

Effects of vocal tract growth on gender and vowel
identification based on simulated children's vowels
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The anatomical structures that form the vocal tract exhibit non-uniform growth during the course of development from infancy to adulthood. These growth patterns also indicate sex differences, even at prepubertal stages. It is not well understood how these non-uniform scalings of the vocal tract length affect the formant frequencies, and consequently how they affect both gender and vowel identification. The purpose of this study was to use a model of the vocal tract to simulate vowels produced by a male talker and female talker at ages ranging from 1 to 20 years, and determine how listener judgments of gender and vowel identity are affected at different stages of growth.