

Falls in older people: assessing risk and prevention

Clinical guideline

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Your responsibility

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

All problems (adverse events) related to a medicine or medical device used for treatment or in a procedure should be reported to the Medicines and Healthcare products Regulatory Agency using the [Yellow Card Scheme](#).

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should [assess and reduce the environmental impact of implementing NICE recommendations](#) wherever possible.

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This guideline replaces CG21.

This guideline is the basis of QS86.

Introduction

Falls and fall-related injuries are a common and serious problem for older people. People aged 65 and older have the highest risk of falling, with 30% of people older than 65 and 50% of people older than 80 falling at least once a year.

The human cost of falling includes distress, pain, injury, loss of confidence, loss of independence and mortality. Falling also affects the family members and carers of people who fall. Falls are estimated to cost the NHS more than £2.3 billion per year. Therefore falling has an impact on quality of life, health and healthcare costs.

This guideline provides recommendations for the assessment and prevention of falls in older people. It is an extension to the remit of NICE guideline CG21 (published November 2004) to include assessing and preventing falls in older people during a hospital stay (inpatients). The new recommendations for older people in hospital (2013) sit alongside the original recommendations from the 2004 guideline. It is important to emphasise that all of the 2004 recommendations are just as relevant and important now as they were when they were originally published.

Who this guideline is for

This document is for healthcare and other professionals and staff who care for older people who are at risk of falling.

Populations covered by this guideline

All people aged 65 or older are covered by all guideline recommendations. This is because people aged 65 and older have the highest risk of falling. According to the guideline recommendations, all people 65 or older who are admitted to hospital should be considered for a [multifactorial assessment](#) for their risk of falling during their hospital stay. They should also be offered a multifactorial assessment of their community-based falls

risk, if appropriate. These assessments may be done together or separately.

People aged 50 to 64 who are admitted to hospital and are judged by a clinician to be at higher risk of falling because of an underlying condition are also covered by the guideline recommendations about assessing and preventing falls in older people during a hospital stay.

Key priorities for implementation

The following recommendations have been identified as priorities for implementation.

Preventing falls in older people

- Older people in contact with healthcare professionals should be asked routinely whether they have fallen in the past year and asked about the frequency, context and characteristics of the fall/s. **[2004]**
- Older people who present for medical attention because of a fall, or report recurrent falls in the past year, or demonstrate abnormalities of gait and/or balance should be offered a multifactorial falls risk assessment. This assessment should be performed by a healthcare professional with appropriate skills and experience, normally in the setting of a specialist falls service. This assessment should be part of an individualised, multifactorial intervention. **[2004]**

Preventing falls in older people during a hospital stay

- Regard the following groups of inpatients as being at risk of falling in hospital and manage their care according to recommendations 1.2.2.1 to 1.2.3.2:
 - all patients aged 65 years or older
 - patients aged 50 to 64 years who are judged by a clinician to be at higher risk of falling because of an underlying condition. **[new 2013]**
- For patients at risk of falling in hospital (see recommendation 1.2.1.2), consider a multifactorial assessment and a multifactorial intervention. **[new 2013]**
- Ensure that any multifactorial assessment identifies the patient's individual risk factors for falling in hospital that can be treated, improved or managed during their expected stay. These may include:
 - cognitive impairment

- continence problems
- falls history, including causes and consequences (such as injury and fear of falling)
- footwear that is unsuitable or missing
- health problems that may increase their risk of falling
- medication
- postural instability, mobility problems and/or balance problems
- syncope syndrome
- visual impairment. **[new 2013]**

Recommendations

People have the right to be involved in discussions and make informed decisions about their care as described in [your care](#).

[Making decisions using NICE guidelines](#) explains how we use words to show the strength (or certainty) of our recommendations and has information about prescribing medicines (including off-label use), professional guidelines, standards and laws (including on consent and mental capacity) and safeguarding.

Terms used in this guideline

Extended care

A care setting such as a nursing home or supported accommodation.

Multifactorial assessment or multifactorial falls risk assessment

An assessment with multiple components that aims to identify a person's risk factors for falling.

Multifactorial intervention

An intervention with multiple components that aims to address the risk factors for falling that are identified in a person's multifactorial assessment.

Older people

In section 1.1, older people are people aged 65 years and older. In section 1.2, older people are people aged 50 years and older.

Older people living in the community

Older people living in their own home or in extended care.

Risk prediction tool

A tool that aims to calculate a person's risk of falling, either in terms of 'at risk/not at risk', or in terms of 'low/medium/high risk', etc.

1.1 Preventing falls in older people

1.1.1 Case/risk identification

- 1.1.1.1 Older people in contact with healthcare professionals should be asked routinely whether they have fallen in the past year and asked about the frequency, context and characteristics of the fall/s. **[2004]**
- 1.1.1.2 Older people reporting a fall or considered at risk of falling should be observed for balance and gait deficits and considered for their ability to benefit from interventions to improve strength and balance. (Tests of balance and gait commonly used in the UK are detailed in section 3.3 of the [full guideline](#).) **[2004]**

1.1.2 Multifactorial falls risk assessment

- 1.1.2.1 Older people who present for medical attention because of a fall, or report recurrent falls in the past year, or demonstrate abnormalities of gait and/or balance should be offered a multifactorial falls risk assessment. This assessment should be performed by a healthcare professional with appropriate skills and experience, normally in the setting of a specialist falls service. This assessment should be part of an individualised, multifactorial intervention. **[2004]**
- 1.1.2.2 Multifactorial assessment may include the following:
- identification of falls history
 - assessment of gait, balance and mobility, and muscle weakness

- assessment of osteoporosis risk
- assessment of the older person's perceived functional ability and fear relating to falling
- assessment of visual impairment
- assessment of cognitive impairment and neurological examination
- assessment of urinary incontinence
- assessment of home hazards
- cardiovascular examination and medication review. **[2004]**

1.1.3 Multifactorial interventions

- 1.1.3.1 All older people with recurrent falls or assessed as being at increased risk of falling should be considered for an individualised multifactorial intervention. **[2004]**

In successful multifactorial intervention programmes the following specific components are common (against a background of the general diagnosis and management of causes and recognised risk factors):

- strength and balance training
 - home hazard assessment and intervention
 - vision assessment and referral
 - medication review with modification/withdrawal. **[2004]**
- 1.1.3.2 Following treatment for an injurious fall, older people should be offered a multidisciplinary assessment to identify and address future risk and individualised intervention aimed at promoting independence and improving physical and psychological function. **[2004]**

1.1.4 Strength and balance training

- 1.1.4.1 Strength and balance training is recommended. Those most likely to benefit are older people living in the community with a history of recurrent falls and/or balance and gait deficit. A muscle-strengthening and balance programme should be offered. This should be individually prescribed and monitored by an appropriately trained professional. **[2004]**

1.1.5 Exercise in extended care settings

- 1.1.5.1 Multifactorial interventions with an exercise component are recommended for older people in extended care settings who are at risk of falling. **[2004]**

1.1.6 Home hazard and safety intervention

- 1.1.6.1 Older people who have received treatment in hospital following a fall should be offered a home hazard assessment and safety intervention/modifications by a suitably trained healthcare professional. Normally this should be part of discharge planning and be carried out within a timescale agreed by the patient or carer, and appropriate members of the health care team. **[2004]**
- 1.1.6.2 Home hazard assessment is shown to be effective only in conjunction with follow-up and intervention, not in isolation. **[2004]**

1.1.7 Psychotropic medications

- 1.1.7.1 Older people on psychotropic medications should have their medication reviewed, with specialist input if appropriate, and discontinued if possible to reduce their risk of falling. **[2004]**

1.1.8 Cardiac pacing

- 1.1.8.1 Cardiac pacing should be considered for older people with cardioinhibitory

carotid sinus hypersensitivity who have experienced unexplained falls. **[2004]**

1.1.9 Encouraging the participation of older people in falls prevention programmes

- 1.1.9.1 To promote the participation of older people in falls prevention programmes the following should be considered.
- Healthcare professionals involved in the assessment and prevention of falls should discuss what changes a person is willing to make to prevent falls.
 - Information should be relevant and available in languages other than English.
 - Falls prevention programmes should also address potential barriers such as low self-efficacy and fear of falling, and encourage activity change as negotiated with the participant. **[2004]**
- 1.1.9.2 Practitioners who are involved in developing falls prevention programmes should ensure that such programmes are flexible enough to accommodate participants' different needs and preferences and should promote the social value of such programmes. **[2004]**

1.1.10 Education and information giving

- 1.1.10.1 All healthcare professionals dealing with patients known to be at risk of falling should develop and maintain basic professional competence in falls assessment and prevention. **[2004]**
- 1.1.10.2 Individuals at risk of falling, and their carers, should be offered information orally and in writing about:
- what measures they can take to prevent further falls
 - how to stay motivated if referred for falls prevention strategies that include exercise or strength and balancing components
 - the preventable nature of some falls

- the physical and psychological benefits of modifying falls risk
- where they can seek further advice and assistance
- how to cope if they have a fall, including how to summon help and how to avoid a long lie. [2004]

1.1.11 Interventions that cannot be recommended

1.1.11.1 **Brisk walking.** There is no evidence that brisk walking reduces the risk of falling. One trial showed that an unsupervised brisk walking programme increased the risk of falling in postmenopausal women with an upper limb fracture in the previous year. However, there may be other health benefits of brisk walking by older people. [2004]

This refers to evidence reviewed in 2004

1.1.12 Interventions that cannot be recommended because of insufficient evidence

We do not recommend implementation of the following interventions at present. This is not because there is strong evidence against them, but because there is insufficient or conflicting evidence supporting them. [2004]

The recommendations in this section refer to evidence reviewed in 2004.

1.1.12.1 **Low intensity exercise combined with incontinence programmes.** There is no evidence that low intensity exercise interventions combined with continence promotion programmes reduce the incidence of falls in older people in extended care settings. [2004]

1.1.12.2 **Group exercise (untargeted).** Exercise in groups should not be discouraged as a means of health promotion, but there is little evidence that exercise interventions that were not individually prescribed for older people living in the community are effective in falls prevention. [2004]

- 1.1.12.3 **Cognitive/behavioural interventions.** There is no evidence that cognitive/behavioural interventions alone reduce the incidence of falls in older people living in the community who are of unknown risk status. Such interventions included risk assessment with feedback and counselling and individual education discussions. There is no evidence that complex interventions in which group activities included education, a behaviour modification programme aimed at moderating risk, advice and exercise interventions are effective in falls prevention with older people living in the community. **[2004]**
- 1.1.12.4 **Referral for correction of visual impairment.** There is no evidence that referral for correction of vision as a single intervention for older people living in the community is effective in reducing the number of people falling. However, vision assessment and referral has been a component of successful multifactorial falls prevention programmes. **[2004]**
- 1.1.12.5 **Vitamin D.** There is evidence that vitamin D deficiency and insufficiency are common among older people and that, when present, they impair muscle strength and possibly neuromuscular function, via CNS-mediated pathways. In addition, the use of combined calcium and vitamin D3 supplementation has been found to reduce fracture rates in older people in residential/nursing homes and sheltered accommodation. Although there is emerging evidence that correction of vitamin D deficiency or insufficiency may reduce the propensity for falling, there is uncertainty about the relative contribution to fracture reduction via this mechanism (as opposed to bone mass) and about the dose and route of administration required. No firm recommendation can therefore currently be made on its use for this indication. **[2004, amended 2013]**

The following text has been deleted from the 2004 recommendation: 'Guidance on the use of vitamin D for fracture prevention will be contained in the forthcoming NICE clinical practice guideline on osteoporosis, which is currently under development.' As yet, there is no NICE guidance on the use of vitamin D for fracture prevention.

- 1.1.12.6 **Hip protectors.** Reported trials that have used individual patient randomisation have provided no evidence for the effectiveness of hip protectors to prevent fractures when offered to older people living in extended care settings or in their own homes. Data from cluster randomised trials provide some evidence that hip

protectors are effective in the prevention of hip fractures in older people living in extended care settings who are considered at high risk. **[2004]**

1.2 Preventing falls in older people during a hospital stay

1.2.1 Predicting patients' risk of falling in hospital

- 1.2.1.1 Do not use fall risk prediction tools to predict inpatients' risk of falling in hospital. **[new 2013]**
- 1.2.1.2 Regard the following groups of inpatients as being at risk of falling in hospital and manage their care according to recommendations 1.2.2.1 to 1.2.3.2:
- all patients aged 65 years or older
 - patients aged 50 to 64 years who are judged by a clinician to be at higher risk of falling because of an underlying condition. **[new 2013]**

1.2.2 Assessment and interventions

- 1.2.2.1 Ensure that aspects of the inpatient environment (including flooring, lighting, furniture and fittings such as hand holds) that could affect patients' risk of falling are systematically identified and addressed. **[new 2013]**
- 1.2.2.2 For patients at risk of falling in hospital (see recommendation 1.2.1.2), consider a multifactorial assessment and a multifactorial intervention. **[new 2013]**
- 1.2.2.3 Ensure that any multifactorial assessment identifies the patient's individual risk factors for falling in hospital that can be treated, improved or managed during their expected stay. These may include:
- cognitive impairment
 - continence problems

- falls history, including causes and consequences (such as injury and fear of falling)
- footwear that is unsuitable or missing
- health problems that may increase their risk of falling
- medication
- postural instability, mobility problems and/or balance problems
- syncope syndrome
- visual impairment. **[new 2013]**

1.2.2.4 Ensure that any multifactorial intervention:

- promptly addresses the patient's identified individual risk factors for falling in hospital **and**
- takes into account whether the risk factors can be treated, improved or managed during the patient's expected stay. **[new 2013]**

1.2.2.5 Do not offer falls prevention interventions that are not tailored to address the patient's individual risk factors for falling. **[new 2013]**

1.2.3 Information and support

1.2.3.1 Provide relevant oral and written information and support for patients, and their family members and carers if the patient agrees. Take into account the patient's ability to understand and retain information. Information should include:

- explaining about the patient's individual risk factors for falling in hospital
- showing the patient how to use the nurse call system and encouraging them to use it when they need help
- informing family members and carers about when and how to raise and lower bed rails

- providing consistent messages about when a patient should ask for help before getting up or moving about
- helping the patient to engage in any multifactorial intervention aimed at addressing their individual risk factors. **[new 2013]**

1.2.3.2 Ensure that relevant information is shared across services. Apply the principles in the NICE guideline on Patient experience in adult NHS services in relation to continuity of care. **[new 2013]**

Recommendations for research

The Guideline Development Group (GDG) has made the following recommendations for research, based on its review of evidence, to improve NICE guidance and patient care in the future. The [full set of recommendations for research are detailed in the full guideline](#).

New recommendations for research

1 Environmental adaptations aimed at reducing the risk of falling in older inpatients

What environmental adaptations can be made in existing inpatient units, and should be considered when inpatient units are built, to reduce the risk of falls and injuries in older inpatients?

Why this is important

Dementia, delirium, poor mobility and balance, urgent or frequent toilet needs or incontinence and visual impairment are common in older hospital patients. Several multifactorial studies have included adjustments to the ward environment that have plausible mechanisms for reducing falls in patients with these risk factors (such as improved lighting, changes to flooring, furniture, handholds, walking routes, lines of sight and signposting), but the impact of these changes has not been recorded. There is a need to understand which improvements to the inpatient environment are the most effective and cost-effective for preventing falls and injuries in hospital, and the factors that architects should take into account when designing new hospitals.

2 Prevalence of risk factors for falling in older inpatients

Which risk factors for falling that can be treated, improved or managed during the hospital stay are most prevalent in older patients who fall in inpatient settings in the UK?

Why this is important

Many existing studies identify risk factors for falling in the inpatient setting, but these

studies are not all relevant to a current UK hospital population. Additionally, existing studies often focus on factors that predict falls but cannot be treated, improved or managed (such as chronological age). Identifying the risk factors for falling that are most prevalent in the current UK older inpatient population underpins the development of more effective and better targeted multifactorial assessments and interventions.

3 Causes of unwitnessed falls among older inpatients

What are the causes of unwitnessed falls among older inpatients?

Why this is important

A large proportion of inpatient falls are unwitnessed. Although staff may deduce reasons for the fall and/or the patient (if able and if asked) may describe their own perception of what happened, research is needed to establish more objectively how and why these falls occur. Research would need to encompass a qualitative exploration of why older inpatients who are vulnerable to falling mobilise without asking for help.

4 Interventions for preventing falls in older inpatients

How can falls among older inpatients be prevented? Which patients are most likely to benefit from falls prevention interventions, and does the effectiveness of interventions relate to the patient's length of stay?

Why this is important

Various single and multifactorial interventions for preventing falls have been the subject of research, but their overall effectiveness in different inpatient settings (such as mental health units for older people) has not been established. The relative effectiveness of different components of a multifactorial assessment and a multifactorial intervention, and which older inpatients would benefit most from each intervention, or each component within a multifactorial assessment and intervention, is unclear. The effectiveness of falls prevention interventions in hospital patients with a short length of stay has not been established, and nor has their effectiveness in specific subgroups such as patients with dementia. High-quality randomised controlled trials conducted in the UK are required to improve the existing evidence base.

Recommendations for research from the 2004 guideline

The following research gaps were identified by the GDG. Following NICE requirements, the first five are those prioritised by the GDG. **[2004]**

5 Multifactorial interventions

Further analysis of existing trial data to identify which components of multifactorial interventions are important in different settings and amongst different patient groups. **[2004]**

6 Cost effective components of multifactorial programmes

Future trials designed and analysed with the intention of identifying cost effective components of multifactorial programmes for particular groups of older people in different settings. **[2004]**

7 Falls prevention programmes

Evaluation of multi-agency falls prevention programmes to measure the impact of these programmes on reducing falls, injurious falls and fractures in older people. **[2004]**

8 Falls prevention trials

Falls prevention trials with a focus on injury reduction, such as fracture outcomes and fall related outcomes. **[2004]**

9 Optimal methods of risk assessment

Research on the optimal methods of risk assessment for falls in older people and evaluation of whether fall-prone individuals can be risk stratified, in terms of whom will most benefit from assessment and intervention. **[2004]**

10 Cognitive impairment and dementia

Trials investigating the most effective strategy for preventing falls in older people with

cognitive impairment and dementia. [2004]

11 Falls prevention interventions

UK-based cost effectiveness studies of falls prevention interventions. [2004]

12 Hip protectors

Trials to investigate the effectiveness of hip protectors compared with other fracture prevention interventions in older people at high risk of falling. [2004]

Finding more information and committee details

To find NICE guidance on related topics, including guidance in development, see the [NICE topic page for injuries, accidents and wounds](#).

For full details of the evidence and the guideline committee's discussions, see [the full guideline](#). You can also find information about [how the guideline was developed](#), including details of the committee.

NICE has produced [tools and resources](#) to help you put this guideline into practice. For general help and advice on putting NICE guidelines into practice, see [resources to help you put guidance into practice](#).

Update information

June 2013 We have reviewed the evidence and made new recommendations on preventing falls in older people during a hospital stay. These recommendations are marked **[2013]**.

We have also made some changes without an evidence review. These recommendations are marked **[2004, amended 2013]**.

Recommendations marked **[2004]** last had an evidence review in 2004. In some cases minor changes have been made to the wording to bring the language and style up to date, without changing the meaning.

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