

## Changes of Transient Visual Evoked Potentials in Dyslexic Children

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**Objectives:** To investigate the characteristics of Visual Evoked Potentials (VEP) in dyslexics.

**Methods:** Fourteen children, 7 dyslexics and 7 control, aged 7 to 8 years were recruited. All dyslexic subjects were diagnosed by clinical psychologist. All subjects are from mainstream primary schools in Hong Kong, using Chinese and Cantonese as their primary written and spoken language, having normal visual acuity and IQ. Children with reported emotional or behavioral problems or binocular vision problem were excluded. All the subjects participated in pattern-reversal VEP measurements binocularly with 1000msec recording time. Four conditions of stimulations (checkersize: 180 min of arc) were applied.

- (1) 5-Hz at 15% contrast
- (2) 5-Hz at 1% contrast
- (3) 15-Hz at 15% contrast
- (4) 15-Hz at 1% contrast

**Results:** At 15% contrast stimulus, dyslexic subjects showed smaller amplitudes in both frequencies compared with the control group, especially in higher frequency. At 1% contrast stimulus, dyslexic subjects also showed smaller amplitudes in both frequencies and obvious reduction was observed at the later part of the recording period. No observable difference was showed in the latency of both contrast conditions.

**Conclusion:** The attenuated VEP responses in higher frequency at low contrast condition in dyslexic group showed the changes of the transient visual response and this implies an abnormality in magnocellular pathway in dyslexia.