

# EARLY CLINICAL OUTCOMES OF A POST-OPERATIVE ADJUSTABLE INTRAOCULAR LENS

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# DISCLOSURES

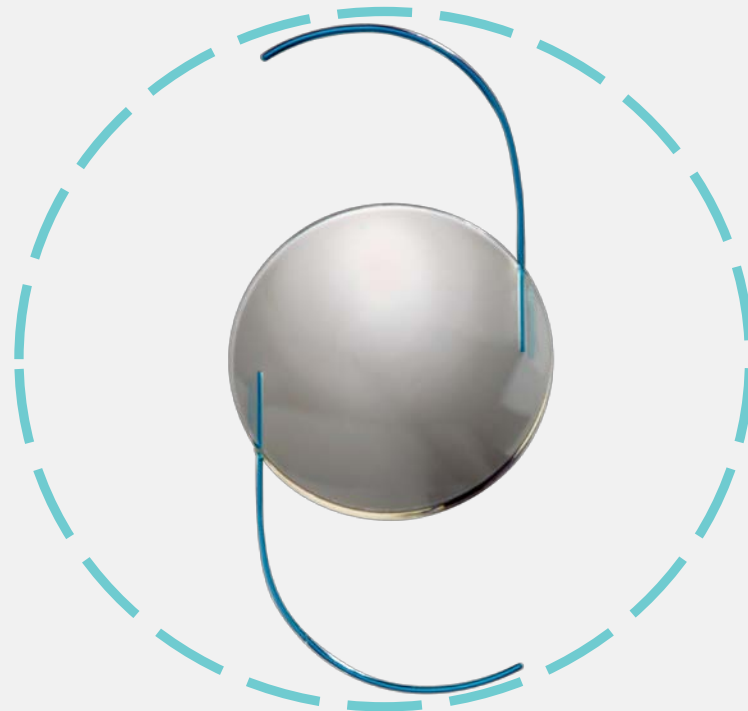
- **Joseph Ling:** No relevant financial interests
- **Andrew Yazji:** No relevant financial interests
- **Shamik Bafna:** Acufocus, A; Alcon, A; Beaver-Visitec, A; Carl Zeis Mediteer, A; CorneaGen, A; CXL Ophthalmics, R; CXL USA, D; Imprimis, B; Ocular Therapeutix, D; Presbia, D; ReVision Optics, D; RxSight, D; Shire, B, Sight Sciences, A
- **William Wiley:** Acufocus, A; Alcon, B; Allergan, D; AMO, B, D; ArcScan, A; Calhoun, D; Clarity, R; CorneaGen, A; Equinox, R; Glaukos, A; Imprimis, P; J&J, A; New World Medical, A; New World Medical, A; Omega, R, A; Revision, B; RxSight, R, B, D; Zeiss, A
- **Kayla Karpuk:** No relevant financial interests

# LIGHT ADJUSTABLE LENS

Approved for patients with pre-existing astigmatism of 0.75 D or more who are undergoing cataract surgery

## OPTIC BODY

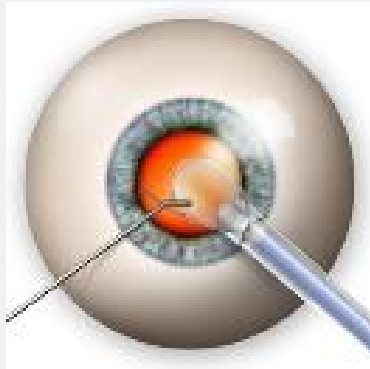
- Photo-reactive UV absorbing silicone
- Biconvex
- Anterior surface – rounded edge
- Posterior surface – squared edge
- 6-mm diameter



## HAPTICS

- Blue core polymethylmethacrylate (PMMA) monofilament
- Modified 'C'
- Haptic angle –  $10^{\circ}$
- 13mm – LAL total diameter

# HOW IT WORKS



2-3 Weeks



Standard Cataract  
Implant Procedure

Residual Refractive Error  
is Determined Using  
Standard Phoropter

Refractive Error is  
Entered Into Light  
Delivery Device

### Adjustment Beam

### Photopolymerization

### Diffusion and Power Change

### Lock-In Beam

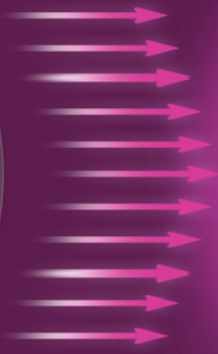
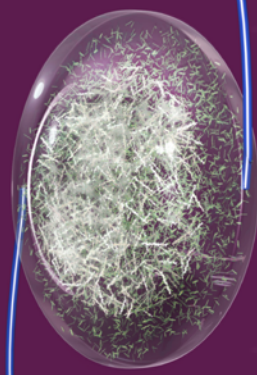
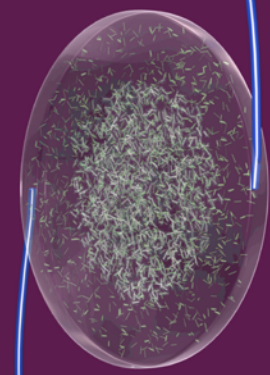
### Final Result

A

B

C

D



Light from the RxSight LDD is directed by the surgeon to the Light Adjustable Lens

Macromers in the path of the light are photopolymerized

Unpolymerized macromers move into the exposed area, causing precise shape and power change

The entire lens is exposed to light to polymerize all the remaining macromers

The outcome is a precise change in the lens power to match the patient's individual prescription

## PURPOSE

To evaluate the targeted refractive and visual outcomes achieved after implantation and adjustment of the Light Adjustable Lens after cataract surgery.

# METHODS

- **Retrospective chart review**
  - 248 eyes undergoing cataract extraction with implantation of the LAL
- **Primary Outcome Measures:**
  - Uncorrected visual acuity (UCVA)
    - Measured in eyes corrected for distance
    - Measured in eyes corrected for near
  - Best corrected visual acuity (BCVA)
  - Percentage of patients with manifest refraction spherical equivalent (MRSE) within  $\pm 0.25D$ ,  $\pm 0.5D$ , and  $\pm 1.0D$  of refractive target
  - Data was collected following final postoperative adjustment with the light delivery device (LDD), 3 months postoperatively

## **Patient Demographics (N=248)**

**Male**

**99 (40%)**

**Female**

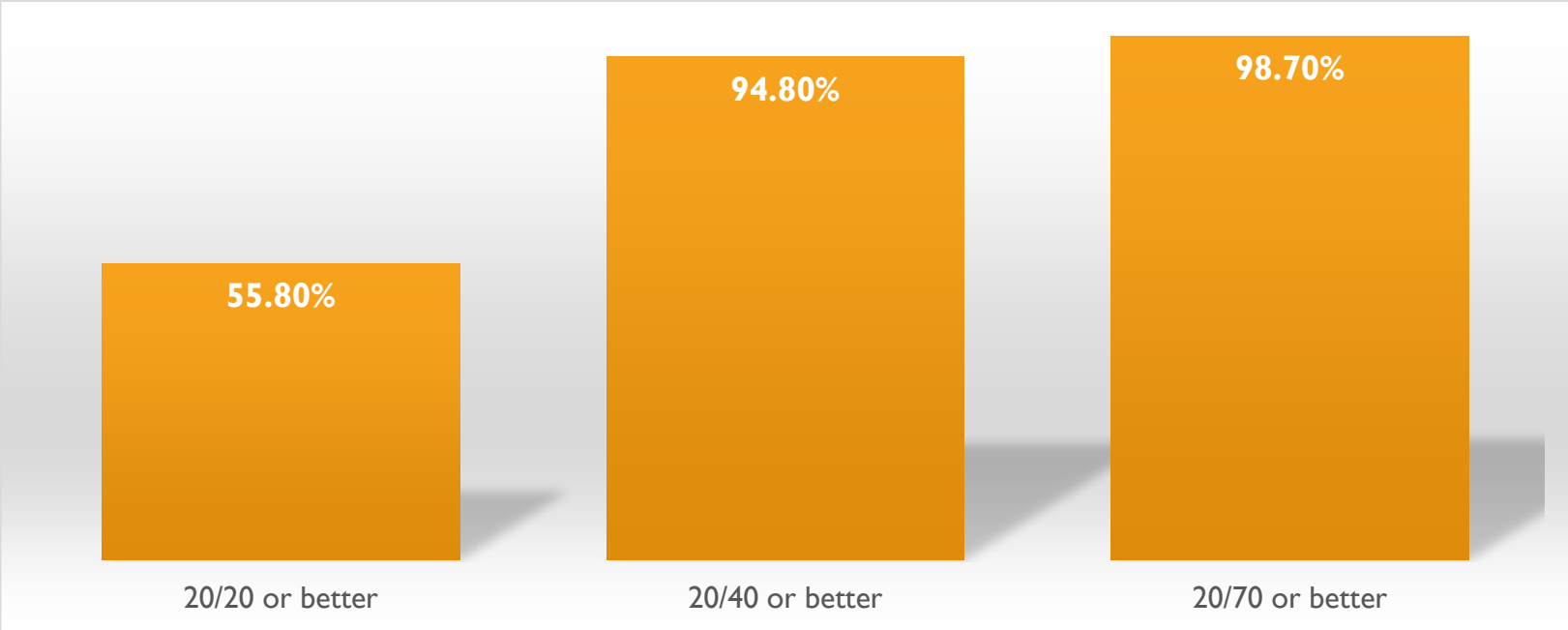
**149 (60%)**

**Mean Age**

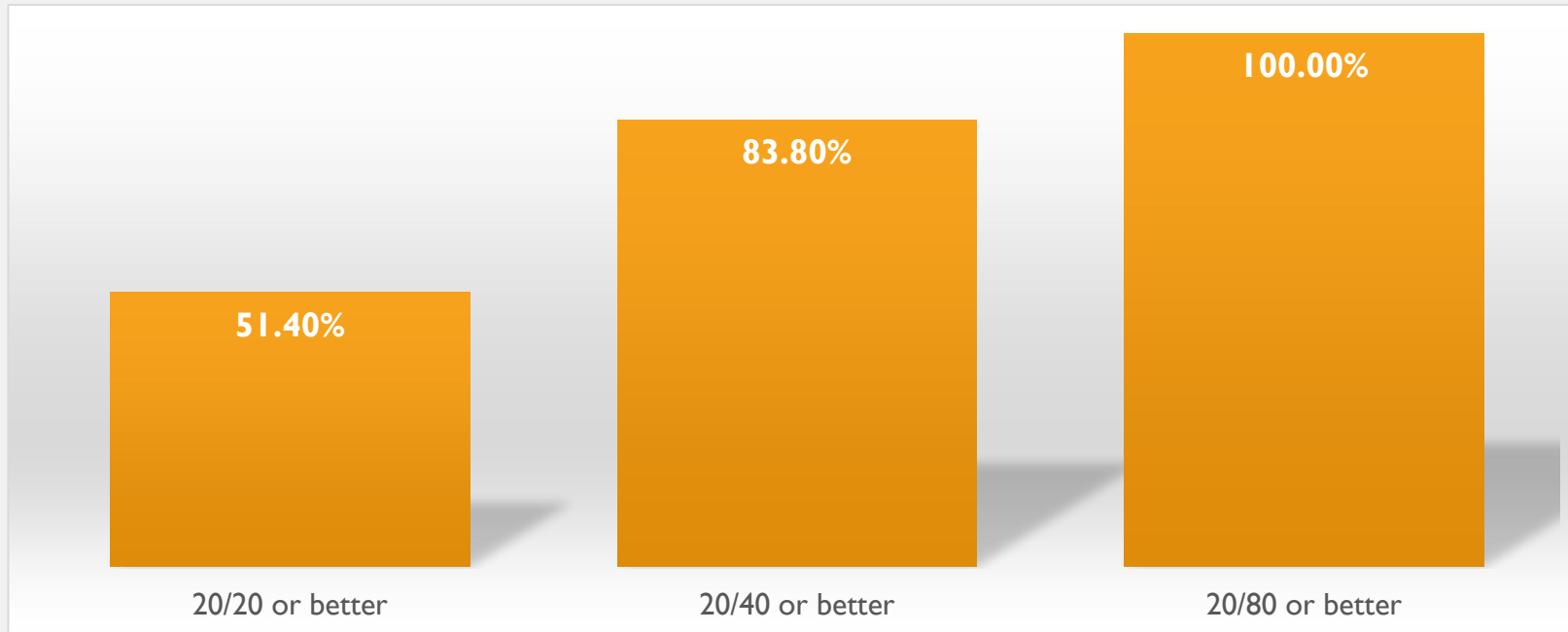
**66 years**



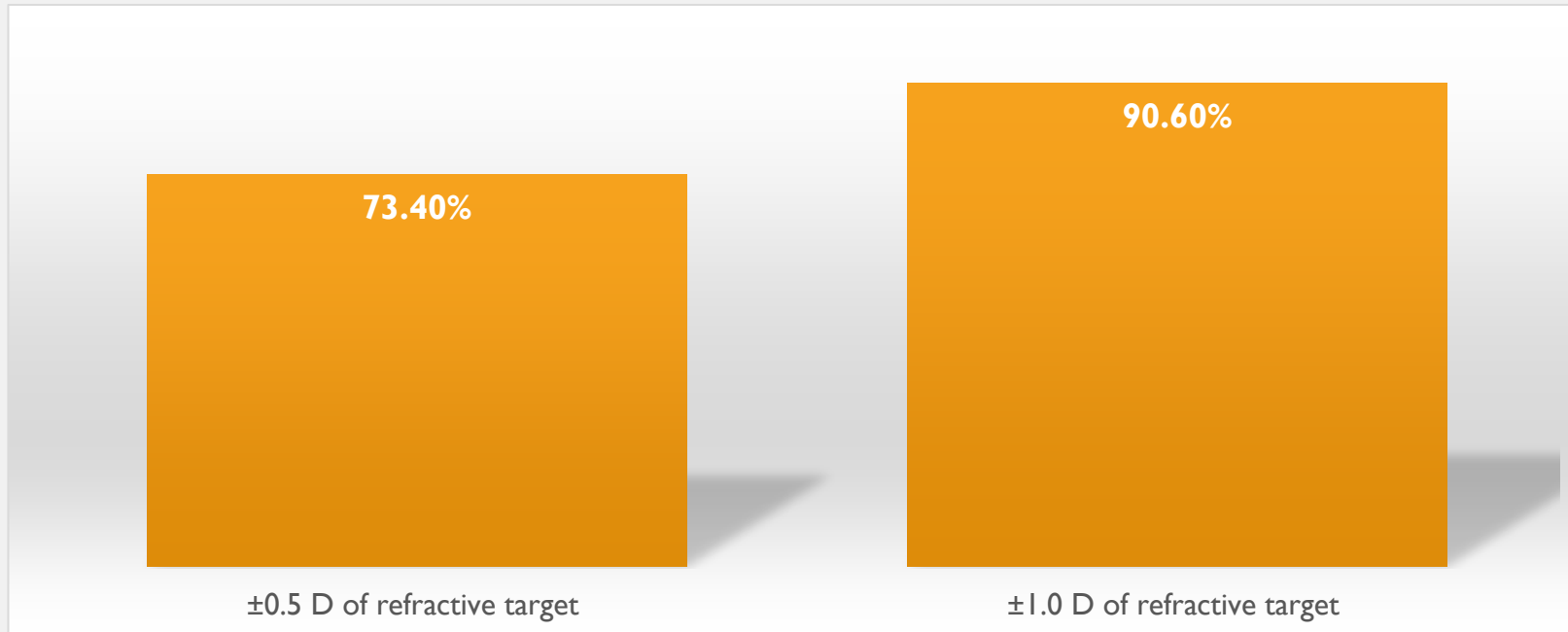
# DISTANCE UCVA FOLLOWING LOCK-IN TREATMENT (N=160)



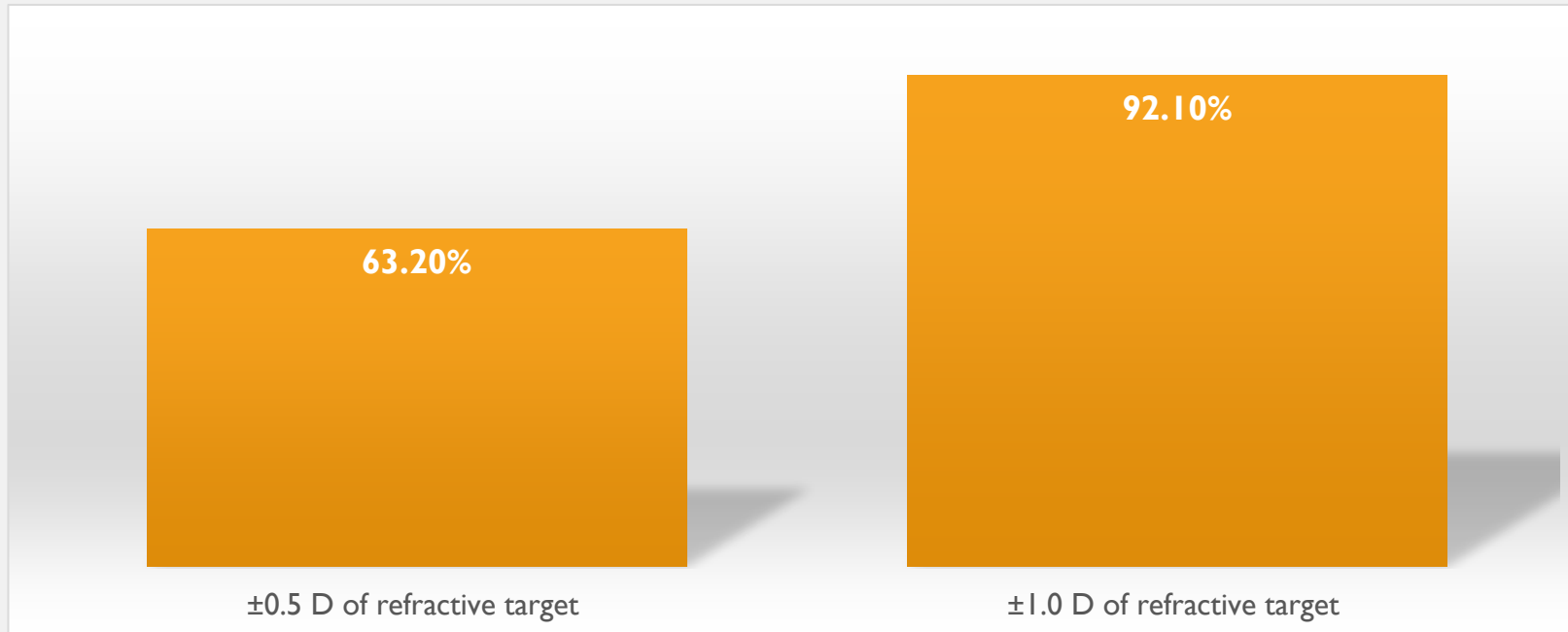
# NEAR UCVA FOLLOWING LOCK-IN TREATMENT (N=79)



MRSE RELATIVE TO PLANO REFRACTIVE  
TARGET FOLLOWING LOCK-IN TREATMENT  
(N=160)



MRSE RELATIVE TO NEAR REFRACTIVE  
TARGET FOLLOWING LOCK-IN TREATMENT  
(N=79)



## AVERAGE MRSE

- Average MRSE for distance target eyes was  $-0.354 \pm 0.724$  D, deviating on average  $-0.217 \pm 0.595$  D from target.
- Average MRSE for near target eyes was  $-1.349 \pm 1.021$  D, deviating on average  $-0.072 \pm 0.893$  D from target.

# POST-LOCK IN RESULTS

- After final postoperative adjustment with the LDD:
  - Mean MRSE to target refraction: **-0.35 D**
  - **80.4%** of eyes had BCVA of 20/20 or better
  - No eyes had loss of BCVA or any complications

## REFRACTIVE TARGET

- The final refraction for patients prior to lock-in is typically secondary to the patient's satisfaction with the outcome. If the patient is satisfied with the vision, and the refraction is close to plano, then lock-in can proceed.

# CONCLUSION

The LAL provides excellent visual and refractive outcomes in patients wanting to achieve targeted distance or near vision with a reduced dependency on glasses.