Introduction

Dear Members,

We are happy to bring to you another issue of Research in Review highlighting research articles relevant to neurologic physical therapy over the past 8-week period. We hope that you enjoy perusing through the articles we selected for this edition of the research review.

We choose recently published articles that are available through a link on PubMed or directly through the link on the Research in Review citation. We have also provided links to common search engines on the left panel, which have full text availability. We welcome any suggestions or comments you may have to help improve the newsletter.

Sincerely,

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Feature Articles


Computational neurorehabilitation: modeling plasticity and learning to predict recovery.

Motor Control

The Effect of Levodopa on Improvements in Protective Stepping in People With Parkinson's Disease.
Peterson DS, Horak FB. Neurorehabil Neural Repair. 2016 May 9

Free-living gait characteristics in ageing and Parkinson's disease: impact of environment and ambulatory bout length.

Effect of dual-task-induced uncertainty on gait biomechanics in patients with multiple sclerosis with 2-6.5 EDSS grade.

Reactive but not predictive locomotor adaptability is impaired in young Parkinson's disease patients.

Energy cost of walking, symptomatic fatigue and perceived exertion in persons with multiple sclerosis.

Assessing stability in mild and moderate Parkinson's disease: Can clinical measures provide insight?

Rehabilitation

Combining fast walking training and a step activity monitoring program to improve daily walking activity after stroke: a preliminary study.

Upper-Limb Recovery After Stroke: A Randomized Controlled Trial Comparing EMG-Triggered, Cyclic, and Sensory Electrical Stimulation.

Examining the Feasibility, Tolerability, and Preliminary Efficacy of Repetitive Task-Specific Practice for People With Unilateral Spatial Neglect.
The effects of visual feedback during a rhythmic weight-shifting task in patients with Parkinson's disease.  
van den Heuvel MR, Daffertshofer A, Beek PJ, Kwakkel G, van Wegen EE.  

Multivariate Connectome-Based Symptom Mapping in Post-Stroke Patients: Networks Supporting Language and Speech.  
Yourganov G, Fridriksson J, Rorden C, Gleichgerrcht E, Bonilha L.  

Improved in-hospital outcomes and care for patients in stroke research: An observational study.  
Purvis T, Hill K, Kilkenny M, Andrew N, Cadilhac D.  

Clinical Neurophysiology

Engaging Cervical Spinal Cord Networks to Reenable Volitional Control of Hand Function in Tetraplegic Patients.  
Lu DC, Edgerton VR, Modaber M, AuYong N, Morikawa E, Zdunowski S, Sarino ME, Sarrafzadeh M, Nuwer MR, Roy RR, Gerasimenko Y.  
Neurorehabil Neural Repair. 2016 May 18.

Same Intervention-Different Reorganization: The Impact of Lesion Location on Training-Facilitated Somatosensory Recovery After Stroke.  

Remodeling of Neuronal Circuits After Reach Training in Chronic Capsular Stroke.  
Neurorehabil Neural Repair. 2016 May 18.

Post-exercise depression following submaximal and maximal isometric voluntary contraction.  

Competition with Primary Sensory Afferents Drives Remodeling of Corticospinal Axons in Mature Spinal Motor Circuits.  
Jiang YQ, Zaaimi B, Martin JH.  

Cortical thickness and metabolite concentration in chronic stroke and the relationship with motor function.  
Jones PW, Borich MR, Vavassour J, Mackay A, Boyd LA.  

Technologies
A low-cost, tablet-based option for prehospital neurologic assessment: The iTREAT Study.

Effect of a mixed reality-based intervention on arm, hand, and finger function on chronic stroke.
Colomer C, Llorens R, Noé E, Alcañiz M.

Overground walking training with the i-Walker, a robotic servo-assistive device, enhances balance in patients with subacute stroke: a randomized controlled trial.

Powered robotic exoskeletons in post-stroke rehabilitation of gait: a scoping review.
Louie DR, Eng JJ.

Task-specific ankle robotics gait training after stroke: a randomized pilot study.
Forrester LW, Roy A, Hafer-Macko C, Krebs HI, Macko RF.

Cluster failure: Why fMRI inferences for spatial extent have inflated false-positive rates.
Eklund A, Nichols TE, Knutsson H.
The Research in Review was designed using Medline filters to extract high impact research articles related to the field of neuroscience and physical therapy, which includes areas of motor control, rehabilitation, clinical neurophysiology, and technology. Emphasis is placed heavily on articles published within the last eight weeks, that cover issues related to spinal cord injury, stroke, balance and falls, brain injury, degenerative diseases, and vestibular rehabilitation. The list contains the full citation and a link to the abstract or full text article. The Research in Review is published once every 2 months and will arrive in your email box in a format that is easily viewable by both HTML and text-based readers. Articles with no volume, issue or page numbers indicate that the article has not been published in paper form yet, but may be available in electronic form through the publisher. We welcome requests for article postings at the first and third Mondays of each month. Those interested in assisting with this endeavor are welcome to contact Trisha Kesar, PT, PhD.

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