## LINGUAL KINEMATICS: DEVELOPMENTAL AND CONSONANTAL DIFFERENCES IN 10-15 YEAR OLD CHILDREN

## Jennell C. Vick, Michelle L. Foye, & Gregory S. Lee

Early adolescence is a time of dynamic development, especially in the realms of cognition, language, and morphology. These constraints, among others, are likely responsible for the protracted course of development of speech motor control. Important differences have been observed in the stability and patterning of movements at the phoneme and sentence level between adolescents and adults in both labial (Walsh & Smith, 2002; Smith & Zelaznik, 2004) and lingual plosives (Cheng, Murdoch, Goozée & Scott, 2007a; Cheng, Murdoch, Goozée & Scott, 2007b; Murdoch, Cheng, & Goozée, 2012). The purpose of this study was to expand on this formative work to characterize the development of lingual control and coordination for production of a larger variety of consonants during early adolescence. Forty typical children, aged 10-15 years, and 20 adults produced 20 repetitions of nonsense phrases containing six consonants (/d,t,s,z,n,g,k/) in phrase initial, medial and final positions. Using the Wave articulography system (NDI, Waterloo) to record position, measures were made of the movements of five sensors (with locations on and lateral to the midsagittal plane) on the tongue during closing gestures for each consonant. Specific measures included peak speed, distance traveled, and duration, as well as phrase-level stability measured using spatiotemporal index. Developmental trends in measures of performance and variability will be reported, as well as consonant-specific similarities and differences in all measures.