

## Improvements in the 8-Dimensions of the Parkinson's Disease Quality of Life Questionnaire after 8-weeks of Resistance Training with Instability and/or Cadence Walking in Persons with Mild to Moderate Parkinson's Disease

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### ABSTRACT

Physical activity helps slow the progression of Parkinson's disease (PD). Resistance training with instability (RTI) and cadence walking (CW) add an additional skill (compared to resistance training and walking alone) to improve neuromuscular connections and blood flow to the brain during exercise. A cross-training exercise regimen, combining both resistance training and walking (RTI+CW), has not been studied to determine its effect on the progression of Parkinson's disease. **PURPOSE:** to examine the changes in the 8-dimensions of the Parkinson's Disease Questionnaire (PDQ39) (mobility, activities of daily living (ADL), emotional well-being, stigma, social support, cognition, communication and bodily discomfort) after 8-weeks of RTI, CW and RTI+CW in individuals with mild to moderate PD. **METHODS:** individuals diagnosed with mild to moderate PD (N=18 ( 6 female, 12 males); MHY stage=1.53 ± 0.50; age = 63.67 ± 7.23 y; BMI = 27.38 ± 3.88 kg/m<sup>2</sup>) were randomized into RTI, CW or RTI+CW exercise groups for 8-weeks. RTI and CW were performed 3 days/week and RTI+CW was performed 4 days/week (2 days RTI and 2 days CW). RTI included full-body machine and free-weight exercises with volume (reps and sets) and instability progressions. CW included volume (time) and intensity (speed) progressions for 8-weeks. The PDQ39 questionnaire was given at pre- and post-assessments. **RESULTS:** improvements in the PDQ39 questionnaire were seen across all groups in all 8 dimensions of mobility, activities of daily living, emotional well-being, stigma, social support, cognition, communication and bodily discomfort. A significant time effect was observed for dimensions of mobility (17.33 ± 7.30 and 15.94 ± 7.6, p=0.043), stigma (7.12 ± 3.50 and 6.12 ± 2.75, p=0.02) and bodily discomfort (7.34 ± 1.97 and 6.05 ± 2.46, p=0.005). A significant group x time effect was observed for mobility and bodily discomfort. A Tukey's post hoc analysis revealed significant differences between RTI+CW and CW for mobility (RTI+CW 16.00 ± 6.54 and 13.83 ± 5.42 and CW 18.00 ± 6.48 and 17.33 ± 10.39, p=0.04) and RTI and CW for bodily discomfort (RTI 7.33 ± 1.97 and 5.67 ± 2.16; CW 7.33 ± 1.63 and 6.50 ± 1.97). **CONCLUSION:** All exercise groups improved in scores for all 8-dimensions of the PDQ39 questionnaire. Significant time effects were observed for mobility, stigma and bodily discomfort. RTI+CW improved mobility more than CW alone. RTI improved bodily discomfort more than CW alone.