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Stereopsis Results at 4.5 Years of Age in the Infant Aphakia

Treatment Study

E. Eugenie Hartmann ^a

Infant Aphakia Treatment Study Group

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Purpose

To determine whether stereopsis of infants treated for monocular cataracts varies with the type of optical correction used.

Design

Randomized prospective clinical trial.

Methods

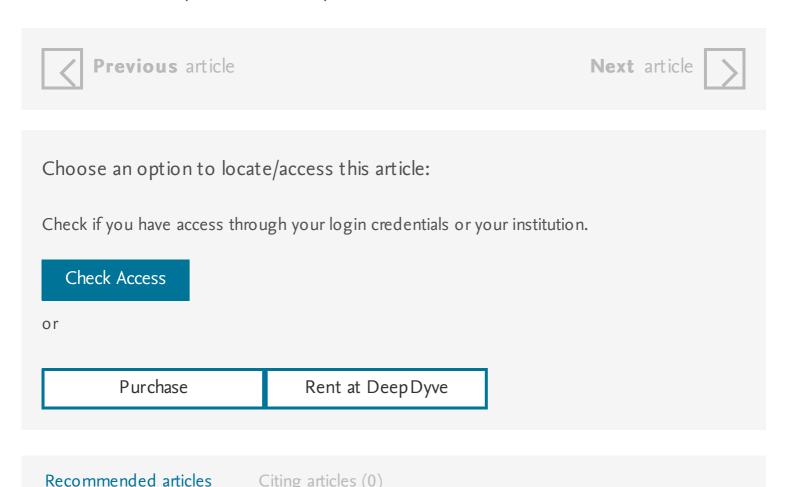
The Infant Aphakia Treatment Study randomized 114 patients with unilateral cataracts at age 1–7Â months to either primary intraocular lens (IOL) or contact lens correction. At 4.5 years of age a masked examiner assessed stereopsis on these patients using 3 different tests: (1) Frisby; (2) Randot Preschool; and (3) Titmus Fly.

Results

Twenty-eight patients (25%) had a positive response to at least 1 of the stereopsis tests. There was no statistically significant difference in stereopsis between the 2 treatment groups: Frisby (contact lens, 6 [11%]; IOL, 7 [13%]; $P\hat{A} = .99$), Randot (contact lens, 3 [6%]; IOL, 1 [2%]; $P\hat{A} = .62$), or Titmus (contact lens, 8 [15%]; IOL, 13 [23%]; $P\hat{A} = .34$). The median age at surgery for patients with stereopsis was younger than for those without stereopsis (1.2 vs 2.4 \hat{A} months; $P\hat{A}$ = .002). The median visual acuity for patients with stereopsis was better than for those without stereopsis (20/40 vs 20/252; $P\hat{A} = .0003$).

Conclusion

The type of optical correction did not influence stereopsis outcomes. However, 2 other factors did: age at surgery and visual acuity in the treated eye at age 4.5 years. Early surgery for unilateral congenital cataract and the presence of visual acuity better than or equal to 20/40 appear to be more important than the type of initial optical correction used for the development of stereopsis.



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E. Eugenie Hartmann, PhD is a Professor in the Department of Vision Sciences at the University of Alabama at Birmingham. Her training encompasses Developmental Psychology as well as Vision Sciences. She has expertise in both behavioral and electrophysiological assessments of visual function in infants and young children. She has participated in multi-center trials since 1987, including studies with Ross Laboratories demonstrating the advantages of supplemented formulas for preterm infants based on visual evoked potential findings.





Ann U. Stout MD has joined Houston Eye Associates after fourteen years at Casey Eye Institute in Portland, Oregon. She attended Baylor College of Medicine and was chief resident at Baylor's Cullen Eye Institute. She completed a pediatric ophthalmology fellowship at Childrens Hospital Los Angeles, and stayed as faculty for ten years. In 2000 she joined Oregon Health Sciences. Her research includes the Pediatric Eye Disease Investigator Group studies and early detection of cerebrotendinous xanthomatosis.

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