

Falls

Current Awareness Newsletter Quarterly



Summer 2016

Respecting everyone
Embracing change
Recognising success
Working together
Our hospitals.



Training Calendar 2016

All sessions are 1 hour

Literature Searching

An in-depth guide to formulating an effective search strategy and getting the most out of searching key healthcare databases.

Critical Appraisal

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'.

August (12pm)

Tue 2nd **Critical Appraisal**
Wed 10th **Statistics**
Thurs 18th **Information resources**
Fri 26th **Literature Searching**

September (1pm)

Fri 2nd **Critical Appraisal**
Mon 5th **Statistics**
Tue 18th **Information resources**
Wed 21st **Literature Searching**
Thurs 29th **Critical Appraisal**

October (12pm)

Fri 7th **Statistics**
Mon 10th **Information resources**
Tue 18th **Literature Searching**
Wed 26th **Critical Appraisal**

November (1pm)

Thurs 3rd **Statistics**
Fri 11th **Information resources**
Mon 14th **Literature Searching**
Tues 22nd **Critical Appraisal**
Wed 30th **Statistics**

December (12pm)

Thurs 8th **Information resources**
Fri 16th **Literature Searching**
Mon 20th **Critical Appraisal**

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Your Friendly Local Librarian...

Whatever your information needs, the library is here to help. As your outreach librarian I offer **literature searching services** as well as training and guidance in **searching the evidence** and **critical appraisal** – just email me at library@uhbristol.nhs.uk

OUTREACH: Your Outreach Librarian can help facilitate evidence-based practise for all in the falls team, as well as assisting with academic study and research. We can help with **literature searching, obtaining journal articles and books**, and setting up individual **current awareness alerts**. We also offer one-to-one or small group training in **literature searching, accessing electronic journals, and critical appraisal**. Get in touch: library@uhbristol.nhs.uk

LITERATURE SEARCHING: We provide a literature searching service for any library member. For those embarking on their own research it is advisable to book some time with one of the librarians for a 1 to 1 session where we can guide you through the process of creating a well-focused literature research and introduce you to the health databases access via NHS Evidence. Please email requests to library@uhbristol.nhs.uk

New Activity in Up-to-Date

Falls in older persons: Risk factors and patient evaluation

Author: Douglas P Kiel, MD, MPH

Literature review current through: Jun 2016. | **This topic last updated:** Jun 01, 2016

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 healthcare 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.

Falls: Prevention in community-dwelling older persons

Author: Douglas P Kiel, MD, MPH

Literature review current through: Jun 2016. | **This topic last updated:** May 12, 2016.

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New from the Cochrane Library

[Multifactorial and multiple component interventions for preventing falls in older people living in the community](#)

Authors: Sally Hopewell, Olubusola Adedire, Bethan J Copsey, Catherine Sherrington, Lindy M Clemson, Jacqueline CT Close, Sarah E Lamb

First published: 6 June 2016

Editorial Group: [Cochrane Bone, Joint and Muscle Trauma Group](#)

Abstract: This is the protocol for a review and there is no abstract. The objectives are as follows: To assess the effects (benefits and harms) of multifactorial interventions and multiple component interventions for preventing falls in older people living in the community.

New from NICE

[QTUG for assessing falls risk and frailty](#)

NICE advice [MIB73] Published date: July 2016

Summary

- The **technology** described in this briefing is the Quantitative Timed Up and Go (QTUG). It uses body-worn sensors and a mobile software app to assess mobility, falls risk and frailty. It is used during the standard Timed Up and Go (TUG) test.
- The **innovative aspects** are that QTUG uses proprietary algorithms to give an objective assessment of falls and frailty risk using average values for age and gender and statistical models. QTUG can be used by non-specialists and is wireless and portable.
- The intended **place in therapy** for QTUG would be as an alternative to the standard TUG test. QTUG is intended to be used to assess mobility, falls risk or frailty in people needing a mobility assessment, including older people, those with disabilities affecting gait and mobility, and those with chronic neurological conditions.
- The **key points from the evidence** summarised in this briefing are from 2 observational studies on QTUG. These studies involved a total of 841 community-dwelling adults 60 years and over who could walk unaided. The studies both suggest that the accuracy of falls risk assessment is greatest when QTUG is combined with clinical risk factor assessment, when compared to either QTUG alone or clinical risk factor assessment alone. The evidence also suggests that the assessment of frailty is most accurate using a TUG test with inertial sensors, such as QTUG. Both studies had methodological limitations.
- **Key uncertainties** exist around the ability of QTUG to assess frailty as there is a lack of evidence to support this function of the device.
- The indicative **costs** for the QTUG hardware (including a hand held tablet computer and 2 inertial sensors) is £675 excluding VAT and for the annual software licence fee is £1,500 excluding VAT.



To access electronic resources you need an NHS Athens username and password

To register, click on the link:

<https://openathens.nice.org.uk/>

You need to register using an NHS PC and an NHS email address.

Registration is a quick, simple process, and will give you access to a huge range of online subscription resources, including:

UpToDate

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E-journals

E-books

For more information or help with setting up your Athens account, email:

joanna.hooper@uhbristol.nhs.uk

Current Awareness Database Articles on Falls

Below is a selection of articles related to orthopaedics recently added to the healthcare databases, grouped in the following categories:

If you would like any of the following articles in full text, or if you would like a more focused search on your own topic, then get in touch: library@uhbristol.nhs.uk

Title: Fear of falling as a risk factor of mobility disability in older people at five diverse sites of the IMIAS study.

Citation: Archives of Gerontology & Geriatrics, 2016, vol./is. 66/(147-153)

Author(s): Auais, Mohammad, Alvarado, Beatriz E., Curcio, Carmen-Lucia, Garcia, Angeles,

Title: Serious conditions for ED elderly fall patients: a secondary analysis of the Basel Non-Specific Complaints study.

Citation: American Journal of Emergency Medicine, 2016, vol./is. 34/8(1394-1399), 07356757

Author(s): Liu, Shan W., Sri-On, Jiraporn, Tirrell, Gregory Philip, Nickel, Christian, Bingisser, Roland

Abstract: Objective: Falls among older adults are a public health problem and are multifactorial. We sought to determine whether falls predict more serious conditions in older adult patients presenting to the emergency department (ED) with a "nonspecific complaint" (NSC). A secondary objective was to examine what factors predicted serious conditions among older adult patients with a fall. Methods: This study was a secondary analysis of a prospective delayed-type cross-sectional diagnostic study that included a 30-day follow-up. We included patients 65 years and older who presented to the ED from May 2007 and July 2011 with a NSC and had an Emergency Severity Index score of 2 or 3. We then compared the serious conditions among older adults who presented to the ED with a fall with those who did not fall in a cohort of patients with NSC. Results: We had 1111 patients enrolled in our study; 518 (47%) of them had fallen. We found that 310 (60%) of elderly fall patients vs 349 (59%) of nonfall patients had a 30-day serious condition (P=.74). In multiple logistic regression analysis, falls did not predict serious conditions or 30-day mortality among all NSC patients. Among fall patients, male sex, diuretic use, and generalized weakness predicted serious conditions. Conclusion: Fall patients share many features with nonfall NSC patient. However, falls did not increase the risk of serious conditions. Falls in the elderly could be considered under the broader entity of NSC.

Title: Preoperative Falls and Their Association with Functional Dependence and Quality of Life.

Citation: Anesthesiology, 2016, vol./is. 125/2(322-332)

Author(s): Kronzer, Vanessa L., Tang, Rose D., Schelble, Allison P., Abdallah, Arbi Ben, Wildes, Troy

Abstract: Background: No study has rigorously explored the characteristics of surgical patients with recent preoperative falls. Our objective was to describe the essential features of preoperative falls and determine whether they are associated with preoperative functional dependence and poor quality of life. Methods: This was an observational study involving 15,060 surveys from adult patients undergoing elective surgery. The surveys were collected between January 2014 and August 2015, with a response rate of 92%. Results: In the 6 months before surgery, 26% (99% CI, 25 to 27%) of patients fell at least once, and 12% (99% CI, 11 to 13%) fell at least twice. The proportion of patients who fell was highest among patients presenting for neurosurgery (41%; 99% CI, 36 to 45%). At least one fall-related injury occurred in 58% (99% CI, 56 to 60%) of those who fell. Falls were common in all age groups, but surprisingly, they did not increase monotonically with age. Middle-aged patients (45 to 64 yr) had the highest proportion of fallers (28%), recurrent fallers (13%), and severe fall-related injuries (27%) compared to younger (18 to 44 yr) and older (65+ yr) patients ($P < 0.001$ for each). A fall within 6 months was independently associated with preoperative functional dependence (odds ratio, 1.94; 99% CI, 1.68 to 2.24) and poor physical quality of life (odds ratio, 2.18; 99% CI, 1.88 to 2.52). Conclusions: Preoperative falls might be common and are possibly often injurious in the presurgical population, across all ages. A history of falls could enhance the assessment of preoperative functional dependence and quality of life.

Title: Symptoms of Knee Instability as Risk Factors for Recurrent Falls.

Citation: Arthritis Care & Research, 2016, vol./is. 68/8(1089-1097)

Author(s): Nevitt, Michael C., Tolstykh, Irina, Shakoor, Najia, Nguyen, Uyen-Sa D. T., Segal, Neil A.,

Abstract: Objective: Whether knee instability contributes to the increased risk of falls and fractures observed in persons with knee osteoarthritis (OA) has not been studied. We examined the association of knee buckling with the risk of falling and fall-related consequences in older adults with, or at high risk for, knee OA. Methods: At the 60-month visit of the Multicenter Osteoarthritis Study, men and women ages 55-84 years were asked about knee buckling in the past 3 months and whether they fell when a knee buckled. Falls and fall-related injuries in the past 12 months and balance confidence were assessed at 60 and 84 months. Multivariate logistic regression was used to assess the association of knee buckling with falls and their consequences. Results: A total of 1,842 subjects (59% women, mean \pm SD age 66.9 ± 7.8 years, and body mass index 30.3 ± 5.7) were included. At 60 months 16.8% reported buckling and at 84 months 14.1% had recurrent (≥ 2) falls. Bucklers at 60 months had a 1.6- to 2.5-fold greater odds of recurrent falls, fear of falling, and poor balance confidence at 84 months. Those who fell when a knee buckled at baseline had a 4.5-fold, 2-fold, and 3-fold increased odds 2 years later of recurrent falls, significant fall injuries, and fall injuries that limited activity, respectively, and were 4 times more likely to have poor balance confidence. Conclusion: Interventions that reduce knee buckling may help prevent falls, fall-related injuries, and adverse psychological consequences of falls in persons with knee OA.

Title: Antidepressant use and recurrent falls in the elderly.

Citation: Brown University Psychopharmacology Update, 2016, vol./is. 27/8(2-3)

Author(s): Lam, Y. W. Francis

Title: Continuous Monitoring of Turning Mobility and Its Association to Falls and Cognitive Function: A Pilot Study.

Citation: Journals of Gerontology Series A: Biological Sciences & Medical Sciences, 2016, vol./is. 71/8(1102-1108)

Author(s): Mancini, Martina, Schlueter, Heather, El-Gohary, Mahmoud, Mattek, Nora, Duncan, Colette, Kaye, Jeffrey, Horak, Fay B.

Abstract: Background: Difficulty turning is a major contributor to mobility disability, falls, and reduced quality of life in older people because it requires dynamic balance control that worsens with age. However, no study has quantified the quality and quantity of turning during normal daily activities in older people. The objective of this pilot study was to determine if quality of turning during daily activities is associated with falls and/or cognitive function. Methods: Thirty-five elderly participants (85 ± 8 years) wore three Opal inertial sensors. Turning and activity rate were measured. Based on retrospective falls, participants were grouped into nonfallers ($N = 16$), single fallers ($N = 12$), and recurrent fallers ($N = 7$). We also determined which turning characteristic predicted falls in the 6 months following the week of monitoring. Results: Quality of turning was significantly compromised in recurrent fallers compared with nonfallers ($p < .05$). In contrast, activity rate and mean number of turns per hour were similar across the three groups. Also, quality of turning during a prescribed test was similar across the three groups. Visuospatial and memory functions and the Tinetti Balance Scores were associated with quality of turning. Future falls were related to an increased variability of number of steps to turn. Conclusions: Continuous monitoring of turning characteristics, while walking during daily activities, is feasible in older people. Turning characteristics during daily life appear to be more sensitive to fall risk than prescribed turning tasks. These findings suggest a slower, less variable, cautious turning strategy in elderly volunteers with a history of falls.

Title: Falls risk assessment in older patients in hospital.

Citation: Nursing Standard, 2016, vol./is. 30/48(53-61)

Author(s): Matarese, Maria, Ivziku, Dhurata

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

Citation: Annals of Pharmacotherapy, 2016, vol./is. 50/7(525-533), 10600280

Author(s): Marcum, Zachary A., Perera, Subashan, Thorpe, Joshua M., Switzer, Galen E.

Abstract: Background: Few studies have compared the risk of recurrent falls across various antidepressant agents-using detailed dosage and duration data-among community-dwelling older adults, including those who have a history of a fall/fracture. Objective: To examine the association of antidepressant use with recurrent falls, including among those with a history of falls/fractures, in community-dwelling elders. Methods: This was a longitudinal analysis of 2948 participants with data collected via interview at year 1 from the Health, Aging and Body Composition study and followed through year 7 (1997-2004). Any antidepressant medication use was self-reported at years 1, 2, 3, 5, and 6 and further categorized as (1) selective serotonin reuptake inhibitors (SSRIs), (2) tricyclic antidepressants, and (3) others. Dosage and duration were examined. The outcome was recurrent falls (≥ 2) in the ensuing 12-month period following each medication data

collection. Results: Using multivariable generalized estimating equations models, we observed a 48% greater likelihood of recurrent falls in antidepressant users compared with nonusers (adjusted odds ratio [AOR] = 1.48; 95% CI = 1.12-1.96). Increased likelihood was also found among those taking SSRIs (AOR = 1.62; 95% CI = 1.15-2.28), with short duration of use (AOR = 1.47; 95% CI = 1.04-2.00), and taking moderate dosages (AOR = 1.59; 95% CI = 1.15-2.18), all compared with no antidepressant use. Stratified analysis revealed an increased likelihood among users with a baseline history of falls/fractures compared with nonusers (AOR = 1.83; 95% CI = 1.28-2.63). Conclusion: Antidepressant use overall, SSRI use, short duration of use, and moderate dosage were associated with recurrent falls. Those with a history of falls/fractures also had an increased likelihood of recurrent falls.

Title: Barriers to and promoters of screening for falls in elderly community-dwelling patients by general practitioners: a large cross-sectional survey in two areas of France.

Citation: Archives of Gerontology & Geriatrics, 2016, vol./is. 65/(85-91),

Author(s): Gaboreau, Yoann, Imbert, Patrick, Jacquet, Jean-Pierre, Royer De Vericourt, Guillaume, Couturier, Pascal, Gavazzi, Gaëtan

Title: Phenotype of sarcopenic obesity in older individuals with a history of falling.

Citation: Archives of Gerontology & Geriatrics, 2016, vol./is. 65/(255-259)

Author(s): Huo, Ya Ruth, Suriyaarachchi, Pushpa, Gomez, Fernando, Curcio, Carmen L.,

Title: Daytime sleepiness is independently associated with falls in older adults with dementia.

Citation: Geriatrics & Gerontology International, 2016, vol./is. 16/7(850-855)

Author(s): Chen, Pin-Yuan, Chiu, Hsiao-Ting, Chiu, Hsiao-Yean

Title: Activity, balance, learning, and exposure (ABLE): a new intervention for fear of falling.

Citation: International Journal of Geriatric Psychiatry, 2016, vol./is. 31/7(791-798), 08856230

Author(s): Wetherell, Julie Loebach, Johnson, Kristen, Chang, Douglas, Ward, Samuel R., Bower, Emily S., Merz, Caroline, Petkus, Andrew J.

Abstract: Objective: Fear of falling is an important problem among older adults, even those with relatively low rates of objective fall risk, who are often overlooked as targets for intervention. Method: We developed and pilot tested a new intervention, Activity, Balance, Learning, and Exposure (ABLE), in a sample of 10 older adults with excessive fear of falling. The ABLE intervention integrates exposure therapy and cognitive restructuring with a home safety evaluation and an exercise program and is conducted in the home. In this pilot project, ABLE was jointly conducted by a physical therapist and a psychologist with expertise in geriatric anxiety disorders. Results: The intervention was feasible and acceptable and resulted in decreases in fear and activity avoidance for most participants. One participant experienced an injurious fall. Discussion: We learned a number of important lessons resulting in modifications to the inclusion criteria, assessments, and intervention over the course of this pilot study. Results suggest

that ABLE has promise for treating excessive fear of falling in the elderly and support testing the intervention in a larger randomized trial.

Title: Prevention of fall-related injuries in the elderly: An Eastern Association for the Surgery of Trauma practice management guideline.

Citation: Journal of Trauma & Acute Care Surgery, 2016, vol./is. 81/1(196-206), 21630755

Author(s): Crandall, Marie, Duncan, Thomas, Mallat, Ali, Greene, Wendy, Violano, Pina,

Abstract: Background: Fall-related injuries among the elderly (age 65 and older) are the cause of nearly 750,000 hospitalizations and 25,000 deaths per year in the United States, yet prevention research is lagging. Using the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) methodology, the Eastern Association for the Surgery of Trauma produced this practice management guideline to answer the following injury prevention-related population, intervention, comparator, outcomes (PICO) questions: PICO 1: Should bone mineral-enhancing agents be used to prevent fall-related injuries in the elderly? PICO 2: Should hip protectors be used to prevent fall-related injuries in the elderly? PICO 3: Should exercise programs be used to prevent fall-related injuries in the elderly? PICO 4: Should physical environment modifications be used to prevent fall-related injuries in the elderly? PICO 5: Should risk factor screening be used to prevent fall-related injuries in the elderly? PICO 6: Should multiple interventions tailored to the population or individual be used to prevent fall-related injuries in the elderly? Methods: A comprehensive search and review of all the available literature was performed. We used the GRADE methodology to assess the breadth and quality of the data specific to our PICO questions. Results: We reviewed 50 articles that met our inclusion and exclusion criteria as they applied to our PICO questions. Conclusion: Given the data constraints, we offer the following suggestions and recommendations: PICO 1: We conditionally recommend vitamin D and calcium supplementation for frail elderly individuals. PICO 2: We conditionally recommend hip protectors for frail elderly individuals, in the appropriate environment. PICO 3: We conditionally recommend evidence-based exercise programs for frail elderly individuals. PICO 4: We conditionally recommend physical environment modification for frail elderly people. PICO 5: We conditionally recommend frailty screening for the elderly. PICO 6: We strongly recommend risk stratification with targeted comprehensive risk-reduction strategies tailored to particular high-risk groups. Level Of Evidence: Systematic review, level III.

Title: Are older adults receiving evidence-based advice to prevent falls post-discharge from hospital?

Citation: Health Education Journal, 2016, vol./is. 75/4(448-463), 00178969

Author(s): Lee, Den-Ching A., Brown, Ted, Stolwyk, Rene, O'Connor, Daniel W., Haines, Terry P.

Title: Functional ability and health status of community-dwelling late age elderly people with and without a history of falls.

Citation: Hong Kong Physiotherapy Journal, 2016, vol./is. 34/1(1-9),

Author(s): Thiwabhom Thaweewannakij, Patcharawan Suwannarat, Lugkana Mato,

Title: Anxiety symptoms during hospitalization of elderly are associated with increased risk of post-discharge falls.

Citation: International Psychogeriatrics, 2016, vol./is. 28/6(951-958), 10416102

Author(s): Agmon, Maayan, Zisberg, Anna, Tonkikh, Orly, Sinoff, Gary, Shadmi, Efrat

Abstract: Background: The aim of this study was to test the association between anxiety at the time of hospitalization and falls occurring within one month of discharge, and to offer potential mechanisms for this association. Methods: One-month, prospective cohort study of 556 older adults in two medical centers in Israel. Anxiety and functional decline were assessed during hospitalization and falls were assessed one month post-discharge. Results: A total of 72 (12.9%) participants reported at least one fall during the 30-day post-discharge period. Controlling for demographics, functional decline and pre-morbid functional status, the odds of falls between discharge, and 1-month follow-up were almost twice as high among patients with anxiety symptoms (OR = 1.89, 95% CI: 1.04-3.48) compared with those who screened negative for anxiety. After accounting for in-hospital functional decline, the relationship between anxiety symptoms and falls decreased by 11% (from OR = 2.13 to 1.89), indicating that the relationship between anxiety and falls was partially mediated by functional decline during hospitalization. Conclusions: Anxiety at time of hospitalization is associated with falls 30-days post-discharge, controlling for several well-known confounders. This relationship is partially mediated by functional decline. Identifying patients with anxiety for inclusion in targeted rehabilitation interventions may be an important component of fall prevention strategies.

Title: Association of Hearing Impairment With Incident Frailty and Falls in Older Adults.

Citation: Journal of Aging & Health, 2016, vol./is. 28/4(644-660),

Author(s): Kamil, Rebecca J., Betz, Joshua, Powers, Becky Brott, Pratt, Sheila, Kritchevsky, Stephen,

Title: Associations of Computed Tomography-Based Trunk Muscle Size and Density With Balance and Falls in Older Adults.

Citation: Journals of Gerontology Series A: Biological Sciences & Medical Sciences, 2016, vol./is. 71/6(811-816)

Author(s): Anderson, Dennis E., Quinn, Emily, Parker, Emily, Allaire, Brett T., Muir, Jesse W.

Abstract: Background: Deficits in balance and muscle function are important risk factors for falls in older adults. Aging is associated with significant declines in muscle size and density, but associations of trunk muscle size and density with balance and falls in older adults have not been previously examined. Methods: Trunk muscle size (cross-sectional area) and attenuation (a measure of tissue density) were measured in computed tomography scans (at the L2 lumbar level) in a cohort of older adults (mean \pm SD age of 81.9 \pm 6.4) residing in independent living communities. Outcome measures were postural sway measured during quiet standing and Short Physical Performance Battery (SPPB) at baseline, and falls reported by participants for up to 3 years after baseline measurements. Results: Higher muscle density was associated with reduced postural sway, particularly sway velocities, in both men and women, and better Short Physical Performance Battery score in women, but was not associated with falls. Larger muscle size was associated with increased postural sway in men and women and with increased likelihood of falling in men. Conclusions: The results suggest that balance depends more on muscle quality than on the

size of the muscle. The unexpected finding that larger muscle size was associated with increased postural sway and increased fall risk requires further investigation, but highlights the importance of factors besides muscle size in muscle function in older adults..

Title: Do subjective memory complaints predict falls, fractures and healthcare utilization? A two-year prospective study based on a cohort of older women recruited from primary care.

Citation: International Journal of Geriatric Psychiatry, Jul 2016, (Jul 18, 2016), 0885-6230 (Jul 18, 2016)

Author(s): Al-Sari, Usama A., Tobias, Jon H., Archer, Hilary, Clark, Emma M.

Abstract: Objective A proportion of older individuals report subjective memory complaints (SMCs), which can predict the development of cognitive impairment and dementia. Previous studies based on secondary care suggest that SMC is also associated with other adverse health consequences, including falls, fractures and increased healthcare utilization. In this study, we aimed to establish whether similar findings are observed in the wider population. Methods Prospective analysis of the Cohort for Skeletal Health in Bristol and Avon, a population-based cohort recruited from primary care, was carried out. Data were collected by self-completion questionnaire at baseline and 2 years. SMC was assessed at baseline. Fractures, measures of falls, mobility and healthcare utilization were assessed 2 years later. A random 5% subsample of data was validated against electronic general practitioner records. Logistic regression was used to identify independent associations, following adjustment for a range of confounders assessed at baseline. Results Data were available on 3184 women. Three hundred and fifty participants (11.0%) reported SMC. They were older (73.3 ± 4.5 vs 72.0 ± 4.2 years) and less mobile compared with those not reporting SMC. SMCs at baseline were associated with an increased risk of upper limb fractures over the following 2 years (OR 1.72, 95% CI 1.02–2.90). SMCs were also associated with an increased risk of falls (OR 1.83, 95% CI 1.41–2.38) and increased healthcare utilization (OR for hospital appointments 2.20, 95% CI 1.26–3.86). No association was observed with bone mineral density at any site. Conclusions Subjective memory complaints are important markers of adverse health outcomes and should prompt interventions to reduce fractures such as physiotherapy-led fall reduction programmes.

Title: A Kinect and inertial sensor-based system for the self-assessment of fall risk: A home-based study in older people.

Citation: Human-Computer Interaction, Jul 2016, vol. 31, no. 3-4, p. 261-293

Author(s): Ejupi, Andreas, Gschwind, Yves J., Valenzuela, Trinidad, Lord, Stephen R., Delbaere, Kim

Abstract: Falls remain an important problem in older people. There is strong evidence that falls can be prevented with appropriately designed intervention programs. To start a targeted fall prevention program, a first step is to identify those at high risk of falls. Sensor-based tests hold great promise for more frequent and accurate assessment of fall risk in clinical and home settings. The aims of this study were to (a) empirically examine the feasibility of the iStoppFalls (Information and communications technology-based System to Predict & Prevent Falls) assessment, a Kinect and inertial sensor-based test for regular and unsupervised fall risk assessments at home, (b) investigate the experience of older adults with this home-based self-assessment, and (c) make recommendations for future assessments. The iStoppFalls assessment system was installed into the homes of 62 community-living older people in Australia, Germany,

and Spain for the duration of 4 months. Participants were asked to perform at least 1 assessment each month. The system use and the user experience were evaluated. To our knowledge, these are the first results on the long-term use of an unsupervised directed routine fall risk assessment system at private homes. In total, 241 assessments were independently performed by the participants. Most participants felt positive about their experience and could see themselves continuing with the assessment on a regular basis. Through the analysis the user motivation, the design and selection of appropriate tests, the user feedback, the reliability and usability of the applied technology, the frequency and duration of the assessment and the safety and support aspects were identified as important characteristics of a home-based self-assessment. The findings demonstrate the feasibility of a sensor-based self-assessment for fall risk but also highlight that further work is necessary. Future research should consider the necessary design requirements identified by this study

Title: A longitudinal qualitative study of health care personnel's perceptions of simultaneous implementation of three risk assessment scales on falls, malnutrition and pressure ulcers.

Citation: Journal of Clinical Nursing, Jul 2016, vol. 25, no. 13-14, p. 1912-1922

Author(s): Skytt, Bernice, Engström, Maria, Mårtensson, Gunilla, Mamhidir, Anna-Greta

Abstract: Aims and objectives: In this study, the aim was to understand health care personnel's expectations and experiences of participating in an intervention aimed at the implementation of three assessment scales for fall injuries, malnutrition and pressure ulcers, and the performance of preventive measures in these areas over the period of 18 months. Background: Fall injuries, malnutrition and pressure ulcers among older people are challenging issues for caregivers at different levels in the health care system. Design: A descriptive design with a qualitative approach was used to follow health care personnel before, during and after implementation of a care prevention intervention. Methods: Twelve health care personnel with different professions at the hospital, primary care and municipal care levels participated in a preventive care introduction. Seminars were held at four occasions, with assignments to be completed between seminars. Lectures and group discussions were performed, and three risk assessment scales were introduced. The participants were interviewed before, during and after the introduction. Manifest and latent content analysis were used. Results: The main results are presented in the theme 'Patient needs are visualised through a gradually developed shared understanding' and in five categories. The work approach of performing three risk assessments simultaneously was perceived as positive and central to ensuring quality of care; it was not, however, perceived as unproblematic. Conclusion: The participants as well as health care team members showed a positive attitude towards and described the advantages of being given opportunities for shared understanding to improve patient safety and to provide structure for the provision of good care. Relevance to clinical practice: The managerial approach of listening to and acting on issues stressed by health care personnel is important to ensure ongoing and future improvement initiatives

Title: A decision model to predict the risk of the first fall onset

Citation: Experimental Gerontology, August 2016, vol./is. 81/(51-55)

Author(s): Deschamps T., Le Goff C.G., Berrut G., Cornu C., Mignardot J.-B.

Abstract: Background: Miscellaneous features from various domains are accepted to be associated with the risk of falling in the elderly. However, only few studies have focused on establishing clinical tools to predict the risk of the first fall onset. A model that would objectively and easily evaluate the risk of a first fall occurrence in the coming year still needs to be built. Objectives: We developed a model based on machine learning, which might help the medical staff predict the risk of the first fall onset in a one-year time window. Participants/measurements: Overall, 426 older adults who had never fallen were assessed on 73 variables, comprising medical, social and physical outcomes, at t0. Each fall was recorded at a prospective 1-year follow-up. A decision tree was built on a randomly selected training subset of the cohort (80% of the full-set) and validated on an independent test set. Results: 82 participants experienced a first fall during the follow-up. The machine learning process independently extracted 13 powerful parameters and built a model showing 89% of accuracy for the overall classification with 83%-82% of true positive fallers and 96%-61% of true negative non-fallers (training set vs. independent test set). Conclusion: This study provides a pilot tool that could easily help the gerontologists refine the evaluation of the risk of the first fall onset and prioritize the effective prevention strategies. The study also offers a transparent framework for future, related investigation that would validate the clinical relevance of the established model by independently testing its accuracy on larger cohort.

Title: Phenotype of sarcopenic obesity in older individuals with a history of falling

Citation: Archives of Gerontology and Geriatrics, July 2016, vol./is. 65/(255-259)

Author(s): Huo Y.R., Suriyaarachchi P., Gomez F., Curcio C.L., Boersma D., Gunawardene P.,

Abstract: Background: Although sarcopenic obesity is associated with disability in middle-aged community-dwelling individuals, the phenotype of sarcopenic obesity in people 65 and older, especially those with a history of falls, remain unknown. To fill this knowledge gap, the goal of this study was to obtain a comprehensive phenotype of sarcopenic obesity in this high-risk population. Methods: Cross-sectional study of 680 subjects (mean age = 79 +/- 9, 65% female) assessed between 2009 and 2013 at the Falls and Fractures Clinic, Nepean Hospital (Penrith, Australia). The assessment included a comprehensive examination, posturography, gait velocity, grip strength, bone densitometry and body composition by DXA, and blood tests for biochemical status. Patients were divided into four groups based on DXA and clinical criteria: 1) sarcopenic obese; 2) non-sarcopenic obese; 3) sarcopenic and; 4) non-sarcopenic/non-obese. The difference between groups was assessed by one-way ANOVA, chi-square analysis, and multivariable linear regression. Results: Sarcopenic obese subjects were older (81.1 +/- 7.3), mostly female and more likely to have lower bone mineral density, lower grip strength, slower gait velocity, and poor balance. Sarcopenic obese individuals also showed significantly higher parathyroid hormone and lower vitamin D. Conclusions: We identified a particular set of clinical and biochemical characteristics in our subgroup of sarcopenic obese older fallers. Identification of these particular characteristics in the clinical setting is essential in order to prevent poor outcomes in this high-risk population.

Title: Development of predictive models for the estimation of the probability of suffering fear of falling and other fall risk factors based on posturography parameters in community-dwelling older adults

Citation: International Journal of Industrial Ergonomics, July 2016, vol./is. 54/(131-138)

Author(s): Duenas L., Balasch i Bernat M., Mena del Horno S., Aguilar-Rodriguez M., Alcantara E.

Abstract: Falls pose an important problem for older adults. Balance training is one of the main prevention strategies, but there is a lack of objective measurement methods that would allow the effectiveness of the treatments employed to be assessed. This study aimed to analyse the relationship between posturographic parameters and risk factors associated with falling, including the fear of falling (FoF). Forty-one healthy community-dwelling older adults were surveyed on their perception of problems considered to be fall risk factors. Balance measurement with posturography was performed. The relationships between risk factors and falls and risk factors and posturography were analysed by means of cross-tabulation and logistic regression, respectively. Experimental results showed a significant relationship between some of the posturographic parameters and various fall risk factors. Stability limits were related to FoF, and results from the Romberg test with eyes closed with and without foam correlated with problems in kneeling/crouching. The results from the Romberg test with eyes closed and foam correlated with osteoarthritis. Equations were developed to estimate the probability of having such problems. In conclusion, posturography is useful for the estimation of fall risk conditions in relation to three important fall risk factors (FoF, osteoarthritis and problems in kneeling/crouching), and it could be used for targeting, training and studying progress after the use of different treatments. Relevance to industry: Posturography can be used as an assessment tool to analyse the effects of those treatments aimed at preventing falls. Furthermore, the equations derived from our results can be used along with posturographic variables to assess patient progress.

Title: Kinematic and behavioral analyses of protective stepping strategies and risk for falls among community living older adults

Citation: Clinical Biomechanics, July 2016, vol./is. 36/(74-82)

Author(s): Bair W.-N., Prettyman M.G., Beamer B.A., Rogers M.W.

Abstract: Background Protective stepping evoked by externally applied lateral perturbations reveals balance deficits underlying falls. However, a lack of comprehensive information about the control of different stepping strategies in relation to the magnitude of perturbation limits understanding of balance control in relation to age and fall status. The aim of this study was to investigate different protective stepping strategies and their kinematic and behavioral control characteristics in response to different magnitudes of lateral waist-pulls between older fallers and non-fallers. Methods Fifty-two community-dwelling older adults (16 fallers) reacted naturally to maintain balance in response to five magnitudes of lateral waist-pulls. The balance tolerance limit (BTL, waist-pull magnitude where protective steps transitioned from single to multiple steps), first step control characteristics (stepping frequency and counts, spatial-temporal kinematic, and trunk position at landing) of four naturally selected protective step types were compared between fallers and non-fallers at- and above-BTL. Findings Fallers took medial-steps most frequently while non-fallers most often took crossover-back-steps. Only non-fallers varied their step count and first step control parameters by step type at the instants of step initiation (onset time) and termination (trunk position), while both groups modulated step execution parameters (single stance duration and step length) by step type. Group differences were generally better demonstrated above-BTL. Interpretation Fallers primarily used a biomechanically less effective medial-stepping strategy that may be partially explained by reduced somato-sensation. Fallers did not modulate their step parameters by step type at first step initiation and termination, instances particularly vulnerable to instability, reflecting their limitations in balance control during protective stepping.

Title: Balance Disorders in the Elderly: Does Instability Increase over Time?

Citation: Annals of Otology, Rhinology and Laryngology, July 2016, vol./is. 125/7(550-558)

Author(s): Soto-Varela A., Rossi-Izquierdo M., Faraldo-Garcia A., Vaamonde-Sanchez-Andrade I.

Abstract: Objectives: To analyze the equilibrimetric differences between 2 populations of elderly patients (young elderly and very elderly) with instability induced solely by age. Methods: Cross-sectional study, with 2 study groups classified according to patient age (cut-points in twenty-fifth and seventy-fifth percentiles of the age of the sample). Population: 64 patients aged 65 years or more. Two groups of 32 subjects were established: group A (people 65 years of age or older but less than 72.6, twenty-fifth percentile) and group B (patients 82.5 years, seventh-fifth percentile, or older). Main analyzed variables: timed up-and-go test, sensory organization test of the computerized dynamic posturography, Dizziness Handicap Inventory (DHI), and Short Falls Efficacy Scale-International (FES-I) questionnaires. Student's t test or the Mann-Whitney test were used. Results: The older patients obtain poorer scores in the equilibrimetric tests but not in all of them. In the sensory organization test, the older patients make poorer use of visual and vestibular information; they also require more time and steps for the timed up-and-go. With regards to the questionnaires, fear of falling is greater (higher Short FES-I scores) but not subjective perception of disability (DHI scores without differences). Conclusions: There is a need to establish aged subgroups of elderly patients with instability, adapting therapeutic strategies.

Title: Medication use, falls, and fall-related worry in older adults in the United States

Citation: Consultant Pharmacist, July 2016, vol./is. 31/7(385-393), 0888-5109 (July 2016)

Author(s): Watanabe J.H.

Abstract: OBJECTIVE: To compare the prevalence of falls and fall-related concerns of medication users versus nonusers in U.S. seniors. DESIGN: Cross-sectional study. SETTING: The National Health and Aging Trends Study. PARTICIPANTS: U.S. nationally representative sample of Medicare beneficiaries in 2011. OUTCOMES: Comparing subjects who used medications with subjects who did not in the past month, the outcomes were percentages of subjects who experienced 1) a fall in the past month, 2) worry about falling in the past month, 3) being limited by this worry in the past month, 4) a fall in the past year. RESULTS: A greater percentage of medication users experienced falls and fall-related outcomes, compared with nonmedication users. Among medication users, 10.29% had a past month fall, compared with 5.42% of non-medication users; 27.69% of medication users worried in the past month about falling, compared with 9.15% of non-medication users; 40.96% of medication users were limited by this worry, compared with 21.21%; 22.82% of medication users had a fall in the past year, compared with 13.15% of nonmedication users. CONCLUSION: Seniors who use medications are more likely to fall and to be concerned about falling. Pharmacist involvement in fall prevention continues to be essential.

Title: Lower leg muscle density is independently associated with fall status in community-dwelling older adults

Citation: Osteoporosis International, July 2016, vol./is. 27/7(2231-2240)

Author(s): Frank-Wilson A.W., Farthing J.P., Chilibeck P.D., Arnold C.M., Davison K.S.,

Abstract: Summary: Muscle density is a risk factor for fractures in older adults; however, its association with falls is not well described. After adjusting for biologically relevant confounding factors, a unit decrease in muscle density was associated with a 17 % increase in odds of reporting a fall, independent of functional mobility. Introduction: Falls are the leading cause of injury, disability, and fractures in older adults. Low muscle density (i.e., caused by muscle adiposity) and functional mobility have been identified as risk factors for incident disability and fractures in older adults; however, it is not known if these are also independently associated with falls. The purpose of this study was to explore the associations of muscle density and functional mobility with fall status. Methods: Cross-sectional observational study of 183 men and women aged 60-98 years. Descriptive data, including a 12-month fall recall, Timed Up and Go (TUG) test performance, lower leg muscle area, and density. Odds ratio (OR) of being a faller were calculated, adjusted for age, sex, body mass index, general health status, diabetes, and comorbidities. Results: Every mg/cm^3 increase in muscle density (mean 70.2, SD 2.6 mg/cm^3) independently reduced the odds of being a faller by 19 % (OR 0.81 [95 % CI 0.67 to 0.97]), and every 1 s longer TUG test time (mean 9.8, SD 2.6 s) independently increased the odds by 17 % (OR 1.17 [95 % CI 1.01 to 1.37]). When both muscle density and TUG test time were included in the same model, only age (OR 0.93 [95 % CI 0.87 to 0.99]) and muscle density (OR 0.83 [95 % CI 0.69 to 0.99]) were independently associated with fall status. Conclusions: Muscle density was associated with fall status, independent of functional mobility. Muscle density may compliment functional mobility tests as a biometric outcome for assessing fall risk in well-functioning older adults.

Title: Differences in lifestyle, physical performance and quality of life between frail and robust Brazilian community-dwelling elderly women.

Citation: Geriatrics & gerontology international, Jul 2016, vol. 16, no. 7, p. 829-835,

Author(s): Sewo Sampaio, Priscila Yukari, Sampaio, Ricardo Aurélio Carvalho, Coelho Júnior,

Abstract: To investigate the lifestyles, physical performance and quality of life (QOL) of frail and robust Brazilian community-dwelling older women, and to identify risk factors for frailty. Frailty was assessed using the Kihon Checklist. Lifestyles were assessed using a questionnaire. Physical performance was assessed by measuring walking speeds, performance on the one-leg stand test and the five-times chair stand test and handgrip strength. QOL was assessed using the Short Form-8 questionnaire. Participants were divided into frail and robust groups based on their total Kihon Checklist scores. A total of 109 participants (age 70.8 ± 6.87 years) were included in this study (robust $n = 85$, frail $n = 24$). Differences in living structures ($P < 0.001$), financial satisfaction ($P = 0.004$) and the frequencies with which participants leave the house ($P < 0.001$) were found between groups. The frail group had more fallers ($P = 0.047$), and lower engagement in physical activity ($P = 0.044$), lower body mass indices ($P = 0.043$) and poorer nutritional status ($P = 0.002$), whereas robust older people showed better physical performance (walking speed $P < 0.001$, one-leg stand $P = 0.021$, handgrip strength $P = 0.002$) and higher QOL scores (general health $P = 0.005$, role-physical $P = 0.013$, bodily pain $P = 0.002$, vitality $P = 0.001$, social functioning $P = 0.001$, role-emotional $P = 0.008$). Multivariate regression analysis identified a slow usual walking speed and bodily pain as risk factors for frailty. Frail participants had higher indices for being housebound, and having financial dissatisfaction, a sedentary lifestyle, falls, and malnutrition. Furthermore, they showed poorer physical performance and QOL. An early, well-focused approach is crucial, especially for older adults who walk slowly and have bodily pain to preserve health and QOL. Geriatr Gerontol Int 2016; 16: 829-835.

Title: Strength in Numbers: A Community Education Program to Prevent Falls in Older Adults.

Citation: Home healthcare now, Jul 2016, vol. 34, no. 7, p. 369-375, 2374-4537 (2016 Jul-Aug)

Author(s): Yount, John

Abstract: The incidence and consequences of falls for older adults are well documented and well known to home care clinicians. In the absence of a falls-prevention program targeting older adults living in the community, home healthcare professionals at Cooley Dickinson VNA & Hospice in Northampton, MA, observed a high rate of falls and hip fractures. The clinicians designed a falls reduction program titled Strength in Numbers, an evidence-informed, multifaceted approach offered in community settings such as local senior centers and retirement communities. Physical and occupational therapists presented sessions that addressed risk factors for falls: fear of falling, strength, balance, medications, vision, and home safety. This article describes the program, its evolution and expansion, and outcomes. Between 2008 and 2015, 1,974 people received falls-prevention education through one of several variations of Strength in Numbers. Nearly 20% of those returning for a follow-up session who had fallen before did not fall again after completing it. Presenters recorded statistically significant improvement for participants in Single-Leg Standing, Timed Up and Go, and Functional Reach tests.

Title: Telephone Calls Make a Difference in Home Balance Training Outcomes: A Randomized Trial.

Citation: Journal of geriatric physical therapy (2001), Jul 2016, vol. 39, no. 3, p. 97-101

Author(s): Light, Kathye, Bishop, Mark, Wright, Tracy

Abstract: To determine the benefit of a weekly telephone contact on balance control for community-dwelling frail older adults participating in home-exercise programs. Falls in frail older adults often lead to hospitalization and sometimes death. Evidence supports the effectiveness of home exercise programs in reducing fall risk in older adults. As well, there is a high cost for the delivery of a home exercise program in a traditional manner. Poor adherence to a home exercise program can limit the expected reduction in fall risk in the older adult population. We hypothesized that a weekly telephone call would improve adherence to a home-exercise program and, therefore, improve outcomes on the Berg Balance Test. Seventy-five community-dwelling, frail older adult participants, at risk for falling (mean age: 76 years, range: 64-88 years; 3 women), were randomized in alternating pairs to a Telephone Call or No Telephone Call group. All participants received physical therapy home-exercise programs focused on balance control and were assessed and progressed 4 times over 12 weeks. All participants used an exercise log in which they were asked to record the amount of time and the number of repetitions performed of all daily exercises. The Telephone Call group received an additional 15-minute weekly telephone call with standard questions and encouragement to discuss their program. The primary outcome measure was the Berg Balance Scale. A total of 11 subjects dropped out of the study with 8 from the No Telephone Call group and 3 from the Telephone Call group. For both groups, a significant effect for time was noted, demonstrating that both groups improved significantly in balance control with the home exercise intervention. For the Berg Balance Scale, an interaction occurred whereby the Telephone Call group improved significantly more in balance control than the No Telephone Call group (Telephone Call group = 6.3 points; No Telephone Call group = 3.9 points). A home exercise program was beneficial to improve the balance of community-dwelling frail older adults. More importantly for health policy consideration, a simple, weekly, telephone call made a

significant difference in how much balance improvement was made. Telephone calls are a cost-effective way to provide effective follow-up support for older adults participating in home exercise programs.

Title: Fall-Related Injuries in a Cohort of Community-Dwelling Older Adults Attending Peer-Led Fall Prevention Exercise Classes.

Citation: Journal of geriatric physical therapy (2001), Jul 2016, vol. 39, no. 3, p. 110-116

Author(s): MPhty, Birgit Wurzer, Waters, Debra Lynn, Hale, Leigh Anne

Abstract: To investigate reported injuries and circumstances and to estimate the costs related to falls experienced by older adults participating in Steady As You Go (SAYGO) peer-led fall prevention exercise classes. A 12-month prospective cohort study of 207 participants attending community-based SAYGO classes in Dunedin, New Zealand. Types and costs of medical treatment for injuries and circumstances of falls were obtained via standardized fall event questionnaires and phone-administered questionnaires. Eighty-four percent completed the study (160 females, 14 males, mean age = 77.5 [standard deviation = 6.5] years). More than a third of the total falls (55/148 total falls, 37%) did not result in any injuries. Most injuries (45%, n = 67) were sprains, grazes, and bruises. Medical attention was sought 26 times (18%), out of which 6 participants (4%) reported fractures (none femoral). The majority of falls occurred while walking. More falls and injuries occurred outdoors (n = 55). The number of times medical treatment was sought correlated with the number of falls in the previous year ($r = 0.50$, $P = .02$). The total number of years attending SAYGO was a significant predictor of lower total number of injuries (stepwise regression $\beta = -0.157$, $t = -1.99$, $P = .048$). The total cost of medical treatment across all reported injurious falls was estimated at NZ\$6946 (US\$5415). Older adults participating in SAYGO appear to sustain less severe injuries following a fall than previously reported. More falls and injuries occurred outdoors, suggesting better overall health of these participants. The role of long-term participation in fall prevention exercise classes on injurious falls warrants further investigation.

Title: A Prospective Cohort Study on the Effect of a Balance Training Program, Including Calf Muscle Strengthening, in Community-Dwelling Older Adults.

Citation: Journal of geriatric physical therapy (2001), Jul 2016, vol. 39, no. 3, p. 125-131,

Author(s): Maritz, Carol A, Silbernagel, Karin Grävare

Abstract: Falls are the number 1 cause of injury, fractures, and death among the older population. In fact, one-third of adults older than 60 years will experience 1 or more falls annually. Factors including inactivity and decreased mobility are associated with overall declines in strength, balance, and functional mobility in older adults. The purpose of this study was to evaluate the effect of a balance training program, including calf muscle strengthening, in community-dwelling older adults and to evaluate how calf muscle strength correlates with risk factors for falls. Community-dwelling older adults from a local senior center were invited to participate in a 5-week (10 sessions), 1-on-1, balance training program, which included calf muscle strengthening. All the participants were evaluated before and after the intervention. The outcome measures were static balance, unilateral heel-rise test, Timed Up and Go test (TUG), the 30-second Chair Stand Test (30-sCST), and the Activity Balance Confidence Scale. Twenty-eight participants (6 males and 22 females) mean (standard deviation) age of 78 years were included in the study and completed the baseline evaluation. Eight participants did not complete the study. Static balance with eyes closed,

heel rise, TUG, 30-sCST, and the Activity Balance Confidence Scale improved significantly ($P < .05$) following treatment compared with the baseline evaluation. The heel-rise ability correlated significantly ($P < .05$) with TUG ($r = -0.484$ to -0.528) and 30-sCST ($r = 0.501-0.595$). Sixty-three percent of the participants performed 10 reps or less of the unilateral heel rise on the right side and 60% on the left side. None of the participants who performed 10 reps or more of the unilateral heel rise had a high risk of falls based on the TUG. A balance training program that includes calf muscle strengthening performed twice a week for 5 weeks resulted in significant improvements in calf muscle strength, functional performance and balance, as well as a significant improvement in balance confidence. The results from this study identify the importance unilateral calf muscle strength has to falls risk among older adults.

Title: Is single room hospital accommodation associated with differences in healthcare-associated infection, falls, pressure ulcers or medication errors? A natural experiment with non-equivalent controls.

Citation: Journal of health services research & policy, Jul 2016, vol. 21, no. 3, p. 147-155,

Author(s): Simon, Michael, Maben, Jill, Murrells, Trevor, Griffiths, Peter

Abstract: A wide range of patient benefits have been attributed to single room hospital accommodation including a reduction in adverse patient safety events. However, studies have been limited to the US with limited evidence from elsewhere. The aim of this study was to assess the impact on safety outcomes of the move to a newly built all single room acute hospital. A natural experiment investigating the move to 100% single room accommodation in acute assessment, surgical and older people's wards. Move to 100% single room accommodation compared to 'steady state' and 'new build' control hospitals. Falls, pressure ulcer, medication error, meticillin-resistant *Staphylococcus aureus* and *Clostridium difficile* rates from routine data sources were measured over 36 months. Five of 15 time series in the wards that moved to single room accommodation revealed changes that coincided with the move to the new all single room hospital: specifically, increased fall, pressure ulcer and *Clostridium difficile* rates in the older people's ward, and temporary increases in falls and medication errors in the acute assessment unit. However, because the case mix of the older people's ward changed, and because the increase in falls and medication errors on the acute assessment ward did not last longer than six months, no clear effect of single rooms on the safety outcomes was demonstrated. There were no changes to safety events coinciding with the move at the new build control site. For all changes in patient safety events that coincided with the move to single rooms, we found plausible alternative explanations such as case-mix change or disruption as a result of the re-organization of services after the move. The results provide no evidence of either benefit or harm from all single room accommodation in terms of safety-related outcomes, although there may be short-term risks associated with a move to single rooms

Title: Lower leg muscle density is independently associated with fall status in community-dwelling older adults.

Citation: Osteoporosis international : a journal established as result of cooperation between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the USA, Jul 2016, vol. 27, no. 7, p. 2231-2240

Author(s): Frank-Wilson, A W, Farthing, J P, Chilibeck, P D, Arnold, C M, Davison, K S,

Abstract: Muscle density is a risk factor for fractures in older adults; however, its association with falls is not well described. After adjusting for biologically relevant confounding factors, a unit decrease in muscle density was associated with a 17 % increase in odds of reporting a fall, independent of functional mobility. Falls are the leading cause of injury, disability, and fractures in older adults. Low muscle density (i.e., caused by muscle adiposity) and functional mobility have been identified as risk factors for incident disability and fractures in older adults; however, it is not known if these are also independently associated with falls. The purpose of this study was to explore the associations of muscle density and functional mobility with fall status. Cross-sectional observational study of 183 men and women aged 60-98 years. Descriptive data, including a 12-month fall recall, Timed Up and Go (TUG) test performance, lower leg muscle area, and density. Odds ratio (OR) of being a faller were calculated, adjusted for age, sex, body mass index, general health status, diabetes, and comorbidities. Every mg/cm³ increase in muscle density (mean 70.2, SD 2.6 mg/cm³) independently reduced the odds of being a faller by 19 % (OR 0.81 [95 % CI 0.67 to 0.97]), and every 1 s longer TUG test time (mean 9.8, SD 2.6 s) independently increased the odds by 17 % (OR 1.17 [95 % CI 1.01 to 1.37]). When both muscle density and TUG test time were included in the same model, only age (OR 0.93 [95 % CI 0.87 to 0.99]) and muscle density (OR 0.83 [95 % CI 0.69 to 0.99]) were independently associated with fall status. Muscle density was associated with fall status, independent of functional mobility. Muscle density may compliment functional mobility tests as a biometric outcome for assessing fall risk in well-functioning older adults.



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