Dysphagia

Project Title:

The Role of the Cerebral Cortex in the Coordination of Breathing and Swallowing in Adults

Primary Investigators:

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Project Summary:

The purpose of this study is to provide insight into the neural control of swallowing, specifically the coordination of breathing and swallowing. This research hypothesizes that conscious cortical input (i.e. input from the cerebral cortex) is involved in this coordination. Therefore, it is expected that there will be a decrease in variability in breathing-swallowing coordination (BSC) with an increase in cortical input. Testing of this hypothesis will involve the comparison of BSC during four conditions: rapid eye movement sleep and non-rapid eye movement sleep (minimized cortical activation) in healthy adults. Coordination during cued volitional dry swallows, spontaneous swallows while performing a distraction task and then during sleep will be recorded. The direction of respiratory airflow will be measured at the nares using a nasal canula. Submental surface electromyography and thyroid acoustics will be used to identify onset of pharyngeal swallow. Body position will be controlled for using a mercury switch position monitor. Swallows will be categorized by the point in the respiratory cycle in which swallowing apnoea occurred. EEG will be used to provide objective confirmation and categorisation of sleep state.