

**Title: Factors affecting successful strabismus surgery in children presenting with Acquired Nonaccommodative Esotropia**

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**Background:** Childhood esotropia affects 2% of all children. Treatment options include optical and surgical treatments. Successful strabismus surgery not only improves ocular alignment but more importantly allows development or recovery of binocular vision (depth perception and motor fusion). Many factors affect the final functional outcome of strabismus surgery in pediatric esotropia. The purpose of this study was to examine factors affecting functional outcomes in children presenting with acquired nonaccommodative esotropia (ANAET)

**Methods:** A computer search of the patient database of 1 pediatric ophthalmologist (I.M.) at the Ivey Eye Institute, University of Western Ontario, was performed to identify the records of all children who received surgery for ANAET <10 years of age between August 2007 and August 2015. A total of 111 patients with ANAET were identified, representing 26% of all children receiving strabismus surgery for esotropia. Complete data was available on 101 patients. A retrospective chart review of patients was performed. We compared preoperative factors between patients achieving postoperative stereopsis of 100 seconds of arc or better versus those with worse than 100 seconds of arc.

**Results:** Thirty-four patients (34%) had a final stereopsis of 100 seconds of arc or better. The older age at the onset of the deviation, older age at referral and at initial visit was associated with a better functional outcome (p value = 0.002, 0.011, 0.015 ) respectively. Presenting with dense amblyopia was associated with a worse outcome (P= 0.02), presenting with intermittent deviation was associated with a good outcome (0.003)

**Conclusion:** Older age of onset appears to be the strongest predictor for developing postoperative stereopsis in children presenting with ANAET. Presenting with dense amblyopia is a poor prognostic factor for recovering stereopsis and presenting while the deviation is still intermittent is ideal for obtaining good outcome. Early diagnosis and management of amblyopia can influence functional outcomes for childhood esotropia surgery.