EFFECTS OF EXPIRATORY MUSCLE STRENGTH TRAINING ON AIRWAY PROTECTION IN PARKINSON’S DISEASE

C.M. Sapienza¹,², M. Troche¹,², J. Rosenbek¹, N. Musson³, T. Pitts⁴, M. Okun⁵

¹Speech, Language and Hearing Sciences, University of Florida, ²Brain Rehabilitation Research Center, ³Speech Language Pathology, VA Medical Center Gainesville, ⁴Physiology, ⁵Neurology, University of Florida, Gainesville, FL, USA

Objective: To examine the effects of an expiratory muscle strength training (EMST) technique on airway protection (swallow and cough) in persons with moderate Parkinson’s disease (PD).

Background: The majority of persons with PD will develop dysphagia involving both the oral and pharyngeal phases of swallow with changes to swallow timing and safety of swallow. This information is critically relevant given that sequelae secondary to dysphagia is a leading cause of death in PD, causing significant reductions in quality of life. Efficacious/effective therapies targeting swallow changes are understudied.

Methods: Twenty participants with PD and a history of dysphagia were enrolled in the current study. Participants were followed for 4 weeks, whereby they did not participate in any swallow intervention (control period) and they then completed four weeks of EMST. Outcome measures included videofluoroscopic measures of bolus flow, hyoid motion, swallow safety (specifically P-A score), cough function and swallow-related quality of life. These were compared between conditions (no intervention vs. EMST) in a repeated measures design.

Results: Analysis revealed improvements in bolus flow, swallow safety and voluntary cough production following EMST. Improvements in swallow related quality of life were found in those participants who were penetrators/aspirators at baseline.

Conclusions: EMST was found to be efficacious in improving swallow and cough function, and subsequently quality of life, in those with PD who were unsafe swallowers at baseline. This therapy is novel and can be transferred to home care setting.