

P4.10

DIFFERENCES IN MISMATCH NEGATIVITY (MMN) RESPONSE TO PURE-TONE AND SPEECH SOUNDS IN NORMAL SUBJECTS: AN ADDITIONAL EXPLANATION

Tomé D.¹, Barbosa F.², Marques-Teixeira J.²

¹Department of Audiology, Health School of Allied Sciences, Polytechnic Institute of Porto, Porto, Portugal;

²Laboratory of Neuropsychophysiology, Faculty of Psychology and Educational Sciences, University of Porto, Porto, Portugal

The relation of automatic auditory discrimination, measured with MMN, with the type of stimuli has not been well established in the literature, despite its importance as an electrophysiological measure of central sound representation. In this study, MMN response was elicited by pure-tone and speech binaurally passive auditory oddball paradigm in a group of 8 normal young adult subjects at the same intensity level (75 dB SPL). The frequency difference in pure-tone oddball was 100 Hz (standard = 1 000 Hz; deviant = 1 100 Hz; same duration = 100 ms), in speech oddball (standard /ba/; deviant /pa/; same duration = 175 ms) the Portuguese phonemes are both plosive bi-labial in order to maintain a narrow frequency band. Differences were found across electrode location between speech and pure-tone stimuli. Larger MMN amplitude, duration and higher latency to speech were verified compared to pure-tone in Cz and Fz as well as significance differences in latency and amplitude between mastoids. Results suggest that speech may be processed differently than non-speech; also it may occur in a later stage due to overlapping processes since more neural resources are required to speech processing.