

## EDITORIAL

# Comments on: Emmetropization in Accommodative Esotropia: An Update and Review

MERRILL STASS-ISERN, MD, AND SCOTT OLITSKY, MD

When treated properly, accommodative esotropia, a very common entity in pediatric ophthalmology, generally results in good vision, proper alignment, and excellent stereopsis. In this issue, Lowery et al<sup>1</sup> present a concise review of normal emmetropization and accommodative esotropia, and they discuss the possible relationship between the two conditions. They also discuss the treatment of patients with accommodative esotropia, assuming that there is a relationship between the treatment of hyperopia and emmetropization. In their discussion regarding spectacle use in accommodative esotropia and emmetropization, the authors note that little published data are available and that the studies published to date produced largely disparate and inconclusive results.

With the advent of refractive surgery, the general public has sent the ophthalmic community a strong message: “we prefer not to wear spectacles.” Parents of first-time spectacle wearers for accommodative esotropia typically ask how long the child needs to remain in spectacles. As ophthalmologists,

however, our goal for these children is first, and foremost, restoration and maintenance of good visual acuity, ocular alignment, and excellent stereopsis. Although elimination of spectacles may evolve with age in a certain subset of children with accommodative esotropia, it should not be thought of as a primary objective of treatment. In addition, overly aggressive reduction in the hyperopic correction in these children may lead to a recurrent esotropia and possible amblyopia.

Recently, two studies evaluating the characteristics of children most likely to be weaned from their spectacles stated that the degree of baseline hyperopia at initial spectacle prescription (less than 3 diopters) and older age appeared to be the best predictors.<sup>2,3</sup> These results are not surprising. With gradual reduction of their refractive error, some patients with moderate levels of hyperopia will develop enough fusional divergence that they will be able to maintain straight eyes without glasses. This, along with the natural loss of hyperopia in these children, does not necessarily mean that this reduction has altered the process of

Drs. Stass-Isern and Olitsky are affiliated with the Children's Mercy Hospitals and Clinics, Kansas City, MO, and the University of Missouri-Kansas City School of Medicine, Department of Ophthalmology, Kansas City, MO.

Dr. Olitsky is a member of the *Comprehensive Ophthalmology Update* editorial board.

emmetropization. The question that remains unanswered is: "What is the role of the normal increase in divergence amplitudes with or without the gradual decrease in hyperopic refraction error (normal emmetropization) in the discontinuation of spectacles?" Does slowly decreasing the hyperopic prescription (below the full cycloplegic refraction) stimulate divergence amplitudes enough to allow discontinuation of spectacles, or does it stimulate a decrease in the level of hyperopia? Although Lambert et al attempt to answer these questions by examining initial cycloplegic refraction upon enrollment of children in their study,<sup>2,3</sup> the final cycloplegic refraction at the time of spectacle discontinuation is not provided. Without the final cycloplegic refraction measurements, it is not known whether the weaning of spectacles facilitates emmetropization or simply stimulates divergence amplitudes that are large enough to allow patients' accommodative esotropia to maintain normal alignment without correction of their

hyperopia. To answer this question, an age-matched controlled study that examines such data at both study points is required.

The authors also raise an interesting point in how the refractive error is best measured. They suggest that the use of cycloplegic autorefraction is superior to cycloplegic retinoscopy in the management of children with accommodative esotropia. They state that autorefraction is better able to detect and quantify astigmatism. Most pediatric ophthalmologists rely on the use of cycloplegic retinoscopy to determine the refractive error of these patients, and there are no studies in the literature that have changed this practice pattern for most ophthalmologists. Until such studies are available and agreed upon by the pediatric community, cycloplegic retinoscopy remains the "gold standard" in this regard.

In this article, the authors raise interesting issues that go beyond the historical goals in the treatment of accommodative esotropia. With the continued advancement and expansion of refractive surgery, these questions retain relevance in

optimizing the care of patients with accommodative esotropia. Accommodative esotropia is a common clinical entity. It should, in theory, be possible to design studies to help answer these questions in order to allow us to provide the best possible care for our patients.

## References

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