



Welcome

NSW Falls Prevention Network Forum *Translating research into practice*

This issue features a report on the NSW Falls Prevention Network Forum held on Friday 27th May at the Wesley Conference Centre, Sydney.

The forum was opened by the NSW Health Minister, the Hon. Jillian Skinner MP.

The forum was attended by 325 professionals from hospital, community and residential aged care settings and consumers. There were 12 trade exhibits with 25 representatives manning the stalls.

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NSW Falls Prevention Network Forum 2011



Prue Miller (Consumer Representative), Prof Stephen Lord (NeuRA), Dr Esther Vance (NeuRA), Lorraine Lovitt (Clinical Excellence Commission), The Hon. Jillian Skinner MP and A/Prof Jacqueline Close (NeuRA)

NSW Falls Prevention Network Forum 2011

Opening

Prof Brian McCaughan, Chair of the Board, Clinical Excellence Commission (CEC) and Agency for Clinical Innovation (ACI) welcomed participants and introduced Mrs Jillian Skinner MP, Minister for Health, and Minister for Medical Research who opened the Forum. The Minister reiterated the importance of falls as a health issue and shared a personal anecdote of a fall she had experienced. The Minister also launched the new NSW Falls Policy Directive: *Preventing Falls and Harm from Falls among Older People: 2011-2015*, available at:

http://www.health.nsw.gov.au/policies/pd/2011/PD2011_029.html.



Plenary Session 1

Risk Factors for falls in cognitive impairment: A/Prof Jacqueline Close, Neuroscience Research Australia and Prince of Wales Hospital (POWH)

This presentation covered the epidemiology of falls in cognitive impairment and dementia. The incidence of falls is 2x and fractures are 3x more common in cognitively impaired older people compared to cognitively intact older people. A study at the POWH found that cognitive impairment impacted significantly on the length of stay, increasing this by 6 days compared with cognitively intact patients.

The Falls in Cognitively Impaired Subjects (FOCIS) study found that stroke, depression and total number of medications were all significantly higher in cognitively impaired older people. There was also a significant difference in hand reaction time (increased) and quadriceps strength (decreased) in the cognitive impaired group and a dramatic difference in balance.

This study concluded that:

- cognitively impaired people performed worse on all physiologic tests compared to the cognitively intact group.
- In the cognitively impaired group a simple measure of balance (near tandem stand test) and reaction time could predict multiple fallers.

There is insufficient evidence from trials for specific interventions for cognitively impaired older people, however this population should be offered all the interventions that are not affected by the cognitive impairment such as osteoporosis treatment, cataract surgery, medication review and cardiovascular interventions. A Pilot study has found that this population are also likely to benefit from a tailored exercise intervention and environmental intervention that have been professionally prescribed and carer led.

Research Update: Vitamin D and falls in older people; falls prevention in hospitals, Prof Stephen Lord, Senior Principal Research Fellow, Falls & Balance Research Group, Neuroscience Research Australia

This presentation provided information on the evidence of the role of Vitamin D in physiological and cognitive functioning in older people. A study of Older People in Sydney found 30% had Vitamin D insufficiency (Menant et al 2011). There were significant differences in executive functioning and there was a reduction in strength and walking speed in Vitamin D deficient older men and women. Older men also had a significant increase in falls & injurious falls.

Vitamin D levels should be checked in older people and those found with Vitamin D deficiency be supplemented.



The most recent Cochrane review (Cameron et al 2010) found that multifactorial interventions can reduce falls and risk of falling in hospitals and exercise interventions were effective in subacute hospital settings. A recent study by Haines et al (2010) found that multimedia education for patients and staff worked well with a cognitively intact population.

Data presented from the Prince of Wales Hospital showed that when feedback and data was provided to ward staff with respect to falls risk factors such as the use of sedative medication and Vitamin D supplementation, there was a decrease in sedative use dispensed over a period of years and an increase in Vitamin D tablets dispensed and a slow but sustained decrease in the number of falls that occurred on these wards.

References:

Cameron ID, Murray GR, Gillespie LD, Robertson MC, Hill KD, Cumming RG, Kerse N. Interventions for preventing falls in older people in nursing care facilities and hospitals. Cochrane Database of Systematic Reviews 2010, Issue 1.

Haines TP, Hill AM, Hill KD, et al. Patient education to prevent falls among older people: Randomized Controlled Trial. Arch Intern. Med. 2011;171:516-524.

Menant JC, Close JCT, Delbaere K et al. Relationships between vitamin D levels, neuromuscular and neuropsychological function and falls in older men and women. Osteoporosis Int.2011 Online First 26th April 2011.

Costing and Cost-effectiveness in falls prevention: Dr Wendy Watson, Senior Research Fellow, Injury Risk Management Research Centre, UNSW.

This presentation focused on the cost of falls to NSW and also the cost-effectiveness of interventions. Hospital admissions due to falls have increased 48% from 1998/99 to 2008/09. The total cost of falls related injuries in NSW in 2006/07 has been estimated at \$558.5 million and this represents 5% of the State's Health Budget, with 58% of this cost being borne by the hospital sector. The projections for falls related hospital admissions was a three fold increase by 2051, which is double the prediction of the Moller Study from 2003. These updated costs include all episodes of care including rehabilitation costs which had not previously been included.

The good news was that fall related hip fractures have decreased from 1998/99 to 2008/09 by 2.1% per annum and there has also been a significant increase in the level of physical activity in women over the age of 45 (except for those women aged >75 years).

A small number of modelling studies of the cost-effectiveness of interventions in NSW have been carried out and these have found Tai Chi to be the most cost effective intervention for the general population especially when delivered by volunteer exercise leaders. In high risk groups, OT delivered Home hazard assessment and modification and multifactorial risk factor management have been found to be somewhat cost effective as have expedited cataract surgery and medication review. In Residential Aged Care settings, medication review and Vitamin D supplementation were both found to be highly cost effective.



Plenary Session 2

Prevention of Falls and Harm from Falls among Older People: 2011-2015: Joanne Smith, Director, Centre for Health Advancement (CHA), NSW Department of Health

This presentation outlined the new NSW Falls Plan (Policy Directive). This plan builds on the infrastructure of the first plan and incorporates current evidence on effective strategies to prevent falls and the guiding documents are the updated ACSQHC National Falls Prevention Best Practice Guidelines for clinical settings.

This plan was developed after extensive statewide stakeholder consultations and the outcomes of a number of commissioned studies including the incidence and cost of falls in NSW, Best Practice recommendations for physical activity programs to prevent

falls and a CATI survey of 5,000 older people on falls risk and protective factors (the initial study was conducted in 2009 and follow up studies are planned).

The main aims of the new plan are:

- to reduce the incidence and severity of harm from falls among older people
- to reduce the social, psychological and economic impact of falls and falls injuries on individuals and families and the community.

The scope of the policy:

- to describe key NSW Health actions over the next 5 years
- to detail the involvement of the Department of Health, Local Health Districts, Ambulance, CEC and ACI and other key stakeholders both within and outside the health system.

The Centre for Health Advancement (CHA) at NSW Health will be involved by :

- social marketing strategy to support falls prevention objectives including strategies for implementation at the local level with key partners in Local Health Districts and Non-government organisations (NGOs).
- providing guidelines to assist in the training of community based exercise providers to safely incorporate balance and strength training components within their classes.
- maintaining a statewide service directory of exercise programs with an evidence based falls prevention component and accessible to older people and health professionals. (www.activeandhealthy.nsw.gov.au)
- supporting the implementation of the Stepping On Program
- providing resources such as the *Staying active and on your feet* booklet and *active & healthy* website.

The CEC in conjunction with the NSW Department of Health will support Local Health Districts in implementation of the ACSQHC 2009 Falls Best Practice Guidelines and contribute to statewide policy and program development in NSW Health clinical settings.

The NSW Falls Policy Directive: *Preventing Falls and Harm from Falls among Older People: 2011-2015* is available on the NSW Health website at:

http://www.health.nsw.gov.au/policies/pd/2011/PD2011_029.html

Falls- a consumer perspective: Dr Karen Luxford, Director Patient Based Care, Clinical Excellence Commission.

This presentation featured the use of storytelling, developed by the CEC NSW Falls Prevention Program, to improve the quality of care. Two personal recollections were presented on falls, one on a fall in a community setting and the subsequent hospital experience and the other on a fall that occurred in hospital. There was discussion around learning gained from watching these videos as well as how these personal stories could be used in education to promote patient centred care. These stories generated a lot of interest and further work is in progress to refine these stories for use in staff education.

Translating Research into Practice Policy Roundtable: Prof Stephen Lord and Dr Roslyn Poulos, Senior Lecturer, School of Public Health and Community Medicine, UNSW.

This presentation provided a report on the Translating Research into Practice policy roundtable held in March 2011 as part of an NHMRC Partnership Grant. This policy roundtable provided a mechanism for a group of researchers, clinicians and policy makers to come together and discuss the key research areas in falls including the best bets/best buys interventions in falls prevention as well as implementation issues such as barriers and facilitators, cost and cost effectiveness. Interventions that have a high level of evidence were discussed and synthesized into 'gold bars' slides.

The implementation of these evidence based interventions were discussed and the



importance of focusing not just on falls prevention but improving quality of life and integrating interventions into person centred care were reiterated. For multidisciplinary assessment and interventions to be effective there needs to be pathways that fit into existing infrastructure.

It was also important to increase capacity by involving GPs and mechanisms to assist GPs in this were discussed. These included; looking at models of working with GPs, presenting falls prevention at GP forums and integration of falls prevention into the chronic diseases program.

The afternoon session was a trial strategic planning session with key stakeholders to improve the implementation of an evidence based intervention, in this case Vitamin D supplementation in Residential Aged Care settings. There was discussion around how uptake of Vitamin D could be improved; this required influencing clinicians and care staff in these settings. A theoretical framework was provided and discussion centred around enablers and actions required to increase awareness, enhance adoption, promote implementation and enable maintenance of Vitamin D supplementation in the Residential Aged Care setting.

Concurrent Sessions

There were 2 concurrent sessions in the afternoon:

Session A: Exercise programs and falls prevention

Exercise as a component of treatment for frailty; Prof Ian Cameron, Rehabilitation Studies Unit, University of Sydney and Colleen Langron, Physiotherapist, Hornsby Hospital, Northern Sydney Local Health District.

Post-hospital exercise programs; A/Prof Cathie Sherrington, NHMRC Senior Research Fellow, Musculoskeletal division, The George Institute for Global Health, and Betty Ramsay, Research Physiotherapist, Falls and Balance Research Group, Neuroscience Research Australia.

Exercise after stroke to prevent falls, enhance mobility and increase physical activity: the Stroke Club trial; A/Prof Catherine Dean, Director and Head of Physiotherapy Program, Macquarie University.

Exercise programs for Parkinson's disease; Dr Colleen Canning, Senior Lecturer, Physiotherapy, Faculty of Health Sciences, University of Sydney.

Session B: Falls risk factors, assessment and interventions

A screening tool to predict fallers in hospital Emergency Departments; Dr Anne Tiedemann, Research Fellow, Musculoskeletal Division, The George Institute for Global Health.

Fear of falling in older persons: does it protect or does it harm? Dr Kim Delbaere, Research Officer, Falls and Balance Research Group, Neuroscience Research Australia.

Sarcopenia, older age, chronic disease and obesity: is this the major risk factor for falling? A/Prof John Ward, Clinical Lead, greater Newcastle Cluster, Hunter New England Local Health District.

A solution for better health outcomes for osteoporosis in NSW, Robyn Speerin, Network Manager, Musculoskeletal Network, Agency for Clinical Innovation (ACI).

Presentations from the day were recorded (apart from the consumer session) and are available on CDROM, the powerpoints from each presentation are also available on the Falls Network website at

<http://fallsnetwork.neura.edu.au/events/index.php>



A/Prof Brian McCaughan
Chair CEC and ACI



Donna Ingram MLALC



Statina non-slip socks



Prius non-slip anti-embolism stocking



Falls Coordinators, NSW Falls Prevention Program



Active Mobility Systems



MC Mike Petersen, CEC



Introduction of new NSW Falls Policy Directive by
Joanne Smith



Robyn Speerin from the
Musculoskeletal Network



Lorraine Lovitt, Joanne Smith and
A/Prof Brian McCaughan



Statina hip protectors



Tunstall alarms

RECENT ABSTRACTS FROM THE RESEARCH LITERATURE

REVIEWS

Tai chi as an intervention to improve balance and reduce falls in older adults: A systematic and meta-analytical review.

Leung DP, Chan CK, Tsang HW, Tsang WW, Jones AY.

Altern. Ther. Health Med. 2011; 17(1): 40-48. Affiliation: Department of Rehabilitation Sciences, The Hong Kong Polytechnic University, Hungghom. DOI: unavailable PMID: 21614943 (Copyright © 2011, InnoVision Communications).

ABSTRACT

OBJECTIVE: The evidence of tai chi for balance improvement and fall reduction in older adults was updated and reviewed.

METHOD: A systematic review was carried out by two independent reviewers among nine electronic databases to identify randomized controlled trials (RCTs) that examined the effects of tai chi on balance improvement and fall reduction in older adults using such key words as tai chi, falls, balance, and randomized trial.

RESULTS: The results based on 13 RCTs indicated that tai chi was effective in improving balance of older adults but may not necessarily be superior to other interventions. Results also showed that in the absence of other interventions, tai chi reduced falls in the nonfrail elderly.

CONCLUSION: Tai chi is recommended as an alternative treatment for improving balance so as to reduce falls. Future research with improved research designs such as more consistent outcome measures on balance and fall reduction and longer post-intervention follow-up should be conducted to unravel the efficacy of different types of tai chi.

Dementia Medications and Risk of Falls, Syncope, and Related Adverse Events: Meta-analysis of Randomized Controlled Trials.

Kim DH, Brown RT, Ding EL, Kiel DP, Berry SD.

J. Am. Geriatr. Soc. 2011; ePub(ePub): ePub. Affiliation: Division of Gerontology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, Massachusetts Institute for Aging Research, Hebrew Senior Life, Harvard Medical School, Boston, Massachusetts; and Departments of Epidemiology Nutrition, Harvard School of Public Health, Boston, Massachusetts. DOI: 10.1111/j.1532-5415.2011.03450.x PMID: 21649634 (Copyright © 2011, John Wiley and Sons).

ABSTRACT

OBJECTIVES: To evaluate the effect of cholinesterase inhibitors (ChEIs) and memantine on the risk of falls, syncope, and related events, defined as fracture and accidental injury.

DESIGN: Meta-analysis of randomized controlled trials that were identified from MEDLINE, EMBASE, Cochrane Central Register of Controlled Trials (no language restriction, through July 2009), and manual search.

SETTING: Community and nursing homes.

PARTICIPANTS: Participants in fifty-four placebo-controlled randomized trials and extension studies of ChEIs and memantine that reported falls, syncope, and related events in cognitively impaired older adults.

MEASUREMENTS: Falls, syncope, fracture, and accidental injury.

RESULTS: ChEI use was associated with greater risk of syncope (odds ratio (OR)=1.53, 95% confidence interval (CI)=1.02-2.30) than placebo but not with other events (falls: OR=0.88, 95% CI=0.74-1.04; fracture: OR=1.39, 95% CI=0.75-2.56; accidental injury: OR=1.13, 95% CI=0.87-1.45). Memantine use was associated with fewer fractures (OR=0.21, 95% CI=0.05-0.85) but not with other events (falls: OR=0.92, 95% CI=0.72-1.18; syncope: OR=1.04, 95% CI=0.35-3.04; accidental injury: OR=0.80, 95% CI=0.56-1.12). There was no differential effect according to type and severity of cognitive impairment, residential status, or length of

follow-up, although because of under reporting and small number of events, a potential benefit or risk cannot be excluded.

CONCLUSION: ChEIs may increase the risk of syncope, with no effects on falls, fracture, or accidental injury in cognitively impaired older adults. Memantine may have a favorable effect on fracture, with no effects on other events. More research is needed to confirm the reduction in fractures observed for memantine.

Balance and falls in Parkinson's disease: A meta-analysis of the effect of exercise and motor training.

Allen NE, Sherrington C, Paul SS, Canning CG.

Mov. Disord. 2011; ePub(ePub): ePub. Affiliation: Neurological Rehabilitation Research Group, Faculty of Health Sciences, University of Sydney, Sydney, Australia. natalie.allen@sydney.edu.au. DOI: 10.1002/mds.23790 PMID: 21674624 (Copyright © 2011, John Wiley and Sons).

ABSTRACT

This systematic review with meta-analysis aimed to determine the effects of exercise and motor training on the performance of balance-related activities and falls in people with Parkinson's disease. Sixteen randomized and quasi-randomized controlled trials that assessed the efficacy of exercise and/or motor training against no intervention or placebo intervention were included. The primary outcome measures were balance-related activity performance (15 trials) and falls (2 trials). The pooled estimate of the effect of exercise and motor training indicated significantly improved balance-related activity performance (Hedges' g , 0.33; 95% confidence interval, 0.11-0.55; $P = .003$), but there was no evidence of an effect on the proportion of fallers (risk ratio, 1.02; 95% confidence interval, 0.66-1.58, $P = .94$). Balance-related activity performance improved to a greater extent in the trials of programs involving highly challenging balance training, but the difference in effect sizes was not statistically significant ($P = .166$). Exercise and motor training can improve the performance of balance-related activities in people with Parkinson's disease. However, further research is required to determine if falls can be prevented in this population. © 2011 Movement Disorder Society.

Effectiveness of Intervention Programs In Preventing Falls: A Systematic Review of Recent 10 Years and Meta-Analysis.

Choi M, Hector M.

J. Am. Med. Dir. Assoc. 2011; ePub(ePub): ePub. Affiliation: College of Nursing & Health Innovation, Arizona State University, Phoenix, AZ; IPC The Hospitalist Company, Tucson, AZ. DOI: 10.1016/j.jamda.2011.04.022 PMID: 21680249 (Copyright © 2011, Lippincott Williams and Wilkins).

ABSTRACT

OBJECTIVE: To examine the reported effectiveness of fall-prevention programs for older adults by reviewing randomized controlled trials from 2000 to 2009.

DESIGN: Systematic review and meta-analysis of randomized controlled trials.

DATA SOURCES: A systematic literature search of articles was conducted using 5 electronic databases (Medline, PubMed, PsycINFO, CINAHL, and RefWorks), including articles describing interventions designed to prevent falls, in English with full text availability, from 2000 through 2009.

REVIEW METHODS: Of a potential 227 studies, we identified 17 randomized controlled trials with a duration of intervention of at least 5 months of follow-up. Inclusion and exclusion criteria were used to assess the methodological qualities of the studies. We excluded unidentified study design, quasi-experimental studies, and/or studies that were nonspecific regarding inclusion criteria.

DATA EXTRACTION: Primary outcome measures were number of falls and fall rate. Methodological quality assessment included internal and external validity, reporting, and power. Data were extracted independently by 2 investigators and analyzed using a random-effects model. We analyzed the effectiveness of these fall intervention programs using their risk ratios (RR) in 2 single-intervention versus 15 multifactorial intervention trials, 3 nursing homes versus 14 community randomized controlled trials, and 8 Model 1 (initial intervention with subsequent follow up) versus 9 Model II (ongoing intervention throughout the follow-up) studies.

RESULTS: The combined RR for the number of falls among 17 studies was 0.855 ($z = -2.168$; $p = .030$; 95% CI = 0.742-0.985; $Q = 196.204$, $df = 16$, $P = .000$, $I(2) = 91.845$), demonstrating that fall-prevention programs across the studies were effective by reducing fall rates by 14%, but with substantial heterogeneity. Subgroup analysis indicated that there was a significant fall reduction of 14% in multifactorial intervention (RR = 0.856, $z = -2.039$, $P = .041$) with no variation between multifactorial and single-intervention groups ($Q = 0.002$, $P = .961$), 55% in the nursing home setting (RR = 0.453, $z = -9.366$, $P = .000$) with significant variation between nursing home and community groups ($Q = 62.788$, $P = .000$), and no significant effect was gained by dividing studies into either in Model I or II. Sensitivity analysis found homogeneity ($Q = 18.582$, $df = 12$, $P = .099$, $I(2) = 35.423$) across studies with a 9% overall fall reduction (RR = 0.906, 95% CI = 0.853-0.963, $z = -3.179$, $P = .001$), including a fall-reduction rate of 10% in multifactorial intervention (RR = 0.904, $z = -3.036$, $P = .002$), 9% in community (RR = 0.909, $z = -3.179$, $P = .001$), and 12% in Model I (RR = 0.876, $z = -3.534$, $P = .000$) with no variations among all the groups. Meta regression suggested that the model fit explained 68.6% of the relevant variance.

CONCLUSIONS: The meta-sensitivity analysis indicates that randomized controlled trials of fall-prevention programs conducted within the past 10 years (2000-2009) are effective in overall reduction of fall rates of 9% with a reduction of fall rates of 10% in multifactorial interventions, 9% in community settings, and 12% in Model I interventions (initial intervention efforts and then subsequent follow-up).

EPIDEMIOLOGY AND RISK FACTORS

Falls After Discharge From Hospital: Is There a Gap Between Older Peoples' Knowledge About Falls Prevention Strategies and the Research Evidence?

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

Gerontologist 2011; ePub(ePub): ePub. Affiliation: School of Physiotherapy, The University of Notre Dame Australia, PO Box 1225, Fremantle, WA 6959, Australia. anne-marie.hill@nd.edu.au. DOI: 10.1093/geront/gnr052 PMID: 21593009 (Copyright © 2011, Gerontological Society of America)

ABSTRACT

PURPOSE: The aim of this study was to examine whether older people are prepared to engage in appropriate falls prevention strategies after discharge from hospital.

DESIGN AND METHODS: We used a semi-structured interview to survey older patients about to be discharged from hospital and examined their knowledge regarding falls prevention strategies to utilize in the post-discharge period. The study was part of a prospective cohort study, nested within a larger, randomized controlled trial. Participants ($n = 333$) were asked to suggest strategies to reduce their falls risk at home after discharge, and their responses were compared with current reported research evidence for falls prevention interventions.

RESULTS: Participants' strategies ($n = 629$) were classified into 7 categories: behavioral, support while mobilizing, approach to movement, physical environment, visual, medical, and activities or exercise. Although exercise has been identified as an effective falls risk reduction strategy, only 2.9% of participants suggested engaging in exercises. Falls prevention was most often conceptualized by participants as requiring 1 (35.4%) or 2 (40.8%) strategies for avoiding an accidental event, rather than engaging in sustained multiple risk reduction behaviors.

IMPLICATIONS: Results demonstrate that older patients have low levels of knowledge about appropriate falls prevention strategies that could be used after discharge in spite of their increased falls risk during this period. Findings suggest that health care workers should design and deliver falls prevention education programs specifically targeted to older people who are to be discharged from hospital.

New Insights: Dose-Response Relationship Between Psychotropic Drugs and Falls: A Study in Nursing Home Residents With Dementia.

Sterke CS, van Beeck EF, van der Velde N, Ziere G, Petrovic M, Looman CW, van der Cammen TJ.

J. Clin. Pharmacol. 2011; ePub(ePub): ePub. Affiliation: De StromenOpmaatGroep. DOI: 10.1177/0091270011405665 PMID: 21628599 (Copyright © 2011, Sage Publications).

ABSTRACT

The contribution of specific psychotropic drugs to fall risk in patients with dementia has not been quantified precisely until now. The authors evaluated the dose-response relationship between psychotropic drugs and falls in nursing home residents with dementia. Daily drug use and daily falls were recorded in 248 nursing home residents with dementia from January 1, 2006, to January 1, 2008. For each day of the study period, data on drug use were abstracted from the prescription database, and falls were retrieved from a standardized incident report system, resulting in a data set of 85 074 person-days. The authors found significant dose-response relationships for the use of anti-psychotics (hazard ratio [HR], 2.78; 95% confidence interval [CI], 1.49-5.17), anxiolytics (1.60; 1.20-2.14), hypnotics and sedatives (2.58; 1.42-4.68), and antidepressants (2.84; 1.93-4.16). Fall risk increased significantly with 28% at 0.25 of the defined daily dose (DDD) of an antipsychotic or antidepressant, with 8% at 0.2 of the DDD of an anxiolytic, and with 56% at 0.5 of the DDD of a hypnotic or sedative; it increased further with dose increments and with combinations of psychotropics. Even at low dosages, psychotropic drugs are associated with increased fall risk in nursing home residents with dementia.

The Role of Falls in Fracture Prediction.

Bischoff-Ferrari HA.

Curr. Osteoporos. Rep. 2011; ePub(ePub): ePub. Affiliation: Centre on Aging and Mobility, University of Zurich, Zurich, Switzerland, heikeabischoff@aol.com. DOI: 10.1007/s11914-011-0059-y PMID: 21655932 (Copyright © 2011, Current Science).

ABSTRACT

Close to 75% of hip and non-hip fractures occur among seniors age 65 years and older. Notably, the primary risk factor for a hip fracture is a fall, and over 90% of all fractures occur after a fall. Thus, critical for the understanding and prevention of fractures at later age is their close relationship with muscle weakness and falling. In fact, antiresorptive treatment alone may not reduce fractures among individuals 80 years and older in the presence of nonskeletal risk factors for fractures despite an improvement in bone metabolism. This article will review the epidemiology of falls, and their importance in regard to fracture risk. Finally, fall prevention strategies and how these translate into fracture reduction are evaluated based on data from randomized controlled trials.

Falls, injuries from falls, health related quality of life and mortality in older adults with vision and hearing impairment-Is there a gender difference?

Lopez D, McCaul KA, Hankey GJ, Norman PE, Almeida OP, Dobson AJ, Byles JE, Yeap BB, Flicker L. *Maturitas* 2011; ePub(ePub): ePub. Affiliation: Western Australian Centre for Health and Ageing (WACHA), Centre for Medical Research, The University of Western Australia, M573, 35 Stirling Highway, Nedlands, Western Australia 6009, Australia. DOI: 10.1016/j.maturitas.2011.05.006 PMID: 21664773 (Copyright © 2011, Elsevier Publishing).

ABSTRACT

BACKGROUND: Vision and hearing decline with age. Loss of these senses is associated with increased risk of falls, injuries from falls, mortality and decreased health-related quality of life (HRQOL). Our objective was to determine if there are gender differences in the associations between visual and hearing impairment and these outcomes.

METHODS: 2340 men and 3014 women aged 76-81 years from the Health in Men Study and the Australian Longitudinal Study on Women's Health were followed for an average of 6.36 years. Dependent variables were self-reported vision and hearing impairment. Outcome variables were falls, injuries from falls, physical and mental components of HRQOL (SF-36 PCS and MCS) and all-cause mortality.

RESULTS: Vision impairment was more common in women and hearing impairment was more common in men. Vision impairment was associated with increased falls risk (odds ratio (OR)=1.77, 95% CI=1.35-2.32 in men; OR=1.82, 95% CI=1.44-2.30 in women), injuries from falls (OR=1.69, 95% CI=1.23-2.34 in men, OR=1.79, 95% CI=1.38-2.33 in women), and mortality (hazard ratio (HR)=1.44; 95% CI=1.17-1.77 in men; HR=1.50, 95% CI=1.24-1.82 in women) and declines in SF-36 PCS and MCS. Hearing impairment was associated with increased falls risk (OR=1.38, 95% CI=1.08-1.78 in men; OR=1.45, 95% CI=1.08-1.93 in

women) and declines in SF-36 PCS and MCS. Overall there were no gender differences in the association between vision and hearing impairment and the outcomes.

CONCLUSION: In men and women aged 76-81 years, there were no gender differences in the association between self-reported vision and hearing impairment and the outcomes of falls, mortality and HRQOL.

FEAR OF FALLING

The relationship of fear of falling and balance confidence with balance and dual tasking performance.

Hadjistavropoulos T, Carleton RN, Delbaere K, Barden J, Zwakhalen S, Fitzgerald B, Ghandehari OO, Hadjistavropoulos H.

Psychol. Aging 2011; ePub(ePub): ePub. DOI: 10.1037/a0024054 PMID: 21707181 (Copyright © 2011, American Psychological Association).

ABSTRACT

According to traditional conceptualizations of the relationship between fear of falling and falls in older adults, fear of falling is considered to be predictive of falls because it leads to activity avoidance which, in turn, leads to de-conditioning that increases fall risk. The recent literature has begun to challenge such conceptualizations. Specifically, it has been argued that fear of falling and anxiety, in and of themselves, have a direct negative effect on balance. In this study we manipulated anxiety level by asking older research participants to walk either on the floor (low anxiety condition) or an elevated platform (high anxiety condition). Half the time participants carried a tray (dual tasking) and half the time they did not. Manipulation checks (involving heart rate, galvanic skin response, and self-reported anxiety measurement) confirmed that the experimental manipulation was successful in affecting anxiety level. The results demonstrate that the experimental manipulation (platform vs. floor) affected balance parameters and dual tasking performance with the platform condition resulting in a less stable gait. In addition, increased task demand (i.e., dual tasking) also had a negative effect on balance performance. Finally, the results demonstrate that the paper and pencil measures of fear can also predict balance performance (although the variance accounted for is small) even after controlling for medical risk factors for falling. Implications for models of fear of falling are discussed. (PsycINFO Database Record (c) 2011 APA, all rights reserved).

RISK ASSESSMENT

Application of a fall screening algorithm stratified fall risk but missed preventive opportunities in community-dwelling older adults: a prospective study.

Muir SW, Berg K, Chesworth B, Klar N, Speechley M.

J. Geriatr. Phys. Ther. 2010; 33(4): 165-172. Affiliation: Department of Epidemiology & Biostatistics, Schulich School of Medicine and Dentistry, University of Western Ontario, London, Ontario, Canada. susanw.muir@uwo.ca DOI: unavailable PMID: 21717920 (Copyright © 2010, American Physical Therapy Association).

ABSTRACT

OBJECTIVES: Evaluate the ability of the American and British Geriatrics Society fall prevention guideline's screening algorithm to identify and stratify future fall risk in community-dwelling older adults.

METHODS: Prospective cohort of community-dwelling older adults (n = 117) aged 65 to 90 years. Fall history, balance, and gait measured during a comprehensive geriatric assessment at baseline. Falls data were collected monthly for 1 year. The outcomes of any fall and any injurious fall were evaluated.

RESULTS: The algorithm stratified participants into 4 hierarchical risk categories. Fall risk was 33% and 68% for the "no intervention" and "comprehensive fall evaluation required" groups respectively. The relative risk estimate for falling comparing participants in the 2 intervention groups was 2.08 (95% CI 1.42-3.05) for any fall and 2.60 (95% CI 1.53-4.42) for any injurious fall. Prognostic accuracy values were: sensitivity of 0.50 (95% CI 0.36-0.64) and specificity of 0.82 (95% CI 0.70-0.90) for any fall; and sensitivity of 0.56 (95% CI 0.38-0.72) and specificity of 0.78 (95% CI 0.67-0.86) for any injurious fall.

CONCLUSIONS: The algorithm was able to identify and stratify fall risk for each fall outcome, though the values of prognostic accuracy demonstrate moderate clinical utility. The recommendations of fall evaluation for individuals in the highest risk groups appear supported though the recommendation of no intervention

in the lowest risk groups may not address their needs for fall prevention interventions. Further evaluation of the algorithm is recommended to refine the identification of fall risk in community-dwelling older adults.

INTERVENTION STUDIES

Effectiveness of a multifaceted podiatry intervention to prevent falls in community dwelling older people with disabling foot pain: Randomised controlled trial.

Spink MJ, Menz HB, Fotoohabadi MR, Wee E, Landorf KB, Hill KD, Lord SR.

Br. Med. J. BMJ 2011; 342(online): d3411. Affiliation: Musculoskeletal Research Centre, Faculty of Health Sciences, La Trobe University, Bundoora Victoria, Australia. DOI: 10.1136/bmj.d3411 PMID: 21680622 (Copyright © 2011, BMJ Publishing Group).

ABSTRACT

OBJECTIVE: To determine the effectiveness of a multifaceted podiatry intervention in preventing falls in community dwelling older people with disabling foot pain.

DESIGN: Parallel group randomised controlled trial.

SETTING: University health sciences clinic in Melbourne, Australia. **PARTICIPANTS:** 305 community dwelling men and women (mean age 74 (SD 6) years) with disabling foot pain and an increased risk of falling. 153 were allocated to a multifaceted podiatry intervention and 152 to routine podiatry care, with 12 months' follow-up.

INTERVENTIONS: Multifaceted podiatry intervention consisting of foot orthoses, advice on footwear, subsidy for footwear (\$A100 voucher; £65; €74), a home based programme of foot and ankle exercises, a falls prevention education booklet, and routine podiatry care for 12 months. The control group received routine podiatry care for 12 months.

MAIN OUTCOME MEASURES: Proportion of fallers and multiple fallers, falling rate, and injuries resulting from falls during follow-up.

RESULTS: Overall, 264 falls occurred during the study. 296 participants returned all 12 calendars: 147 (96%) in the intervention group and 149 (98%) in the control group. Adherence was good, with 52% of the participants completing 75% or more of the requested three exercise sessions weekly, and 55% of those issued orthoses reporting wearing them most of the time. Participants in the intervention group (n=153) experienced 36% fewer falls than participants in the control group (incidence rate ratio 0.64, 95% confidence interval 0.45 to 0.91, P=0.01). The proportion of fallers and multiple fallers did not differ significantly between the groups (relative risk 0.85, 0.66 to 1.08, P=0.19 and 0.63, 0.38 to 1.04, P=0.07). One fracture occurred in the intervention group and seven in the control group (0.14, 0.02 to 1.15, P=0.07). Significant improvements in the intervention group compared with the control group were found for the domains of strength (ankle eversion), range of motion (ankle dorsiflexion and inversion/eversion), and balance (postural sway on the floor when barefoot and maximum balance range wearing shoes).

CONCLUSIONS: A multifaceted podiatry intervention reduced the rate of falls in community dwelling older people with disabling foot pain. The components of the intervention are inexpensive and relatively simple to implement, suggesting that the programme could be incorporated into routine podiatry practice or multidisciplinary falls prevention clinics. Trial registration Australian New Zealand Clinical Trials Registry ACTRN12608000065392.

The 6-PACK programme to decrease fall-related injuries in acute hospitals: Protocol for a cluster randomised controlled trial.

Barker A, Brand C, Haines T, Hill K, Brauer S, Jolley D, Botti M, Cumming R, Livingston PM, Sherrington C, Zavarsek S, Morello R, Kamar J.

Inj. Prev. 2011; ePub(ePub): ePub. Affiliation: The Centre for Research Excellence in Patient Safety, Department of Epidemiology and Preventative Medicine, Monash University, Victoria, Australia. DOI: 10.1136/injuryprev-2011-040074 PMID: 21653650 (Copyright © 2011, BMJ Publishing Group).

ABSTRACT

Background and aims: In-hospital fall-related injuries are a source of personal harm, preventable hospitalisation costs, and access block through increased length of stay. Despite increased fall prevention awareness and activity over the last decade, rates of reported fall-related fractures in hospitals appear not to have decreased. This cluster randomised controlled trial (RCT) aims to determine the efficacy of the 6-PACK programme for preventing fall-related injuries, and its generalisability to other acute hospitals.

Methods: 24 acute medical and surgical wards from six to eight hospitals throughout Australia will be recruited for the study. Wards will be matched by type and fall-related injury rates, then randomly allocated to the 6-PACK intervention (12 wards) or usual care control group (12 wards). The 6-PACK programme includes a nine-item fall risk assessment and six nursing interventions; 'falls alert' sign; supervision of patients in the bathroom; ensuring patient's walking aids are within reach; establishment of a toileting regime; use of a low-low bed; and use of bed/chair alarm. Intervention wards will be supported by a structured implementation strategy. The primary outcomes are fall and fall-related injury rates 12 months following 6-PACK implementation.

Discussion: This study will involve approximately 16 000 patients, and as such is planned to be the largest hospital fall prevention RCT to be undertaken and the first to be powered for the important outcome of fall-related injuries. If effective, there is potential to implement the programme widely as part of daily patient care in acute hospital wards where fall-related injuries are a problem. Trial registration The protocol for this study is registered with the Australian New Zealand Clinical Trials Registry (ACTRN12611000332921).

Active video gaming to improve balance in the elderly.

Lamoth CJ, Caljouw SR, Postema K.

Stud. Health Technol. Inform. 2011; 167(ePub): 159-64. Affiliation: Center for Human Movement Sciences, University Medical Centre Groningen, University of Groningen, the Netherlands,

PMID: 21685660 (Copyright © 2011, IOS Press).

ABSTRACT

The combination of active video gaming and exercise (exergaming) is suggested to improve elderly people's balance, thereby decreasing fall risk. Exergaming has been shown to increase motivation during exercise therapy, due to the enjoyable and challenging nature, which could support long-term adherence for exercising balance. However, scarce evidence is available of the direct effects of exergaming on postural control. Therefore, the aim of the study was to assess the effect of a six-week videogame-based exercise program aimed at improving balance in elderly people. Task performance and postural control were examined using an interrupted time series design. Results of multilevel analyses showed that performance on the dot task improved within the first two weeks of training. Postural control improved during the intervention. After the intervention period task performance and balance were better than before the intervention. Results of this study show that healthy elderly can benefit from a videogame-based exercise program to improve balance and that all subjects were highly motivated to exercise balance because they found gaming challenging and enjoyable.

Sunlight exposure is important for preventing hip fractures in patients with Alzheimer's disease, Parkinson's disease, or stroke.

Iwamoto J, Takeda T, Matsumoto H.

Acta Neurol. Scand. 2011; ePub(ePub): ePub. Affiliation: Institute for Integrated Sports Medicine, Keio University School of Medicine, Tokyo, Japan. DOI: 10.1111/j.1600-0404.2011.01555.x PMID: 21682695 (Copyright © 2011, John Wiley and Sons).

ABSTRACT

Objectives: Hypovitaminosis D as a result of malnutrition or sunlight deprivation, increased bone resorption, low bone mineral density (BMD), or an increased risk of falls may contribute to an increased risk of hip fractures in patients with neurological diseases, including Alzheimer's disease, Parkinson's disease, and stroke. The purpose of this study was to clarify the efficacy of sunlight exposure for reducing the risk of hip fractures in patients with such neurological diseases.

Methods: The English literature was searched using PubMed, and randomized controlled trials evaluating the efficacy of sunlight exposure for reducing the risk of hip fractures in patients with Alzheimer's disease, Parkinson's disease, and stroke were identified. The relative risk and the 95% confidence interval were calculated for individual randomized controlled trials, and a pooled data analysis (meta-analysis) was performed.

Results: Three randomized controlled trials were identified. Sunlight exposure improved hypovitaminosis D and increased the BMD. The relative risk (95% confidence interval) of hip fractures was 0.22 (0.05, 1.01) for Alzheimer's disease, 0.27 (0.08, 0.96) for Parkinson's disease, and 0.17 (0.02, 1.36) for stroke. The relative risk (95% confidence interval) calculated for the pooled data analysis was 0.23 (0.10, 0.56) ($P=0.0012$), suggesting a significant risk reduction rate of 77%.

Conclusion: The present meta-analysis added additional evidence indicating the efficacy of sunlight exposure for reducing the risk of hip fractures in patients with Alzheimer's disease, Parkinson's disease, and stroke.

The effect of an exercise-based balance intervention on physical and cognitive performance for older adults: a pilot study.

Shubert TE, McCulloch K, Hartman M, Giuliani CA.

J. Geriatr. Phys. Ther. 2010; 33(4): 157-64. Affiliation: UNC Chapel Hill Center for Aging and Health, Chapel Hill, North Carolina 27599, USA. tshubert@med.unc.edu DOI: unavailable PMID: 21717919 (Copyright © 2010, American Physical Therapy Association).

ABSTRACT

BACKGROUND: Several exercise-based falls prevention interventions produced significant long-term reductions in fall rate, but few demonstrate long-term improvements in falls risk factors. A strong body of evidence supports a protective effect of aerobic or strength-training exercise on cognition. Individuals participating in an exercise-based balance improvement program may also experience this protective effect. This may contribute to the decreased rate of falls reported in the literature.

PURPOSE: To determine if individuals participating in an evidence-based exercise program to reduce falls would demonstrate improvements in both physical and cognitive performance.

METHODS: In this nonexperimental, pretest, post test design study, 76 adults (65-93 years) participated in a scripted 12-week, 24 session exercise-based balance improvement program. Each 60 minute class incorporated balance, strength, endurance, and flexibility exercises. Participants completed baseline assessments of physical and cognitive performance measures 1 week prior and 1 week following the intervention.

RESULTS: Fifty-two participants completed post test measures. There were significant improvements in 3 physical performance measures (chair rise time, 360 degree turn, and 4 square step test). There also was similar improvement in the Symbol Digit Modality Test, a measure of processing speed and mental flexibility. When participants were dichotomized into 2 groups based on achieving/not achieving, a baseline walking speed of at least 1.0 meters/second, secondary analysis revealed greater improvements in cognitive performance measures of Trails A and Trails B tests by faster walkers compared to slower walkers.

CONCLUSIONS: Participation in balance programs can have a positive impact on cognition and physical outcomes. This may provide insight about how exercise influences fall risk. Therapists can utilize this information clinically by educating patients about the potential positive effect of balance exercises on cognition.

The effectiveness of a walking booster program for seniors.

Jancey JM, Lee AH, Howat PA, Burke L, Leong CC, Shilton T.

Am. J. Health Promot. 2011; 25(6): 363-7. DOI: 10.4278/ajhp.090512-ARB-164 PMID: 21721960 (Copyright © 2011, American Journal of Health Promotion).

ABSTRACT

Purpose: To determine the effectiveness of a 3-month home-based booster program for seniors to increase walking.

Design: A longitudinal prospective study.

Setting: Perth, Western Australia.

Subjects: Of the 177 (of 260) program participants and 236 (of 313) controls who initially completed the neighbourhood walking intervention, 114 (64%) and 134 (57%) were available for the booster, and 100 and 131 participants completed the entire program, respectively. Intervention A 6-month neighbourhood walking intervention was followed 12 months later by a 3-month home-based booster program comprised of print-based materials, a pedometer, and two motivational phone calls.

Measures: A self-reported questionnaire was administered at four time points: original intervention, baseline (t1) and 6 months (t2); booster, 18 months (t3) and 21 months (t4). Physical activity levels were measured using the International Physical Activity Questionnaire. Personal and demographic information was collected.

Analysis: Descriptive statistics and repeated-measures analysis of variance.

Results: The intervention group's mean time spent walking for recreation and mean time spent walking for errands per week showed significant increases between t1 and t2, but the weekly mean time walking for recreation dropped by 52 minutes from t2 to t3. Significant increases were evident from t3 to t4 as a result of the booster. Walking levels for the control group remained stable over the study period.

Conclusion: Physical activity levels of seniors revert once an intervention concludes. A home-based booster program can reactivate physical activity levels. Hence, program planners should include booster sessions for program sustainability.

Synergistic Effect of Social Support and Self-Efficacy on Physical Exercise in Older Adults

Lisa M. Warner, Jochen P. Ziegelmann, Benjamin Schüz, Susanne Wurm, Ralf Schwarzer
J. Aging Phys. Act. 2011; 19(3):249-261

ABSTRACT

The purpose of the current study was to examine whether the effects of social support on physical exercise in older adults depend on individual perceptions of self-efficacy. Three hundred nine older German adults (age 65–85) were assessed at 3 points in time (3 months apart). In hierarchical-regression analyses, support received from friends and exercise self-efficacy were specified as predictors of exercise frequency while baseline exercise, sex, age, and physical functioning were controlled for. Besides main effects of self-efficacy and social support, an interaction between social support and self-efficacy emerged. People with low self-efficacy were less likely to be active in spite of having social support. People with low support were less likely to be active even if they were high in self-efficacy. This points to the importance of both social support and self-efficacy and implies that these resources could be targets of interventions to increase older adults' exercise.

These abstracts are from the SafetyLit Injury Research and Prevention Database which provides weekly updates of scholarly research articles published in the research literature on injury prevention and safety promotion. SafetyLit can be accessed at <http://www.safetylit.org/>

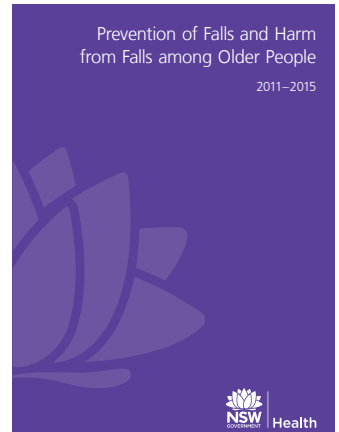
RESOURCES

http://www.health.nsw.gov.au/policies/pd/2011/PD2011_029.html

Preventing Falls and Harm from Falls among Older People: 2011-2015

This new policy directive is now available on the NSW Health website and describes actions that NSW Health will undertake to support the prevention of falls and fall-related harm among older people.

Actions will take place in three key domains: health promotion, NSW Health clinical services and NSW Health residential aged care services (multi-purpose services and State Government Residential Aged Care Facilities). The Policy aims to reduce the incidence and severity of falls among older people and reduce the social, psychological and economic impact of falls on individuals, families and the community



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The most recent issue of this bulletin is a special issue on Falls Prevention in NSW, articles include;

Falls prevention in NSW: a big issue requiring sustained research, policy and practice initiatives, Andrew J Milat & Stephen Lord

Characteristics of falls-related injuries attended by an ambulance in Sydney, Australia: a surveillance summary, Susan L. Thomas, David J. Muscatello, Paul M. Middleton and Wei Zheng

The cost of fall-related injuries among older people in NSW, 2006-07, Wendy L. Watson, Angela J. Clapperton and Rebecca J. Mitchell

An economic evaluation of community and residential aged care falls prevention strategies in NSW, Jody Church, Stephen Goodall, Richard Norman and Marion Haas

An evaluation of the NSW Management Policy to Reduce Fall Injury Among Older People, 2003-2007: implications for policy development, Wendy L. Watson and Rebecca J. Mitchell.

The strategic development of the NSW Health Plan for the Prevention of Falls and Harm from Falls Among Older People: 2011-2015; translating research into policy and practice, Andrew J. Milat, Claire Monger, Joanne Smith, Adrian Baumann, Sally Redman and Brendan Goodger.

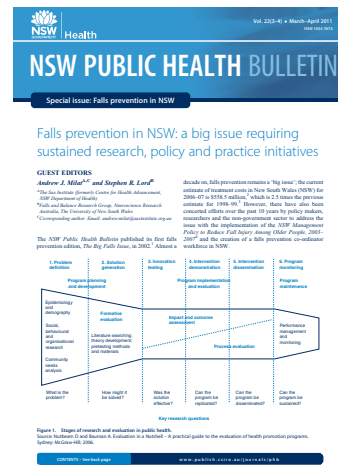
Exercise to prevent falls in older adults: an updated meta-analysis and best practice recommendations, Catherine Sherrington, Anne Tiedemann, Niccola Fairhall, Jacqueline C.T. Close and Stephen R. Lord.

Implementing falls prevention research into policy and practice: an overview of a new National Health and Medical Research Council Partnership Grant, Stephen R. Lord, Kim Delbaere, Anne Tiedemann, Stuart T. Smith and Daina L. Sturnieks.

The bulletin is available at:

<http://www.publish.csiro.au/nid/226/issue/5787.htm>

A limited number of hard copies of this journal are available, if you would like a copy please send an e-mail to e.vance@neura.edu.au



NEW Website

www.activeandhealthy.nsw.gov.au



The **NEW** state wide consumer and professional resource for

- ***Falls Prevention Exercise Programs*** in your local area
- ***Staying Active and On Your Feet*** publication
- Simple and essential ***Home Based Exercises***
- ***Health and Lifestyle*** tips and checklist
- ***A Home Safety Checklist***

Falls can be prevented



<http://fallsnetwork.neura.edu.au/>

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 prevention for older people.

The NSW Falls Prevention Network activities are part of the implementation of the NSW Falls Prevention Policy 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.ealth.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 type

unsubscribe nsw-falls-network

on the next line type **end**

If you have any problems, contact Esther at e.vance@neura.edu.au.

Share your news and information/ideas

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@neura.edu.au

The Network Listserv

It is great to see the increased activity on the listserv and we 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

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.