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Exercise to improve walking abilities in individuals with parkinson's disease

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Parkinson's Disease (PD) is a neurodegenerative disease that affects the brain and results in gait dysfunction due to impaired movement control, such as tremor, rigidity, bradykinesia, and postural instability. The gait dysfunction is demonstrated as decreased walking speed and difficulties in advanced walking including turning and obstacle crossing performance. Such gait dysfunction may affect the functional independence and increase the fall risks. Therefore, training to improve gait performance is essential for people with PD. Treadmill training can improve gait speed, stride length and walking distance due to mass practice and forced use. The turning-based treadmill training has been reported to improve turning performance due to the task-specificity. The non-invasive brain stimulation, such as the repetitive Transcranial Magnetic Stimulation (rTMS) has been proposed to prime the brain activity to enhance the following training effects. It is noted that the rTMS followed by treadmill training exerts better effects in improving walking performance paralleled modulation of corticomotor inhibition than treadmill training alone.

Biography

Ray-Yau Wang has received her entry-level Physical Therapy training in National Taiwan University, Master's degree in Physical Therapy in Emory University, and practiced as a Physical Therapist in the Rehabilitation Center, Emory University Hospital, USA. She has completed her PhD in Physiology at National Yang-Ming University and is currently the Faculty in Department of Physical Therapy and Assistive Technology, National Yang-Ming University. She concentrates and engages in the physical therapy and medical research in the area of neurorehabilitation. One of her major research areas is to develop the treatment protocols for patients with stroke and parkinson's disease.

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