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A comprehensive fracture prevention strategy in older adults: the European Union Geriatric Medicine Society (EUGMS) statement

Blain H, Masud T, Dargent-Molina P, Martin FC, Rosendahl E, van der Velde N, Bousquet J, Benetos A, Cooper C, Kanis JA, Reginster JY, Rizzoli R, Cortet B, Barbagallo M, Dreinhöfer KE, Vellas B, Maggi S, Strandberg T.

Aging Clin. Exp. Res. 2016; ePub(ePub): ePub.

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DOI 10.1007/s40520-016-0588-4 **PMID** 27299902

Abstract

Prevention of fragility fractures in older people has become a public health priority, although the most appropriate and cost-effective strategy remains unclear. In the present statement, the Interest Group on Falls and Fracture Prevention of the European Union Geriatric Medicine Society, in collaboration with the International Association of Gerontology and Geriatrics for the European Region, the European Union of Medical Specialists, and the International Osteoporosis Foundation-European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis, outlines its views on the main points in the current debate in relation to the primary and secondary prevention of falls, the diagnosis and treatment of bone fragility, and the place of combined falls and fracture liaison services for fracture prevention in older people.

PDF Y Endnote Y

A program to improve reach estimation and reduce fall risk in the elderly

Gabbard C, Robinson K, Fox A.

Geriatrics (Basel) 2016; 1(2): e14.

(Copyright © 2016, MDPI)

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Abstract

Contemporary research findings indicate that in older persons (typically 64 > years) there are functional decrements in the ability to mentally represent and effectively plan motor actions. Actions, if poorly planned, can result in falling, a major health concern for the elderly. Whereas a number of factors may contribute to falls, over- or underestimation of reach abilities may lead to loss of postural control (balance) and pose a higher risk of falling. Our intent with this paper was to provide: (1) a brief background of the problem, (2) suggest strategies for mental (motor) imagery practice in the context of reach planning, and (3) describe general guidelines and a sample practice format of a training program for clinical use. Mental (motor) imagery practice of reach planning has potential for improving motor performance in reach-related everyday activities and reducing the risk of falls in older persons.

PDF Y Endnote Y

Agreement between the frailty index and phenotype and their associations with falls and overnight hospitalizations

Zhu Y, Liu Z, Wang Y, Wang Z, Shi J, Xie X, Jin L, Chu X, Wang X.

Arch. Gerontol. Geriatr. 2016; ePub(ePub): ePub.

(Copyright © 2016, Elsevier Publishing)

DOI 10.1016/j.archger.2016.06.004 PMID unavailable

Abstract

BACKGROUND: The objective of this study is to examine the agreement between two commonly used frailty measurements (frailty index and phenotype) and their associations with falls and overnight hospitalizations in a community-based population.

METHODS: Data was collected from 1663 elderly adults (aged 70-84 years) from the aging arm of the Rugao Longevity and Ageing study, a two-arm cohort conducted in Rugao, China. Items concerning the frailty index and phenotype, falls and overnight hospitalizations were collected.

RESULTS: The Kappa agreement examining three levels of these two frailty measurements was 0.310 (95% CI: 0.277-0.343) according to the frailty index cut-off developed by Hoover et al. Both frailty measurements were significantly associated with falls and overnight hospitalizations. For instance, compared with the frailty index defined non-frail participants, their pre-frail and frail counterparts had significantly increased risks for falls, with odds ratios (ORs) of 1.69 (95% CI: 1.17-2.43) and 2.87 (95% CI: 1.93-4.28), respectively. When the two frailty measurements were simultaneously included in the models, significant associations were also observed. More importantly, a sub-analysis in participants who were categorized as robust by frailty phenotype revealed that frail participants (frailty index > 0.21) still had increased risks for falls (OR = 2.35, 95% CI: 1.24-4.46) and overnight hospitalizations (OR = 2.56, 95% CI: 1.05-6.23) compared with their non-frail counterparts.

CONCLUSIONS: Common characteristics and complementarity existed in the frailty index and phenotype in the elderly Chinese population. Additional consideration of the frailty index when applying frailty phenotype should be undertaken. The findings provide preliminary but crucial clues for future studies on frailty.

PDF Y Endnote Y

An investigation of the attributes of walkable environments from the perspective of seniors in Montreal

Moniruzzaman M, Paez A.

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DOI 10.1016/j.jtrangeo.2015.12.001 PMID unavailable

Abstract

The objective of this paper is to investigate the attributes of walkable environments from the perspective of seniors in the Island of Montreal in Quebec, Canada. The research is based on a combination of statistical analysis of travel diary data and field work to conduct walkability audits. The approach follows a sequence of logical steps. The first step involves the estimation of a travel behavior model walking by seniors (people 65 years or older). The results of this model, in combination with cluster analysis, are used to identify sites where the model systematically under- or over-predicts walking. Subsequently, sites are targeted for walkability audits. It then becomes possible to assess the presence or absence of attributes of built environments where walking is more or less common than other factors would predict. A walkability audit of 403 street segments was used to proof the concept in this paper. The audited items were summarized in contingency tables and tested with the chi-squared test of independence to identify streetscape elements that correlate with walking for transportation.

PDF Y Endnote Y

Clinical and functional characterization of pre-frailty among elderly patients consulting primary care centres

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J. Nutr. Health Aging 2016; 20(6): 653-658.

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DOI 10.1007/s12603-016-0684-3 **PMID** 27273356

Abstract

BACKGROUND: Characterization of the main features of pre-frailty may contribute to better understanding the mechanisms involved in the development of frailty.

OBJECTIVE: To characterize the pre-frail population consulting in primary care centres in Mataró (Catalonia, Spain), to describe the Fried's frailty criteria for this population and to identify the main associated factors.

DESIGN: Cross-sectional study.

SETTING: Three primary care centres in Catalonia.

PARTICIPANTS: Pre-frail subjects recruited from among persons aged 70 years and older consulting primary care centres and screened for frailty according to Fried's criteria.

MEASUREMENTS: Clinical, nutritional and functional data.

RESULTS: Frailty prevalence of 31.0% and pre-frailty prevalence of 49.0% were observed.

Comorbidity was not especially frequent among elderly individuals classified as pre-frail (except for diabetes with 35.8% prevalence). Functional status and nutritional status were both reasonably satisfactory in pre-frail subjects with mean Barthel score of 98 points and 91% classified as well nourished. Among pre-frail subjects, 35% were obese (body mass index>30); 75% reported pain; 12% had an accidental fall in the previous three months; and the mean number of medications ingested was 6.2. Weakness was the most prevalent frailty criterion (70%), followed by slowness (30%). Weakness was associated with age in men and with pain in women. Poor physical activity was associated with pain.

CONCLUSIONS: Pre-frailty is very common among elderly subjects consulting primary care centres. Weakness, slowness, diabetes, pain and polypharmacy should alert healthcare professionals to the onset of a frailty process.

PDF Y Endnote Y

Effect of lower extremity stretching exercises on balance in geriatric population

Reddy RS, Alahmari KA.

Int. J. Health Sci. (Qassim) 2016; 10(3): e1037.

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Abstract

BACKGROUND AND OBJECTIVE: The purpose of this study was to find "Effect of lower extremity stretching exercises on balance in the geriatric population.

METHOD: 60 subjects (30 male and 30 female) participated in the study. The subjects underwent 10 weeks of lower limb stretching exercise program. Pre and post 10 weeks stretching exercise program, the subjects were assessed for balance, using single limb stance time in seconds and berg balance score. These outcome measures were analyzed.

RESULTS: Pre and post lower extremity stretching on balance was analyzed using paired t test. Of 60 subjects 50 subjects completed the stretching exercise program. Paired sample t test analysis showed a significant improvement in single limb stance time (eyes open and eyes closed) ($p < 0.001$) and berg balance score ($p < 0.001$).

CONCLUSION: Lower extremity stretching exercises enhances balance in the geriatric population and thereby reduction in the number of falls.

PDF Y Endnote Y

Exploring user experience and technology acceptance for a fall prevention system: results from a randomized clinical trial and a living lab

Vaziri DD, Aal K, Ogonowski C, Von Rekowski T, Kroll M, Marston HR, Poveda R, Gschwind YJ, Delbaere K, Wieching R, Wulf V.

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DOI 10.1186/s11556-016-0165-z **PMID** 27293489

Abstract

BACKGROUND: Falls are common in older adults and can result in serious injuries. Due to demographic changes, falls and related healthcare costs are likely to increase over the next years. Participation and motivation of older adults in fall prevention measures remain a challenge. The iStoppFalls project developed an information and communication technology (ICT)-based system for older adults to use at home in order to reduce common fall risk factors such as impaired balance and muscle weakness. The system aims at increasing older adults' motivation to participate in ICT-based fall prevention measures. This article reports on usability, user-experience and user-acceptance aspects affecting the use of the iStoppFalls system by older adults.

METHODS: In the course of a 16-week international multicenter study, 153 community-dwelling older adults aged 65+ participated in the iStoppFalls randomized controlled trial, of which half used the system in their home to exercise and assess their risk of falling. During the study, 60 participants completed questionnaires regarding the usability, user experience and user acceptance of the iStoppFalls system. Usability was measured with the System Usability Scale (SUS). For user experience the Physical Activity Enjoyment Scale (PACES) was applied. User acceptance was assessed with the Dynamic Acceptance Model for the Re-evaluation of Technologies (DART). To collect more detailed data on usability, user experience and user acceptance, additional qualitative interviews and observations were conducted with participants.

RESULTS: Participants evaluated the usability of the system with an overall score of 62 (Standard Deviation, SD 15.58) out of 100, which suggests good usability. Most users enjoyed the iStoppFalls games and assessments, as shown by the overall PACES score of 31 (SD 8.03). With a score of 0.87 (SD 0.26), user acceptance results showed that participants accepted the iStoppFalls system for use in their own home. Interview data suggested that certain factors such as motivation, complexity or graphical design were different for gender and age.

CONCLUSIONS: The results suggest that the iStoppFalls system has good usability, user experience and user acceptance.

It will be important to take these along with factors such as motivation, gender and age into consideration when designing and further developing ICT-based fall prevention systems.

PDF Y Endnote Y

Falls and fear of falling after stroke: a case-control study

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PM R 2016; ePub(ePub): ePub.

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Abstract

BACKGROUND: Falls are common after stroke with potentially serious consequences. Few investigations have included age-matched controls to directly compare fall characteristics between older adults with and without stroke. Further, fear of falling, a significant psychological consequence of falls, has only been examined to a limited degree as a risk factor for future falls in a stroke population.

OBJECTIVE: To compare the fall history between older adults with and without a previous stroke and to identify the determinants of falls and fear of falling in older stroke survivors **DESIGN:** Case-control observational study **SETTING:** Primary teaching hospital **PARTICIPANTS:** Seventy-five patients with stroke (mean age \pm standard deviation, 66 \pm 7) and 50 age-matched controls with no previous stroke were tested.

METHODS: Fall history, fear of falling, and physical, cognitive and psychological function were assessed. Chi-squared test was performed to compare characteristics between groups and logistic regression was done to determine the risk factors for falls and fear of falling. **MAIN OUTCOME MEASURES:** Fall events in the past 12 months, Fall Efficacy Scale-International (FES-I), Berg Balance Scale (BBS), Functional Ambulation Category (FAC), Fatigue Severity Scale (FSS), Montreal Cognitive Assessment (MoCA), and Patient Healthy Questionnaire-9 (PHQ-9) were measured for all participants. Fugl-Meyer Motor Assessment (FM) was used to quantify severity of stroke motor impairments.

RESULTS: Twenty-three patients and 13 controls reported at least one fall in the past 12 months ($p = .58$). Nine stroke participants had recurrent falls (≥ 2 falls) compared to none of the controls ($p < .01$). Participants with stroke reported greater concern for falling than non-stroke controls ($p < .01$). Female gender was associated with falls in the non-stroke group while falls in the stroke group were not significantly associated with any measured outcomes. Fear of falling in the stroke group was associated with functional ambulation level and balance. Functional ambulation level alone explained 22% of variance in fear of falling in the stroke group.

CONCLUSIONS: Compared to non-stroke individuals, patients with stroke were significantly more likely to experience recurrent falls and fear of falling. Falls in stroke were not explained by any of the outcome measures used, while fear of falling was predicted by functional ambulation level.

This study has identified potentially modifiable risk factor with which to devise future prevention strategies for falls in stroke patients.

PDF Y Endnote Y

Hip joint contact loads in older adults during recovery from forward loss of balance by stepping

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J. Biomech. 2016; ePub(ePub): ePub.

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(Copyright © 2016, Elsevier Publishing)

DOI 10.1016/j.jbiomech.2016.05.033 **PMID** 27288331

Abstract

Hip joint contact loads during activities of daily living are not generally considered high enough to cause acute bone or joint injury. However there is some evidence that hip joint loads may be higher in stumble recovery from loss of balance. A common laboratory method used to evaluate balance recovery performance involves suddenly releasing participants from various static forward lean magnitudes (perturbation intensities). Prior studies have shown that when released from the same perturbation intensity, some older adults are able to recover with a single step, whereas others require multiple steps. The main purpose of this study was to use a musculoskeletal model to determine the effect of three balance perturbation intensities and the use of single versus multiple recovery steps on hip joint contact loads during recovery from forward loss of balance in community dwelling older adults (n=76). We also evaluated the association of peak hip contact loads with perturbation intensity, step length and trunk flexion angle at foot contact at each participant's maximum recoverable lean angle (MRLA). Peak hip joint contact loads were computed using muscle force estimates obtained using Static Optimisation and increased as lean magnitude was increased and were on average 32% higher for Single Steppers compared to Multiple Steppers. At the MRLA, peak hip contact loads ranged from 4.3 to 12.7 body weights and multiple linear stepwise regression further revealed that initial lean angle, step length and trunk angle at foot contact together explained 27% of the total variance in hip joint contact load. Overall findings indicated that older adults experience peak hip joint contact loads during maximal balance recovery by stepping that in some cases exceeded loads reported to cause mechanical failure of cadaver femurs. While step length and trunk flexion angle are strong predictors of step recovery performance they are at best moderate predictors of peak hip joint loading.

PDF Y Endnote Y

Impact of mild head injury on neuropsychological performance in healthy older adults: longitudinal assessment in the AIBL Cohort

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Front. Aging Neurosci. 2016; 8: e105.

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(Copyright © 2016, Frontiers Research Foundation)

DOI 10.3389/fnagi.2016.00105 **PMID** 27242516

Abstract

Traumatic brain injury (TBI) is suggested to be a significant risk factor for dementia. However, little research has been conducted into long-term neuropsychological outcomes after head trauma. Participants from the Australian Imaging, Biomarkers and Lifestyle Study of Ageing (AIBL) who had recovered after sustaining a mild TBI involving loss of consciousness more than 5 years previously were compared with matched controls across a 3-year period. Bayesian nested-domain modeling was used to estimate the effect of TBI on neuropsychological performance. There was no evidence for a chronic effect of mild TBI on any neuropsychological domain compared to controls. Within the TBI group, there was some evidence suggesting that the age that the head trauma occurred and the duration of unconsciousness were modulators of episodic memory. However, these findings were not robust. Taken together, these findings indicate that adults who have sustained a TBI resulting in loss of consciousness, but who recover to a healthy level of cognitive functioning, do not experience frank deficits in cognitive ability.

PDF Y Endnote Y

Influence of cognitive impairment on mobility recovery of patients with hip fracture

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Am. J. Phys. Med. Rehabil. 2016; ePub(ePub): ePub.

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(Copyright © 2016, Lippincott Williams and Wilkins)

DOI 10.1097/PHM.0000000000000550 **PMID** 27196384

Abstract

OBJECTIVE: The aims of this study were to study the mobility recovery in hip fracture patients and determine the influence of cognitive impairment on mobility within the first 3 months after surgery.
DESIGN: This prospective cohort study was carried out in an acute public hospital in southern Spain and included 275 patients, 65 years or older, with a hip fracture. Mobility and Cognitive status were measured by Tinetti Performance-Oriented Mobility Assessment and Pfeiffers' Scale (Short Portable Mental State Questionnaire), respectively. Multiple linear regression was used to examine the influence of cognitive impairment on mobility.

RESULTS: The median Performance-Oriented Mobility Assessment score changed from 4 (3-4) points at discharge to 17 (7-22) at 3 months. All degrees of cognitive impairment were negatively associated with gait and balance at 1 and 3 months after surgery ($P < 0.01$). Age, weight bearing, length of hospital stay, and postsurgical complications were also identified as independent predictors of mobility outcome at 3 months.

CONCLUSIONS: Cognitive impairment is a negative prognostic factor for the recovery of mobility in elderly patients with a hip fracture. New treatment strategies are needed for hip fracture patients with cognitive impairment.

PDF Y Endnote Y

Major trauma and the elder West Virginian: a six Year review at a Level I trauma center

Whiteman C, Davidov DM, Sikora R, Paulson D, Schaefer G.

W. V. Med. J. 2016; 112(3): 94-99.

(Copyright © 2016, West Virginia State Medical Association)

DOI unavailable **PMID** 27301162

Abstract

BACKGROUND: Trauma was the seventh leading cause of death for persons 65 and older in West Virginia (WV) in 2010. In 2007, fatality rates for both accidental falls and motor vehicle crashes were higher in West Virginia than the nation as a whole. US Census Data from 2010 showed WV to have one of the oldest median ages in the nation (surpassed by Maine and Vermont) and currently 16% of the population of WV is over 65 years of age.

METHODS: This is a retrospective observational study of data extracted from the John Michael Moore Trauma Center (JMMTC) trauma registry for the time period of January 1, 2009 to December 31, 2014.

RESULTS: There were 3,895 patients, aged 65 years or older, treated at the Jon Michael Moore Trauma Center in Morgantown, WV during the study time period. Accidents accounted for 98.6% of the injuries. The elderly were most commonly injured in their place of residence (59.8%). The top two mechanisms of injury were falls (75.2%) and motor vehicular crashes (13.9%). Frequently, disposition from the Emergency Department was to a higher level of care: Intensive Care Unit (32.3%) and Step-down Unit (21.2%). The most common serious injuries were intracranial hemorrhage (40.0%), lower extremity fractures (38.1%), and spine fracture (26.0%). The average hospital stay was 5.6 days and the average ICU stay was 3.2 days. Hospital discharge dispositions frequently resulted in care out of the home; skilled nursing facility (22.0%), rehabilitation facility (15.5%), morgue/funeral home (6.6%), and long-term residential care facility (5.7%). The most common pre-existing medical conditions were hypertension (71.9%), diabetes mellitus (29.3%), chronic obstructive pulmonary disease (19.5%), and dementia (18.8%).

CONCLUSION: Elder West Virginians most frequently are injured in falls and motor vehicular crashes. Pre-existing medical conditions are very common. Trauma in the elderly creates a significant burden on the patient, their families, and on the health care system in West Virginia. Injury prevention interventions have the potential to diminish the impact of trauma on elder West Virginians.

PDF Endnote Y

Reliability and validity of center of pressure measures for balance assessment in older adults

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J. Phys. Ther. Sci. 2016; 28(4): 1364-1367.

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(Copyright © 2016, Society of Physical Therapy Science)

DOI 10.1589/jpts.28.1364 **PMID**27190484

Abstract

PURPOSE: This study was conducted to assess the reliability and validity of center of pressure-based parameters for balance assessment.

SUBJECTS AND METHODS: Two hundred and forty older adults were evaluated using a force platform and the Berg Balance Scale at 1-week intervals. The intra-class correlation coefficient and the Pearson correlation coefficient were used to test reliability and validity respectively.

RESULTS: The reliability of the 12 selected center of pressure measures was satisfactory (intra-class correlation coefficient = 0.75-0.99) and the validity between the parameters and the Berg Balance Scale was moderate to good ($r = -0.62$ to -0.88).

CONCLUSION: Center of pressure-based parameters are reliable and valid measures in older adults.

PDF Y Endnote Y

Use of the sit-to-stand task to evaluate motor function of older adults using telemetry

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BMC Geriatr. 2016; 16(1): e121.

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(Copyright © 2016, BioMed Central)

DOI 10.1186/s12877-016-0294-2 **PMID** 27268048

Abstract

BACKGROUND: Physical exercises are widely used in community programs, but not all older adults are willing to participate. Information and communication technology may solve this problem by allowing older people to participate in fitness programs at home. Use of remote instruction will facilitate physical exercise classes without requiring that participants gather at one place. The aim of this study was to examine use of a sit-to-stand task in evaluating motor function using conventional video communication in a telemetry system to enable real-time monitoring, and evaluation in physical performance of older adults at home.

METHODS: The participants were 59 older individuals and 81 university students. Three physical exercise batteries were used: arm curl, figure-of-eight walk test, and functional reach. The knee extension maximum angular velocity (KEMAV) and the iliac elevation maximum velocity (IEMV) during standing up from a chair and the heel rise frequency were used in the motion-capture measurements. The results were assessed using multi-group structural equation modeling (SEM) for the young and older groups.

RESULTS: Young participants consistently performed better than their older counterparts on all items. Analyses with multi-group SEM based on correlations between items yielded a good model-fit for the data. Among all path diagrams for IEMV and KEMAV in the older and young groups, paths from muscular strength to skillfulness showed significant effects. The path from the IEMV to muscular strength was also significant in the older group.

CONCLUSIONS: Multi-group SEM suggested that video-based measurements of IEMV during sit-to-stand motion can estimate muscular strength, which suggests that remote monitoring of physical performance can support wellness of community-dwelling older adults.

PDF Y Endnote Y

Visual field dependence is associated with reduced postural sway, dizziness and falls in older people attending a falls clinic

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J. Nutr. Health Aging 2016; 20(6): 671-676.

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(Copyright © 2016, Springer Science+Business Media)

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Abstract

Moving visual fields can have strong destabilising effects on balance, particularly when visually perceived motion does not correspond to postural movements. This study investigated relationships between visual field dependence (VFD), as assessed using the roll vection test, and reported dizziness, falls and sway under eyes open, eyes closed and optokinetic conditions. Ninety five falls clinic attendees undertook the roll vection test (i.e. attempted to align a rod to the vertical while exposed to a rotating visual field). Sway was assessed under different visual conditions by centre of pressure movement. Participants also completed questionnaires on space and motion discomfort, fear of falling, depression and anxiety. Thirty four (35.8%) participants exhibited VFD, i.e. had an error $> 6.5^\circ$ in the roll vection test. Compared to participants without VFD, participants with VFD demonstrated less movement of the centre of pressure across all visual conditions, were more likely to report space and motion discomfort and to have suffered more multiple falls in the past year. VFD was independent of fear of falling, anxiety and depression. VFD in a falls clinic population is associated with reduced sway possibly due to a stiffening strategy to maintain stance, dizziness symptoms and an increased risk of falls.

PDF Y Endnote Y

What physical performance measures predict incident cognitive decline among intact older adults?

A 4.4 year follow up study

Veronese N, Stubbs B, Trevisan C, Bolzetta F, De Rui M, Solmi M, Sartori L, Musacchio E, Zambon S, Perissinotto E, Crepaldi G, Manzano E, Sergi G.

Exp. Gerontol. 2016; ePub(ePub): ePub.

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Abstract

Reductions in physical performance, cognitive impairment (CI) and decline (CD), are common in older age, but few prospective cohort studies have considered the relationship between these domains. In this study we investigated whether reduced physical performance and low handgrip/lower limbs strength, could predict a higher incidence of CI/CD during a 4-year follow-up among a cohort of elderly individuals. From 3,099 older community-dwelling individuals initially enrolled in the Progetto Veneto Anziani (PRO.V.A.) study, 1,249 participants without CI at the baseline were included (mean age 72.2 years, 59.5 % females). Physical performance measures included the Short Physical Performance Battery (SPPB), 4m gait speed, chair stands time, leg extension and flexion, handgrip strength, and 6-Minute Walking Test (6MWT), categorized in gender-specific tertiles. CI was defined as a Mini-Mental State Examination (MMSE) score below 24; CD a decline of 3 or more points in the MMSE without CI. At baseline, participants developing CI during follow-up scored significantly worse across all physical performance measures compared to those that retained normal cognitive status. After adjusting for potential confounders, a significant trend for MMSE changes was noted for all physical performance tests, except for the SPPB and chair stands time. Multinomial logistic regression revealed that slow gait speed at baseline significantly predicted CD at follow up. Poor SPPB performance and slower gait speed predicted the onset of CI at the follow-up.

In conclusion, slow walking speed appears to be the best independent predictor of poor cognitive status over a 4.4-year follow-up, while other items of SPPB were also significantly associated with CI.

PDF Endnote

A comprehensive initiative to prevent falls among newborns

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Nurs. Womens Health 2016; 20(3): 247-257.

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(Copyright © 2016, John Wiley and Sons)

DOI 10.1016/j.nwh.2016.04.025 **PMID** 27287351

Abstract

Our hospital experienced seven instances of newborns falling over a 7-month period. Until that time, there had been no reported newborn falls. We formed a committee to study the situation and make recommendations for change. Common factors observed were early morning hours and an exhausted parent, usually the mother, falling asleep while feeding the newborn. The committee developed a policy and procedure addressing falls among newborns, created staff education and tools, and posted signage in mothers' rooms. We also updated crib cards to include information about falls and safe sleep, and we revised newborn admission education for parents with additional information about falls. The incidence of newborns falling has decreased since we implemented these changes.

PDF Endnote Y

Injury profiles, demography and representativeness of patients with TBI attending a regional emergency department

Ala-Seppälä H, Heino I, Frantzén J, Takala RS, Katila AJ, Kyllönen A, Maanpää HR, Posti JP, Tallus J, Tenovuori O.

Brain Inj. 2016; ePub(ePub): ePub.

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DOI 10.3109/02699052.2016.1170880 **PMID** 27295072

Abstract

OBJECTIVES: The aim of this study was to describe the demography and epidemiology of Finnish patients with TBI and to analyse the representativeness of a study sample.

MATERIALS AND METHODS: This prospective multi-centre study was conducted as part of an international collaboration within the EU-funded TBicare project. The study group was recruited from patients attending the regional emergency department (ED) of the Turku University Hospital, Finland. Pre-defined exclusion criteria included age < 18 years, more than 2 weeks from the injury and uncertain diagnosis of TBI. To be included, a need for an acute head CT (NICE-criteria) was required.

RESULTS: Of the 620 patients with TBI or suspected TBI, 203 patients were recruited to the study. Falls were the most common injury mechanism. The study group included more males than the total eligible population ($p = 0.011$), but no other statistical differences were found. The most common cause for being excluded was lack of information available to the research group before discharge (34%).

CONCLUSION: This study supports previous findings that falls are the most common injury mechanism in the Western countries. Uncertainty about the diagnosis of TBI, lack of representativeness without continuous recruitment and poor information transfer about the ED attendees are major challenges for prospective TBI studies.

PDF Y Endnote Y

Reactions of standing bipeds on moving platforms to keep their balance may increase the amplitude of oscillations of platforms satisfying Hooke's law

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Abstract

Consider a person standing on a platform that oscillates laterally, i.e. to the right and left of the person. Assume the platform satisfies Hooke's law. As the platform moves, the person reacts and moves its body attempting to keep its balance. We develop a simple model to study this phenomenon and show that the person, while attempting to keep its balance, may do positive work on the platform and increase the amplitude of its oscillations. The studies in this article are motivated by the oscillations in pedestrian bridges that are sometimes observed when large crowds cross them.

PDF Y Endnote Y

Velocity of visual field progression implicated in falls

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JAMA Ophthalmol. 2016; ePub(ePub): ePub.

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Abstract [Abstract unavailable] Commentary

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