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Editors' Selections From This Issue: Volume 97 / Number 4 / April 2016

FROM THE EDITORS' DESK

Editorial Board member Amy J. Houtrow, MD, PhD, MPH, and co-author David W. Pruitt, MD, continue our series of editorials highlighting the professional interests of our Editorial Board with their article, *Meeting the Growing Need for Pediatric Rehabilitation Medicine Physicians*, on page 501.

AUTHOR PODCAST

In this month's podcast, Sarah A. Moore, PhD, discusses the article *Exercise Induces Peripheral Muscle But Not Cardiac Adaptations After Stroke: A Randomized Controlled Pilot Trial* by Moore et al. (See the full article at page 596.) This podcast, and our full collection of author podcasts, is available at http://www.archives-pmr.org/content/podcast_collection.

INFORMATION/ EDUCATION

See *Respiratory Health and Spinal Cord Injury* by Garshick et al on page 655. Information/Education pages are designed to provide consumer-friendly information on topics relevant to rehabilitation medicine. Previously published pages are available free of charge at <http://www.archivespmr.org/content/infoeducation>.

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Utility of the Six-Spot Step Test as a Measure of Walking Performance in Ambulatory Individuals With Multiple Sclerosis

The Six-Spot Step Test (SSST) is a relatively new quantitative test of ambulation developed for individuals with multiple sclerosis (MS). Fritz and colleagues examined the concurrent validity of the SSST with clinical measures of walking and spatiotemporal measures of gait in MS, and investigated the utility of the SSST in individuals with both low and high levels of disability. Twenty-nine participants with relapsing-remitting MS performed a series of tests (SSST, Timed Up and Go test, timed 25-foot walk test, spatiotemporal measures of walking). The authors found that the SSST has strong concurrent validity with common clinical walking tests, and that it could function as an alternative test for lower-extremity function in the clinical setting in both higher and lower Expanded Disability Status Scale scores groups. ■ SEE THE FULL ARTICLE AT PAGE 507

Characterization of Compensatory Stepping in People With Multiple Sclerosis

Peterson and colleagues examined postural responses to forward and backward external perturbations in people with multiple sclerosis (PwMS), and the relationship of these responses to commonly used clinical outcomes. The authors tested the postural responses of 54 PwMS and 21 age-matched controls during large "stepping" and smaller "feet-in-place" perturbations in forward and backward directions. The PwMS exhibited larger center of mass displacement and step latency than control participants in response to "stepping" perturbations. Stepping deficits were more pronounced during backward stepping and were significantly correlated to increased severity on clinical measures. The authors conclude that compensatory stepping is impaired in PwMS, and correlates with clinical disability. Prolonged step latencies, large anticipatory postural adjustments, and multiple compensatory steps are especially altered in PwMS and suggest possible targets for neurorehabilitation. ■ SEE THE FULL ARTICLE AT PAGE 513

Lower Limb Strength Is Significantly Impaired in All Muscle Groups in Ambulatory People With Chronic Stroke: A Cross-Sectional Study

Dorsch and colleagues sought to quantify the extent of loss of muscle strength in people with chronic stroke who are able to walk independently. The authors measured strength in all muscle groups of the lower limbs in 60 ambulatory stroke survivors with a wide range of disability, as well as 35 age-matched controls. The strength of most of the major muscle groups of both the affected and intact lower limbs of stroke survivors was significantly less than that of controls. The authors conclude that all muscle groups should be assessed for loss of strength after stroke, and that strengthening programs should target affected muscles in order to improve long-term outcomes. ■ SEE THE FULL ARTICLE AT PAGE 522

Motor Planning for Loading During Gait in Subacute Stroke

Individuals with stroke often experience reduced stability of the lower limb, and the knee in particular, during the loading response phase immediately after initial contact. Peters and colleagues examined muscle activation patterns during gait in the quadriceps and hamstrings in 27 people with stroke, as well as 8 controls without stroke. The authors found that the motor control of gait after subacute stroke was characterized by symmetry of timing and amplitude of muscle recruitment at the knee. High levels of co-contraction were associated with lower levels of function, whereas low co-contraction levels were more strongly related to higher functional balance and mobility. The authors conclude that participants poststroke with high levels of co-contraction surrounding the knee also had muscle functioning with altered timing and amplitude, whereas participants with low levels of co-contraction more closely approximated the pattern of muscle activity found in controls without stroke and had with higher levels of functional balance and mobility. ■ SEE THE FULL ARTICLE AT PAGE 528