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**Comparison of speech vs speech-analogue temporal encoding in
human: An auditory brainstem response & categorical perception
assessment**

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Temporal speech cues, such as periodicity and voice onset time (VOT), are particularly salient information for speech intelligibility. In addition, speech elicited auditory brainstem response (Speech ABR) to consonant vowels (CV) has been shown to mimic the temporal periodicity of the acoustic signal very accurately. Consequently, Speech ABR has been described as a potential objective tool to explore the temporal integration of speech excerpts in human brainstem. We aimed at putting in evidence the specialization of temporal encoding of speech vs non-speech signals through clinical and behavioral measurements. A sum of 5 sinusoids, at the 5 formant frequencies, modulated by the corresponding CV temporal envelope, was taken as speech-analogue. Accordingly, Speech and Analogue ABRs components were compared, although a priori due to be similar. Furthermore, categorical perception assessment was processed to both analogue and full-speech continuums. If confirmed, these preliminary results (7 normal hearing adults for physiological ABRs & behavioral categorical perception) would bring further evidence of an early specialization of temporal processing of speech, in line with previous research [Kraus & Nicol, *Trends in Neuroscience* 28(4):176–81 (2005)]. [Work supported by CNRS, Cochlear & Univ.Lyon 1].