# Using a dual task paradigm to evaluate speech and limb motor function in individuals with early Parkinson disease

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The purpose of this specific project was to examine both speech and upper limb motor performance during a dual task in individuals with early Parkinson disease (PD) (Stage I and II) as compared to age-matched healthy individuals. The upper limb motor task studied for this project required each subject to sit at a keyboard and tap with the index finger between two piano keys 40 cm apart, as fast and accurate as possible for 60 seconds. Three conditions were analyzed: 1) right and left arm tap alone, 2) recite the Pledge of Allegiance alone and 3) right and left arm tap and recite Pledge of Allegiance. Data from the impaired side in subjects with PD were compared to both the right and left side in healthy individuals. For both groups of subjects, the following dependent variables were measured: vocal SPL, speech rate (words per minute-WPM), and movement time (MT). Both the means and standard deviations (SD) were measured over the course of the 60-second trial. Results showed that limb MT slowed during the dual task while vocal SPL and speech rate did not change significantly.