JRRD at a Glance

A revised taxonomy of assistance animals

Lindsay Parenti, MA, BCBA, et al.

The increasing use of animals in various assistive, therapeutic, and emotional support roles has contributed to an uncoordinated expansion of labels used to distinguish these animals. Inconsistent vocabularies have created confusion and barriers for individuals with service animals. This article proposes a concise taxonomy for classifying assistance animals into six categories: (1) service animal; (2) public or military service animal; (3) therapy animal; (4) visitation animal; (5) sporting, recreational, or agricultural animal; and (6) support animal. This taxonomy provides veterans, rehabilitation counselors, allied health professionals, researchers, policy makers, and regulatory agencies a clear vocabulary on which policy and practice can be built.
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Development of a mild traumatic brain injury-specific vision screening protocol: A Delphi study

Gregory L. Goodrich, PhD, et al.

Among the problems people with a traumatic brain injury (TBI) can have are binocular dysfunctions, which may cause difficulty reading or doing other daily activities. Research has shown that these dysfunctions often occur in servicemembers returning from Iraq and Afghanistan with a TBI either because of blast events or other trauma. Department of Veterans Affairs Polytrauma Rehabilitation Centers provide TBI-specific ocular health and visual functioning examinations for those with moderate or severe TBI. To better enable eye care providers (optometrists and ophthalmologists) to diagnose subtle visual dysfunctions, a screening tool was developed that is intended to improve eye care services for servicemembers and veterans experiencing residual visual effects resulting from mild TBI.
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Responses to Mantram Repetition Program from Veterans with posttraumatic stress disorder: A qualitative analysis

Jill E. Bormann, PhD, RN, et al.

This study describes ways in which a Mantram Repetition Program was used by Veterans to manage emotional symptoms related to experiencing a traumatic event. Veterans learned to focus attention by silently repeating a selected mantram (sacred word or phrase) at any time or place, by purposefully slowing down thoughts and behaviors, and by doing one task at a time. These practices were shown to help Veterans relax and calm down, let go of negative feelings, think more clearly, and deal with sleep disturbances such as insomnia and nightmares.
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Myoelectrically driven functional electrical stimulation may increase motor recovery of upper limb in poststroke subjects: A randomized controlled pilot study

Rune Thorsen, PhD, MSee, et al.

In stroke rehabilitation, the therapist may work on residual movements. To promote motor relearning, we devised a system in which the electric activity from the affected muscles controls stimulation of the same or synergic muscles, thus boosting residual movements in weaker muscles. The system was used in a normal clinical setting. Compared with a control group receiving the same amount of treatment without the experimental system, we found both statistically and clinically significant improvement in hand function. With further development and research,

this method may play an important role in stroke rehabilitation.
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Association between cognitive performance, physical fitness, and physical activity level in women with chronic fatigue syndrome

Kelly Ickmans, PT, MSc, et al.

Cognitive complaints are some of the most frequent and significant contributors to social and occupational dysfunction in people with chronic fatigue syndrome (CFS). We examined the relationship between cognitive performance, physical activity level (PAL), and physical fitness in 31 women with CFS and found that physical fitness, but not PAL, is associated with cognitive performance. Based on our findings, we hypothesize that PAL is a potential mediator of the relationship between physical fitness (aerobic capacity) and cognitive function. Future studies should explore the influence of changes in physical fitness, eventually through changes in PAL, on cognitive function in patients with CFS.
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Chronic physical activity preserves efficiency of proprioception in postural control in older women

Julien Maitre, PhD, et al.

This article emphasizes that the regular practice of physical and/or sport activities positively affects the ability to maintain balance, whatever an individual's age. When balance was disturbed by an external perturbation, the group of older participants who were physically active maintained balance more efficiently than the group of older participants who were sedentary (did not regularly practice physical activity) and as efficiently as the group of young participants who were sedentary. Older individuals should regularly practice physical activity because it preserves postural control efficiency.
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Interaction effects between rehabilitation and discharge destination on inpatient's functional abilities

Fase Badriah, MPH, et al.

A patient's functional ability after hospital discharge may be influenced by in-hospital rehabilitation and discharge destination. However, we know very little about this point. Thus, how an interaction between in-hospital rehabilitation and discharge destination influenced patients' later functional ability was examined. The subjects of the study were 835 inpatients who went through rehabilitation at a hospital in Japan. The stroke and orthopedic patients' functional abilities were influenced by an interaction between in-hospital rehabilitation and discharge destination. These findings may be useful when deciding on the best discharge destination for a patient.
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Comparison of seat, waist, and arm sit-to-stand assistance modalities in elderly population

Jeswin Jeyasurya, MASc, et al.

The ability to perform a sit-to-stand motion is important to the independence of ambulatory adults. We investigated the mechanics of the sit-to-stand process to better understand how passive and active assistance facilitates the sit-to-stand motion. Experiments were conducted with older adults performing both unassisted and assisted sit-to-stand rises with a grab bar and arm, seat, and waist assistance. Based on a consideration of both subject preference and biomechanical characteristics, our results suggest that seat-based sit-to-stand assistance most closely matches natural sit-to-stand movements while providing a substantial reduction in required knee

extensor effort. This study provides metrics for the development of new sit-to-stand devices and will help clinicians better understand the biomechanics of assisted sit-to-stand and develop recommendations for assistance selection.
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How does adding and removing liquid from socket bladders affect residual-limb fluid volume?

Joan E. Sanders, PhD, et al.

Adding and removing liquid from socket bladders is a means for people with limb loss to accommodate residual-limb volume change. Research subjects with transtibial amputation used their regular prosthetic socket fitted with liquid-filled bladders on the inside socket surface. When bladder liquid was added, most subjects experienced residual-limb fluid volume loss. When the bladder liquid was removed, most subjects did not recover that fluid volume. Care should be taken when implementing adjustable-socket technologies in people with limb amputation. Reducing socket volume may accentuate residual-limb fluid volume loss.
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How "healthy" is circuit resistance training following paraplegia? Kinematic analysis associated with shoulder mechanical impingement risk

Linda M. Riek, DPT, PhD, et al.

Prevention of shoulder pain and maintenance of shoulder health is critical to functional independence following paraplegia. Circuit resistance training is commonly recommended to keep the upper limbs "healthy." Thus, it is important that these exercises do not contribute to development of shoulder pain. The purpose of this study was to compare shoulder motion and exposure (time spent in certain positions) during circuit resistance training exercises in order to determine if the exercises place the shoulder at risk. Eighteen individuals with paraplegia (age 25–76 yr) who used manual wheelchairs participated. The rickshaw was highlighted as the exercise of most concern.
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The effect of timing electrical stimulation to robot-assisted stepping on neuromuscular activity and associated kinematics

Sina Askari, MS, et al.

The ability to walk again can greatly improve the health and quality of life for patients with spinal cord injury. A therapy called functional electrical stimulation (FES) delivers electrical current to the legs to assist actions such as standing and walking. We have combined FES with robot-controlled treadmill training in a way that we believe trains the injured spinal cord to resume control over locomotion. In this study, we investigated the effects of timing FES precisely to the robot-controlled movements. This was an important first step in the development of a therapy that rehabilitates walking after spinal cord injury.
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Blast-related ear injuries among U.S. military personnel

Amber L. Dougherty, MPH, et al.

Blast-related ear injuries are a concern during deployment because they can compromise situational awareness. We studied the effect of hearing protection and examined hearing loss and tinnitus following blast-related ear injuries. Eardrum ruptures and ear injuries with tinnitus were most common. Hearing protection reduced the risk of ear injuries with tinnitus. Personnel with eardrum rupture had higher odds of hearing loss and tinnitus outcomes than those without eardrum rupture. Ear injuries and hearing impairment are common following blasts. Hearing protection is warranted for all servicemembers at risk for blast exposure.
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