

**Effects of vacuum-compression therapy on healing of diabetic foot ulcers: Randomized controlled trial**

Asghar Akbari, PhD, et al.

Diabetes mellitus is one of the most common metabolic diseases. More than 154 million people are estimated to have diabetes worldwide. The prevalence of diabetes among veterans has increased to 17%, more than double the prevalence in the general population. Diabetic foot ulcers are a frequent late complication in diabetic patients and the most prevalent lesion of the diabetic foot. Foot examinations are important for patients with diabetes. Veterans Health Administration stated that foot examinations should be performed annually. Although preventive methods and treatment modalities have been effective in healing foot ulcers, statistics show a high incidence of foot ulcers and amputations in diabetic patients. Therefore, we conducted a single-blind randomized controlled trial to evaluate vacuum-compression therapy (VCT) to heal diabetic foot ulcers. We found that VCT enhances diabetic foot-ulcer healing when used with appropriate wound care.

**Effects of intensive gait-oriented physiotherapy during early acute phase of stroke**

Sinikka H. Peurala, PhD, et al.



Previous studies have shown that an early versus delayed rehabilitation leads to better recovery from stroke. We assessed the effects and strenuousness of intensive gait-oriented rehabilitation initiated as early as possible after stroke. Patients intensively practiced walking for 3 weeks and gained more than 10 km walking distance. In addition, they participated in other types of active physiotherapy. Patients tolerated the exercises well despite the

early start. Patients achieved major improvements in walking ability, walking speed, and gross motor function during the first month after stroke.

**Stroke caregiver information needs: Comparison of Mainland and Puerto Rican caregivers**

Melanie Sberna Hinojosa, PhD; Maude R. Rittman, RN, PhD

The Department of Veterans Affairs (VA) recommends that caregivers and family members of stroke survivors receive education about stroke and the recovery process. However, research indicates that caregivers often do not have the information necessary to adequately manage the recovery process at home. We found that one-fifth to one-half of caregivers need information, and this need is greater for caregivers in Puerto Rico compared with caregivers in Mainland United States. We also found that caregivers receive most of their information from their doctors, the VA, and the Internet. Given caregivers' reliance on VA resources, future work should focus on the dissemination of information through the VA system (for example, through the MyHealthVet Web site: <http://www.myhealth.va.gov/>).

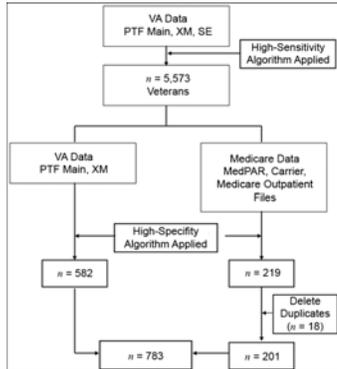
**Televideo assessment using Functional Reach Test and European Stroke Scale**

Susan E. Palsbo, PhD, et al.

Many rehabilitation professionals are interested in using telecommunications to treat patients who cannot travel to clinics. While studies have shown that doctors and therapists can view and talk with a patient over a videophone or Web camera, no studies have asked whether a physical therapist directing and evaluating a patient over a video connection is as accurate as a physical therapist directing and evaluating a patient in person. This study shows that a video assessment is probably as effective as an in-person assessment, as long as the assessment does not require the therapist to touch the patient.

**Identifying veterans with acute strokes with high-specificity ICD-9 algorithm with VA automated records and Medicare claims data: A more complete picture**

L. Douglas Ried, PhD, et al.



Research results are only as good as the methods used to obtain them. This project benefits veterans by improving methods for identifying veterans with acute stroke for clinical and epidemiological reporting and for research. Research findings will more accurately apply to all veterans when the sample includes both those

who use VA and those who use non-VA services. Moreover, programmatic or treatment applications will generalize more readily to the entire population of veterans. Our finding that identifying veterans with acute stroke improves with the use of both VA and Medicare health services affects research on all medical conditions, not just acute stroke.

**Influence of pain and depression on fear of falling, mobility, and balance in older male veterans**

Mark D. Bishop, PT, PhD, et al.

A multidisciplinary team (doctor, pharmacist, and physical therapist) evaluated patients referred to the Geriatric Gait and Balance Disorders Clinic at the Department of Veterans Affairs hospital in Gainesville, Florida. All patients were prescribed a home exercise program and were evaluated four times over 12 weeks. Approximately half the patients attended all evaluation sessions, and attendance at follow-up visits was associated with improved balance and mobility. Pain was associated with decreased balance and mobility. Older veterans who have fallen can improve their balance and mobility over a 12-week period. Pain may negatively affect the improvements, and we recommend targeted interventions that decrease pain and improve attendance in and adherence to rehabilitation programs for older adults with balance or gait disorders.

**Relationship between self-reported function and disability and balance performance measures in the elderly**

Itshak Melzer, PhD, PT, et al.

We demonstrated that the Hebrew version of the Late-Life Function and Disability Instrument (LLFDI) reliably and validly assesses function and disability in older adults. The LLFDI is recommended as an outcome instrument in studies in which older adults' function and disability are outcomes of interest. The LLFDI successfully avoided floor and ceiling effects by distinguishing between participants who did and did not use canes. These results contribute to existing information on the performance of the LLFDI and support the reliability and validity of the LLFDI in older adults.

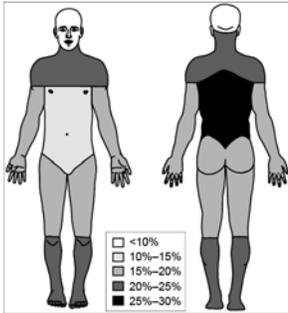
**Comparison of mobility device delivery within Department of Veterans Affairs for individuals with multiple sclerosis versus spinal cord injury**

Fabrisia Ambrosio, PhD, MPT, et al.

We studied demographic differences between veterans with multiple sclerosis (V-MS) and veterans with spinal cord injury (V-SCI) issued a wheelchair through the Veterans Health Administration (VHA) and described the differences in mobility prescription. We merged two VHA databases to obtain age, sex, race/ethnicity, and wheelchair distribution information for all V-SCI and V-MS in 2000 and 2001. We found that V-MS were less likely to receive ultralightweight manual wheelchairs and programmable customizable power wheelchairs. Instead, V-MS were most likely to receive scooters. Effective solutions for optimizing the provision of assistive technology devices to V-MS should be investigated further, and future studies should identify standards for issuing mobility devices to individuals with MS who have a complicated and unpredictable clinical course.

### Chronic pain after spinal cord injury: What characteristics make some pains more disturbing than others?

Elizabeth Roy Felix, PhD, et al.

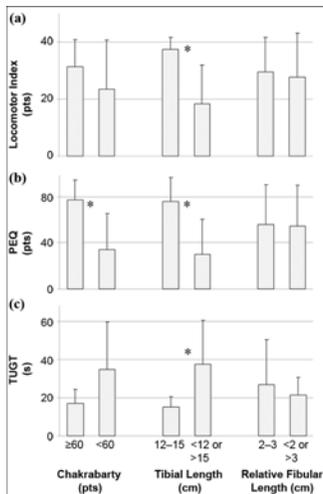


Many persons develop chronic pain following a spinal cord injury (SCI). Frequently, a person with SCI experiences more than one type of pain. In this study, we determined that the pain characteristics sharp, more constantly present, very intense, aggravating, and interfering most predicted whether participants

identified a particular pain as the “most disturbing” of all pains they had. We believe this study will give health professionals insight into which pain characteristics they should include in a thorough examination of pain so that the greatest improvement in quality of life for persons with SCI and chronic pain is achieved.

### Residual-limb quality and functional mobility 1 year after transtibial amputation caused by vascular insufficiency

Henk J. Arwert, MD, et al.



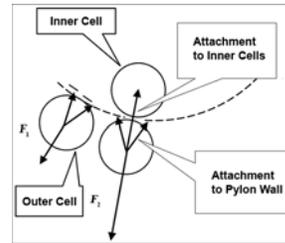
We conducted a study to identify which residual-limb quality factors relate to functional mobility by evaluating 28 subjects 1 year after transtibial amputation. The residual-limb quality was assessed in general and with respect to specific bony factors. We tested functional mobility with the Prosthesis Evaluation Questionnaire, the Locomotor Index, and the Timed Up and Go test. We found that general residual-limb

quality (Chakrabarty score) and tibial length were both correlated with increased functional mobility. Every patient with transtibial amputation deserves an adequate residual limb. The surgeon responsible for the amputation procedure needs evidence-based guidelines about the residual-limb

characteristics that will offer the patient the best chance to regain mobility. This study is a small step in the development of such a guideline.

### Porous composite prosthetic pylon for integration with skin and bone

Mark Pitkin, PhD, et al.



We aimed to develop a strong porous pylon that could integrate with the surrounding skin and create a natural barrier against the infection associated with direct skeletal attachment of limb prostheses. Mathematical modeling and mechanical

tests determined how strong the porous pylon needed to be to approximate the strength of anatomical bone. In an animal study, we implanted rats with either a porous or solid titanium pylon. Our mechanical tests confirmed that the strength of the porous pylon was in the specified range, and electronic scanning and morphological analysis demonstrated clear integration of the porous pylon with the surrounding skin. Direct skeletal attachment, if made infection-free, would improve the outcomes of prosthetic management for people with limb amputations.

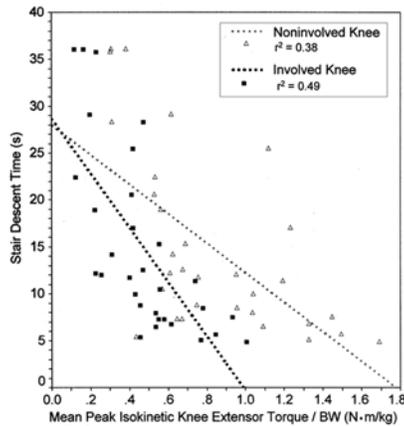
### Effectiveness of group versus individual hearing aid visits

Margaret P. Collins, PhD, CCC-A, et al.

The demand for hearing aids in the Veterans Health Administration rose more than 300% from 1996 to 2005. One way to meet this increased demand is to use group appointments. However, group appointment visits might be less satisfactory to patients. We compared patients who had group visits and individualized visits in the past. Patients who had group visits had better function, were more satisfied, and used their hearing aids more than patients who had individual visits. Group visits may be a way to provide quality hearing care for more veterans. We cannot verify this finding until we have results from randomized studies.

### Self-reported chair-rise ability relates to stair-climbing readiness of total knee arthroplasty patients: A pilot study

John Nyland, PT, EdD, SCS, ATC, FACSM, et al.



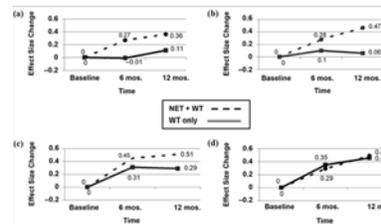
We studied the relationship between how patients believed they could rise from a chair following total knee replacement (TKR) surgery and stair-climbing readiness. Group 1 believed they could only rise from a chair using their hands and arms. Group 2 believed that their pain

did not affect their ability to rise from a chair. Group 3 believed that their knee did not affect their ability to rise from a chair. We measured stair-climbing time, chair-rise repetitions, knee muscle strength, and physical function. Group 3 descended stairs quicker, performed more chair-rise repetitions, and had better knee survey scores than group 1. Group 3 had greater involved and noninvolved knee muscle strength than groups 1 or 2. Patients' beliefs about chair-rise capability approximately 3.6 weeks after

TKR surgery helped physical therapists determine stair-climbing readiness.

### Neurocognitive enhancement therapy with work therapy in schizophrenia: 6-month follow-up of neuropsychological performance

Morris Bell, PhD, et al.



We randomly assigned patients with schizophrenia or schizoaffective disorder to 6 mo of work therapy (WT) or work therapy combined with neurocognitive

enhancement therapy (NET + WT), a program of exercises of attention, memory, and problem-solving. Neuropsychological testing at the end of the 6 mo training and 12 mo after the training started showed greater improvement in problem solving and working memory for participants in NET + WT, although participants in both conditions improved significantly in verbal and visual memory over time. Findings suggest that cognitive training, when combined with other forms of rehabilitation, may produce lasting improvements in cognitive performance and that WT itself may also improve cognition.