

Authors:

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Title:

Word-level prosodic measures and the differential diagnosis of apraxia of speech

Abstract:

Impaired production of prosody is a primary diagnostic criterion for apraxia of speech, but lexical retrieval and syntactic formulation often preclude evaluation in connected speech. We examined diagnostic relevance for five word-level prosody measures. Multisyllabic words were repeated and audio-recorded from 38 speakers (nine with AOS, ten with aphasia and no AOS, and 19 age-matched controls without speech difficulties). Lexical stress indices were computed based on the relative duration, fundamental frequency, and intensity across pairs of unstressed-stressed syllables with varied intrinsic vowel duration. Mean word syllable duration was also calculated. Lexical stress measures based on fundamental frequency and intensity did not differentiate among the groups. In contrast, the AOS speakers differed from the other two groups on all metrics involving duration. Performance for speakers with aphasia and no AOS was indistinguishable from that of age-matched controls on the word syllable duration measure but not on the lexical stress measures. For control participants, acoustic correlates of stress was greatest when intrinsic vowel duration varied in the same direction as the stress contrast and smallest when intrinsic vowel duration was opposite the stress contrast. Results indicate that acoustic quantification of temporal prosody should be pursued, procedures standardized, and normative data collected.