Defocus Incorporated Soft Contact (DISC) lens

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Summary
Purpose: DISC lens is a concentric bifocal contact lens, combining myopia correction and constant myopic defocus. We investigate the effects of wearing time, eye dominance and pupil size on myopia control with DISC lens. Methods: 128 children completed a 2-year double masked randomized clinical trial of myopic control (66 in DISC lens and 63 in single v contact lenses). Refraction and axial length were measured with cycloplegic autorefraction and IOL Master. Ocular dominance was determined with the Miles and Porta tests. Pupil images were captured by EAS-1000 (Nidek) for children wearing the DISC lens, the area ratio of the two optical zones was then calculated. Results: Those who have worn the DISC lens for 8 hours daily reached a 60% reduction in myopia progression. There were no significant differences in eye dominance with refractive changes (t-test), association between myopic progression (chi-square test) and correlation between the zones at pupil and myopic progression (multiple linear regression analysis). Conclusions: We identified a dosage effect on the lens in slowing myopia progression. Ocular dominance and pupil size do not have any effect on myopia control using the lens.