

**APPLICATION OF TONE-PIP STIMULI OF DIFFERENT RISE-TIMES  
FOR WAVE V IDENTIFICATION IN AUDITORY BRAINSTEM  
RESPONSES (ABR) PROCEDURES**

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**Abstract**

Application of tone-pip stimuli of elongated rise-times in examination of auditory brainstem responses (ABR TON) makes it possible to detect desynchronization of auditory nerve fibers in a much earlier stage of retrocochlear pathology than it would be possible when applying click-type acoustic stimuli. However, longer rise-time deteriorates synchronization of responses from individual nerve fibers.

It makes the assessment of ABR morphology more difficult, in particular it hinders correct recognition of wave V. The quality of ABR recordings might be poor when examining retrocochlear pathologies, and/or in presence of excessive artifacts. The authors propose that, in the cases when accurate evaluation of wave V in ABRs recorded with the use of long-rise tone-pip stimuli (ABR TON, 4 or 8 cycles rise-time) is difficult, one should apply tone-pip stimuli of shortened rise-time (ABR TON-2,2 cycles rise-time) to correctly identify wave V.

Keywords: biomedical measurements, auditory brainstem responses (ABR), tone-pip