

Attentional Modulation of Chromatic Onset Visual Evoked Potentials

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Past studies have shown that behavioral, fMRI, and visual evoked potential (VEP) responses may be subject to changes with attentional modulation. Other studies report that responses from early visual areas generally do not show attentional effects. Attentional modulation of the VEP has clinical significance in that it is often only possible to monitor patient attention indirectly (e.g. through direction of gaze). The magnitude of reported attentional effects depends upon the stimulus/distractor geometry as well as the task-relevance of the distractor. We report here the results of a series of experiments to ascertain the degree to which attentional manipulations affect the characteristics of the spatio-chromatic, pattern-onset VEP. In this series, we investigated the effects of spatial separation as well as task difficulty and relevance on the amplitude and latency of the response. The chromatic VEP responses showed little or no change in amplitude or latency for manipulations of attention. This suggests that the chromatic onset VEP response may reflect lower level visual mechanisms that are relatively unaffected by attentional feedback. The results also suggest that in clinical settings direct monitoring of attention is not necessary for the chromatic-onset VEP and that monitoring of fixation or gaze is sufficient.