## Diadochokinetic Speech Rates and Tongue Strength A. Neel, P. Palmer, & D. Cunnington

The contribution of tongue strength to speech sound production is not well understood. In a previous study, we found that individuals with markedly reduced tongue strength due to oculopharyngeal muscular dystrophy still produced intelligible speech (Neel, Palmer, Sprouls, and Morrison, 2006). These individuals, however, displayed reduced speed of speech sound repetition – their diadochokinetic rates were slower than those of unaffected adults. In the current study, we are investigating the relation between diadochokinetic rates for speech sounds and maximum tongue strength as measured by IOPI in normally-speaking younger and older adults. Repetition rates for the syllable /tn/ were significantly correlated with maximum tongue strength (r = .31, p < .02), whereas rates for the more speech-like sequence /p $\Lambda$ təkə/ were not related to tongue strength (r = -.01, p < .96). Other correlations between tongue strength and diadochokinetic rates appear to be influenced by age and gender. We are currently analyzing tongue pressure values during production of  $t\Lambda$  and  $d\Lambda$  to determine if speech-related tongue pressures are related to speed of speech movements. This data may be valuable in determining the relation between tongue weakness and speech intelligibility in a wide variety of speech disorders.