

Post-PT Extension of In-Home Dynamic Standing Table Use in Parkinson Disease

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Research Abstract

Axial motor dysfunctions in Parkinson disease (PD) are least responsive to dopaminergic therapy and incline many patients towards a sedentary lifestyle. This places PD patients at increased risk for the negative consequences of physical inactivity. When PD patients develop postural imbalance and gait difficulties (PIGD), including falls, they are generally referred to physical therapy (PT) for optimal management. Although a Cochrane review confirms the (short-term) benefit of physical therapy in PD with PIGD motor features there is a critical gap in clinical practice on what to do next once the PT sessions are over. Clinical experience shows that most patients return to a sedentary lifestyle indicating an urgent need for post-PT in-home physical

activity programs in PD with PIGD features to preserve mobility functions. Recent advances in physical activity research tout non-exercise physical activity (NEPA) approaches to promote healthy lifestyle modifications. For PD patients with PIGD, normal upright standing and weight-shifting (stepping) for longer periods of time may be an ideal form of NEPA. It activates lower extremity muscles and encourages postural activity. To promote this type of NEPA, we have developed a sit-stand desk system that enhances upright standing activity with weight-shifting movements. The “dynamic standing table” has a tabletop that oscillates in the horizontal plane, which cues users to make periodic mediolateral body weight shifting adjustments. Dynamic standing would represent a minimal level of physical activity compared to sitting, which is pervasive in PD subjects with PIGD motor features. Use of the dynamic standing table can easily be incorporated with routine desktop activities, such as computer use, reading, or watching TV and may promote physical activity. Preliminary data shows that patients with moderate PD are able to complete sessions of at least 3 hours without significant difficulty and may have motor and cognitive benefits from using this table. We propose an exploratory controlled trial of a post-PT in-home extension of a physical activity program in patients with PD and PIGD consisting of combined post-PT standard of care (i.e., weekly physical activity group sessions) with in-home dynamic standing table use versus the post-PT standard of care alone. The incremental addition of the dynamic table use is expected to more effectively reduce post-PT sedentary behavior compared to the standard of care alone. We will test the exploratory hypothesis that post-PT gains in mobility functions in PD patients with PIGD features will be preserved better with in-home dynamic standing table use compared to a control group.

Further information available at:

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