Temporal Encoding Of Voice Onset Time In Young Children

Aseel Almeqbel
Kuwait University, Kuwait

Objectives: Voice onset time (VOT) is an important parameter of speech that denotes the time interval between consonant onset and the onset of low frequency periodicity generated. In this study we examined the temporal encoding of voice onset time in the cortical auditory evoked response (CAEP) of young children.

Background: Voice onset time (VOT) is an important temporal cue for speech perception. is important speech parameter signifies the interval between consonant release (onset) and the start of rhythmic vocal-cord vibrations (voicing). In English, the VOT for voiced stop consonants such as/ga/ is short, voiceless stop consonants such as /ka/ have a much longer VOT duration. For speech perception, rapidly changing acoustic cues such as VOT are used to discriminate stop consonants while steady-state cues such as formant transition provide information on vowel discrimination.

Method: Scalp recoded CAEP were measured in 18 children aged from 5-8 participated (n=18). The N2 latency was evoked using differences in voice-onset-times (VOTs) using stop consonant-vowel syllables /ga/-/ka/.

Results: A significant and systematic shift in the N2 latency was observed for differences in VOT.

Conclusions: Our results demonstrate that temporal encoding of VOT exists in the developing cortical evoked response.