Balance/gait training                                                              
|                                                                             | • Individual or group based                                                          
|                                                                             | • Trained professional                                                               
|                                                                             | • Social aspect?                                                                     
| Frequency and duration                                                      | • How many times per week                                                             
|                                                                             | • Over how many weeks                                                                 
| Intensity                                                                   | • The right degree of challenge for the individual                                    
|                                                                             | • Supervision/progression over time                                                  |
## How evidence-based are our exercise programmes?

Survey of 1768 patients* referred to falls prevention services in England, Wales and NI wide shows two thirds were participating in group based exercise but wide variation in models of delivery of exercise interventions

| Recommended exercise programmes should be individually tailored, progressive and delivered over long periods (Otago 1 year; FaME 35 wks) | • Most patients attended group-based classes of short duration (<12 weeks) and only once/week Only 50% patients said their programme was progressed as they improved |
| High levels of patient satisfaction with programme | • But lack of follow up afterwards |

*Buttery et al 2014
Where the evidence doesn’t help ...

Dementia

- Evidence inconclusive that exercise prevents falls in dementia/ cognitive impairment*
- Poor adherence and loss to follow up*
- Cognitive impairment frequently cited as a reason not to refer or not to offer exercise**
- Recent small trial - 6 month tailored programme can improve balance, concern about falls, and planned physical activity in community-dwelling older people with dementia***

Fear of falls

- Exercise alone may possibly reduce fear of falls but only in the short term****
- Not all trials have fear of falling as an outcome****

Adherence and compliance

Trials report uptake of exercise interventions can drop from as high as 80% in the first 10 weeks to 50% at one year*

In practice adherence can be much lower than 50%

Patient level barriers include transport, cost, motivation and fear of injury

50-82% community dwelling older people did not consider that participation in exercise programs would be worthwhile, even if it reduced risk of falling to 0%.**

Programme level barriers

Group – Decreased adherence with duration of 20 weeks or more, two or fewer sessions per week, or a flexibility component***

Home - Increased adherence with balance component, home visit support and physiotherapy led****
Decreased adherence with flexibility component****

How can we promote and improve adherence?

Older people participate in exercise to remain independent and they value approaches that promote autonomy and self management.

Physiotherapists are fatalistic with a ‘take it or leave it’ attitude to the exercise they prescribe and instruct.

Robinson et al 2013
Barriers and facilitators in exercise for falls prevention

### Barriers
- Practical issues - transport
- Concerns – adverse effects, too difficult
- Unawareness – denial of fall risk
- Reduced health status – unwell, fatigue
- Lack of support – poor instructor, no support at home
- Lack of interest – low motivation

### Facilitators
- Support – professional and family
- Social interaction – relationships, social time
- Perceived benefit – staying independent
- Supportive exercise context – trust, individual adaptation
- Feelings of commitment – structured programme
- Having fun - enjoyment

Sandlund et al 2017 systematic review
Population-based interventions for prevention of fall related injuries in older people

Systematic review to assess the effectiveness of population-based interventions, defined as coordinated, community-wide, multi-strategy initiatives, for reducing fall-related injuries among older people.

Preliminary claim that the population-based approach to the prevention of fall-related injury is effective and can form the basis of public health practice.

Randomised, multiple community trials of population-based interventions are indicated to increase the level of evidence in support of the population-based approach.

McClure et al 2008
Exercise and falls prevention: from evidence to implementation

- Multiple agency commitment and older people involvement
- Population based and whole system approach involving all sectors
- Evidence based intervention applied consistently and with training
- Joined up approach with other pathways/services, e.g. dementia
- Leadership and continuous innovation and quality improvement
- Joint commissioning

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References


