

NCC 'FUTURE GENERATION 2024' POSTER Abstracts
SCIENTIFIC SESSION IN COOPERATION WITH THE BCLA

NCC 'Future generation 2024'

Organization Section: NCC/ BCLA

POSTER Abstracts

Monday, March 11, 2024

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Is it possible to calculate the sagittal height for soft contact lens fitting?

Validation of a theoretical calculator:

Sagitador

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Purpose: The main objective of this study was to compare the sagitta calculated with the Sagitador, with a scleral module of a Scheimpflug topographer at different chords.

Method: A descriptive, prospective, and transversal study has been performed. Fifty-five subjects (31 women and 24 men) were recruited from the Optometry Clinic of the Faculty of Optics and Optometry (UCM, Spain). Mean age was 39.77 ± 15.56 years (range 16-75 years). Inclusion criteria were age between 15 to 75 years old without any ocular surface pathology. Subjects wearing orthokeratology and scleral contact lenses were excluded. All variables were measured in the same daytime for each subject. Three measurements were taken with each eye with both topographers. Simulated keratometry and eccentricity at principal meridians and corneal diameter were measured with a Placido disc topographer. Sagittal height at 14, 14.50 and 15mm were performed with Scleral module of a Scheimpflug topographer. Data from keratometry and eccentricity were used to calculate the sagittal height at different chord with the Sagitador.

Results: After applying a regression equation, no difference between the Sagitador and the Scheimpflug

measurement was found for any chord and meridian analyzed ($p > 0.05$). The difference at 14mm was $6,01 \pm 101,32 \mu\text{m}$ and $-0,03 \pm 88,51 \mu\text{m}$ for flat and steep meridians, respectively. For chord at 14.50mm, the sagitta difference was $-0,86 \pm 93,96 \mu\text{m}$ and $-1,24 \pm 102,32 \mu\text{m}$, for flat and steep meridians, respectively. For 15mm, the difference was $-1,12 \pm 101,13 \mu\text{m}$ and $0,07 \pm 113,79 \mu\text{m}$, for flat and steep meridians, respectively. Corneal astigmatism has an influence on the error between the real measurement and the calculation except in the 15mm chord steep meridian.

Conclusions: Sagitador can estimate the sagittal height in regular corneas at different chords using the eccentricity and keratometry from a Placido disc corneal topographer, being a great tool to select the best soft contact lens fitting.

Research funding received: This research has been granted by "COOOC - Cercle d'Optometria" (Catalan College of Optics and Optometry).