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Treatment of severe amblyopia with atropine: Results from 2 randomized clinical trials

Michael X. Repka, MD^a, Raymond T. Kraker, MSPH^b, Roy W. Beck, MD, PhD^b, Eileen Birch, PhD^c, Susan A. Cotter, OD^d, Jonathan M. Holmes, BM, BCh^e, Richard W. Hertle, MD^f, Darren L. Hoover, MD^g, Deborah L. Klimek, MD^h, Wendy Marsh-Tootle, ODⁱ, Mitchell M. Scheiman, OD^j, Donny W. Suh, MD^k, and David R. Weakley, MD^l for the Pediatric Eye Disease Investigator Group*

^a Wilmer Ophthalmological Institute, Johns Hopkins University, Baltimore, Maryland ^b Jaeb Center for Health Research, Tampa, Florida ^c Retina Foundation of the Southwest, Dallas, Texas ^d Southern California College of Optometry, Fullerton, California ^e Mayo Clinic, Rochester, Minnesota ^f Children's Hospital of Pittsburgh, Pittsburgh, Pennsylvania ^g Everett and Hurite Ophthalmic Association, Pittsburgh, Pennsylvania ^h Children's Eye Care & Adult Strabismus Surgery, South Charleston, West Virginia ⁱ University of Alabama Pediatric Eye Care, Birmingham Health Care, Birmingham, Alabama ^j Salus University, Pennsylvania College of Optometry, Philadelphia, Pennsylvania ^k Wolfe Clinic, West Des Moines, Iowa ^l Children's Medical Center, Department of Ophthalmology, Dallas, Texas

To the Editor

Dr. Lempert selected cross-sectional pretreatment visual acuity data from our earlier study of moderate amblyopia to suggest that there is spontaneous improvement in visual acuity of amblyopic eyes occurring over a four-year span between "early and late childhood."¹ In fact, there was only a 0.7 line difference in mean amblyopic eye acuity before treatment between the younger and the older children which may represent a small age effect. These cross-sectional acuity data from children four years apart in age are not comparable to our data from a longitudinal study of four months of treatment.

We reported the results from 18 weeks of twice weekly atropine treatment to the sound eye (with or without plus spectacle correction) in children 3 to 6 years of age with severe amblyopia.² After a period of about 4 months of treatment, amblyopic eye visual acuity improved an average of 4.5 lines in the atropine plus correction group and 5.1 lines in the atropine plus plano lens group. Dr. Lempert has speculated that this improvement is solely due to learning and maturation rather than the specific therapy. Although we did not have an untreated control group, the overall average amount of observed improvement in the amblyopic eye of 4.9 lines substantially exceeded any learning effect or age effect during the 18 weeks of the study.

Corresponding author: Michael X. Repka, MD, c/o Jaeb Center for Health Research, 15310 Amberly Drive, Suite 350, Tampa, FL 33647; phone: (813) 975-8690, fax: (813) 975-8761, pedig@jaeb.org.

*A list of the members of the Pediatric Eye Disease Investigator Group participating in the study has been published.²

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Previously published data for spectacle-only treated amblyopic eyes of 15 similarly aged children with severe anisometropic amblyopia is available to estimate improvement from learning or maturation over such a short period.³ The change in visual acuity with spectacle-only management was an improvement of 0.6 lines at 5 weeks and 1.2 lines if we evaluate maximum acuity after continued follow-up (maximum follow-up = 10 weeks).³ These findings further support our conclusion that the treatment benefit seen in our study was substantially greater than any learning effect.

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