Occipital distribution of foveal half-field responses

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Abstract. Foveal left and right half-field responses were recorded in six subjects (12 half-fields) and compared with wide half-field responses. In the foveal responses a general trend was seen for the negative-positive-negative (NPN) complex to extend to the contralateral channels, replacing the contralateral positive-negative-positive (PNP) complex found with wide half-field stimulation. Many individual variations in foveal response morphology were seen, which may be understood in terms of anatomical variation. Individual differences between foveal half-fields in the same subject may be as great as those between subjects.

Wide half-field checkerboard reversal stimulation (16° r) with 50' checks produces in most cases an ipsilateral N75-P100-N145 complex and a contralateral P75-N105-P135 complex (Blumhardt and Halliday, 1979).

The responses to foveal half-field stimulation are known to be more variable and are expected to have a more contralateral distribution of the P100 component (Halliday 1980, 1982).

This study examines the variety of responses found with foveal half-field pattern reversal stimulation in six chosen subjects using two check sizes (20' and 50'). The foveal responses are also compared with those obtained with wide half-field stimulation.

Methods

Pattern reversal visually evoked potentials (VEPs) were recorded following stimulation of the left and right half-fields of ten healthy subjects with an eight-channel montage. All the subjects had acuities of 6/6 or better when tested with the Snellen chart. The records of four subjects were excluded on the grounds of small amplitude or poor repeatability, in some cases due to poor concentration. The recording montage consisted of five electrodes placed 5 cm above the inion and 5 cm apart so that the two lateral electrodes were located 5 cm and 10 cm to either side of the midline electrode. Three

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Figure 1. The types of response found in the ipsilateral and contralateral channels with foveal half-field stimulation. 50' checks were used in a, b, c, and 20' checks in d, e.