

CONCURRENT VISUAL TASK EFFECTS ON EVOKED AND EMITTED AUDITORY P300 IN ADOLESCENTS

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Using an oddball stimulus presentation paradigm, the effects of divided attention on auditory P300s were studied. Auditory attention was either divided or focused, depending on the demands placed on subjects during the performance of a concomitantly presented visual task. Two types of auditory tasks were performed under each of the two auditory attention conditions. In one, subjects responded to infrequently presented high pitched tones (oddball stimuli). In the other they responded to the occasional omission of a stimulus in an otherwise rhythmically presented chain of stimuli. P300s and reaction times were recorded to both the rare tones and the omissions. The Sternberg visual memory task was used to manipulate the subject's auditory attention state. Subjects actively performed the Sternberg task during the divided auditory attention condition, whereas during the focused attention condition they were not required to respond to the visual stimuli. During focused auditory attention, evoked auditory P300s were both larger and faster than their emitted counterparts. During divided attention, auditory P300s were reduced in amplitude but latency was unaffected. Evoked auditory P300s showed evidence of containing P300a as well as P300b components, particularly when attention was shared with the visual task.

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