

JRRD At A Glance Podcast Episode 39

Listen to the JRRD At a Glance Podcast Episode 39: Discussing Prosthesis thermal discomfort, fascia, artificial sensory feedback, and more from JRRD Volume 51, Number 6, 2014.

[Johanna Gribble]: This is episode 39 of the JRRD podcast for volume 51, issue 6, produced by the Journal of Rehabilitation Research and Development (JRRD) and the U.S. Department of Veterans Affairs. Hello, I'm Johanna Gribble.

[Ken Frager]: And I'm Ken Frager. You can find more information about the topics we are discussing today, along with detailed Power Point presentations on most of these articles, online at the Table of Contents page for issue 51-6 at www.rehab.research.va.gov.

[Johanna Gribble]: Unemployment among people with disabilities is a serious problem that has a significant impact on Veterans. For people with spinal cord injuries, returning to work has been shown to be a vital element to improve quality of life and restore psychological well-being. A guest editorial in this issue of JRRD looks at how returning to work can also decrease overall healthcare use without sacrificing rehabilitation.

[Ken Frager]: Heat and perspiration in the sockets of prosthetics limit activities for people with amputation. These problems can build up, causing discomfort and dissatisfaction with prosthetic use. It also leads to an increase in skin irritations, ulcers, infections, and unpleasant odors. In the article "Prevalence of heat and perspiration discomfort inside prostheses," the authors review the latest research on this topic.

[Johanna Gribble]: The authors of "Elevated liver enzymes following polytraumatic injury" examine the factors associated with mild liver enzyme elevations in patients with traumatic brain injuries and review testing conducted as a result of these findings. Dr. Alan Fox and colleagues also propose general recommendations in the case of abnormal findings.

[Ken Frager]: Fascia, which can be described as part of all of the connective tissues in the human body, does not have a clear definition in the medical community. However, fascia may be the key to helping us understand how the musculoskeletal system works or becomes a source of pain. In the article “Fascia—Current knowledge and future directions in physiatry,” Drs. Kwong and Findlay review current research showing how understanding fascia can help physicians diagnose and treat various painful musculoskeletal disorders.

[Johanna Gribble]: Veterans returning from the conflicts in Iraq and Afghanistan represent a young, active population demanding high-functioning prostheses following limb loss. In the article “Individualizing goals for users of externally powered partial hand prostheses,” Lynsay Whelan and colleagues discuss the importance of identifying which tasks are most important and difficult for individuals with partial hand loss to improve their quality of life.

[Ken Frager]: Older Veterans with lower-limb loss may face different barriers to regular activity than younger Veterans. Dr. Alyson Littman and colleagues, in the article “Physical activity barriers and enablers in older Veterans with lower-limb amputation,” sought to increase physical activity in this population, identify interventions to address motivational issues, improve information sharing about resources and techniques, address television watching, reduce financial barriers to exercising, and to consider involving family members.

[Johanna Gribble]: The focus of the article “Toward an artificial sensory feedback system for prosthetic mobility rehabilitation: Examination of sensorimotor responses,” is on Veterans with lower-limb amputation who are currently limited in their abilities because of a lack of sensory information about the status of their prosthesis. Aman Sharma and colleagues explored the

ability of nondisabled individuals and lower-limb prosthetic users to respond to vibratory tactile feedback. The authors hope the research will help inform the design of an artificial sensory feedback system to improve overall rehabilitation outcomes for people with lower-limb amputation.

[Ken Frager]: A new testing method was developed in which a widely used outcome measure of upper-limb function, the Box and Blocks test, was modified and motion capture was used to collect normative kinematic data. Dr. Jacqueline Herbert and colleagues describe, in their article “Normative data for modified Box and Blocks test measuring upper-limb function via motion capture,” how this has the potential to be a useful outcome measure to quantify function and evaluate the effect of treatment interventions in persons with upper-limb impairment.

[Johanna Gribble]: For most patients who have had a traumatic brain injury, treatment focuses on resolving self-reported symptoms. While many symptoms are often psychological, self-reported cognitive problems are common. Given the importance of self-reported symptoms for treatment and compensation after TBI, Dr. Louis French and colleagues examined the accuracy of patient self-report in determining the presence and severity of cognitive problems. Their findings are included in the article “Subjective cognitive complaints and neuropsychological test performance following military-related traumatic brain injury.”

[Ken Frager]: Upper-limb fatigue is a common problem that may restrict people with multiple sclerosis from using their electric powered wheelchair effectively and for a long period of time. In their article “Preliminary evaluation of a variable compliance joystick for people with multiple sclerosis,” the authors evaluate whether participants with multiple sclerosis can drive a

wheelchair better using a variable compliance joystick and customizable algorithms than when using a conventional joystick.

[Johanna Gribble]: A new assessment tool for powered mobility has been developed. In the article “Assessment of learning powered mobility use—Applying grounded theory to occupational performance,” Drs. Nilsson and Durkin describe the Assessment of Learning Powered Mobility Use. This practice is used together with a set of facilitating learning strategies to better meet the needs of people with cognitive and physical disabilities who need to work on skills including regulating attention, using tools, multitasking, solving problems, and making judgments.

[Ken Frager]: Understanding how spasticity affects walking will help medical professionals decide the most efficient and effective way to treat the walking difficulties that people with multiple sclerosis encounter. In the article “Dynamometer-based measure of spasticity confirms limited associations between plantarflexor spasticity and walking function in persons with multiple sclerosis,” Theodore Kremer and colleagues expand on previous research into how spasticity, a common symptom of multiple sclerosis, contributes to reduced walking speed, walking endurance, and a person’s perception of walking problems.

[Johanna Gribble]: Shoulder pain and pathology are common in veterans, particularly among those who use wheelchairs. The article “Reliability of freehand three-dimensional ultrasound to measure scapular rotations,” discusses the reliability of a freehand three-dimensional ultrasound in determining scapular position. According to Dr. Worobey and colleagues, while shoulder pain and pathology have been related to changes in scapular movement, existing

methods for evaluating such movement are invasive, expose patients to radiation, or have been shown to be inaccurate.

[Ken Frager]: Some individuals with severe physical impairments use single-switch scanning to enter text for spoken and written communication. While single-switch scanning allows communication using only one controlled input movement, it is a slow method of text entry. In the article “Method for enhancing text entry rate with single-switch scanning,” the authors discuss a method for adjusting the settings in a single-switch scanning interface to increase a user’s text entry rate.

[Johanna Gribble]: Finally, in the article “Fukuda and Babinski-Weil tests: Within-subject variability and test-retest reliability in nondisabled adults,” Dr. Paquet and colleagues determined whether testing for dizziness, a frequent, debilitating symptom in older adults that is associated with a high risk of falls, can accurately differentiate truly dizzy patients from healthy, nondisabled individuals. Understanding the results, according to the authors, could help clinicians better understand the limitations of these clinical tests.

[Ken Frager]: Today’s discussion focused on articles in JRRD volume 51, issue 6. These articles and many others can be read online at www.rehab.research.va.gov/jrrd. Just a reminder that the *JRRD At a Glance* section is available online in English, Spanish, and Traditional and Simplified Chinese! You can submit your comments on this podcast or request articles for us to highlight at vhajrrdinfo@va.gov.

[Johanna Gribble]: Our thanks to JRRD’s David Bartlinski for his audio engineering, recording, and editing to make this podcast possible. We would also like to thank all of our listeners for

your support. We'd love to hear from you. For JRRD, thanks for listening. Don't forget to follow JRRD on Facebook at JRRDJournal and on Twitter at JRRDEditor.