September 15, 2016

Dr. Adam Marmon
Grants Administrator
Research Methods in Physical Activity
Call for Research Letters of Intent

Dear Dr. Adam Marmon,

We would like to present this letter of intent for your review. This is a proposal to study one of our interest topics:

1- Weighted compression sleeve to suppress tremor and improve fine motor skills in Parkinson's Disease patients. BACKGROUND: Individuals with Parkinson's Disease (PD) typically experience several different motor skill symptoms including tremors. Further studies are necessary to support the use of weighted compression garments for increased proprioception in individuals with PD (Southard et al., 2016). PURPOSE: The purpose of this experiment is to examine the effects of a weighted compression sleeve in depressing the tremor in patients with Parkinson's Disease. METHODS: Measure the accuracy of a fine motor task when using a weighted compression sleeve, non-weighted compression sleeve, and no sleeve in PD patients.

2- Improving knee extension and plantar flexion angles through insole in shoe for patients with Parkinson's Disease. BACKGROUND: There is a high frequency of falls in individuals with PD, resulting in tripping. Tripping may be caused by impairment of foot clearance during gait and could be improved by interventions refining gait velocity and step length (Alcock et al., 2016). PURPOSE: The purpose of this experiment is to test the effectiveness of an insole in shoe where the ball of the foot lies to increase the plantar flexion angle of the ankle to ultimately improve knee extension during gait. METHODS: Knee extension and plantar flexion angles will be measured in patients with PD before insoles are placed in shoes, while using insoles, and after using insoles and returning to regular footwear.

3- Regular cycling to improve joint mobility in patients with Parkinson's Disease. BACKGROUND: Parkinson's Disease can be characterized by the onset of rigidity, postural instability, and decreased muscular strength and fatigue (Farlow, Pankratz, Wojcieszek, & Foroud, 2014).Individuals suffering from freezing of gait commonly experience impairments in walking abilities. Data shows that bicycling abilities are preserved in those same patients and bike therapies have been proposed to improve motor control and bradykinesia (Storzer et al., 2016). PURPOSE: The purpose of this experiment is to examine the benefits of regular cycling for patients with Parkinson's Disease, particularly with joint mobility in the knees. METHODS: Knee extension angle will be measured before and after period of regular cycling.

Thank you for taking the time to review our interest topics.

Sincerely,

Jennifer Iannello, Garry Johnson, Lauren Pilla