

Characteristics of Veterans diagnosed with seizures within Veterans Health Administration

Rizwana Rehman, PhD, et al.

The purpose of this article is to describe demographics of Veterans diagnosed with seizures and taking antiepileptic drugs (AEDs) within the Veterans Health Administration (VHA) during fiscal year 2011, particularly with regards to comorbid traumatic brain injury (TBI) and posttraumatic stress disorder (PTSD). TBI and PTSD are risk factors for both epilepsy and psychogenic nonepileptic seizures. Within the VHA, many Veterans experiencing seizures cannot be successfully treated with AEDs. The Epilepsy Centers of Excellence promotes a multidisciplinary approach to increase and improve access to both epilepsy and mental health specialists for the care of epileptic and nonepileptic seizures.

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Evaluation of wheelchair resistive forces during straight and turning trajectories across different wheelchair configurations using free-wheeling coast-down test

Jui-Te Lin, MS, et al.

Reducing resistive forces while maneuvering manual wheelchairs will reduce propulsion effort and shoulder stress. Therefore, Veterans who use manual wheelchairs can benefit from the practical knowledge of how different configurations affect resistive forces. This new coast-down technique demonstrates a satisfactory repeatability and sensitivity for detecting deceleration changes during straight and turning trajectories. The results indicate that weight distribution has a greater effect on resistive forces than the wheelchair mass and that this effect varies between trajectories. Clinically, this study can serve as a good

reference for evaluating resistive forces while selecting or configuring a manual wheelchair.

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Neuromuscular control of curved walking in people with stroke: Case report

Amanda E. Chisholm, PhD, et al.

One of the most obvious deficits due to stroke is mobility restrictions from gait impairments. Difficulty adapting the basic walking pattern to change directions can contribute to falls at home and in the community. However, most clinical evaluations only measure impairments during straight walking. In this case study, we describe the neuromuscular response to walking paths of different curvatures among individuals with stroke. We found impaired modulation in the distribution of foot pressures and muscle activity regardless of the level of motor recovery. New approaches to evaluate walking are critical to determine the effect of interventions on advanced gait skills.

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Volumetric muscle loss leads to permanent disability following extremity trauma

Benjamin T. Corona, PhD, et al.

Volumetric muscle loss (VML) is the traumatic or surgical loss of skeletal muscle with a resultant functional impairment. Although the traumatic injuries experienced by wounded servicemembers often cause a large degree of soft-tissue damage, the contribution of VML is not known. Patients unable to return to duty because of a tibia fracture or for various other reasons were examined to better understand the contribution of VML to their disability. We found that failing to adequately address soft-tissue

deficits results in persistent muscle weakness that can play a large part in poor outcomes following injury. The results also suggest that VML can contribute significantly to a servicemember's disability and that developing therapies to address VML has the potential to fill a significant void in the care of patients with this disability.

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Evaluation of custom energy expenditure models for SenseWear armband in manual wheelchair users

KaLai Tsang, et al.

Manual wheelchair users tend to be physically inactive because of their mobility limitations. This sedentary lifestyle will increase their risk of developing secondary health problems such as obesity, high blood pressure, cancers, and heart diseases. Without proper assessment tools, wheelchair users will not know how much physical activity they need to do to stay healthy and clinicians will not be able to prescribe proper physical activity treatments to benefit their patients. This study evaluated recently developed custom energy expenditure models that will allow manual wheelchair users to accurately track their daily physical activity and develop a healthier lifestyle.

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Reduced gait automaticity in female patients with chronic fatigue syndrome: Case-control study

Jan b Eyskens, MSc PT, DO, Pr Ph, et al.

Veterans, when diagnosed with chronic fatigue syndrome (CFS), often experience ongoing fatigue and visual and/or cognitive problems, especially when performing two tasks at the same time. We observed and compared the ability of female patients with CFS versus female nondisabled controls to perform two tasks at the same time: walking with

eyes closed and walking with eyes closed while answering a simple question. Of the patients with CFS, 55.9% stopped walking with eyes closed to answer the question compared with 5.3% in the nondisabled control group. The "stops walking with eyes closed with secondary cognitive task" test suggests that gait automaticity is reduced in patients with CFS.

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Evaluating gaze-driven power wheelchair with navigation support for persons with disabilities

Erik Wästlund, PhD, et al.

This article describes a system for gaze-driven control and navigation support. The system is intended for people with severe disabilities who only have control of their eyes. Gaze-control is used instead of a joystick, and navigation support can provide assistance if needed. The system is attached to the user's power wheelchair and customized to his or her needs for different levels of support. All test participants were able to independently operate their powered wheelchair. They were very positive and appreciated the independence the system provided. In addition to being a personal aid, the system also serves as a tool for evaluation and rehabilitation.

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Lower-limb amputation and effect of posttraumatic stress disorder on Department of Veterans Affairs outpatient cost trends

Vibha Bhatnagar, MD, MPH, et al.

Department of Veterans Affairs data resources from the years 2003 to 2012 were used to analyze outpatient costs for a cohort of combat Veterans, including Veterans with serious lower-limb injury without amputation ($n = 170$) and those with unilateral ($n = 460$) and bilateral ($n = 153$) lower-limb amputation(s). Those with limb injuries had diminishing costs over the follow-up period; outpatient cost among those with amputation(s) was

more than 2 times higher and sustained, presumably from prosthetics and other specialized types of care. Posttraumatic stress disorder (PTSD) was also a strong predictor of increased cost across several types of outpatient care, highlighting the effect of PTSD across multiple domains of health and the importance of adequate treatment and support.

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Identification of pseudobulbar affect symptoms in Veterans with possible traumatic brain injury

Jennifer R. Fonda, MA, et al.

It is well known that some kinds of brain damage can change the way people express how they are feeling. The condition called “pseudobulbar affect,” or PBA, can develop after brain damage, making people laugh or cry even though they are not really feeling happy or sad. We sent a survey to Veterans of the recent wars who reported a history of concussion. We found that PBA symptoms were very common, with 70% reporting symptoms. Since PBA symp-

toms can be embarrassing and difficult to control at work or home, doctors should identify and treat PBA in this group of Veterans.

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Ambulation and independence among Veterans with nontraumatic bilateral lower-limb loss

Sherene E. Sharath, MPH, et al.

There is no disputing the fact that patients with a history of unilateral lower-limb amputation have poorer clinical outcomes following lower-limb bypass in the contralateral limb. Yet, there is still uncertainty as to whether these poorer outcomes are worse than when compared with outcomes after other treatments. Because patients in the Veterans Health Administration are at a higher risk for bilateral amputations, with the prevalence of diabetes nearly twice that of the general population, we are duty-bound and uniquely positioned to examine the evidence that advises and informs standard practices, therefore ensuring excellence in care.

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