

# Longitudinal changes and predictive value of choroidal thickness for myopia control after Repeated Low-Level Red-Light Therapy

A secondary analysis of data from a multicenter, randomized controlled trial (RCT; NCT04073238).

Ruilin Xiong, MD | Zhuoting Zhu, MD, PhD | Yu Jiang, MD, PhD | Meng Xuan, MD | Junwen Zeng, MD, PhD  
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## Purpose:

To evaluate longitudinal changes in macular choroidal thickness (mCT) in myopic children treated for one year with Repeated Low-Level Red-Light (RLRL) therapy, and their predictive value for treatment efficacy on myopia control.

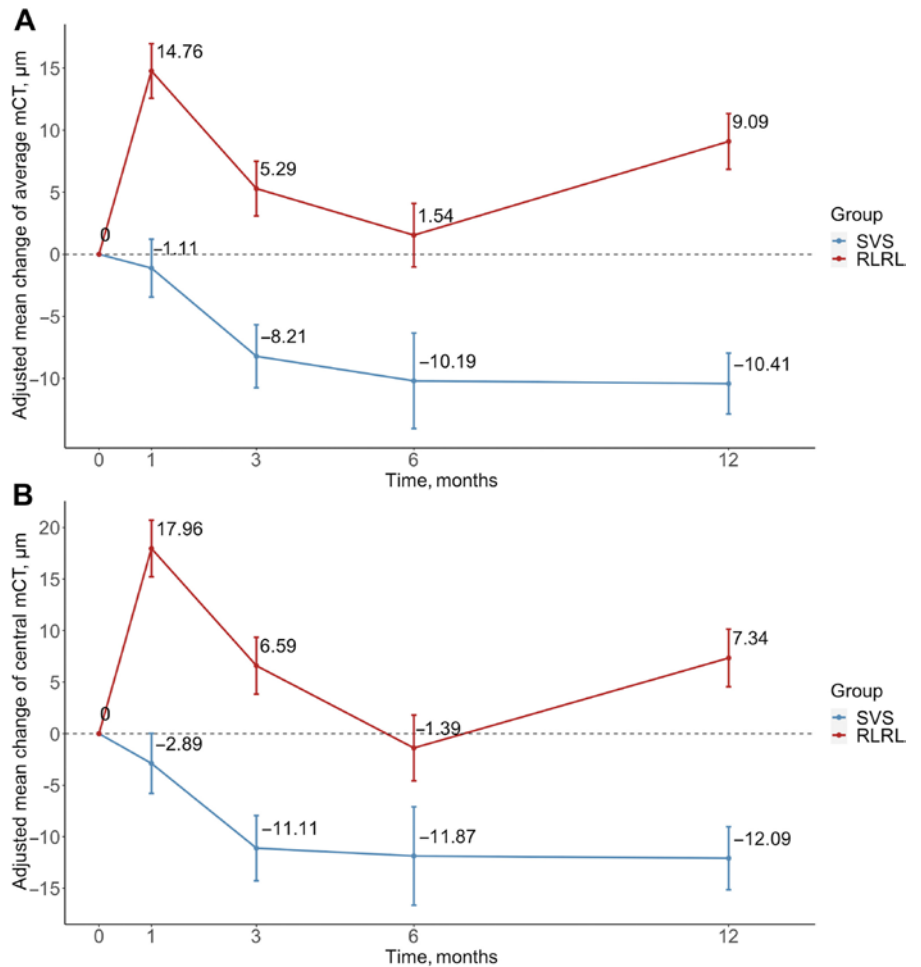
## Method:

Repeated Low-Level Red-Light therapy was delivered using a home-use desktop light device that emitted red-light at 650 nm. Choroidal thickness was measured by SS-OCT at baseline and 1-, 3-, 6-, and 12-month follow-ups. Visual acuity, axial length (AL), cycloplegic spherical equivalent refraction (SER), and treatment compliance were measured.

## Results:

1. A total of 120 children were included in the analysis (RLRL group: n = 60; single-vision spectacle [SVS] group: n = 60).
2. In the RLRL group, changes in mCT from baseline remained positive over 1 year.
3. Average mCT in the RLRL group was 19.499  $\mu\text{m}$  thicker than SVS group at 12 months.
4. Models that included mCT changes at 3 months alone had acceptable predictive discrimination of satisfactory myopia control over 12 months, with areas under the curve of 0.710-0.786.

## Clinical trial outcome:



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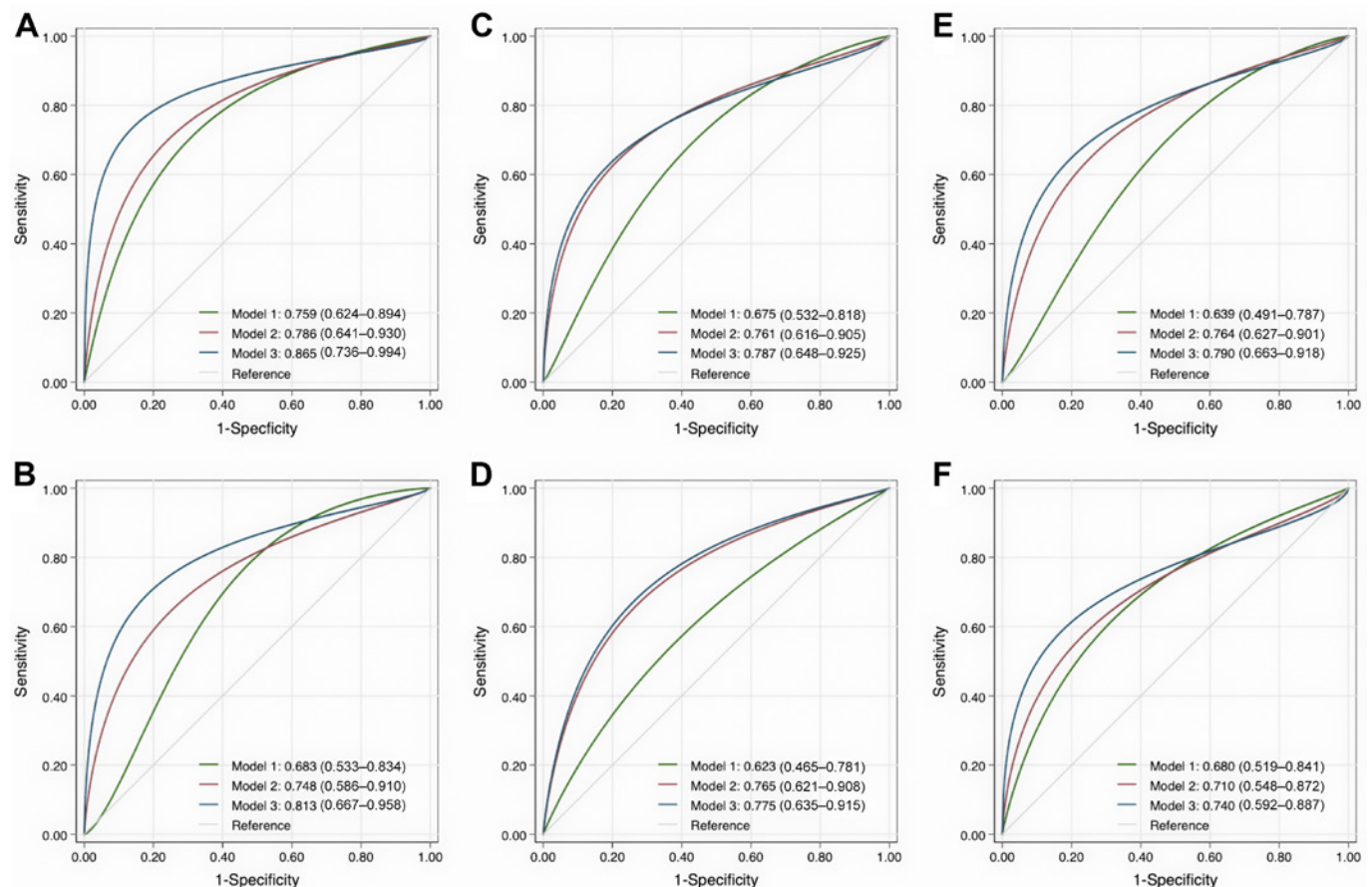
To find out more about the Repeated Low-Level Red-Light Therapy available via the Eyerising Myproclear, get in touch with your local Eyerising International team today.

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## Clinical trial outcome:



Receiver operating characteristic curves of the prediction models for discriminating a satisfactory control effect on axial length (AL) and spherical equivalent refraction (SER) over 12 months in the Repeated Low-Level Red-Light (RLRL) group. Axial elongation < 0 mm/year (A), SER progression < 0 diopter (D)/year (B), axial elongation < 0.05 mm/year (C), SER progression < 0.25 D/year (D), axial elongation < 0.10 mm/year (E), and SER progression < 0.50 D/year (F). Model 1 included 1-month change in macular choroidal thickness (mCT). Model 2 included 3-month change in mCT. Model 3 included 3-month change in mCT and baseline age, gender, and baseline AL/SER.



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