8TH INTERNATIONAL CONGRESS OF BEHAVIOURAL OPTOMETRY

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Time/Date Scheduled:	1330 on Thursday, 26 April
Location:	Plenary

Presentation Title: **A randomised clinical trial for myopia control – use of myopic defocus spectacle lens**

Abstract

Purpose: To determine if wearing the defocus incorporated multiple segments (DIMS) spectacle lenses retard the progression of myopia in Hong Kong Chinese myopic children.

Method: A 2-year double-blind randomised controlled trial, enrolled between August 2014 and July 2017. Eye examination including measurement of refractive error and axial length were performed at the Centre for Myopia Research, School of Optometry every 6 months over 2 years.

183 Chinese children aged 8 to 13 years, with myopia from -1.00 to -5.00D in spherical equivalent (SE), astigmatism and anisometropia of 1.5D or less were randomly assigned to wear the DIMS lenses (treatment group) or the single vision spectacle lenses (control group). The study outcomes included cycloplegic refraction and axial length. Only the data of the right eyes were used for data analysis. The changes of refraction in SE and axial length between the two groups were compared by using unpaired t-tests.

Result: A total of 160 children completed the study (79 in the treatment group and 81 in the control group). Myopic progressions of the children over 2-years were-0.38 ± 0.53D and -0.93 ± 0.58D in the treatment group and the control group respectively. The mean changes in axial length were 0.21± 0.22 mm and 0.53 ± 0.24mm in the treatment and the control group. Children wearing MSMD lenses had significantly less myopic progression by 59% (mean differences was -0.55 ± 0.09D, $p < 0.0001$), and axial elongation by 60% (0.31± 0.04mm, $p < 0.0001$) as compared with those wearing the single vision lenses.

Conclusion: The daily wearing of the DIMS spectacle lens significantly slowed myopia progression and axial elongation in myopic school children. Our findings provided strong evidence for incorporating myopic defocus simultaneously with clear vision for effective myopia control. It presented the best control efficacy for myopia in the form of a spectacle lens. Being a spectacle lens, the DIMS lens can be an effective first line of treatment for myopia control in clinic.

Declaration: Collaborative research sponsored by HOYA Lens Thailand Ltd, Thai subsidiary of HOYA Corporation (Tokyo, Japan).

Clinicaltrials.gov Identifier: NCT02206217

Patent: CN104678572 A