Clinical performance of the defocus incorporated soft contact (DISC) lens in a 2-year myopia control study

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Purpose: To evaluate the clinical performance of a specially designed Defocus Incorporated Soft Contact (DISC) Lens for myopia control.

Methods: The DISC lens is a multi-zone bifocal soft contact lens designed for myopia control; it provides clear vision and myopic defocus simultaneously at all viewing distances. Myopic schoolchildren aged 8-13 years were randomly assigned to wear either the DISC or the single vision (SV) lenses. Refractive errors, amplitude of accommodation, distant VA at 100%, 25%, 10% and 5% contrast, high and low contrast near VA were measured at 6 months interval for 2 years. Lens comfort and vision quality was graded by the subjects on a scale from 1-5. The right eye data was presented after 6 months wear.

Results: 100 children completed the study (DISC group, n= 52; SV group, n=48). Both groups reported comfortable lens wear, good distant and near VA which were not statistically significant (unpaired t-test, p>0.05). Amplitudes of accommodation with both lens types (DISC= 12.37 ± 2.46D; SV= 12.07 ± 1.87D) were not significantly different (unpaired t-test, p>0.05) from that of spectacles (DISC= 12.44±2.21D; SV= 12.41±2.24D). Children wearing DISC lenses accommodated normally to near targets. There was no statistical significant difference between the two lens types in high contrast but significant differences occurred in low contrast for both distance and near VA; however, the differences were not clinically significant.

Conclusion: The DISC lens provided compatible vision quality as SV contact lens and simultaneously provided a constant myopic defocus for myopia control.

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Minor changes needed? YES □ NO □