

# Control of Myopia Using Diffusion Optics Technology (DOT) Spectacle Lenses in a Chinese population

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## Purpose

Diffusion Optics Technology™ (DOT) spectacle lenses are designed to slow myopia progression by modulating retinal contrast and have demonstrated excellent safety and efficacy in a 4-year clinical trial (CYPRESS) in North America. The purpose of this research was to evaluate the myopia control efficacy of DOT spectacle lenses in a Chinese population.

## Methods

Myopic children aged 6 to 13 years were enrolled in a 1-year randomized controlled clinical trial across 5 Chinese sites (NCT05562622). Data from 71 children who had completed the 6-month visit were analysed. Participants were randomised to wear either DOT spectacle lenses or standard single-vision Control spectacle lenses in a 2:1 ratio. The current sample included n=48 (67.6%) DOT lens wearers. The primary endpoints were based on within-subject change from baseline in Axial Length (AL in mm) and cycloplegic Spherical Equivalent Refraction (cSER in Dioptre).

## Results

Participants mean age was  $9.87 \pm 1.72$  years; male n=39, 54.9%. For the Control group (n=23), the mean (SE) AL and cSER increased by 0.19 (0.04) mm (95%CI: [0.11, 0.26],  $p < 0.001$ ) and by -0.38 (0.08) D (95%CI: [-0.54, -0.22],  $p < 0.0001$ ), respectively. In contrast, there was no evidence for similar increases from baseline in the DOT group (n=48), the mean (SE) AL and cSER were -0.05 (0.02) mm (95%CI: [-0.09, 0.00],  $p = 0.04$ ) and 0.01 (0.05) D (95%CI: [-0.10, 0.11],  $p = 0.85$ ), respectively. The unadjusted mean differences (DOT–Control) in the changes from baseline were significant, -0.23 mm (95%CI: [-0.32, -0.14]) for AL and 0.39 D (95%CI: [0.21, 0.58]) for cSER.

## Conclusion

In a Chinese cohort, DOT spectacle lenses significantly slowed myopia progression and axial elongation compared to standard single vision spectacle lenses after 6 months of wear. These results support the hypothesis that modulating retinal contrast can slow myopia progression in children from diverse populations.

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