

Disease-related changes in articulation are known to contribute significantly to the progressive loss of speech intelligibility in talkers with amyotrophic lateral sclerosis (ALS) and Parkinson's disease (PD). Although prior studies have primarily investigated articulatory performance in these conditions separately, they support the notion that there may be similar as well as disease-specific mechanisms that contribute to speech loss in these progressive dysarthrias. Further, existing studies suggest that articulatory performance may vary depending on the speech stimuli used. Yet, comparative studies that have systematically investigated articulatory motor performance as a function of stimulus complexity in ALS and PD are lacking. Therefore, the current study sought to compare tongue motor performance in ALS and PD as a function of stimulus complexity at the word level. 3D tongue (tip and dorsum) movement data were obtained from 15 healthy controls and 15 talkers each with PD and ALS for 10 target words that were categorized as either high or low complexity, based on the framework by Kent (1992). Tongue speed and range of motion (ROM) were averaged across 5-10 repetitions of each word, to determine between-group differences in tongue motor performance. Compared to controls, the PD group showed significant reductions in tongue tip ROM only for high complexity words. Although the ALS data are still being analyzed, based on previous studies, significant decreases in movement extent and speed are expected for this group relative to controls even for relatively simple utterances. Clinical and theoretical implications of the findings will be discussed during the presentation.