COMPARISON STUDY OF CORNEAL SENSATION AND SELF-REPORTED DRY SYMPTOMS AFTER MYOPIC LASIK WITH INVERTED BEVEL-IN SIDE CUT VERSUS STANDARD BEVEL-OUT SIDE CUT

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Financial Interest Disclosure

- I am a consultant for Gerson Lehrman and Best Doctors, Inc.
- I am an equity owner in Calhoun Vision, Inc., Veralas, Inc., Seros Medical, LLC., Krypton Vision, Inc. and Refresh Innovations, Inc.
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- Drs. Sales and Kung have no financial interests



Study Design

- Prospective, randomized, contralateral study
- 122 eyes of 61 Subjects
- Each subject had a LASIK flap created with the AMO Intralase iFS 150 kHz femtosecond laser in one eye and the AMO Intralase FS 60 femtosecond laser in their fellow eye
- All eyes underwent wavefront-guided ablation with the AMO CustomVue S4 excimer laser
- Corneal sensation measured pre-op and at post-op months 1, 3, 6 and 12
- A validated questionnaire was administered pre-op and at post-op months 1, 3, 6 and 12 to assess self-reported dry eye symptoms



Preoperative Demographics

	iFS 150	FS 60
	(n = 61)	(n = 61)
Age (years)	34 ± 9 (Range: 21-57)	
Gender	64% Female	
	36% Male	
Manifest Sphere	-4.62 ± 2.32	-4.66 ± 2.30
Manifest Cyl	0.65 ± 0.49	0.69 ± 0.70
Manifest SEQ	-4.30 ± 2.31	-4.32 ± 2.31
	Coma: 0.19 ± 0.10	Coma: 0.18 ± 0.09
Aberrations	Trefoil: 0.16 ± 0.09	Trefoil: 0.17 ± 0.08
	SphAb: 0.09 ± 0.12	SphAb: 0.09 ± 0.12
	RMS error: 0.34 ± 0.11	RMS error: 0.34 ± 0.09

Operative Parameters

- iFS 150
 - 105 micron programmed flap thickness
 - 9.0 mm superior hinge
 - 130 degree inverted side cut angle
 - 150 kHz repetition rate
- FS 60
 - 105 micron programmed flap thickness
 - 9.0 mm superior hinge
 - 70 degree beveled side cut angle
 - 60 kHz repetition rate



Corneal sensation recovers earlier with the 150 kHz femtosecond laser using an inverted side-cut



Achieved Flap Thickness



DRYNESS

All time points *P* >0.05



FOREIGN BODY SENSATION

All time points *P* >0.05



PAIN OR DISCOMFORT

All time points *P* >0.05



LIGHT SENSITIVITY

All time points *P* >0.05



Study Conclusions

- Statistically significant greater reduction in corneal sensation in the conventional side cut group compared to the the inverted side cut group
- Faster recover of corneal sensation in the inverted side cut group compared to the conventional side cut group
- No difference in self-reported dry eye symptoms, foreign body sensation, pain or light sensitivity between the two groups

