

# Airway protection deficits according to stimulus type in Parkinsons disease

<https://www.neurodegenerationresearch.eu/survey/airway-protection-deficits-according-to-stimulus-type-in-parkinsons-disease-2/>

## Principal Investigators

HEGLAND, KAREN W

## Institution

UNIVERSITY OF FLORIDA

## Contact information of lead PI

### Country

USA

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Airway protection deficits according to stimulus type in Parkinsons disease

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1

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Coughing, Deglutition Disorders, Parkinson Disease, Aspiration Pneumonia, Fogs

## Research Abstract

? DESCRIPTION (provided by applicant): Aspiration pneumonia (APn) occurs at a disproportionately higher rate in patients with Parkinson's disease (PD) versus healthy age-matched older adults. This is of particular public health concern given that death secondary to aspiration pneumonia and lung infection is a leading cause of death in persons with PD. The development of APn is multifactorial with aspiration of material from disordered swallowing (dysphagia) without proper cough response being the main contributing factor. Swallowing and

cough function are affected in PD, putting people with PD at significant risk for uncompensated aspiration (aspiration without adequate cough response). One challenge in the management of airway protective deficits related to PD is the chronic and progressive nature of the disease, where swallowing dysfunction appears subtly in the form of microaspiration, reducing the perceived urgency of the swallowing disorder by both clinicians and patients. The long-term goal of this research is to advance the management of airway protection deficits in patients with neurodegenerative disease in order to decrease morbidity and mortality due to aspiration related lung infection. The objective here, which is a critical step in pursuit of that goal, is to further specify deficits leading to uncompensated airway compromise in PD in order to advance the clinical management of these patients, leading to an immediate positive impact. In order to accomplish the objective of this application we have identified 2 aims: First, to determine the relationship between perceptual cough sensitivity and cough motor threshold in people with PD, with and without dysphagia, compared to age and sex-matched control participants, and second to determine the relationship between reflex cough stimulus type, cough response and dysphagia in patients with PD. We will accomplish these aims in 2 studies. First, we will perform modified barium swallow studies in order to determine the presence of dysphagia and establish two PD participant groups. Next we will perform reflex cough testing using up to 6 concentration (intensity) levels of capsaicin in order to determine reflex cough sensitivity (urge-to-cough and cough sensory threshold) and cough motor threshold. We will test for differences between the three groups (PD, PD with dysphagia, and healthy control). We will then test the cough response to two types of low intensity stimuli (capsaicin and fog) and compare these data to the presence or absence of dysphagia in the two PD groups. The realization of the proposed aims and studies is significant because it is a necessary step in a program of research that is expected to lead to earlier, more accurate identification, as well as targeted interventions for treating airway protection deficits in PD. Completion of this research is systematically important for our goal of maintaining adequate airway protective function in patients currently living with PD; the results are expected to directly impact reductions in health care costs, morbidity, and mortality related to airway protection deficits.

**Further information available at:**

**Types:**

Investments < €500k

**Member States:**

United States of America

**Diseases:**

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