

# 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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### Publication

American Journal of Ophthalmology, April 2023.

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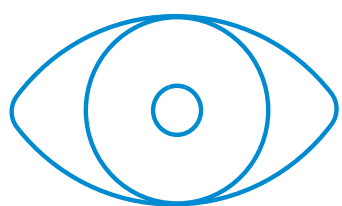
## Methodology

### 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)

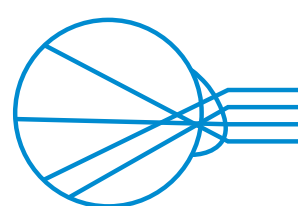
### Sample size



**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	<b>74.6 %</b>
Barrett True-K KCN (K)**	0.834	1.147	64.2 %
Barrett Univ. II (TK)	0.864	1.207	<b>67.2 %</b>
Barrett Univ. II (K)	0.905	1.298	62.7 %
EVO 2.0 (TK)	0.799	1.141	<b>68.7 %</b>
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	<b>68.7 %</b>
Kane (K)	0.884	1.268	64.2 %
Cooke K6 (TK)	0.868	1.208	<b>65.7 %</b>
Cooke K6 (K)	0.895	1.289	62.7 %
Pearl DGS (TK)	0.885	1.233	<b>65.7 %</b>
Pearl DGS (K)	0.925	1.305	67.2 %
SRK/T (TK)	0.932	1.258	<b>61.2 %</b>
SRK/T (K)	0.956	1.322	59.7 %
Holladay 1 (TK)	0.987	1.354	<b>56.7 %</b>
Holladay 1 (K)	1.043	1.460	58.2 %
Haigis (TK)	0.967	1.355	<b>65.7 %</b>
Haigis (K)	1.022	1.439	65.7 %
Hoffer Q (TK)	1.084	1.451	<b>55.2 %</b>
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.