



Integrated care for older people (ICOPE)
Guidelines on community-level interventions
to manage declines in intrinsic capacity

Evidence profile: risk of falls

Scoping question:

Do interventions to prevent falls produce any benefit or harm for older people at risk of falls?

The full ICOPE guidelines and complete set of evidence profiles are available at:
who.int/publications/i/item/9789241550109

Painting: "Wet in Wet" by Gusta van der Meer. At 75 years of age, Gusta has an artistic style that is fresh, distinctive and vibrant. A long-time lover of art, she finds that dementia is no barrier to her artistic expression. Appreciated not just for her art but also for the support and encouragement she gives to other artists with dementia, Gusta participates in a weekly art class. Copyright by Gusta van der Meer. All rights reserved

Contents

Background	1
Part 1: Evidence review	2
Scoping question in PICO format (population, intervention, comparison, outcome)	2
Search strategy	3
List of systematic reviews identified by the search process	3
PICO table	4
Narrative description of the studies that went into analysis	5
GRADE table 1: Medication review or withdrawal versus control for older people living in the community	6
GRADE table 2: Environment (home safety and aids for personal mobility) versus control for older people living in the community: subgroup analysis by risk of falling at baseline	7
GRADE table 3: Home safety intervention versus control for older people living in the community: subgroup analysis by delivery personnel	8
GRADE table 4: Multifactorial intervention versus control for older people living in the community	9
GRADE table 5: Multifactorial intervention versus control for older people living in the community: subgroup analysis by risk of falling at baseline	10
GRADE table 6: Multifactorial intervention versus control for older people living in the community: subgroup analysis by intensity of intervention	11
GRADE table 7: Exercise intervention versus control for older people living in the community	12
GRADE table 8: Group exercise intervention versus control in older people living in the community: subgroup analysis by risk of falling at baseline	15
GRADE table 9: Group t'ai chi exercise versus control in older people living in the community: subgroup analysis by risk of falling at baseline	16
Part 2: From evidence to recommendations	17
Summary of evidence	17
Evidence-to-recommendations table	20
Guideline development group recommendations and remarks	24
References	26
Annex 1: Search strategy	28
Annex 2: PRISMA 2009 flow diagram for intervention to prevention falls in community-dwelling older people	29

© World Health Organization 2017

Some rights reserved. This work is available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO;
<https://creativecommons.org/licenses/by-nc-sa/3.0/igo>)

Background

In older people, falls are the most prominent external cause of unintentional injury. Research suggests that one third of community-dwelling people aged over 65 years fall each year and almost half of them experience recurrent falls (1–10). Incidents of falls by older people are strongly associated with hospitalization, severe functional decline, care dependency and premature admission to institutional care (11). Nearly 15% of falls result in non-fatal injuries (12), ranging from minor bruises and wrist lacerations to hip fractures (4, 5, 13). More importantly, 23–40% of injury-related deaths in older people are attributable to falls (9, 14).

The risk factors for falls are complex and multifactorial in nature. Evidence from longitudinal studies suggests strong interactions among multiple risk factors, such as age, sex, previous history of falls, chronic diseases and environmental factors (4, 10, 14). Medical conditions that increase the risk of falls include: orthostatic

hypotension (6, 8, 10, 15), musculoskeletal disease (3, 5, 16), visual impairment (7, 17, 18), low systolic blood pressure, stroke, cognitive impairments, Parkinson's disease, gait disorders, balance disorders and sensory impairments (3, 4, 7, 10, 14). Medications in general, and polypharmacy in particular, increase the risk of falls in older people (19).

In recent years, there has been an increasing level of research and policy interest in the public health impact of falls. The effectiveness of single and complex programmes for the prevention of falls and fall-related injuries was extensively tested among older people at risk of falls (20). Most intervention studies were carried out in community settings; a few were undertaken in hospitals and residential care settings (13). In this document, the evidence for fall-prevention interventions undertaken for community-dwelling older people at risk of falls has been summarized to inform the recommendations provided in the full ICOPE guidelines available at who.int/ageing/publications/guidelines-icope.

Part 1: Evidence review

Scoping question in PICO format (population, intervention, comparison, outcome)

Population

Older people 60 years of age and older (both male and female) at risk of falls

Interventions

- Multicomponent exercise programme/strength training
- Falls risk assessment by the physiotherapist to develop individualized falls and injury prevention
- Individually tailored exercises
- Medication review
- Withdrawal of psychotropic medication
- Multifactorial interventions with comprehensive geriatric assessment

- Environmental modification for home safety
- Assistive technology (walking aid, hearing aid, personal alarm system)
- Footwear assessment
- Insertion of a pacemaker (carotid sinus hypersensitivity)

Comparison

- Usual care or standard care
- Placebo or no active intervention
- Waiting list control
- Active control intervention

Outcome

- Critical: rate of falls

Setting

- Primary care/community

Search strategy

The search for systematic reviews was conducted on 10 October 2015 in Ovid MEDLINE, Embase and the Cochrane Library using comprehensive search terms (Annex 1). Details of the number studies retrieved and included are presented in Annex 2.

List of systematic reviews identified by the search process

Included in GRADE¹ tables (6):

— Gillespie LD, Robertson MC, Gillespie WJ, Sherrington C, Gates S, Clemson LM, Lamb SE. Interventions for preventing falls in older people living in the community. Cochrane Database Syst Rev. 2012;(9):CD007146. Publication status and date: Edited (no change to conclusions), published in Issue 4, 2015.

¹ GRADE: Grading of Recommendations Assessment, Development and Evaluation. More information: <http://gradeworkinggroup.org>

PICO table

	Intervention/comparison	Outcomes	Systematic review used for GRADE	Explanation
1	<p>Compared with no intervention (or an intervention not expected to reduce falls), fall-prevention interventions included:</p> <ul style="list-style-type: none"> • exercise • t'ai chi • multifactorial programmes • home safety interventions • cognitive behavioural intervention • prevention education • anti-slip shoe device • vision treatment • pacemaker for carotid hypersensitivity • reduced psychotropics • vitamin D supplementation. 	Risk of falls.	<p>Gillespie LD, Robertson MC, Gillespie WJ, Sherrington C, Gates S, Clemson LM, Lamb SE. Interventions for preventing falls in older people living in the community. Cochrane Database Syst Rev. 2012;(9):CD007146. (6)</p>	Systematic review relevant to the area.

Narrative description of the studies that went into analysis

Gillespie et al. (2012) is a Cochrane systematic review of interventions designed to reduce the incidence of falls in older people living in the community (6). The search for clinical trials was conducted in the Cochrane Bone, Joint and Muscle Trauma Group Specialized Register (February 2012), CENTRAL (The Cochrane Library 2012, Issue 3), MEDLINE (1946 to March 2012), Embase (1947 to March 2012), CINAHL (1982 to February 2012) and online trial registers. Only randomized controlled trials (RCTs) of interventions to reduce falls in community-dwelling older people were included. The review included 159 trials with 79 193 participants. Most trials compared a fall-prevention intervention with no intervention or an intervention not expected to reduce falls. The most common interventions tested were exercise as a single intervention (59 trials) and multifactorial programmes (40 trials). Sixty-two per cent (99/159) of the trials were at low risk of selection bias for sequence generation, 60% for attrition bias for the outcome

of falls (66/110), 73% (96/131) for attrition bias for fallers, and 38% (60/159) for selection bias due to allocation concealment. The review found no evidence of effect for cognitive behavioural interventions or interventions aiming to improve knowledge about falls prevention alone. Limited evidence was reported in the review for an anti-slip shoe device, and for interventions to treat vision problems. Pacemaker insertion reduced falls in very selected populations of older people with carotid hypersensitivity, and reduction of psychotropic medication also reduced falls but the sustainability of the effect was questioned. The authors concluded that group and home-based exercise programmes and home safety interventions reduce the rate of falls and the risk of falling; that multifactorial assessment and intervention programmes reduce the rate of falls but not the risk of falling; and that t'ai chi reduces the risk of falling. Overall, vitamin D supplementation does not appear to reduce falls but may be effective in people who have lower vitamin D levels before treatment.

GRADE table 1: Medication review or withdrawal versus control for older people living in the community

Author: WHO systematic review team

Date: November 2015

Question: What is the effectiveness of medication review or withdrawal versus control for preventing falls in older people living in the community?

Setting: Community

Bibliography: (6) Gillespie LD, Robertson MC, Gillespie WJ, Sherrington C, Gates S, Clemson LM, Lamb SE. Interventions for preventing falls in older people living in the community. Cochrane Database Syst Rev. 2012;(9):CD007146. Publication status and date: Edited (no change to conclusions), published in Issue 4, 2015.

Quality assessment							Number of patients		Effect	Quality	Importance
Number of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Medication withdrawal	Control	Relative (95% CI)		
Rate of falls: psychotropic medication withdrawal vs control (follow-up 14 weeks)											
1	randomized trials	serious ^a	no serious inconsistency	no serious indirectness	serious ^b	none	48	45	RR: 0.34 (0.16 to 0.73)	●●○○ LOW	CRITICAL
Rate of falls: medication review and modification vs usual care (follow-up 12 months)											

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_26666

