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Effect of click repetition rate on the latency of human auditory brainstem responses

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Authors
Don, M
Allen, A
Starr, A

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GG12. <u>Effect of click repetition rate on the latency of human auditory brainstem responses.</u> M. Don, A. Allen, and A. Starr (Neurology Division, University of California, Irvine, CA 92668)

Auditory brainstem responses are the far-field reflection of electrical activity originating in the auditory pathway in its course from the cochlea to cortex that can be recorded from scalp electrodes using computer averaging techniques. There are seven components in the initial 10 msec following a click signal which have been shown to have an orderly change in latency as a function of signal intensity. The results of this study show that click repetition rate can also significantly affect the response latency measure. Responses were measured in ten normal hearing subjects at click rates of 10 to 100/sec and at four intensity levels (30, 40, 50, 60 dB SL). The mean latency shift of component V was 0.5 msec when responses at 10 and 100/sec were compared. This is equivalent to a 20-dB decrease of signal intensity at the 10/sec click rate. An analysis of the time of occurrence of this shift using brief click trains at 100/sec showed the shift to be complete by the fifth click. The latency shift was similar at the four signal levels tested. The results are interpreted as an objective measure of adaptation in the human auditory system with implication for the measurement in disorders of hearing.