

Best Evidence Summaries of Topics in Mental Healthcare

BEST *in* **MH** *clinical question-answering service*

Question

“In older adults, how effective is the use of hip protectors, compared to not using hip protectors / any other intervention, for reducing injury from falls?”

Clarification of question using PICO structure

Patients: Older adults
Intervention: Hip protectors
Comparator: Not using hip protectors / any other intervention
Outcome: Incidence of falls

Clinical and research implications

One well conducted review of 19 studies (around 17 000 participants) found that providing hip protectors to older people in nursing care facilities is likely to lead to a small decrease in hip fractures but may lead to an increase in pelvic fractures. Providing hip protectors to older people living at home had no effect on fracture incidence. The risk of adverse events is low but adherence may be a problem, especially long term. These findings are likely to be reliable.

What does the evidence say?

Number of included studies/reviews (number of participants)

One systematic review (19 studies, around 17 000 participants) assessed hard or soft hip protectors enclosed in special underwear in older people living in nursing care facilities or at home.

Main Findings

There was moderate quality evidence that, in older people living in nursing care facilities, providing a hip protector is likely to lead to a small decrease in the risk of hip fracture (RR 0.82, 95% CI 0.67, 1.00; 14 trials), may lead to a small increase of pelvic fracture (RR 1.27, 95% 0.78, 2.08), and is unlikely to impact on other types of fracture (RR 0.87, 95% CI 0.71, 1.07; 6 trials) or falls (RR 1.02, 95% 0.9, 1.16; 16 trials). Providing a hip protector to older people living at home has little or no effect on hip fractures (RR 1.15, 95% CI 0.84, 1.58; 5 trials). Very few people (0-5%) had adverse events such as skin irritation. Adherence was poor, especially in the long term (24-80%).

Authors Conclusions

The authors concluded that hip protectors probably reduce the risk of hip fractures if made available to older people in nursing care or residential care settings, without increasing the frequency of falls. However, hip protectors may slightly increase the small risk of pelvic fractures. Poor acceptance and adherence by older people offered hip protectors is a barrier to their use. Better understanding is needed of the personal and design factors that may influence acceptance and adherence.

Reliability of conclusions/Strength of evidence

This was a well conducted review and its conclusions are likely to be reliable.

What do guidelines say?

Neither the National Institute of Health and Care Excellence (NICE) nor the Scottish Intercollegiate Guidelines Network (SIGN) have produced guidelines which make recommendations regarding the use of hip protectors for older adults.

Date question received: 07/10/2014
Date searches conducted: 21/10/2014
Date answer completed: 12/11/2014


References

SRs

Santesso, N., Carrasco-Labra, A., & Brignardello-Petersen, R. (2014). Hip protectors for preventing hip fractures in older people. *Cochrane Database of Systematic Reviews*, 3. Art. No.: CD001255. DOI: 10.1002/14651858.CD001255.pub5.





Results

Systematic Reviews


Author (year)	Search Date	Inclusion criteria	Number of included studies	Summary of results	Risk of bias
Santesso et al. (2014)	12/2012	<p><i>Participants:</i> Older people living in the community or in institutional care, aged 65 years and over.</p> <p><i>Intervention:</i> Allocation individually or in a cluster to the provision of hip protectors. Studies were excluded if the intervention being tested was a programme designed to reduce the incidence of hip fractures, whereby the provision of hip protectors was just one component.</p> <p><i>Comparator:</i> No provision of hip protectors.</p> <p><i>Outcome:</i> Primary outcomes: risk of sustaining a hip fracture; risk of sustaining a pelvic fracture; overall rate of pelvic and other fractures; rate of fall events.</p> <p><i>Study designs:</i> Randomised or quasi-randomised controlled trials. Individually and cluster randomised trials were eligible.</p>	19 (~17000 people)	<p>Older people living in nursing care facilities: Hip fracture: RR 0.82, 95% CI 0.67, 1.00; 14 trials Pelvic fracture: RR 1.27, 95% 0.78, 2.08; 9 trials Other types of fracture: RR 0.87, 95% CI 0.71, 1.07; 6 trials Falls: RR 1.02, 95% 0.9, 1.16; 16 trials</p> <p>Older people living at home: Hip fracture: RR 1.15, 95% CI 0.84, 1.58; 5 trials.</p> <p>Adverse events e.g. skin irritation ranged from 0-5% Adherence ranged from 24-80%</p>	


Risk of Bias:

SRs

Author (year)	Risk of Bias				
	Inclusion criteria	Searches	Review Process	Quality assessment	Synthesis
Santesso et al. (2014)					

 Low Risk

 High Risk

 Unclear Risk

Search Details

Source	Search Strategy	Number of hits	Relevant evidence identified
<i>SRs and Guidelines</i>			
NICE	hip protector	2	0
DARE	(fracture* adj3 (hip* or femur* or femor*)) IN DARE 102 Delete 2 (hip* adj3 protect*) IN DARE 14 Delete 3 (cloth* adj3 protect*) IN DARE 1 Delete 4 (devic* adj3 protect*) IN DARE 12 Delete 5 (devic* adj3 orthotic*) IN DARE 1 Delete 6 (hip* adj3 pad*) IN DARE 1 Delete 7 (hip* adj3 fracture*) IN DARE 211 Delete 8 MeSH DESCRIPTOR Hip Fractures EXPLODE ALL TREES 246 Delete 9 MeSH DESCRIPTOR Protective Clothing EXPLODE ALL TREES 38 Delete 10 MeSH DESCRIPTOR Orthotic Devices EXPLODE ALL TREES 143 Delete 11 #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 576 Delete 12 ((old OR older) adj2 (adult* Or people OR person* OR male OR female)) IN DARE 624 Delete 13 (elderly OR geriatric OR aged OR pension* OR retire*) IN DARE 6108 Delete 14 MeSH DESCRIPTOR Frail Elderly EXPLODE ALL TREES 77 Delete 15 MeSH DESCRIPTOR Geriatric Psychiatry EXPLODE ALL TREES 7 Delete 16 MeSH DESCRIPTOR Geriatrics EXPLODE ALL TREES 40 Delete 17 MeSH DESCRIPTOR Geriatric Nursing EXPLODE ALL TREES 29 Delete 18 MeSH DESCRIPTOR Health Services for the Aged EXPLODE ALL TREES 145 Delete 19 #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 6381 Delete 20 #11 AND #19	180	1
<i>Primary studies</i>			

CENTRAL	<p>#1 hip adj3 pad* or protector* or cushion*.ti,ab,kw (Word variations have been searched) 499</p> <p>#2 "hip protector*" 137</p> <p>#3 #1 or #2 527</p> <p>#4 "older adult*" or elderly or aged or aging 372608</p> <p>#5 MeSH descriptor: [Geriatrics] explode all trees 198</p> <p>#6 #4 or #5 372615</p> <p>#7 #3 and #6 304</p> <p>Central only</p>	237	0
PsycINFO	<ol style="list-style-type: none"> 1. PsycINFO; HIPS/; 866 results. 2. PsycINFO; "hip protector*".ti,ab; 37 results. 3. PsycINFO; *FALLS/; 1344 results. 4. PsycINFO; *SAFETY DEVICES/; 556 results. 5. PsycINFO; (hip adj3 pad* OR protector* Or cushion*).ti,ab; 882 results. 6. PsycINFO; ACCIDENT PREVENTION/; 1218 results. 7. PsycINFO; 1 OR 2 OR 3 OR 4 OR 5 OR 6; 4603 results. 8. PsycINFO; GERIATRICS/; 7274 results. 9. PsycINFO; ("older adult*" OR elderly OR aged OR aging).ti,ab; 282666 results. 10. PsycINFO; 8 OR 9; 284803 results. 11. PsycINFO; 7 AND 10; 1402 results. 12. PsycINFO; CLINICAL TRIALS/; 8006 results. 13. PsycINFO; random*.ti,ab; 134477 results. 14. PsycINFO; groups.ti,ab; 376009 results. 15. PsycINFO; (double adj3 blind).ti,ab; 18193 results. 16. PsycINFO; (single adj3 blind).ti,ab; 1447 results. 17. PsycINFO; EXPERIMENTAL DESIGN/; 9304 results. 18. PsycINFO; controlled.ti,ab; 83372 results. 19. PsycINFO; (clinical adj3 study).ti,ab; 8148 results. 20. PsycINFO; trial.ti,ab; 70707 results. 21. PsycINFO; "treatment outcome clinical trial".md; 28020 results. 	20	0

	<p>22. PsycINFO; 12 OR 13 OR 14 OR 15 OR 16 OR 17 OR 18 OR 19 OR 20 OR 21; 583121 results.</p> <p>23. PsycINFO; 11 AND 22; 459 results.</p> <p>24. PsycINFO; 1 AND 4; 3 results.</p> <p>25. PsycINFO; 1 AND 6; 6 results.</p> <p>26. PsycINFO; 2 OR 5 OR 24 OR 25; 883 results.</p> <p>27. PsycINFO; 22 AND 26; 132 results.</p> <p>28. PsycINFO; 10 AND 27; 20 results.</p>		
Embase	<p>29. EMBASE; HIPS/; 0 results.</p> <p>30. EMBASE; "hip protector*".ti,ab; 426 results.</p> <p>31. EMBASE; *FALLS/; 4 results.</p> <p>32. EMBASE; *SAFETY DEVICES/; 0 results.</p> <p>33. EMBASE; (hip adj3 pad* OR protector* Or cushion*).ti,ab; 8772 results.</p> <p>34. EMBASE; ACCIDENT PREVENTION/; 13659 results.</p> <p>35. EMBASE; 29 OR 30 OR 31 OR 32 OR 33 OR 34; 22356 results.</p> <p>36. EMBASE; GERIATRICS/; 32719 results.</p> <p>37. EMBASE; ("older adult*" OR elderly OR aged OR aging).ti,ab; 764968 results.</p> <p>38. EMBASE; 36 OR 37; 787013 results.</p> <p>39. EMBASE; 35 AND 38; 1674 results.</p> <p>40. EMBASE; 29 AND 32; 0 results.</p> <p>41. EMBASE; 29 AND 34; 0 results.</p> <p>42. EMBASE; 30 OR 33 OR 40 OR 41; 8772 results.</p> <p>43. EMBASE; 22 AND 42; 0 results.</p> <p>44. EMBASE; 38 AND 43; 0 results.</p> <p>45. EMBASE; 30 OR 33; 8772 results.</p> <p>46. EMBASE; 38 AND 45; 573 results.</p> <p>47. EMBASE; random*.ti,ab; 906400 results.</p> <p>48. EMBASE; factorial*.ti,ab; 23477 results.</p> <p>49. EMBASE; (crossover* OR cross-over*).ti,ab; 70110 results.</p> <p>50. EMBASE; placebo*.ti,ab; 203025 results.</p>	129	0

	<p>51. EMBASE; (doubl* ADJ blind*).ti,ab; 144007 results.</p> <p>52. EMBASE; (singl* ADJ blind*).ti,ab; 14729 results.</p> <p>53. EMBASE; assign*.ti,ab; 243412 results.</p> <p>54. EMBASE; allocat*.ti,ab; 85802 results.</p> <p>55. EMBASE; volunteer*.ti,ab; 178508 results.</p> <p>56. EMBASE; CROSSOVER PROCEDURE/; 40397 results.</p> <p>57. EMBASE; DOUBLE BLIND PROCEDURE/; 115761 results.</p> <p>58. EMBASE; RANDOMIZED CONTROLLED TRIAL/; 351464 results.</p> <p>59. EMBASE; SINGLE BLIND PROCEDURE/; 18912 results.</p> <p>60. EMBASE; 47 OR 48 OR 49 OR 50 OR 51 OR 52 OR 53 OR 54 OR 55 OR 56 OR 57 OR 58 OR 59; 1440847 results.</p> <p>61. EMBASE; 46 AND 60; 129 results.</p>		
Cinahl	<p>10. CINAHL; "hip protector*".ti,ab; 170 results.</p> <p>11. CINAHL; (hip adj3 pad* OR protector* Or cushion*).ti,ab; 1060 results.</p> <p>12. CINAHL; GERIATRICS/; 2517 results.</p> <p>13. CINAHL; ("older adult*" OR elderly OR aged OR aging).ti,ab; 119657 results.</p> <p>14. CINAHL; 10 OR 11; 1060 results.</p> <p>15. CINAHL; 12 OR 13; 121314 results.</p> <p>16. CINAHL; 14 AND 15; 128 results.</p> <p>17. CINAHL; (random* OR RCT OR trial).ti,ab; 136888 results.</p> <p>18. CINAHL; (single-blind* OR double-blind* OR allocat*).ti,ab; 26378 results.</p> <p>19. CINAHL; 17 OR 18; 143848 results.</p> <p>20. CINAHL; 16 AND 19; 34 results.</p>	34	0
Medline	<p>29. MEDLINE; HIPS/; 10118 results.</p> <p>30. MEDLINE; "hip protector*".ti,ab; 374 results.</p> <p>31. MEDLINE; *FALLS/; 9384 results.</p> <p>32. MEDLINE; *SAFETY DEVICES/; 3632 results.</p> <p>33. MEDLINE; (hip adj3 pad* OR protector* Or cushion*).ti,ab; 7947 results.</p> <p>34. MEDLINE; ACCIDENT PREVENTION/; 8587 results.</p> <p>35. MEDLINE; 29 OR 30 OR 31 OR 32 OR 33 OR 34; 38555 results.</p> <p>36. MEDLINE; GERIATRICS/; 27505 results.</p>	158	0

	<p>37. MEDLINE; ("older adult*" OR elderly OR aged OR aging).ti,ab; 647480 results.</p> <p>38. MEDLINE; 36 OR 37; 668184 results.</p> <p>39. MEDLINE; 35 AND 38; 5454 results.</p> <p>40. MEDLINE; 29 AND 32; 13 results.</p> <p>41. MEDLINE; 29 AND 34; 1 results.</p> <p>42. MEDLINE; 30 OR 33 OR 40 OR 41; 7950 results.</p> <p>43. MEDLINE; 22 AND 42; 0 results.</p> <p>44. MEDLINE; 38 AND 43; 0 results.</p> <p>45. MEDLINE; 30 OR 33; 7947 results.</p> <p>46. MEDLINE; 38 AND 45; 454 results.</p> <p>47. MEDLINE; "randomized controlled trial".pt; 397350 results.</p> <p>48. MEDLINE; "controlled clinical trial".pt; 90496 results.</p> <p>49. MEDLINE; randomized.ab; 316885 results.</p> <p>50. MEDLINE; placebo.ab; 162975 results.</p> <p>51. MEDLINE; "drug therapy".fs; 1775294 results.</p> <p>52. MEDLINE; randomly.ab; 227206 results.</p> <p>53. MEDLINE; trial.ab; 330636 results.</p> <p>54. MEDLINE; groups.ab; 1429199 results.</p> <p>55. MEDLINE; 47 OR 48 OR 49 OR 50 OR 51 OR 52 OR 53 OR 54; 3509100 results.</p> <p>56. MEDLINE; 46 AND 55; 158 results.</p>		
Summary	NA	NA	

Disclaimer

BEST in MH answers to clinical questions are for information purposes only. BEST in MH does not make recommendations. Individual health care providers are responsible for assessing the applicability of BEST in MH answers to their clinical practice. BEST in MH is not responsible or liable for, directly or indirectly, any form of damage resulting from the use/misuse of information contained in or implied by these documents. Links to other sites are provided for information purposes only. BEST in MH cannot accept responsibility for the content of linked sites.