Falls

Current Awareness Newsletter

December 2015/January 2016
## Literature Searching
An in-depth guide to formulating an effective search strategy and getting the most out of searching key healthcare databases.

## Understanding Articles
How to assess the strengths and weaknesses of research methods. Examining different research designs, bias and validity, and frameworks for systematically appraising a medical paper.

## Medical Statistics
A basic introduction to the key statistics in medical articles. Giving an overview of statistics that compare risk, test confidence, analyse clinical investigations, and test difference.

## Information Resources
A comprehensive overview of Library subscription resources, freely available online resources and ‘grey literature’.

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**New Activity in UptoDate**

**Falls: Prevention in nursing care facilities and the hospital setting**
Authors: Sarah Berry, MD, Douglas P Kiel, MD, MPH

Literature review current through: Dec 2015. | This topic last updated: Jul 01, 2015.

INTRODUCTION — Falls occur commonly in older individuals, and are a major health concern. Falls usually occur in elderly persons with multiple impairments in cognitive, sensory, and gait domains [1]. Falls are therefore very common among older adults who are cared for in institutional healthcare settings, such as nursing homes, rehabilitation facilities, or acute hospitals.

Falls in institutional settings lead to functional decline, increased length of stay in acute care hospitals, and increased institutional liability. Much geriatric research has focused on strategies and interventions to prevent falling in the institutional environment.

**Falls: Prevention in community-dwelling older persons**
Author: Douglas P Kiel, MD, MPH


INTRODUCTION — Falls in older persons occur commonly and are major factors threatening the independence of older individuals. As is the case for many geriatric syndromes, falls usually occur when impairments in multiple domains compromise the compensatory ability of the individual [1].

Falls often go without clinical attention for a variety of reasons: the patient never mentions the event to a health care provider; there is no injury at the time of the fall; the provider fails to ask the patient about a history of falls; or either provider or patient erroneously believes that falls are an inevitable part of the aging process. Often, treatment of injuries resulting from a fall does not include investigation of the cause of the fall.

Significant morbidity and mortality may result from falls in older individuals. The importance of preventing falls is emphasized by a study that found that 80 percent of older women preferred death to a "bad" hip fracture that would result in nursing home admission [2].

A number of the physical conditions and environmental situations that predispose to falls are modifiable. Clinicians caring for older patients need to routinely inquire about falls, assess for fall risk, and address modifiable underlying risk factors.
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**Title:** Physical and Psychosocial Effects of Wii Fit Exergames Use in Assisted Living Residents: A Pilot Study

**Citation:** Clinical Nursing Research, Dec 2015, vol. 24, no. 6, p. 589-603

**Author(s):** Chao, Ying-Yu, Scherer, Yvonne K, Montgomery, Carolyn A, Wu, Yow-Wu,

**Abstract:** The purpose of this study was to investigate the physical and psychosocial effects of the Wii Fit exergames incorporating self-efficacy theory on assisted living residents. The study was a quasi-experimental pre/post-test design. Thirty-two participants were recruited from two assisted living facilities. Sixteen participants received the Wii Fit exergames incorporating self-efficacy theory twice a week for 4 weeks. The other participants received a health education program. Physical function, fear of falling, depression, and quality of life were evaluated. T tests were used for data analysis. After the 4-week intervention, the Wii Fit group showed significant improvements in balance (p < .01), mobility (p < .01), and depression (p < .05). The education group showed no significant improvement in any of the outcomes. Integrating concepts of self-efficacy theory with the exergames show promise as a potential tool to improve and maintain physical and psychosocial health for older adults.

**Title:** Recovery of Activities of Daily Living Among Older People One Year After Hip Fracture

**Citation:** Clinical Nursing Research, Dec 2015, vol. 24, no. 6, p. 604-623

**Author(s):** Córcoles-Jiménez, María Pilar, Villada-Munera, Ascensión,

**Abstract:** This article aims to determine the functional recovery of older people, who were previously independent in activities of daily living (ADLs) and without cognitive impairment, in the year following a fall-related hip fracture. A cohort study was carried out among patients admitted to University General Hospital of Albacete (Spain). Consecutive sampling was performed. Variables included demographic, habitual residence, type of hip fracture, mental status (Short Portable Mental Status Questionnaire [SPMSQ] Pfeiffer), and independence in ADLs (according to the Barthel Index [BI]) prior to the fall and after the fracture. For 205 patients, 1 year after surgery, the mean BI score was 78.09 (SD = 25.13); (vs. 90.02 before the hip fracture), 59% showed urinary continence (vs. 79%), and 65% walked without assistance (vs. 82%). Regarding predictors of recovery, results indicate that patients who are older, who suffer complications after hospital discharge, or who reside in nursing homes experience poorer recovery in ADLs. Only 47.9% of the patients regained prior levels of autonomy 1 year after surgery.

**Title:** Falling in the elderly: Do statistical models matter for performance criteria of fall prediction? Results from two large population-based studies

**Citation:** European Journal of Internal Medicine, January 2016, vol./is. 27/ (48-56)

**Author(s):** Kabeshova A., Launay C.P., Gromov V.A., Fantino B., Levinoff E.J., Allali G., Beauchet O.
**Abstract:** Objective To compare performance criteria (i.e., sensitivity, specificity, positive predictive value, negative predictive value, area under receiver operating characteristic curve and accuracy) of linear and non-linear statistical models for fall risk in older community-dwellers. Methods Participants were recruited in two large population-based studies, "Prevention des Chutes, Reseau 4" (PCR4, n = 1760, cross-sectional design, retrospective collection of falls) and "Prevention des Chutes Personnes Agees" (PCPA, n = 1765, cohort design, prospective collection of falls). Six linear statistical models (i.e., logistic regression, discriminant analysis, Bayes network algorithm, decision tree, random forest, boosted trees), three non-linear statistical models corresponding to artificial neural networks (multilayer perceptron, genetic algorithm and neuroevolution of augmenting topologies [NEAT]) and the adaptive neuro fuzzy interference system (ANFIS) were used. Falls > 1 characterizing fallers and falls > 2 characterizing recurrent fallers were used as outcomes. Data of studies were analyzed separately and together. Results NEAT and ANFIS had better performance criteria compared to other models. The highest performance criteria were reported with NEAT when using PCR4 database and falls > 1, and with both NEAT and ANFIS when pooling data together and using falls > 2. However, sensitivity and specificity were unbalanced. Sensitivity was higher than specificity when identifying fallers, whereas the converse was found when predicting recurrent fallers. Conclusions Our results showed that NEAT and ANFIS were non-linear statistical models with the best performance criteria for the prediction of falls but their sensitivity and specificity were unbalanced, underscoring that models should be used respectively for the screening of fallers and the diagnosis of recurrent fallers.

**Title:** Anticoagulation and injurious falls in the elderly: a review

**Citation:** European Orthopaedics and Traumatology, December 2015, vol./is. 6/4(405-408)

**Author(s):** Sotade O.

**Abstract:** The proportion of elderly people in the Western population is projected to reach 25 % by 2040. Trauma is the fifth most common cause of mortality in this patient population, predominantly due to traumatic brain injury (TBI). This paper will review the current knowledge relating to fall-related mortality as a result of TBI in elderly patients on oral anticoagulation (OAC). The literature suggests that age is an independent significant determinant of mortality risk, and the use of warfarin is also associated with increased relative risk of TBI-related mortality. However, some studies have reported that anticoagulant use does not adversely affect the outcomes of severe head injuries after a fall in elderly patients.

**Title:** Effect of a Program Based on Balance Exercises on Gait, Functional Mobility, Fear of Falling, and Falls in Prefrail Older Women: A Randomized Clinical Trial

**Citation:** Topics in Geriatric Rehabilitation, December 2015, vol./is. 31/2(113-120)

**Author(s):** Arantes P.M.M., Dias J.M.D., Fonseca F.F., Oliveira A.M.B., Oliveira M.C., Pereira L.S.M.

**Abstract:** Objectives: To evaluate the efficacy of a program on the basis of balance exercises on gait, balance, functional mobility, fear of falling, and falls in prefrail older women at risk of falling. Methods: Thirty older women were randomly distributed for an experimental (EG) or a control group (CG). Assessments were performed of gait (GAITRite), balance, and functional mobility with
the sit-to-stand, semitandem and alternate step tests, fear of falling, and occurrence of falls. The EG performed progressive exercises, which challenged balance in different tasks and environment conditions. The CG practiced exercises for the upper limbs. Results: The mixed analysis of variance with repeated measures revealed significant interactions that showed increase in stride speed and length, better performance in the tests of balance and mobility, and reduced fear of falling. The EG showed fewer falls (P =.029) during the period of intervention than did the CG. The number necessary to treat ranged from 1 to 3.8. Conclusion: The results reinforce the importance of including exercises that challenge balance, in high doses and progressive intensity, in programs designed for older women.

Title: Ethnicity and culture: Is it associated with falls?

Citation: Clinical Interventions in Aging, December 2015, vol./is. 10/(1945-1946)

Author(s): Anissian D., Zarghami A.

Title: Computed tomography of scalp embedded gravel: Differentiation between falling and kicking

Citation: Journal of Forensic Radiology and Imaging, December 2015, vol./is. 3/4(200-209)

Author(s): Schweitzer W., Thali M.

Abstract: In the case of a survived head injury of a 39 year old man, kick versus fall as mechanism had to be discerned. On top of conventionally used medicolegal findings, clinical computed tomography (CT) scans were evaluated. There, dense particles at the back of the head were scattered on and in the skin, around the region also likely to be the center of an impact related skull burst fracture. Experiments then were conducted to discern falling, kicking and scrubbing, based on gravel particle details, using suitable model substrate materials. Particle size and count were larger in falls without scrubbing than in kicks also because soles may not retain heavier or larger gravel particles. Based on chemical composition obtained through EDS (energy-dispersive X-ray spectroscopy), gravel particle mass attenuation coefficient was determined, linearly correlating with effective CT attenuation of scalp particles and bone and skin materials. Gravel particle size showed to be a stronger evidence in the distinction of fall versus kick than skin and brain morphology. Clinical CT can be a valuable asset in reconstructive forensic medicine.

Title: One wisconsin county's experience with fall-related mortality

Citation: Wisconsin Medical Journal, December 2015, vol./is. 114/6(253-256), 1098-1861

Author(s): Deprey S.M., Biedrzycki L., Klenz K.

Abstract: Background: Falls in Wisconsin account for 74.1% of all injury-related deaths for persons 65 years and older. This study describes the rate, demographics, and characteristics of fall-related mortality in one Wisconsin county over an 8-year period from 2005 to 2012. Methods: Retrospective review of 841 death investigation records of Waukesha County residents 65 years and older who died from a fall during the years 2005 to 2012. Data were collected at the Waukesha County Medical Examiner’s office. Results: No significant differences in individual
demographics, activity, or injury characteristics (P > 0.05) in fall-related deaths over an 8-year period. Conclusion: Fall-related mortality in Waukesha County over the past 8 years has demonstrated consistent demographics, fall, and injury characteristics.

**Title:** A study on the meteorological analysis of nocturnal falls during sleep in hospital

**Citation:** Sleep Medicine, December 2015, vol./is. 16/(S114)

**Author(s):** Magota C., Ando S., Nishizaka M., Horikoshi K., Tanaka K., Miyazono M., Hashiguchi N

**Abstract:** Introduction: Nocturnal falls of in-hospital patients occurs by various factors and not only deteriorate patients' quality of life but also cause serious mental and physical stress on medical staff. The aim of this study was, thus, to clarify the effects of meteorological factors of in-hospital nocturnal falls to reduce the incidence. Materials and methods: We performed a retrospective study on fall-incident reports (April 2010 to March 2014) in a medium sized hospital with 260 beds in the southern part of Japan. We collected all fall-incident data excluding those that occurred in the intensive care unit and emergency room and evaluated patient characteristics, frequency of the falls, and activities associated with falls. We also analyzed the relationship between the frequency of nocturnal falls and several meteorological factors including the length of night or season. For data analysis, chi-square test and regression analysis were used. Results: In this hospital, light is turn on at 6:00 and off at 21:00 irrespective of the season. We reviewed total 201 nocturnal fall-incident reports for 4 years. The mean age of the patients was 76 +/- 10 years old, and 121 were male (61%). One hundred thirty-seven falls (68.1%) were associated with excretion activity. During 4 years, the mean number of nocturnal falls per hour was 22 +/- 6 times, and the frequency per hour was significantly altered according to the time of night; the frequency was significantly increased at 22:00-23:00, 02:00-03:00, 04:00-05:00, and 05:00-06:00 compared with that of 21:00-22:00, and mean frequency during 22:00-06:00 was 1.5-2.5 times higher than that during 21:00-22:00 (P < 0.05). Furthermore, the frequency of fall at 02:00-03:00 was significantly increased (x 2.3, p < 0.05) during October-March, so-called fall/winter seasons, compared with that of April-September (spring/summer seasons). Additionally, we examined correlation between the length of nighttime and frequency of falls to further investigate the factor of seasonal variation in frequency of nocturnal falls and found a significant positive correlation between them (R2 = 0.72, p < 0.001; the mean number of nocturnal falls per month was 17 +/- 4 times during 21:00-06:00). Conclusion: Since many incidences of nocturnal falls of in hospital patients were related to excretion activity in dark period, we should pay more attention to meteorological factors, especially to the darkness in the early morning of the season with a long night-time in order to decrease the fall incidence.

**Title:** A reduction in antipsychotic medications is associated with a decrease in geriatric fall trauma

**Citation:** Critical Care Medicine, December 2015, vol./is. 43/12 SUPPL. 1(293)

**Author(s):** Rogers F., Evans T., Gross B., Brand H., Baier R.

**Abstract:** Learning Objectives: With approximately 30% of adults 65 and older falling each year, and 20-30% of these incidents resulting in moderate to severe injuries, falls are a significant issue afflicting the geriatric community and healthcare system. It has been suggested that medications, such as antipsychotics with extensive side effects may contribute to the high geriatric fall rate. We hypothesized that a resident-specific reduction in antipsychotic medication dosages in a sample of
geriatric living facility-dwelling adults would result in a reduced fall rate. Methods: Beginning in January 2014, a fall prevention medication intervention seeking to reduce dosages of antipsychotic medications was established in a mature, geriatric living facility. Medication reductions were determined on an individual basis under the discretion of an in-house pharmacist and medical director for all residents on antipsychotics. To determine the impact of this initiative, linear trend tests assessed fall rates (total falls/total residents) from 2013-2014 (preintervention) were compared to fall rates from 2014-2015 (post-intervention). Results: Over the course of the study period (2013-2015), no statistically significant changes in living facility demographics were observed. The fall rate was found to have decreased from 9.4% pre-intervention to 7.6% post-intervention (p=0.040). Conclusions: We have associated a statistically significant decrease in falls at a geriatric living facility following a resident-specific antipsychotic medication reduction initiative. Antipsychotic reduction interventions targeting the geriatric population may prove effective in decreasing unnecessary injury and healthcare costs resulting from geriatric falls.

Title: Hospitalizations associated with falls in the United States: Profile and outcomes

Citation: Critical Care Medicine, December 2015, vol./is. 43/12 SUPPL. 1(278)

Author(s): Rampa S., Fernando W., Romesh N., Allareddy V.

Abstract: Learning Objectives: Accidental falls are a frequent cause of hospitalization. We examined trends in the profile and outcomes for patients hospitalized due to falls using nationally representative data. Methods: Nationwide Inpatient Sample for the yr 2004 to 2010 was used. All patients who were hospitalized due to falls were selected using External Causes of Injury codes. Hospitalization outcomes included in-hospital mortality-IHM, hospital charges-HC, and length of stay-LOS. Outcomes were stratified by demographic factors and examined by multivariable regression models. Regression estimates were adjusted by age, sex, race, insurance, number of concomitant injuries, admission type, co-morbidity and hospital teaching status/region. This study was IRB approved. Results: A total of 8,153,313 hospitalizations were attributed to falls. Two-thirds occurred among those aged 65yr or older. Females comprised 61.7% of cases. Outcomes included: IHM 217,861 patients (2.7%), HC (mean: $39,185, total $319 billions) & LOS in days (mean: 5.3, total 43.1 million). Most common injuries were fractures of neck of femur (23%), lower limb (14%), upper limb (12.4%); and intra-cranial injuries (9.6%). After adjustments for confounders, those aged>65 yr (OR=5.17, 95% CI=4.77-5.60, p<0.0001) and those aged 46 to 65yr (OR=2.22, 95% CI=2.07-2.38, p<0.0001) were more likely to die compared to those aged 18 to 45yr. Those aged>65yr(Estimate[e]=0.08, p<0.0001; positive estimate implies higher) and 46 to 65yr(e=0.07, p<0.0001) were associated with significantly higher HC compared to those aged 18 to 45yr. Those aged>65 yr(e=0.245, p<0.0001) and 46 to 65yr(e=0.144, p<0.0001) were also associated with significantly longer LOS compared to those aged 18 to 45yr. Conclusions: Injuries due to accidental falls needing hospitalization is anticipated to substantially increase in number and cost with the aging population in the U.S. Patients aged > 65y experienced worse outcomes compared to younger age groups. Our results have important implications for identifying effective interventions that promote falls prevention among older age groups.

Title: Development of an algorithm to identify fall-related injuries and costs in Medicare data

Citation: Injury Epidemiology, December 2016, vol./is. 3/1(1-11), 2197-1714 (01 Dec 2016)
**Author(s):** Kim S.-B., Zingmond D.S., Keeler E.B., Jennings L.A., Wenger N.S., Reuben D.B.,

**Abstract:** Background: Identifying fall-related injuries and costs using healthcare claims data is cost-effective and easier to implement than using medical records or patient self-report to track falls. We developed a comprehensive four-step algorithm for identifying episodes of care for fall-related injuries and associated costs, using fee-for-service Medicare and Medicare Advantage health plan claims data for 2,011 patients from 5 medical groups between 2005 and 2009. Methods: First, as a preparatory step, we identified care received in acute inpatient and skilled nursing facility settings, in addition to emergency department visits. Second, based on diagnosis and procedure codes, we identified all fall-related claim records. Third, with these records, we identified six types of encounters for fall-related injuries, with different levels of injury and care. In the final step, we used these encounters to identify episodes of care for fall-related injuries. Results: To illustrate the algorithm, we present a representative example of a fall episode and examine descriptive statistics of injuries and costs for such episodes. Altogether, we found that the results support the use of our algorithm for identifying episodes of care for fall-related injuries. When we decomposed an episode, we found that the details present a realistic and coherent story of fall-related injuries and healthcare services. Variation of episode characteristics across medical groups supported the use of a complex algorithm approach, and descriptive statistics on the proportion, duration, and cost of episodes by healthcare services and injuries verified that our results are consistent with other studies. Conclusions: This algorithm can be used to identify and analyze various types of fall-related outcomes including episodes of care, injuries, and associated costs. Furthermore, the algorithm can be applied and adopted in other fall-related studies with relative ease.

**Title:** Predicting falls in Parkinson disease patients

**Citation:** Archives of Neuroscience, January 2016, vol./is. 3/1(no pagination)

**Author(s):** Lieberman A., Krishnamurthi N., Dhall R., Salins N., Pan D., Deep A.

**Abstract:** Background: Falls are a major risk for Parkinson disease patients (PD). Single falls, in older people may be related to the underlying disease or may be accidental. Recurrent falls are more likely to be related to the underlying disease. Objectives: To predict falls in patients with Parkinson disease. Patients and Methods: Between July 1, 2011 and June 30, 2012 we examined 452 persons with PD in the Muhammad Ali Parkinson Clinic during their outpatient visits. Results: We followed 401 persons with PD for a year, 205 of whom, 51.0% fell: 161 fell once and 44 fell more than once (recurrent fallers). Recurrent fallers had PD significantly longer, 12.6 + 7.0 versus 5.9 + 4.5 years, had significantly higher, worse, motor unified parkinson disease rating scale (UPDRS) scores” 31.2 + 12.7 versus 19.7 + 8.3. The major difference between recurrent and single fallers was an inability of recurrent fallers to stand on one leg for < 3 seconds: 95% versus 11%, odds ratio 178 CI 95% 39.5 - 801.2. Conclusions: Single fallers who are unable to stand on one foot for < 3 seconds may be at risk for recurrent falls. Gait and balance training focused on improving a patient’s ability to stand on one leg may decrease the risk of recurrent falls in PD.

**Title:** Savings in acute care costs if all older adults treated for fall-related injuries completed matter of balance

**Citation:** Injury Epidemiology, December 2015, vol./is. 2/1(no pagination), 2197-1714
Author(s): Howland J., Shankar K.N., Peterson E.W., Taylor A.A.

Abstract: Background: Falls among older adults are a common and serious public health problem. Evidence-based fall prevention programs delivered in community settings and targeting older adults living independently are increasingly deployed throughout the nation. These programs tend to be offered by public and private organizations that serve older adults, and recruitment usually occurs through direct marketing to the target population, rather than through referrals from healthcare providers. Matter of Balance, a program developed to reduce fear of falling and associated activity restriction in community-dwelling older adults, is currently being delivered in 38 of the 50 United States. In this study, we estimate the one-year medical care cost savings if older adults treated at Massachusetts hospitals for fall-related injuries were referred by healthcare providers to participate in Matter of Balance. Methods: Data from several sources were used for this study. We estimated annual cost savings in older adult falls recidivism for a hypothetical 100 patients presenting at an emergency department for a fall-related injury, assuming that all were referred to, and 50% completed, Matter of Balance. This cost-saving estimate was subsequently expanded based on the actual number (43,931) of older adult patients presenting at, and discharged from Massachusetts emergency departments for all fall-related injuries in 2012. Cost savings were calculated for two additional participation rates: 25% and 75%. The return on investment (ROI), was calculated based on the percentage of return per each dollar invested. Results: The calculated ROI for Matter of Balance was 144%. Statewide savings ranged from $2.79 million assuming a 25% participation rate to $8.37 million, assuming a 75% participation rate. Conclusions: Referral to evidence-based falls prevention programs of older adult patients presenting at EDs with a fall-related injury could reduce subsequent falls and associated treatment costs.

Title: Differences in fall injury hospitalization and related survival rates among older adults across age, sex, and areas of residence in Canada

Citation: Injury Epidemiology, December 2015, vol./is. 2/1(no pagination), 2197-1714

Author(s): Johnson S., Kelly S., Rasali D.

Abstract: Background: Falls are the leading cause of injury-related hospital admissions in Canadian older adults, accounting for 85% of injury hospitalizations among older adults aged over 65 years. While many of these injuries can lead to death, the survival rates of fall-related injuries are rarely examined. This surveillance study examined the fall injury hospitalization and survival rates among older adults in the context of place. Methods: Saskatchewan's health administrative data on injury hospitalizations among individuals aged 65 years and over (n = 39,867) was utilized for this study. Variables of interest included age group, sex, and the geographical area of residence at the time of hospitalization (rural, urban, north). Logistic regression analysis was applied to determine the association of variables of interest (age group, sex, and area of residence at the time of hospitalization as the covariate) with frequency of fall injury hospitalizations. Probable time to death due to fall-related injury hospitalization was determined by survival analysis. Results: Three key findings that emerged from the present study are the following: (1) fall injury hospitalizations accounted for 77% of all injury hospitalizations; (2) fall injury hospitalization rates varied by age group, sex, and area of residence, with advancing age, women, and certain geographical areas showing higher rates; and (3) survival rates also varied by sex and area of residence. Women had
longer survival estimates after a fall injury hospitalization compared to men, and those living in the north have the shortest survival estimates. Conclusions: The findings from the study highlighted the high rate of fall-related injury hospitalization among older adults varying with their age group, sex, and area of residence. These factors need to be considered in injury surveillance and fall prevention research as well as programs and policies that support the reduction of falls.

Title: Characteristic computed tomographic findings of midface fractures relative to the cause of injury: a fall or violence

Citation: Oral Radiology, December 2015, vol./is. 31/3(149-154)

Author(s): Ogura I., Kawashima Y., Muramatsu T., Ito K., Kaneda T.

Abstract: Objectives: The aim of this study was to investigate the characteristic computed tomography (CT) findings of midface fractures in regard to falls and violence as their etiologies. Methods: A prospective study was performed in 104 patients with midface fractures resulting from falls or violence and who underwent 64-slice multidetector CT. The midface fracture locations were classified as Le Fort I-III, isolated anterior maxillary sinus, isolated zygomatic arch, zygomaticomaxillary complex, and blowout fractures. Statistical analysis to study the relation between the cause of the fractures (falls or violence) and their locations was performed using Fisher’s exact test. A value of p < 0.05 was considered to be statistically significant. Results: The proportions of fractures resulting from falls and violence, respectively, were 70.2 and 29.8 % of all midface fractures. When these categories were further examined, 77.3 and 22.7 % of zygomaticomaxillary complex fractures, respectively (p = 0.047), resulted from falls and violence, as did 43.8 and 56.2 % of isolated anterior maxillary sinus fractures (p = 0.018). Conclusions: This study suggests that zygomaticomaxillary complex midface fractures as seen on CT are more often caused by a fall, whereas midface isolated anterior maxillary sinus fractures are more often seen on CT images after an act of violence.

Title: Influence of urinary urgency and other urinary disturbances on falls in Parkinson’s disease.

Citation: Journal of the neurological sciences, Jan 2016, vol. 360, p. 153-157 (January 15, 2016)

Author(s): Sakushima, Ken, Yamazaki, Shin, Fukuma, Shingo, Hayashino, Yasuaki, Yabe, Ichiro,

Abstract: Falling is one of the most common and serious public health problems. It can cause injuries such as sprains and fractures, and hospitalization may be required for serious injuries. Patients with Parkinson’s disease have a higher risk of falls, and urinary incontinence is a known risk factor for falls in the elderly. However, whether other urinary disturbances contribute to the risk of falling remains unclear. The purpose of this study was to identify the association between falls and urinary disturbances in Parkinson’s disease. A prospective cohort study was conducted at a single institution with a 6-month observation period. Subjects were ambulatory patients with Parkinson’s disease. Assessments included patient demographics, disease severity measured by the Hoehn and Yahr scale, and urinary disturbances measured using the overactive bladder symptom score (OABSS). Falls were reported using a self-documented fall record. A total of 97 patients were included. Forty-four subjects experienced one or more falls during the observation period. The frequency of urination was not related to falling; however, mild urinary urgency, but not severe urinary urgency, increased the risk of falls by an odds ratio of 5.14 (95% confidence
interval: 1.51-17.48). Mild urinary urgency was also associated with the time to the first fall and the frequency of falls. One third of falls occurred in the living room, and 13.8% of falls occurred on the way to/from the toilet. Falls in patients with Parkinson's disease might be associated with urinary urgency, but not with the frequency of urination. Copyright © 2015 Elsevier B.V. All rights reserved.

Title: Evaluation of a combined cognitive-behavioural and exercise intervention to manage fear of falling among elderly residents in nursing homes.

Citation: Aging & mental health, Jan 2016, vol. 20, no. 1, p. 2-12 (January 2016)

Author(s): Huang, Tzu-Ting, Chung, Meng-Ling, Chen, Fan-Ru, Chin, Yen-Fan, Wang, Bi-Hwa

Abstract: Although the fear of falling is common among elderly residents in long-term care facilities, interventions developed for fear of falling management is very rare. Of these limited interventions, most were exercise interventions with only limited testing. The cognitive-behavioural intervention can decrease the fear of falling; however no intervention of the kind was developed and assessed to decrease fear of falling among the elderly in long-term care facilities. The purpose of this study was to examine the effectiveness of cognitive-behavioural strategies either with or without exercise in reducing fear of falling among elderly residents in nursing homes. A prospective randomized control trial was conducted in six nursing homes in northern Taiwan. Seventy-five elderly participants were randomly assigned to one of the three groups: the comparison group, the cognitive-behavioural strategies with or without exercise group. The fear of falling, falls, depressive inclination, mobility, and muscle strength of extremities were collected at the two-month and five-month follow-up sessions, in which the progress of the patients were assessed. The mixed model analysis revealed that elderly adults in the combination experimental group had significant improvements compared with the other two groups on fear of falling, depressive inclination, mobility, and muscle strength at five months. The incidences of falls, post intervention, in both experimental groups were significantly lower than those in the comparison group. The results suggest that the combination intervention helped elderly residents manage their fear of falling and falls, decrease their depressive inclination, and enhance their mobility and muscle strength.

Title: Depressive symptomology management and falls among middle aged and older adults.

Citation: Aging & mental health, Jan 2016, vol. 20, no. 1, p. 13-21 (January 2016)

Author(s): Prizer, Lindsay Penny, Smith, Matthew Lee, Housman, Jeff, Ory, Marcia G

Abstract: This study aims to examine the relationship between middle-aged and older adults' depressive symptomology and anti-depressant use and the frequency of falls within the previous 12 months, controlling for sociodemographic variables, health indicators, and health behaviors. From the 2010 National Social Life, Health, and Aging Project, 2338 cases were examined. Falls were categorized into a binary variable, comparing zero falls with one or more falls. An unadjusted model was run to examine the relationship between independent and dependent variables. Potential covariates were added into the model, and backward elimination was used among independent variables with a univariate P < 0.05 to identify the covariates with the strongest association with falls. This final adjusted binary logistic regression model was then used to
examine the relationship between falls and the independent variables. In the adjusted model, anti-depressant use was positively associated with falls (P = 0.001), as was being female (P < 0.001), having diabetes (P = 0.018), and having increased limitations in daily activities (P < 0.001). The relationship between depressive symptomology and anti-depressant prescription was also significantly associated with falls (P = 0.006). While findings confirm that a relationship between depressive symptomology and anti-depressant use are associated with falls among middle-aged and older adults, additional studies are needed that simultaneously examine the influence of these two risk factors.

Title: Woman With Wrist Pain After Falling.

Citation: Annals of emergency medicine, Jan 2016, vol. 67, no. 1, p. 15-48 (January 2016)

Author(s): Baum, Andrew E, Kramer, Thomas W, Samuels-Kalow, Margaret E

Title: Risk factors for severe injury following indoor and outdoor falls in geriatric patients.

Citation: Archives of gerontology and geriatrics, Jan 2016, vol. 62, p. 75-82 (2016 Jan-Feb)

Author(s): Kim, Sun Hyu

Abstract: This study was performed to examine the characteristics of indoor and outdoor falls in older patients and the factors related to severe injury in the emergency department (ED). In total, 26,515 patients fell indoors and 19,581 outdoors. The general and clinical characteristics were compared between the two groups and factors associated with severe injury following the falls were evaluated. Younger males fell more frequently outdoors than indoors. The common activities during outdoor falls were sports and leisure activities. Environmental hazards lead to more outdoor falls than indoor falls. Factors associated with severe injury after indoor falls were transport to the ED by public ambulance or from another medical facility rather than individual transportation, fall from stairs rather than fell over, and a head and neck injury rather than a lower extremity injury. Factors related to severe injury after outdoor falls were male sex, transport to the ED by public ambulance or from another medical facility or by another method rather than individual transportation, state employed, fall from stairs rather than fell over, head and neck or thorax or abdomen injury rather than a lower extremity injury. Transport to the ED by public ambulance or from another medical facility, and head and neck injury were risks for severe injury following indoor and outdoor falls in elderly subjects. Efforts to identify the risk factors for severe injury and for falling itself are important to prevent and reduce fall injuries in elderly subjects. Copyright © 2015 Elsevier Ireland Ltd. All rights reserved.

Title: Use of a Short-Form Balance Confidence Scale to Predict Future Recurrent Falls in People With Parkinson Disease.

Citation: Archives of physical medicine and rehabilitation, Jan 2016, vol. 97, no. 1, p. 152-156

Author(s): Cole, Michael H, Rippey, Jodi, Naughton, Geraldine A, Silburn, Peter A

Abstract: To assess whether the 16-item Activities-specific Balance Confidence scale (ABC-16) and short-form 6-item Activities-specific Balance Confidence scale (ABC-6) could predict future
recurrent falls in people with Parkinson disease (PD) and to validate the robustness of their predictive capacities. Twelve-month prospective cohort study. General community. People with idiopathic PD (N=79). Clinical tests were conducted to assess symptom severity, balance confidence, and medical history. Over the subsequent 12 months, participants recorded any falls on daily fall calendars, which they returned monthly by reply paid post. Logistic regression and receiver operating characteristic analyses estimated the sensitivities and specificities of the ABC-16 and ABC-6 for predicting future recurrent falls in this cohort, and "leave-one-out" validation was used to assess their robustness. Of the 79 patients who completed follow-up, 28 (35.4%) fell more than once during the 12-month period. Both the ABC-16 and ABC-6 were significant predictors of future recurrent falls, and moderate sensitivities (ABC-16: 75.0%; ABC-6: 71.4%) and specificities (ABC-16: 76.5%; ABC-6: 74.5%) were reported for each tool for a cutoff score of 77.5 and 65.8, respectively. The results have significant implications and demonstrate that the ABC-16 and ABC-6 independently identify patients with PD at risk of future recurrent falls. Copyright © 2016 American Congress of Rehabilitation Medicine. Published by Elsevier Inc. All rights reserved.

Title: Cognitive and physical resources are important in order to complete a geriatric fall prevention programme.

Citation: Danish medical journal, Jan 2016, vol. 63, no. 1 (January 2016)

Author(s): Kirchhoff, Marianne, Damgaard, Kirsten

Abstract: It is well documented that falls may be prevented, but effectiveness in reducing the risk of falling depends on the uptake of and the adherence to preventive actions. 65+-year-old fallers identified by screening for fall risk were offered referral to a geriatric fall clinic together with fallers referred from general practitioners (GPs). They were assessed to identify individual risk factors for falling, and appropriate interventions were planned, including exercise classes. A total of 811 persons were identified by screening, 342 of whom accepted referral. Furthermore, 176 were referred from GPs. Only 402 of 518 fallers attended the clinic. A total of 65 dropped out by their own request, 29 stopped because they became seriously ill or died. Another 62 patients were discharged before fulfilling the programme as they were unable to participate due to physical or cognitive problems. Indicators of cessation were cognitive or physical weakness. Geriatric fall prevention is resource-consuming both in terms of staff needed and with respect to demands made on the patients, and the frailest part of the fall population cannot comply. It is necessary to differentiate fall prevention services for the population of elderly fallers as interventions in primary healthcare have been shown to be more effective among the most frail elderly fallers. The project received funding from the Danish Ministry of the Interior and Health and from The Fund for Scientific Work in the Geriatric Field within the former Copenhagen Hospital Corporation. not relevant.

Title: Prevention of falls for adults with intellectual disability (PROFAID): a feasibility study.

Citation: Disability and rehabilitation, Jan 2016, vol. 38, no. 1, p. 36-44

Author(s): Hale, Leigh Anne, Mirfin-Veitch, Brigit F, Treharne, Gareth J

Abstract: A novel physiotherapy intervention for people with intellectual disability (ID) to improve balance was developed and evaluated in a feasibility study which quantitatively assessed potential
benefits on measures of balance, gait and activity participation, and qualitatively explored its acceptability, utility and feasibility. Participants were 27 adults with mild to profound ID (mean age 53 years SD 10.9). We used a mixed methods approach: an uncontrolled before-after study (data analysed with the related samples sign test) and a qualitative interview evaluation (data analysed with the general inductive approach). Balance, gait and participation were assessed at baseline and 6 months after introduction of the physiotherapy intervention with four standardised measures and two questionnaires. Appropriate exercises and a physical activity could be found for all participants, irrespective of the level of ID, although for many this required a high level of assistance from support staff. Only the Balance Scale for ID changed significantly by a median score of 2 (95% CI = 0.00-2.50, p = 0.04). No other outcomes changed significantly. Four themes emerged: "Understanding the intervention"; "Routine and reality"; "Remembering what I have to do" and "What happens beyond the study itself"? The findings provide some evidence for the benefit, acceptability, utility and feasibility of the intervention justifying further evaluation. Implications for Rehabilitation Falling is a frequent and serious problem for many adults with intellectual disability. Two to three exercises targeted at increasing lower limb strength and challenging balance, performed each day as part of daily routine may help improve balance in adults with intellectual disability. The importance of exercising needs to be stressed to those who support adults with intellectual disability to encourage ongoing adherence.

Title: Direction-specific impairment of stability limits and falls in children with developmental coordination disorder: Implications for rehabilitation.

Citation: Gait & posture, Jan 2016, vol. 43, p. 60-64 (January 2016)

Author(s): Fong, Shirley S M, Ng, Shamay S M, Chung, Louisa M Y, Ki, W Y, Chow, Lina P Y

Abstract: Limit of stability (LOS) is an important yet under-examined postural control ability in children with developmental coordination disorder (DCD). This study aimed to (1) compare the LOS and fall frequencies of children with and without DCD, and (2) explore the relationships between LOS parameters and falls in the DCD population. Thirty primary school-aged children with DCD and twenty age- and sex-matched typically-developing children participated in the study. Postural control ability, specifically LOS in standing, was evaluated using the LOS test. Reaction time, movement velocity, maximum excursion, end point excursion, and directional control were then calculated. Self-reported fall incidents in the previous week were also documented. Multivariate analysis of variance results revealed that children with DCD had shorter LOS maximum excursion in the backward direction compared to the control group (p=0.003). This was associated with a higher number of falls in daily life (rho=-0.556, p=0.001). No significant between-groups differences were found in other LOS-derived outcomes (p>0.05). Children with DCD had direction-specific postural control impairment, specifically, diminished LOS in the backward direction. This is related to their falls in daily life. Therefore, improving LOS should be factored into rehabilitation treatment for children with DCD. Copyright © 2015 Elsevier B.V. All rights reserved.

Title: Relationships between fear of falling, balance confidence, and control of balance, gait, and reactive stepping in individuals with sub-acute stroke.

Citation: Gait & posture, Jan 2016, vol. 43, p. 154-159

Author(s): Schinkel-Ivy, Alison, Inness, Elizabeth L, Mansfield, Avril
Abstract: Fear of falling is common in individuals with stroke; however, the associations between fear of falling, balance confidence, and the control of balance and gait are not well understood for this population. This study aimed to determine whether, at the time of admission to in-patient rehabilitation, specific features of balance and gait differed between individuals with stroke who did and did not report fear of falling, and whether these features were related to balance confidence. Individuals with stroke entering in-patient rehabilitation were asked if they were afraid of falling, and completed the Activities-Specific Balance Confidence Scale. Participants performed quiet standing, gait, and reactive stepping tasks, and specific measures were extracted for each (quiet standing: centre of pressure amplitude, between-limb synchronization, and Romberg quotients; gait: walking velocity, double support time, and variability measures; reactive stepping: number of steps, frequency of grasp reactions, and frequency of assists). No significant differences were identified between individuals with and without fear of falling. Balance confidence was negatively related to centre of pressure amplitude, double support time, and step time variability, and positively related to walking velocity. Low balance confidence was related to poor quiet standing balance control and cautious behavior when walking in individuals with sub-acute stroke. While the causal relationship between balance confidence and the control of balance and gait is unclear from the current work, these findings suggest there may be a role for interventions to increase balance confidence among individuals with stroke, in order to improve functional mobility. Copyright © 2015 Elsevier B.V. All rights reserved.

Title: Fall injuries in Baghdad from 2003 to 2014: Results of a randomised household cluster survey.

Citation: Injury, Jan 2016, vol. 47, no. 1, p. 244-249

Author(s): Stewart, Barclay T, Lafta, Riyadh, Al Shatari, Sahar A Esa, Cherewick, Megan, Flaxman,
effect of prolonged insecurity on a fragile health system, many injuries resulted in life-limiting disabilities. In turn, households shouldered much of the burden after fall injury due to loss of income and/or medical expenditure, often resulting in food insecurity. Given ongoing conflict, civilian injury control initiatives, trauma care strengthening efforts and support for households of the injured is urgently needed. Copyright © 2015 Elsevier Ltd. All rights reserved.

Title: Temporal trends in falls cases seen by EMS in Melbourne: The effect of residence on time of day and day of week patterns.

Citation: Injury, Jan 2016, vol. 47, no. 1, p. 266-271 (January 2016)

Author(s): Cantwell, Kate, Burgess, Stephen, Morgans, Amee, Smith, Karen, Livingston, Michael,

Abstract: Injury due to falls is a major public health problem, especially for older people. We aimed to determine the accuracy of the ambulance call taker triage algorithm relative to paramedic assessment, and characterise variation in ambulance service demand for falls cases involving older adults over time and by residence type. We obtained all ambulance case records for January 2008 to December 2011 for adults aged 65 or over in Melbourne, Australia. Data elements comprised age, gender, date and time of emergency call, dispatch category, location of incident and the patient's clinical condition as ascertained by paramedics. We compared cases coded as falls by the call taker triage algorithm with those identified by paramedics. We also examined temporal variation (hour of day and day of week) in ambulance service demand for cases involving older adults, and compared community-dwelling cases and those from Residential Aged Care Facilities (RACFs). We used negative binomial regression to compare counts and trigonometric regression to compare temporal variation patterns. Over the four-year study period 77,891 falls cases involved older adults (6.5% of overall ambulance demand). Eighty-seven per cent of paramedic-assessed falls cases were correctly identified by the triage system. The RACF population was older (median age 87 years, IQR 82-91 vs. 82 years, IQR 76-87), had higher hospital transport rates (89.5% vs. 75.8%) and a higher incidence of falls at any age than the community-dwelling population. The temporal pattern for fall cases for all residence types peaked between 6:00 and 12:00, but fall cases from RACFs showed an additional peak in the evening between 17:00 and 20:00. Falls by older people are the second-biggest contributor to ambulance demand in Melbourne, consuming significant operational resources. Using call taker triage data instead of paramedic case records to calculate falls cases may underestimate the true incidence of falls by up to 13%. Temporal patterns can inform ambulance service policy and practice, falls referral and prevention programmes to optimise service delivery which will lessen the number of future falls cases. Copyright © 2015 Elsevier Ltd. All rights reserved.

Title: "Oh the weather outside is frightful": Severe injury secondary to falls while installing residential Christmas lights.

Citation: Injury, Jan 2016, vol. 47, no. 1, p. 277-279 (January 2016)

Author(s): Driedger, Michael R, Gupta, Arjun, Wells, Bryan, Dixon, Elijah, Ball, Chad G

Abstract: Falls are an increasingly common source of severe traumatic injury. They now account for approximately 40% of both overall trauma volumes and injury-related deaths within Canada. In
northern climates, the risk of all types of falls may increase during the fall/winter months when conditions become increasingly dangerous. The purpose of this study was to define the injury and patient demographics of severe trauma that occurs during falls associated with the installation of Christmas lights. All patients who were admitted to a referral level 1 trauma center (2002-2012) with severe injuries (ISS≥12) caused during Christmas light installation were retrospectively reviewed. Standard statistical methodology was utilised (p<0.05=significant). A total of 40 patients were severely injured (95% male; mean age=55 years; mean ISS=25.7 (range: 12-75)) while installing Christmas lights. Injuries included: neurologic (68%), thoracic (68%), spinal (43%), extremity (40%), and multiple other sites. Fall mechanisms were: ladder (65%), roof (30%), ground (3%) and railing (3%). Interventions included intubation and critical care (20%), as well as orthopaedic and neurosurgical operative repairs (30%). The median length of hospital stay was 15.6 days (range: 2-165). The fall-related morbidity (28%) and mortality (5%) were significant with a total of 12.5% patients requiring transfer to a long-term care or rehabilitation facility. Falls while installing Christmas lights during the fall/winter seasons can result in severe life-altering injuries with considerable morbidity and mortality. Caution should be employed when installing lights at any height. Copyright © 2015 Elsevier Ltd. All rights reserved.

Title: Falls in older adults with major depressive disorder (MDD): a systematic review and exploratory meta-analysis of prospective studies.

Citation: International psychogeriatrics / IPA, Jan 2016, vol. 28, no. 1, p. 23-29 (January 2016)

Author(s): Stubbs, Brendon, Stubbs, Jean, Gnanaraj, Solomon Donald, Soundy, Andrew

Abstract: Depressive symptomology is now widely recognized as a key risk factor for falls. The evidence regarding the impact of major depressive disorder (MDD) on falls is unclear. A systematic review and exploratory meta-analysis was undertaken to explore the relationship between MDD and falls. Major electronic database were searched from inception till April 2015. Studies that defined MDD and measured falls prospectively in older adults (≥60 years) were included. Studies relying on depressive symptomology alone were excluded. The methodological quality of included articles was assessed and study findings were synthesized using an exploratory meta-analysis. From a potential of 415 articles, only three studies met the inclusion criteria. This included 976 unique older adults with a range of mean age from ≥65 to 83 years. The methodological quality of included studies was satisfactory. None of the included studies' primary aim was to investigate the relationship between MDD and falls. The exploratory meta-analysis demonstrated older adults with MDD are at increased risk of falling compared to non-depressed older adults (odds ratio (OR) 4.0, 95% CI 2.0-8.1, I ² = 60%, n = 976). There is a paucity of research considering falls in older adults with MDD. Our results demonstrate that the odds of falling appear to be greater among people with MDD (OR 4.0) than in previous meta-analyses that have only considered subthreshold depressive symptoms. Given the distinct nature and challenges with MDD, more research is required to better understand the falls risk in this group.

Title: Identifying Balance Measures Most Likely to Identify Recent Falls.

Citation: Journal of geriatric physical therapy (2001), Jan 2016, vol. 39, no. 1, p. 30-

Author(s): Criter, Robin E, Honaker, Julie A
**Abstract:** Falls sustained by older adults are an increasing health care issue. Early identification of those at risk for falling can lead to successful prevention of falls. Balance complaints are common among individuals who fall or are at risk for falling. The purpose of this study was to evaluate the clinical utility of a multifaceted balance protocol used for fall risk screening, with the hypothesis that this protocol would successfully identify individuals who had a recent fall (within the previous 12 months). This is a retrospective review of 30 individuals who self-referred for a free fall risk screening. Measures included case history, Activities-Specific Balance Confidence Scale, modified Clinical Test of Sensory Interaction on Balance, Timed Up and Go test, and Dynamic Visual Acuity. Statistical analyses were focused on the ability of the test protocol to identify a fall within the past 12 months and included descriptive statistics, clinical utility indices, logistic regression, receiver operating characteristic curve, area under the curve analysis, effect size (Cohen d), and Spearman correlation coefficients. All individuals who self-referred for this free screening had current imbalance complaints, and were typically women (70%), had a mean age of 77.2 years, and had a fear of falling (70%). Almost half (46.7%) reported at least 1 lifetime fall and 40.0% within the past 12 months. Regression analysis suggested that the Timed Up and Go test was the most important indicator of a recent fall. A cutoff score of 12 or more seconds was optimal (sensitivity: 83.3%; specificity: 61.1%). Older adults with current complaints of imbalance have a higher rate of falls, fall-related injury, and fear of falling than the general community-dwelling public. The Timed Up and Go test is useful for determining recent fall history in individuals with imbalance.

**Title:** Highly Challenging Balance Program Reduces Fall Rate in Parkinson Disease.

**Citation:** Journal of neurologic physical therapy : JNPT, Jan 2016, vol. 40, no. 1, p. 24-30

**Author(s):** Sparrow, David, DeAngelis, Tamara R, Hendron, Kathryn, Thomas, Cathi A,

**Abstract:** There is a paucity of effective treatment options to reduce falls in Parkinson disease (PD). Although a variety of rehabilitative approaches have been shown to improve balance, evidence of a reduction in falls has been mixed. Prior balance trials suggest that programs with highly challenging exercises had superior outcomes. We investigated the effects of a theory-driven, progressive, highly challenging group exercise program on fall rate, balance, and fear of falling. Twenty-three subjects with PD participated in this randomized cross-over trial. Subjects were randomly allocated to 3 months of active balance exercises or usual care followed by the reverse. During the active condition, subjects participated in a progressive, highly challenging group exercise program twice weekly for 90 minutes. Outcomes included a change in fall rate over the 3-month active period and differences in balance (Mini-Balance Evaluation Systems Test [Mini-BESTest]), and fear of falling (Falls Efficacy Scale-International [FES-I]) between active and usual care conditions. The effect of time on falls was significant (regression coefficient = -0.015 per day, P < 0.001). The estimated rate ratio comparing incidence rates at time points 1 month apart was 0.632 (95% confidence interval, 0.524-0.763). Thus, there was an estimated 37% decline in fall rate per month (95% confidence interval, 24%-48%). Improvements were also observed on the Mini-BESTest (P = 0.037) and FES-I (P = 0.059). The results of this study show that a theory-based, highly challenging, and progressive exercise program was effective in reducing falls, improving balance, and reducing fear of falling in PD. Video abstract available for more insights from the authors (see Supplemental Digital Content 1, http://links.lww.com/JNPT/A120).

**Title:** Nursing Staff Develop a Video to Prevent Falls: A Quality Improvement Project.
**Citation:** Journal of nursing care quality, Jan 2016, vol. 31, no. 1, p. 40-45 (2016 Jan-Mar)

**Author(s):** Silkworth, Amelia L, Baker, Jennifer, Ferrara, Joseph, Wagner, Molly, Gevaart, Melinda,

**Abstract:** Many fall prevention strategies exist with some degree of effectiveness. Evidence to support 1 unique bundling of strategies is limited. The purpose of this article is to describe a staff-driven quality improvement initiative to develop a video in partnership with patients and families to prevent falls when hospitalized. Since the video’s release, the fall rate has decreased by 29.4%.

**Title:** Development of an Automated Self-assessment of Fall Risk Questionnaire for Hospitalized Patients.

**Citation:** Journal of nursing care quality, Jan 2016, vol. 31, no. 1, p. 46-53 (2016 Jan-Mar)

**Author(s):** Sitzer, Verna

**Abstract:** Falls in hospital settings continue to challenge health care providers. Multifactorial interventions aim to reduce falls but rarely involve the patient as an active participant. A patient self-assessment of fall risk questionnaire was customized in the hospital's computer-based, television-equipped, interactive patient care system. Designed to engage patients in determining their risk for falling, the questionnaire is a reliable and valid means for patients and nurses to assess risk of falls.

**Title:** A balance retraining program reduces injurious falls and improves physical function in older women at risk of falling [commentary].

**Citation:** Journal of physiotherapy, Jan 2016, vol. 62, no. 1, p. 48. (January 2016)

**Author(s):** Tiedemann, Anne

**Title:** A balance retraining program reduces injurious falls and improves physical function in older women at risk of falling [synopsis].

**Citation:** Journal of physiotherapy, Jan 2016, vol. 62, no. 1, p. 48. (January 2016)

**Author(s):** Elkins, Mark

**Title:** Cross-Cultural Adaptation, Validity and Reliability of the Arabic Version of the Falls Efficacy Scale-International (FES-I).

**Citation:** Medical principles and practice : international journal of the Kuwait University, Health Science Centre, Jan 2016, vol. 25, no. 1, p. 1-7 (2016)

**Author(s):** Halaweh, Hadeel, Svantesson, Ulla, Rosberg, Susanne, Willen, Carin

**Abstract:** The aim of this study was to evaluate the validity and reliability of an Arabic language version (Ar) of the Falls Efficacy Scale-International (FES-I) with respect to its use with Arabic-speaking elderly subjects. For cross-cultural adaptation, the translation of the original English
version of the scale was conducted based on the protocol of the Prevention of Falls Network Europe (ProFaNE). The FES-I (Ar) was administered via face-to-face interviews to 108 community-dwelling elderly Palestinians (61 women and 47 men, aged 60-84 years). Statistical analyses were used to determine group differences with respect to age, gender and fall history. To assess validity, Spearman’s rank correlation coefficient was used to examine the correlation between the total scores of FES-I (Ar) and the Timed Up and Go (TUG) test, gait speed and balance. Test-retest reliability between the two test occasions was assessed in accordance with Svensson’s method. The FES-I (Ar) total scores were positively correlated with TUG (rs = 0.641, p < 0.001) and negatively correlated with gait speed (rs = -0.670, p < 0.001) and balance (rs = -0.592, p < 0.001). All items of the FES-I (Ar) indicated a high percentage agreement (from 88 to 93%), and the relative position ranged from 0.01 to 0.06. In this study, the FES-I (Ar) was shown to be a comprehensible, valid and reliable measure of the concern about falling among community-dwelling elderly subjects. In clinical practice and future research, the FES-I (Ar) instrument could be used to effectively assess concern about falling in Arabic-speaking elderly persons. © 2015 S. Karger AG, Basel.

Title: NewsCAP: Falls remain an important cause of patient injury in hospitals.

Citation: The American journal of nursing, Jan 2016, vol. 116, no. 1, p. 15. (January 2016)

Title: Beyond Socks, Signs, and Alarms: A Reflective Accountability Model for Fall Prevention.

Citation: The American journal of nursing, Jan 2016, vol. 116, no. 1, p. 42-47 (January 2016)

Author(s): Hoke, Linda M, Guarracino, Dana

Abstract: Despite standard fall precautions, including nonskid socks, signs, alarms, and patient instructions, our 48-bed cardiac intermediate care unit (CICU) had a 41% increase in the rate of falls (from 2.2 to 3.1 per 1,000 patient days) and a 65% increase in the rate of falls with injury (from 0.75 to 1.24 per 1,000 patient days) between fiscal years (FY) 2012 and 2013. An evaluation of the falls data conducted by a cohort of four clinical nurses found that the majority of falls occurred when patients were unassisted by nurses, most often during toileting. Supported by the leadership team, the clinical nurses developed an accountability care program that required nurses to use reflective practice to evaluate each fall, including sending an e-mail to all staff members with both the nurse's and the patient's perspective on the fall, as well as the nurse's reflection on what could have been done to prevent the fall. Other program components were a postfall huddle and guidelines for assisting and remaining with fall risk patients for the duration of their toileting. Placing the accountability for falls with the nurse resulted in decreases in the unit's rates of falls and falls with injury of 55% (from 3.1 to 1.39 per 1,000 patient days) and 72% (from 1.24 to 0.35 per 1,000 patient days), respectively, between FY2013 and FY2014. Prompt call bell response (less than 60 seconds) also contributed to the goal of fall prevention.

Title: South-west Scotland to West Bengal: where does patient expectation fall?

Citation: The British journal of general practice : the journal of the Royal College of General Practitioners, Jan 2016, vol. 66, no. 642, p. 35.

Author(s): Hallam, Samantha, Arnot, David
Title: Association of Proton Pump Inhibitor Use with Recurrent Falls and Risk of Fractures in Older Women: A Study of Medication Use in Older Fallers.

Citation: The journal of nutrition, health & aging, Jan 2016, vol. 20, no. 1, p. 77-81

Author(s): Thaler, H W, Sterke, C S, van der Cammen, T J M

Abstract: To examine the association between Proton pump inhibitors (PPIs) use and falls and fractures. A cross-sectional study. 400 female patients aged 70 years or older who were consecutively admitted to the Trauma Center Meidling, Vienna, after a fall and who required hospital admission. We quantified the strength of the associations between PPI use and falls, and between PPI use and fractures, using a logistic regression. use of PPIs was significantly associated with risk of recurrent falls (OR 1.92, 95% CI = 1.05 - 3.50, p = 0.04) as well as with risk of a fracture (OR 2.15, 95% CI 1.10 - 4.21, p = 0.03). In conclusion, our results provide further evidence that PPI use may increase risk of falls and fractures in older women and highlight the need for clinicians to reassess the original indication and the need for continuation of PPIs on a regular basis.

Title: Regional Gray Matter Volumes Are Related to Concern About Falling in Older People: A Voxel-Based Morphometric Study.

Citation: The journals of gerontology. Series A, Biological sciences and medical sciences, Jan 2016, vol. 71, no. 1, p. 138-144

Author(s): Tuerk, Carola, Zhang, Haobo, Sachdev, Perminder, Lord, Stephen R, Brodaty, Henry

Abstract: Concern about falling is common in older people. Various related psychological constructs as well as poor balance and slow gait have been associated with decreased gray matter (GM) volume in old age. The current study investigates the association between concern about falling and voxel-wise GM volumes. A total of 281 community-dwelling older people aged 70-90 years underwent structural magnetic resonance imaging. Concern about falling was assessed using Falls Efficacy Scale-International (FES-I). For each participant, voxel-wise GM volumes were generated with voxel-based morphometry and regressed on raw FES-I scores (p < .05 family-wise error corrected on cluster level). FES-I scores were negatively correlated with total brain volume (r = -.212; p ≤ .001), GM volume (r = -.210; p ≤ .001), and white matter volume (r = -.155; p ≤ .001). Voxel-based morphometry analysis revealed significant negative associations between FES-I and GM volumes of (i) left cerebellum and bilateral inferior occipital gyrus (voxels-in-cluster = 2,981; p < .001) and (ii) bilateral superior frontal gyrus and left supplementary motor area (voxels-in-cluster = 1,900; p = .004). Additional adjustment for vision and physical fall risk did not alter these associations. After adjustment for anxiety, only left cerebellum and bilateral inferior occipital gyrus remained negatively associated with FES-I scores (voxels-in-cluster = 2,426; p < .001). Adjustment for neuroticism removed all associations between FES-I and GM volumes. Our study findings show that concern about falling is negatively associated with brain volumes in areas important for emotional control and for motor control, executive functions and visual processing in a large sample of older men and women. Regression analyses suggest that these relationships were primarily accounted for by psychological factors (generalized anxiety and neuroticism) and not by physical fall risk or vision. © The Author 2015. Published by Oxford University Press on behalf of
Title: Reliability and Validity of the NDNQI® Injury Falls Measure.

Citation: Western journal of nursing research, Jan 2016, vol. 38, no. 1, p. 111-128 (January 2016)

Author(s): Garrard, Lili, Boyle, Diane K, Simon, Michael, Dunton, Nancy, Gajewski, Byron

Abstract: Although remarkable efforts have been made to improve patient fall reporting through the utilization of standardized definitions, injury falls reporting has rarely been examined. This study used an overall intra-class correlation coefficient (ICC) estimate and factor analysis to assess the reliability and validity of the National Database of Nursing Quality Indicators® (NDNQI®) falls with injury measure. Data were collected from an online Fall Injury Level Survey that was administered to 1,159 NDNQI site coordinators (39.7% response rate; 91% registered nurses [RNs]). Estimated overall ICC was .85. Exploratory factor analysis (EFA) with a Promax rotation (root mean square error of approximation [RMSEA] = 0.053) identified three latent factors: No Injury, Minor Injury, and Moderate/Major Injuries. Final confirmatory factor analysis (CFA) assessment (comparative fit index [CFI] = 0.914, Tucker Lewis Index [TLI] = 0.910, RMSEA = 0.048) confirmed an acceptable model fit. Results provided strong evidence that the NDNQI falls with injury measure is reliable and valid in supporting hospitals' fall prevention efforts and future injurious falls research. © The Author(s) 2014.

Title: Obese patients who fall have less injury severity but a longer hospital stay than normal-weight patients.

Citation: World journal of emergency surgery : WJES, Jan 2016, vol. 11, p. 3. (2016)

Author(s): Chuang, Jung-Fang, Rau, Cheng-Shyuan, Liu, Hang-Tsung, Wu, Shao-Chun, Chen, Yi-Chun, Hsu, Shiun-Yuan, Hsieh, Hsiao-Yun, Hsieh, Ching-Hua

Abstract: The effects of obesity on injury severity and outcome have been studied in trauma patients but not in those who have experienced a fall. The aim of this study was to compare injury patterns, injury severities, mortality rates, and in-hospital or intensive care unit (ICU) length of stay (LOS) between obese and normal-weight patients following a fall. Detailed data were retrieved for 273 fall-related hospitalized obese adult patients with a body mass index (BMI) ≥30 kg/m(2) and 2357 normal-weight patients with a BMI <25 kg/m(2) but ≥18.5 kg/m(2) from the Trauma Registry System of a Level I trauma center between January 1, 2009, and December 31, 2013. We used the Pearson's chi-squared test, Fisher's exact test, the Mann Whitney U test, and independent Student's t-test to analyze differences between the two groups. Analysis of AIS scores and AIS severity scaling from 1 to 5 revealed no significant differences in trauma regions between obese and normal-weight patients. When stratified by injury severity (Injury Severity Score [ISS] of <16, 16-24, or ≥25), more obese patients had an ISS of <16 compared to normal-weight patients (90.5 % vs. 86.0 %, respectively; p = 0.041), while more normal-weight patients had an ISS between 16 and 24 (11.0 % vs. 6.6 %, respectively; p = 0.025). Obese patients who had experienced a fall had a significantly lower ISS (median (range): 9 (1-45) vs. 9 (1-50), respectively; p = 0.015) but longer in-hospital LOS than did normal-weight patients (10.1 days vs. 8.9 days, respectively; p = 0.049). Even after taking account of possible differences in comorbidity and ISS,
the obese patients have an average 1.54 day longer LOS than that of normal-weight patients. However, no significant differences were found between obese and normal-weight patients in terms of the New Injury Severity Score (NISS), Trauma-Injury Severity Score (TRISS), mortality, percentage of patients admitted to the ICU, or LOS in the ICU. Obese patients who had experienced a fall did not have different injured body regions than did normal-weight patients. However, they had a lower ISS but a longer in-hospital LOS than did normal-weight patients.

Title: Pattern of fall injuries in Pakistan: the Pakistan National Emergency Department Surveillance (Pak-NEDS) study.

Citation: BMC emergency medicine, Dec 2015, vol. 15 Suppl 2, p. S3. (December 11, 2015)

Author(s): Fayyaz, Jabeen, Wadhwaniya, Shirin, Shahzad, Hira, Feroze, Asher, Zia, Nukhba, Mir, Mohammed, Khan, Uzma, Iram, Sumera, Ali, Sabir, Razzak, Junaid, Hyder, Adnan A

Abstract: We aimed to analyse the frequency and patterns of fall-related injuries presenting to the emergency departments (EDs) across Pakistan. Pakistan National Emergency Departments surveillance system collected data from November 2010 to March 2011 on a 24/7 basis using a standardized tool in seven major EDs (five public and two private hospitals) in six major cities of Pakistan. For all patients presenting with fall-related injuries, we analysed data by intent with focus on unintentional falls. Simple frequencies were run for basic patient demographics, mechanism of falls, outcomes of fall injuries, mode of arrival to ED, investigations, and procedures with outcomes. There were 3335 fall-related injuries. In cases where intent was available, two-thirds (n = 1186, 65.3%) of fall injuries were unintentional. Among unintentional fall patients presenting to EDs, the majority (76.9%) were males and between 15-44 years of age (69%). The majority of the unintentional falls (n = 671, 56.6%) were due to slipping, followed by fall from height (n = 338, 28.5%). About two-thirds (n = 675, 66.6%) of fall injuries involved extremities, followed by head/neck (n = 257, 25.4%) and face (n = 99, 9.8%). Most of the patients were discharged from the hospital (n = 1059, 89.3%). There were 17 (1.3%) deaths among unintentional fall cases. Falls are an important cause of injury-related visits to EDs in Pakistan. Most of the fall injury patients were men and in a productive age group. Fall injuries pose a burden on the healthcare system, especially emergency services, and future studies should therefore focus on safety measures at home and in workplaces to reduce this burden.

Title: Reduction of falls in older people by improving balance with vestibular rehabilitation (ReFOVeRe study): design and methods.

Citation: Aging clinical and experimental research, Dec 2015, vol. 27, no. 6, p. 841-848

Author(s): Soto-Varela, Andrés, Gayoso-Diz, Pilar, Rossi-Izquierdo, Marcos, Faraldo-García, Ana, Vaamonde-Sánchez-Andrade, Isabel, Del-Río-Valeiras, María, Lirola-Delgado, Antonio, Santos-Pérez, Sofía

Abstract: Evaluate the effectiveness of vestibular rehabilitation (VR) to improve the balance in older people, assessed immediately afterwards. (a) To verify the maintenance of improvement of the balance achieved in the medium term (6-12 months). (b) To consider whether this improvement results in a reduction in the number of falls. (c) To compare among themselves the effectiveness of three different methods of VR in improving balance and to explore whether there
are differences to achieve a reduction in the number of falls. Experimental study, single-centre, open, randomised (balanced blocks of patients) in four branches in parallel, in 220 elderly patients (over 64 years) with high risk of falls and a follow-up period of 12 months. Department of Otolaryngology of the University Hospital of Santiago. People over 64 years, fulfilling one of the following requirements: (a) At least one fall in the last year. (b) Take at least 16 s or require some support in perform the test "timed up and go". (c) A percentage of average balance in the sensory organisation test (SOT) in the dynamic posturography (CDP) <68 %. (d) At least one fall in any of the conditions in the SOT of CDP. Three different protocols of VR. The percentage of average balance in the SOT in CDP. Secondary measures: time and supports in the test of "timed up and go", scores of the dynamic posturography and SwayStar system, and rate of falls.

Title: Focal muscle vibration as a possible intervention to prevent falls in elderly women: a pragmatic randomized controlled trial.

Citation: Aging clinical and experimental research, Dec 2015, vol. 27, no. 6, p. 857-863

Author(s): Celletti, Claudia, Fattorini, Luigi, Camerota, Filippo, Ricciardi, Diego, La Torre, Giuseppe,

Abstract: Different and new approaches have been proposed to prevent the risk of falling of elderly people, particularly women. This study investigates the possibility that a new protocol based on the focal mechanical muscle vibration may reduce the risk of falling of to understand the value of community-based prevention and wellness programs for Medicare. A controlled retrospective cohort study was conducted in 2012-2013, using 2007-2011 MOB program data and 2006-2013 Medicare data. It investigated program effects on falls and fall-related fractures, and health service utilization and costs (standardized to 2012 dollars), of 6,136 Medicare beneficiaries enrolled in MOB from 2007 through 2011. A difference-in-differences analysis was employed to compare outcomes of MOB participants with matched controls. MOB participation was associated with total medical cost savings of $938 per person (95% CI=$379, $1,498) at 1 year. Savings per person amounted to $517 (95% CI=$265, $769) for unplanned hospitalizations; $81 for home health care (95% CI=$20, $141); and $234 (95% CI=$55, $413) for skilled nursing facility care. Changes in the incidence of falls or fall-related fractures were not detected, suggesting that cost savings accrue through other mechanisms. This study suggests that MOB and similar prevention programs have the potential to reduce Medicare costs. Further research accounting for program delivery costs would help inform the development of Medicare-covered preventive benefits. Copyright © 2015 American Journal of Preventive Medicine. All rights reserved

Title: Effectiveness of Exergaming Training in Reducing Risk and Incidence of Falls in Frail Older Adults With a History of Falls.

Citation: Archives of physical medicine and rehabilitation, Dec 2015, vol. 96, no. 12, p. 2096-2102 (December 2015)

Author(s): Fu, Amy S, Gao, Kelly L, Tung, Arthur K, Tsang, William W, Kwan, Marcella M

Abstract: To use Nintendo's Wii Fit balance board to determine the effectiveness of exergaming training in reducing risk and incidence of falls in older adults with a history of falls. Randomized controlled trial. Nursing home for older adults. Adults aged 65 years and older (N=60). Participants
who lived in a nursing home had 6 weeks of balance training with either Wii Fit equipment or
conventional exercise. Physiological Profile Assessment scores and incidence of falls were
observed with subsequent intention-to-treat statistical analyses. Physiological Profile Assessment
scores and incidence of falls improved significantly in both groups after the intervention (all
P<.01), but participants in the Wii Fit training group showed a significantly greater improvement in
both outcome measures (P=.004 and P<.001, respectively). In institutionalized older adults with a
history of falls, Wii Fit balance training was more effective than conventional balance training in
reducing the risk and incidence of falls. Copyright © 2015 American Congress of Rehabilitation by
Elsevier Inc. All rights reserved.
Source: Medline

Title: Self-Awareness of Falls Risk Among Elderly Patients: Characterizing Awareness Deficits and
Exploring Associated Factors.

Citation: Archives of physical medicine and rehabilitation, Dec 2015, vol. 96, no. 12, p. 2145-2152

Author(s): Mihaljcic, Tijana, Haines, Terry P, Ponsford, Jennie L, Stolwyk, Renerus J

Abstract: To characterize self-awareness in older adults undergoing inpatient rehabilitation and
explore factors associated with reduced awareness of falls risk. Prospective, cross-sectional design.
Older adult inpatient rehabilitation setting. Rehabilitation inpatients (N=91; mean age,
77.97±8.04y) and their treating physiotherapist. None. Three aspects of self-awareness
(intellectual, emergent, anticipatory) were measured using the Self-Awareness of Falls Risk
Measure. Demographic, medical, and cognitive (Mini-Mental State Examination) information were
collected. Current ability was measured using the FIM and timed Up and Go test. Of the patients in
the sample, 31% to 63% underestimated falls risk and 3% to 10% overestimated falls risk
depending on the aspect of awareness measured. Different aspects of reduced self-awareness
were correlated with being a man, higher educational attainment, neurologic history, lower
cognitive ability, and lower functional ability. Regression analysis indicated that sex (β=-.33,
P=.004), education (β=.30, P=.006), and neurologic history (β=.22, P=.038) were independently
associated with overall self-awareness. The results suggest that a proportion of older adults
undergoing inpatient rehabilitation underestimate personal falls risk. Further research is required
to investigate the contributors to and effects of reduced self-awareness of falls risk. Greater
understanding of these factors will facilitate the development of strategies to increase awareness
of falls risk and increase engagement in falls prevention. Copyright © 2015 American Congress of
Rehabilitation Medicine. Published by Elsevier Inc. All rights reserved.

Title: Analyzing the History of Falls in Patients with Severe Knee Osteoarthritis.

Citation: Clinics in orthopedic surgery, Dec 2015, vol. 7, no. 4, p. 449-456 (December 2015)

Author(s): Tsonga, Theano, Michalopoulou, Maria, Malliou, Paraskevi, Godolias, George,
Kapetanakis, Stylianos, Gkasdaris, Grigorios, Soucacos, Panagiotis

Abstract: One out of three adults over the age of 65 years and one out of two over the age of 80
falls annually. Fall risk increases for older adults with severe knee osteoarthritis, a matter that
should be further researched. The main purpose of this study was to investigate the history of falls
including frequency, mechanism and location of falls, activity during falling and injuries sustained from falls examining at the same time their physical status. The secondary purpose was to determine the effect of age, gender, chronic diseases, social environment, pain elsewhere in the body and components of health related quality of life such as pain, stiffness, physical function, and dynamic stability on falls frequency in older adults aged 65 years and older with severe knee osteoarthritis. An observational longitudinal study was conducted on 68 patients (11 males and 57 females) scheduled for total knee replacement due to severe knee osteoarthritis (grade 3 or 4) and knee pain lasting at least one year or more. Patients were personally interviewed for fall history and asked to complete self-administered questionnaires, such as the 36-item Short Form Health Survey (SF-36) and the Western Ontario and McMaster Universities Arthritis Index (WOMAC), and physical performance test was performed. The frequency of falls was 63.2% for the past year. The majority of falls took place during walking (89.23%). The main cause of falling was stumbling (41.54%). There was a high rate of injurious falling (29.3%). The time patients needed to complete the physical performance test implied the presence of disability and frailty. The high rates of fall risk, the high disability levels, and the low quality of life were confirmed by questionnaires and the mobility test. Patients with severe knee osteoarthritis were at greater risk of falling, as compared to healthy older adults. Pain, stiffness, limited physical ability, reduced muscle strength, all consequences of severe knee osteoarthritis, restricted patient’s quality of life and increased the fall risk. Therefore, patients with severe knee osteoarthritis should not postpone having total knee replacement, since it was clear that they would face more complicated matters when combining with fractures other serious injuries and disability.

Title: Clinical Decision Support for Nurses: A Fall Risk and Prevention Example.

Citation: Computers, informatics, nursing : CIN, Dec 2015, vol. 33, no. 12, p. 530-537

Author(s): Lytle, Kathryn S, Short, Nancy M, Richesson, Rachel L, Horvath, Monica M

Abstract: Clinical decision support tools in electronic health records have demonstrated improvement with process measures and clinician performance, predominantly for providers. Clinical decision support tools could improve patient fall risk identification and prevention plans, a common concern for nursing. This quality-improvement project used clinical decision support to improve the rate of nurse compliance with documented fall risk assessments and, for patients at high risk, fall prevention plans of care in 16 adult inpatient units. Preintervention and postintervention data were compared using quarterly audits, retrospective chart review, safety reports, and falls and falls-with-injury rates. Documentation of fall risk assessments on the 16 units improved significantly according to quarterly audit data (P = .05), whereas documentation of the plans of care did not. Retrospective chart review on two units indicated improvement for admission fall risk assessment (P = .05) and a decrease in the documentation of the shift plan of care (P = .01); one unit had a statistically significant decrease in documentation of plans of care on admission (P = .00). Examination of safety reports for patients who fell showed all patients before and after clinical decision support had fall risk assessments documented. Falls and falls with injury did not change significantly before and after clinical decision support intervention.

Title: Clinical Decision Support for Nurses: A Fall Risk and Prevention Example.

Citation: Computers, informatics, nursing : CIN, Dec 2015, vol. 33, no. 12, p. E1. (December 2015)
Title: Vibration Therapy to Prevent Bone Loss and Falls: Mechanisms and Efficacy.

Citation: Current osteoporosis reports, Dec 2015, vol. 13, no. 6, p. 381-389 (December 2015)

Author(s): Beck, Belinda R

Abstract: A considerable volume of evidence has accumulated to suggest that whole-body vibration (WBV) may have a therapeutic role to play in the prevention of osteoporotic fracture, particularly for individuals who are unable to tolerate vigorous exercise interventions. There is moderate to strong evidence that WBV will prevent falls (likely due to enhanced neuromuscular function), but also some indication that the effects of WBV do not outstrip those of targeted exercise. Animal data indicates that WBV will also improve bone mass, including preventing loss due to hormone withdrawal, disuse and glucocorticoid exposure. Human trials, however, have produced equivocal outcomes for bone. Positive trends are apparent at the hip and spine, but shortcomings in study designs have limited statistical power. The mechanism of the vibration effect on bone tissue is likely to be mechanical coupling between an oscillating cell nucleus and the cytoskeleton. More robust dose-response human data are required before therapeutic guidelines can be developed.

Title: TJC: Time to curb patient falls in healthcare settings.

Citation: ED management : the monthly update on emergency department management, Dec 2015, vol. 27, no. 12, p. Suppl 1, 1044-9167 (December 2015)

Abstract: Noting that there are far too many falls in healthcare settings, The Joint Commission (TJC) has issued a Sentinel Event Alert, telling hospitals and other providers to take steps to identify patients at risk for a fall, and implement preventive interventions. However, while most falls occur in hospitals, preventing falls in the emergency setting presents some unique challenges. Since 2009, TJC says it has received 465 reports of patient falls with serious injury, and more than half of these have resulted in death. Most fall risk assessment tools are too cumbersome and take too long to complete at triage in the ED. The ED at Hartford Hospital in Hartford, CT, has implemented a streamlined risk assessment tool with just five "yes or no" factors for the triage nurse to consider. In concert with the risk assessment tool, the hospital has implemented a series of prevention interventions, including hourly rounding, bed alarms, post-fall huddles, and a non-punitive culture for reporting falls.

Title: Medications associated with falls in older people: systematic review of publications from a recent 5-year period.

Citation: European journal of clinical pharmacology, Dec 2015, vol. 71, no. 12, p. 1429-1440

Author(s): Park, Hyerim, Satoh, Hiroki, Miki, Akiko, Urushihara, Hisashi, Sawada, Yasufumi

Abstract: Falls are an important public health problem in older people. Medication use is considered a risk factor for falls. This study systematically reviewed recent studies to determine the medications that might be associated with the risk of falling in older people. We conducted a systematic review of prospective and retrospective studies identified through the MEDLINE and CINAHL databases that quantitatively assessed the contribution of medications to falls risk in
participants ≥60 years old published in English between May 2008 and April 2013. The search identified 1,895 articles; 36 articles met the inclusion criteria. Of the 19 studies that investigated the effect of polypharmacy on the risk of falling, six studies reported that the risk of falling increased with polypharmacy. Data on the use of antihypertensive medications including calcium channel blockers, beta-blockers, and angiotensin system blocking medications were collected in 14 studies, with mixed results. Twenty-nine studies reported an association between the risk of falls and psychotropic medications including sedatives and hypnotics, antidepressants, and benzodiazepines. The use of sedatives and hypnotics and antidepressants including tricyclic antidepressants, selective serotonin reuptake inhibitors, and serotonin norepinephrine reuptake inhibitors appears to be related with an increased risk of falls. It is not clear if the use of antihypertensive medications is associated with the risk of falls in older people.

**Title:** The impact of body mass index on severity, patterns and outcomes after traumatic brain injuries caused by low level falls.

**Citation:** European journal of trauma and emergency surgery : official publication of the European Trauma Society, Dec 2015, vol. 41, no. 6, p. 651-656

**Author(s):** Majdan, M, Brazinova, A, Wilbacher, I, Rusnak, M, Mauritz, W

**Abstract:** Low level falls are a common cause of traumatic brain injuries (TBI) and are associated with significant mortality and disability. The aim of this study was to analyse whether BMI, height and weight of patients were related to severity, patterns and outcomes of TBI caused by low level falls. Data on patients with TBI where cause of injury was a low level fall (fall < 3 m) with known body mass index (BMI) (N = 683) were analysed. Patients were categorized into underweight, normal, pre-obese and obese based on BMI and demographic characteristics, injury severity, patterns and outcomes were compared. In addition, physiological status, comorbidities and length of hospitalization were analysed in a subset of patients where this information was available. The median BMI was 25.6. About 1/10 of patients were obese. The mean age and proportion of male sex of patients was increasing with increasing BMI. The patients in all BMI groups were of similar injury severity and neurological status. There was also no difference in mortality and functional outcome based on patient’s BMI. Obese and pre-obese patients required longer stay at ICU and in hospital. We found no associations between BMI and severity or outcome of TBI caused by low level falls. More detailed data and further studies are needed to fully elucidate these complex relationships.

**Title:** The Rise and Fall of Universal Salt Iodization in Vietnam: Lessons Learned for Designing Sustainable Food Fortification Programs With a Public Health Impact.

**Citation:** Food and nutrition bulletin, Dec 2015, vol. 36, no. 4, p. 441-454,

**Author(s):** Codling, Karen, Quang, Nguyen Vinh, Phong, Le, Phuong, Do Hong, Quang, Nguyen

**Abstract:** In 2005, more than 90% of Vietnamese households were using adequately iodized salt, and urinary iodine concentration among women of reproductive age was in the optimal range. However, household coverage declined thereafter to 45% in 2011, and urinary iodine concentration levels indicated inadequate iodine intake. To review the strengths and weaknesses of the Vietnamese universal salt iodization program from its inception to the current day and to
discuss why achievements made by 2005 were not sustained. Qualitative review of program documents and semistructured interviews with national stakeholders. National legislation for mandatory salt iodization was revoked in 2005, and the political importance of the program was downgraded with consequential effects on budget, staff, and authority. The Vietnamese salt iodization program, as it was initially designed and implemented, was unsustainable, as salt iodization was not practiced as an industry norm but as a government-funded activity. An effective and sustainable salt iodization program needs to be reestablished for the long-term elimination of iodine deficiency, building upon lessons learned from the past and programs in neighboring countries. The new program will need to include mandatory legislation, including salt for food processing; industry responsibility for the cost of fortificant; government commitment for enforcement through routine food control systems and monitoring of iodine status through existing health/nutrition assessments; and intersectoral collaboration and management of the program. Many of the lessons would apply equally to universal salt iodization programs in other countries and indeed to food fortification programs in general. © The Author(s) 2015.

Title: Kinect-Based Five-Times-Sit-to-Stand Test for Clinical and In-Home Assessment of Fall Risk in Older People.

Citation: Gerontology, Dec 2015, vol. 62, no. 1, p. 118-124 (December 2015)

Author(s): Ejupi, Andreas, Brodie, Matthew, Gschwind, Yves J, Lord, Stephen R, Zagler, Wolfgang L,

Abstract: Accidental falls remain an important problem in older people. The five-times-sit-to-stand (5STS) test is commonly used as a functional test to assess fall risk. Recent advances in sensor technologies hold great promise for more objective and accurate assessments. The aims of this study were: (1) to examine the feasibility of a low-cost and portable Kinect-based 5STS test to discriminate between fallers and nonfallers and (2) to investigate whether this test can be used for supervised clinical, supervised and unsupervised in-home fall risk assessments. A total of 94 community-dwelling older adults were assessed by the Kinect-based 5STS test in the laboratory and 20 participants were tested in their own homes. An algorithm was developed to automatically calculate timing- and speed-related measurements from the Kinect-based sensor data to discriminate between fallers and nonfallers. The associations of these measurements with standard clinical fall risk tests and the results of supervised and unsupervised in-home assessments were examined. Fallers were significantly slower than nonfallers on Kinect-based measures. The mean velocity of the sit-to-stand transitions discriminated well between the fallers and nonfallers based on 12-month retrospective fall data. The Kinect-based measures collected in the laboratory correlated strongly with those collected in the supervised (r = 0.704-0.832) and unsupervised (r = 0.775-0.931) in-home assessments. In summary, we found that the Kinect-based 5STS test discriminated well between the fallers and nonfallers and was feasible to administer in clinical and supervised in-home settings. This test may be useful in clinical settings for identifying high-risk fallers for further intervention or for regular in-home assessments in the future. © 2015 S. Karger AG, Basel.

Title: Strength or power, which is more important to prevent slip-related falls?

Citation: Human movement science, Dec 2015, vol. 44, p. 192-200

Author(s): Han, Longzhu, Yang, Feng
**Abstract:** Falls are a serious health and medical concern facing older adults worldwide. Both muscle strength and power have been related to falls among older adults. The primary purpose of this study was to identify which one of these two muscular performances is more important in preventing a slip-related fall. Twenty-six healthy young adults participated in this study. Their muscle strength (torque) and power capacities were assessed at the right knee under maximum voluntary isometric (flexion and extension) and isokinetic (concentric extension and flexion at three different contraction speeds: 60deg/s, 120deg/s, and 180deg/s) contractions, respectively. They were then subjected to an identical and unannounced slip during gait on a treadmill under the protection of a safety harness after walking regularly for five times on the treadmill. Accuracy of predicting slip outcome (fall vs. recovery) was examined for each muscle performance measurement using logistic regression. Results showed that overall the joint power capacity measurements predicted the slip outcome among these subjects with higher accuracy than did the joint torque capacity measurements. Such results suggested that muscle power could be more closely related to a fall initiated by a slip during gait. The findings from the present study could provide guidance to identify individuals at increased risk of falling using the joint power capacity measurement and to design effective fall prevention training paradigms aiming at maximizing muscle power among older adults and others with physical disabilities. Copyright © 2015 Elsevier B.V. All rights reserved.

**Title:** Risk and protective factors for falls on one level in young children: multicentre case-control study.

**Citation:** Injury prevention : journal of the International Society for Child and Adolescent Injury Prevention, Dec 2015, vol. 21, no. 6, p. 381-388

**Author(s):** Benford, P, Young, B, Coupland, C, Watson, M, Hindmarch, P, Hayes, M, Goodenough, T, Majsak-Newman, G, Kendrick, D, Keeping Children Safe study group

**Abstract:** Childhood falls are an important global public health problem, but there is lack of evidence about their prevention. Falls on one level result in considerable morbidity and they are costly to health services. To estimate ORs for falls on one level in children aged 0-4 years for a range of safety behaviours, safety equipment use and home hazards. Multicentre case-control study at hospitals, minor injury units and general practices in and around four UK study centres. Participants included 582 children less than 5 years of age with a medically attended fall injury occurring at home and 2460 controls matched on age, sex, calendar time and study centre. Fall on one level. Cases' most common injuries were bangs on the head (52%), cuts or grazes not needing stitches (29%) or cuts or grazes needing stitches (17%). Comparing cases to community controls in the adjusted analyses, significant findings were observed for only two exposures. Injured children were significantly less likely to live in a household without furniture corner covers (adjusted OR (AOR) 0.72, 95% CI 0.55 to 0.95), or without rugs and carpets firmly fixed to the floor (AOR 0.76, 95% CI 0.59 to 0.98). We did not find any safety practices, use of safety equipment or home hazards associated with a reduced risk of fall on one level. Our findings do not provide evidence to support changes to current injury prevention practice. Published by the BMJ Publishing Group Limited. For permission to use (where not already granted under a licence) please go to http://www.bmj.com/company/products-services/rights-and-licensing/
**Title:** Moving forward in fall prevention: an intervention to improve balance among patients in a quasi-experimental study of hospitalized patients.

**Citation:** International journal of rehabilitation research. Internationale Zeitschrift für Rehabilitationsforschung. Revue internationale de recherches de réadaptation, Dec 2015, vol. 38, no. 4, p. 313-319

**Author(s):** Villafañe, Jorge H, Pirali, Caterina, Buraschi, Riccardo, Arienti, Chiara, Corbellini, Camilo,

**Abstract:** We investigated the effectiveness of three different rehabilitative programs: group exercise, individual core stability or balance training intervention with a stabilometric platform to improve balance ability in elderly hospitalized patients. We used a prospective quasi-experimental study design. Twenty-eight patients, 39.3% women [age (mean±SD) 72.4±6.5 years], known to have had at least a fall in the last 12 months, were consecutively assigned to one of the following three groups: group exercise intervention, individual core stability or balance training with a stabilometric platform (five sessions a week for 3 weeks in each group). Outcomes were collected at baseline and immediately following the intervention period. In each intervention group, patients showed improvement in balance and mobility, shown as an improvement in the three functional tests score (the Tinetti scale, the Berg Balance Scale, and the Time Up and Go test) (all, P<0.05), whereas, generally, the changes in the score of the test of the stabilometric platform (Postural Stability Test and Fall Risk Test) were not significant for all the interventions. No significant group-by-time interaction was detected for any of the intervention groups, which suggests that the groups improved in the same way. These findings indicate that participation in an exercise program can improve balance and functional mobility, which might contribute toward the reductions of the falls of elderly hospitalized patients and the subsequent fall-related costs. Functional scales might be more appropriate than an instrumental test (Postural Stability Test and Fall Risk Test of the Biodex Balance System) in detecting the functional improvement because of a rehabilitative intervention.

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**Title:** A Study of Rate and Predictors of Fall Among Elderly Patients in a University Hospital.

**Citation:** Journal of patient safety, Dec 2015, vol. 11, no. 4, p. 210-214 (December 2015)

**Author(s):** Al Tehewy, Mahi Mahmoud, Amin, Ghada Essam, Nassar, Nahla Wassem

**Abstract:** Falls represent a serious problem facing hospital-admitted patients, and the severity of fall-related complications rises steadily after the age of 65 years. The aims of this study were (a) to calculate the rate of falls among elderly patients in the internal medicine departments in Ain Shams University Hospital, (b) to identify different predictors and characteristics of falls, and (c) to assess clinical consequences and hospitalization outcomes of falls. An observational longitudinal study has been conducted in Ain Shams University Hospital, where 411 elderly patients admitted to the internal medicine departments were included. Upon admission, the patients were assessed for their risk for falling using the Morse Fall Scale (MFS). Information about their medical condition and drugs administered was obtained. Functional assessment of the patients regarding their ability to perform different daily activities was also performed. The patients were followed up during their stay, and once a fall event occurred, complete details regarding the circumstances and consequences of that event were obtained. The incidence rate of falls was found to be 16.9 per 1000 patient days. The fallers had a significantly high risk for falling according to the MFS (P =
The MFS was able to predict patients at risk for falling and identified correctly 82.6% of the fallers. The most common medical conditions associated with falls were diabetes (48.7%), hypertension (58.7%), and visual impairment (41.3%). Anemia (P = 0.05) and osteoporosis (P = 0.02) showed a statistically significant difference between the fallers and the nonfallers. Presence of a history of a fall and increased length of hospital stay were highly significant (P = 0.01) factors that predisposed to falls. Logistic regression analysis showed that anemia, osteoporosis, and history of a fall were independent predictors of falls. Most falls had no serious consequences, approximately 18% had contusions, 2% had subdural hematomas, and 4% had fractures and lacerations. Elderly patients with anemia, osteoporosis, and history of a fall are more prone to falls and should be considered in fall protective measures.

Title: Frailty as a Predictor of Future Falls Among Community-Dwelling Older People: A Systematic Review and Meta-Analysis.

Citation: Journal of the American Medical Directors Association, Dec 2015, vol. 16, no. 12, p. 1027-1033

Author(s): Kojima, Gotaro

Abstract: Although multiple longitudinal studies have investigated frailty as a predictor of future falls, the results were mixed. Thus far, no systematic review or meta-analysis on this topic has been conducted. To review the evidence of frailty as a predictor of future falls among community-dwelling older people. Systematic review of literature and meta-analysis were performed using 6 electronic databases (Embase, Scopus, MEDLINE, CINAHL Plus, PsycINFO, and the Cochrane Library) searching for studies that prospectively examined risk of future fall risk according to frailty among community-dwelling older people published from 2010 to April 2015 with no language restrictions. Of 2245 studies identified through the systematic review, 11 studies incorporating 68,723 individuals were included in the meta-analysis. Among 7 studies reporting odds ratios (ORs), frailty and prefrailty were significantly associated with higher risk of future falls (pooled OR = 1.84, 95% confidence interval [95% CI] = 1.43-2.38, P < .001; pooled OR = 1.25, 95% CI = 1.01-1.53, P = .005, respectively). Among 4 studies reporting hazard ratios (HRs), whereas frailty was significantly associated with higher risk of future falls (pooled HR = 1.24, 95% CI = 1.10-1.41, P < .001), future fall risk according to prefrailty did not reach statistical significance (pooled HR = 1.14, 95% CI = 0.95-1.36, P = .15). High heterogeneity was noted among 7 studies reporting ORs and seemed attributed to difference in gender proportion of cohorts according to subgroup and meta-regression analyses. Frailty is demonstrated to be a significant predictor of future falls among community-dwelling older people despite various criteria used to define frailty. The future fall risk according to frailty seemed to be higher in men than in women. Copyright © 2015 AMDA – The Society for Post-Acute and Long-Term Care Medicine. Published by Elsevier Inc. All rights reserved.

Title: Effects of Mild Cognitive Impairment on the Development of Fear of Falling in Older Adults: A Prospective Cohort Study.

Citation: Journal of the American Medical Directors Association, Dec 2015, vol. 16, no. 12, p. 1104.e9

Author(s): Uemura, Kazuki, Shimada, Hiroyuki, Makizako, Hyuma, Doi, Takehiko, Tsutsumimoto, Kota, Lee, Sangyoon, Umegaki, Hiroyuki, Kuzuya, Masafumi, Suzuki, Takao
Abstract: The aim of this study was to determine whether mild cognitive impairment (MCI) affects the development of fear of falling (FoF) in older adults. Prospective cohort study. The Obu Study for Health Promotion in the Elderly, Japan. A total of 1700 community-dwelling people aged 65 years or older without FoF at baseline participated. FoF and related variables, such as physical function, self-rated health, depression, and total number of medication doses, were investigated at baseline. Participants also underwent cognitive tests and were divided into cognitive healthy and MCI. Fifteen months after the baseline measurements, we collected information about the status of FoF and fall incidence during the 15-month follow-up. At the 15-month follow-up survey, 452 participants (26.5%) reported the development of FoF. Logistic regression analysis showed that MCI (odds ratio [95% CI] = 1.41 [1.07-1.87]) and a fall incident (3.00 [2.23-4.07]) during follow-up independently predicted the development of FoF, after controlling for demographic factors, physical function, self-rated health, and depression. The odds ratio for the development of FoF in participants with both MCI and a fall incident compared with those without them was 7.34 (4.06-13.3), after controlling for confounding factors. MCI predicts the new onset of FoF in older adults, especially when they have experience with falling. Aside from the risk of falling, it is suggested that individuals with MCI are an at-risk population for FoF and related negative consequences in terms of postfall syndrome. Copyright © 2015 AMDA – The Society for Post-Acute and Long-Term Care Medicine. Published by Elsevier Inc. All rights reserved.

Title: Effects of a six-week Pilates intervention on balance and fear of falling in women aged over 65 with chronic low-back pain: A randomized controlled trial.

Citation: Maturitas, Dec 2015, vol. 82, no. 4, p. 371-376 (December 2015)

Author(s): Cruz-Díaz, David, Martínez-Amat, Antonio, De la Torre-Cruz, Manuel J, Casuso, Rafael A,

Abstract: The purpose of our study was to evaluate the effects of six weeks of Pilates regarding functional balance, fear of falling and pain in community living women older than 65 years old with chronic low-back pain. A single blind controlled randomized trial of six weeks of Pilates in addition to physiotherapy treatment (n=50) vs. physiotherapy treatment alone (n=47) was conducted on 97 community living women (71.14±3.30 years) with chronic low-back pain (CLBP). Main outcome measures were fear of falling (FoF), assessed by the Falls Efficacy Scale-international; functional mobility and balance, measured with the Timed up and Go Test; and pain, evaluated using the numeric rating scale. Only the Pilates group showed improvement in FoF (ES; d=.68) and functional mobility and balance (ES; d=1.12) after treatment, and also had better results in pain (ES; d=1.46) than the physiotherapy-only group. Six weeks of Pilates exercises may be effective in fall prevention through the improvement of FoF, functional balance, and pain in Spanish women over 65 years old with CLBP. Copyright © 2015 Elsevier Ireland Ltd. All rights reserved.

Title: Identification of Fall Prevention Strategies for the Military: A Review of the Literature.

Citation: Military medicine, Dec 2015, vol. 180, no. 12, p. 1225-1232 (December 2015)

Author(s): Canham-Chervak, Michelle, Cowan, David N, Pollack, Keshia M, Jackson, Rhonda R,
**Abstract:** In the U.S. Army, falls have historically been among the top five causes of hospitalization and a leading cause of nonbattle injuries in military operations overseas. For safety and public health professionals, commanders, and supervisors looking to address this problem, a literature review was conducted to identify and summarize existing fall prevention strategies applicable to a working-age population. A total of nine literature databases were searched for articles published from 1970 to 2011. Article titles and abstracts were screened to select original research with an injury or non-injury outcome. Intervention studies were reviewed in detail and quality scored by 3 public health scientists. The search identified over 2,200 articles. Of these, 525 met inclusion criteria and were reviewed in more detail, resulting in identification of 9 interventions. Nearly all of the identified interventions had been implemented in occupational environments. Study quality was rated and scores ranged from 4.5 to 8.0 (maximum 10 points). Few intervention studies were identified. Multifaceted programs showed the greatest promise for translation to military environments. Additional evaluation research is greatly needed to further efforts to address this leading military public health problem. Reprint & Copyright © 2015 Association of Military Surgeons of the U.S.

**Title:** Staff-led innovations reduce falls in high-acuity patients.

**Citation:** Nursing management, Dec 2015, vol. 46, no. 12, p. 20-25 (December 2015)

**Author(s):** Ward, Kathryn L, Roach, Patricia A, Wilk, Colette, Selden, Michelle M, Hurd, Jennifer

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**Title:** Rising above risk: Eliminating infant falls.

**Citation:** Nursing management, Dec 2015, vol. 46, no. 12, p. 28-32 (December 2015)

**Author(s):** Hodges, Kimberly T, Gilbert, Jason H

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**Title:** Comparative performance of current definitions of sarcopenia against the prospective incidence of falls among community-dwelling seniors age 65 and older.

**Citation:** Osteoporosis international : a journal established as result of cooperation between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the USA, Dec 2015, vol. 26, no. 12, p. 2793-2802 (December 2015)

**Author(s):** Bischoff-Ferrari, H A, Orav, J E, Kanis, J A, Rizzoli, R, Schögl, M, Staehelin, H B

**Abstract:** In this study, we compare the extent to which seven available definitions of sarcopenia and two related definitions predict the rate of falling. Our results suggest that the definitions of Baumgartner and Cruz-Jentoft best predict the rate of falls among sarcopenic versus non-sarcopenic community-dwelling seniors. The purpose of the study is to compare the extent to which seven available definitions of sarcopenia and two related definitions predict the prospective rate of falling. We studied a cohort of 445 seniors (mean age 71 years, 45 % men) living in the community who were followed with a detailed fall assessment for 3 years. For comparing the rate of falls in sarcopenic versus non-sarcopenic individuals, we used multivariate Poisson regression analyses adjusting for gender and treatment (original intervention tested vitamin D plus calcium against placebo). Of the seven available definitions, three were based on low lean mass alone (Baumgartner, Delmonico 1 and 2) and four required both low muscle mass and decreased
performance in a functional test (Fielding, Cruz-Jentoft, Morley, Muscaritoli). The two related definitions were based on low lean mass alone (Studenski 1) and low lean mass contributing to weakness (Studenski 2). Among 445 participants, 231 fell, sustaining 514 falls over the 3-year follow-up. The prospective rate of falls in sarcopenic versus non-sarcopenic individuals was best predicted by the Baumgartner definition based on low lean mass alone (RR = 1.54; 95 % CI 1.09-2.18) with 11 % prevalence of sarcopenia and the Cruz-Jentoft definition based on low lean mass plus decreased functional performance (RR = 1.82; 95 % CI 1.24-2.69) with 7.1 % prevalence of sarcopenia. Consistently, fall rate was non-significantly higher in sarcopenic versus non-sarcopenic individuals based on the definitions of Delmonico 1, Fielding, and Morley. Among the definitions investigated, the Baumgartner definition and the Cruz-Jentoft definition had the highest validity for predicting the rate of falls.

Title: The Association Between Weight Status and Pediatric Forearm Fractures Resulting From Ground-Level Falls.

Citation: Pediatric emergency care, Dec 2015, vol. 31, no. 12, p. 835-838 (December 2015)

Author(s): Ryan, Leticia Manning, Teach, Stephen J, Searcy, Kimberle, Singer, Steven A,

Abstract: The purpose of our study was to evaluate the hypothesis that pediatric forearm fractures resulting from ground-level falls are associated with increased weight status (weight for age/sex percentile ≥ 95th) in comparison with those resulting from major trauma. This is a retrospective case-control study nested within a case series of 929 children, ages 0 to 17 years, with self-identified residence in Washington, DC, who were treated for isolated forearm fractures in an urban, academic pediatric emergency department between 2003 and 2006. Multivariable logistic regression was performed to test for the association of weight status with mechanism of injury while controlling for sex, age, race/ethnicity, bone fractured, and season. Of 929 forearm fractures, there were 226 (24.3%) with ground-level falls and 54 (5.8%) with major trauma. Compared with children with forearm fractures resulting from major trauma, ground-level fall cases were significantly older (10.4 [3.4] vs 7.4 [4.2] years, P < 0.05), had greater adjusted odds of having a weight for age/sex of 95th percentile or higher (odds ratio, 2.7; 95% confidence interval, 1.2-6.5), and had significantly more radius-only fractures (odds ratio, 2.3; 95% confidence interval, 1.2-4.7). These groups did not differ in sex, race/ethnicity, or injury season. Ground-level falls are a common mechanism of pediatric forearm fracture and are significantly associated with increased weight status and radius-only fractures. These results suggest the need for further investigation into obesity and bone health in pediatric patients with forearm fractures caused by ground-level falls.

Title: Cost Effectiveness of Falls and Injury Prevention Strategies for Older Adults Living in Residential Aged Care Facilities.

Citation: PharmacoEconomics, Dec 2015, vol. 33, no. 12, p. 1301-1310 (December 2015)

Author(s): Church, Jody L, Haas, Marion R, Goodall, Stephen

Abstract: To evaluate the cost effectiveness of interventions designed to prevent falls and fall-related injuries among older people living in residential aged care facilities (RACFs) from an Australian health care perspective. A decision analytic Markov model was developed that stratified
individuals according to their risk of falling and accounted for the risk of injury following a fall. The effectiveness of the interventions was derived from two Cochrane reviews of randomized controlled trials for falls/fall-related injury prevention in RACFs. Interventions were considered effective if they reduced the risk of falling or reduced the risk of injury following a fall. The interventions that were modelled included vitamin D supplementation, annual medication review, multifactorial intervention (a combination of risk assessment, medication review, vision assessment and exercise) and hip protectors. The cost effectiveness was calculated as the incremental cost relative to the incremental benefit, in which the benefit was estimated using quality-adjusted life-years (QALYs). Uncertainty was explored using univariate and probabilistic sensitivity analysis. Vitamin D supplementation and medication review both dominated 'no intervention', as these interventions were both more effective and cost saving (because of healthcare costs avoided). Hip protectors are dominated (less effective and more costly) by vitamin D and medication review. The incremental cost-effectiveness ratio (ICER) for medication review relative to vitamin D supplementation is AU$2442 per QALY gained, and the ICER for multifactorial intervention relative to medication review is AU$1,112,500 per QALY gained. The model is most sensitive to the fear of falling and the cost of the interventions. The model suggests that vitamin D supplementation and medication review are cost-effective interventions that reduce falls, provide health benefits and reduce health care costs in older adults living in RACFs.

**Title:** Do measures of reactive balance control predict falls in people with stroke returning to the community?

**Citation:** Physiotherapy, Dec 2015, vol. 101, no. 4, p. 373-380 (December 2015)

**Author(s):** Mansfield, A, Wong, J S, McIlroy, W E, Biasin, L, Brunton, K, Bayley, M, Inness, E L

**Abstract:** To determine if reactive balance control measures predict falls after discharge from stroke rehabilitation. Prospective cohort study. Rehabilitation hospital and community. Independently ambulatory individuals with stroke who were discharged home after inpatient rehabilitation (n=95). Balance and gait measures were obtained from a clinical assessment at discharge from inpatient stroke rehabilitation. Measures of reactive balance control were obtained: (1) during quiet standing; (2) when walking; and (3) in response to large postural perturbations. Participants reported falls and activity levels up to 6 months post-discharge. Logistic and Poisson regressions were used to identify measures of reactive balance control that were related to falls post-discharge. Decreased paretic limb contribution to standing balance control [rate ratio 0.8, 95% confidence interval (CI) 0.7 to 1.0; P=0.011], reduced between-limb synchronisation of quiet standing balance control (rate ratio 0.9, 95% CI 0.8 to 0.9; P<0.0001), increased step length variability (rate ratio 1.4, 95% CI 1.2 to 1.7; P=0.0011) and inability to step with the blocked limb (rate ratio 1.2, 95% CI 1.0 to 1.3; P=0.013) were significantly associated with increased fall rates when controlling for age, stroke severity, functional balance and daily walking activity. Impaired reactive balance control in standing and walking predicted increased risk of falls post-discharge from stroke rehabilitation. Specifically, measures that revealed the capacity of both limbs to respond to instability were related to increased risk of falls. These results suggest that post-stroke rehabilitation strategies for falls prevention should train responses to instability, and focus on remediating dyscontrol in the more-affected limb. Copyright © 2015 Chartered Society of Physiotherapy. Published by Elsevier Ltd. All rights reserved.
Title: Examining Contextual Influences on Fall-Related Injuries Among Older Adults for Population Health Management.

Citation: Population health management, Dec 2015, vol. 18, no. 6, p. 437-448 (December 2015)

Author(s): Hoffman, Geoffrey J, Rodriguez, Hector P

Abstract: The objectives were to assess the associations between fall-related injuries (FRIs) treated in the emergency department (ED) among older adults in California and contextual county-level physical, social, and economic characteristics, and to assess how county-level economic conditions are associated with FRIs when controlling for other county-level factors. Data from 2008 California ED discharge, Medicare Impact File, and County Health Rankings were used. Random effects logistic regression models estimated contextual associations between county-level factors representing economic conditions, the built environment, community safety, access to care, and obesity with patient-level FRI treatment among 1,712,409 older adults, controlling for patient-level and hospital-level characteristics. Patient-level predictors of FRI treatment were consistent with previous studies not accounting for contextual associations. Larger and rural hospitals had higher odds of FRI treatment, while teaching and safety net hospitals had lower odds. Better county economic conditions were associated with greater odds (β=0.73, P=0.001) and higher county-level obesity were associated with lower odds (β=-0.37, P=0.004), but safer built environments (β=-0.31, P=0.38) were not associated with FRI treatment. The magnitude of association between county-level economic conditions and FRI treatment attenuated with the inclusion of county-level obesity rates. FRI treatment was most strongly and consistently related to more favorable county economic conditions, suggesting differences in treatment or preferences for treatment for FRIs among older individuals in communities of varying resource levels. Using population health data on FRIs, policy makers may be able to remove barriers unique to local contexts when implementing falls prevention educational programs and built environment modifications. (Population Health Management 2015;18:437-448).

Title: Cohort study of institutionalized elderly people: fall risk factors from the nursing diagnosis.

Citation: Revista latino-americana de enfermagem, Dec 2015, vol. 23, no. 6, p. 1130-1138

Author(s): Reis, Karine Marques Costa Dos, Jesus, Cristine Alves Costa de

Abstract: to determine the incidence of falls in elderly residents of long-stay institutions of the Federal District, to identify the aspects involved in the falls, in terms of risk factors, from the application of scales and the Taxonomy II of NANDA-I, and to define the level of accuracy with its sensitivity and specificity for application in the clinical nursing practice. this was a cohort study with the evaluation of 271 elderly people. Cognition, functionality, mobility and other intrinsic factors were evaluated. After six months, the elderly people who fell were identified, with significance analysis then performed to define the risk factors. the results showed an incidence of 41%. Of the 271 patients included, 69 suffered 111 episodes of falls during the monitoring period. Risk factors were the presence of stroke with its sequelae (OR: 1.82, 95% CI 1.01 - 3.28, p=.045), presenting more than five chronic diseases (OR: 2.82, 95% CI 1.43 - 5.56, p=.0028), foot problem (OR: 2.45, 95% CI 1.35 - 4.44, p=.0033) and motion (OR: 2.04, 95% CI 1.15 - 3.61, p=.0145). the taxonomy has high validity regarding the detection of elderly people at risk of falling and should be applied consistently in the clinical nursing practice.
Title: Connection between competence, usability, environment and risk of falls in elderly adults.

Citation: Revista latino-americana de enfermagem, Dec 2015, vol. 23, no. 6, p. 1139-1148

Author(s): Leiva-Caro, José Alex, Salazar-González, Bertha Cecilia, Gallegos-Cabriales,

Abstract: to determine connections between competence, usability, environment and risk of falls in elderly adults. correlational descriptive study, 123 elderly adults, both male and female, aged 70 years and older were included. Data was collected via the Tinetti Scale, CESD-7 Scale, Montreal Cognitive Assessment, Usability Questionnaire on Housing and Housing Enabler; and sociodemographic and health background certificate data. For data analysis, descriptive and inferential statistics were used, multivariate linear and logistic regression models were adjusted. 42.0% of the elderly adults had presented with falls, with a higher prevalence in women, and in the group of 70-75 years. The physical environment of the house, gait, and usability were set as risk factors for falls. A negative relationship between usability and depressive symptoms, cognitive health, balance, gait, the social and physical environment was found, p <0.05; and a strong positive correlation between walking and balance, p <0.05. this study helps to better understand the phenomenon of falling, to find a connection between usability with the risk of falls, and other variables.

Title: Comminuted C2 Articular Pillar Fracture in a Patient With Multiple Sclerosis and Recurrent Falls.

Citation: The Journal of orthopaedic and sports physical therapy, Dec 2015, vol. 45, no. 12, p. 1051

Author(s): Sault, Josiah D, Elliott, James M

Abstract: The patient was a 60-year-old woman, with long-standing balance deficits due to multiple sclerosis, referred to physical therapy by her primary care physician secondary to increasing fall frequency. Following evaluation, the physical therapist escorted the patient to her primary care physician's office, where a computed tomography scan was immediately performed, revealing a comminuted C2 articular pillar fracture. J Orthop Sports Phys Ther 2015;45(12):1051. doi:10.2519/jospt.2015.0412.

Title: Geriatric trauma G-60 falls with hip fractures: A pilot study of acute pain management using femoral nerve fascia iliaca blocks.

Citation: The journal of trauma and acute care surgery, Dec 2015, vol. 79, no. 6, p. 1067-1072

Author(s): Mangram, Alicia J, Oguntodu, Olakunle F, Hollingworth, Alexandra K, Prokuski, Laura,

Abstract: Hip fractures due to falls cause significant morbidity and mortality among geriatric patients. A significant unmet need is an optimal pain management strategy. Consequently, patients are treated with standard analgesic care (SAC) regimens, which deliver high narcotic doses. However, narcotics are associated with delirium as well as gastrointestinal and respiratory failure risks. The purpose of this pilot study was to determine the safety and effectiveness of ultrasound-guided continuous compartmental fascia iliaca block (CFIB) in patients 60 years or
older with hip fractures in comparison with SAC alone. We performed a retrospective study of 108 patients 60 years or older, with acute pain secondary to hip fracture (2012-2013). Patient variables were age, sex, comorbidities, and Injury Severity Score (ISS). Primary outcome was pain scores; secondary outcomes included hospital length of stay, discharge disposition, morbidity, and mortality. Statistical analysis was performed using (IBM SPSS version 22). For group comparison (SAC vs. SAC + CFIB) median test, repeated-measures analysis and Student's t test of transformed pain scores were used. Sixty-four patients received SAC only, and 44 patients received SAC + CFIB. Each CFIB placement was successful on first attempt without complications. Median time from emergency department arrival to block placement was 12.5 hours (interquartile range, 4-22 hours). Patients who received SAC + CFIB had significantly lower pain score ratings than patients treated with SAC alone. There were no differences in inpatient morbidity and mortality rates. Patients treated with SAC + CFIB were discharged home more often (p < 0.05). Ultrasound-guided CFIB is safe, practical, and readily integrated into the G-60 service for improved pain management of hip fractures. We are now conducting a prospective randomized control trial to confirm our observations. Therapeutic study, level IV.

Title: Long-term Consequences of Noninjurious and Injurious Falls on Well-being in Older Women.

Citation: The journals of gerontology. Series A, Biological sciences and medical sciences, Dec 2015, vol. 70, no. 12, p. 1519-1525

Author(s): Peeters, G M E Geeske, Jones, Mark, Byles, Julie, Dobson, Annette J

Abstract: The physical and mental health consequences of falls are known to influence well-being in the short term. The aim was to investigate the long-term consequences of noninjurious and injurious falls on well-being in older women over 12 years. A total of 10,277 participants (aged 73-78 years, 98.8% community-dwelling) returned the 1999 survey of the Australian Longitudinal Study on Women’s Health. Follow-up surveys were completed at 3-year intervals. Surveys included questions about falls and related injuries in the past year. Scores on the health-related quality of life Short Form-36 subscales (range 0-100) were used to compare well-being between noninjurious fallers, injurious fallers, and nonfallers using linear mixed modeling with adjustment for confounders. Scores in the years before and after the first fall since enrolment were graphically depicted with time relative to the first fall since enrolment. For this purpose, nonfallers were matched with noninjurious and injurious fallers based on pattern of surveys returned, chronic conditions, and age to assign them a fictitious "time-of-first-fall." Over 12 years, there were 22.5% noninjurious fallers, 30.1% injurious fallers, and 47.5% nonfallers. Compared with nonfallers, noninjurious and injurious fallers scored significantly lower on six and seven of the eight domains at the time of the reported fall, respectively. Significant differences were apparent 12 years before the injurious fall for the subscales role physical, bodily pain, and general health. A drop in scores after the reported injurious fall was seen for role physical, bodily pain, and social functioning. Among older women, a gap in well-being emerges years before the first reported fall, which may be driven by underlying risk factors rather than the fall itself.

Title: Antihypertensive Use and Recurrent Falls in Community-Dwelling Older Adults: Findings From the Health ABC Study.

Citation: The journals of gerontology. Series A, Biological sciences and medical sciences, Dec 2015, vol. 70, no. 12, p. 1562-1568
Author(s): Marcum, Zachary A, Perera, Subashan, Newman, Anne B, Thorpe, Joshua M,

Abstract: Despite wide-spread use of antihypertensives in older adults, the literature is unclear about their association with incident recurrent falls over time. Health, Aging and Body Composition study participants (n = 2,948) who were well functioning at baseline (1997) were followed to Year 7 (2004). The main outcome was recurrent falls (≥2) in the ensuing 12 months. Antihypertensive use was examined as: (a) any versus none, (b) long- versus short-term (≥2 vs <2 years), and by (c) summated standardized daily dose (SDD; 1 = maximum recommended daily dose for one antihypertensive), and (d) subclass. Controlling for potential demographic, health status/behavior and access to care confounders, we found no increase in risk of recurrent falls in antihypertensive users compared to nonusers (adjusted odds ratio [AOR] = 1.13; 95% CI = 0.88-1.46), or those taking higher SDDs or for longer durations. Only those using a loop diuretic were found to have a modest increased risk of recurrent falls (AOR = 1.50; 95% CI = 1.11-2.03). Antihypertensive use overall was not statistically significantly associated with recurrent falls after adjusting for important confounders. Loop diuretic use may be associated with recurrent falls and needs further study.

Title: Orthopedic Injuries: Protocols to Prevent and Manage Patient Falls.

Citation: The Nursing clinics of North America, Dec 2015, vol. 50, no. 4, p. 645-661

Author(s): Parsons, Lynn C, Revell, Maria A

Abstract: Health care organizations must adopt a culture of safety and implement effective fall prevention protocols. The teach-back method is a useful strategy for health providers to determine patient understanding of information taught to maintain a safe environment and prevent falls. Purposeful rounding is a proactive approach to ensure that patient assessments are accurate and research supports that patients use the call light less when nurses participate in hourly rounding. This article provides the reader with evidence-based fall prevention interventions, tips for using the teach-back method, and fall prevention tools to safely care for patients of all ages. Published by Elsevier Inc.

Title: Encapsulated lumbar hematoma after fall from standing height.

Citation: The spine journal : official journal of the North American Spine Society, Dec 2015, vol. 15, no. 12, p. e11.

Author(s): Choy, Winward, Kesavabhotla, Kartik, Dahdaleh, Nader S, Smith, Zachary A
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OpenAthens is a way of authenticating that you have permission to access our subscription e-resources. To access our electronic resources you will need a UH Bristol Athens username/password.

How can I get an Athens login?
Click here to complete the online registration form. You will need to register using a Trust PC and a UH Bristol email address. Once you have successfully completed the form, you will be sent an email to your UH Bristol account with an authentication link.

I have an Athens account from another Trust/University. Do I still need a UH Bristol account?
You will need a UH Bristol account to access our local subscription resources. You can either update the settings of your existing account by logging in and selecting 'change organisation', or you can set up a new UH Bristol account by clicking here (you will need to register using a Trust PC and a UH Bristol email address).

My Athens account has expired. What should I do?
You can register for a new account here.

I have forgotten my Athens Username / Password. How can I reset it?
Password: If you are on a Trust PC, follow the link to https://register.athensams.net/nhs/forgotten_password.php.

Username and password: You should email athens.sdhct@nhs.net with your full name, full work address, work telephone number and the email address you used to register for the account. In the email subject line put 'Forgotten username and password'. It may take up to five working days to receive your username and a reset password.
Library Opening Times

Staffed hours: 8am-5pm, Mon-Fri

Swipe-card access: 7am-11pm 7 days a week

Level 5, Education and Research Centre
University Hospitals Bristol

Contact your outreach librarian:

Jo Hooper, outreach librarian

library@uhbristol.nhs.uk Ext. 20103