

## SafetyLit May 15<sup>th</sup> 2016

### **A smartwatch-based assistance system for the elderly performing fall detection, unusual inactivity recognition and medication reminding**

Deutsch M, Burgsteiner H.

Stud. Health Technol. Inform. 2016; 223: 259-266.

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(Copyright © 2016, IOS Press)

**DOI** unavailable **PMID** 27139412

#### **Abstract**

The growing number of elderly people in our society makes it increasingly important to help them live an independent and self-determined life up until a high age. A smartwatch-based assistance system should be implemented that is capable of automatically detecting emergencies and helping elderly people to adhere to their medical therapy. Using the acceleration data of a widely available smartwatch, we implemented fall detection and inactivity recognition based on a smartphone connected via Bluetooth. The resulting system is capable of performing fall detection, inactivity recognition, issuing medication reminders and alerting relatives upon manual activation. Though some challenges, like the dependence on a smartphone remain, the resulting system is a promising approach to help elderly people as well as their relatives to live independently and with a feeling of safety.

#### **PDF Y Endnote Y**

### **Cortical implications of advancing age and disease duration in Parkinson's disease patients with postural instability and gait dysfunction**

Herb JN, Rane S, Isaacs DA, Van Wouwe N, Roman OC, Landman BA, Dawant BM, Hedera P, Zald DH, Neimat JS, Wylie SA, Donahue MJ, Claassen DO.

*J. Parkinsons Dis.* 2016; ePub(ePub): ePub.

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**DOI** 10.3233/JPD-150753 **PMID** 27164041

#### **Abstract**

**BACKGROUND:** Parkinson's Disease patients with predominant gait dysfunction appear to have reduced cortical thickness compared to other motor phenotypes. The extent to which advancing age, or disease duration impact the pattern of these distinctions is unclear.

**OBJECTIVE:** We examine if PD patients with predominant signs of postural instability and gait dysfunction are distinguished by distinct patterns of cerebral atrophy, and how these differences are influenced by age and disease duration.

**METHODS:** The Unified Parkinson's Disease Rating Score (UPDRS) was administered to 196 PD patients (age = 61.4±8.9yrs) in the Off and On dopamine state. All completed a structural T1-weighted brain MRI. We defined 3 motor phenotypes: Tremor dominant, akinetic-rigid, and postural instability with gait disorder. General linear modeling quantified cortical thickness in relation to disease duration, and motor improvement after dopaminergic therapy. Cortical thickness and subcortical volumes were compared between the three motor subtypes, after controlling for disease duration and age.

**RESULTS:** We identified 177/196 patients who met criteria for a motor subtype. When corrected for disease duration, postural-instability patients had marked cortical thinning of the bilateral frontal-

temporal, and posterior cortical regions (cuneus/precuneus). After regressing for age, reduced frontal thickness was evident in patients with gait dysfunction. Widespread cortical thinning was associated with increasing disease duration and reduced motor improvement to dopaminergic therapy.

**CONCLUSIONS:** Results emphasize that the profile of motor signs, especially prominent gait manifestations, relate to cortical thinning in distinct regions. Unique patterns of atrophy appear to be driven by advancing pathology related to age and disease duration.

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### **Describing older adults' awareness of fall risk using situation awareness research techniques: a pilot study**

Azzarello J, Hall B.

*Res. Gerontol. Nurs.* 2016; ePub(ePub): 1-6.

(Copyright © 2016, Healio)

**DOI** 10.3928/19404921-20160504-01 **PMID** 27158975

#### **Abstract**

The purpose of the current study was to evaluate efficacy of techniques adapted from situation awareness research for describing how older adults perceive and understand fall risk factors in the context of daily routine. Eleven older adults watched a video of an older woman performing daily activities. Thirteen intrinsic, extrinsic, and behavioral fall risks were embedded throughout the scenario. The video was periodically frozen/blanked from view while participants answered questions about their understanding of the situation and associated story elements. Participants perceived a variety of fall risk factors but did not necessarily interpret them as indicating fall risk. Many fall risks held non-fall meaning for participants (e.g., newspapers on the floor meant the woman liked to read). Although four participants readily identified a fall risk situation, seven did not until they were explicitly asked to consider safety. Study techniques were effective for describing situation awareness of fall risk and several suggestions for improvement are described. [*Res Gerontol Nurs.* 20XX; x(xx):xx-xx.].

**PDF Not yet available Endnote Y**

### **Effectiveness of a multimodal intervention program for older individuals presenting to the emergency department after a fall in the Northern French Alps Emergency Network**

Ageron FX, Ricard C, Perrin-Besson S, Picot F, Dumont O, Cabillic S, Haesevoet M, Dalmon P, Gaillard C, Cezard O, Belle L, Couturier P.

*Acad. Emerg. Med.* 2016; ePub(ePub): ePub.

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(Copyright © 2016, Society for Academic Emergency Medicine, Publisher John Wiley and Sons)

**DOI** 10.1111/acem.12989 **PMID** 27144990

#### **Abstract**

**OBJECTIVE:** Fall-related visits to emergency departments (EDs) are common among older individuals. We aim to assess effectiveness of a healthcare intervention program for the management of elderly patients admitted to EDs after a fall.

**METHODS:** Using a before-after observation method, we investigated ED healthcare staff practices related to fall-related injuries in 2010 (period 1) and 2012 (period 2) in 13 centers participating in the Northern French Alps Emergency Network. Following the identification of initial weaknesses, several

information and training tools were introduced between the two periods to improve patient management. All individuals aged 75 years or over who presented to an ED after a fall were included in the study. We reviewed the completeness and quality of medical records during both periods and compared the rate of clinical-paraclinical check-ups performed, geriatric evaluation/assessment in the ED, and the 1-month recurrence of visits to the ED for the same reason.

**RESULTS:** During period 1, 2425 falls were recorded, while 2684 were reported in period 2. The 2012 medical charts contained significantly more information about risk factors than those of 2010. An ECG (64% vs 53%;  $p < 0.001$ ), biological check-up (65% vs 57%;  $p < 0.001$ ), balance, orthostatic hypotension, and cognitive impairment tests were more often performed in 2012. There was no change in the hospitalization rate, although short-duration hospitalization in the ED was more frequent in 2012. Geriatrists were more often consulted by patients in 2012 (18% vs 13%;  $p < 0.001$ ) and more involved in ED evaluation and hospitalization. The intervention program had a beneficial impact on the fall recurrence rate ( $n=29$  [3.6%] in period 1 and  $n=17$  [2.0%] in period 2; odds ratio=0.52;  $p=0.037$ ), which significantly decreased between 2010 and 2012.

**CONCLUSIONS:** The intervention program was associated with a decrease of fall recurrence. Further efforts should be made in EDs to ensure a sustained level of satisfactory and long-lasting management of the elderly. This article is protected by copyright. All rights reserved.

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### **Effects of exercise on functional performance and fall rate in subjects with mild or advanced Alzheimer's disease: secondary analyses of a randomized controlled study**

Öhman H, Savikko N, Strandberg T, Kautiainen H, Raivio M, Laakkonen ML, Tilvis R, Pitkälä KH. *Dement. Geriatr. Cogn. Disord.* 2016; 41(3-4): 233-241.

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(Copyright © 2016, Karger Publishers)

**DOI** 10.1159/000445712 **PMID** 27160164

#### **Abstract**

**BACKGROUND:** Exercise improves functional performance in subjects with dementia. However, whether the benefits of exercise are evident in all stages of dementia remains uncertain. This study examines how people in different stages of Alzheimer's disease (AD) benefit from exercise intervention in their physical functioning and risk of falling.

**METHODS:** The present study is a subanalysis of a randomized controlled trial examining the effects of exercise intervention (twice a week for 12 months) in AD patients ( $n = 194$ ). We studied the effects separately in participants with mild dementia and in participants with advanced dementia.

**RESULTS:** In subjects with mild dementia, the deterioration in physical functioning was slower in the intervention group than in the controls. Changes in Functional Independence Measure at 12 months were -2.7 (95% CI -0.5 to -4.9) in the intervention group and -10.1 (95% CI -7.0 to -13.3) in the control group ( $p < 0.001$ ). The exercise intervention proved effective in preventing falls among patients with advanced AD, with an incidence rate ratio of 0.47 (95% CI 0.37-0.60;  $p < 0.001$ ).

**CONCLUSIONS:** Regular exercise may slow the rate of functional deterioration in mild AD and reduce falls in patients suffering from advanced AD.

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## **Epidemiological and clinical characteristics of fall injuries in East Azerbaijan, Iran; a cross-sectional study**

Ghaffari-fam S, Sarbazi E, Daemi A, Sarbazi M, Riyazi L, Sadeghi-Bazargani H, Allahyari A.  
*Bull. Emerg. Trauma* 2015; 3(3): 104-110.

**Affiliation:** Imam Reza Hospital, Tabriz University of Medical Sciences, Tabriz, Iran.  
(Copyright © 2015, Trauma Research Center, Shiraz University of Medical Sciences)

**DOI** unavailable **PMID** 27162912 **PMCID** PMC4771250

### **Abstract**

**OBJECTIVE:** To describe the epidemiological and clinical characteristics of fall injuries in East Azerbaijan, Iran.

**METHODS:** This cross-sectional study was based on Hospital Information System (HIS) data for patients referred to the Imam Reza Hospital between 2008 and 2013. We recorded the demographic characteristics and epidemiological patterns of patients who were admitted to our center due to fall injuries. To standardize the reports the International Classification of Diseases (ICD), the International Classification of Diseases 9 Clinical Modification (ICD-9-CM) was used. Equally, the hospitalization period and number, admission ward, and the final status of victims after discharge from the hospital were extracted from the HIS.

**RESULTS:** Overall we included a total number of 3397 patients with mean age of  $39.2 \pm 22.7$  years. There were 2501 (73.6%) men among the patients. Long bone fracture (48.1%) and intracranial injury (24.2%) were the most frequent injuries among fall injury victims. Operations on spinal cord and spinal canal structures (12.0%), Operations on nose (11.6%) were the most common operations being performed in these patients. The survival was significantly lower in patients with age more than 60 years when compared to other age groups ( $p=0.001$ ). The survival rate was significantly lower in age group of >60 years, compared to other age groups ( $p=0.001$ ).

**CONCLUSION:** Given the high rate of fall injuries and death among the elderly that increases with age, appropriate measures must be taken to control and prevent injuries while prioritizing the elderly.

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## **Falls among persons aged $\geq 65$ years with and without severe vision impairment - United States, 2014**

Crews JE, Chou CF, Stevens JA, Saaddine JB.

*MMWR Morb. Mortal. Wkly. Rep.* 2016; 65(17): 433-437.

(Copyright © 2016, (in public domain), Publisher U.S. Centers for Disease Control and Prevention)

**DOI** 10.15585/mmwr.mm6517a2 **PMID** 27148832

### **Abstract**

In 2014, an estimated 2.8 million persons aged  $\geq 65$  years in the United States reported severe vision impairment\* defined as being blind or having severe difficulty seeing, even with eyeglasses. Good vision is important for maintaining balance as well as for identifying low-contrast hazards, estimating distances, and discerning spatial relationships. Conversely, having poor vision increases the risk for falls (1,2). Falls among older adults are common and can cause serious injuries, disabilities, and premature death (1,3). To date, no state-level investigations have examined the annual prevalence of falls among persons with and without severe vision impairment. CDC analyzed data from the 2014 Behavioral Risk Factor Surveillance System (BRFSS) to estimate the state-specific annual prevalence of falls among persons aged  $\geq 65$  years with and without self-reported severe vision impairment.

Overall, 46.7% of persons with, and 27.7% of older adults without, self-reported severe vision impairment reported having fallen during the previous year. The state-specific annual prevalence of falls among persons aged  $\geq 65$  years with severe vision impairment ranged from 30.8% (Hawaii) to 59.1% (California). In contrast, the prevalence of falls among persons aged  $\geq 65$  years without severe vision impairment ranged from 20.4% (Hawaii) to 32.4% (Alaska). Developing fall-prevention interventions intended for persons with severe vision impairment will help states manage the impact of vision impairment and falls on health care resources, and can inform state-specific fall prevention initiatives.

**PDF Y Endnote Y**

**Falls in the elderly secondary to urinary symptoms**

Soliman Y, Meyer R, Baum N.

*Rev. Urol.* 2016; 18(1): 28-32.

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(Copyright © 2016, RIU Publishers)

**DOI** unavailable **PMID** 27162509 **PMCID** PMC4859925

**Abstract**

Falls and fractures have a significant impact on our patients, their families, and caregivers, and cost the health care system billions of dollars. Each year, millions of adults aged 65 and older fall. Falls can cause moderate to severe injuries, such as hip fractures and head traumas, and can increase the risk of early death. Fortunately, falls are a public health problem that is largely preventable. Because many patients with falls and subsequent fractures have urologic conditions, urologists are positioned to help with the prevention of these significant and costly injuries. This article discusses the epidemiology of falls and fractures, and the urologic comorbidities that increase their risk.

**PDF Y Endnote Y**

Falls, depression, and other hospitalization risk factors for adults in residential care facilities

Gimm GW, Kitsantas P.

*Int. J. Aging Hum. Dev.* 2016; 83(1): 44-62.

**Affiliation:** George Mason University, Fairfax, VA, USA.

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**DOI** 10.1177/0091415016645347 **PMID** 27147680

**Abstract**

Prior research has shown a relationship between falls, hospitalizations, and depression among older adults in nursing home settings, but few studies have explored these relationships for younger and older adults in residential care facilities. This study examined risk factors for hospitalizations among assisted living residents. Using the 2010 National Survey of Residential Care Facilities, the study found that 24% of residents had a hospital stay in the past year. Residents with falls were more than twice as likely to have a hospitalization. For younger residents, depression was a key risk factor (OR = 1.74,  $p < .01$ ). However, older residents with dementia had a lower risk of hospitalization (OR = 0.71,  $p < .01$ ). More attention is needed to prevent falls and identify residents with depression and severe mental illness, who are at greater risk of hospitalization. Reducing avoidable hospitalizations can improve well-being for older and younger adults in residential care facilities.

**PDF Y Endnote Y**

### **Fear of falling: efficacy of virtual reality associated with serious games in elderly people**

Levy F, Leboucher P, Rautureau G, Komano O, Millet B, Jouvent R.

*Neuropsychiatr. Dis. Treat.* 2016; 12: 877-881.

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(Copyright © 2016, Dove Medical Press)

**DOI** 10.2147/NDT.S97809 **PMID** 27143889

#### **Abstract**

**OBJECTIVE:** Fear of falling is defined as an ongoing concern about falling that is not explained by physical examination. Focusing on the psychological dimension of this pathology (phobic reaction to walking), we looked at how virtual reality associated with serious games can be used to treat this pathology.

**METHODS:** Participants with fear of falling were randomly assigned to either a treatment group or a waiting list. The therapy consisted of 12 weekly sessions of virtual reality exposure therapy associated with serious games.

**RESULTS:** Sixteen participants were included. The mean age of the treatment group was 72 years and that of the control group was 69 years. Participants' scores on the fear of falling measure improved after treatment with virtual reality associated with serious games, leading to a significant difference between the two groups.

**CONCLUSION:** Virtual reality exposure therapy associated with serious games can be used in the treatment of fear of falling. The two techniques are complementary (top-down and bottom-up processes). To our knowledge, this is the first time that a combination of the two has been assessed. There was a specific effect of this therapy on the phobic reaction. Further studies are needed to confirm its efficacy and identify its underlying mechanism.

#### **PDF Y Endnote Y**

### **Functional mobility and its contributing factors for older adults in different cities in Taiwan**

Lin SI, Lee HC, Chang KC, Yang YC, Tsao JY.

*J. Formos. Med. Assoc.* 2016; ePub(ePub): ePub.

**Affiliation:** School and Graduate Institute of Physical Therapy, National Taiwan University, Taipei, Taiwan. Electronic address: jytsao@ntu.edu.tw.

(Copyright © 2016, Scientific Communications International)

**DOI** 10.1016/j.jfma.2016.01.011 **PMID** 27142082

#### **Abstract**

**BACKGROUND/PURPOSE:** Impaired mobility is one of the primary causes of declined functional capacity in old age. The timed up-and-go test (TUG), a common mobility test, has been studied extensively in Western countries. The purposes of this study were to compare and identify factors associated with TUG performance in older adults with impaired mobility and living in different cities in Taiwan.

**METHODS:** Older adults living in Taipei, Tainan, and Niasong cities were screened for mobility impairments and then recruited. A series of questionnaires and physical and functional tests were used to obtain information and measurements for potential contributing factors and TUG.

Regression analysis was conducted to determine factors contributing to TUG.

**RESULTS:** A total of 413 older adults participated in the study. The mean TUG was 14.3 seconds for participants across the three cities, and was significantly shorter in Tainan. Age, number of

medications, fear of falling, depression, high intensity activity time, reaction time, single leg stance time, and functional reach distance were found to have significant contribution. These factors accounted for approximately half of the variance in TUG. The regression equations were not equal for the different cities, with depression being the only common determinant.

**CONCLUSION:** Taiwanese older adults with mobility problems living in different cities performed differently in TUG and the contributing factors were also different. These findings indicate a need of further studies examining older adults in different environments.

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### **Global forum: fractures in the elderly**

Court-Brown CM, McQueen MM.

*J. Bone Joint Surg. Am.* 2016; 98(9): e36.

**Affiliation:** University of Edinburgh, Edinburgh, Scotland.

(Copyright © 2016, Journal of Bone and Joint Surgery)

**DOI** 10.2106/JBJS.15.00793 **PMID** 27147693

#### **Abstract**

Fractures in the elderly are increasing in incidence and becoming a major health issue in many countries. With an increasing number of the elderly living to an older age, the problems associated with fractures will continue to increase. We describe the epidemiology of fractures in the elderly and identify six fracture patterns in the population of patients who are sixty-five years of age or older. We also analyzed multiple fractures and open fractures in the elderly and we show that both increase in incidence with older age. The incidence of open fractures in elderly women is equivalent to that in young men. Many factors, including patient socioeconomic deprivation, increase the incidence of fractures in the elderly. More than 90% of fractures follow low-energy falls and the mortality is considerable. Mortality increases with older age and medical comorbidities, but there is also evidence that it relates to premature discharge from the hospital.

**PDF Y Endnote Y**

### **Health coaching and pedometers to enhance physical activity and prevent falls in community-dwelling people aged 60 years and over: study protocol for the Coaching for Healthy AGEing (CHANGE) cluster randomised controlled trial**

Tiedemann A, Rissel C, Howard K, Tong A, Merom D, Smith S, Wickham J, Bauman A, Lord SR, Vogler C, Lindley RI, Simpson JM, Allman-Farinelli M, Sherrington C.

*BMJ Open* 2016; 6(5): e012277.

**Affiliation:** The George Institute for Global Health, Sydney Medical School, The University of Sydney, Sydney, New South Wales, Australia.

(Copyright © 2016, BMJ Publishing Group)

**DOI** 10.1136/bmjopen-2016-012277 **PMID** 27165652

#### **Abstract**

**INTRODUCTION:** Prevention of falls and promotion of physical activity are essential for maximising well-being in older age. However, there is evidence that promoting physical activity among older people without providing fall prevention advice may increase fall rates. This trial aims to establish the impact of a physical activity and fall prevention programme compared with a healthy eating programme on physical activity and falls among people aged 60+ years.

**METHODS AND ANALYSIS:** This cluster randomised controlled trial will involve 60 groups of community-dwelling people aged 60+ years. Participating groups will be randomised to: (1) a physical activity and fall prevention intervention (30 groups), involving written information, fall risk assessment and prevention advice, a pedometer-based physical activity tracker and telephone-based health coaching; or (2) a healthy eating intervention (30 groups) involving written information and telephone-based dietary coaching. Primary outcomes will be objectively measured physical activity at 12 months post-randomisation and self-reported falls throughout the 12-month trial period. Secondary outcomes include: the proportion of fallers, the proportion of people meeting the Australian physical activity guidelines, body mass index, eating habits, mobility goal attainment, mobility-related confidence, quality of life, fear of falling, risk-taking behaviour, mood, well-being, self-reported physical activity, disability, and health and community service use. The between-group difference in the number of falls per person-year will be analysed using negative binomial regression models. For the continuously scored primary and secondary outcome measures, linear regression adjusted for corresponding baseline scores will assess the effect of group allocation. Analyses will be preplanned, conducted while masked to group allocation, will take into account cluster randomisation, and will use an intention-to-treat approach. **ETHICS AND DISSEMINATION:** Protocol has been approved by the Human Research Ethics Committee at The University of Sydney, Australia (number 2015/517).

**RESULTS** will be disseminated via peer-reviewed journal articles, international conference presentations and participants' newsletters. **TRIAL REGISTRATION NUMBER:**

ACTRN12615001190594.

**PDF Y Endnote Y**

### **Impact of drug-drug and drug-disease interactions on gait speed in community-dwelling older adults**

Naples JG, Marcum ZA, Perera S, Newman AB, Greenspan SL, Gray SL, Bauer DC, Simonsick EM, Shorr RI, Hanlon JT.

*Drugs Aging* 2016; 33(6): 411-418.

**Affiliation:** Department of Epidemiology, School of Public Health, University of Pittsburgh, Pittsburgh, PA, USA.

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**DOI** 10.1007/s40266-016-0373-2 **PMID** 27138955

#### **Abstract**

**BACKGROUND:** Gait speed decline, an early marker of functional impairment, is a sensitive predictor of adverse health outcomes in older adults. The effect of potentially inappropriate medications, including drug-disease and drug-drug interactions, on gait speed decline is not well known.

**OBJECTIVE:** The aim of this study was to determine if drug interactions impair functional status as measured by gait speed.

**METHODS:** The sample included 2402 older adults with medication and gait speed data from the Health, Aging and Body Composition study. The independent variable was the frequency of drug-disease and/or drug-drug interactions at baseline and 3 additional years. The main outcome was a clinically meaningful gait speed decline of  $\geq 0.1$  m/s the year following drug interaction assessment. Adjusted odds ratios and 95 % confidence intervals (CIs) were calculated using multivariate generalized estimating equations for both the overall sample and a sample stratified by gait speed at time of drug interaction assessment.



**RESULTS:** The prevalence of drug-disease and drug-drug interactions ranged from 7.6 to 9.3 and 10.5 to 12.3 %, respectively, with few participants (3.8-5.7 %) having multiple drug interactions. At least 22 % of participants had a gait speed decline of  $\geq 0.1$  m/s annually. Drug interactions were not significantly associated with gait speed decline overall or in the stratified sample of fast walkers. There was some evidence, however, that drug interactions increased the risk of gait speed decline among those participants with slower gait speeds, though p values did not reach statistical significance (adjusted odds ratio 1.22; 95 % CIs 0.96-1.56;  $p = 0.11$ ). Moreover, a marginally significant dose-response relationship was seen with multiple drug interactions and gait speed decline (adjusted odds ratio 1.40; 95 % CIs 0.95-2.04;  $p = 0.08$ ).

**CONCLUSIONS:** Drug interactions may increase the likelihood of gait speed decline among older adults with evidence of preexisting debility. Future studies should focus on frail elders with less physiological reserve who may be more susceptible to the harms associated with potentially inappropriate medications.

#### **PDF N Endnote Y**

#### **Incidence rate of falls and its risk factors in patients with rheumatoid arthritis compared to controls: four years of the TOMORROW study**

Mamoto K, Inui K, Okano T, Sugioka Y, Tada M, Koike T, Nakamura H.

*Mod. Rheumatol.* 2016; ePub(ePub): ePub.

**Affiliation:** Department of Orthopaedic Surgery .

(Copyright © 2016, Japan Rheumatism Association, Publisher Springer Science+Business Media)

**DOI** 10.1080/14397595.2016.1176625 **PMID** 27142648

#### **Abstract**

**OBJECTIVE:** Patients with rheumatoid arthritis (RA) have been recognized to experience falls frequently due to functional disabilities. The aim of this study was to prospectively investigate factors influencing falls in patients with RA compared to controls.

**METHODS:** We compared the frequency of falls in 208 RA patients and 205 age- and sex-matched volunteers for four years and analyzed risk factors for falls in RA patients using multivariate regression analysis.

**RESULTS:** No significant difference in the incidence rate of falls (/person-year) between patients with RA (median [interquartile range]: 0 [0, 0.5]) and controls (0 [0, 0.5]) was evident during four years. Logistic regression analysis identified age, sex, body mass index, history of falls, and lower limb implant at baseline as significant risk factors for falls. The highest quartile of anti-CCP antibody level ( $>300.6$  U/ml) was the strongest predictor for multiple falls (odds ratio, 2.97; 95% confidence interval, 1.12-7.91,  $p = 0.029$ ) among RA patients.

**CONCLUSION:** During four years we could not observe the higher incidence rate of falls in RA patients compared to controls in our cohort. Subjects with a higher titer of anti-CCP antibody might be at higher risk of frequent falls among RA patients.

#### **PDF Y Endnote Y**

#### **Interventions for human frailty: physical activity as a model**

Fried LP.

*Cold Spring Harb. Perspect. Med.* 2016; ePub(ePub): ePub.

**Affiliation:** Columbia University Medical Center, New York, New York 10032.

(Copyright © 2016, Cold Spring Harbor Laboratory Press)

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### Abstract

In the last 100 years, populations in developed countries have experienced an unprecedented addition of 30 years to life expectancy. Developing countries are now experiencing this same phenomenon, but over a shorter time frame. With this success comes the challenge of maximizing health and vitality across these added years. The compression of morbidity to the latest point in the human life span could unleash a sustained third demographic dividend that benefits all of society. To accomplish this, society needs to invest in the prevention and treatment of frailty, as well as in the prevention of chronic diseases at every age and stage of life. A model intervention, physical activity, may offer a road map.

### PDF Y Endnote Y

#### Lessons learned from implementing CDC's STEADI Falls Prevention Algorithm in primary care

Casey CM, Parker EM, Winkler G, Liu X, Lambert GH, Eckstrom E.

*Gerontologist* 2016; ePub(ePub): ePub.

**Affiliation:** Division of General Internal Medicine and Geriatrics, Oregon Health & Science University, Portland.

(Copyright © 2016, Oxford University Press)

DOI 10.1093/geront/gnw074 PMID 27130270

### Abstract

**BACKGROUND:** Falls lead to a disproportionate burden of death and disability among older adults despite evidence-based recommendations to screen regularly for fall risk and clinical trials demonstrating the effectiveness of multifactorial interventions to reduce falls. The Centers for Disease Control and Prevention developed STEADI (Stopping Elderly Accidents, Deaths, and Injuries) to assist primary care teams to screen for fall risk and reduce risk of falling in older adults.

**PURPOSE OF THE STUDY:** This paper describes a practical application of STEADI in a large academic internal medicine clinic utilizing the Kotter framework, a tool used to guide clinical practice change.

**DESIGN AND METHODS:** We describe key steps and decision points in the implementation of STEADI as they relate to the recommended strategies of the Kotter framework. Strategies include: creating a sense of urgency, building a guiding coalition, forming a strategic vision and initiative, enlisting volunteers, enabling success by removing barriers, generating short-term wins, sustaining change, and instituting change.

**RESULTS:** Fifty-six patients were screened during pilot testing; 360 patients were screened during the first 3 months of implementation. Key to successful implementation was (a) the development of electronic health record (EHR) tools and workflow to guide clinical practice and (b) the proactive leadership of clinical champions within the practice to identify and respond to barriers.

**IMPLICATIONS:** Implementing falls prevention in a clinical setting required support and effort across multiple stakeholders. We highlight challenges, successes, and lessons learned that offer guidance for other clinical practices in their falls prevention efforts.

### PDF Y Endnote Y

#### Mobility and muscle strength together are more strongly correlated with falls in suburb-dwelling older Chinese

Wang X, Ma Y, Wang J, Han P, Dong R, Kang L, Zhang W, Shen S, Wang J, Li D, Zhou M, Wang L, Niu K, Guo Q.

*Sci. Rep.* 2016; 6: e25420.

**Affiliation:** Department of Rehabilitation and Sports Medicine, Tianjin Medical University, Tianjin, China.

(Copyright © 2016, Nature Publishing Group)

**DOI** 10.1038/srep25420 **PMID** 27146721

#### **Abstract**

Falls are common in older adults and result in adverse outcomes. Impaired mobility and poor muscle strength have been consistently identified as the main contributors to falls. We choose three easy-to-perform tests (i.e. Timed Up and Go test (TUGT), walking speed (WS) and grip strength (GS)) in order to assess mobility and muscle strength to further define their relationship with falls. This study is cross-sectional, consisting of 1092 residents over 60-year-old; 589 were female. 204 (18.68%) participants reported falling at least once in the past year. It was found that, of the three tests evaluated independently, a TUGT < 9.1750 s had the strongest association with fewer falls. When evaluating these tests as pairs, the combination of a TUGT < 9.1750 s and a WS < 0.9963 m/s was the best protective indicator of falls after adjusting for age, sex and other variables. When evaluating all three tests in conjunction with each other, the combination of a TUGT < 9.1750 s, a WS < 0.9963 m/s, and a GS > 0.3816 was most correlated with less possibility of falls. The combination of a better TUGT performance, a stronger GS, and a slower WS is the most strongly correlated with less possibility of falls.

**PDF Y Endnote Y**

#### **Risk factors associated with in-hospital mortality in elderly patients admitted to a regional trauma center after sustaining a fall**

Cartagena LJ, Kang A, Munnangi S, Jordan A, Nweze IC, Sasthakonar V, Boutin A, George Angus LD. *Aging Clin. Exp. Res.* 2016; ePub(ePub): ePub.

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**DOI** 10.1007/s40520-016-0579-5 **PMID** 27142683

#### **Abstract**

**BACKGROUND AND AIMS:** Falls are a significant cause of mortality in the elderly patients. Despite this, the literature on in-hospital mortality related to elderly falls remains sparse. Our study aims to determine the risk factors associated with in-hospital mortality in elderly patients admitted to a regional trauma center after sustaining a fall.

**METHODS:** All elderly case records with fall-related injuries between 2003 and 2013 were retrospectively analyzed for demographic characteristics, injury severities, comorbidity factors and clinical outcomes. Logistic regression analysis was used to examine the risk factors associated with in-hospital mortality.

**RESULTS:** In total, 1026 elderly patients with fall-related injuries were included in the study. The average age of patients was  $80.94 \pm 8.16$  years. Seventy seven percent of the patients had at least one comorbid condition. Majority of the falls occurred at home. More than half of the patients fell from ground level. Overall, the in-hospital mortality rate was 16 %. Head injury constituted the most common injury sustained in patients who died (77 %). In addition to age, ISS, GCS, ICU admission and anemia were significantly ( $P < 0.05$ ) associated with in-hospital deaths in elderly fall patients.

**CONCLUSION:** Ground-level falls in the elderly can be devastating and carry a significant mortality rate. Elderly patients with anemia were two times more likely to die in the hospital after sustaining a

fall in our study population. Increased focus on anemia which is often underappreciated in elderly fall patients can be beneficial in improving outcomes and reducing in-hospital mortality.

#### PDF Y Endnote Y

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

Liu SW, Sri-On J, Tirrell GP, Nickel C, Bingisser R.

*Am. J. Emerg. Med.* 2016; ePub(ePub): ePub.

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**DOI** 10.1016/j.ajem.2016.04.007 **PMID** 27133925

#### 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.

#### PDF Y Endnote Y

### Short-term risk of serious fall injuries in older adults initiating and intensifying treatment with antihypertensive medication

Shimbo D, Barrett Bowling C, Levitan EB, Deng L, Sim JJ, Huang L, Reynolds K, Muntner P.

*Circ. Cardiovasc. Qual. Outcomes* 2016; 9(3): 222-229.

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**DOI** 10.1161/CIRCOUTCOMES.115.002524 **PMID** 27166208

## Abstract

**BACKGROUND:** Antihypertensive medication use has been associated with an increased risk of falls in some but not all studies. Few data are available on the short-term risk of falls after antihypertensive medication initiation and intensification.

**METHODS AND RESULTS:** We examined the association between initiating and intensifying antihypertensive medication and serious fall injuries in a case-crossover study of 90 127 Medicare beneficiaries who were  $\geq 65$  years old and had a serious fall injury between July 1, 2007, and December 31, 2012, based on emergency department and inpatient claims. Antihypertensive medication initiation was defined by a prescription fill with no fills in the previous year. Intensification was defined by the addition of a new antihypertensive class, and separately, titration by the addition of a new class or increase in dosage of a current class. Exposures were ascertained for the 15 days before the fall (case period) and six 15-day earlier periods (control periods). Overall, 272, 1508, and 3113 Medicare beneficiaries initiated, added a new class of antihypertensive medication or titrated therapy within 15 days of their serious fall injury. The odds for a serious fall injury was increased during the 15 days after antihypertensive medication initiation (odds ratio, 1.36 [95% confidence interval, 1.19-1.55]), adding a new class (odds ratio, 1.16 [95% confidence interval, 1.10-1.23]), and titration [odds ratio, 1.13 [95% confidence interval, 1.08-1.18]]. These associations were attenuated beyond 15 days.

**CONCLUSIONS:** Antihypertensive medication initiation and intensification was associated with a short-term, but not long-term, increased risk of serious fall injuries among older adults.

## PDF Y Endnote Y

### Strategies to reduce the risk of falling: Cohort study analysis with 1-year follow-up in community dwelling older adults

Morris JN, Howard EP, Steel K, Berg K, Tchalla A, Munankarmi A, David D.  
*BMC Geriatr.* 2016; 16(1): e92.

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(Copyright © 2016, BioMed Central)

**DOI** 10.1186/s12877-016-0267-5 **PMID** 27129303 **PMCID** PMC4851816

## Abstract

**BACKGROUND:** According to the CDC, falls rank among the leading causes of accidental death in the United States, resulting in significant health care costs annually. In this paper we present information about everyday lifestyle decisions of the older adult that may help reduce the risk of falling. We pursued two lines of inquiry: first, we identify and then test known mutable fall risk factors and ask how the resolution of such problems correlates with changes in fall rates. Second, we identify a series of everyday lifestyle options that persons may follow and then ask, does such engagement (e.g., engagement in exercise programs) lessen the older adult's risk of falling and if it does, will the relationship hold as the count of risk factors increases? **METHODS:** Using a secondary analysis of lifestyle choices and risk changes that may explain fall rates over one year, we drew on a data set of 13,623 community residing elders in independent housing sites from 24 US states. All older adults were assessed at baseline, and a subset assessed one year later ( $n = 4,563$ ) using two interRAI tools: the interRAI Community Health Assessment and interRAI Wellness Assessment.

**RESULTS:** For the vast majority of risk measures, problem resolution is followed by lower rate of falls. This is true for physical measures such as doing housework, meal preparation, unsteady gait,

transferring, and dressing the lower body. Similarly, this pattern is observed for clinical measures such as depression, memory, vision, dizziness, and fatigue. Among the older adults who had a falls risk at the baseline assessment, about 20 % improve, that is, they had a decreased falls rate when the problem risk improved. This outcome suggests that improvement of physical or clinical states potentially may result in a decreased falls rate. Additionally, physical exercise and cognitive activities are associated with a lower rate of falls.

**CONCLUSIONS:** The resolution of risk problems and physical and cognitive lifestyle choices are related to lower fall rates in elders in the community. The results presented here point to specific areas, that when targeted, may reduce the risk of falls. In addition, when there is problem resolution for specific clinical conditions, a decreased risk for falls also may occur.

#### **PDF Y Endnote Y**

#### **Trauma in elderly people: access to the health system through pre-hospital care**

da Silva HC, Pessoa Rde L, Menezes RM.

*Rev. Lat. Am. Enfermagem* 2016; 24: e2690.

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**DOI** 10.1590/1518-8345.0959.2690 **PMID** 27143543

#### **Abstract**

**OBJECTIVE:** to identify the prevalence of trauma in elderly people and how they accessed the health system through pre-hospital care.

**METHOD:** documentary and retrospective study at a mobile emergency care service, using a sample of 400 elderly trauma victims selected through systematic random sampling. A form validated by experts was used to collect the data. Descriptive statistical analysis was applied. The chi-square test was used to analyze the association between the variables.

**RESULTS:** Trauma was predominant among women (52.25%) and in the age range between 60 and 69 years (38.25%), average age 74.19 years (standard deviation±10.25). Among the mechanisms, falls (56.75%) and traffic accidents (31.25%) stood out, showing a significant relation with the pre-hospital care services ( $p<0.001$ ). Circulation, airway opening, cervical control and immobilization actions were the most frequent and Basic Life Support Services (87.8%) were the most used, with trauma referral hospitals as the main destination (56.7%).

**CONCLUSION:** trauma prevailed among women, victims of falls, who received pre-hospital care through basic life support services and actions and were transported to the trauma referral hospital. It is important to reorganize pre-hospital care, avoiding overcrowded hospitals and delivering better care to elderly trauma victims.

#### **PDF Y Endnote Y**

#### **Treadmill walking is not equivalent to overground walking for the study of walking smoothness and rhythmicity in older adults**

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*Gait Posture* 2016; 46: 42-46.

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(Copyright © 2016, Elsevier Publishing)

DOI 10.1016/j.gaitpost.2016.02.012 PMID 27131175

### Abstract

Treadmills are appealing for gait studies, but some gait mechanics are disrupted during treadmill walking. The purpose of this study was to examine the effects of speed and treadmill walking on walking smoothness and rhythmicity of 40 men and women between the ages of 70-96 years. Gait smoothness was examined during overground (OG) and treadmill (TM) walking by calculating the harmonic ratio from linear accelerations measured at the level of the lumbar spine. Rhythmicity was quantified as the stride time standard deviation. TM walking was performed at two speeds: a speed matching the natural OG walk speed (TM-OG), and a preferred TM speed (PTM). A dual-task OG condition (OG-DT) was evaluated to determine if TM walking posed a similar cognitive challenge. Statistical analysis included a one-way Analysis of Variance with Bonferroni corrected post hoc comparisons and the Wilcoxon signed rank test for non-normally distributed variables. Average PTM speed was slower than OG. Compared to OG, those who could reach the TM-OG speed (74.3% of sample) exhibited improved ML smoothness and rhythmicity, and the slower PTM caused worsened vertical and AP smoothness, but did not affect rhythmicity. PTM disrupted smoothness and rhythmicity differently than the OG-DT condition, likely due to reduced speed. The use of treadmills for gait smoothness and rhythmicity studies in older adults is problematic; some participants will not achieve OG speed during TM walking, walking at the TM-OG speed artificially improves rhythmicity and ML smoothness, and walking at the slower PTM speed worsens vertical and AP gait smoothness.

PDF Y Endnote Y

### Views and experiences of Malaysian older persons about falls and their prevention: a qualitative study

Loganathan A, Ng CJ, Low WY.

*BMC Geriatr.* 2016; 16(1): e97.

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DOI 10.1186/s12877-016-0274-6 PMID 27153989 PMCID PMC4858905

### Abstract

**BACKGROUND:** Few studies on falls interventions have been conducted in South East Asia. Despite its population ageing rapidly, the acceptability of interventions among the older population in this region remains variable. This study aims to explore views and experiences regarding falls and their prevention among older persons at high risk of falls.

**METHOD:** Sixteen individuals aged 60 years and over with at least one fall in the preceding 12 months were recruited from our Primary Care clinics. A qualitative study using semi-structured interviews among individuals and focus-groups was conducted. Thematic analyses were conducted on transcriptions of audio-taped interviews using the WeftQDA software. The interviews ceased when data saturation was achieved.

**RESULTS:** The three themes included older persons' views on falls, help-seeking behaviour and views on falls interventions. Many older persons interviewed did not perceive falls as a serious problem, some reported a stigma surrounding falls, while others felt they had not sustained more serious injuries due to God's grace. Older persons sought traditional medicine and other alternative treatments for pain relief and other fall-related symptoms. Accessibility of healthcare facilities often prevented older persons from receiving physiotherapy or eye tests.

**CONCLUSION:** The delivery of complex interventions for a multifactorial condition such as falls in the

older persons in our setting is inhibited by various cultural barriers, falls perceptions as well as logistic difficulties. Efforts to establish a multi-disciplinary intervention among our older population will need to include strategies to overcome these issues.

#### **PDF Y Endnote Y**

##### **Developing an audit checklist to assess outdoor falls risk**

Curl A, Thompson CW, Aspinall P, Ormerod M.

*Proc. Inst. Civ. Eng. Urban Des. Plan.* 2016; 169(3): 138-153.

**Affiliation:** University of Salford, Salford, UK.

(Copyright © 2016, Institution of Civil Engineers, Publisher Thomas Telford Journals)

**DOI** 10.1680/udap.14.00056 **PMID** 27166968

##### **Abstract**

Falls by older people (aged 65+) are linked to disability and a decrease in mobility, presenting a challenge to active ageing. As such, older fallers represent a vulnerable road user group. Despite this there is little research into the causes and prevention of outdoor falls. This paper develops an understanding of environmental factors causing falls or fear of falling using a walk-along interview approach with recent fallers to explore how older people navigate the outdoor environment and which aspects of it they perceived facilitate or hinder their ability to go outdoors and fear of falling. While there are a number of audit checklists focused on assessing the indoor environment for risk or fear of falls, nothing exists for the outdoor environment. Many existing street audit tools are focused on general environmental qualities and have not been designed with an older population in mind. We present a checklist that assesses aspects of the environment most likely to encourage or hinder those who are at risk of falling outdoors, developed through accounting for the experiences and navigational strategies of elderly individuals. The audit checklist can assist occupational therapists and urban planners, designers and managers in working to reduce the occurrence of outdoor falls among this vulnerable user group.

#### **PDF Endnote Y**

##### **Is there an increased risk of falls and fractures in people with early diagnosed hip and knee osteoarthritis? Data from the Osteoarthritis Initiative**

Smith TO, Higson E, Pearson M, Mansfield M.

*Int. J. Rheum. Dis.* 2016; ePub(ePub): ePub.

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**DOI** 10.1111/1756-185X.12871 **PMID** 27153388

##### **Abstract**

**AIMS:** To assess the probability of individuals with early-diagnosed hip or knee osteoarthritis experiencing a fall and/or fracture compared to a cohort without osteoarthritis.

**METHODS:** Data were analyzed from the Osteoarthritis Initiative dataset. We identified all people who were diagnosed with hip or knee osteoarthritis within a 12 month period, compared to those without osteoarthritis. We determined whether there was a difference in the occurrence of falls, with or without consequential fractures, between people newly diagnosed with hip or knee osteoarthritis compared to those who had not, using odd ratios (OR) and 95% confidence intervals



(95% CI).

**RESULTS:** Five hundred and fifty-two individuals with hip osteoarthritis were compared to 4244 individuals without hip osteoarthritis; 1350 individuals with knee osteoarthritis were compared to 3445 individuals without knee osteoarthritis. People with knee osteoarthritis had a 54% greater chance of experiencing a fall compared to those without (OR: 1.54; 95% CI: 1.35-1.77). People with hip osteoarthritis had a 52% greater chance of experiencing a fall compared to those without hip osteoarthritis (OR: 1.52; 95% CI: 1.26-1.84). People with knee and hip osteoarthritis demonstrated over an 80% greater chance of experiencing a fracture in the first 12 months of their diagnosis compared to those without hip or knee osteoarthritis (total knee arthroplasty: OR 1.81; total hip arthroplasty: OR 1.84).

**CONCLUSIONS:** There is an increased risk of falls and fractures in early-diagnosed knee and hip osteoarthritis compared to those without osteoarthritis. International guidelines on the management of hip and knee osteoarthritis should consider the management of falls risk.

**PDF Y Endnote Y**

### **Long-term survival following traumatic brain injury: a population-based parametric survival analysis**

Fuller GW, Ransom J, Mandrekar J, Brown AW.

*Neuroepidemiology* 2016; 47(1): 1-10.

**Affiliation:** Emergency Medicine Research in Sheffield, Health Services Research Section, School of Health and Related Research (SchARR), University of Sheffield, Sheffield, UK.

(Copyright © 2016, Karger Publishers)

**DOI** 10.1159/000445997 **PMID** 27165161

#### **Abstract**

**BACKGROUND:** Long-term mortality may be increased following traumatic brain injury (TBI); however, the degree to which survival could be reduced is unknown. We aimed at modelling life expectancy following post-acute TBI to provide predictions of longevity and quantify differences in survivorship with the general population.

**METHODS:** A population-based retrospective cohort study using data from the Rochester Epidemiology Project (REP) was performed. A random sample of patients from Olmsted County, Minnesota with a confirmed TBI between 1987 and 2000 was identified and vital status determined in 2013. Parametric survival modelling was then used to develop a model to predict life expectancy following TBI conditional on age at injury. Survivorship following TBI was also compared with the general population and age- and gender-matched non-head injured REP controls.

**RESULTS:** Seven hundred and sixty nine patients were included in complete case analyses. The median follow-up time was 16.1 years (interquartile range 9.0-20.4) with 120 deaths occurring in the cohort during the study period. Survival after acute TBI was well represented by a Gompertz distribution. Victims of TBI surviving for at least 6 months post-injury demonstrated a much higher ongoing mortality rate compared to the US general population and non-TBI controls (hazard ratio 1.47, 95% CI 1.15-1.87). US general population cohort life table data was used to update the Gompertz model's shape and scale parameters to account for cohort effects and allow prediction of life expectancy in contemporary TBI.

**CONCLUSIONS:** Survivors of TBI have decreased life expectancy compared to the general population. This may be secondary to the head injury itself or result from patient characteristics associated with both the propensity for TBI and increased early mortality. Post-TBI life expectancy estimates may be

useful to guide prognosis, in public health planning, for actuarial applications and in the extrapolation of outcomes for TBI economic models.

#### PDF Endnote Y

### **Misalignment of the desired and measured center of pressure describes falls caused by slip during turning**

Yamaguchi T, Higuchi H, Onodera H, Hokkirigawa K, Masani K.

*PLoS One* 2016; 11(5): e0155418.

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(Copyright © 2016, Public Library of Science)

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#### **Abstract**

In this study, desired center of pressure (dCOP) was introduced to evaluate dynamic postural stability. The dCOP is defined as a virtual point on the ground, where the moment around the body center of mass (COM) becomes zero when dCOP and the measured COP (mCOP) coincide. We hypothesized that, when the misalignment of the dCOP and mCOP (dCOP-mCOP) increases up to a certain value due to a large perturbation during walking, it becomes difficult to make a compensatory step and to recover balance of COM and to continue gait. Here we tested this hypothesis in slipping during turning. The study involved twelve healthy young adult males with an average age of  $21.5 \pm 1.9$  yrs. The subjects were asked to (1) walk straight and turn 60 degrees to the right with the right foot (spin turn) on a dry floor surface, and (2) walk straight and 60 degrees spin turn to the right on a slippery lubricated surface. The dCOP-mCOP during turning in the slip trial with fall were significantly larger, particularly in x-direction (i.e., the medial-lateral direction during straight walk), than that in no-slip trial and slip trial without fall. The receiver operating characteristic (ROC) analysis indicated that the dCOP-mCOP in x-direction is good indicator of falling (area under the curve (AUC) = 0.93) and the threshold in the dCOP-mCOP in x-direction to distinguish for fall or no-fall was 0.55 m. These results support our hypothesis in slipping during turning.

#### PDF Y Endnote Y

### **Potentially inappropriate medications in primary care older patients in Toledo (SPAIN): the STOPP-START criteria compared with the Beers criteria**

Gonzalez ML, Martin MF, Amezuza FOCD, Hernández MC, Girones MZ.

*Eur. J. Hosp. Pharm.* 2015; 22(Suppl 1): A163-A164.

(Copyright © 2015, BMJ Publishing Group)

**DOI** 10.1136/ejpharm-2015-000639.394 **PMID** unavailable

#### **Abstract**

**BACKGROUND:** Prescribing potentially inappropriate medications (PIMs) and omitting essential drugs are a common problem in elderly. Application of Beers criteria and screening tool of older persons' potentially inappropriate prescriptions (STOPP) in primary care setting has not been studied broadly.

**PURPOSE:** To identify PIMs using Beers and STOPP criteria. The START (Screening Tool to Alert doctors to the Right Treatment) criteria were applied to detect potential prescribing omission in elderly patients in Primary Care.

**MATERIAL AND METHODS:** A descriptive, observational study was carried out for patients over 65

years, with more than 6 medications who attended in 5 Medical Centres Primary Care between October 2013 and June 2014. The patients were randomly selected to participate in the study. The patient demographic data including medical histories, current diagnoses and current medications were recorded by a pharmacist. PIMs have been defined as patient who met any of the Beers 2012, STOPP or START criteria.

**RESULTS:** Number of patients: 270. Average age: 80 years. Total prescribed medications: 2.758, average 10, 2 per patient. The highest prevalence was related to drugs for the cardiovascular system, inhibitors of proton pump, statins and omeprazole. There were 49%, 59%, 20% PIMs found using Beers, STOPP and START criteria, respectively. The most common PIMs using Beers and STOPP criteria were short-acting benzodiazepine prescribed to elderly patient with a history of falls (31% vs. 24%). The STOPP criteria were duplicate drugs prescriptions among (24%), higher doses than 150 mg/day of aspirin (7%). Common PPOs identified included antiplatelet for diabetes with high cardiovascular risk index (18%), vitamin D and calcium supplements for known osteoporosis patients (17%).

**CONCLUSION:** STOPP/START criteria showed higher MPIs detection capability than Beers criteria. This study confirms the high prevalence of PIMs among older adults comparing prior studies (16.3-62.5%). This can be explained by the diversity in the severity of disease in the study subjects.

#### **PDF Endnote Y**

#### **The interrelationship between disease severity, dynamic stability, and falls in cerebellar ataxia**

Schniepp R, Schlick C, Pradhan C, Dieterich M, Brandt T, Jahn K, Wuehr M.

*J. Neurol.* 2016; ePub(ePub): ePub.

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#### **Abstract**

Cerebellar ataxia (CA) results in discoordination of body movements (ataxia), a gait disorder, and falls. All three aspects appear to be obviously interrelated; however, experimental evidence is sparse. This study systematically correlated the clinical rating of the severity of ataxia with dynamic stability measures and the fall frequency in patients with CA. Clinical severity of CA in patients with sporadic ( $n = 34$ ) and hereditary ( $n = 24$ ) forms was assessed with the Scale for the Assessment and Rating of Ataxia (SARA). Gait performance was examined during slow, preferred, and maximally fast walking speeds. Spatiotemporal variability parameters in the fore-aft and medio-lateral directions were analyzed. The fall frequency was assessed using a standardized interview about fall events within the last 6 months. Fore-aft gait variability showed significant speed-dependent characteristics with highest magnitudes during slow and fast walking. The SARA score correlated positively with fore-aft gait variability, most prominently during fast walking. The fall frequency was significantly associated to fore-aft gait variability during slow walking. Severity of ataxia, dynamic stability, and the occurrence of falls were interrelated in a speed-dependent manner: (a) Severity of ataxia symptoms was closely related to instability during fast walking. (b) Fall frequency was associated with instability during slow walking. These findings suggest the presence of a speed-dependent, twofold cerebellar locomotor control.



Assessment of gait performance during non-preferred, slow and fast walking speeds provides novel insights into the pathophysiology of cerebellar locomotor control and may become a useful approach in the clinical evaluation of patients with CA.

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