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COGNITIVE EVOKED-POTENTIALS IN DEMENTIA AS AN EXAMPLE OF THEIR CLINICAL-APPLICATIONS

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4. Cognitive evoked potentials in dementia as an example of their clinical applications. — A. Starr (Department of Neurology, University of California, Irvine, CA, U.S.A.)

Both auditory and visual stimuli have been employed to elicit the P300 component of event related potentials in normal and demented subjects. The tasks involve the detection of an

infrequent stimulus ($P = 0.15$) (low tone, or a projected circle) occurring on a background of frequent stimuli (high tone or a projected triangle) by making a reaction time button press. In normals the P300 latency is longer to the visual rare stimulus than it is to the auditory rare stimulus and the change in latency with age is steeper in visual than auditory tasks. In patients with dementing illness (Huntington's chorea, Alzheimer's disease), the P300 may be abnormal to both modalities, to only one of the modalities or even normal to both. Furthermore, the correlation between P300 latency and extent of cognitive impairment was poor. Data from experiments in which the auditory and visual tasks were combined (i.e., 'respond only when a low tone and a circle appear') will be discussed in relationship to the brain structures involved in producing P300s to visual and auditory signals. Furthermore, the clinical applications of cognitive evoked potentials will be discussed in a more general frame.