

## A Predictive Model for Personalized Fitting of Peripheral Defocus Spectacles Based on Ocular Biometric Parameters [Corrigendum]

Zhou P, Li Y, Chen S, Wang K, Li Y. *Clin Optom (Auckl)*. 2026;18:576749. doi: 10.2147/OPTO.S576749

After publication, concerns have been raised by a third party regarding the article. Our authors have considered the concerns raised and have made corrections as follows.

Changes needed on Page 1:

1. **Paper title** should change from “A Predictive Model for Personalized Fitting of Peripheral Defocus Spectacles Based on Ocular Biometric Parameters” to “A Predictive Model for Personalized Fitting of Myopia Control Spectacles Based on Ocular Biometric Parameters”.

2. **Structural Abstract section:** the words “peripheral defocus” should read “myopia control” in all occurrences.

-**Purpose** section should read from “To construct a predictive model for personalized recommendation of peripheral defocus spectacle designs based on ocular biometric parameters.” to “To construct a predictive model for personalized recommendation of myopia control spectacle designs based on ocular biometric parameters.”

-First sentence in the **Methods** section should read from “This retrospective cohort study included 2824 myopic children who wore peripheral defocus spectacles at the Ophthalmology Center of Peking University People’s Hospital.” to “This retrospective cohort study included 2824 myopic children who wore myopia control spectacles at the Ophthalmology Center of Peking University People’s Hospital.”

-First sentence in the **Results** section should read from “After matching baseline parameters, no statistically significant difference was observed in axial elongation control efficacy among the five peripheral defocus spectacles designs (P = 0.28).” to “After matching baseline parameters, no statistically significant difference was observed in axial elongation control efficacy among the five myopia control spectacles designs (P = 0.28).”

-**Conclusion** section should read from “Although no significant differences in average efficacy were observed among the five designs, this study successfully established predictive models based on ocular biometric parameters to guide personalized fitting of peripheral defocus spectacles.” to “Although no significant differences in average efficacy were observed among the five designs, this study successfully established predictive models based on ocular biometric parameters to guide personalized fitting of myopia control spectacles.”

3. Plain Language Summary: the word “defocus” should be updated to read “myopia control” in all occurrences.

Updated Plain Language Summary should read as follows:

**Plain Language Summary:** Myopia control glasses have been proven to slow down the progression of myopia, but there is currently no method for selecting the type of myopia control lenses on an individual basis. This study proposes a model

for personalized selection of myopia control lenses based on ocular biometric data. This model will offer guidance in clinical decisions for myopia management strategies.

4. Change needed in the “**Background**” section on page 2:

-Last sentence in paragraph 4 of the **Background** section in the main text should read from “Nonetheless, there is a lack of research examining the relationship between ocular biometric parameters and the efficacy of various defocus spectacle lenses for myopia control.” to “Nonetheless, there is a lack of research examining the relationship between ocular biometric parameters and the efficacy of various myopia control spectacle lenses for myopia control.”

-First sentence in paragraph 5 of the **Background** section should read from “This study investigates the feasibility of utilizing ocular biometric parameters to predict the personalized fitting of defocus spectacle lenses.” to “This study investigates the feasibility of utilizing ocular biometric parameters to predict the personalized fitting of myopia control spectacle lenses.”

-Last sentence in paragraph 5 of the Background section should read from “Finally, we examined the application of this model in selecting the most suitable defocus lens.” to “Finally, we examined the application of this model in selecting the most suitable myopia control lens.”

5. Changes needed in the “**Materials and Methods**” section on page 3

-First sentence in the subsection “Study Design and Ethical Statement” should read from “This retrospective cohort study utilized clinical data from pediatric patients fitted with defocus spectacle lenses at the Ophthalmology and Optometry Center of Peking University People’s Hospital between January 1, 2022, and June 30, 2025.” to “This retrospective cohort study utilized clinical data from pediatric patients fitted with myopia control spectacle lenses at the Ophthalmology and Optometry Center of Peking University People’s Hospital between January 1, 2022, and June 30, 2025.”

-The paragraph of “Study Subjects and Screening Criteria” should read from “The study enrolled myopic children aged 17 years or younger who were prescribed spectacles. Inclusion criteria comprised a spherical equivalent (SE) refraction greater than  $-1.00$  D, use of defocus spectacle lenses, availability of comprehensive clinical data, provision of signed informed consent, and absence of alternative myopia control methods, including but not limited to low-concentration atropine. Exclusion criteria encompassed hereditary ocular diseases, follow-up duration of less than 12 months, concurrent use of other myopia control strategies, including but not limited to low-concentration atropine, or a missing data rate exceeding 20% for critical variables. All five defocus lens designs were available in spherical powers ranging from  $-0.50$  D to  $-10.00$  D, with cylindrical corrections up to  $-4.00$  D, fully covering the refractive prescriptions of all participants in this cohort.” to “The study enrolled myopic children aged 17 years or younger who were prescribed spectacles. Inclusion criteria comprised a spherical equivalent (SE) refraction greater than  $-1.00$  D, use of myopia control spectacle lenses, availability of comprehensive clinical data, provision of signed informed consent, and absence of alternative myopia control methods, including but not limited to low-concentration atropine. Exclusion criteria encompassed hereditary ocular diseases, follow-up duration of less than 12 months, concurrent use of other myopia control strategies, including but not limited to low-concentration atropine, or a missing data rate exceeding 20% for critical variables. All five myopia control lens designs were available in spherical powers ranging from  $-0.50$  D to  $-10.00$  D, with cylindrical corrections up to  $-4.00$  D, fully covering the refractive prescriptions of all participants in this cohort.”

-Last sentence in the subsection “Sample Matching and Grouping” should read from “Participants were categorized into five groups according to the brand of defocus lenses worn: Diversified Segmental Defocus Optimization (DSDO), Diffusion Optics Technology (DOT), Defocus Incorporated Multiple Segments (DIMS), Highly Aspherical Lenslets

(HALT), and Hexagon Optimized Reticular Integration (HORI).” to “Participants were categorized into five groups according to the brand of myopia control lenses worn: Diversified Segmental Defocus Optimization (DSDO), Diffusion Optics Technology (DOT), Defocus Incorporated Multiple Segments (DIMS), Highly Aspherical Lenslets (HALT), and Hexagon Optimized Reticular Integration (HORI).”

-First sentence in the subsection “Statistical Modeling and Analysis” should read from “To assess the predictive efficacy of each defocus lens brand on axial elongation rate, separate multiple linear regression models were developed for the five glasses brands.” to “To assess the predictive efficacy of each myopia control lens brand on axial elongation rate, separate multiple linear regression models were developed for the five glasses brands.”

#### 6. Changes needed in “**Results**” section on page 4

-Subsection heading “Comparison of Five Defocus Spectacle Lenses” should be updated to read “Comparison of Five Myopia Control Spectacle Lenses”.

-First sentence in the subsection “Comparison of Five Defocus Spectacle Lenses” should read from “The study aimed to construct a personalized prediction model for selecting defocus spectacle lenses based on specific ocular biometric parameters.” to “The study aimed to construct a personalized prediction model for selecting myopia control spectacle lenses based on specific ocular biometric parameters.”

-Third sentence in the subsection “Comparison of Five Defocus Spectacle Lenses” should read from “Post-adjustment, the average axial elongation rate varied between 0.21 mm/year and 0.23 mm/year among the five defocus lens groups.” to “Post-adjustment, the average axial elongation rate varied between 0.21 mm/year and 0.23 mm/year among the five myopia control lens groups.”

-Table 1 caption should read from “Comparison of Five Peripheral Defocus Spectacle Designs” to “Comparison of Five Myopia Control Spectacle Designs”.

#### Changes needed in “**Results**” section on page 5

-Figure 1 caption should read from “**Figure 1** Violin plots illustrating the efficacy of various peripheral defocus spectacle designs in controlling axial elongation. No statistically significant differences were observed among the five designs after matching for gender, age, and baseline biometric parameters ( $P = 0.28$ ).” to “**Figure 1** Violin plots illustrating the efficacy of various myopia control spectacle designs in controlling axial elongation. No statistically significant differences were observed among the five designs after matching for gender, age, and baseline biometric parameters ( $P = 0.28$ ).”

-Third sentence in the subsection of “Construction and Validation of Models” should read from “Specifically, for the defocus lens models,  $R^2$  values spanned from 0.89 to 0.96 in the training datasets and from 0.88 to 0.97 in the validation datasets (Table 2).” to “Specifically, for the myopia control lens models,  $R^2$  values spanned from 0.89 to 0.96 in the training datasets and from 0.88 to 0.97 in the validation datasets (Table 2).”

#### 7. Change needed in “**Discussion**” section on page 5

-First paragraph should read from “This study identified no statistically significant differences in the efficacy of the five defocus spectacle lenses (DSDO, DOT, DIMS, HORI, and HALT) after controlling for sex, age, and baseline ocular biometric parameters. Additionally, predictive models for myopia progression were developed for each lens type using these biometric parameters, offering a basis for personalized selection of defocus spectacle lenses.” to “This study

identified no statistically significant differences in the efficacy of the five myopia control spectacle lenses (DSDO, DOT, DIMS, HORI, and HALT) after controlling for sex, age, and baseline ocular biometric parameters. Additionally, predictive models for myopia progression were developed for each lens type using these biometric parameters, offering a basis for personalized selection of myopia control spectacle lenses.”

-Second paragraph should read from “Ocular biometric parameters were selected for predictive purposes due to their practical advantages and clinical relevance in myopia management. While genetic sequencing could theoretically facilitate personalized defocus lens fitting—analogue to its application in forecasting Orthokeratology success—this method entails substantial costs associated with genetic testing. Genotypic characteristics manifest through phenotypic traits, with ocular biometric parameters, such as corneal thickness and pupil diameter, serving as key phenotypic indicators in myopia research. In our clinical practice, we routinely employ the IOLmaster for axial length measurements among pediatric patients to track myopia progression. This procedure also yields other ocular biometric data concurrently, furnishing a comprehensive dataset. Consequently, we explored the feasibility of leveraging these accessible biometric indicators to forecast outcomes in the customization of defocus lenses.” to “Ocular biometric parameters were selected for predictive purposes due to their practical advantages and clinical relevance in myopia management. While genetic sequencing could theoretically facilitate personalized myopia control lens fitting—analogue to its application in forecasting Orthokeratology success—this method entails substantial costs associated with genetic testing. Genotypic characteristics manifest through phenotypic traits, with ocular biometric parameters, such as corneal thickness and pupil diameter, serving as key phenotypic indicators in myopia research. In our clinical practice, we routinely employ the IOLmaster for axial length measurements among pediatric patients to track myopia progression. This procedure also yields other ocular biometric data concurrently, furnishing a comprehensive dataset. Consequently, we explored the feasibility of leveraging these accessible biometric indicators to forecast outcomes in the customization of myopia control lenses.”

#### 8. Changes needed in “**Discussion**” section on page 7

-**Table 2** caption should read from “Models to Predict the Axial Elongation Rate for Personalized Fitting of Peripheral Defocus Spectacles” to “Models to Predict the Axial Elongation Rate for Personalized Fitting of Myopia Control Spectacles”.

-Last sentence in paragraph three of “**Discussion**” should read from “These findings collectively underscore the utility of ocular biometric measurements in risk assessment strategies, offering support for their application in personalizing defocus lens prescriptions to address myopia progression effectively.” to “These findings collectively underscore the utility of ocular biometric measurements in risk assessment strategies, offering support for their application in personalizing myopia control lens prescriptions to address myopia progression effectively”.

-Paragraph 4 of “**Discussion**” section should read from “The significant outcome of this study is the development of formulas that predict the effects of various defocusing lenses based on ocular biometry. In this investigation, we constructed and validated personalized multiple linear regression models aimed at predicting defocus lens selection. These models exhibited favorable performance metrics, including the coefficient of determination ( $R^2$ ) which signifies the model fit, and the root mean square error (RMSE), representing the average prediction error. Upon inputting precise ocular biometric parameters, the models can accurately forecast the axial elongation rate associated with a specific defocus spectacle lens.” to “The significant outcome of this study is the development of formulas that predict the effects of various defocusing lenses based on ocular biometry. In this investigation, we constructed and validated personalized multiple linear regression models aimed at predicting myopia control lens selection. These models exhibited favorable performance metrics, including the coefficient of determination ( $R^2$ ) which signifies the model fit, and the root mean square error (RMSE), representing the average prediction error. Upon inputting precise ocular biometric parameters, the models can accurately forecast the axial elongation rate associated with a specific myopia control spectacle lens.”

- The authors acknowledge the error in third sentence of paragraph 5 of “**Discussion**” section regarding the mechanism of the DOT lens. The sentence stating, “The DOT lens functions predominantly on the peripheral defocus principle, theoretically minimizing the impact of unfocused peripheral light on the retina.” should read “The DOT lens functions on the principle of contrast modulation, utilizing microscopic light-scattering elements to subtly reduce retinal contrast and thereby signal the eye to slow axial elongation.” to accurately reflect its mechanism.

-Second sentence in paragraph 6 of “**Discussion**” section should read from “To develop more reliable models for defocus lens selection, future research should focus on prospective clinical trials that expand on these results” to “To develop more reliable models for myopia control lens selection, future research should focus on prospective clinical trials that expand on these results.”

#### 9. Change needed in “**Conclusion**” section on page 8

First sentence to read from “This study found no statistically significant differences in average efficacy across the five defocus lens types when matched for baseline characteristics” to “This study found no statistically significant differences in average efficacy across the five myopia control lens types when matched for baseline characteristics”.

The authors stated that it is important to emphasize that while the terminology used to categorize the DOT lenses was a misnomer, this nomenclature oversight does not impact the study’s raw data, methodology, statistical analysis, or the validity of the predictive models developed. The regression models were built upon the empirical relationship between the patients’ baseline ocular biometric parameters and their clinical outcomes while wearing specific lens brands. Therefore, the predictive model and clinical recommendations for the DOT group remain mathematically and clinically sound.

Clinical Optometry

**Publish your work in this journal**

Clinical Optometry is an international, peer-reviewed, open access journal publishing original research, basic science, clinical and epidemiological studies, reviews and evaluations on clinical optometry. All aspects of patient care are addressed within the journal as well as the practice of optometry including economic and business analyses. Basic and clinical research papers are published that cover all aspects of optics, refraction and its application to the theory and practice of optometry. The manuscript management system is completely online and includes a very quick and fair peer-review system, which is all easy to use. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.

Submit your manuscript here: <https://www.dovepress.com/clinical-optometry-journal>

**Dovepress**  
Taylor & Francis Group