



# FALLS LINKS

Volume 4 issue 4  
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## WELCOME

Welcome to our fourth issue for 2009. This issue features our new website to be launched September 1st. Go to <http://www.powmri.edu.au/fallsnetwork> and take a look!

We welcome and value your comments on the new website. Please send them to [e.vance@powmri.edu.au](mailto:e.vance@powmri.edu.au)

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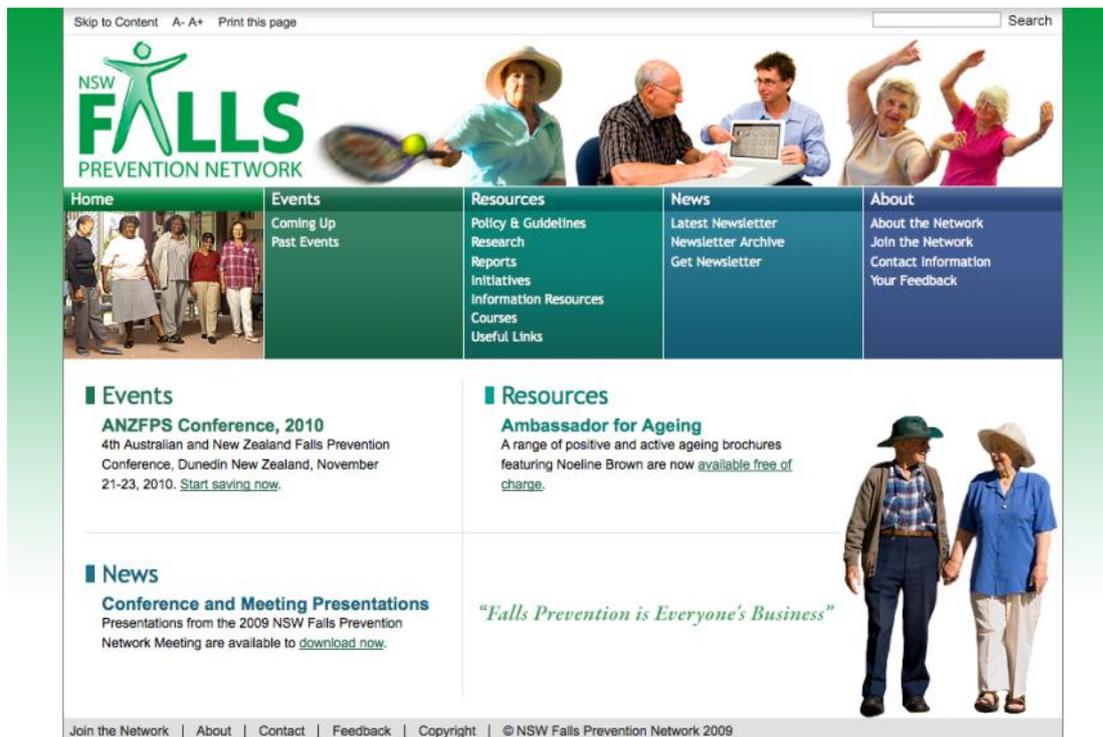
- Staying Vertical II, a workshop on balance training for fitness leaders, information on pages 2 and 3.
- Feature Focus report on Falls Injury Prevention in Residential Aged Care, see page 4.

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## NEW WEBSITE LAUNCHED



Home page of our new website

## Staying Vertical: balance training for fitness leaders

Falls injury is a major public health problem therefore preventing falls in older people is a priority. There is strong evidence to support exercise as a single intervention to prevent falls in community settings. Exercises which offer balance training that is challenging yet safe are effective in preventing falls.

Increasing access to appropriate physical activity opportunities is a cost effective and evidence based way of reducing falls risk. This physical activity should be focused on increasing muscle strength, balance and gait.

However, many fitness leaders that have been practicing for over 15 years may have undergone different training to what is currently delivered thus there may be significant gaps in their knowledge and skills. Fitness training courses have been revised as more evidence has emerged therefore there is a need to provide appropriate support to enhance fitness leader skills in order to deliver evidence based exercise class.

Consultations with fitness leaders found that there is a need for suitable professional development so that fitness leader's capacity to deliver evidenced based exercise classes is available locally at a reasonable cost. Therefore, the South Eastern Sydney Illawarra Area Health Service, Health Promotion Service worked with an Exercise Physiologist to develop Staying Vertical I & II workshops..

Staying Vertical I looked at the importance of strength, balance and power in older people. Staying Vertical II further built on this knowledge and skill. The packages were assessed by Fitness Australia and Staying Vertical I was awarded six continuing education credit (CEC) points and Staying Vertical II was awarded 8 CEC points. These workshops have been very popular amongst fitness leaders and have provided good feedback.

The learning outcomes for Staying Vertical I were:

- Develop an understanding of recent research findings regarding the prevalence of falls in older people,
- Assess basic balance ability of older people,
- Implement Basic Balance Training intervention for older people
- Assess the strength of older people,
- Implement a basic strength training intervention for older people,
- Assess the locomotive power of older people,
- Implement a basic power training intervention aimed at increasing locomotive power in older people



**Participants at a Staying vertical II Workshop**

The learning outcomes for Staying Vertical II were:

- Screen and evaluate the multiple dimensions of balance and mobility,
- Interpret test results and identify underlying impairments,
- Develop a set of exercise progressions designed to improve centre of gravity control in seated, standing and moving situations,
- Develop basic routines to enhance floor to standing mobility,

- Understand how each of the three sensory systems contribute to postural control in different sensory environments,
- develop a set of exercise progressions designed to improve the use of the three sensory systems to control balance,
- Develop a set of exercise progressions designed to improve gait,
- Effectively plan and implement group based lessons.



**Participants in the Staying Vertical II workshop led by Luke Delvecchio (white shirt) an Exercise Physiologist based in Southern Sydney, practising some of the exercises..**

### Summary

Fitness leaders who attended the Staying Vertical I & II found the information provided, materials used and presentation of the workshop excellent. Feedback indicated that participants would most likely use the skills learnt at the workshop in their practice and they found the content very relevant and valuable.

For further information please contact Bharat Nepal on 02 9947 9818

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<sup>1</sup> Sherrington C, Lord S & Close J (2008) Best-Practice recommendations for Physical Activity to Prevent Falls in Older Adults.

## FEATURE FOCUS REPORT

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### **Falls injury prevention in residential aged care may not be as easy as we thought: a randomised controlled trial**

Dr John Ward, Clinical Leader, Aged care and Mandy Harden, CNC Aged Care Education for Community Services, Hunter New England Area Health Service.

#### **Background**

This project was aimed to test the hypothesis that the employment of a full-time Project Nurse to support residential aged care facilities to implement an evidence-based multi-factorial program of falls injury prevention would significantly reduce the number of hip fractures.

About 30% of all hip fractures in our community occur in residential aged care, representing a substantial cost to our healthcare system. Overseas research had suggested the provision of calcium and vitamin D supplementation and the wearing of hip protectors could significantly reduce hip fractures in this population. A reduction in hip fractures in residential aged care of only 10-15% would represent a substantial savings to the healthcare system and would more than balance the commitment necessary for falls injury prevention programs.

We proposed that falls injury prevention programs in aged care facilities could be more effective and sustainable if they were supported by a centrally-based facilitator able to provide resources, support and encouragement for implementation of a full range of best practice strategies for falls injury prevention.

The project was funded for three years by the NSW Health Department under the Health Promotion Demonstration Research Grant Scheme.

#### **Methods**

All residential aged care facilities with at least 20 beds in the Hunter and Lower Mid-North Coast areas of NSW were invited to participate in the study. Of the 92 eligible facilities, 82 participated for the full project period, including a total of 5391 residents.

The study was undertaken as a cluster randomised controlled trial. The intervention was holistic and aimed at the environment and cultures surrounding the residents, therefore whole facilities (i.e. the clusters) were randomly allocated to intervention or control conditions.

After a baseline assessment period of 6 months, during which a record of all falls injuries was kept and a survey of falls injury prevention strategies carried out, a total of 46 facilities were randomly allocated to be included in the intervention group and a range of best-practice strategies were promoted over the intervention period of 17 months. The strategies promoted were falls risk assessment, hip protectors, calcium and vitamin D supplementation, continence management, exercise programs, safe footwear, Residential Medication Management Review (RMMR), environmental audits and post-fall management review.

Approaches used by the project officer to promote these strategies included the development of a set of resources to support the Big Green Box (Preventing falls and harm from falls in older people, National Safety & Quality Council), brochures on all strategies, training programs for link nurses in each facility, and 3 monthly Network Meetings.

Measurement and comparison of outcomes were undertaken at two levels. The first level assessed whether the intervention resulted in an overall reduction of falls injuries in the intervention facilities when compared to control facilities. The second level involved assessment of the effectiveness of the intervention for reducing falls risk among the cohort of residents who were in the selected facilities at the start of the intervention period.

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## Results

There was a significant increase in the use of many of the strategies, particularly risk assessment, vitamin D supplementation and the use of hip protectors. There was no increase in the use of medication reviews.

Overall, we did not show any reduction in hip fractures in the intervention group compared to the control group nor did we show any reduction in the rate of hip fractures between the base-line 6 months compared to the final 6 months of the intervention.

## Discussion

There are several possible reasons for our failure to show any reduction in hip fractures:

The available best practice strategies may not result in a reduction in hip fractures in this population. Few falls prevention programs in any setting, community, acute care or residential care, have produced a reduction in hip fracture rates

- The intervention period may have been too short to show an effect.
- Falls injury prevention programs may not be effective if they involve a significant proportion of people with dementia
- There was contamination between the intervention and control groups with regard to the introduction of the strategies
- The uptake of the best practice strategies may have been insufficient in the intervention facilities.

There are significant existing barriers including:

- The tremendous pressure on the staff of aged care facilities leaving staff little time to concentrate on programs such as falls injury prevention.
- There is no readily available calcium that is palatable to older people
- The vitamin D available on the Pharmaceutical Benefits Scheme requires a daily dose adding to cost and compliance issues for older people.
- There is considerable confusion as to which hip protector to recommend
- During the period of the trial, the system of medication reviews in aged care facilities changed creating some confusion for GPs

Finally, the staffing of aged care facilities seems now to be at a very low level, particularly with regard to registered and enrolled nurses.

## Summary

There is still no clear evidence, that hip fractures in residential aged care facilities in Australia, can be consistently reduced by either single or multi-factorial interventions, given current conditions. The potential savings to the health system from preventing hip fractures in residential aged care remains considerable. If some of the potential obstacles can be resolved, such as palatability and cost of calcium, availability of a high dose vitamin D to be taken monthly or less frequently, clarification of the system of medication reviews in aged care facilities and effectiveness and durability of hip protectors, then a longer trial of at least three years intervention would be worthwhile. Even if all this was achieved, unless the staffing of aged care facilities is improved, it would be difficult to implement effective falls injury prevention programs without dedicated funding.

## RECENT ABSTRACTS FROM THE RESEARCH LITERATURE

### REVIEWS

#### **Does a home based strength and balance programme in people aged $\geq 80$ years provide the best value for money to prevent falls?: A systematic review of economic analyses of falls prevention interventions.**

Davis JC, Robertson MC, Ashe MC, Liu-Ambrose T, Khan KM, Marra CA.

**Br J Sports Med** 2009; ePub(ePub): ePub. Affiliation: University of British Columbia, Canada. (Copyright © 2009, BMJ Publishing Group)

#### **ABSTRACT**

**OBJECTIVES:** To investigate the value for money of strategies to prevent falls in older adults living in the community.

**DESIGN:** Systematic review of peer reviewed journal articles reporting an economic evaluation of a falls prevention intervention as part of a randomised controlled trial, a controlled trial, or using an analytic model. We searched MEDLINE, PUBMED, EMBASE, and NHS EED databases to identify cost effectiveness, cost utility, and cost benefit studies from 1945 through July 2008.

**SETTING:** Not applicable. **PATIENTS:** Not applicable.

**INTERVENTION:** Not applicable.

**MAIN OUTCOME MEASURES:** Our primary outcome measure was incremental cost-effectiveness, cost-utility and cost-benefit ratios in the reported currency and in pounds sterling at 2008 prices. We assessed the quality of the studies using two instruments: 1) an economic evaluation checklist developed by Drummond and colleagues and 2) the Quality of Health Economic Studies instrument.

**RESULTS:** Nine studies meeting our inclusion criteria included eight cost-effectiveness analyses, one cost-utility and one cost-benefit analysis. Three effective falls prevention strategies were cost saving in a subgroup of Participants:

(i) an individually customised multifactorial programme in those with four or more of the eight targeted fall risk factors, (ii) the home based Otago Exercise Programme in people  $\geq 80$  years, and (iii) a home safety programme in the subgroup with a previous fall. These three findings were from six studies that scored  $\geq 75\%$  on the Quality of Health Economic Studies instrument.

**CONCLUSIONS:** Best value for money came from effective single factor interventions such as the Otago Exercise Programme which was cost saving in adults 80 years and older. This programme has broad applicability and therefore warrants health policy decision makers' close scrutiny.

### EPIDEMIOLOGY AND RISK FACTORS FOR FALLS

#### **Epidemiology and pathophysiology of falls in facioscapulohumeral disease.**

Horlings CG, Munneke M, Bickerstaffe A, Laverman L, Allum JH, Padberg GW, Bloem BR, van Engelen BG.

**J Neurol Neurosurg Psychiatry** 2009; ePub(ePub): ePub.

Affiliation: Radboud University Nijmegen Medical Centre, Netherlands.

(Copyright © 2009, BMJ Publishing Group)

#### **ABSTRACT**

Muscle weakness is a potentially important, yet poorly studied, risk factor for falls. Detailed studies of patients with specific myopathies may shed new light on the relation between muscle weakness and falls. Here, we examined falls in patients with facioscapulohumeral disease (FSHD), who suffer from lower limb muscle weakness. This study provides insights into the prevalence, relevance and pathophysiology of falls in FSHD. We used a validated questionnaire as well as a prospective 3 month follow-up to examine the prevalence, circumstances and consequences of falls in 73 FSHD patients and 49 matched healthy controls. In a subgroup of 28 subjects, we also examined muscle strength and electrophysiologically assessed balance using body-worn gyroscopes. In the questionnaire, 30% of the patients reported to fall at least once a month, whereas none of the controls did. Injuries occurred in almost 70% of the patients. The prospective study showed that patients fell mostly at home, mainly due to intrinsic (patient-related) causes, and usually in a forward direction. Fallers were unstable while climbing stairs, rising from a chair and standing with eyes closed, whereas non-fallers had normal balance control. Frequent fallers had greater muscle weakness than infrequent fallers. These findings demonstrate the high prevalence and clinical relevance of falls in FSHD. We also highlight the relation between muscle weakness and instability among fallers. Because patients fell mainly at home, fall prevention strategies should focus on home adaptations. As mainly intrinsic causes underlie falls, the impact of adopting balance strategies or balance training should be explored in this patient group.

### Does assessing error in perceiving postural limits by testing functional reach predict likelihood of falls in hospitalized stroke patients?

Takatori K, Okada Y, Shomoto K, Shimada T.

*Clin Rehabil* 2009; 23(6): 568-575. (Copyright © 2009, Sage Publications)

#### ABSTRACT

**Objective:** To investigate the relationship between errors in perceiving postural limits and falls in hospitalized hemiplegic patients and to determine whether this relationship is useful for identifying patients at high risk of falls.

**Design:** Observational study. Subjects: Seventy-six hemiplegic patients who were admitted to a rehabilitation hospital.

**Methods:** Error in perceiving postural limits was defined as the difference between the estimated maximum reach and actual reach distances, and its relationship to falls during hospitalization was investigated. Other measurements included Functional Ambulation Category, Brunnstrom's recovery stage, sensory disturbance, fear of falling and the Japanese version of the Montgomery-Åsberg Depression Rating Scale (MADRS-J).

**Results:** For the multiple fall group, the error in estimated distance (EED) was significantly greater than that for the zero/single fall group ( $P < 0.01$ ). Stepwise logistic regression analysis showed that EED (odds ratio 1.2, 95% confidence interval (CI) 1.1—1.4,  $P < 0.01$ ) and MADRS-J scores (odds ratio 1.1, 95% CI 1.0—1.3,  $P < 0.05$ ) were correlated with multiple falls. According to the receiver operating characteristic curve for EED, the cut-off value for discriminating multiple fallers was 6.3cm (sensitivity 81.0%, specificity 78.2%, area under the curve 0.8).

**Conclusions:** The results suggest that assessing error in perceiving postural limits by measuring the maximum reach of the non-affected side of hemiplegic patients is one way to identify those who are at high risk for falling.

### Incidence and prediction of falls in dementia: a prospective study in older people.

Allan LM, Ballard CG, Rowan EN, Kenny RA.

*PLoS ONE*. 2009;4(5): e5521.

#### ABSTRACT

**BACKGROUND:** Falls are a major cause of morbidity and mortality in dementia, but there have been no prospective studies of risk factors for falling specific to this patient population, and no successful falls intervention/prevention trials. This prospective study aimed to identify modifiable risk factors for falling in older people with mild to moderate dementia.

**METHODS AND FINDINGS:** 179 participants aged over 65 years were recruited from outpatient clinics in the UK (38 Alzheimer's disease (AD), 32 Vascular dementia (VAD), 30 Dementia with Lewy bodies (DLB), 40 Parkinson's disease with dementia (PDD), 39 healthy controls). A multifactorial assessment of baseline risk factors was performed and fall diaries were completed prospectively for 12 months. Dementia participants experienced nearly 8 times more incident falls (9118/1000 person-years) than controls (1023/1000 person-years; incidence density ratio: 7.58, 3.11-18.5). In dementia, significant univariate predictors of sustaining at least one fall included diagnosis of Lewy body disorder (proportional hazard ratio (HR) adjusted for age and sex: 3.33, 2.11-5.26), and history of falls in the preceding 12 months (HR: 2.52, 1.52-4.17). In multivariate analyses, significant potentially modifiable predictors were symptomatic orthostatic hypotension (HR: 2.13, 1.19-3.80), autonomic symptom score (HR per point 0-36: 1.055, 1.012-1.099), and Cornell depression score (HR per point 0-40: 1.053, 1.01-1.099). Higher levels of physical activity were protective (HR per point 0-9: 0.827, 0.716-0.956).

**CONCLUSIONS:** The management of symptomatic orthostatic hypotension, autonomic symptoms and depression, and the encouragement of physical activity may provide the core elements for the most fruitful strategy to reduce falls in people with dementia. Randomised controlled trials to assess such a strategy are a priority.

### Broadening our understanding: Approaching falls as a stigmatizing topic for older adults

Heather M. Hanson, Alan W. Salmoni, Philip C. Doyle.

*Disability and Health Journal*. Vol 1; Issue 2: 2009; 33-44.

#### ABSTRACT

This theoretical paper aims to demonstrate that our current understanding of falls in older adulthood can be improved by viewing falls as a stigmatizing topic. Existing empirical research alludes to the stigmatization of falls for older adults, but until now the explicit link between the study of falls and stigma has not been made. After applying the concepts of identity threat, modified labeling theory, and attribution theory, the research implications of stigma on an older adult's willingness to report and discuss falls will be outlined. As many research investigations use the number of prior falls to assign individuals to study groups, the influence of stigma may be widespread and confounding research findings. By better recognizing and understanding the contribution of stigma to the willingness of older

adults to report and discuss falls, we will be better able to mitigate its effects.

### **Incident falls impair ability to function in hip-fracture survivors: a prospective study of 95 elderly women.**

Di Monaco M, Vallero F, Tappero R, De Lauso L, De Toma E, Cavanna A.  
Arch Gerontol Geriatr. 2009 May-Jun;48(3):397-400.

#### **ABSTRACT**

The present study focused on home-dwelling women successfully discharged back to the community after a fall-related fracture of the hip. We investigated the role of incident falls in affecting ability to function in activities of daily living. Ninety-five of 103 consecutive women without cognitive impairment were recruited during in-patient rehabilitation following their first hip fracture. Functional independence in activities of daily living was assessed by using the Barthel Index (BI) score at discharge from in-patient rehabilitation and at a 6-month follow-up. Nineteen of the 95 women sustained one or more falls during a median observation time of 187 days. At a Mann-Whitney test, both BI scores assessed at the 6-month follow-up and gains in BI scores during the follow-up were significantly lower in the 19 fallers than in the 76 non-fallers ( $p=0.021$  and  $p=0.030$ , respectively), whereas no significant differences were found in baseline BI scores between the two groups. At linear multiple regression, we found a negative association between incident falls and both functional scores ( $p=0.01$ ) and their gains ( $p=0.006$ ) after adjustment for several confounders. We conclude that incident falls were significantly associated with a worse functional score in our sample of hip-fracture women.

### **An Exploratory Study of Individual and Environmental Correlates of Fear of Falling Among Community-Dwelling Seniors.**

Filiatrault J, Desrosiers J, Trottier L.

J Aging Health 2009; ePub(ePub): ePub. (Copyright © 2009, Sage Publications)

#### **ABSTRACT**

**OBJECTIVE:** The objective of this study was to identify individual and environmental correlates of fear of falling among community-dwelling seniors.

**METHOD:** The study sample involved 288 community-dwelling adults aged 65 years or older going through the normal aging process. Fear of falling and a series of individual and environmental characteristics were measured with a questionnaire during home interviews.

**RESULTS:** Multivariate logistic regression procedures showed that the strongest correlates of fear of falling are gender, support from a spouse or partner, and residential area. Being a female as well as living in a smaller city or rural area were shown to be risk factors for fear of falling, whereas the availability of support from a spouse or partner was a protective factor.

**DISCUSSION:** Findings from this study suggest that researchers should adopt an ecological perspective to understanding the phenomenon of fear of falling among seniors and collect data on a broader range of individual and environmental factors.

### **Longitudinal study of the Home Falls and Accidents Screening Tool in identifying older people at increased risk of falls.**

Mackenzie L, Byles J, D'Este C.

Australas J Ageing 2009; 28(2): 64-9.

Affiliation: Discipline of Occupational Therapy, Faculty of Health Sciences, University of Sydney, Sydney, New South Wales, Australia. l.mackenzie@usyd.edu.au (Copyright © 2009, John Wiley and Sons)

#### **ABSTRACT**

**AIM:** To evaluate the predictive validity and responsiveness of the Home Falls and Accidents Screening Tool (HOME FAST).

**METHODS:** A prospective study of 727 community dwelling Veterans and war widows aged 70 years and over. The outcome was 6-month recall of any fall at 3-year follow-up. Baseline measurements were taken of common falls risk factors, and home hazards (using the HOME FAST). Changes in the prevalence of HOME FAST items were calculated and a logistic regression model was computed to determine predictors of falls at follow-up.

**RESULTS:** Prevalence of 14 HOME FAST items was significantly reduced from baseline to follow-up ( $P \leq 0.05$ ). Falls were significantly related to the baseline HOME FAST score (odds ratio (OR) 1.016, 95% confidence interval (CI) 1.004–1.098,  $P = 0.006$ ), and a reduction in home hazards at follow-up (OR 0.984, 95% CI 0.973–0.996,  $P = 0.02$ ).

**CONCLUSION:** The HOME FAST can predict falls in older people and is responsive to change.

### **The immediate effect of physical activity on standing balance in healthy and balance-impaired older people.**

Egerton T, Brauer SG, Cresswell AG.

*Australas J Ageing* 2009; 28(2): 93-6.

Affiliation: School of Health and Rehabilitation Sciences, The University of Queensland, St Lucia, Australia.

t.egerton@uq.edu.au (Copyright © 2009, John Wiley and Sons)

#### **ABSTRACT**

**OBJECTIVE:** To determine if standing balance was affected by moderate levels of physical activity in healthy young, healthy older and balance-impaired older adults.

**METHODS:** Thirty-one healthy young, 33 healthy older and 22 balance-impaired older adults took part. Centre of pressure (COP) motion was measured before and immediately after participants undertook 14 minutes of self-paced, moderate intensity physical activity.

**RESULTS:** All groups responded in a similar manner. Following the physical activity circuit, mediolateral COP displacement and standard deviation of mediolateral COP position increased by 5% and 17%, respectively. Anteroposterior COP displacement and COP standard deviation, and total COP displacement, did not change. All changes were small compared with the magnitude of the group differences.

**CONCLUSIONS:** A small increase in fall risk may exist immediately following physical activity and older people may need to exercise caution following moderate intensity bouts of physical activity to prevent falling.

### **Falls and catastrophic thoughts about falls predict mobility restriction in community-dwelling older people: A structural equation modelling approach.**

Delbaere K, Crombez G, van Haastregt JC, Vlaeyen JW.

*Ageing Ment Health.* 2009 ;13(4):587-92.

#### **ABSTRACT**

How and when concerns about falls emerge is not yet completely known, because these concerns are present in both people with and without a falls history. The aim of this study was to investigate the role of catastrophic beliefs about falls and previous falls in the development of concerns about falls and resulting mobility restrictions (MR).

**METHOD:** Within a cross-sectional design, 896 older people (mean age 76.2 +/- 4.7) living independently in the community completed a battery of questionnaires. Self-report data was gathered on previous falls, catastrophic beliefs about consequences of a fall (Catastrophizing About Falls Scale), concerns about falls (modified Falls Efficacy Scale) and mobility restrictions during daily life (Sickness Impact Profile 68).

**RESULTS:** Using structural equation modelling, we found that the number of falls in the previous year was not directly related to mobility restrictions in daily life, but via an increase of concerns about falls. Also catastrophic beliefs about the consequences of falls were related to concerns about falls and to mobility restrictions. Goodness-of-fit indices revealed that the presented model had an acceptable fit. Alternative models resulted in lesser-fit indices.

**CONCLUSION:** Both previous falls and catastrophic beliefs about falls are unique and independent predictors of concerns about falls and, subsequently, of mobility restrictions. A cognitive-behavioural perspective upon mobility restrictions may provide important additional components for treatment and prevention of excessive concerns about falls in older people.

### **Barriers to participation in a hospital-based falls assessment clinic programme: an interview study with older people.**

Evron L, Schultz-Larsen K, Fristrup T.

*Scand J Public Health.* 2009 Jul 28. Epub ahead of print.

#### **ABSTRACT**

To gain new knowledge about barriers to participation in hospital-based falls assessment.

**METHODS:** Semi-structured interviews with 20 older people referred to falls assessment at a hospital-based clinic were conducted. A convenience sample of 10 refusers and 10 accepters was collected. Those who refused referral were recruited in relation to a systematic falls screening programme performed by preventive home visitors. Accepters were selected among 72 participants successively completing the falls assessment clinic programme. The time between the interviews was 12 months; different levels of knowledge were expected, owing to accepters'

participation in the programme. Interview transcriptions were thematically analysed. The analysis was directed towards identification of barriers to falls assessment.

**RESULTS:** Barriers to participation were categorized as being either within or outside the falls clinic, and included administration, time, communication, attitudes to fall prevention, and expected future costs. Accepters completing the programme expressed a feeling of being "met" in the system and maintaining authority over their own life, while the refusers expressed concern about the healthcare system taking over their life.

**CONCLUSIONS:** This study indicates that older at-risk patients acknowledge their falls problem, but refuse to participate in hospital-based assessment programmes because they expect to lose their authority and to be caught up in the healthcare system. In order to transform the findings of this study to a public health message, we have to consider moving the focus of falls prevention strategies from disease control to the domain of health promotion in order to engage older adults in preventive healthcare.

## INTERVENTION STUDIES

### A Randomized Trial Comparing Digital Video Disc with Written Delivery of Falls Prevention Education for Older Patients in Hospital.

Hill AM, McPhail S, Hoffmann T, Hill K, Oliver D, Beer C, Brauer S, Haines TP.

*J Am Geriatr Soc.* 2009 Jun 8. Epub ahead of print.

#### ABSTRACT

**OBJECTIVES:** To compare the effectiveness of a digital video disc (DVD) with that of a written workbook delivering falls prevention education to older hospital patients on self-perceived risk of falls, perception of falls epidemiology, knowledge of prevention strategies, and motivation and confidence to engage in self-protective strategies. To compare the effect of receiving either education approach versus no education on patients' perception of falls epidemiology.

**DESIGN:** Randomized trial (DVD vs workbook) with additional quasi-experimental control group.

**SETTINGS:** Geriatric, medical, and orthopedic wards in Perth and Brisbane, Australia.

**PARTICIPANTS:** One hundred (n=51 DVD, n=49 workbook) hospital inpatients aged 60 and older receiving an intervention (mean age 75.3+/-10.1) and 122 in the control group (mean age 79.3+/-8.3). **INTERVENTION:** Participants randomly assigned to receive identical educational material on falls prevention delivered on a DVD or in a workbook. Control group received usual care.

**MEASUREMENTS:** Custom-designed survey addressing elements of the Health Belief Model of health behavior change.

**RESULTS:** Participants randomized to DVD delivery had a higher self-perceived risk of falling (P=.04) and higher levels of confidence (P=.03) and motivation (P=.04) to engage in self-protective strategies than participants who received the workbook. A higher proportion of participants who received either form of the education provided "desired" responses than of control group participants across all knowledge items (P<.001).

**CONCLUSION:** Delivery of falls prevention education on a DVD compared to a written workbook is more likely to achieve important changes in parameters likely to affect successful uptake of falls prevention messages in the hospital setting.

### Scheduled Medications and Falls in Dementia Patients Utilizing a Wander Garden.

Detweiler MB, Murphy PF, Kim KY, Myers LC, Ashai A.

*Am J Alzheimers Dis Other Demen* 2009; 24(4): 322-332. (Copyright © 2009, Sage Publications)

#### ABSTRACT

Little has been reported about the relationship of a dementia wander garden with scheduled psychiatric medications in addition to changes in fall number and severity. The 28 participating residents of a dementia unit were divided into high (HUG) and low (LUG) wander garden user groups and assessed for the number and severity of falls. The type and dose of scheduled psychiatric medications were monitored for 12 months before and 12 months after the wander garden was opened. Results indicated that the residents experienced about a 30% decrease for the raw number of falls and fall severity scores. The HUG had a significant reduction in high-dose antipsychotics, whereas there was relatively no change in antidepressant, hypnotic, and anxiolytic use. High wander garden user group required fewer scheduled medications and experienced reduced falls and lower fall morbidity than the LUG. The most significant changes in scheduled psychiatric medications were reductions in scheduled antipsychotics and an increase in residents requiring no antipsychotics.

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**Effectiveness of a community-based multifaceted fall-prevention intervention in active and independent older Chinese adults.**

Xia QH, Jiang Y, Niu CJ, Tang CX, Xia ZL.

*Inj Prev.* 2009;15(4):248-51.

**ABSTRACT**

To evaluate the effectiveness of an 18-month multifaceted intervention designed to reduce the incidence of falls in community-living older adults in China.

**METHODS:** A population-based community trial evaluated by before-and-after cross-sectional surveys. Four residential communities were randomised to either a multifaceted intervention or a control condition. Baseline information was collected from a sample of older adults in each community. A 1-year annual fall rate was calculated after an 18-month comprehensive intervention.

**RESULTS:** After intervention, 7.19% of the intervention community sample reported falls, compared with 17.86% of the control community sample ( $p < 0.000$ ). The annual fall rate decreased by 10.52% in the intervention communities, whereas the difference in control communities was not statistically significant.

**CONCLUSIONS:** Multifaceted interventions in community settings may be useful in preventing falls among older people, and can be applied in similar settings in China. The intervention framework include behavioural and environmental components, individual and group interventions, and interventions directed at older people and their carers (see table 1). Behavioural interventions included an education programme, brochure distribution, poster exhibition and healthcare consultation. Environmental interventions included improving indoor and community safety through hazard assessment and hazard elimination. Every participant in the intervention group had access to all these interventions. Before the intervention was conducted, a multidisciplinary group was established, including the local centre for disease control and prevention (CDC), representatives from the street government, the community health centre (CHC), community committees, landowners within the community, and volunteers.

**Reducing risk of falling in older people discharged from hospital: a randomized controlled trial comparing seated exercises, weight-bearing exercises, and social visits.**

Vogler CM, Sherrington C, Ogle SJ, Lord SR.

*Arch Phys Med Rehabil* 2009; 90(8): 1317-24.

Affiliation: Department of Aged Care and Rehabilitation, Royal North Shore Hospital, University of Sydney, Sydney, Australia. cmvog@med.usyd.edu.au (Copyright © 2009, Elsevier Publishing)

**ABSTRACT**

**OBJECTIVE:** To compare the efficacy of seated exercises and weight-bearing (WB) exercises with social visits on fall risk factors in older people recently discharged from hospital.

**DESIGN:** Twelve-week randomized, controlled trial.

**SETTING:** Home-based exercises.

**PARTICIPANTS:** Subjects (N=180) aged 65 and older, recently discharged from hospital.

**INTERVENTIONS:** Seated exercises (n=60), WB exercises (n=60), and social visits (n=60).

**MAIN OUTCOME MEASURES:** Primary outcome factors were Physiological Profile Assessment (PPA) fall risk score, and balance while standing (Coordinated Stability and Maximal Balance Range tests). Secondary outcomes included the component parts of the PPA and other physical and psychosocial measures.

**RESULTS:** Subjects were tested at baseline and at completion of the intervention period. After 12 weeks of interventions, subjects in the WB exercise group had significantly better performance than the social visit group on the following: PPA score ( $P = .048$ ), Coordinated Stability ( $P < .001$ ), Maximal Balance Range ( $P = .019$ ); body sway on floor with eyes closed ( $P = .017$ ); and finger-press reaction time ( $P = .007$ ) tests. The seated exercise group performed better than the social visit group in PPA score ( $P = .019$ ) but for no other outcome factor. The seated exercise group had the highest rate of musculoskeletal soreness.

**CONCLUSIONS:** In older people recently discharged from the hospital, both exercise programs reduced fall risk score in older people. The WB exercises led to additional beneficial impacts for controlled leaning, reaction time, and caused less musculoskeletal soreness than the seated exercises.

**Home rehabilitation after hip fracture. A randomized controlled study on balance confidence, physical function and everyday activities.**

Zidén L, Frandin K, Kreuter M.

*Clin Rehabil* 2008; 22(12): 1019-1033. (Copyright © 2008, Sage Publications)

## ABSTRACT

**Objective:** To investigate whether home rehabilitation can improve balance confidence, physical function and daily activity level compared to conventional care in the early phase after hip fracture.

**Design:** A randomized controlled study.

**Setting:** Geriatric rehabilitation clinic.

**Subjects:** One hundred and two community-dwelling elderly people. **Interventions:** A geriatric, multiprofessional home rehabilitation programme focused on supported discharge, independence in daily activities, and enhancing physical activity and confidence in performing daily activities was compared with conventional care in which no structured rehabilitation after discharge was included. **Main measures:** Falls efficacy, degree of dependency and frequency in daily activities, habitual physical activity and basic functional performance.

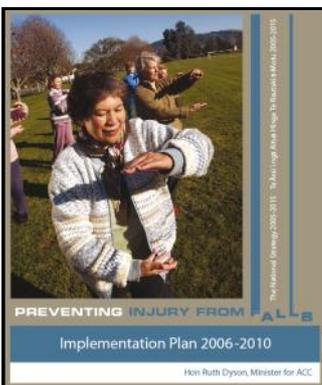
**Results:** When comparing status one month after discharge with baseline, the home rehabilitation group showed a higher degree of recovery in self-care ( $P < 0.0001$ ), mobility ( $P = 0.002$ ), locomotion ( $P = 0.0036$ ) and domestic activities ( $P = 0.0098$ ), as well as larger increase in balance confidence on stairs ( $P = 0.0018$ ) and instrumental activities (mean increase home rehabilitation 19.7 and conventional care 7.1,  $P < 0.0001$ ) compared with the conventional care group. At one month, a majority of the home rehabilitation participants (88%) took outdoor walks, compared with less than half (46%) of the conventional care group ( $P < 0.001$ ) and were also more independent in outdoor activities ( $P = 0.0014$ ).

**Conclusions:** This study indicates that home rehabilitation, focused on supported discharge and enhancing self-efficacy, improves balance confidence, independence and physical activity in community-dwelling older adults in the early phase after hip fracture.

## WEBSITES

### Accident Compensation Corporation (NZ)

This website features a number of useful resources including:



[ACC2216 Preventing Injury from Falls: The National Strategy 2005 – 2015](#)

[ACC2216 Preventing Injury from Falls: The National Strategy 2005 - 2015 – b/w version](#)

[ACC2565 Preventing Injury from Falls: Implementation Plan 2006 – 2010 \).](#)

[ACC2587 Standing up to falls](#)

[ACC4697 Vitamin D prescribing criteria](#)

[ACC4937 Information for residential care staff - Vitamin D](#)

[ACC4940 Stay on your feet and stay active - with a little help from Vitamin D](#)

[Optimisation of ACC's fall prevention programmes for older people: Final Report 2008 by M. Clare Robertson & A. John Campbell](#) , this evidence based report investigates ways in which effective falls prevention strategies can be optimised for maximum cost effectiveness in preventing falls and injuries in older New Zealanders.

## Osteoporosis Australia



A new exercise and fracture prevention guide for Health Professionals is available now to download at the Osteoporosis Australia website

[http://www.osteoporosis.org.au/files/internal/oa\\_exercise\\_gphp.pdf](http://www.osteoporosis.org.au/files/internal/oa_exercise_gphp.pdf)



[www.powmri.edu.au/  
fallsnetwork](http://www.powmri.edu.au/fallsnetwork)

### **NSW FALLS PREVENTION NETWORK BACKGROUND**

The NSW Falls Prevention Network has existed since 1993. The role of this network has grown since its inception and now includes:

- Meetings for discussion of falls related issues;
- Dissemination of research findings both local and international;
- Sharing resources developed and exploration of opportunities to combine resources in joint initiatives;
- Encouragement of collaborative projects and research;
- To act as a group to influence policy;
- To liaise with NSW Health to provide information on current State/Commonwealth issues in relation to falls and
- Maintenance of resources pertinent to the field

The main purpose of the network is to share knowledge, expertise, and resources on falls injury prevention for older people.

**The NSW Falls Prevention Network activities are part of the implementation of the NSW Falls Prevention Program funded by the NSW Department of Health**

## **NETWORK INFORMATION**

### **JOINING THE NETWORK**

To join the NSW Falls Prevention Network listserv :

- Send an email to :  
[majordomo@lists.health.nsw.gov.au](mailto:majordomo@lists.health.nsw.gov.au)
- In the body of the message type **subscribe nsw-falls-network** on the next line type **end**
- Do not put anything in the subject line
- You will receive an e-mail to confirm you have been added to the listserv
- To unsubscribe send an e-mail to the above address and in the body of the message write **unsubscribe nsw-falls-network** on the next line type **end**

If you have any problems contact Esther at [e.vance@powmri.edu.au](mailto:e.vance@powmri.edu.au).

### **SHARE YOUR NEWS AND INFORMATION/IDEAS ON FALLS PREVENTION**

Do you have any news on Falls Prevention you want to share with others on the network, or do you want to report on a project that is happening in your area.

Please email Esther with your information. We also welcome suggestions for articles and information you would like to see in this newsletter.

Send your information to  
[e.vance@powmri.edu.au](mailto:e.vance@powmri.edu.au)

### **THE NETWORK LISTSERV**

It is great to see the increased activity on the listserv and want to continue to promote this. To send an item to the listserv where all members of the network can see it, send an email to:

[nsw-falls-network@lists.health.nsw.gov.au](mailto:nsw-falls-network@lists.health.nsw.gov.au)

You need to be a subscriber to the listserv to send an email that will be distributed to all members of the on the listserv. Remember to put a short description in the subject line.

Recently some posts to the listserv have bounced due to email address changes in the area health services, you need to re-subscribe with your new e-mail address and unsubscribe from your old address following the Join the Network instructions as shown on this page.