Myopia control and multifocal spectacles

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In this month's article we are going to be lifting off the cornea and evaluating multifocal spectacles as a tool for myopia control.

Myopia is considered a major public health risk with approximately 25 percent of the United States population suffering from this condition. The public health cost, as of 2007 was estimated to be between $3.8 and $4.6 billion annually for visual corrective devices and evaluations. Certain ethnic groups such as Asians have been anecdotally considered to have a greater preponderance and/or myopia progression rates as compared to Caucasians. It is now widely accepted that emmetropization is an active causative process that outstrips the genetic predisposition towards the activation of myopia and the progression rate.

The Correction of Myopia Evaluation Trial (COMET) was a multicenter, prospective, randomized clinical trial that was designed to evaluate whether multifocal spectacle lenses (MLs) would slow the progression of juvenile onset myopia as compared to the use of single vision lenses (SVLs). In this trial, 469 children with low to moderate myopia (-1.25 to -4.50 D and a mean refractive error of -2.38 D) were randomized to the use of MLSs or SVLs and followed initially for a duration of three years with a follow-up study at the seven-year mark.

The results of this and other trials indicated that:

- Age and baseline myopia amounts were significant parameter for progression.
- Gender, ethnicity or treatment assignment was not associated with high myopia risk.
- MLSs inhibit myopia progression by a statistical but clinically insignificant amount.
- Amount of parental myopia was related to their progeny's myopia progression rates.
- Children of two myopic parents demonstrated progression rates 50% faster than similar baseline myopic children of one or no myopic parents.

Some caution must be utilized in interpreting the COMET results as the ethnic population was statistically underrepresented and papers have called into question the lack of accountability of customizing the near addition in relation to the near vergence system responses.

References:

Dr. McPherran is an associate clinical professor and serves as chief of the University of California- Berkeley Eye Services at Castle Family Health Center. He is a Fellow of the American Academy of Optometry and has served as past chief examiner to the National Board of Examiners in Optometry. He is a frequent lecturer at the American Academy of Optometry, Ellerbrock Lecture Series.

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