

**Dopaminergic Treatment Changes Speech-Related
Sensory Mechanisms in Parkinson's Disease**
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Persons with Parkinson's Disease (PD) experience sensory and motor deficits affecting airway/speech motor control. Dopaminergic treatment for PD, including dopamine agonists, is typically prescribed in an effort to improve limb deficits. Our understanding of how dopaminergic treatment may affect speech-related airway sensorimotor symptoms in PD is incomplete. We tested whether impaired sensory mechanisms of airway control would improve with anti-PD medication. We tested 10 PD participants before/after morning anti-PD medication. We used endoscopic stimulus delivery to present a pressure-calibrated burst of air to the laryngeal mucosa to determine the threshold pressure at which each participant could detect the stimulus and the threshold pressure at which each participant exhibited the laryngeal adductor reflex. Before medication, detection thresholds were 4x higher compared with healthy controls. After medication, detection thresholds were reduced by 27%. Before medication, reflex thresholds were 2x higher compared with healthy controls, but were essentially unchanged after medication. There were modest correlations between sensory detection thresholds and clinical measures of speech and airway motor function. Our findings suggest that dopaminergic medication may influence airway sensory and may influence airway motor function. Understanding sensory-motor interaction and treatment response is important to advance clinical care for individuals with this progressive neurodegenerative disease.