

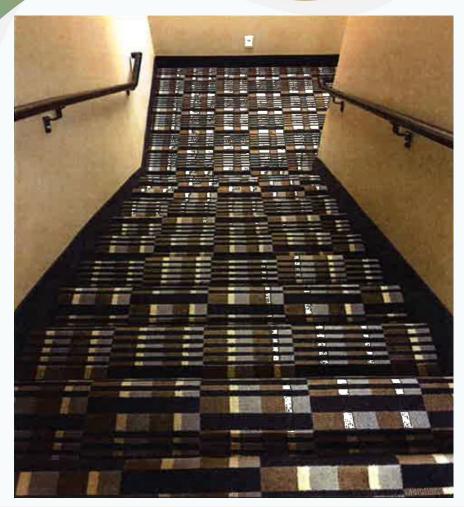
31st National Conference and Exhibition 2025

A Cochrane Systematic Review: Occupational therapy-led fallprevention home hazard assessments reduce falls

Professor Alison Pighills







Home Hazard assessment / Environmental Assessment and Modification

1. A. PIGHILLS, L. CLEMSON AND S. STARK (2024) WALKING AND FALLS. IN: OCCUPATIONAL THERAPY FOR PEOPLE EXPERIENCING ILLNESS, INJURY OR IMPAIRMENT-E-BOOK: PROMOTING OCCUPATIONAL PARTICIPATION, EDITED BY M. CURTIN, M. EGAN, Y. PRIOR, T. PARNELL, R. GALVAAN, K. SAUVÉSCHENK, ET AL. ELSEVIER HEALTH SCIENCES. 8TH EDN.



22 STUDIES FROM 10 COUNTRIES INVOLVING 8463 COMMUNITY-RESIDING OLDER PEOPLE



Cochrane Database of Systematic Reviews

Environmental interventions for preventing falls in older people living in the community (Review)

Clemson L, Stark S, Pighills AC, Fairhall NJ, Lamb SE, Ali J, Sherrington C

 CLEMSON, L; STARK, S; PIGHILLS, AC; FAIRHALL, NJ; LAMB, SE; ALI, J; SHERRINGTON, C (2023). ENVIRONMENTAL INTERVENTIONS FOR PREVENTING FALLS IN OLDER PEOPLE LIVING IN THE COMMUNITY. COCHRANE DATABASE OF SYSTEMATIC REVIEWS, ISSUE 3. ART. No.: CD013258. DOI: 10.1002/14651858.CD013258.PUB2.



Analysis 1.1. Comparison 1: Home fall-hazard reduction versus control: primary outcome: rate of falls, Outcome 1: Rate of falls - overall analysis

Study or Subgroup	log[Rate Ratio]	SE	Intervention Total	Control Total	Weight	Rate Ratio IV, Random, 95% CI	Rate Ratio IV, Random, 95% CI
Campbell 2005	-0.89	0.15	100	96	9.9%	0.41 [0.31 , 0.55]	
Chu 2017	-0.6	0.31		103	5.9%		
Cockayne 2021	0.16	0.08	420	888	11.6%	1.17 [1.00 , 1.37]	
Cumming 1999	-0.15	0.09	264	266	11.4%		
Day 2002	0	0.1	136	137	11.2%	1.00 [0.82 , 1.22]	
Lannin 2007	-1.11	1.19	5	5	0.7%	0.33 [0.03, 3.40]	
Lin 2007	-0.78	0.37	50	50	4.8%	0.46 [0.22, 0.95]	
Lockwood 2019	-0.09	0.43	37	36	4.0%	0.91 [0.39, 2.12]	
Nikolaus 2003	-0.37	0.16	181	179	9.6%	0.69 [0.50, 0.95]	
Pighills 2011	-0.44	0.08	156	77	11.6%	0.64 [0.55, 0.75]	
Stark 2021	-0.48	0.21	135	140	8.3%	0.62 [0.41, 0.93]	
Stevens 2001	0.02	0.11	570	1167	10.9%	1.02 [0.82 , 1.27]	+
Total (95% CI)			2149	3144	100.0%	0.74 [0.61, 0.91]	
Heterogeneity: Tau ² =	0.09; Chi ² = 66.24, df =	11 (P < 0	0.00001); $I^2 = 83$	3%			•
Test for overall effect:	Z = 2.84 (P = 0.005)						$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
Test for subgroup diffe	rences: Not applicable	Fa	avours intervention Favours control				



Analysis 1.2. Comparison 1: Home fall-hazard reduction versus control: primary outcome: rate of falls, Outcome 2: Rate of falls - subgrouped by risk of falls at baseline

			Intervention	Control		Rate Ratio	Rate Ratio				
Study or Subgroup	log[Rate Ratio]	SE	Total	Total	Weight	IV, Random, 95% CI	IV, Random, 95% CI				
1.2.1 Selected for high risk of falling at baseline											
Campbell 2005 (1)	-0.89	0.15	100	96	10.6%	0.41 [0.31, 0.55]	<u> </u>				
Chu 2017 (2)	-0.6	0.31	95	103	3.1%	0.55 [0.30 , 1.01]					
Cockayne 2021 (3)	-0.15	0.28	41	83	3.8%	0.86 [0.50 , 1.49]					
Cumming 1999 (4)	-0.29	0.13	103	103	12.9%	0.75 [0.58, 0.97]					
Lin 2007 (5)	-0.78	0.37	50	50	2.2%	0.46 [0.22, 0.95]					
Lockwood 2019 (6)	-0.09	0.43	37	36	1.7%	0.91 [0.39, 2.12]					
Nikolaus 2003 (7)	-0.46	0.02	53	55	37.4%	0.63 [0.61, 0.66]					
Pighills 2011 (8)	-0.44	0.08	156	77	22.1%	0.64 [0.55, 0.75]	•				
Stark 2021 (9)	-0.48	0.21	135	140	6.2%	0.62 [0.41, 0.93]					
Subtotal (95% CI)			770	743	100.0%	0.62 [0.56, 0.70]	•				
Heterogeneity: $Tau^2 = 0.01$; $Chi^2 = 12.91$, $df = 8$ (P = 0.11); $I^2 = 38\%$											
Test for overall effect: Z	= 8.30 (P < 0.00001)										
1.2.2 Not selected for h	igh risk of falling at	baseline									
Cockayne 2021 (10)	0.19	0.09	379	805	29.6%	1.21 [1.01, 1.44]	-				
Cumming 1999 (11)	0.06	0.14	161	163	12.2%	1.06 [0.81, 1.40]	_ _ _				
Day 2002 (12)	0	0.1	136	137	24.0%	1.00 [0.82, 1.22]	<u>+</u>				
Lannin 2007 (13)	-1.11	1.19	5	5	0.2%	0.33 [0.03, 3.40]	-				
Nikolaus 2003 (14)	-0.09	0.13	128	124	14.2%	0.91 [0.71 , 1.18]					
Stevens 2001 (12)	0.02	0.11	570	1167	19.8%	1.02 [0.82 , 1.27]	<u> </u>				
Subtotal (95% CI)			1379	2401	100.0%	1.05 [0.96 , 1.16]	•				
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 4.86$, $df = 5$ ($P = 0.43$); $I^2 = 0\%$											
Test for overall effect: Z	= 1.08 (P = 0.28)										
Test for subgroup differe	0.2 0.5 1 2 5										
						Fav	yours intervention Favours control				



Results Summarised

- 26% REDUCTION IN FALLS FOR INTERVENTION TARGETING ALL FALLS RISK CATEGORIES (RAR 0.74, 95% CI 0.61 to 0.91, p=0.005)
- 38% REDUCTION IN FALLS FOR INTERVENTION TARGETING HIGH FALLS RISK CATEGORY (RAR 0.62, 95% CI 0.56 to 0.70, P<0.00001)
- No reduction in falls for intervention targeting Low falls risk category (RaR 1.05, 95% CI 0.96 to 1.16, p=0.28)
- 39% REDUCTION IN FALLS FOR OT LED INTERVENTION TARGETING HIGH FALLS RISK CATEGORY (RAR 0.61, 95% CI 0.53 to 0.71, p=<0.00001)</p>
- NO REDUCTION IN FALLS FOR OT LED INTERVENTION TARGETING LOW FALLS RISK CATEGORY (RAR 1.07, 95% CI 0.91 to 1.27, P=0.24)



High-Intensity Environmental Assessment

1. HAZARD

IDENTIFICATION

2. VALIDATED AX TOOL

3. OBSERVATION OF FUNCTIONAL CAPACITY

4. FOLLOW-UP

1-4 = HIGH
INTENSITY
INTERVENTION

5. WAS THE OLDER
PERSON ACTIVELY
INVOLVED IN THE AX
AND PRIORITY SETTING?

(TO BE DEEMED HIGH INTENSITY THE INTERVENTION MUST MEET 3 OUT OF THE FIRST 4 CRITERIA)

2. CLEMSON, L., MACKENZIE, L., BALLINGER, C., CLOSE, J., & CUMMING, R. G. (2008). ENVIRONMENTAL INTERVENTIONS TO PREVENT FALLS IN COMMUNITY-DWELLING OLDER PEOPLE: A META-ANALYSIS OF RANDOMIZED BLANCHET, R., & EDWARDS, N. (2018). A NEED TO IMPROVE THE ASSESSMENT OF ENVIRONMENTAL HAZARDS FOR FALLS ON STAIRS AND IN BATHROOMS: RESULTS OF A SCOPING REVIEW. BMC GERIATRICS, 18(1), 272-272. DOI:10.1186/s12877-018-0958-1



Implications for practice

- ENVIRONMENTAL ASSESSMENT, AIMING TO REDUCE FALLS,
 SHOULD BE A SPECIFIC TARGETED PROFESSIONALLY PRESCRIBED
 INTERVENTION NOT JUST A COMPONENT OF A GENERIC HOME
 VISIT
- IT IS A PREVENTION FOCUSED INTERVENTION AS OPPOSED TO A THERAPEUTIC INTERVENTION TO ENHANCE INDEPENDENCE
- ENVIRONMENTAL ASSESSMENT IS A JOINT PROBLEM-SOLVING APPROACH



HOME FALL-HAZARD INTERVENTIONS:

- REDUCE THE RATE OF FALLS AND THE NUMBER OF PEOPLE EXPERIENCING FALLS WHEN TARGETED TOWARD PEOPLE AT HIGH RISK OF FALLING
- SHOW GREATER REDUCTIONS WHEN THE INTERVENTION IS TAILORED TO FALLS
- ARE MORE EFFECTIVE WHEN DELIVERED BY AN OCCUPATIONAL THERAPIST
- 4. CLEMSON, L; PIGHILLS, A (2021). MODIFYING THE ENVIRONMENT TO PREVENT FALLS IN LORD, S. R., SHRERRINGTON, C., & MENZ, H. B. EDS. FALLS IN OLDER PEOPLE; RISK FACTORS AND STRATEGIES FOR PREVENTION. CAMBRIDGE: CAMBRIDGE UNIVERSITY PRESS

Conclusions











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GUIDELINE

World guidelines for falls prevention and management for older adults: a global initiative

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GLOBAL REPRESENTATION

This map shows our level of representation from countries across the globe (darker shades of blue indicate higher representation)



INVOLVED

- **96** WORLD "CORE EXPERTS"
- **40** COUNTRIES
- **36** Societies/Agencies
- **25** STEERING COMMITTEE MEMBERS
- **12** WORKING GROUPS
- **11** Systematic reviews



Implementation Pilot

6. PIGHILLS, A; TYNAN, A; FURNESS, L; RAWLE, M (2019). OCCUPATIONAL THERAPIST LED ENVIRONMENTAL ASSESSMENT AND MODIFICATION (EAM) TO PREVENT FALLS IN OLDER PEOPLE IN REGIONAL AND RURAL SETTINGS: A PILOT STUDY USING IMPLEMENTATION SCIENCE, AUSTRALIAN OCCUPATIONAL THERAPY JOURNAL. 66: 347-61. DOI:10.1111/1440-1630.12560

Occupational therapist led environmental assessment and modification to prevent falls: Review of current practice in Feature Article

Feature Article

Occupational therapist led environmental assessment and in the prevent falls: Review

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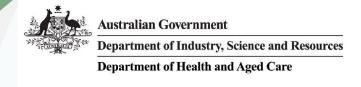
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Grant Opportunity Guidelines



Medical Research Future Fund – Rapid Applied Research Translation Initiative

2022 Rapid Applied Research Translation Grant Opportunity Guidelines

What next?

AIM: TO EXAMINE THE EFFECT OF TAILORED IMPLEMENTATION STRATEGIES ON THE UPTAKE OF **ENVIRONMENTAL ASSESSMENT** AND MODIFICATION AMONGST OCCUPATIONAL THERAPISTS WORKING WITH OLDER PEOPLE AT HIGH RISK OF FALLS IN A VARIETY OF COMMUNITY SETTINGS



The Research Team

DO YOU PROVIDE A SERVICE TO OLDER PEOPLE AT HIGH RISK OF FALLS? DO YOU CARRY OUT HOME BASED OT ASSESSMENTS? IF YES, YOU COULD PARTICIPATE IN OUR MRFF FUNDED NATIONAL IMPLEMENTATION STUDY. FOR FURTHER DETAILS CONTACT: PROFESSOR ALISON PIGHILLS. EMAIL: ALISON.PIGHILLS@JCU.EDU.AU

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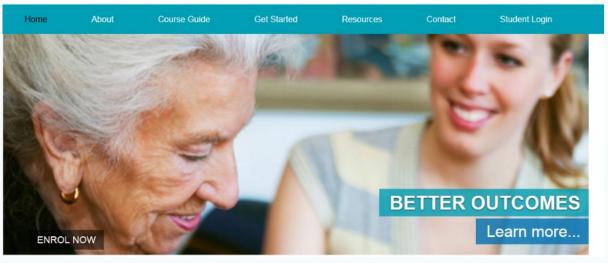






FALLS PREVENTION Online Workshop

HOME AND COMMUNITY SAFETY



Resources

Falls prevention online workshop for health professionals:

https://fallspreventiononlineworkshops.com.au/

Aims to enable clinicians to: Identify environmental hazards and behavioural risks related to falls; problem-solve solutions jointly with patients; reduce or prevent future falls and the consequences of falls; learn to develop a tailored action plan for clients; apply an evidence-based approach in everyday practice

Home and Community Safety
Online Training Module and Resources



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