

***Optimized ablation with
CustomVis solid state laser in
treatment of low myopic
astigmatism in virgin eyes***

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Disclaimer

- ❖ The author does not have any financial or proprietary interest in the products mentioned in this presentation

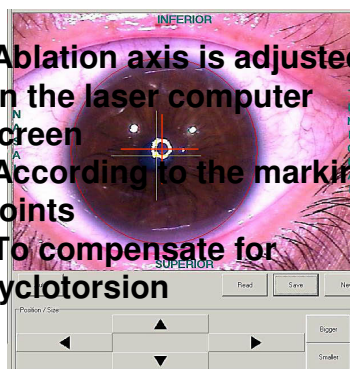
The Laser

- Solid state 213 nm laser
 - Less sensitive to hydration than 193 nm
 - Reduced thermal effect and collateral damage
- 0.6 mm gaussian, flying spot
- Ultra fast, solid state, "crystalscan" – scanning
- 1 KHz closed loop eye tracking
 - Limbus based
 - 1 ms latency
- Gaze tracking
- Topo and WF customization
- Asphericity, centration and cyclotorsion optimized standard ablation

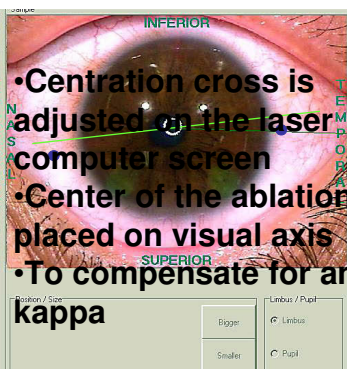


Centration and Axis Registration

- Ablation axis is adjusted on the laser computer screen
- According to the marking points
- To compensate for cyclotorsion



Centration registration



Axis registration

- Centration cross is adjusted on the laser computer screen
- Center of the ablation is placed on visual axis
- To compensate for angle kappa

Ongoing prospective Clinical Trial

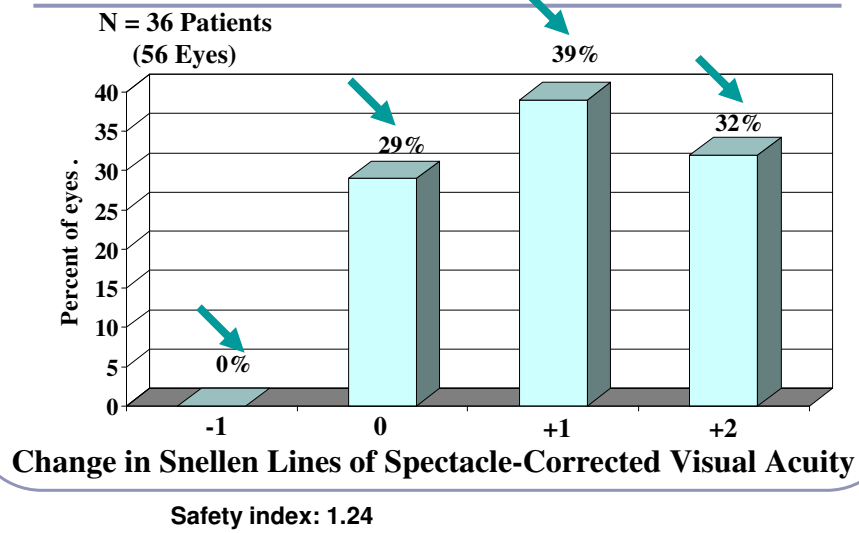
- ❖ 56 eyes of 36 patients treated for low myopic astigmatism with surface ablation were available at 6 months p.o.
- ❖ “Standard ablation” with asphericity, centration and cyclotorsion optimization was used in all cases

Demographics and Baseline Refraction (n=60 patients)

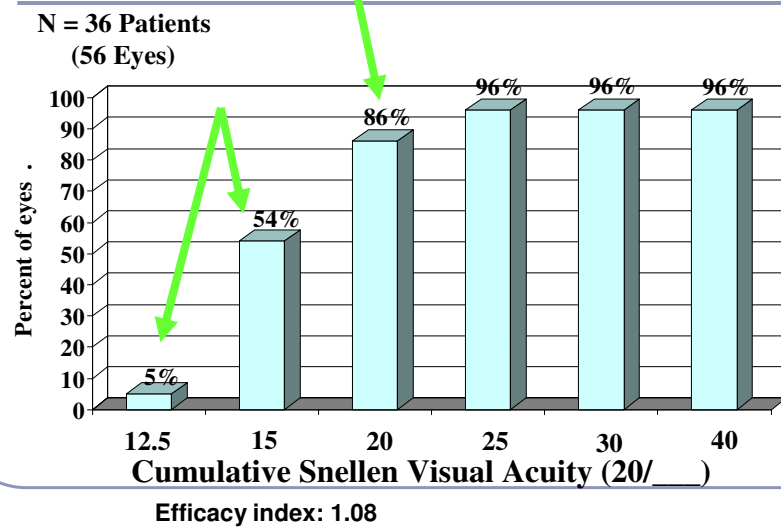
Age	33.5 ± 10.1 (20 to 57)	
Sex	64% males	36% females

Mean MRSE (D)	Mean cyl. (D)
-2.52 ± 0.95 (-1.13 to -4.0)	0.57 ± 0.41 (0.0 to 2.0)

Safety, 6 Months After Surgery

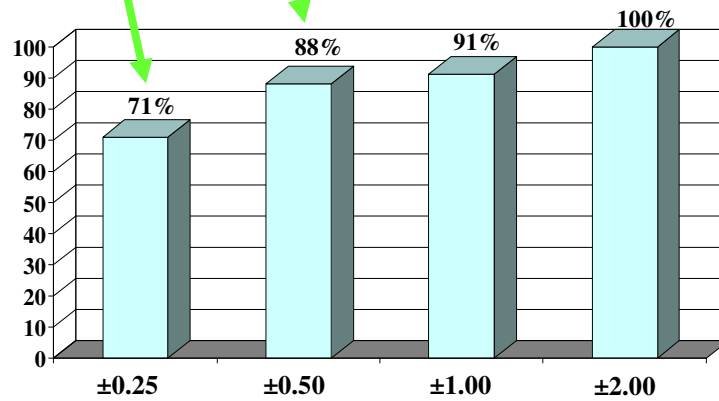


Efficacy (UCVA), 6 Months After Surgery

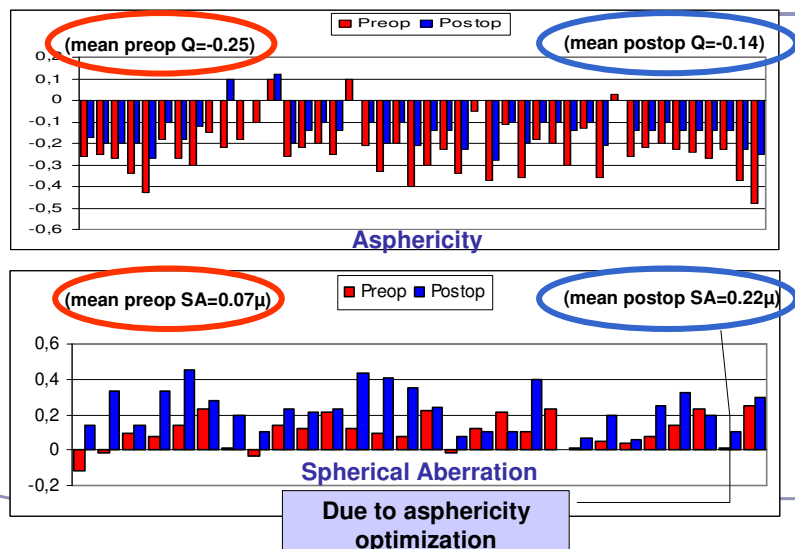


Predictability of MRSE @ x-Months After Surgery

N = 36 Patients
(56 Eyes)



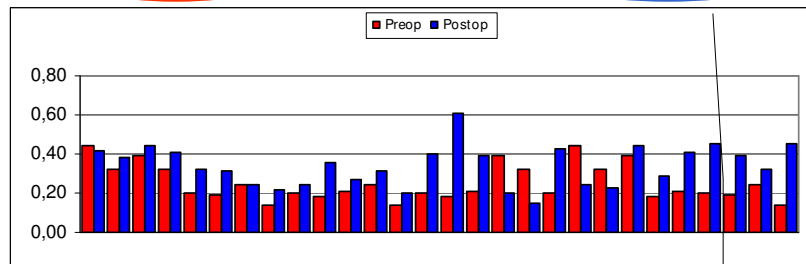
Asphericity (Q) and Spherical Aberration Before and @ 6 Months After the Surgery



Coma+Trefoil (RMS) Before and @ 6 Months After the Surgery

(mean preop RMS=0.26)

(mean postop RMS=0.34)



Third order HOAs (RMS)

Due to centration and cyclotorsion optimization

Conclusion

- **Asphericity, centration and cyclotorsion optimization** in standard CustomVis treatments prevented any significant induction of SA and coma and probably represents **all the customization that is needed to achieve** the desired quality of vision in **virgin eyes**
- Customized ablation that aims for **treatment of HOAs** is probably necessary **only where such aberrations are significantly increased i.e. in symptomatic irregular astigmatism**