

## **Not Only a Motor Speech Deficit: Vowel-Duration Discrimination of Children with Childhood Apraxia of Speech (CAS)**

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Five- and 6-year old male children with childhood apraxia of speech (CAS) and with typical development (TD) judged if pairs of the syllable /ba/ were the same or different based on differing lengths of the vowels in the syllable pairs. A male adult audiorecorded the /ba/ syllable. The /a/ was digitally lengthened and shortened, while maintaining uniform fundamental frequency and amplitude. Vowel lengths increased in 40 millisecond (ms) increments ranging from 208ms to 488ms. Eight pairs, one with equal length and seven with differing vowel lengths, were randomly presented 10 times in blocks of 16 pairs via a computer application. Results indicated that unlike the TD children, who improved in vowel-duration discrimination as duration differences increased, the CAS children' performances did not show such a pattern. The CAS and TD differed significantly in their vowel-length discrimination for five of the seven different syllable pairs, and their accuracy for the pair with equal vowel length was at chance level compared to 94% accuracy for the TD children. These results suggest that CAS, which is often considered a motor speech disorder, may have a perceptual component of CAS related to vowel duration discrimination. Further research directions and clinical implications are discussed.