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Distinguishing Place of Consonant Articulation using the Aurora System

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The goal of this project is to determine the effect of bite-block and speaking rate manipulation on lingual targets for consonants using a recently developed Aurora, a 3-D electromagnetic movement tracking system (NDI). Bite-block and speaking rate manipulations are common intervention techniques with speakers with dysarthria and apraxia of speech. Therefore, understanding their effect on consonant target regions is essential for predicting the outcomes of articulatory training in these clinical populations. In this project, articulatory positions of two sensors on the tongue tip and dorsum will be recorded independent of the head. Stops /t, k/ and fricatives /s, sh/ will be embedded in aCa syllables. A bite block condition will be used to eliminate jaw contribution to tongue movements. The location and size of articulatory regions associated with each consonant will be compared in bite block and no-block conditions. Additionally, the rate effect on the location and size of the consonant articulatory regions will be examined. Potential clinical implication of the finding on articulatory intervention will be considered.