

# Eight Years of Wearing Defocus Incorporated Multiple Segments (DIMS) Spectacle Lenses: User Experience and Myopia Control Outcomes

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## Abstract

### Purpose:

To evaluate the long-term myopia control effect and user experience in participants wearing Defocus Incorporated Multiple Segments (DIMS) spectacle lenses.

### Methods:

There were 75 participants completed the 8 years of follow up. Participants who completed the 2-year randomized clinical trial (RCT) and 6 years of follow-up (n=90) were invited for an eye examination in the 8th year after joining the RCT. The participants' ages ranged from 16 to 21 years old. Participants were interviewed either by phone or face-to-face about their current optical correction and their experience of using the DIMS spectacle lenses. Non-cycloplegic refractions and axial length were measured.

### Results:

61.8% Group 1 participants (who wore DIMS spectacles for 6 years) who returned for the 8-year follow-up, were still wearing the DIMS spectacle lenses for their myopia correction. Of the 38.2% who discontinued DIMS spectacle lens wear, 29.4% have switched to conventional single vision (SV) spectacles, 11.8% to conventional SV contact lenses and 2.9% changed to myopia control contact lenses. Similar patterns were observed in Group 3 participants (who wore SV spectacles for 2 years and followed by DIMS spectacle lenses for 4 years).

In Group 2 (who wore DIMS spectacle lenses for the first 3.5 years and then SV spectacles for 2.5 years) and Group 4 (who wore SV spectacles in the first 2 years, switched to DIMS for 1.5 years, and then SV spectacles for 2.5 years), most of the participants wore SV spectacles at the 8-year visit. The reasons for not resuming DIMS spectacle in these two groups included: 48% because of a lack of access to free spectacles provided from the trial, 22% reported that the DIMS spectacle lenses too expensive, 22% changed to other myopia control methods, 4% found the lenses uncomfortable, and 4% did not need myopia control anymore. All participants were satisfied with the DIMS spectacle lenses for controlling their myopia and agreed that participating in the RCT raised their awareness of managing their myopia.

### Conclusion:

A significant proportion of participants who joined the 2-year DIMS RCT continued to wear the DIMS spectacle lenses for as long as 8 years. The primary reasons cited by those who did not

continue with myopia control were the expense of the lenses and the lack of free lenses from the trial. It is interesting to note that very few participants switched to other myopia control methods or combined treatments, and only a small percentage discontinued due to discomfort or no longer needing control.

Overall, 60% of the participants who wore DIMS spectacles for 6 years continued using them for up to 8 years. All participants were satisfied with the benefits of the DIMS lenses, and their participation in the RCT enhanced their awareness of managing their own myopia.

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Declaration: This was a collaborative research project supported by HOYA, Tokyo, Japan and Hong Kong PolyU grants: 848K and ZGLV. The study was supported by the Centre for Myopia Research and the Centre for Eye and Vision Research (CEVR).

Clinicaltrials.gov Identifier: NCT02206217

Patent: Patents titled 'Spectacle Lens' in China (CN104678572 B) and USA (US10268050 B2) were issued on 27 April 2018 and 23 April 2019 respectively.

Keywords: Myopia control, myopic defocus, user experience