

Evoked responses in humans to continuous amplitude modulated tones.

Rickards, F.W. and Clark, G.M., Department of Otolaryngology, 32 Gisborne St., East Melbourne.

The clinical use of the slow cortical auditory evoked responses and the auditory brainstem response is now widespread. Both of these responses look at electrical changes in the brain following the onset of an acoustic stimulus and are known as transient responses. This paper will describe a technique of recording electrical potentials evoked during a continuous sinusoidally-modulated amplitude-modulated tone. This type of response is known as a steady-state response. The responses to this type of sound were found to be periodic, having the same fundamental frequency as the modulation envelope. A Fourier transform was used to quantify the amplitude and phase of the first two harmonic components of the response. Responses can be recorded for modulation rates from 4Hz to 448Hz, for carrier frequencies from 250Hz to 4KHz and for sound pressure levels (SPLs) from 30dB SPL to 100dB SPL. In general, the response amplitude increases with SPL. Estimates of latencies of these steady-state potentials can be made by measuring the phase of both harmonics as the modulation frequency is varied. Latencies suggest the auditory cortex as one of the sources of the response. The clinical implications of these results will be discussed.



Minerva Access is the Institutional Repository of The University of Melbourne

Author/s:

Rickards, F. W.; Clark, Graeme M.

Title:

Evoked responses in humans to continuous amplitude modulated tones [Abstract]

Date:

1982

Citation:

Rickards, F. W., & Clark, G. M. (1982). Evoked responses in humans to continuous amplitude modulated tones. *Australian Journal of Audiology*, suppl. 1, 11.

Persistent Link:

<http://hdl.handle.net/11343/27169>

File Description:

Evoked responses in humans to continuous amplitude modulated tones [Abstract]