

SafetyLit April 24th 2016

Age-related vulnerability to lethal craniocerebral crush injuries from electrical beds/tables

Byard RW, Herbst J, Langlois NE.

J. Forensic Sci. 2016; ePub(ePub): ePub.

Affiliation: Forensic Science South Australia, 21 Divett Place, Adelaide, 5000, South Australia, Australia.

(Copyright © 2016, American Society for Testing and Materials, Publisher John Wiley and Sons)

DOI 10.1111/1556-4029.13114 **PMID** 27093332

Abstract

Vulnerability to accidents characterizes the extremes of life for reasons that may be similar in each age group. Two cases are reported to demonstrate increased risks of entrapment and crushing injury involving the use of electrically controlled beds/tables. Case 1: A frail 98-year-old woman with a history of dementia suffered a lethal crush injury to her head when she fell out of bed and accidentally activated its lowering mechanism. Case 2: An 18-month-old girl suffered a lethal crush injury to her head when she became trapped under a lowered electric massage table. Common devices may be dangerous if individuals do not have the mental or physical capabilities to deal with them. The forensic assessment of such deaths involves an evaluation of the neurocognitive level and physical strength of the decedent as documented in previous clinical assessments, in addition to a careful examination of the structure and function of the bed/table.

PDF Y Endnote Y

An evaluation of the longitudinal, bidirectional associations between gait speed and cognition in older women and men

Best JR, Liu-Ambrose T, Boudreau RM, Ayonayon HN, Satterfield S, Simonsick EM, Studenski S, Yaffe K, Newman AB, Rosano C.

J. Gerontol. A Biol. Sci. Med. Sci. 2016; ePub(ePub): ePub.

Affiliation: Department of Epidemiology, Graduate School of Public Health, University of Pittsburgh, Pennsylvania.

(Copyright © 2016, Gerontological Society of America)

DOI 10.1093/gerona/glw066 **PMID** 27069098

Abstract

BACKGROUND: Few cohort studies have examined longitudinal associations between age-related changes in cognition and physical performance. Further, whether these associations differ for men versus women or can be attributed to differences in physical activity (PA) is unknown.

METHODS: Participants were 2,876 initially well-functioning community-dwelling older adults (aged 70-79 years at baseline; 52% female; 39% black) studied over a 9-year period. Usual gait speed, self-reported PA, and two cognitive measures-Digit Symbol Substitution Test (DSST) and Mini-Modified Mental State examination (3MS)-were assessed years 0 (ie, baseline), 4, and 9.

RESULTS: Early decline between years 0 and 4 in gait speed predicted later decline between years 4 and 9 in performance on the 3MS ($\beta = 0.10$, $p = .004$) and on the DSST ($\beta = 0.16$, $p < .001$). In contrast, the associations between early decline in cognition and later decline in gait speed were weaker and were non-significant after correcting for multiple comparisons ($\beta = 0.08$, $p = .019$ for 3MS and $\beta = .06$, $p = .051$ for DSST). All associations were similar for women and men and were unaltered when accounting for PA levels.

CONCLUSIONS: The results indicate declining gait speed as a precursor to declining cognitive functioning, and suggest a weaker reciprocal process among older women and men.

PDF Y Endnote Y

Dizziness, physical exercise, falls, and depression in adults and the elderly

Teixeira AR, Wender MH, Gonçalves AK, Freitas Cde L, Santos AM, Soldera CL.

Int. Arch. Otorhinolaryngol. 2016; 20(2): 124-131.

Affiliation: Department of Phonoaudiology, Universidade Federal de Ciências da Saúde de Porto Alegre, Porto Alegre, Rio Grande do Sul, Brazil.

(Copyright © 2016, Fundação Otorrinolaringologia, Publisher Georg Thieme Verlag)

DOI 10.1055/s-0035-1566304 **PMID** 27096016

Abstract

INTRODUCTION: Dizziness is a symptom that can lead to falls, which, in turn, undermine one's independence and autonomy, leading to several comorbidities. The practice of physical exercise, however, can help prevent falls.

OBJECTIVE : The objective of this study is to confirm the association between physical exercise, dizziness, probability of falling, and depressive symptoms in a group of middle-aged adults and seniors.

METHODS: The authors evaluated subjects based on history, the Geriatric Depression Scale, and functional reach test.

RESULTS: The sample consisted of 90 individuals with a mean age of 69.3 ± 6.8 years. The authors found that 37.8% had been practicing exercise, 33.7% had depressive symptoms, and their probability of falling was above average in the functional reach test.

CONCLUSION: The results of this study indicated an association between dizziness, exercise practice and depressive symptoms, indicating that physical activity is a beneficial factor for the aging population.

PDF Y Endnote Y

Effectiveness of a batteryless and wireless wearable sensor system for identifying bed and chair exits in healthy older people

Shinmoto Torres RL, Visvanathan R, Hoskins S, van den Hengel A, Ranasinghe DC.

Sensors (Basel) 2016; 16(4): e16040546.

Affiliation: Auto-ID Lab, The University of Adelaide, North Terrace, Adelaide SA 5005, Australia. damith.ranasinghe@adelaide.edu.au.

(Copyright © 2016, Multidisciplinary Digital Publishing Institute)

DOI 10.3390/s16040546 **PMID** 27092506

Abstract

Aging populations are increasing worldwide and strategies to minimize the impact of falls on older people need to be examined. Falls in hospitals are common and current hospital technological implementations use localized sensors on beds and chairs to alert caregivers of unsupervised patient ambulations; however, such systems have high false alarm rates. We investigate the recognition of bed and chair exits in real-time using a wireless wearable sensor worn by healthy older volunteers. Fourteen healthy older participants joined in supervised trials. They wore a batteryless, lightweight and wireless sensor over their attire and performed a set of broadly scripted activities. We

developed a movement monitoring approach for the recognition of bed and chair exits based on a machine learning activity predictor. We investigated the effectiveness of our approach in generating bed and chair exit alerts in two possible clinical deployments (Room 1 and Room 2). The system obtained recall results above 93% (Room 2) and 94% (Room 1) for bed and chair exits, respectively. Precision was >78% and 67%, respectively, while F-score was >84% and 77% for bed and chair exits, respectively. This system has potential for real-time monitoring but further research in the final target population of older people is necessary.

PDF Y Endnote Y

Efficient assessment of risk of fall

Forrest G, Chen E.

Rehabil. Nurs. 2016; ePub(ePub): ePub.

Affiliation: Department of Physical Medicine and Rehabilitation, University of Washington, Seattle, WA, USA.

(Copyright © 2016, Association of Rehabilitation Nursing, Publisher John Wiley and Sons)

DOI 10.1002/rnj.269 **PMID** 27060993

Abstract

PURPOSE: The aim of this study was to identify factors that are associated with risk of falls on rehabilitation unit and to determine an efficient and inexpensive method of identifying patients at high risk for fall.

DESIGN: Retrospective record review.

METHOD: Retrospective review of 2,254 consecutive admissions to an inpatient rehabilitation unit.

FINDINGS: Score on the Functional Independence Measure (FIM) at the time of admission and length of stay are the factors that most highly correlate with risk of fall. Use of the mobility and problem solving or transfer and problem solving scales can identify patients at high risk for fall.

CONCLUSION: Low scores on total FIM, and the mobility and problem solving items indicate increased risk of fall.

CLINICAL RELEVANCE: Nurses need to take appropriate measures to protect the safety of these patients.

PDF Y Endnote Y

Exergames: neuroplastic hypothesis about cognitive improvement and biological effects on physical function of institutionalized older persons

Monteiro-Junior RS, Vagheti CA, Nascimento OJ, Laks J, Deslandes AC.

Neural Regen. Res. 2016; 11(2): 201-204.

Affiliation: Institute of Physical Education and Sport, Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brazil; Institute of Psychiatry, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil; Neuroscience Laboratory of Exercise, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil.

(Copyright © 2016, Neural Regeneration Research, Shenyang, Liaoning Province, P.R. China, Publisher Wolters Kluwer)

DOI 10.4103/1673-5374.177709 **PMID** 27073355 **PMCID** PMC4810966

Abstract

Exergames can be considered a dual task because the games are performed by a man-videogame interface, requiring cognitive and motor functions simultaneously. Although the literature has shown

improvements of cognitive and physical functions due to exergames, the intrinsic mechanisms involved in these functional changes have still not been elucidated. The aims of the present study were (1) to demonstrate the known biological mechanisms of physical exercise regarding muscle adaptation and establish a relationship with exergames; and (2) to present a neurobiological hypothesis about the neuroplastic effects of exergames on the cognitive function of institutionalized older persons. These hypotheses are discussed.

PDF Y Endnote Y

Gait coordination impairment is associated with mobility in older adults

James EG, Leveille SG, You T, Hausdorff JM, Trivison T, Manor B, McLean R, Bean JF.

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

Affiliation: Department of Physical Medicine and Rehabilitation, Harvard Medical School, Boston, MA 02129, USA.

(Copyright © 2016, Elsevier Publishing)

DOI 10.1016/j.exger.2016.04.009 **PMID** 27086065

Abstract

BACKGROUND: Impairments to body systems contribute to mobility limitations. The objective of this study was to determine whether impaired gait coordination, as measured by the Phase Coordination Index (PCI), is significantly associated with mobility limitations in older adults, even after adjusting for other gait features.

METHODS: We conducted a cross-sectional analysis of performance-based measures of mobility in older adults (N=164) 77-101years of age, participants in the population-based MOBILIZE Boston Study. Mobility outcomes included the Short Physical Performance Battery (SPPB) and each of its three components. Multivariable linear regression models, adjusting for age and gender, were used to examine the associations of PCI and the coefficients of variation of stride length, width and time, stance time, and step width with each outcome.

RESULTS: PCI accounted for more variance in SPPB score ($R(2)=0.21$), gait speed ($R(2)=0.17$), chair rise score ($R(2)=0.10$), and balance score ($R(2)=0.09$) than any of the other gait measures. Impaired gait coordination was significantly associated with performance on the SPPB and each of its component tasks, even after accounting for gait measures previously linked to mobility tasks (all $P<0.05$). In multivariable linear regression modeling PCI accounted for an additional 9% of the variance in SPPB score ($P<0.001$), after accounting for the other gait variables, age, and gender.

CONCLUSIONS: This study shows that impaired gait coordination is associated with poorer mobility performance in older adults, independent of other gait variables previously linked to mobility tasks.

PDF Y Endnote Y

Heartbeat: detection of arrhythmias in older adults with falls and syncope

Otto CM.

Heart 2016; 102(9): 651-652.

(Copyright © 2016, BMJ Publishing Group)

DOI 10.1136/heartjnl-2016-309648 **PMID** 27073247

Abstract [Abstract unavailable]

PDF Y Endnote Y

Involuntary capture and voluntary reorienting of attention decline in middle-aged and old participants

Correa-Jaraba KS, Cid-Fernández S, Lindín M, Díaz F.

Front. Hum. Neurosci. 2016; 10: e129.

Affiliation: Laboratorio de Psicofisiología e Neurociencia Cognitiva, Facultad de Psicología, Universidade de Santiago de Compostela Santiago de Compostela, Spain.

(Copyright © 2016, Frontiers Research Foundation)

DOI 10.3389/fnhum.2016.00129 **PMID** 27065004 **PMCID** PMC4811968

Abstract

The main aim of this study was to examine the effects of aging on event-related brain potentials (ERPs) associated with the automatic detection of unattended infrequent deviant and novel auditory stimuli (Mismatch Negativity, MMN) and with the orienting to these stimuli (P3a component), as well as the effects on ERPs associated with reorienting to relevant visual stimuli (Reorienting Negativity, RON). Participants were divided into three age groups: (1) Young: 21-29 years old; (2) Middle-aged: 51-64 years old; and (3) Old: 65-84 years old. They performed an auditory-visual distraction-attention task in which they were asked to attend to visual stimuli (Go, NoGo) and to ignore auditory stimuli (S: standard, D: deviant, N: novel). Reaction times (RTs) to Go visual stimuli were longer in old and middle-aged than in young participants. In addition, in all three age groups, longer RTs were found when Go visual stimuli were preceded by novel relative to deviant and standard auditory stimuli, indicating a distraction effect provoked by novel stimuli. ERP components were identified in the Novel minus Standard (N-S) and Deviant minus Standard (D-S) difference waveforms. In the N-S condition, MMN latency was significantly longer in middle-aged and old participants than in young participants, indicating a slowing of automatic detection of changes. The following results were observed in both difference waveforms: (1) the P3a component comprised two consecutive phases in all three age groups—an early-P3a (e-P3a) that may reflect the orienting response toward the irrelevant stimulation and a late-P3a (l-P3a) that may be a correlate of subsequent evaluation of the infrequent unexpected novel or deviant stimuli; (2) the e-P3a, l-P3a, and RON latencies were significantly longer in the Middle-aged and Old groups than in the Young group, indicating delay in the orienting response to and the subsequent evaluation of unattended auditory stimuli, and in the reorienting of attention to relevant (Go) visual stimuli, respectively; and (3) a significantly smaller e-P3a amplitude in Middle-aged and Old groups, indicating a deficit in the orienting response to irrelevant novel and deviant auditory stimuli.

PDF Y Endnote Y

The risk of hospital admission due to traumatic brain injury is increased in older persons with severe functional limitations

Büchle G, Rapp K, König HH, Jaensch A, Rothenbacher D, Becker C, Benzinger P.

J. Am. Med. Dir. Assoc. 2016; ePub(ePub): ePub.

Affiliation: Department of Clinical Gerontology, Robert Bosch Krankenhaus Stuttgart, Stuttgart, Germany. Electronic address: petra.benzinger@rbk.de.

(Copyright © 2016, Lippincott Williams and Wilkins)

DOI 10.1016/j.jamda.2016.02.032 **PMID** 27073040

Abstract

INTRODUCTION: Hospital admissions due to traumatic brain injuries (TBIs) in older persons are increasing. Falls are the leading mechanism of injury in this age group. TBIs are associated with

unfavorable outcomes such as mortality and institutionalization.

OBJECTIVES: To estimate rates of TBIs in older persons with severe functional limitations, expressed as "care need," living in the community, and in older persons with care need living in nursing homes compared with older persons without care need. **PARTICIPANTS:** More than 1.2 million persons aged 65 years and older living in Bavaria, Germany, and insured with one of the largest German health insurances (health care and long-term care insurance).

METHODS: Age-standardized rates were calculated based on hospital claims data and claims data of the long-term care insurance and were compared between groups. The 3 groups were defined by claims data of the long-term care insurance.

RESULTS: TBI in older persons account for 4.8 hospital admissions per 1000 person-years. Overall TBI rates do not differ significantly between men and women. TBI rates are lowest in persons without care need and are highest for older persons living in nursing homes. Their contribution to the overall burden of TBI is lower than their contribution to the burden of fragility fractures.

CONCLUSION: TBIs in older persons are common. Those with severe functional limitations are at increased risk for TBI. Nursing home residents have the highest rates of TBI. Fall prevention programs should seek to prevent not only fragility fractures but also head impact.

PDF Y Endnote Y

DIZZYNET-a European network initiative for vertigo and balance research: visions and aims

Zwergal A, Brandt T, Magnusson M, Kennard C.

J. Neurol. 2016; 263(Suppl 1): 2-9.

Affiliation: Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, UK.

(Copyright © 2016, Springer Science+Business Media)

DOI 10.1007/s00415-015-7912-3 **PMID** 27083879

Abstract

Vertigo is one of the most common complaints in medicine. Despite its high prevalence, patients with vertigo often receive either inappropriate or inadequate treatment. The most important reasons for this deplorable situation are insufficient interdisciplinary cooperation, nonexistent standards in diagnostics and therapy, the relatively rare translations of basic science findings to clinical applications, and the scarcity of prospective controlled multicenter clinical trials. To overcome these problems, the German Center for Vertigo and Balance Disorders (DSGZ) started an initiative to establish a European Network for Vertigo and Balance Research called DIZZYNET. The central aim is to create a platform for collaboration and exchange among scientists, physicians, technicians, and physiotherapists in the fields of basic and translational research, clinical management, clinical trials, rehabilitation, and epidemiology. The network will also promote public awareness and help establish educational standards in the field. The DIZZYNET has the following objectives as regards structure and content: to focus on multidisciplinary translational research in vertigo and balance disorders, to develop interdisciplinary longitudinal and transversal networks for patient care by standardizing and personalizing the management of patients, to increase methodological competence by implementing common standards of practice and quality management, to internationalize the infrastructure for prospective multicenter clinical trials, to increase recruitment capacity for clinical trials, to create a common data base for patients with vertigo and balance disorders, to offer and promote attractive educational and career paths in a network of cooperating institutions. In the long term, the DIZZYNET should serve as an internationally visible network for interdisciplinary and multiprofessional research on vertigo and

balance disorders. It ideally should equally attract the afflicted patients and those managing their disorders. DIZZYNET will not compete with the traditional national or international societies active in the field, but will function as an additional structure that addresses some of the above problems.

PDF Y Endnote Y

DIZZYNET: the European network for vertigo and balance research

Zwergal A, Brandt T, Magnusson M, Kennard C.

J. Neurol. 2016; 263(Suppl 1): 1.

Affiliation: Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, UK.

(Copyright © 2016, Springer Science+Business Media)

DOI 10.1007/s00415-015-7920-3 **PMID** 27083878

Abstract [Abstract unavailable]

PDF Y Endnote Y

Epidemiologic study in hospitalized patients with head injuries

Aras Y, Sabanci PA, Unal TC, Aydoseli A, Izgi N.

Eur. J. Trauma Emerg. Surg. 2016; ePub(ePub): ePub.

Affiliation: Department of Neurosurgery, Istanbul University, Istanbul School of Medicine, Istanbul, Turkey.

(Copyright © 2016, Springer Science+Business Media)

DOI 10.1007/s00068-016-0668-3 **PMID** 27062402

Abstract

PURPOSE: The aim of this study was to analyze epidemiologic data of patients with head injuries (HI) who were admitted to the Trauma and Emergency Surgery Department.

METHODS: The hospital records of 497 patients with HI who were admitted to the Trauma and Emergency Surgery Department from January 1, 2014, through 31 December, 2014, were analyzed retrospectively.

RESULTS: The male-to-female ratio was 2:1, and the mean age was 16.3 years. The rates of patients with mild, moderate, and severe HI were 93, 3, and 4 %, respectively. The most common cause of trauma was falls. Linear fractures were the most common radiologic diagnoses with 242 cases (49 %). Of the patients admitted to hospital, 22 % presented 4 h after the trauma had occurred. Mortality rate due to HI was 3 % (15 patients). Outcome was associated with admission Glasgow Coma Scale and presence of additional trauma.

CONCLUSIONS: The number of traffic accidents and assaults were considerably higher in the young adult population compared with the other age groups. Traffic accidents accounted for 46.6 % of the mortality rate. Mortality in HI patients mostly arises from preventable conditions, and the young adult population seems to be the most affected group. HI should be considered as a public health issue, and prevention of HI should be the primary goal.

PDF Y Endnote Y

Evaluation of a four month rehabilitation program for stroke patients with balance problems and binocular visual dysfunction

Schow T, Harris P, Teasdale TW, Rasmussen MA.

NeuroRehabilitation 2016; ePub(ePub): ePub.

Affiliation: Faculty of Science, Spectroscopy and Chemometrics University of Copenhagen, Copenhagen, Denmark.

(Copyright © 2016, IOS Press)

DOI 10.3233/NRE-161324 **PMID**27061161

Abstract

BACKGROUND: Balance problems and binocular visual dysfunction (BVD) are common problems after stroke, however evidence of an effective rehabilitation method are limited.

OBJECTIVE: To evaluate the effect of a four-month rehabilitation program for individuals with balance problems and BVD after a stroke.

METHODS: About 40 sessions of 1.5 hours duration over four months with visual therapy and balance rehabilitation, was provided to all 29 participants, aged 18-67 years, in groups of 7-8 individuals. Several measures for BVD, balance, gait, Health Related Quality Of Life (HRQoL) and functional recovery were used at baseline, at the end of training and at a six-month follow up (FU).

RESULTS: We found significant improvements in stereopsis, vergence, saccadic movements, burden of binocular visual symptoms, balance and gait speed, fatigue, HRQoL and functional recovery. Moreover, 60% of the participants were in employment at the six-month FU, compared to only 23% before training. All improvements were sustained at the six-month FU.

CONCLUSIONS: Although a control group is lacking, the evidence suggests that the positive improvement is a result of the combined visual and balance training. The combination of balance and visual training appears to facilitate changes at a multimodal level affecting several functions important in daily life.

PDF N Endnote Y

Neurovestibular analysis and falls in Parkinson's disease and atypical Parkinsonism

Venhovens J, Meulstee J, Bloem BR, Verhagen WI.

Eur. J. Neurosci. 2016; ePub(ePub): ePub.

Affiliation: Department of Neurology and Clinical Neurophysiology, Canisius Wilhelmina Hospital, Nijmegen, the Netherlands.

(Copyright © 2016, Federation of European Neuroscience Societies, Publisher John Wiley and Sons)

DOI 10.1111/ejn.13253 **PMID** 27062368

Abstract

The primary aim of our study was to determine the extent of vestibular dysfunction in patients with Parkinson's disease (PD). Our secondary aim was to determine if vestibular dysfunction in PD is a risk factor for falling. The tertiary aim was to determine both the extent of vestibular dysfunction and if this dysfunction is a risk factor for falling in patients with atypical parkinsonism (AP). 25 healthy subjects, 30 PD patients, and 14 AP patients were matched for age and gender in a case-control study design. All subjects underwent clinical neurological and neurotological assessments, cervical and ocular vestibular evoked myogenic potentials (VEMPs), brainstem auditory evoked potentials (BAEPs), subjective visual vertical measurements, and videonystagmography with caloric and rotatory chair stimulation. 90% of PD patients (27 of 30) and all 14 AP patients had signs of vestibular dysfunction on laboratory examinations. The evoked potential (VEMPs and BAEPs) test results of PD patients showed significant prolongation of the p13, n1, interpeak III-V latencies on the symptomatic brainstem side ($0.003 \leq P \leq 0.019$) compared to healthy subjects. Also, vestibular testing abnormalities were correlated with an increased risk for falling when fallers among PD and AP patients were compared to the non-fallers ($P \leq 0.001$). To conclude, vestibular dysfunction on

vestibular laboratory testing is highly prevalent in both PD and AP patients compared to healthy subjects, and is associated with an increased risk for falling. This article is protected by copyright. All rights reserved.

PDF Y Endnote Y

What daily activities increase the risk of falling in Parkinson patients? An analysis of the utility of the ABC-16 scale

Foongsathaporn C, Panyakaew P, Jitkriksadakul O, Bhidayasiri R.
J. Neurol. Sci. 2016; 364: 183-187.

Affiliation: Chulalongkorn Center of Excellence for Parkinson Disease & Related Disorders, Department of Medicine, Faculty of Medicine, Chulalongkorn University, King Chulalongkorn Memorial Hospital, Thai Red Cross Society, Bangkok, 10330, Thailand; Department of Rehabilitation Medicine, Juntendo University, Tokyo, Japan. Electronic address: rbh@chulapd.org.
(Copyright © 2016, Elsevier Publishing)

DOI 10.1016/j.jns.2016.03.037 **PMID** 27084242

Abstract

BACKGROUND: Although the strongest predictor of falling in Parkinson's disease is the number of falls in the preceding year, little information is available on what types of daily activities (ADLs) that are associated with a significant fall risk in this population.

OBJECTIVES: To determine balance confidence (FOF) in PD patients by utilizing the 16-item Activities-Specific Balance Confidence Scale (ABC-16), and identifying specific activities from this scale that are predictors of future falls.

METHODS: 160 patients with PD, and 52 age-matched healthy controls completed the Thai-validated version of the ABC-16. The number of falls during the past month was obtained from both groups.

RESULTS: PD patients reported lower confidence in their ability to maintain balance during ADLs compared to controls ($p < 0.001$) with the lowest confidence score being item 16 (walking on slippery sidewalks). A significant negative correlation was observed between the number of falls in the previous month, and a mean ABC-16 score ($r = -0.387$, $p < 0.001$). Logistic regression analysis identified the strongest predictor of fall in PD patients was item 9 (getting in/out of car; OR=4.8), followed by item 6 (standing on chair to reach; OR=3.4), and item 3 (picking up slippers from floor; OR=2.6). All of these high-risk activities involve movement in the vertical orientation.

CONCLUSION: FOF was more common in PD patients than controls. In patients with postural instability and visual impairment, high-risk activities should be minimized, avoided, or performed only under supervision. It is recommended that fall prevention strategies include physical therapy interventions that are targeted at these activities.

PDF Y Endnote Y