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Mental health and falls in older people

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www.NeuRA.edu.au

Depression

Common Risk Factors

- Biderman et al (2002)
 - Identified 5 common risk factors for depression and falls
 - Poor self-rated health
 - Poor cognitive status
 - Impaired ADL
 - 2 or more clinic visits in a month
 - Slow walking speed (>10secs over 5m)
 - Discrimination between fallers and non fallers (86%) and depressed and not depressed (76%)

Depression and Falls

Kvelde T, McVeigh C, Toson B, Greenaway M, Lord SR, Delbaere K, Close JCT.

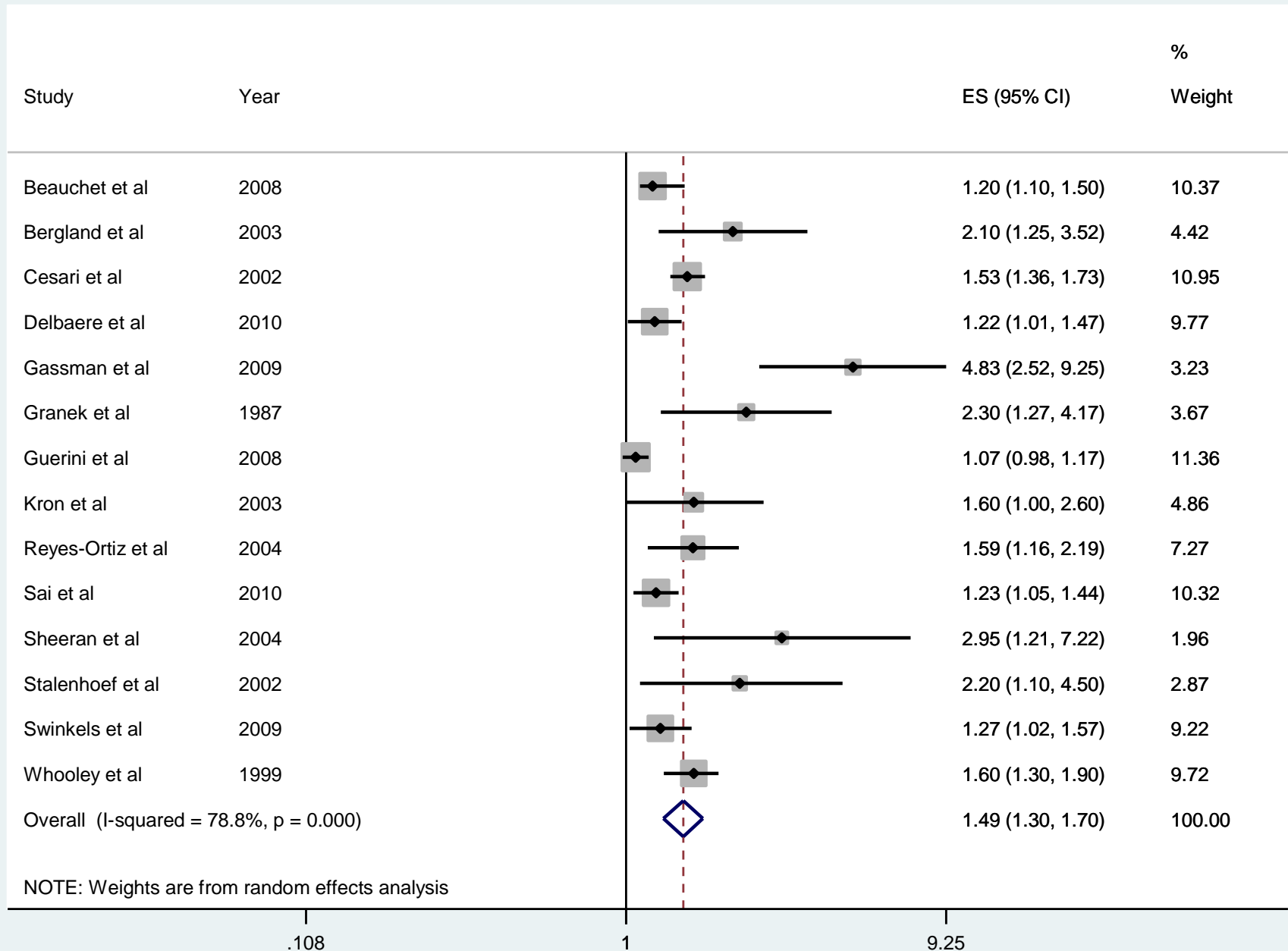
Depressive symptomatology as a risk factor for falls in older people: systematic review and meta-analysis.

Journal of the American Geriatrics Society. In Press.

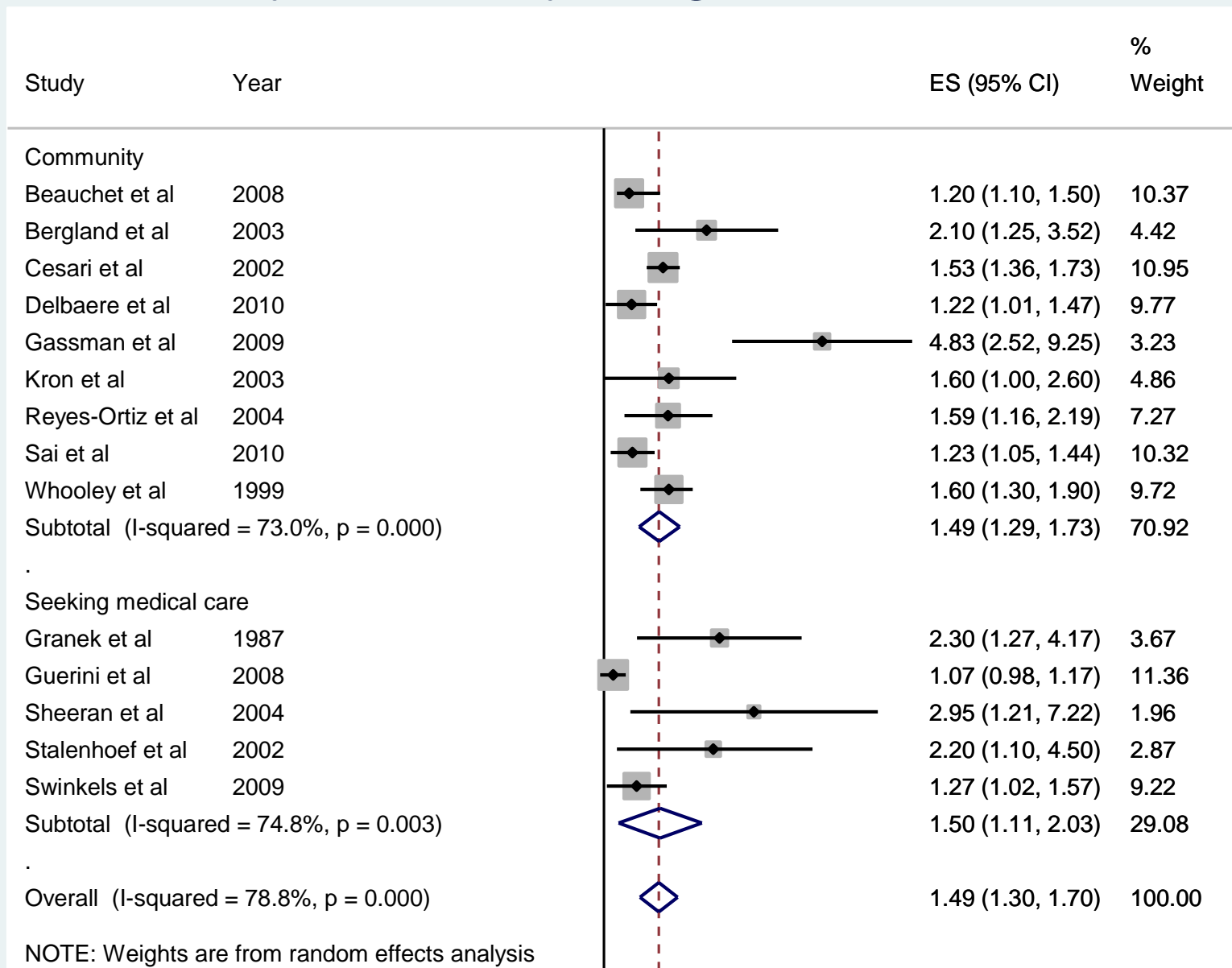
Systematic review findings

- 25 prospective studies with a total of 21,455 participants included
- Recruitment of participants was either conducted randomly in the community or by approaching older people seeking medical attention for various medical conditions
- There were 11 different measures used to assess depressive symptoms and length of follow-up for falls ranged from 90 days to 8 years

Meta-analysis ORs, random effects



Meta-analysis ORs by subgroup, random effects



NOTE: Weights are from random effects analysis

.108

1

9.25

Systematic review conclusions

- Depressive symptoms were found to be consistently associated with falls in older people
- This finding was apparent despite the use of different measures of depressive symptoms and falls, and varying length of follow-up and statistical methods
- There was no difference between community samples and those seeking medical care with respect to depressive symptoms being a risk factor for falls

Psychotropic drugs

Psychotropic drugs and falls

Review Article | November 2009

Meta-analysis of the Impact of 9 Medication Classes on Falls in Elderly Persons **FREE**

John C. Woolcott, MA; Kathryn J. Richardson, MSc; Matthew O. Wiens, BSc, Pharm, PharmD; Bhavini Patel, MPharm; Judith Marin, BPharm, PharmD; Karim M. Khan, MD, PhD; Carlo A. Marra, BSc, Pharm, PharmD, PhD

[\[+\] Author Affiliations](#)

Arch Intern Med. 2009;169(21):1952-1960.

Text Size: [A](#) [A](#) [A](#)

Meta-analyses were completed on 9 unique drug classes from 22 studies including 79 081 participants

Systematic review findings

Drug class	OR (95% CI)
Narcotics	0.96 (0.78-1.18)
Sedatives and hypnotics	1.47 (1.35-1.62)
Benzodiazepines	1.41 (1.20-1.71)
Antipsychotics	1.39 (0.94-2.00)
Antidepressants	1.36 (1.13-1.76)

Antidepressants and falls

Observational study 60,746 patients aged 65+ years with a diagnosis of depression, *Coupland et al, BMJ, 2011*

Drug class	HR (95% CI)
Tricyclics (31.6%)	1.30 (1.23-1.38)
SSRIs (54.7%)	1.66 (1.58-1.73)

Drug use and falls - confounding by indication?

- Is the risk due to the drugs or the indications for their use?
 - Antidepressants & depression
 - Antipsychotics & dementia
 - Anti-epileptics and epilepsy
 - CVS medications & CVS disease
 - Nonsteroidal anti-inflammatory drugs and arthritis

Age and Ageing 2012; **0**: 1–7
doi: 10.1093/ageing/afs065

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Depressive symptoms in addition to visual impairment, reduced strength and poor balance predict falls in older Taiwanese people

MARCELLA MUN-SAN KWAN^{1,2}, SANG-I. LIN^{3,4}, JACQUELINE C. T. CLOSE^{1,5}, STEPHEN R. LORD^{1,2}

Main findings

- No participants were taking anti-depressant medications
- Fifty six of the 260 participants (21.5%) reported depressive symptoms (GDS-15 score ≥ 6)
 - Depressive symptoms were more prevalent in recurrent fallers (40%) & once-only fallers (27.5%) compared with non-fallers (16.1%)
 - Depressive symptoms were associated with increased fall rates IRR= 1.91 (95%CI 1.21-3.00)

Thinking, Feeling, Moving



Mood, Memory and Movement: An Age-Related Neurodegenerative Complex?

Authors: Granholm, Ann-Charlotte; Boger, Heather; Emborg, Marina E.

Source: Current Aging Science, Volume 1, Number 2, July 2008, pp. 133-139(7)

Publisher: Bentham Science Publishers

- Is depression in older age sadness or apathy?
- Age-related brain dysfunction of any kind seems to share several risk factors and/or pathways.

Interventions

Exercise: a meta analysis

Exercise to prevent falls in older adults: an updated systematic review and meta-analysis

Catherine Sherrington,¹ Zoe A Michaleff,^{1,2} Nicola Fairhall,¹ Serene S Paul,¹
Anne Tiedemann,¹ Julie Whitney,³ Robert G Cumming,⁴ Robert D Herbert,⁵
Jacqueline C T Close,^{5,6} Stephen R Lord⁵

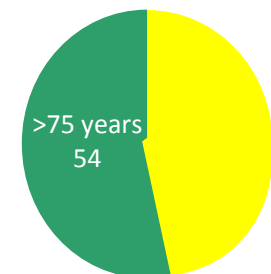
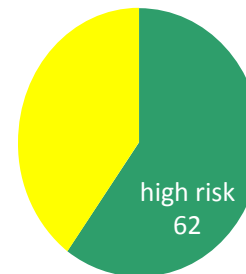
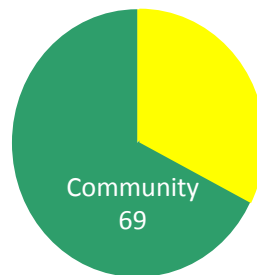


British Journal of
Sports Medicine

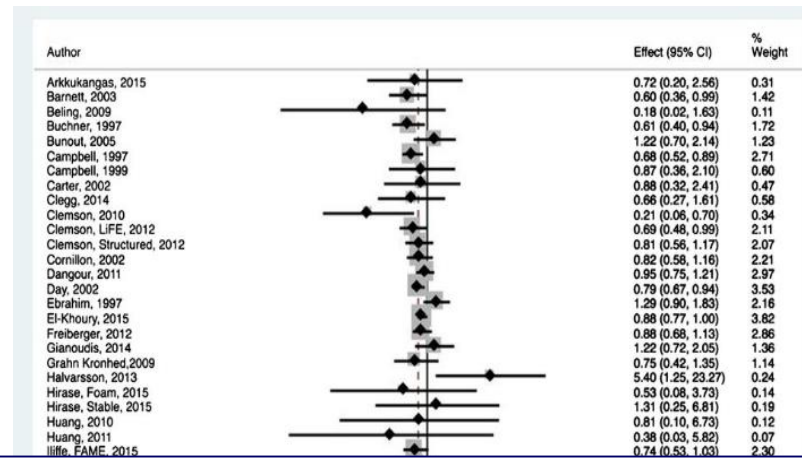
doi:10.1136/bjsports-2016-096547

99 comparisons
(88 trials)

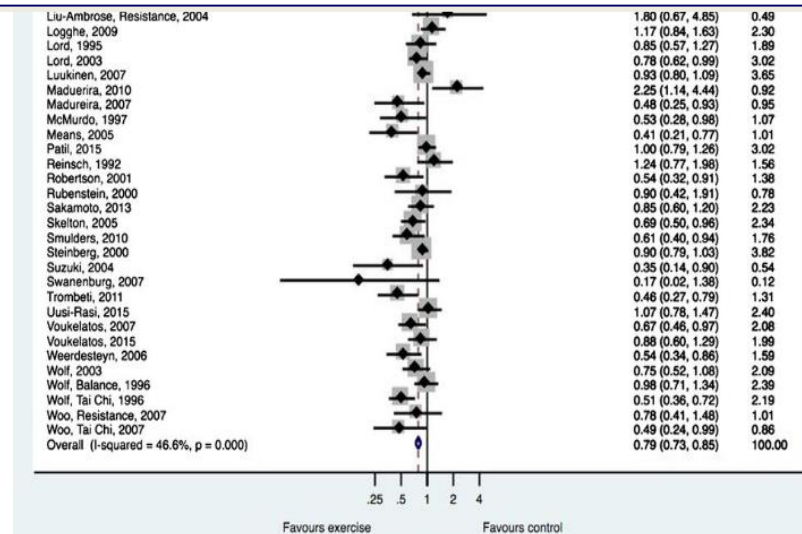
19 478 subjects



Effects of exercise



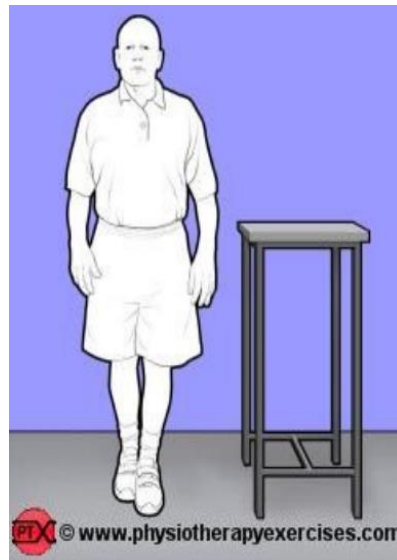
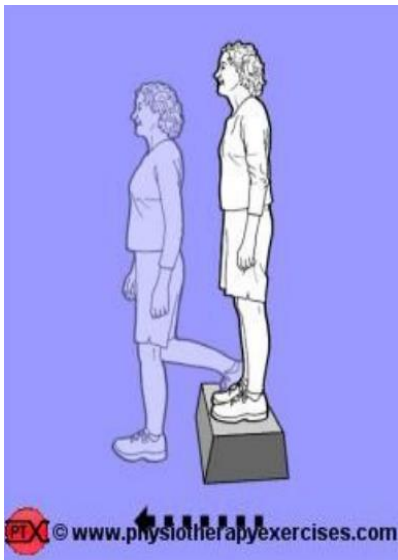
relative risk (RR) = 0.79, 95% CI = 0.73-0.85
21% reduction



Balance intensity

Definition of HIGH CHALLENGE balance training

- exercise while standing and:
 - movement of the centre of mass
 - narrowing of the base of support
 - minimising upper limb support

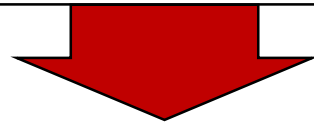


Balance intensity + dose effects

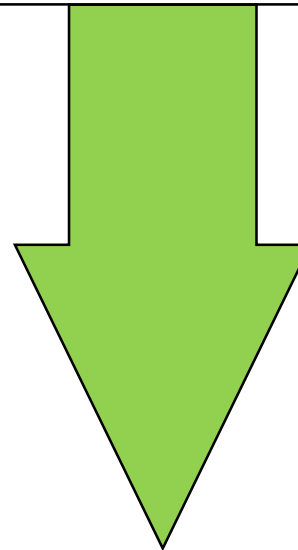
Low challenge +
<3 hours

Mod-high challenge +
>3 hours

Falls rate



10%



39%

Exercise

Regular exercise can be an effective way to reduce depressive symptoms and fear of falling

- Numerous studies have shown that people who exercise regularly experience fewer symptoms of depression and anxiety than those who do not exercise regularly.
- Several trials have shown that regular exercise of moderate intensity can be an effective treatment by itself for mild to moderate depression and to reduce fear of falling; i.e. Singh et al, J Gerontol (Med Sci) 2005;60:768-76.

Psychotropic medication use cessation

- RCT of 93 community dwelling women aged 75+ years
 - Aim to gradually cease benzodiazepine and antidepressant use
 - Significant issues with recruitment and compliance, but:
 - 65% reduction in falls in the intervention group

Falls prevention – what works

- Highest level of evidence given by meta-analyses of RCTs
 - Gillespie LD et al. Interventions for preventing falls in older people living in **the community**. Cochrane Database Syst Rev. 2012 Sep 12;9
 - Cameron ID et al. Interventions for preventing falls in older people in **care facilities and hospitals**. Cochrane Database Syst Rev. 2012 Dec 12;12:
-

Gold bar evidence scale



- One good quality RCT



- At least two good quality RCTs – little inconsistency



- Multiple RCTs and/or systematic reviews – little inconsistency

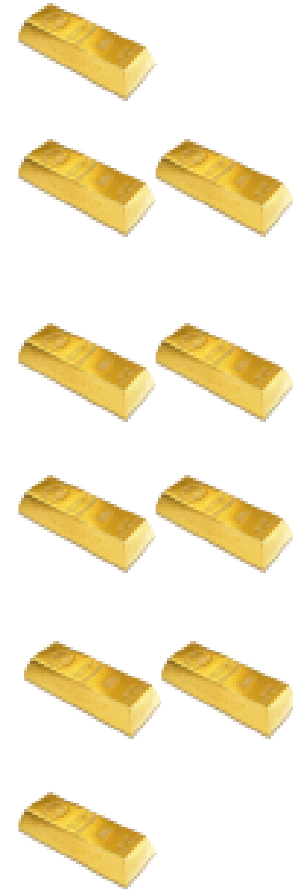
Falls prevention – what works

- High level balance exercise in group or home settings (functional balance exercises, step training, Otago, Tai Chi)
- Occupational therapy interventions (home safety modifications in association with transfer training and education) in high risk populations
- Expedited first eye cataract surgery
- Restriction of multifocal glasses use in older people who take part in regular outdoor activity
- Pharmacist-led education and GP medication review
- Podiatry intervention in people with disabling foot pain



Falls prevention – what works

- Withdrawal of psychoactive medications
- Intensive multidisciplinary assessment of high risk populations
- Intensive interventions in hospitals
- Comprehensive geriatric assessment in residential aged care
- Vitamin D supplementation in residential aged care – excluding megadoses
- Medication review in residential aged care



Thank you



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