Title:

Adaptation effect in Parkinson Disease: Articulatory-acoustic and fluency characteristics.

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Abstract:

Motor deficits in Parkinson disease (PD) have been shown to affect speech motor control, disrupting articulatory scaling and often speech fluency. To date most studies examining the adaptation effect in neurogenic stuttering have been case reports. Additionally, articulatory behavior during an adaptation task has not been studied in the PD population. This study examines adaptation of fluency and articulatory behavior for a group of individuals with PD. Twenty-one individuals with PD and 19 older-adult control speakers completed an adaptation task a total five times. The data suggest that speakers with PD exhibit different articulatory-acoustic behaviors compared to control speakers in an adaptation task. Control speakers showed no changes in articulatory behavior throughout the adaptation task. PD speakers showed significant changes in articulatory behavior when the first and last readings were compared. Specifically, individuals with PD decreased articulatory range of motion and temporal (absolute and relative) properties of diphthong trajectories yielding small-to-moderate increases in global timing. This reduction in the temporal and articulatory scaling of speech movements is suggestive of a loss of speech clarity along with greater coarticulation with adaptation.