

OPHTAMYOP study myopia control in French children treated with Defocus Incorporated Multiple Segment Spectacle Lenses: interim analysis

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Abstract

Purpose: The increasing prevalence of myopia in Europe poses a significant public health concern. This study aims to assess the safety and efficacy of Defocus Incorporate Multiple Segment (DIMS) Spectacle Lenses in French European children with progressive myopia.

Methodology: A retrospective/prospective observational multicenter (12 centers) study of children aged 4-16 years, with myopia (range -0.25D to -8.00D), and with history of progressive myopia. Between April 2020 until April 2024 all eligible participants were recruited and prescribed DIMS spectacle lenses. Ethical committee approval was obtained from Paris Public Hospitals (APHP). Examinations were performed at baseline and at 3, 6, 12, 18, and 24-month follow-up consultations. Parameters measured at each visit included visual acuity, phoria, cycloplegic refraction, fundus examination, and axial length.

Results: 49 participants met the eligibility criteria (60% female), mean age was 10.36±2.49 years, At baseline, the mean spherical equivalent refraction (SER) for the Right Eye (RE) was -2.97 D ± 1.79 D and the mean axial length (AL) for the RE was equal to 24.35±0.89 mm. Children were carefully monitored for adaptation to DIMS spectacle lenses during the study, with no recorded adverse events. Forty-six patients completed the 24-month follow-up. The mean change in SER between baseline and 24M was -0.32 ± 0.44 D for the right eye, and the mean AL change was 0.23 ± 0.2 mm.

Conclusions: Progressive myopia is characterized by an increase in the SER of $\geq -0.5\text{D}$ over one year or $\geq -0.25\text{D}$ over six months, and/or an axial length increase of ≥ 0.2 mm over one year. In our interim study, the mean SER and AL changes over 24M period indicate a significant positive trend of myopia control. DIMS spectacle lenses appear to be a safe and effective method for managing myopia among a French European population. While the patient cohort is small, a robust trend of myopia control is observed in children with history of progressive myopia who are treated with the DIMS spectacle lenses. This further underscores the potential of this approach. Further data from a larger patient population would be valuable.

Financial Disclosure: DBG (Cooper, Essilor, Hoya, J&J, Santen, Thea, Zeiss), BM (Hoya, Santen, Thea), MG (employee of Hoya)