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SINGLE TRIAL EFFECTS OF DYNAMIC CYCLING: HOW LONG DOES IT LAST?  
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Parkinson's disease (PD) is a neurodegenerative disorder that affects motor planning and leads to decreased quality of life in approximately 1.5 million Americans. Many individuals with PD experience decreased abilities to perform everyday activities. Previous studies have shown that motor symptoms improve immediately after bouts of high-cadence cycling in individuals with PD but it is unknown how long these improvements last. The objective of this study was to determine the duration of improvements after a single bout of dynamic high-cadence cycling. Individuals with mild to moderate PD completed a single 40-minute session of dynamic cycling and performed three days of motor function testing at home. Motor function was tested every 2 hours for three days after a cycling session and was analyzed using a repeated measures design. There was a 29.7% improvement in resting tremor 19 hours after completion of the cycling session and improvements continued at 27 hours (12.6%). In addition there was a 15.0% improvement in rapid alternating movement speed, a measure of bradykinesia, at 19 hours. A single session of dynamic cycling results in improvements in resting tremor scores and rapid alternating movement rhythm scores that last up to 30 hours. Cycling sessions should target one bout of dynamic cycling every 24-hour period.