

## Welcome

This issue features:

- Stepping On in Mental Health settings
- Websites, Meetings and Conferences
- Recent Abstracts from the research literature

[fallsnetwork.neura.edu.au](http://fallsnetwork.neura.edu.au)



Wisemans Ferry Stepping On Program (see page 2 for article)

**Falls Prevention**<sup>®</sup>  
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How to join and communicate through the network.

### FOR YOUR DIARY:

- NSW Falls Prevention Network Forum, Friday 20th May 2016, Sydney.
- [2016 International Dementia Conference](#), June 16 & 17, Sydney
- [ANZFPS Conference, 2016](#) November 27-29, Melbourne Park Tennis Centre

## Stepping On in Mental Health settings

**Mandy Meehan, Team Leader, Ryde Specialist Mental Health Services for Older People (SMHSOP) Northern Sydney Local Health District, (NSLHD) & Nadia Williams, Stepping On Coordinator, NSLHD & CCLHD.**

Falls are the leading cause of unintentional injury of older adults in Australia. Research indicates the risk of falls is exacerbated by depression and anxiety [1]. Mental health services should consider falls risk factors in people presenting to these services. Many people living with depression and anxiety can be isolated and withdrawn and this can lead to reduced activity, loss of muscle strength and balance as well the confidence to participate in falls prevention or healthy living activities. People living with Schizophrenia, for example, may have impaired executive functioning. Due to impulsivity, impaired planning and judgment, people with impaired executive dysfunction are at particular risk of falling. Symptoms of Schizophrenia such as hearing voices, experiencing paranoia or hallucinations may cause an individual to become distracted from their surroundings and this can contribute to falls. Additionally, multiple medications, particularly psychotropics prescribed in mental health can further increase falls risks [2].

People with enduring mental illness are at a higher risk of physical health problems than the general population, with considerable reduced life expectancy according to *Living Well: A Strategic Plan for Mental Health in NSW 2014-2024, Mental Health Commission of NSW*. [3]. The Living Well plan identifies physical health conditions such as diabetes; stroke, chronic pain and heart disease are notably higher among people experiencing psychotic disorders [3]. There are also strong links between depression, anxiety and poor physical health. Some key physical risk factors identified with reduced life expectancy in mental health include high rates of smoking and alcohol use or dependence. Excessive weight gain and low levels of activity are concerning for physical health and impact on falls risk [3]. Type 2 diabetes, obesity and high BMI have been identified as contributing to increased falls risk as they tend to impair balance and exacerbate gait abnormalities [4]. Additional symptoms of metabolic syndromes can include neuropathy, visual loss, hypoglycemia and cognitive impairment, all of which may increase falls risk.

Exercise and cognitive behavioral therapy are common tools used in mental health programs, helping consumers identify and address their health needs and empowering them to take responsibility for their own health outcomes [5]. The Stepping On program utilizes these tools to address falls prevention.

Stepping On is an evidence based community falls prevention program delivered across NSW, and has also been recognised internationally [6]. The Stepping On program utilises a cognitive behavioural approach and adult learning principles to increase participant's knowledge and to change attitudes and behaviours. The program involves a tailored series of small group education and exercise sessions. Sessions cover issues such as falls and risk, home hazards, safe footwear, vision, safety in public places, coping after a fall and the impact of medications on falls risk.

Each week participants practice strength and balance exercises. More information about the program is available at: [www.steppingon.com/](http://www.steppingon.com/)

Stepping On was first piloted for mental health in the semi-rural community of Wisemans Ferry. The local community nurse recruited participants for the program from mental health consumers who were being managed in the community. These participants were older adults who were isolated, residing on properties in the district. The majority had experienced chronic depression, anxiety and psychotic illnesses and all had fallen. Transport was provided by Baptist Community Services enabling participants to attend the Stepping On sessions. Social connections made within this group were an important factor in inspiring positive mental health and motivation and an outcome from this pilot study. The group members also responded well to the structured nature of the program and enjoyed the guest speakers. To maintain their physical gains and supportive connections it was identified that participants needed something to keep them engaged in the healthful activities beyond the program. A yoga group was established on their behalf, participants continued to meet on a weekly basis and two years down the track still attend Yoga and socialise. The majority of the participants appear to be thriving, with some participants taking up golf and one returning to paid employment.

The Ryde Specialist Mental Health Services for Older People (SMHSOP) team found that many consumers using their service lacked the confidence to attend community falls prevention activities and had been looking at options to run a falls prevention program at The Studio. Encouraged by results of the pilot Stepping On study at Wiseman's Ferry, a collaborative to deliver the first Stepping On at the Digby House Studio in Ryde was established. Once again the results were very encouraging. Additional outcome measures were taken and these found participants had improved in confidence, strength and balance and had a notable reduction in psychological distress. Participants completing The Studio program also reported improved self-confidence enabling them to re-engage in many activities that they may have otherwise ceased or reduced and they felt strongly that the Stepping On program supported their personal recovery journeys.

Research has shown that uptake and adherence to an exercise program, particularly with older people can be problematic. This can be even more challenging for mental health consumers. The inclusion of the adapted Yoga program directly after the completion of the Stepping On program has proven to be an effective falls prevention strategy and has the addition benefits of promoting mental wellbeing. As a future direction it is hoped that the 8 week Yoga program can be extended as this continues to meet the needs of our participants and helps them maintain their gains, remain focused and improve self-confidence. In the future it is also hoped to establish links with community programs so participants can then be transitioned into ongoing community based exercise programs.

Another pilot program has commenced in October 2015 for mental health consumers under 65 years. Participants will include those that have co-morbid physical health problems (Type 2 Diabetes and high

BMI) as this group has been identified at risk of falling.

Stepping On Coordinator for Northern Sydney, Central Coast Area Health, Nadia Williams and Team Leader, Ryde Specialist Mental Health Services for Older People (SMHSOP) NSLHD, Mandy Meehan, have evaluated their programs to date and presented their findings to the 2014 NSW Falls Prevention Network Forum and the 2014 Mental Health Services (MHS) Conference. Their paper was accepted in the 2014 The MHS Book of Proceedings. They also presented a poster at the 6th Biennial Australian and New Zealand Falls Prevention Conference in 2014. Mandy Meehan presented at the NSW Falls Prevention Network Forum on 22nd May 2015.

For more information you can contact:

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#### References:

1. Kvelde, T., et al., Depressive Symptomatology as a Risk Factor for Falls in Older People: Systematic Review and Meta-Analysis. *Journal of the American Geriatrics Society*, 2013. 61(5): p. 694-706.
2. Park, H., et al., Medications associated with falls in older people: systematic review of publications from a recent 5-year period. *European Journal of Clinical Pharmacology*, 2015. ePub(ePub): p. ePub-ePub.
3. NSW Mental Health Commission, Living Well: A Strategic Plan for Mental Health in NSW 2014-2024. 2014: Sydney (<http://nswmentalhealthcommission.com.au/our-work/strategic-plan>)
4. Mayne, D., N.R. Stout, and T.J. Aspray, Diabetes, falls and fractures. *Age and Ageing*. 39(5): p. 522-525.
5. Kvelde, T., et al., Depressive symptoms increase fall risk in older people, independent of antidepressant use, and reduced executive and physical functioning. *Archives of gerontology and geriatrics*, 2014. ePub(ePub): p. ePub-ePub.
6. Clemson, L., et al., The Effectiveness of a Community-Based Program for Reducing the Incidence of Falls in the Elderly: A Randomized Trial. *Journal of the American Geriatrics Society*, 2004. 52(9): p. 1487-1494.

# Webinars, Websites, Meetings & Conferences

## April Falls Day® 2016 – order your resources

April Falls Day® 2016 – great opportunity to highlight Falls Prevention in your local facility. Plan now and be ready!

April Falls Day® merchandise include: balloons, pens, t-shirts, eye glass cleaners and post it notes. These are available in orange and green. A purchase order/credit authority is required when ordering.

NB: Items are to be ordered by Friday 5th February 2016 and you will receive the price quoted in the attached merchandise information. This will ensure that everything arrives prior to April Falls Day®.

How to order:

Complete an [order form](#) and email to [sales@goodgear.com.au](mailto:sales@goodgear.com.au)

GoodGear will email you an order confirmation

PAYMENT is required – The order will only proceed if an official Purchase Order or Credit Authority is provided to GoodGear

Cut-off date is **Friday 5th February 2016** so that deliveries can be shipped out on week commencing 14th March 2016

All prices listed on the [Order Form & Catalogue](#) are Gst Excl.

If you have any questions at April Falls Day® 2016 please contact Ingrid Hutchison on 9269 5516 or [Ingrid.hutchinson@health.nsw.gov.au](mailto:Ingrid.hutchinson@health.nsw.gov.au)

## Stepping On ([www.steppingon.com](http://www.steppingon.com))

The Stepping On program is an evidence based program that offers older people a way of reducing falls and at the same time increasing self confidence in situations where they are at risk of falling.

This program was recently nominated as a finalist in the HESTA Primary Health Care Awards.

The Stepping On program incorporates a group setting plus individualized follow-up. It covers a range of issues, including falls and risk, strength and balance exercises, home hazards, safe footwear, vision and falls, safety in public places, community mobility, coping after a fall, and understanding how to initiate a medication review.

This website includes resources and testimonies about the Stepping On program.

**Stepping On**  
A Falls Prevention Program, based on the latest Scientific Research, for people 65 and over

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The Stepping On program offers older people a way of reducing falls and at the same time increasing self confidence in situations where they are at risk of falling.

Falls are a serious problem, but can be prevented at any age.

This program, which was developed in Australia and been implemented in the USA and internationally is considered to be one of the most effective falls prevention programs available, giving people the confidence to undertake their everyday activities safely. Participation in a program like Stepping On will help older people maintain independence and give them confidence in their mobility so they are able to undertake their everyday activities safely and without the risk of falling.

The Stepping On program incorporates a group setting plus individualized follow-up. It covers a range of issues, including falls and risk, strength and balance exercises, home hazards, safe footwear, vision and falls, safety in public places, community mobility, coping after a fall, and understanding how to initiate a medication review.

The following is a testimonial from recent Stepping On workshop attendee and shows how the Stepping On program can benefit older people:

*"A positive attitude to ageing is so important. There are so many grumpy people. They can bring you down and make you feel a little depressed if you let them. I try and mix with other positively minded people and limit my time with the grumpy ones."*

*Stepping On has helped me enormously. It has given me confidence to get out, socialise and pursue other health promotion activities. I enjoyed being part of the Stepping On poster.*

*I really didn't understand how important it is to do exercises to improve my balance and prevent me from falling. I go out a lot. It is so important for your mental attitude. It makes all the difference to my outlook. The Stepping On group makes me realise I have to be strong so I can get on and off a chair and get out and about. It changed my life. Ruth, aged 70*

**Read what others are saying about our Program**

**See Maggie's Story** - a video testimonial - and discover how Stepping On can change your life for the better

**This is Gwen.** [Read her story here](#) to see why she is so happy with Stepping On

The Active and Healthy website identifies registered exercise programs in your local area that have specific exercises to improve balance and strength

Find an exercise program on Active & Healthy [www.activeandhealthy.nsw.gov.au](http://www.activeandhealthy.nsw.gov.au)

[Click here to learn more](#)

If you are interested in Stepping On in the USA, please contact the Wisconsin Institute for Healthy Aging, which holds the North American license for the program. The Institute can be contacted by phone: 908-243-9590 (in the US) or via their website: <http://www.wisconsinaging.org/>

**Stepping On in Melbourne!** Megan is presenting a Train the Trainer workshop in Melbourne in February 2016. [Click here](#) for more details

If you or someone you know could benefit from one of our Programs, and you would like to find out more, please [click here](#) if you are in the USA, please [click here](#) for more information)

If you are a Health Professional and would like to facilitate one of our Programs, please [click here](#) (If you are in the USA, please [click here](#) for more information)



# Abstracts

## Recent abstracts from the research literature

### Reviews

#### Effect of low-intensity exercise on physical and cognitive health in older adults: a systematic review

Tse AC, Wong TW, Lee PH.

*Sports Med. Open* 2015; 1(1): e37.

Affiliation : School of Nursing, Hong Kong Polytechnic University, Hungghum, Hong Kong, China.

(Copyright © 2015, Springer Science+Business Media)

#### Abstract

**BACKGROUND:** It is well known that physical exercise is important to promote physical and cognitive health in older population. However, inconsistent research findings were shown regarding exercise intensity, particularly on whether low-intensity exercise (1.5 metabolic equivalent tasks (METs) to 3.0 METs) can improve physical and cognitive health of older adults. This systematic review aimed to fill this research gap. The objective of this study is to conduct a systematic review of the effectiveness of low-intensity exercise interventions on physical and cognitive health of older adults.

**METHODS:** Published research was identified in various databases including CINAHL, MEDLINE, PEDro, PubMed, Science Direct, SPORTDiscus, and Web of Science. Research studies published from January 01, 1994 to February 01, 2015 were selected for examination. Studies were included if they were published in an academic peer-reviewed journal, published in English, conducted as randomized controlled trial (RCT) or quasi-experimental studies with appropriate comparison groups, targeted participants aged 65 or above, and prescribed with low-intensity exercise in at least one study arm. Two reviewers independently extracted the data (study, design, participants, intervention, and results) and assessed the quality of the selected studies. Fifteen studies met the inclusion criteria. Quality index ranged from 15 to 18 mean = 18.3 with a full score of 28, indicating a moderate quality. Most of the outcomes reported in these studies were lower limb muscle strength (n = 9), balancing (n = 7), flexibility (n = 4), and depressive symptoms (n = 3).

**RESULTS:** Out of the 15 selected studies, 11 reported improvement in flexibility, balancing, lower limb muscle strength, or depressive symptoms by low-intensity exercises.

**CONCLUSIONS:** The current literature suggests the effectiveness of low-intensity exercise on improved physical and cognitive health for older adults. It may be a desired intensity level in promoting health among older adults with better compliance, lower risk of injuries, and long-term sustainability.

#### Effects of exercise on falls, balance, and gait ability in Parkinson's disease: a meta-analysis

Shen X, Wong-Yu IS, Mak MK.

*Neurorehabil. Neural Repair* 2015; ePub(ePub): ePub.

Affiliation: The Hong Kong Polytechnic University, Hong Kong margaret.mak@polyu.edu.hk.

(Copyright © 2015, American Society of Neurorehabilitation, Publisher Sage Publications)

#### Abstract

Postural instability and falls are complex and disabling features of Parkinson's disease (PD) and respond poorly to anti-Parkinsonian medication. There is an imperative need to evaluate the effectiveness of exercise interventions in enhancing postural stability and decreasing falls in the PD population. The objectives of our study were to determine the effects of exercise training on the enhancement of balance and gait ability and reduction in falls for people with PD and to investigate potential factors contributing to the training effects on balance and gait ability of people with PD. We included 25 randomized control trials of a moderate methodological quality in our meta-analysis. The trials examined the effects of exercise training on balance and gait ability and falls against no intervention and placebo intervention. The results showed positive effects of exercise intervention on enhancing balance and gait performance (Hedges'  $g = 0.303$  over the short-term in 24 studies and  $0.419$  over the long-term in 12 studies;  $P < .05$ ) and reducing the fall rate (rate ratio =  $0.485$  over the short-term in 4 studies and  $0.413$  over the long-term in 5 studies;  $P < .05$ ). The longest follow-up duration was 12 months. There was no evidence that training decreased the number of fallers over the short- or long-term ( $P > .05$ ). The results of our metaregression and subgroup analysis showed that facility-based training produced greater training effects on improving PD

# Abstracts Continued

## Recent abstracts from the research literature

participants' balance and gait ability ( $P < .05$ ). The findings support the application of exercise training to improve balance and gait ability and prevent falls in people with PD.

### Renal disease and accidental falls: a review of published evidence

López-Soto PJ, De Giorgi A, Senno E, Tiseo R, Ferraresi A, Canella C, Rodríguez-Borrego MA, Manfredini R, Fabbian F. *BMC Nephrol.* 2015; 16(1): e176.

Affiliation: Department of Medicine, Azienda Ospedaliero-Universitaria (AOU) of Ferrara, Ferrara, Italy. f.fabbian@ospfe.it.

(Copyright © 2015, BioMed Central)

#### Abstract

**BACKGROUND:** The pathogenesis of falling is complex, and identification of risk factors may be essential for prevention. The relationship between renal disease and falls is unclear, and the goal of this study was to collect the available evidence and investigate the relationship between accidental falls and renal dysfunction.

**METHODS:** Electronic searches were performed in the MEDLINE, Scopus, Ovid SP and Web of Science databases to identify the appropriate literature. The themes used were: falls (combined in the title/abstract fall or falls or falling or faller\* or fallen or slip\* or trip\* or (MeSH) accidental falls) and renal insufficiency (chronic or renal insufficiency or kidney diseases combined in title/abstract renal disease\* or kidney disease\* or renal insufficiency or kidney insufficiency or kidney failure or renal failure or MeSH renal insufficiency, chronic or renal insufficiency or kidney diseases). The incidence, risk factors, complications, and characteristics of the falls were analyzed.

**RESULTS:** Eight prospective cohorts including five cross-sectional studies, and one case-control study were identified. No randomized controlled studies were found. The incidence of falls in chronic kidney disease patients ranged between 1.18 and 1.60 fall/patient year. These were frequent in frail older adults on hemodialysis treatment. Falling relapses in the same group of patients caused serious consequences. Data on pre-end stage renal disease (ESRD) were scarce.

**CONCLUSIONS:** The risk of falling appears to be common in patients with renal dysfunction especially in older adults undergoing hemodialysis. On the other hand, we could not find any conclusive data on pre-ESRD patients.

## Epidemiology

### Factors influencing falls in the frail elderly individuals in urban and rural areas

Yoo JS, Kim CG, Yim J, Jeon MY.

*Aging Clin. Exp. Res.* 2015; ePub(ePub): ePub.

Affiliation: Department of Nursing, Institute of Health Science, Gyeongsang National University, 900 Gajwa-Dong, Jinju, 660-701, Gyeongnam, Republic of Korea. miyangjeon@gmail.com.

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#### Abstract

**BACKGROUND:** Falls in older people commonly cause morbidity and mortality, loss of independence, and poor quality of life. Differences in residential environments might influence falls experienced by elderly people in urban and rural areas.

**AIM:** The purpose of this study was to provide data through the comparative analysis of physical and environmental factors influencing falls in the frail elderly individuals in urban and rural areas, which might be used for developing the fall prevention program.

**METHODS:** A total of 534 frail elderly individuals living in regional communities were assessed over 2 months. Discomfort when walking, avoiding falls, awareness of falls, physical activity, fear of falling, depression, and a safety score for the home environment were measured.

**RESULTS:** Frail elderly individuals in urban and rural areas had significant differences in terms of their prior experience of falls; the number of falls; the intake of hypertension medication, arthritis medication, and painkillers, respectively, discomfort when walking; physical activity; and the safety score of their home

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environments. There were significant differences between the frail elderly individuals living in urban and rural areas with the highest incidence of falls with regard to their education level, marital status, residential types, the intake of arthritis medication and painkillers, walking discomfort, physical activity, and the safety score of their home environments. In the factors influencing falls of frail elderly individuals in urban areas, stroke, visual impairment, and the fear of falling were significant explanatory variables. In the factors influencing falls of frail elderly individuals in rural areas, dizziness, walking discomfort and the fear of falling were significant explanatory variables.

**DISCUSSION:** These results indicate that different factors influence falls among the elderly living in different residential areas.

**CONCLUSION:** Based on these results, a multidimensional customized fall prevention program should be considered by various factors according to residential environments to effectively prevent falls among elderly adults.

## Association between hypoglycemia and fall-related fractures and health care utilization in older veterans with type 2 diabetes

Zhao Y, Kachroo S, Kawabata H, Colilla S, Mukherjee J, Fonseca V, Iloeje U, Shi L.

*Endocr. Pract.* 2015; ePub(ePub): ePub.

Affiliation: Tulane University, School of Public Health and Tropical Medicine.

(Copyright © 2015, American Association of Clinical Endocrinologists)

### Abstract

**OBJECTIVE:** To examine the association between hypoglycemia and fall-related outcomes in older patients with type 2 diabetes mellitus (T2DM).

**METHODS:** This retrospective cohort study used electronic medical records of T2DM patients (65 years) from the VISN 16 data warehouse (01/01/2004-06/30/2010). Patients in non-hypoglycemia group (Non-HG) were 1:1 randomly matched with patients in hypoglycemia group (HG) by age ( $\pm 5$  years), gender, race, and medical center location. Fall-related events (i.e., fractures and head injuries) were identified, with a fall being the external cause within  $\pm 2$  days. McNemar tests and generalized estimating equation (GEE) models were used to compare fall-related events in the one-year outcome period after the index date (i.e., date of first hypoglycemic episode). We also examined fall-related health care utilization.

**RESULTS:** A total of 4,215 patients in each group were studied, with the mean age of 76.5 years (SD: 5.85). Charlson Comorbidity Index (CCI) was 5.73 (SD: 2.95) in the HG and 4.34 (SD: 2.40) in the non-HG. HG had significantly higher rates of fall-related events than non-HG, 27 (0.64%) versus one event (0.02%) and 89 (2.11%) versus 21 events (0.50%) within 30 days and one year, respectively. GEE models confirmed the elevated risk of fall-related events after controlling for social-demographic and clinical characteristics, comorbidities, and use of medication (adjusted odds ratio [aOR]: 2.70; 95% CI: 1.64-4.47). The HG patients were more likely to have emergency department visits, hospital admissions and long-term care placement compared to their counterparts.

**CONCLUSION:** Hypoglycemia is associated with worse fall-related outcomes among the elderly veterans.

## Falls in hospital and new placement in a nursing home among older people hospitalized with acute illness

Basic D, Hartwell TJ.

*Clin. Interv. Aging* 2015; 10: 1637-1643.

Affiliation: Department of Geriatric Medicine and Rehabilitation, Shoalhaven District Memorial Hospital, Nowra, NSW, Australia.

(Copyright © 2015, Dove Medical Press)

### Abstract

**PURPOSE:** To examine the association between falls in hospital and new placement in a nursing home among older people hospitalized with acute illness.

**MATERIALS AND METHODS:** This prospective cohort study of 2,945 consecutive patients discharged alive from an acute geriatric medicine service used multivariate logistic regression to model the association between one or more falls and nursing home placement (primary analysis). Secondary analyses stratified falls by injury and occurrence of



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multiple falls. Demographic, medical, and frailty measures were considered in adjusted models.

**RESULTS:** The mean age of all patients was 82.8±7.6 years and 94% were admitted through the emergency department. During a median length of stay (LOS) of 11 days, 257 (8.7%) patients had a fall. Of these, 66 (25.7%) sustained an injury and 53 (20.6%) had two or more falls. Compared with nonfallers, fallers were more likely to be placed in a nursing home (odds ratio [OR]: 2.03, 95% confidence interval [CI]: 1.37-3.00), after adjustment for age, sex, frailty, and selected medical variables (including dementia and delirium). Patients without injury (OR: 1.83, 95% CI: 1.17-2.85) and those with injury (OR: 2.35, 95% CI: 1.15-4.77) were also more likely to be placed. Patients who fell had a longer LOS (median 19 days vs 10 days;  $P<0.001$ ).

**CONCLUSION:** This study of older people in acute care shows that falls in the hospital are significantly associated with new placement in a nursing home. Given the predominantly negative experiences and the financial costs associated with placement in a nursing home, fall prevention should be a high priority in older people hospitalized with acute illness.

### The influence of dementia on injury-related hospitalisations and outcomes in older adults

Harvey L, Mitchell R, Brodaty H, Draper B, Close J.

*Injury* 2015; ePub(ePub): ePub.

Affiliation: Falls and Injury Prevention Group, Neuroscience Research Australia, UNSW, Australia; Prince of Wales Clinical School, UNSW, Australia.

(Copyright © 2015, Elsevier Publishing)

#### Abstract

**INTRODUCTION:** Injury is the most common reason for admission to hospital in people with dementia in Australia. However relatively little is known about the temporal trends and the hospital experience of people with dementia hospitalised for an injury. This population-based data linkage study compared the causes, temporal trends and health outcomes for injury-related hospitalisations in people with and without dementia.

**METHODS:** Hospitalisation and death data for 235,612 individuals aged 65 years and over admitted to hospital for an injury over the ten year period (2003-2012) in New South Wales, Australia were probabilistically linked. Descriptive statistics including chi square tests, observed and age-standardised admission rates and rate ratios (RRs) were calculated. Trends over time were analysed using negative binomial regression.

**RESULTS:** There were 331,432 injury-related hospitalisations over the study period. Both the observed (RR 3.16; 95% CI 3.13-3.19) and age-standardised admission rate ratios (RR 1.78; 95% CI 1.77-1.79) were higher for people with dementia. Age-standardised rates increased by 3.5% (95% CI 3.1-3.9) per annum over the study period for people without dementia. In contrast, for people with dementia, rates increased by 2.4% (95% CI 1.8-3.1) per annum until 2007 and then decreased by 3.1% (95% CI -4.4 to -1.7) per annum from 2007 onwards. Compared to people without dementia, a higher proportion of people with dementia were hospitalised as a result of a fall (90.9% vs 75.2%,  $p<0.0001$ ), sustained a fracture (57.2% vs 52.1%,  $p<0.0001$ ), notably hip fracture (30.7% vs 14.7%,  $p<0.0001$ ), had longer mean hospital lengths of stay (LOS) (16.5 vs 13.6 days), and higher 30-day mortality (8.7% vs 3.6%  $p<0.0001$ ), although this pattern was not consistent across all injury types.

**CONCLUSIONS:** People with dementia are disproportionately represented in injury-related hospitalisations, experience longer hospital LOS and have poorer outcomes. Ninety percent of hospitalisations for people with dementia were as a result of a fall, highlighting the importance of developing and implementing effective fall-related preventive strategies in this high risk population.

### Fear of falling

#### Fear of falling and its predictors among community-living older adults in Korea

Oh E, Hong GS, Lee S, Han S.

*Ageing Ment. Health* 2015; ePub(ePub): ePub.

Affiliation: School of Nursing, Columbia University, NY, USA.

(Copyright © 2015, Informa - Taylor and Francis Group)

# Abstracts Continued

## Recent abstracts from the research literature

### Abstract

**OBJECTIVES:** To explore the prevalence and predicting factors of fear of falling (FOF) among community-living older adults in Korea.

**METHODS:** Secondary data analysis of the 2011 Korean National Elderly Living Conditions and Welfare Desire Survey was used. Logistic regression analysis was conducted to examine the predictors of FOF.

**RESULTS:** In total, 75.6% of older adults with normal cognition have FOF. Factors associated with an increased risk of FOF in older adults are previous experience with falling (OR = 3.734, 95% CI = 2.996-4.655), limitations in the performance of exercise involving lower extremities (OR = 2.428, 95% CI = 2.063-2.858), being female (OR = 2.335, 95% CI = 2.023-2.694), having more than three chronic diseases (OR = 1.994, 95% CI = 1.625-2.446), limitations in instrumental activities of daily living (IADLs) (OR = 1.745, 95% CI = 1.230-2.477), limitations in the performance of exercise involving upper extremities (OR = 1.646, 95% CI = 1.357-1.997), living without a spouse (OR = 1.626, 95% CI = 1.357-1.948), having poor self-rated health (OR = 1.571, 95% CI = 1.356-1.821), limitations in muscle strength (OR = 1.455, 95% CI = 1.150-1.841), age ( $\geq 75$  years) (OR = 1.320, 95% CI = 1.150-1.516), lower levels of education (0-6 years) (OR = 1.231, 95% CI = 1.075-1.409), and life satisfaction (OR = 1.104, 95% CI = 1.065-1.114).

**CONCLUSION:** A multidimensional construct of general characteristics, physical, and psychosocial variables act as risk factors for FOF. Preventive intervention should be developed to decrease the FOF among Korean older adults.

### Risk Assessment

#### Balance measured by the sway balance smart-device application does not discriminate between older persons with and without a fall history

Vincenzo JL, Glenn JM, Gray SM, Gray M.

*Aging Clin. Exp. Res.* 2015; ePub(ePub): ePub.

Affiliation: Human Performance Lab, Office for Studies on Aging, University of Arkansas, Fayetteville, USA.

(Copyright © 2015, Editrice Kurtis)

### Abstract

**BACKGROUND:** Clinical functional assessments of balance often lack specificity and sensitivity in discriminating and predicting falls among community-dwelling older adults.

**AIMS:** We determined the feasibility of using a smart-device application measuring balance to discriminate fall status among older adults. We also evaluated differences between smart-device balance measurements when secured with or without a harness.

**METHODS:** A cross-sectional study design to determine the ability of the Sway Balance smart-device application (SWAY) to discriminate older adults based on fall history. The Berg Balance Scale (BBS) and Activities-Specific Balance Confidence Scale (ABC) were used as comparative, clinically based assessments. Community-dwelling older adults with ( $n = 25$ ) and without ( $n = 32$ ) a history of fall(s) participated. Multivariate analysis of variance was used to determine differences among assessments based on fall history. Logistic regression models determined the ability of each assessment to discriminate fall history.

**RESULTS:** Older adults with and without a history of falls were not significantly different on SWAY ( $P = 0.92$ ) but were different on BBS ( $P = 0.01$ ), and ABC ( $P < 0.001$ ). Similarly, SWAY did not discriminate fall history ( $P = 0.92$ ), while BBS and ABC both discriminated fall history ( $P < 0.01$ ). Paired  $t$  tests between SWAY scores with and without a harness indicated no differences ( $P \geq 0.05$ ).

**CONCLUSION:** Among the older adults studied, the BBS and ABC measures discriminated groups defined by fall history, while the SWAY smart-device balance application did not. Modifications to the application may improve the discriminating ability of the measure in the recognition of fall status in older adults.

# Abstracts Continued

## Recent abstracts from the research literature

### The impact of fall risk assessment on nurse fears, patient falls, and functional ability in long-term care

Dever Fitzgerald T, Hadjistavropoulos T, Williams J, Lix L, Zahir S, Alfano D, Scudds R.

*Disabil. Rehabil.* 2015; ePub(ePub): 1-12.

Affiliation: School of Physical Therapy , University of Saskatchewan , Saskatoon , Saskatchewan , Canada.

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#### Abstract

**PURPOSE:** The purpose of this study was to determine whether providing fall risk information to long-term care (LTC) nurses affects restraint use, activities of daily living (ADL), falls, and nurse fears about patient falls.

**METHODS:** One-hundred and fifty LTC residents were randomized to a fall risk assessment intervention or care-as-usual group. Hypotheses were tested using analyses of variance and path analyses.

**RESULTS:** Restraint use was associated with lower ADL scores. In the intervention group, there ceased to be significant relationships between nurse fears about falls and patient falls (after controlling for actual patient risk; post-intervention, nurse fears about falls were based on realistic appraisals), and between fears and restraints (i.e. unjustified nurse fears became less likely to lead to unjustified restraint use). No group differences in falls were identified.

**CONCLUSION:** Despite a lack of group differences in falls, results show initial promise in potentially impacting resident care. Increasing intervention intensity may lead to fall reductions in future research. Implications for Rehabilitation Given the high prevalence rates of falls in LTC and associated injuries, prevention programs are important. Nurse fears about patient falls may impact upon restraint use which, when excessive, can interfere with the patient's ability to perform ADL. Excessive restraint use, due to unjustified nurse fears, could also lead to falls. Providing accurate, concise information to nursing staff about patient fall risk may aid in reducing the association between unjustified nurse fears and the resulting restraint use that can have potential negative consequences.

### Reliability of gait variability assessment in older individuals during a six-minute walk test

Grimpampi E, Oesen S, Halper B, Hofmann M, Wessner B, Mazzà C.

*J. Biomech.* 2015; ePub(ePub): ePub.

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#### Abstract

Gait variability is an important indicator of gait performance. However, the reliability of the parameters used for its quantification, obtained from trunk linear accelerations, has still not been thoroughly investigated. The aim of this study is to assess the reliability of gait variability assessment in healthy older individuals based on lower trunk accelerations during a six-minute walk test and to examine the reliability of the data acquired in shorter periods. Twenty-nine subjects ( $84 \pm 5$  years) performed the test while wearing one inertial sensor on the lower trunk. Gait variability parameters (standard deviation and coefficient of variation of the stride duration, and correlation coefficients of accelerations between neighbouring strides) were calculated from the accelerations over 35 rectilinear strides observed during six series of one-minute intervals extracted from the original signal. The reliability of these parameters was assessed using intraclass correlation coefficients (ICC).

**RESULTS** showed no significant changes across the six series for any of the parameters, with very high ICC values (0.93-0.95), indicating a strong reliability of the observed quantities. Therefore, gait variability analysis based on lower trunk acceleration data is a reliable and informative quantity in gait performance assessment in older individuals, and 1min interval is sufficient to ensure reliable results.

# Abstracts Continued

## Recent abstracts from the research literature

### Risk Factors

#### **Risk factors for fall-related injuries leading to hospitalization among community-dwelling older persons: a hospital-based case-control study in Thiruvananthapuram, Kerala, India**

Ravindran RM, Kutty VR.

*Asia Pac. J. Public Health* 2015; ePub(ePub): ePub.

Affiliation: Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram, Kerala, India.

(Copyright © 2015, Asia-Pacific Academic Consortium for Public Health, Publisher Sage Publications)

#### **Abstract**

This study intended to identify the risk factors for injurious falls that led to hospitalization of older persons living in the community. A hospital-based unmatched incident case-control study was done among 251 cases and 250 controls admitted at a tertiary care centre in Kerala. Mean age of cases was  $71.6 \pm 9.13$  years and that of controls was  $67.02 \pm 6.17$  years. Hip fractures were the predominant injury following falls. Falls were mostly a result of intrinsic causes. After adjusting for other variables, the risk factors for all injuries were age above 70 years (odds ratio [OR] = 2.25; 95% confidence interval [CI] = 1.46-3.46), previous fall history (OR = 2.76; 95% CI = 1.08-7.08), impaired vision (OR = 4.49; 95% CI = 2.77-7.30), not living with spouse (OR = 1.97; 95% CI = 1.31-2.97), door thresholds (OR = 1.52; 95% CI = 1.01-2.29), and slippery floor (OR = 2.37; 95% CI = 1.31-4.32). The risk factors for hip fractures and other injuries were identified separately. Fall prevention strategies among older persons are warranted in Kerala.

#### **Use of fall risk increasing drugs in residents of retirement villages: a pilot study of long term care and retirement home residents in Ontario, Canada**

Rojas-Fernandez C, Dadfar F, Wong A, Brown SG.

*BMC Res. Notes* 2015; 8(1): e568.

Affiliation: Schlegel-University of Waterloo Research Institute for Aging, 325 Max Becker Drive, Suite 202, Kitchener, ON, N2E 4H5, Canada. [sgbrown@uwaterloo.ca](mailto:sgbrown@uwaterloo.ca).

(Copyright © 2015, Biomed Central)

#### **Abstract**

**BACKGROUND:** Falls continue to be a problem for older people in long-term care (LTC) and retirement home (RH) settings and are associated with significant morbidity and health care use. Fall-risk increasing drugs (FRIDs) are known to increase fall risk and represent modifiable risk factors. There are limited data regarding the use of FRIDs in contemporary LTC and RH settings, and it has not been well documented to what extent medication regimens are reviewed and modified for those who have sustained falls. The objective of this study is to characterize medication related fall risk factors in LTC and RH residents and on-going use of medications known to increase fall risk.

**METHODS:** Retrospective chart review of residents aged >65 who sustained one or more falls living in LTC or RH settings.

**RESULTS:** 105 residents who fell one or more times during 2009-2010 were identified with a mean age of 89 years, a mean of nine scheduled medications and seven diagnoses, and 83 % were women. Residents in LTC were ostensibly at higher risk for falls relative to those in RH settings as suggested by higher proportion of residents with multiple falls, multiple comorbidities, comorbidities that increase fall risk and visual impairment. Post fall injuries were sustained by 42 % of residents, and residents in RH sustained more injuries relative to LTC residents (47 vs 34 %). Use of FRIDs such as benzodiazepines, antipsychotic, antidepressant and various antihypertensive drugs was common in the present sample. No medication regimen changes were noted in the 6-month post fall period.

**CONCLUSIONS:** The present study documented common use FRIDs by LTC and RH residents with multiple falls. These potentially modifiable falls risk factors are not being adequately addressed in contemporary practice, demonstrating that there is much room for improvement with regards to the safe and appropriate use of medications in LTC and RH residents.

# Abstracts Continued

## Recent abstracts from the research literature

### Medications are associated with falls in people with multiple sclerosis: a prospective cohort study

Cameron MH, Karstens L, Hoang P, Bourdette D, Lord S.

*Int. J. MS Care* 2015; 17(5): 207-214.

Affiliation: Department of Neurology, Oregon Health & Science University, Portland, OR, USA (MHC, LK, DB); Neuroscience Research Australia, University of New South Wales, Sydney, Australia (PH, SL); and Veterans Affairs Portland Health Care Services, Portland, OR, USA (MHC, DB).

(Copyright © 2015, Clinicians Group)

#### Abstract

**BACKGROUND:** Medication use is associated with falls in many populations, but the relationship between medications and falls in people with multiple sclerosis (MS) is not well understood.

**METHODS:** The number and types of medications used by 248 ambulatory adults with MS in the United States (n = 53) and Australia (n = 195) were assessed. Participants completed fall diaries for 6 months. Associations between number and type of medications reported and falls, adjusting for age, disease severity, comorbidities, sex, and country, were evaluated using multiple logistic regression.

**RESULTS:** Participants reported taking a median of three medications and two supplements. A total of 143 participants (58%) fell at least once in the 6 months, and 110 (44%) experienced one or more injurious falls. The adjusted relative odds of a fall or an injurious fall increased by 13% (P = .048) and 11% (P = .049), respectively, for each medication and by 43% (P = .015) and 55% (P = .001) for each neurologically active medication. Reported use of MS disease-modifying therapy was associated with 48% decreased odds of falling (P = .035) but not significantly decreased odds of injurious falls.

**CONCLUSIONS:** Reporting use of more medications and more neurologically active medications is associated with falls and injurious falls in people with MS. Close evaluation of the need for each medication, with associated minimization of neurologically active medications in patients with MS, may help prevent falls. Use of MS disease-modifying therapies may be associated with fewer falls. This relationship needs further evaluation.

### The risk of fall and fracture with the initiation of a prostate-selective alpha antagonist: a population based cohort study

Welk B, McArthur E, Fraser LA, Hayward J, Dixon S, Hwang YJ, Ordon M.

*BMJ* 2015; 351: h5398.

Affiliation: Division of Urology, Department of Surgery, University of Toronto, Toronto, Ontario.

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#### Abstract

**STUDY QUESTION:** Do men starting treatment with prostate-specific alpha antagonists have increased risk of fall and fracture?

**METHODS:** Administrative datasets from the province of Ontario, Canada, that contain patient level data were used to generate a cohort of 147 084 men aged  $\geq 66$  years who filled their first outpatient prescription for prostate-specific alpha antagonists tamsulosin, alfuzosin, or silodosin between June 2003 and December 2013 (exposed men) plus an equal sized cohort matched 1:1 (using a propensity score model) who did not initiate alpha antagonist therapy. The primary outcome was a hospital emergency room visit or inpatient admission for a fall or fracture in the 90 days after exposure.

**STUDY ANSWER AND LIMITATIONS:** The men exposed to prostate-specific alpha antagonist had significantly increased risks of falling (odds ratio 1.14 (95% CI 1.07 to 1.21), absolute risk increase 0.17% (0.08 to 0.25%)) and of sustaining a fracture (odds ratio 1.16 (1.04 to 1.29), absolute risk increase 0.06% (0.02 to 0.11%)) compared with the unexposed cohort. This increased risk was not observed in the period before alpha antagonist use. Secondary outcomes of hypotension and head trauma were also significantly increased in the exposed cohort (odds ratios 1.80 (1.59 to 2.03) and 1.15 (1.04 to 1.27) respectively). The two cohorts were similar across 98 different covariates including demographics, comorbid conditions, medication use, healthcare use, and prior medical investigation. Potential unmeasured confounders, such as physical deconditioning, mobility impairment,



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and situational risk factors, may exist. The data used to identify the primary outcomes had limited sensitivity, so the absolute risks of the outcomes are probably underestimates. The study only included men  $\geq 66$  years old, and 84% of exposed men were prescribed tamsulosin, so results may not be generalizable to younger men, and there may not be statistical power to show small differences in outcomes between the drugs.

**WHAT THIS STUDY ADDS:** Prostate-specific alpha antagonists are associated with a small but significant increased risk of fall, fracture, and head trauma, probably as a result of induced hypotension.

**FUNDING, COMPETING INTERESTS, DATA SHARING:** This project was conducted at the Institute for Clinical Evaluative Sciences (ICES) Western Site through the Kidney, Dialysis, and Transplantation (KDT) research program. BW has received a research grant from Astellas, and L-AF does consultancy for Amgen.

### Anticholinergic burden is associated with recurrent and injurious falls in older individuals

Zia A, Kamaruzzaman S, Myint PK, Tan MP.

*Maturitas* 2015; ePub(ePub): ePub.

**Affiliation:** Ageing and Age-Associated Disorders Research Group, University of Malaya, Kuala Lumpur, Malaysia; Department of Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia; Centre of Innovation in Medical Engineering, University of Malaya, Kuala Lumpur, Malaysia. Electronic address: mptan@ummc.edu.my.

(Copyright © 2015, Elsevier Publishing)

#### Abstract

**OBJECTIVE:** While the anticholinergic activity of medications has been linked to cognitive decline, few studies have linked anticholinergic burden with falls in older people. We evaluated the relationship between anticholinergic burden and recurrent and injurious falls among community-dwelling older adults.

**STUDY DESIGN:** This case-control study was performed on 428 participants aged  $\geq 65$  years, 263 cases with two or more falls or one injurious fall in the preceding 12 months, and 165 controls with no falls in the preceding 12 months. Anticholinergic burden was determined using the anticholinergic cognitive burden (ACB) scale. Upper and lower limb functional abilities were assessed with timed up and go (TUG), functional reach (FR) and grip strength (GS). Logistic regression analysis was employed to calculate the mediation effect of TUG, FR and GS on ACB associated falls.

**RESULTS:** Univariate analysis revealed a significant association between an ACB score of  $\geq 1$  with falls (OR, 1.8; 95% CI; 1.1-3.0;  $p=0.01$ ) and significantly poorer TUG and FR. The association between ACB  $\geq 1$  and falls was no longer significant after adjustment for either TUG (OR for ACB associated falls, 1.4; 95% CI, 0.88-2.4;  $p=0.14$ ) or FR (OR for ACB associated falls, 1.4; 95% CI, 0.89-2.4,  $p=0.12$ ) but remained significant with GS.

**CONCLUSION:** The association between recurrent and injurious falls and the use of any medications listed in the ACB scale was mediated through gait and balance impairment but not by muscular weakness, providing a novel insight into the potential mechanistic link between ACB and falls. Future studies should determine whether TUG and FR measurements could help inform risk to benefit decisions where ACB medications are being considered.

### The association in elderly hospitalized patients, between psychotropic drugs and hip fractures resulting from falls

Aizenberg D, Weizman A, Weiss A, Akopian M, Amitai M, Beloosesky Y.

*Exp. Aging Res.* 2015; 41(5): 546-555.

**Affiliation:** Department of Geriatrics , Beilinson Hospital, Rabin Medical Center , Petah Tikva , Israel.

(Copyright © 2015, Informa - Taylor and Francis Group)

#### Abstract

**BACKGROUND/STUDY CONTEXT:** Psychotropic drug treatment has been associated with increased risk for falls and hip fractures in elderly patients. The authors examined the association between drug treatment and hip fractures resulting from falls in elderly hospitalized patients, focusing on the medications' anticholinergic properties.

**METHODS:** This retrospective case-control study was conducted in an acute geriatric ward in a general medical center. Medical records, including demographic, clinical, biochemical, and pharmacological variables, of elderly

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## Recent abstracts from the research literature

patients with hip fractures from falls (N = 185), admitted during a 2-year period, were reviewed and compared with a control group (N = 187) of patients matched for age and gender and without hip fractures.

**RESULTS:** The usage rates of antipsychotics, antidepressants, mood stabilizers, and various nonpsychiatric medications were similar in the two groups, except for hypnotics-anxiolytics (higher rates in hip-fracture patients). The Cumulative Illness Rating Scale for Geriatrics (CIRS-G) and diastolic blood pressure constituted very modest predictors of falls ( $R(2) = .038$ ,  $p = .004$ ). There were no significant differences in the anticholinergic burden values, clinical dementia ratings, and comorbidity burden between the two groups.

**CONCLUSION:** The rate of psychotropic drug use in general and their anticholinergic burden are similar in acutely admitted elderly patients with or without hip fractures. However, higher usage rate of anxiolytics found in the patients with hip fractures may indicate that this is a risk factor for hip fractures related to falls in elderly patients living in the community.

### Interventions

#### A Wii bit of fun: a novel platform to deliver effective balance training to older adults

Whyatt C, Merriman NA, Young WR, Newell FN, Craig C.

*Games Health J.* 2015; ePub(ePub): ePub.

School of Psychology, Queen's University Belfast, Belfast, United Kingdom.

(Copyright © 2015, Mary Ann Liebert)

#### Abstract

**BACKGROUND:** Falls and fall-related injuries are symptomatic of an aging population. This study aimed to design, develop, and deliver a novel method of balance training, using an interactive game-based system to promote engagement, with the inclusion of older adults at both high and low risk of experiencing a fall.

**STUDY DESIGN:** Eighty-two older adults (65 years of age and older) were recruited from sheltered accommodation and local activity groups. Forty volunteers were randomly selected and received 5 weeks of balance game training (5 males, 35 females; mean,  $77.18 \pm 6.59$  years), whereas the remaining control participants recorded levels of physical activity (20 males, 22 females; mean,  $76.62 \pm 7.28$  years). The effect of balance game training was measured on levels of functional balance and balance confidence in individuals with and without quantifiable balance impairments.

**RESULTS:** Balance game training had a significant effect on levels of functional balance and balance confidence ( $P < 0.05$ ). This was further demonstrated in participants who were deemed at high risk of falls. The overall pattern of results suggests the training program is effective and suitable for individuals at all levels of ability and may therefore play a role in reducing the risk of falls.

**CONCLUSIONS:** Commercial hardware can be modified to deliver engaging methods of effective balance assessment and training for the older population.

#### Evaluating the effectiveness of a home-based exercise programme delivered through a tablet computer for preventing falls in older community-dwelling people over 2 years: study protocol for the Standing Tall randomised controlled trial

Delbaere K, Valenzuela T, Woodbury A, Davies T, Yeong J, Steffens D, Miles L, Pickett L, Zijlstra GA, Clemson L, Close JC, Howard K, Lord SR.

*BMJ Open* 2015; 5(10): e009173.

Affiliation: Neuroscience Research Australia, University of New South Wales, Sydney, New South Wales, Australia.

(Copyright © 2015, BMJ Publishing Group)

#### Abstract

**INTRODUCTION:** In order to prevent falls, older people should exercise for at least 2 h per week for 6 months, with a strong focus on balance exercises. This article describes the design of a randomised controlled trial to evaluate the effectiveness of a home-based exercise programme delivered through a tablet computer to prevent falls in

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older people.

**METHODS AND ANALYSIS:** Participants aged 70 years or older, living in the community in Sydney will be recruited and randomly allocated to an intervention or control group. The intervention consists of a tailored, home-based balance training delivered through a tablet computer. Intervention participants will be asked to complete 2 h of exercises per week for 2 years. Both groups will receive an education programme focused on health-related information relevant to older adults, delivered through the tablet computer via weekly fact sheets. Primary outcome measures include number of fallers and falls rate recorded in weekly fall diaries at 12 months. A sample size of 500 will be necessary to see an effect on falls rate. Secondary outcome measures include concern about falling, depressive symptoms, health-related quality of life and physical activity levels (in all 500 participants); and physiological fall risk, balance, functional mobility, gait, stepping and cognitive performance (in a subsample of 200 participants). Adherence, acceptability, usability and enjoyment will be recorded in intervention group participants over 2 years. Data will be analysed using the intention-to-treat principle. Secondary analyses are planned in people with greater adherence. Economic analyses will be assessed from a health and community care provider perspective.

**ETHICS AND DISSEMINATION:** Ethical approval was obtained from UNSW Ethics Committee in December 2014 (ref number HC#14/266). Outcomes will be disseminated through publication in peer-reviewed journals and presentations at international conferences.

**TRIAL REGISTRATION NUMBER:** Australian New Zealand Clinical Trials Registry (ACTRN)12615000138583.

### **The effect of dual task and executive training on pattern of gait in older adults with balance impairment: a randomized controlled trial**

Azadian E, Torbati HR, Kakhki AR, Farahpour N.

*Arch. Gerontol. Geriatr.* 2015; ePub(ePub): ePub.

Affiliation: Department of Sport Biomechanics, Faculty of Physical Education and Sport Sciences, Bu Ali Sina University, Hamedan, Iran.

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#### **Abstract**

**OBJECTIVE:** The purpose of this study was to compare the effect of two different approaches of dual-task training and executive training on pattern of gait in older adults with balance impairment.

**METHODS:** Thirty older adults with the mean age of 73.8 participated in the study. They scored 52 or less on the Berg Balance Scale (BBS), and walked with a self-selected gait speed of 1.1m/s or less. Participants were randomly assigned to one of the three groups: experimental group one (cognitive dual-task (CDT) training) that focused on gait performance under dual task condition; experimental group two (executive function (EF) training) who underwent 3 types of training on working memory, inhibition, speed of processing; and a control group. Subjects walked 10m, under single-task and dual-task (DT) conditions where kinematics parameters were recorded. Participants in experimental groups received 45-min training sessions, 3 times a week for 8 weeks. The data obtained was analyzed using repeated measure at a criterion p-value of 0.05.

**RESULTS:** The results showed that after training, changes of walking speed, length of stride and step, times of stride, step, single support, and double support, were significant at  $p < 0.05$ . Asymmetry index in walking with dual task condition increased significantly, but after training asymmetry in DT condition decreased significantly in EF group.

**CONCLUSIONS:** Both training groups showed improvements in gait parameters in the post test compared with that in the control group; however, in EF training group, symmetry of limbs and inter-coordination, improved more than that in CDT group.

### **Older adult perceptions of participation in group- and home-based falls prevention exercise**

Robins LM, Hill KD, Day L, Clemson L, Clemson C, Finch C, Haines T.

*J. Aging Phys. Act.* 2015; ePub(ePub): ePub.

Affiliation: School of Physiotherapy, Medicine, Nursing and Health Sciences Department, Monash University,

# Abstracts Continued

## Recent abstracts from the research literature

Australia.

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### Abstract

This paper describes why older adults begin, continue and discontinue group- and home-based falls prevention exercise and benefits and barriers to participation. Telephone surveys were used to collect data for 394 respondents. Most respondents reported not participating in group- (66%) or home-based (78%) falls prevention exercise recently. Reasons for starting group-based falls prevention exercise include health benefits (23-39%), health professional recommendation (13-19%) and social interaction (4-16%). They discontinued because the program finished (44%) or due to poor health (20%). Commonly reported benefits were social interaction (41-67%) and health (15-31%). Disliking groups was the main barrier (2-14%). Home-based falls prevention exercise was started for rehabilitation (46-63%) or upon health professional recommendation (22-48%) and stopped due to recovery (30%). Improvement in health (18-46%) was the main benefit. These findings could assist health professionals in prescribing group-based falls prevention exercise by considering characteristics of older adults who perceive social interaction to be beneficial.

### Tai Chi vs. combined exercise prescription: a comparison of their effects on factors related to falls

Yıldırım P, Ofluoglu D, Aydogan S, Akyuz G.

*J. Back Musculoskelet. Rehabil.* 2015; ePub(ePub): ePub.

Affiliation: Department of Physical Medicine and Rehabilitation, Marmara University Faculty of Medicine, Istanbul, Turkey.

(Copyright © 2015, IOS Press)

### Abstract

**BACKGROUND:** Regular exercise training is one of the core components of multifactorial fall-prevention programs.

**OBJECTIVE:** To compare the effect of Tai Chi and combined exercise prescription that consists of three main components of an exercise prescription on static balance, dynamic balance, fear of falling and mood.

**METHODS:** Sixty older adults aged 55-76 were randomly assigned to Group 1 (Tai Chi exercise) or Group 2 (combined exercise prescription). Exercise was performed three times a week over a period of 12 weeks. Single Leg-Stance-Eyes Open (SLS-EO), Single Leg-Stance Eyes Closed (SLS-EC), computerized balance measurements, the Timed Up and Go (TUG) test, Berg Balance Scale (BBS), the Survey of Activities and Fear of Falling in the elderly (SAFFE), the Geriatric Depression Scale (GDS), and the Beck Depression Scale (BDS) were assessed before and after the final training session.

**RESULTS:** Both exercise groups yielded better results in dynamic balance assessments (TUG and BBS) at the 12th week ( $p < 0.05$ ). Group 1 also showed significant improvements in the measurements of SLS-EO, SLS-EC, SAFFE, GDS, and BDS during the post-intervention period (all  $p < 0.05$ ). When the groups were compared, a significant difference was found between groups in favor of Group 1 in terms of the SLS-EO and SAFFE ( $p < 0.05$ ).

**CONCLUSIONS:** It can be concluded that Tai Chi may be a more successful exercise intervention for factors-related to falls in older people.

These abstracts have been sourced from [SafetyLit.org](http://SafetyLit.org)

SafetyLit provides abstracts of peer reviewed articles from researchers who work in the more than 30 distinct professional disciplines relevant to preventing and researching unintentional injuries, violence, and self-harm. Each week citations and summaries of about 400 articles and reports are included in a PDF document or through an RSS subscription.

# Falls Network Information

[fallsnetwork.neura.edu.au](http://fallsnetwork.neura.edu.au)

## 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:

[majordomo@lists.health.nsw.gov.au](mailto:majordomo@lists.health.nsw.gov.au)

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 Vance at [e.vance@neura.edu.au](mailto: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](mailto: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](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 listserv. Remember to put a short description in the subject line.

Recently some posts to the listserv have bounced due to email address changes, 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.

## NSW Falls Prevention Network Background

The NSW Falls Prevention Network was established in 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 Ministry of 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 Ministry of Health.

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