

Study Spotlight: ZEISS IOLMaster 700 with TK in keratoconus eyes



Seeing beyond

Source



Title
IOL Power Calculations in Keratoconus Eyes Comparing Keratometry, Total Keratometry, and Newer Formulae



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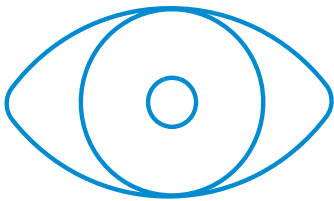
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Methodology

IOL calculation 13 Formulas compared

- SRK/T
- Holladay 1
- Haigis
- Hoffer Q
- Barrett Universal II (BUII)
- Kane
- EVO 2.0
- K6
- Pearl-DGS
- BUII keratoconus with measured PCA (M-PCA)
- BUII with predicted PCA (P-PCA)
- Kane keratoconus
- Holladay 1 with equivalent keratometry reading (EKR)

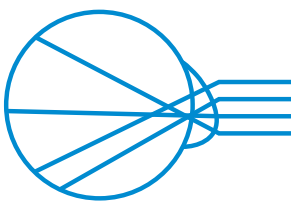
Sample size



67 Eyes - 67 Keratoconus Patients (KCN)

Retrospective study

Evaluation criteria



Refractive Prediction Errors

including root mean square error (RMSE)

Results

TK and PK values can improve refractive accuracy in keratoconus eyes.

KCN eyes (K: mean = 45.59 +/- 3.88 D; from 35.43 to 53.6 D; with 18 eyes > 50 D) n = 67			
IOL calculation formula	MAE	RMSE	% +/- 1.0 D
Barrett True-K KCN (TK)*	0.779	1.043	74.6 %
Barrett True-K KCN (K)**	0.834	1.147	64.2 %
Barrett Univ. II (TK)	0.864	1.207	67.2 %
Barrett Univ. II (K)	0.905	1.298	62.7 %
EVO 2.0 (TK)	0.799	1.141	68.7 %
EVO 2.0 (K)	0.833	1.219	65.7 %
Kane KCN (K)	0.844	1.170	70.1 %
Kane (TK)	0.848	1.186	68.7 %
Kane (K)	0.884	1.268	64.2 %
Cooke K6 (TK)	0.868	1.208	65.7 %
Cooke K6 (K)	0.895	1.289	62.7 %
Pearl DGS (TK)	0.885	1.233	65.7 %
Pearl DGS (K)	0.925	1.305	67.2 %
SRK/T (TK)	0.932	1.258	61.2 %
SRK/T (K)	0.956	1.322	59.7 %
Holladay 1 (TK)	0.987	1.354	56.7 %
Holladay 1 (K)	1.043	1.460	58.2 %
Haigis (TK)	0.967	1.355	65.7 %
Haigis (K)	1.022	1.439	65.7 %
Hoffer Q (TK)	1.084	1.451	55.2 %
Hoffer Q (K)	1.144	1.541	53.7 %

Table:
Refractive prediction errors from 67 eyes of 67 patients for unilateral analysis. Excerpt from original. For the complete table/figure, please refer to the publication.

* referred to as Barrett II Universal True-K Keratoconus M-PCA in the paper
** referred to as Barrett II Universal True-K Keratoconus P-PCA in the paper