Evoked responses in humans to continuous amplitude modulated tones.

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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 30dBSPL to 100dBSPL. 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.

An analysis of error responses for the CAL PBM Word Lists.

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Two lists of the CAL PBM Word Lists were presented to 30 elderly clients attending NAL for hearing aid fitting. The subjects responses were recorded and confusion matrices produced for initial consonant errors, vowel errors and final consonant errors. The results obtained indicate that the group had little difficulty correctly identifying the vowel presented but had increasing difficulty with initial and final consonants. Analysis of the individual confusion matrices revealed that: 1. Where vowel errors were made subjects tended to substitute a vowel with a spectral content and duration similar to that of the target vowel 2. Consonant errors were predominantly those relating to misidentification of place and/or manner of articulation. Few errors resulted from the misidentification of voicing. The results are discussed and their implications for the development of auditory training programmes for the elderly will be considered.

A Co-ordinated approach to alleviation of hearing handicap in adults with acquired hearing impairment.

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Earlier reports have repeatedly indicated inadequacies in traditional approaches to aural rehabilitation in adults with acquired hearing loss. The Hornsby-Kuringai sub-region of the Northern Metropolitan Health Region, N.S.W. Health Commission, places considerable emphasis on community health and on prevention of ill-health, by fostering of healthier living patterns. Within this overall framework, a dual approach to management of hearing handicap secondary to acquired hearing loss, is evolving. Early in 1981, as a contribution to I.Y.D.P., and as a result of long-term co-operative planning involving the audiology unit, the social work department, and some highly motivated hearing impaired community members, a self-governing, self-help group was launched. This group now meets monthly at our Hillview Community Health and Resource Centre, and provides a varied programme, including speakers, discussion sessions and open forums. Its aims are: 1. To promote public awareness of deafness and hearing impairment; 2. To foster the integration of hearing impaired people into the community; 3. To provide support and insight for family and friends of hearing impaired people; 4. To stimulate hearing impaired people to act more confidently in the community. The group provides community support on a continuing basis. However, a need was seen for closed-set, limited membership, professionally conducted communication workshops, to complement the work of the continuing, non-professional group. Particularly as, once continuing aural pathology has been ruled out, there is a case to be made for de-emphasis of any connotations of ill-health, these workshops have been added to the existing Area Health "Lifestyle" programme. Both groups have a common foundation in emphasis on individual responsibility for achieving more successful communication and are planned to be complementary, with members feeding from one group to the other, depending on individual need. Their progress is being closely monitored.
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Title:
Evoked responses in humans to continuous amplitude modulated tones [Abstract]

Date:
1982

Citation:

Persistent Link:
http://hdl.handle.net/11343/27169

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