Comparison of Myopia Progression In New and Established Myopia Control Treatment (MiSight® 1 day) Groups

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Introduction

- Myopia represents a growing public health issue, affecting 33% of adults in the United States and markedly higher proportions in Asia.[1] Increasing myopia is associated with increased risk of retinal detachment, glaucoma, cataracts, and myopic retinopathy.[2-5]
- In the past decade, there has been increased research activity aimed at slowing the progression of myopia by optical methods, including overnight corneal reshaping contact lenses and soft contact lenses incorporating multifocal or aspheric optics[6-8]
- The effectiveness of a contact lens with a dual focus optical design in slowing the rate of progression of juvenile-onset myopia has been recently quantified in a 3 year study.[9]

Purpose

- Evaluate the rate of myopia progression in children new to MiSight® 1 day contact lenses compared to an established MiSight® 1 day wearing group at the 5 year stage.

Methods

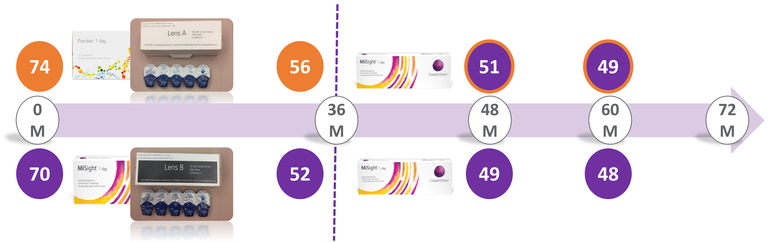
- Following completion of a 3-year trial (part 1) to assess the efficacy of MiSight® 1 day, the control group, comprising wearers of single vision spherical daily disposable (omafilcon A; Proclear® 1 day), were refitted to MiSight® 1 day (Previous Proclear® 1 day [new to MiSight], n=56).
- The existing MiSight® 1 day wearer group continued with MiSight® 1 day (Continuing MiSight® 1 day , n=52) for part 2 of the study.
- The age range of both groups was 11-15 years at part 2 baseline.
- Cycloplegic spherical equivalent autorefraction (SERE) and axial length (AL) were measured at baseline and thereafter every 12 months.
- Only subjects dispensed at part 2 baseline were included in this whole analysis.
- A linear mixed model analyses were used to compare the adjusted annual change in SERE and AL between groups during part 2 study period.

Part 1

- Age: 8-12
- Randomised • Double-masked
- Sites: UK; Portugal; Singapore; Canada
- 3 years

Part 2

- Age: 11-15
- All subjects wearing MiSight® 1 day
- Sites: UK; Portugal; Singapore; Canada
- 3 years



Results

- The previous P1D group displayed more myopia (SERE: Previous P1D, -3.45 ± 1.14D vs Continuing M1D, -2.52 ± 0.98D) and longer axial length (Previous P1D, 25.07 ± 0.74mm vs Continuing M1D, 24.76 ± 0.66mm) for part 2 at baseline.
- There was no significant difference (p>0.05) in fixed demographic factors such as age, gender and ethnicity between groups.
- The annualized mean rate of change from part 2 baseline to the 24-month visit for SERE was -0.18D (95% CI -0.13 to 0.24) and -0.12D (95% CI -0.06 to -0.19) for the continuing M1D and previous P1D wearers, respectively.

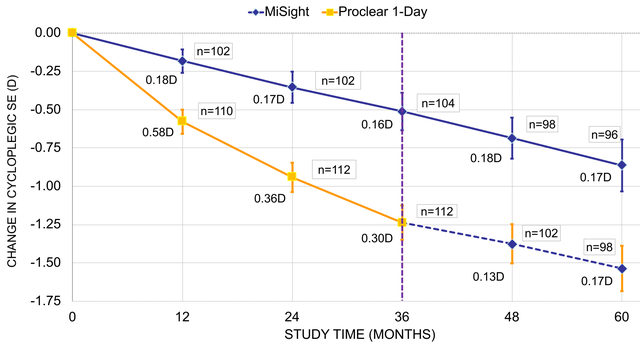


Figure 1. Mean annualized rate of change in SERE (D) over 5-year study period with 95% CI

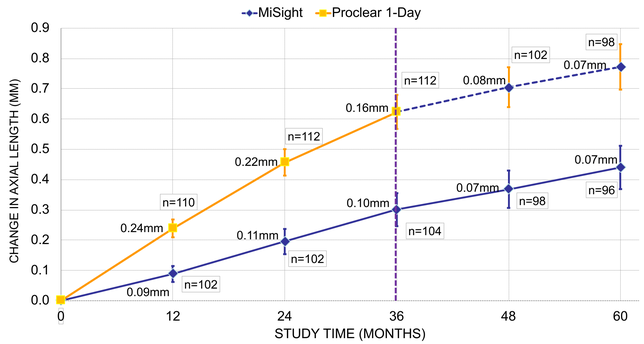


Figure 2. Mean annualized rate of change in axial length (mm) over 5-year study period with 95% CI

- Annualized mean rate of change in axial length was 0.07mm (95%CI 0.05 to 0.10) and 0.05mm (95%CI 0.02 to 0.07), for the continuing M1D and previous P1D wearers respectively.
- There were no significant differences between groups for change in SERE and AL over this 24-month period (p=0.10 and p=0.10 respectively).

Results

- Visual acuity (VA) was better than 20/20 = 0.0 logMAR at every visit. There were no significant differences between groups (*p>0.05*) and between visits (*p>0.05*). Figure 3.

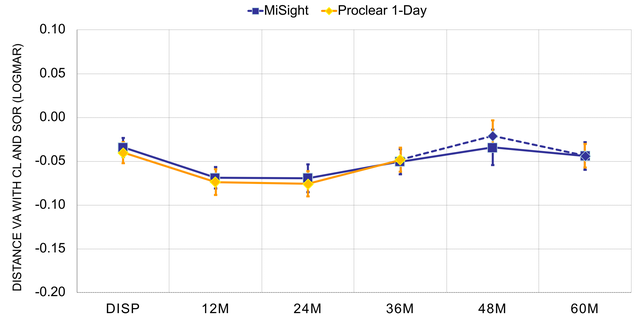


Figure 3. Average LogMAR VA from dispensing with 95% CI; SOR = Spherical over refraction

Conclusions

- Myopia progression rates were similar across two demographically matched populations in previous Proclear 1-Day versus continuing MiSight® lens wear, even though the previous Proclear 1-Day group had more myopia and longer axial length at part 2 baseline.
- MiSight 1 day treatment period of 5 years compared to 2 years did not alter the rate of progression in this study population.

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Acknowledgements

- Visioncare Research Ltd, UK; University of Minho, Portugal; Aston University Ophthalmic Research Group, UK; University of Waterloo School of Optometry, Canada; National University Health System, Ophthalmology Department, Singapore

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* MiSight® 1 day (omafilcon A) daily wear single use contact lenses are indicated for the correction of myopic ametropia and for slowing the progression of myopia in children with non-diseased eyes, who at the initiation of treatment are 8-12 years of age and have refractive error of -0.75 to -4.00 D (spherical equivalent) with ≤ 0.75 DC.