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Submission: 226  
Submission type: Poster

**Abstract title:** The proportion of myopic defocus of the Defocus Incorporated Soft Contact (DISC) lens on retarding myopic progression

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**Purpose:** Purpose: A recent study showed the Defocus Incorporated Soft Contact (DISC) lens slowed myopic progression up to 60% in school children. DISC lens is a concentric bifocal contact lens, comprising of alternating optical zones for correcting myopia and incorporating constant myopic defocus (MD). The purpose of this study was to determine if the area proportion of the two power zones in the DISC lens through the pupil of the wearers was correlated to effect on slowing myopic progression.

**Method:** Methods: 128 children aged 8 to 13 years completed a 2-year double masked randomized clinical trial of myopic control. 65 children wore the DISC lenses and 63 children wore single vision contact lenses. Pupil images were captured by EAS-1000 (Nidek) when the children were wearing the DISC lens, allowing the two power zones to be observed. Pupil sizes under photopic (80cd/m2) and mesopic (3cd/m2) conditions were measured with software of EAS-1000. The area ratio of the two optical zones was calculated by a customized computer program. Correlation between this ratio and myopic progression was investigated using multiple linear regression analysis.

**Results:** Results: There was no significant difference of pupil sizes between two groups under both photopic (DISC = 5.01±0.78 mm, SV =5.07±0.80 mm) and mesopic (DISC = 6.75±0.66mm; SV = 6.79±0.70mm) conditions. The mean area ratio of refraction correction zone
to MD zone were 0.57±0.05 (0.49 – 0.68) and 0.56±0.04 (0.48 – 0.64) under photopic and mesopic conditions respectively. There was no statistically significant correlation between this ratio and myopic progression.

Conclusions: Conclusions: Although there could be variations in pupil size and lens centration among children, the proportion of refraction correction zone and MD zone did not vary too much within pupil area. Such proportion of about 50:50 was confirmed adequate to retard myopia effectively.

1st author biographical sketch: Carly Lam is currently Professor of School of Optometry, The Hong Kong Polytechnic University. Her main research interest is in myopia development and control. Carly has published about 40 papers in the area of myopia.

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