Pinhole Intraocular Lens To Correct Presbyopia and Astigmatism in Eye with Regular and Irregular Cornea: 6 Years Follow Up

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Dr Piovella has the Following Financial Interests or Relationships to disclose.

As Consultant:

- **Acufocus**
- **Carl Zeiss Meditec**
- **Johnson & Johnson**

As Lectures Fees:

- **BVI Beaver Visitec International**
- **Mynosys Cellular Devices Inc.**
- **TearScience**

Dr. Kusa does not have Financial Interests to Disclose.

Kamra Small Aperture Technology Moves Inside the Eye Using Standard IOLs Implantation Surgical Technique: Easier and More Effective

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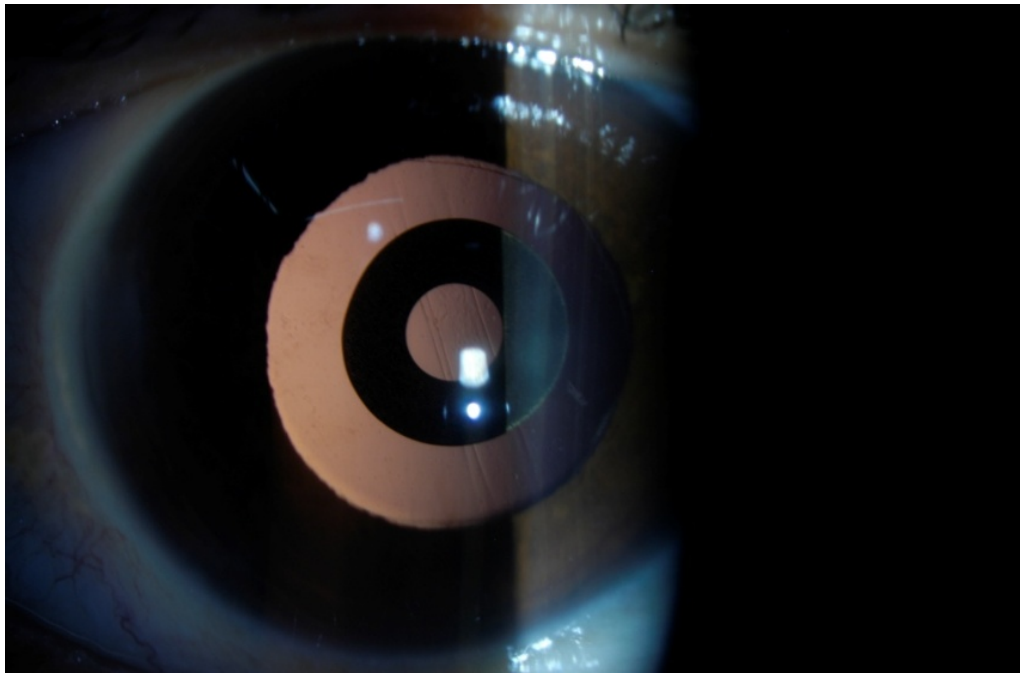
KAMRA™ Corneal Inlay



IC-8™ Small-Aperture IOL

Acufocus IC-8™ Pinhole IOL Design and Mask Features

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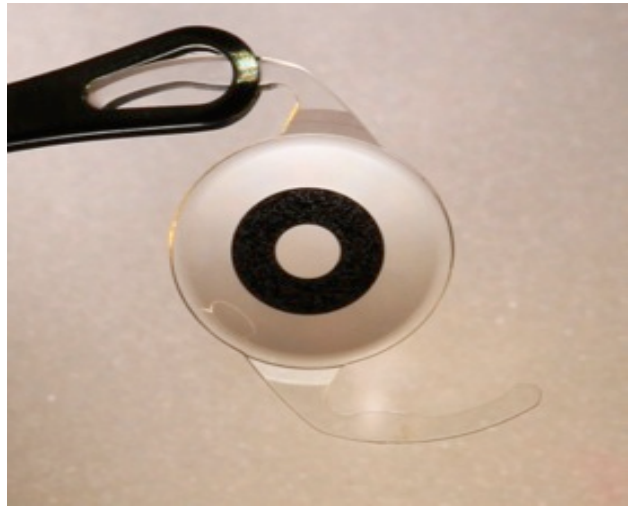
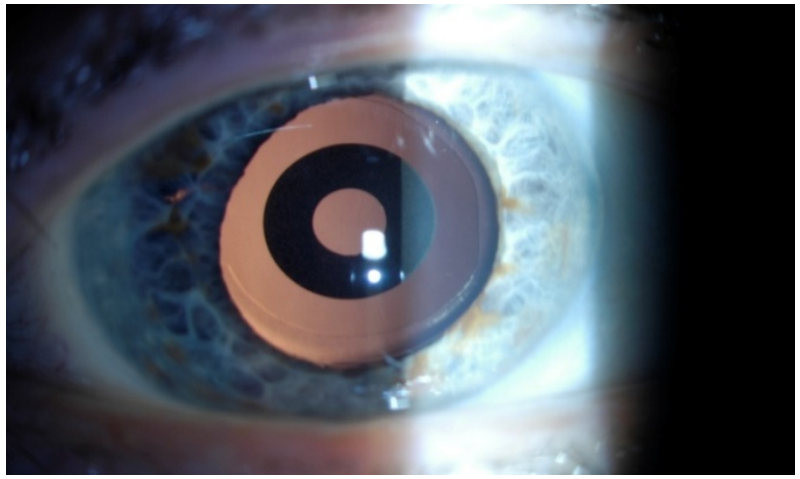
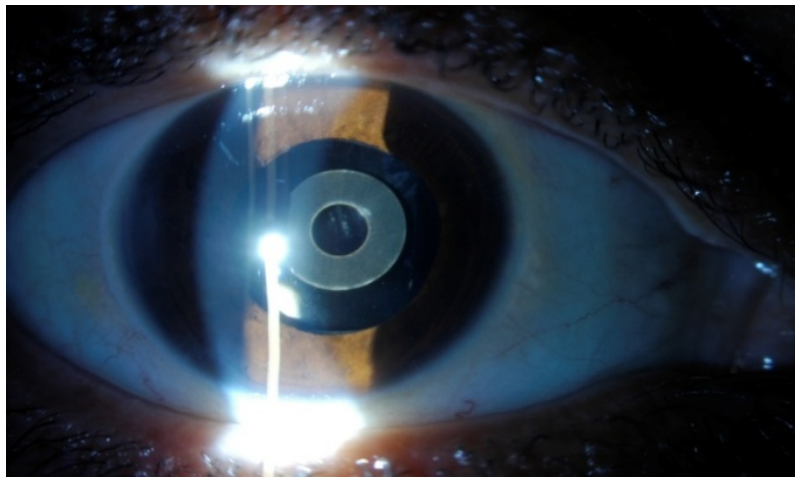
- IOL Material
  - Single Piece Hydrophobic Acrylic
- Mask
  - PVDF & Nano Particles of Carbon
  - 1.36 mm Central Aperture
  - 3.23 mm Total Diameter
  - 3200 Microperforations
  - 5 Microns Thick



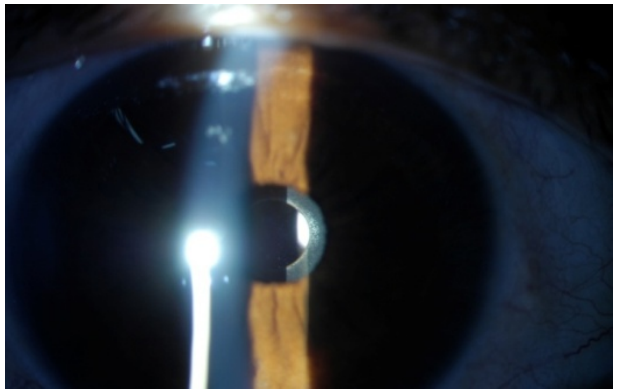




Acufocus IC8 Pinhole IOL Study
Dominant and Non Dominant Eye Biometry Outcomes and Setting

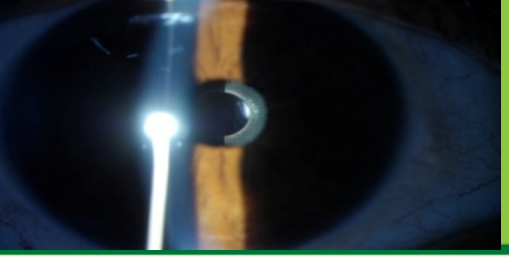
DOMINANT EYE → **Aspheric IOL** → **P.O. Target : PLANO**

NON DOMINANT EYE → **IC 8** → **P.O. Target : - 0.75 sf**



Study Design Effective May 2015 - Inclusion Criteria

- Subjects must be ≥ 45 years of age
- Clear Intraocular Media Other Than Cataract
- BCDVA 20/30 or Worse as a Result of Cataract in the Operative Eye
- Fellow Eye Could Have Either the Natural Crystalline Lens or Prior Aspheric IOL implantation



IC8 Pinhole IOLs : All Distances Monocular Results

6 Years Follow-Up / 21 Patients

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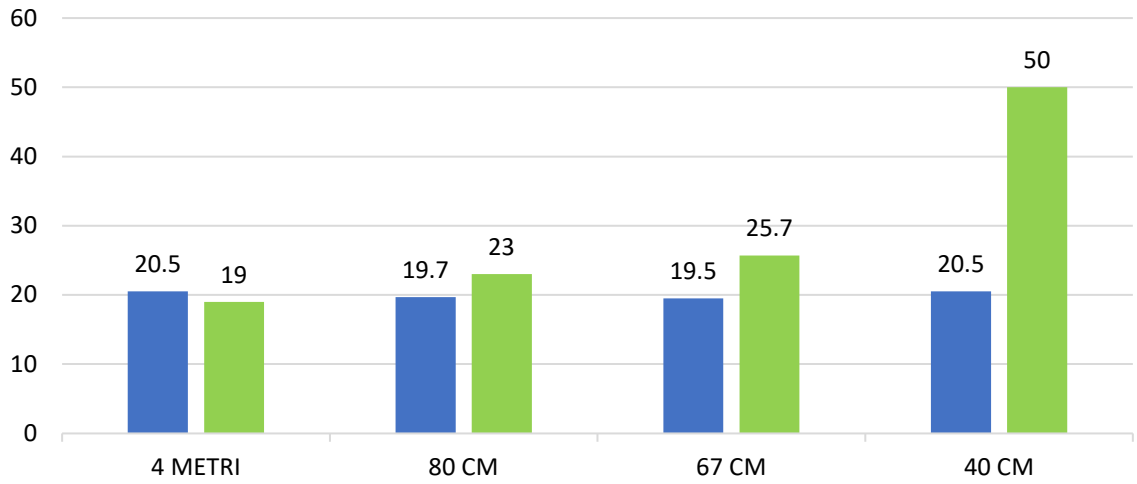
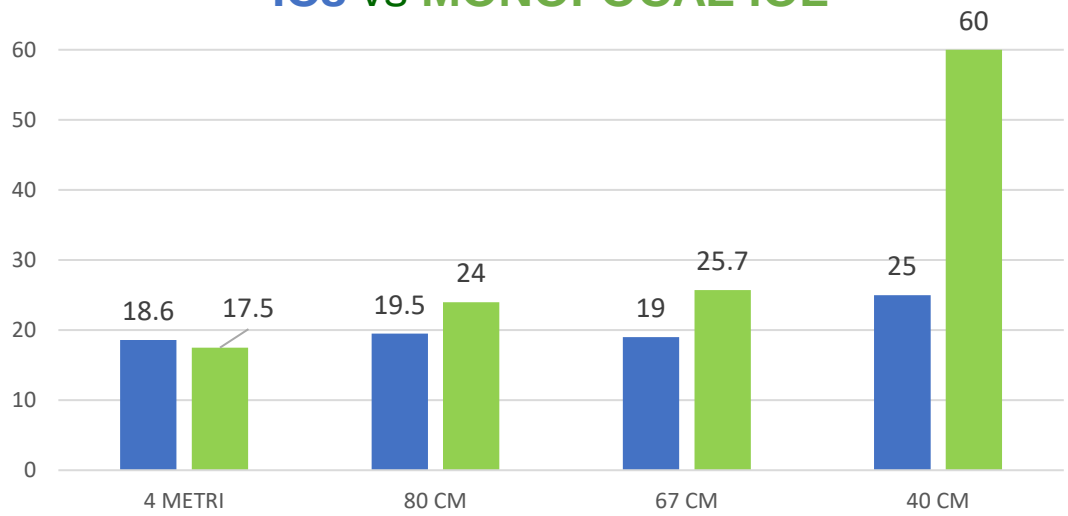
UNCORRECTED VA OUTCOMES
IC8 vs MONOFOCAL IOL



IC8 IOL Postop Target : - 0,75 sf

IC8 IOL Postop Sphere Equivalent – 0,50 ± 0,63

BEST CORRECTED VA OUTCOMES
IC8 vs MONOFOCAL IOL



Monofocal IOL Postop Target : Plano

Monofocal IOL Postop Sphere Equivalent - 0,14 ± 0,26

IC8 Pinhole IOLs : All Distances Binocular Results

5 Year Follow-Up / 21 Patients / Binocular Results - 20/

UNCORRECTED vs CORRECTED

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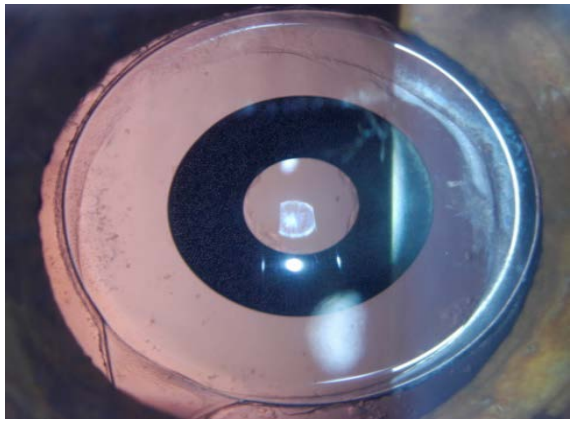

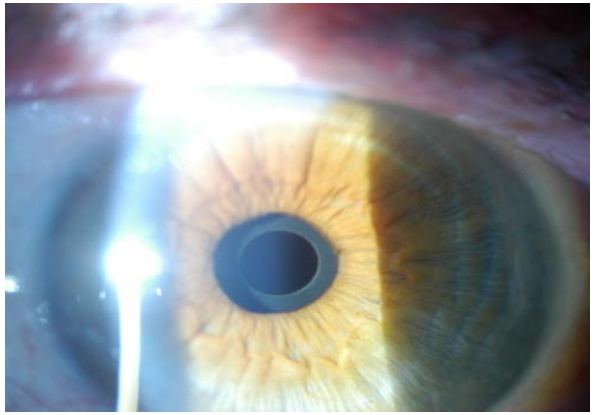

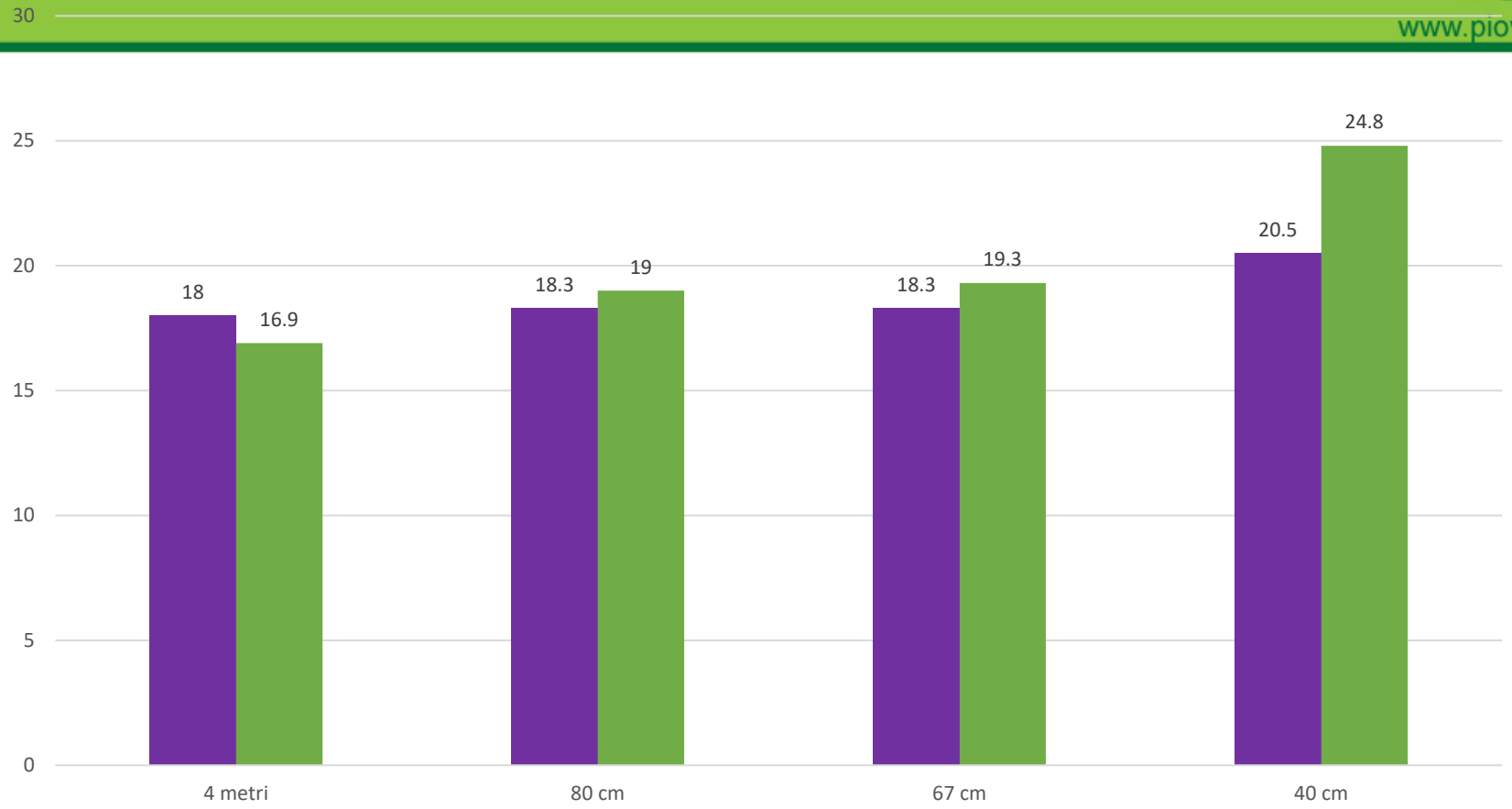

Posterior Capsular Opacity
AcuTarget HD Acufocus
Determinant to Apply Yag Laser Treatment

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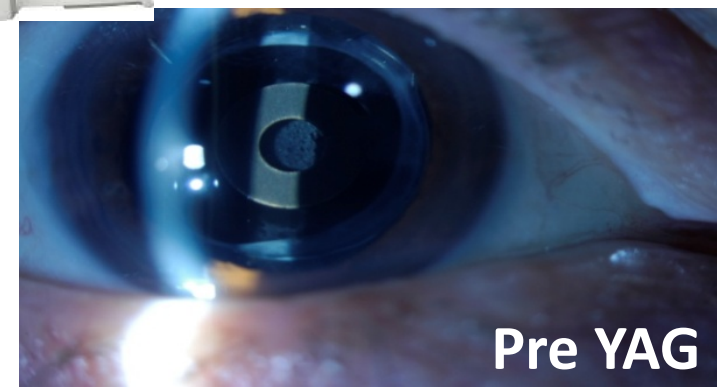
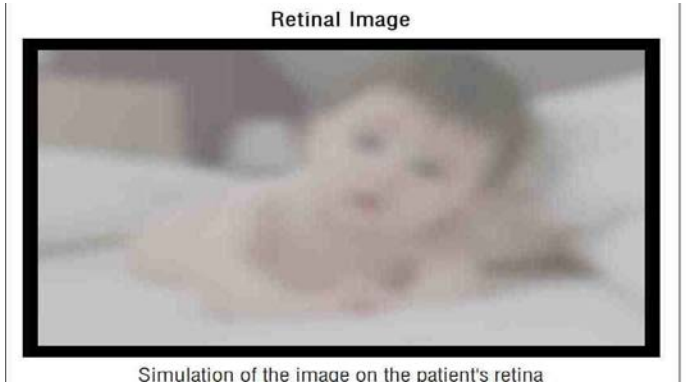
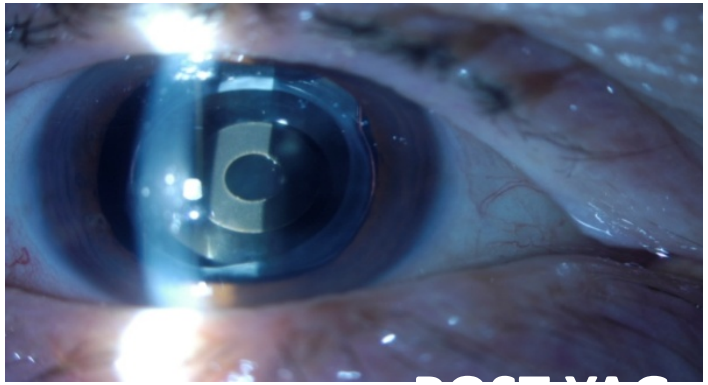
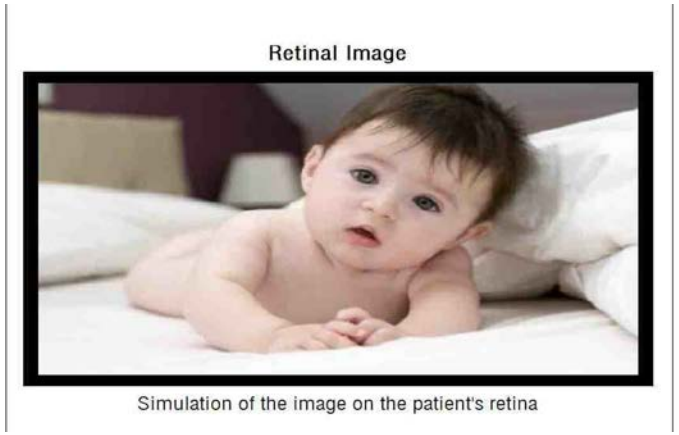
OSI: mean OSI PRE YAG laser 4.77 ± 2.6 (21 eyes treatment)

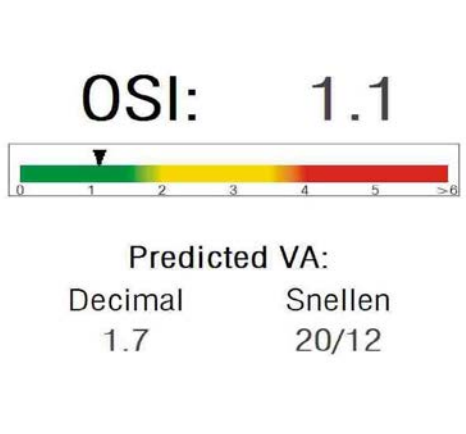




OSI: mean OSI POST YAG laser 1.17 ± 1.8 (21 eyes treatment)







Acufocus IC8 Pinhole IOL

Contrast Sensitivity Pre and After Yag Laser Treatment

ETDRS Chart : 15 Eyes Tested

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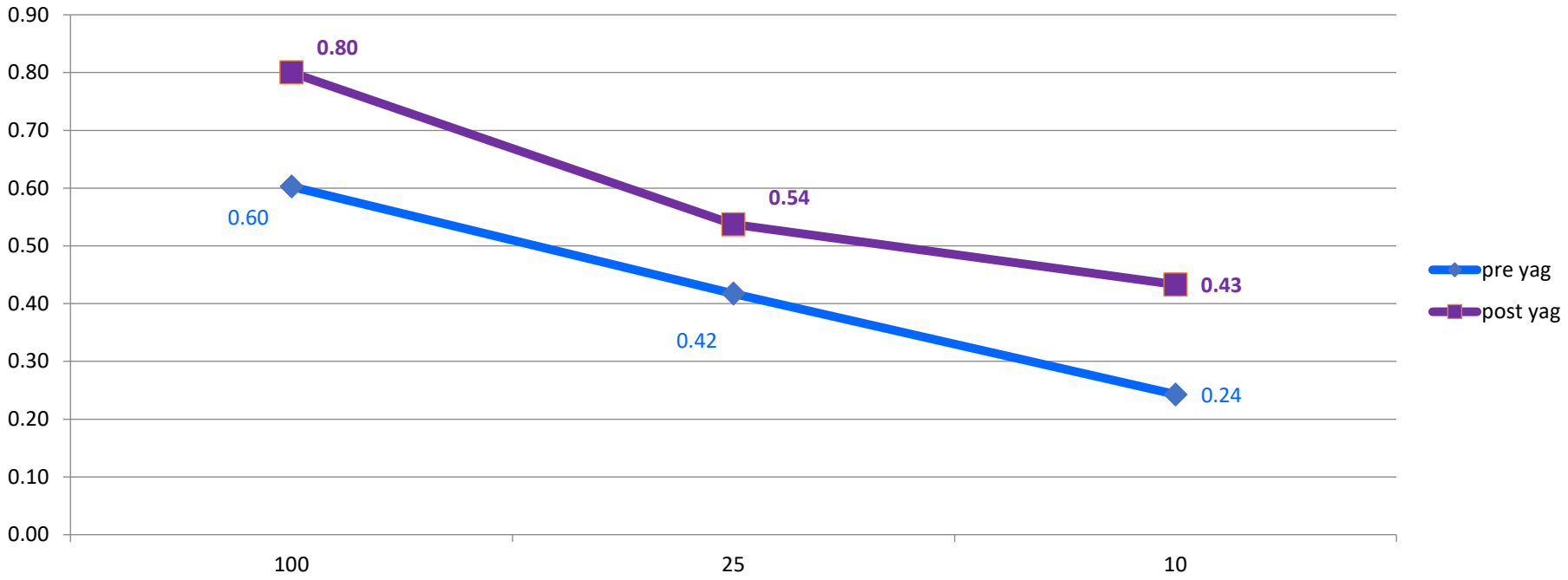
Contrast Sensitivity Tested Using ETDRS Chart
Three Different Conditions : 100%, 25% and 10%

Pre and After Yag Laser Treatment



Acufocus IC8 Pinhole IOL: Posterior Capsular Opacity - PCO

Four Year After Surgery: 21 Yag Laser Treatment (100%)

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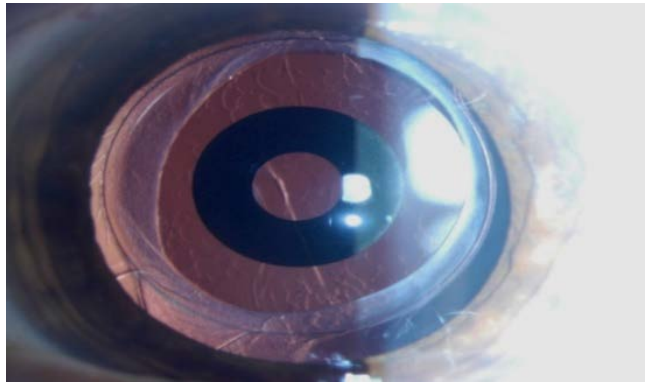
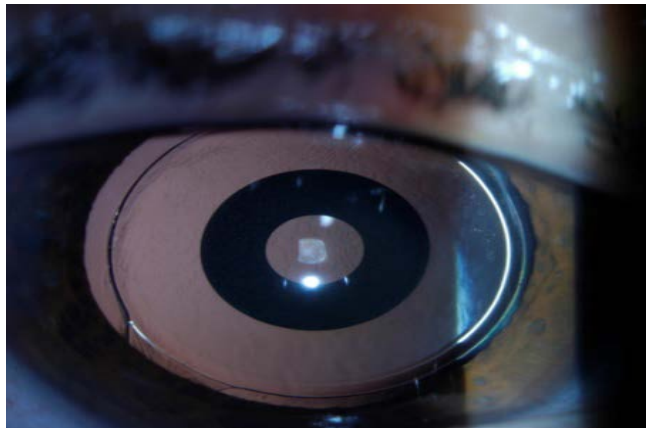
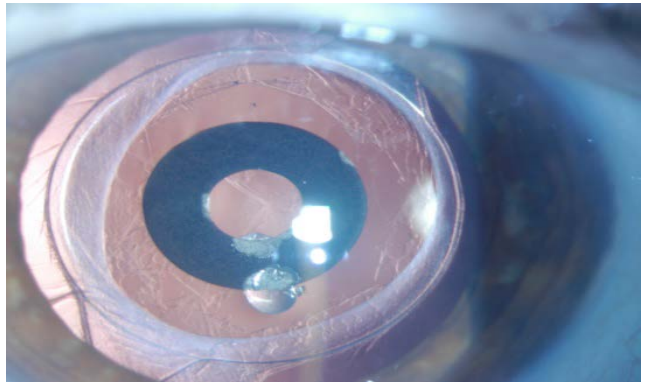
Total of 21 Patients

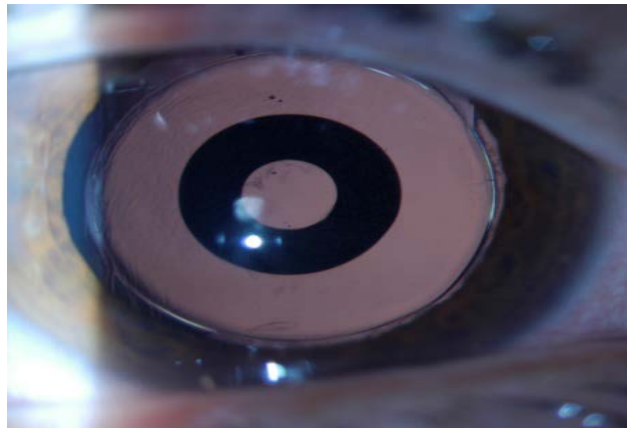
Before YAG Laser Treatment





After YAG Laser Treatment





Centration of the IC8 Pinhole IOL

AcuTarget HD Acufocus

Preoperative Plan vs Post Operative Results

IC8 IOL Easier to Centered VS Corneal KAMRA

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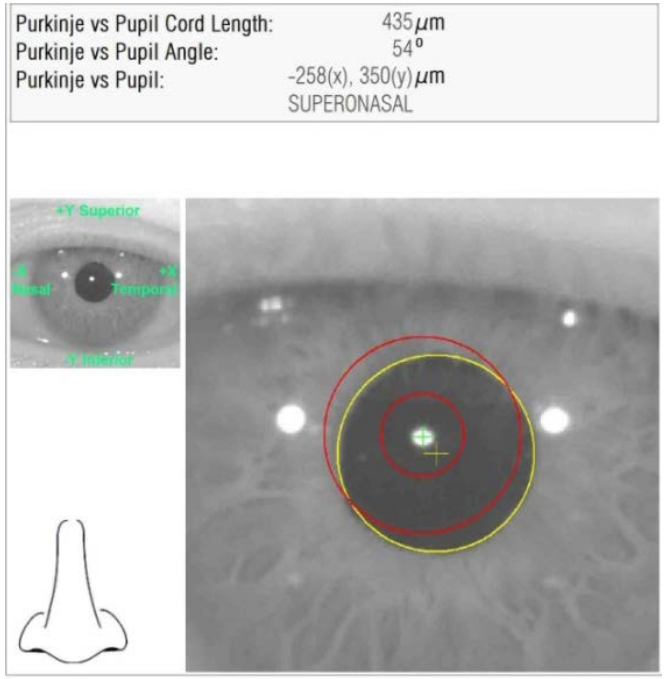
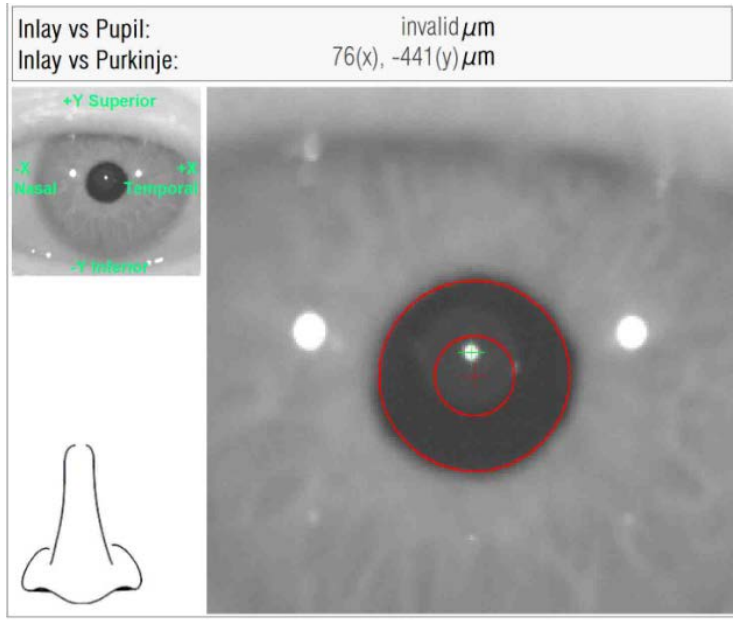
Preoperative



Postoperative



Inlay Vs Purkinje – Mean Decentration

X 106.28 µm ± 213.2 µm

Y 0.0 µm ± 139.4 µm

IC8 Pinhole IOLs: Binocular Implantation After RK

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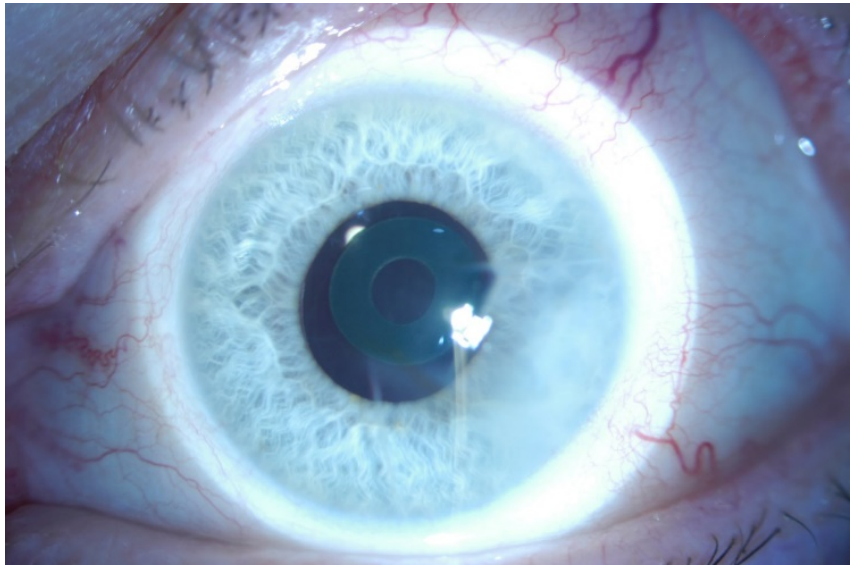
WOMEN 70 YO

- 1993 Bilateral RK - 8 Radial Cuts plus Astigmatism
- 2020 Preop REVA 20/40 -0,75 +3,00 Cyl 40° - Halos Glare Cataract
- 2020 Preop LEVA 20/40 -1,00+ 5,00 Cyl 10° Halos Glare Cataract



THREE MONTHS POSTOP

- REVA -1,00 150° 20/20 No Glare and Efficient Near Vision
- LEVA -1,50 130° 20/20 No Glare and Efficient Near Vision

Pinhole – IC8 Acufocus IOL
Technology Benefits Summary

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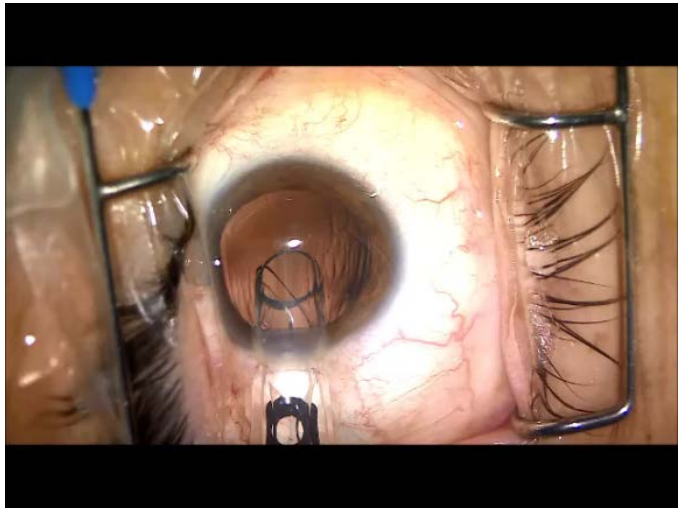
Pinhole IOL does not Need Astigmatism Management up to 2 Diopters

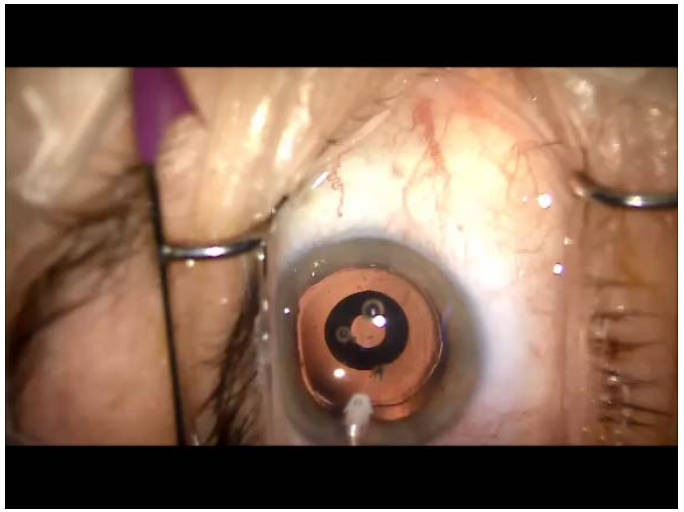
Advanced Technology Only Implanted in Non Dominant Eye – One Eye Only

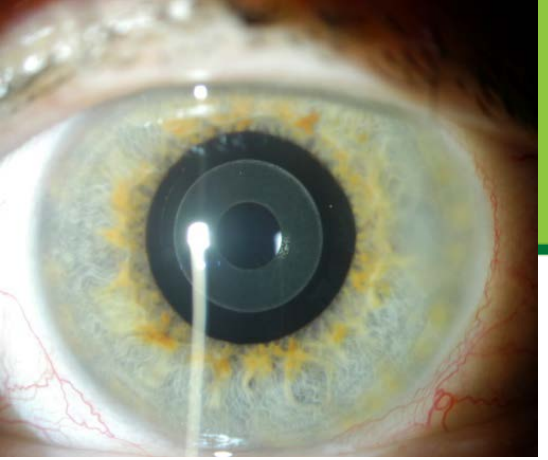
Aberrations Free - Aspheric IOL Technology Implanted in the Dominant Eye

Binocular Far Distance – At least 0.9 Distance Visual Acuity in Pinhole IOL Eye – No Monovision

Only Near Vision Based on Monovision







IC8 Pinhole IOLs
Extended Depth Of Focus - EDOF IOLs

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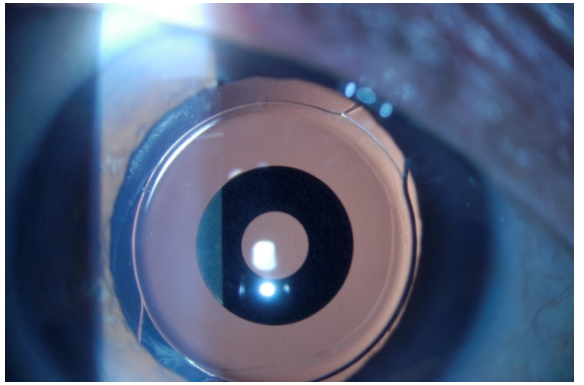

- **Patients Near Vision is Inferior Than Trifocal IOLs Because Near Vision Image in Dominant Eye with Monofocal IOL is not so efficient and Impacts Binocularity**
- **Bilateral IC8 Implantation Provides Better Near Vision Outcomes but Decreases Contrast Sensitivity at Sunset Similar to Uncorrected Mild Short Sighted People**
- **Retinal Evaluations and Surgical Procedures Are Possible to Perform with Specific Techniques**
- **3.5 mm Incision Size Needs Improvements**

Best IOLs Technology After RK or LASIK

Thank you for your attention