



Retreatment after Custom LASIK

A Retrospective Chart Review Study



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Population	379 eyes, 256 patients mean age = 36.1 yo SE Range = -0.38 to -8.75D
Mean Pre-op MRSE	-3.72 D
Mean Pre-op Astigmatism	0.52 D

Eyes excluded if retreated for reason other than refractive

Retreatment Rate & Risk Factors for retreatment assessed
 Potential Risk Factors included: Attempted MRSE Correction, Attempted Astigmatism, Mean Keratometric Curvature, Age, Gender, Ablation Depths (Comparison to Hypothetical Conventional LASIK), Initial Wavefront Aberrations (Coma, Spherical Aberration, Other)

Custom LASIK Retreatment Rate

- 1-year incidence: 20/188 (10.6%)
 - _ 93% within 1-year of initial surgery

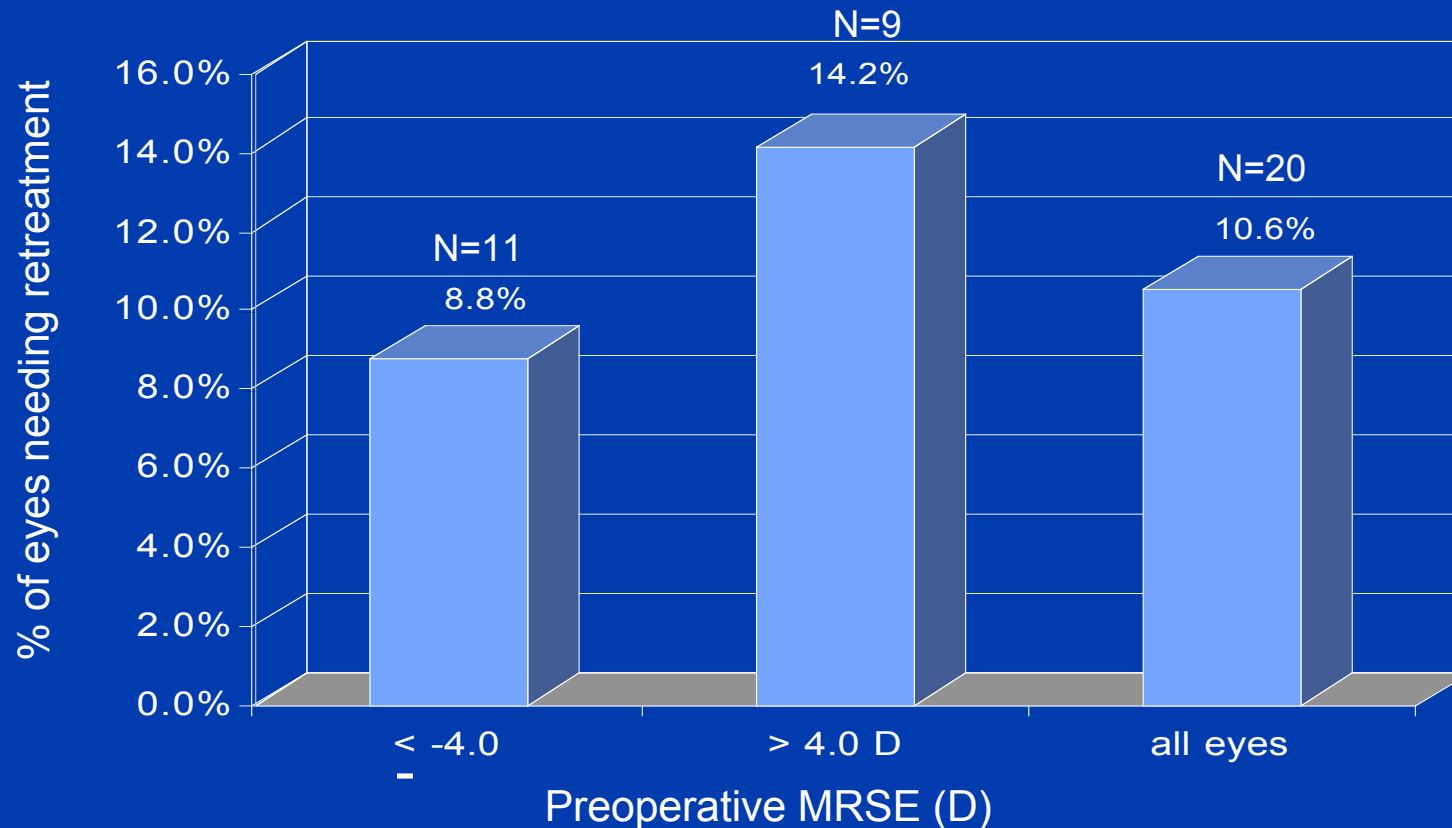
Study Cohort (n=188)	
Mean Pre-op MRSE	-3.51D
Range	-0.63 to -7.88D
Retreatment Cohort (n=20)	
Mean Pre-op MRSE	-4.03D
Range	-1.5 to -7.88D
Mean Pre-retreatment MRSE	-0.42D
Range	-1.38 to +1.75D

_Hersh, Fry, Bishop (*Ophthalmology* 2003) – Conventional LASIK: 1-year incidence rate: 144/1430

Retreatment Rate

Effect of Attempted Correction

- Retreatment rate varies with initial correction
 - _ Higher initial correction increased retreatment rate
 - approaches statistical significance ($p=0.069$)

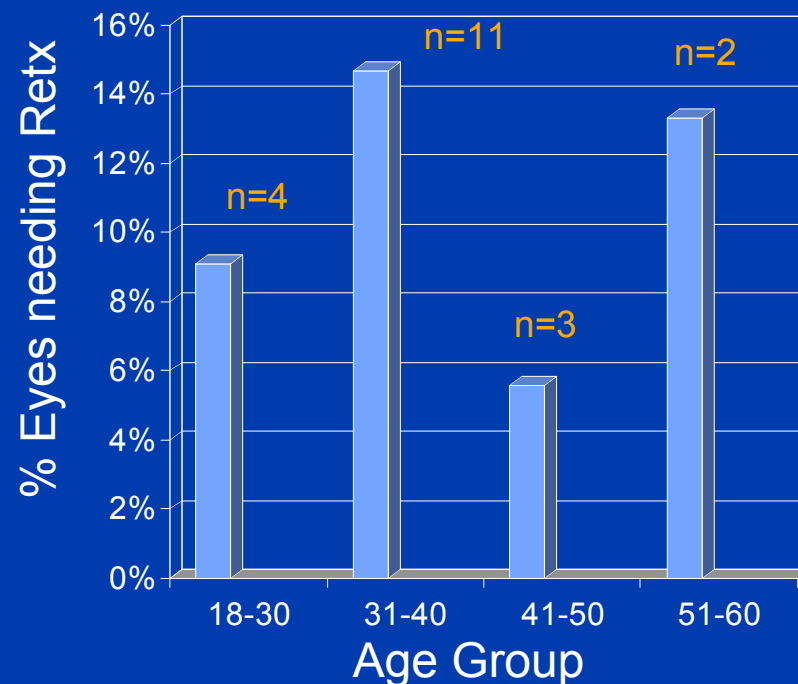


Retreatment Rate

Effect of Age

	Study Cohort	Retreatment Cohort
Mean age	37.1 years	37.0 years

- Age not a risk factor for retreatment



Retreatment rates: *Effect of Initial Wavefront Aberrations*

- Custom Cornea Wavefront System (Alcon Labs)
 - _ 6.5 mm pupil, up to 6th order aberrations

Mean RMS Wavefront Error (microns) (SD)	Retreatment Cohort	Study Cohort
Coma *	0.294 (0.186)	0.234 (0.133)
Spherical Aberration	0.205 (0.148)	0.229 (0.139)
Other	0.284 (0.079)	0.267 (0.097)

* Coma approaches statistical significance ($p=0.068$)

Custom LASIK Retreatments

Study Summary

- No difference in Retreatment Rates for Custom & Conventional LASIK
- Risk factors for retreatment following Custom LASIK:
 - _ ?Higher initial correction
 - _ ?Higher initial coma