Mona M. Nada, Amira M. El Gohary, Radwa M. Azmy, Yasmine M. ElSayed, Bodour Abdelkader
Clinical Neurophysiology, Faculty of Medicine, Cairo University, Cairo, Egypt

# Assessment of amblyopic children undergoing occlusion therapy by pattern visual evoked potentials and contrast sensitivity tests

European Journal of Ophthalmology
Volume 34, Issue 1
https://doi.org/10.1177/11206721231171423

## Abstract

**Background:** Amblyopia is a case where one or less commonly, both eyes have impaired visual performance, even with the best optical correction and no visible disease of the visual system.

**Objectives:** To assess contrast sensitivity tests (CST) and pattern visual evoked potentials (PVEP) results in amblyopic children who have already started occlusion therapy for durations ranging from 6 to 12 months.

**Methods:** This cross-sectional study was conducted on 200 eyes of 50 patients with monocular amblyopia and 50 age and sex matched controls. Both patients and controls underwent ophthalmological assessment, PVEP, and CST**.**

**Results:** There was no statistically significant difference in the results of P100 latencies of qualitative PVEP in amblyopic eyes compared to non-amblyopic eyes and control eyes, while the qualitative CST showed a highly statistically significant difference, being affected in 98% of amblyopic eyes compared to unaffected eyes (4%) and control eyes (4%). The maximum contrast level and minimal contrast level of quantitative CST were significantly lower in amblyopic eyes compared to non-amblyopic and control eyes. The cutoff value of maximal contrast level at mean frequencies of 2.5 ± 0.9 Hz, and a range of (1.1–4.1) for amblyopic eyes is ≤21 dB, while the cutoff value of minimal contrast level at mean frequencies of 13.4 ± 2.6 Hz, and a range of (6.7–18) for amblyopic eyes is ≤12 dB**.**

**Conclusion:** Detection of amblyopia by CST is a noninvasive and easy procedure, which represents a promising tool to support the diagnosis of amblyopia**.**