

# Technique for Docking and Perfect Centration with SMILE

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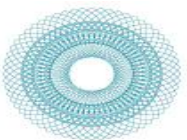
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# Financial Disclosure

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The author (GI Carp) receives travel expenses from Carl Zeiss Meditec AG (Jena, Germany)

The author (DZ Reinstein) is a consultant for Carl Zeiss Meditec AG (Jena, Germany)

The author (DZ Reinstein) acknowledges a financial interest in Insight 100 VHF digital ultrasound (ArcScan Inc, Golden, CO)



# Docking Centration



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# Patient Positioning: Centration of Patient

- Head centration – forehead to chin (not nose!)
- Body straight and centered on laser bed, legs uncrossed
- Patient position should be attained with no muscular effort (do not ask patient to raise or lower their chin into a position requiring continuous muscular effort)



# Speculum: Adequate Exposure

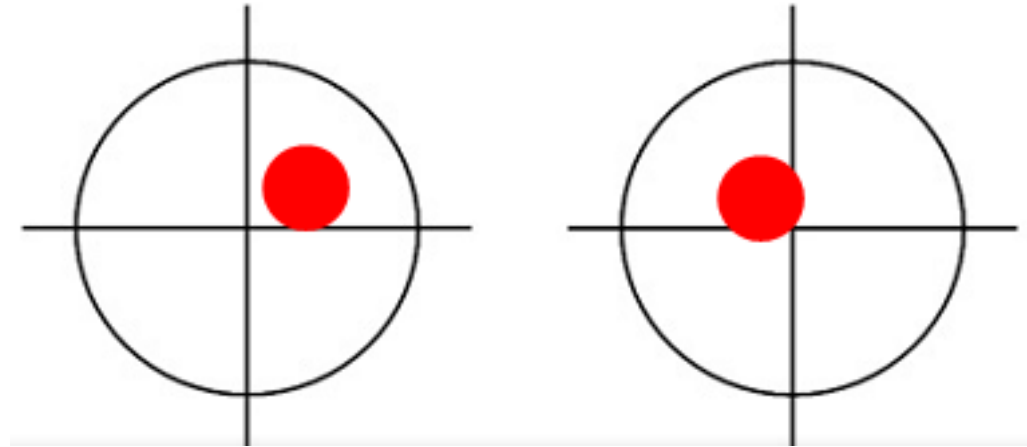
- Ensure adequate exposure – ideally with equal exposure of sclera surrounding the limbus above and below





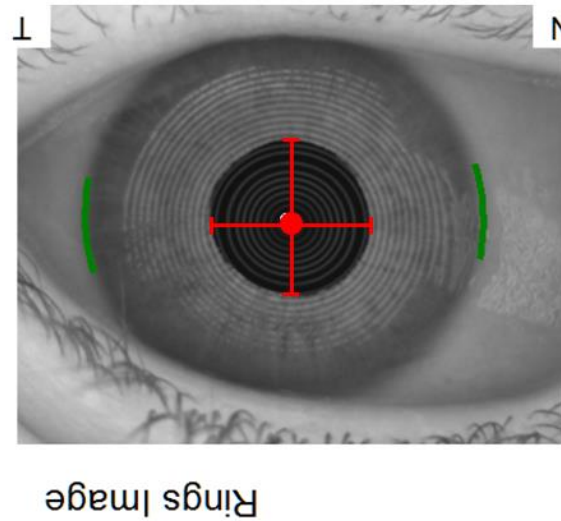
# Centration: Double Verification of Vertex

1. Hirschberg test
2. Atlas eye image



First LAST

OS  
11/07/14  
13:01:53  
Pup. diam 4.8 mm  
HVID 12.3 mm  
Pup. center 0.0, -0.2  
Pho. pup. 3.29 mm  
Sco. pup. 4.92 mm

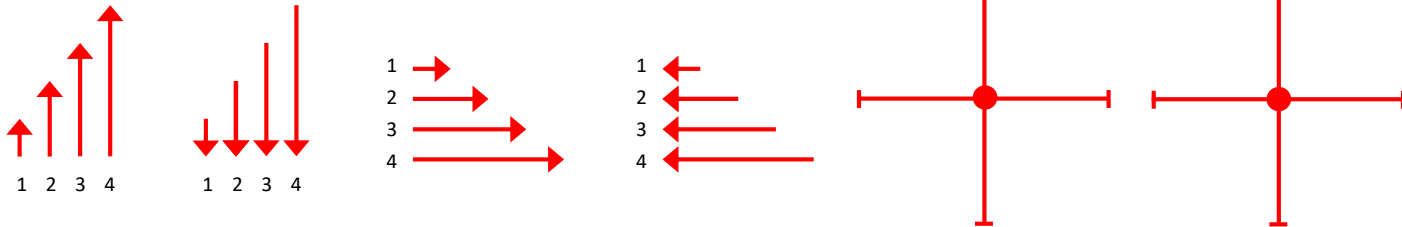
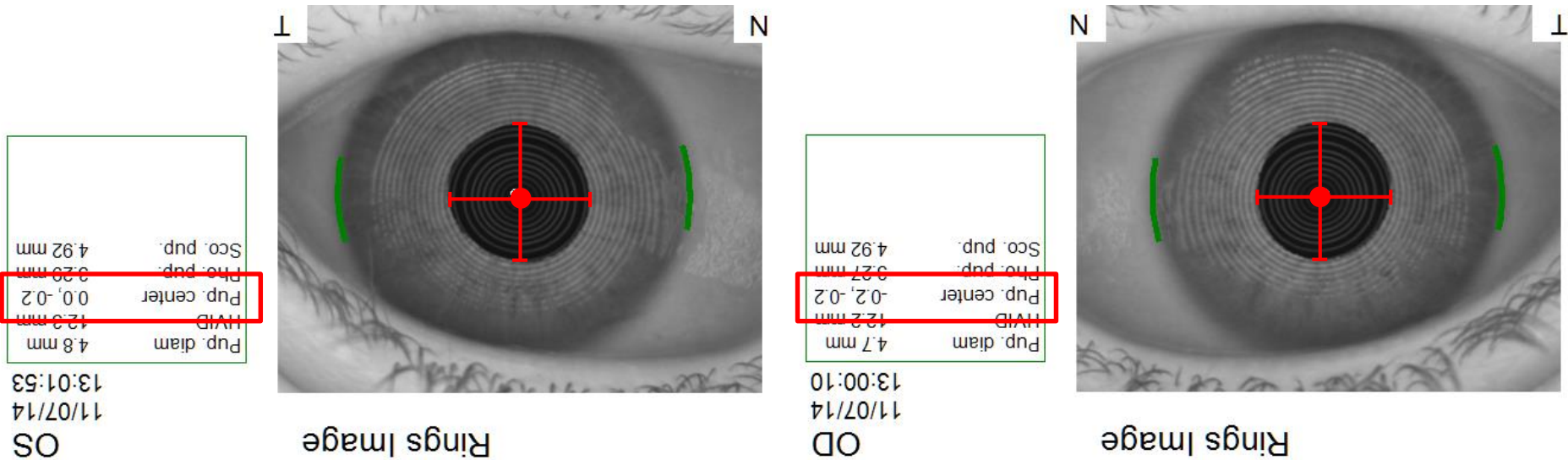


OD  
11/07/14  
13:00:10  
Pup. diam 4.7 mm  
HVID 12.2 mm  
Pup. center -0.2, -0.2  
Pho. pup. 3.27 mm  
Sco. pup. 4.92 mm



# Atlas Eye Image Reference Preparation

First LAST



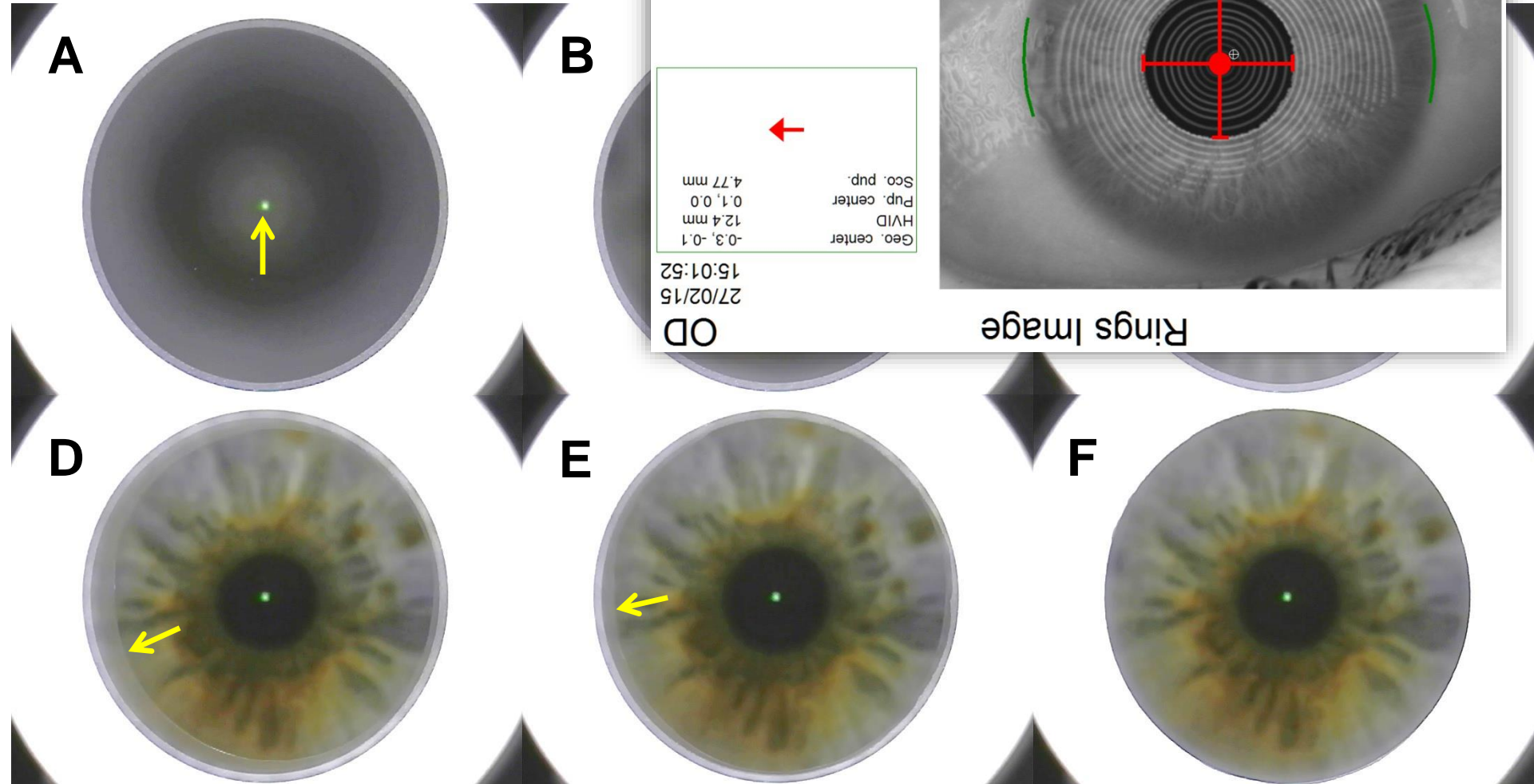
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# Docking Stages



80-90% accurvation – wait a few seconds to verify centration



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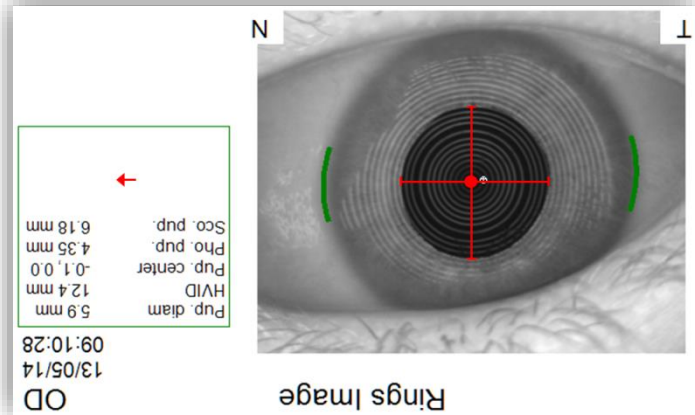
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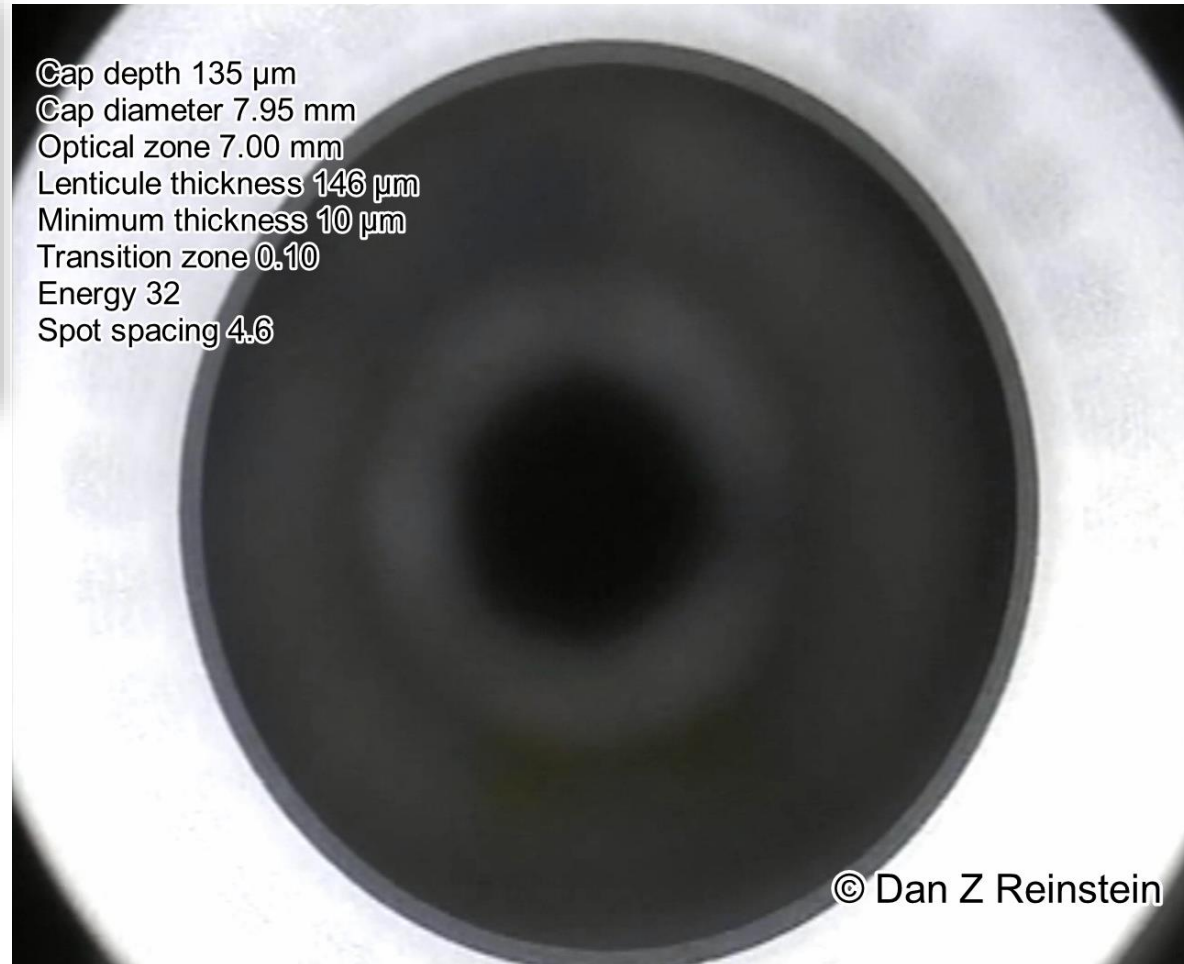


# Docking Pearls – 80-90% Accurvation

- Wait a few seconds at the 80 to 90% accurvation stage to ensure patient fixation



Cap depth 135  $\mu\text{m}$   
Cap diameter 7.95 mm  
Optical zone 7.00 mm  
Lenticule thickness 146  $\mu\text{m}$   
Minimum thickness 10  $\mu\text{m}$   
Transition zone 0.10  
Energy 32  
Spot spacing 4.6



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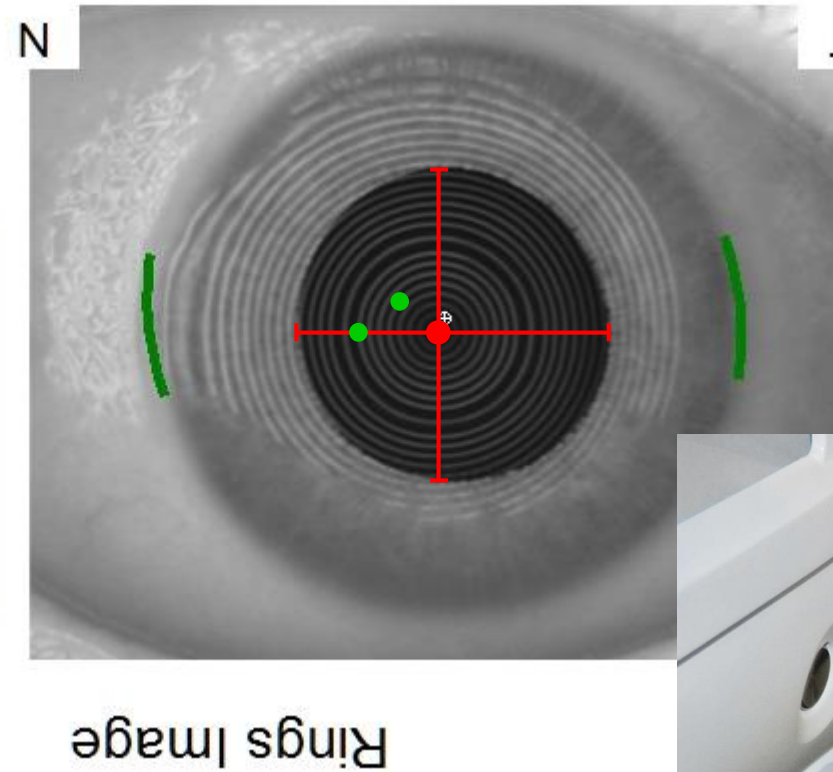

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# Centration Adjustment by Joystick

OD  
20/03/15  
13:28:59  
Pup. diam 6.5 mm  
HVID 12.3 mm  
Pup. center -0.3, -0.1  
Pho. pup. 4.11 mm  
Sco. pup. 6.46 mm

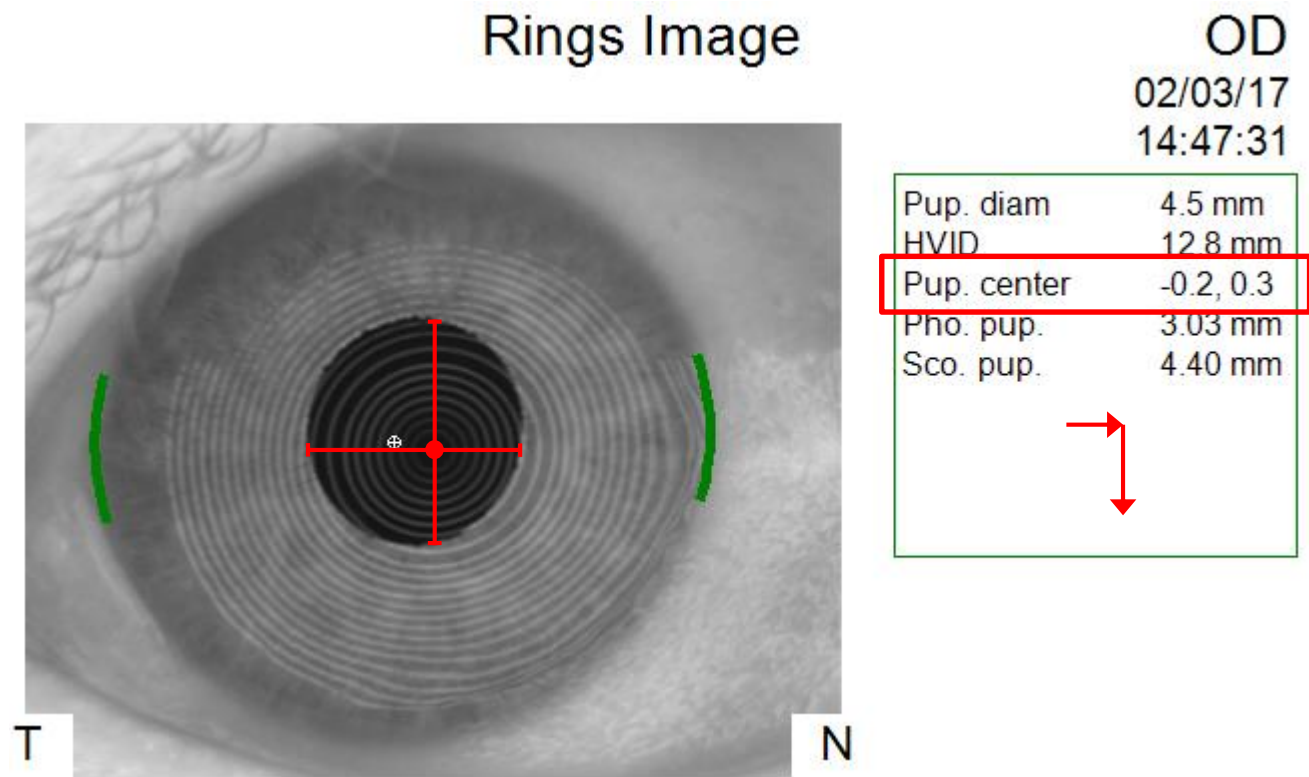


- Analogue
- Hysteresis

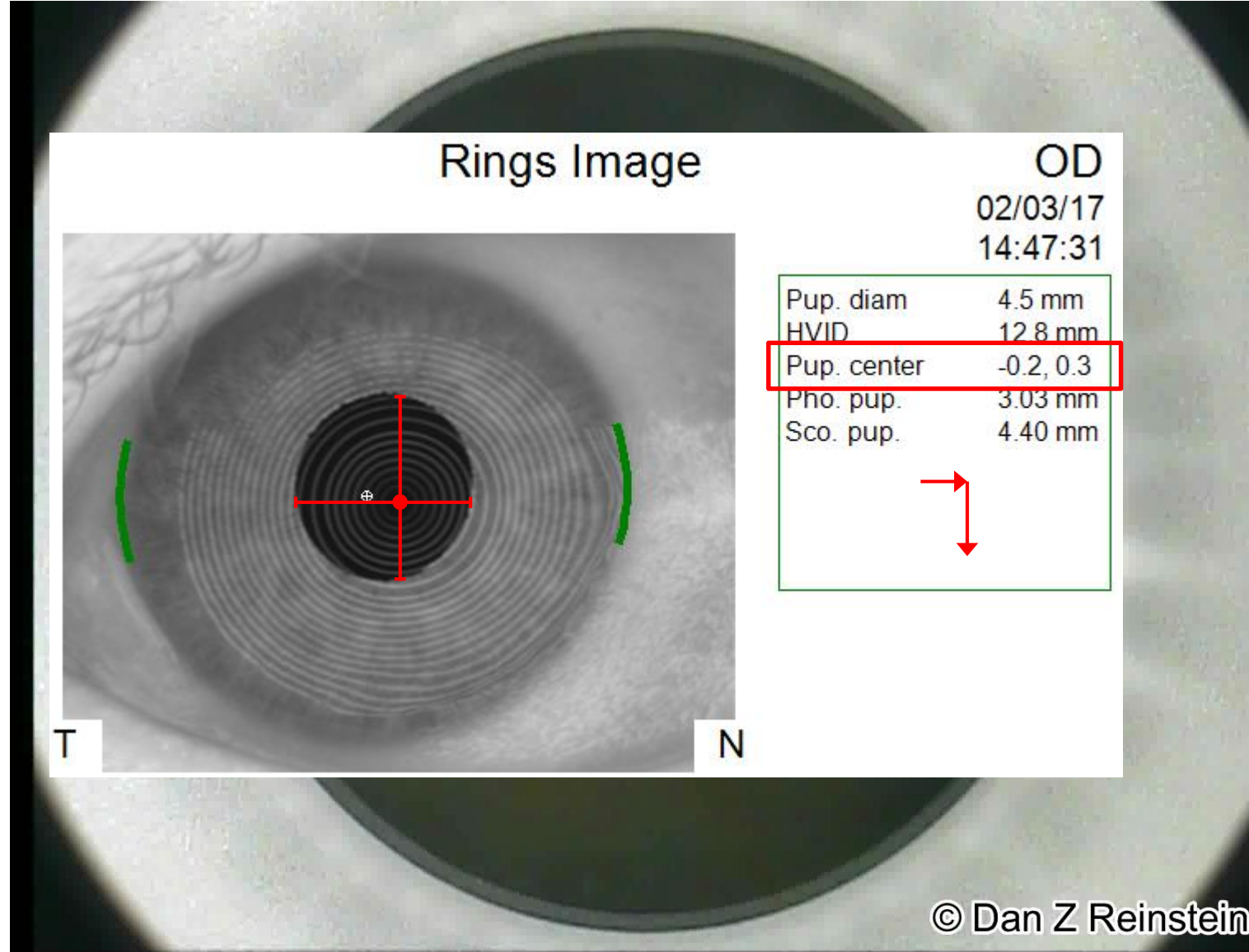


Move the joystick  
*towards* the green light

# Large Inferior Angle Kappa



# Large Inferior Angle Kappa





# Large Inferior Angle Kappa

## Pre primary SMILE

-3.50 -1.25 x 10

Target: 0.00 0.00 x 0

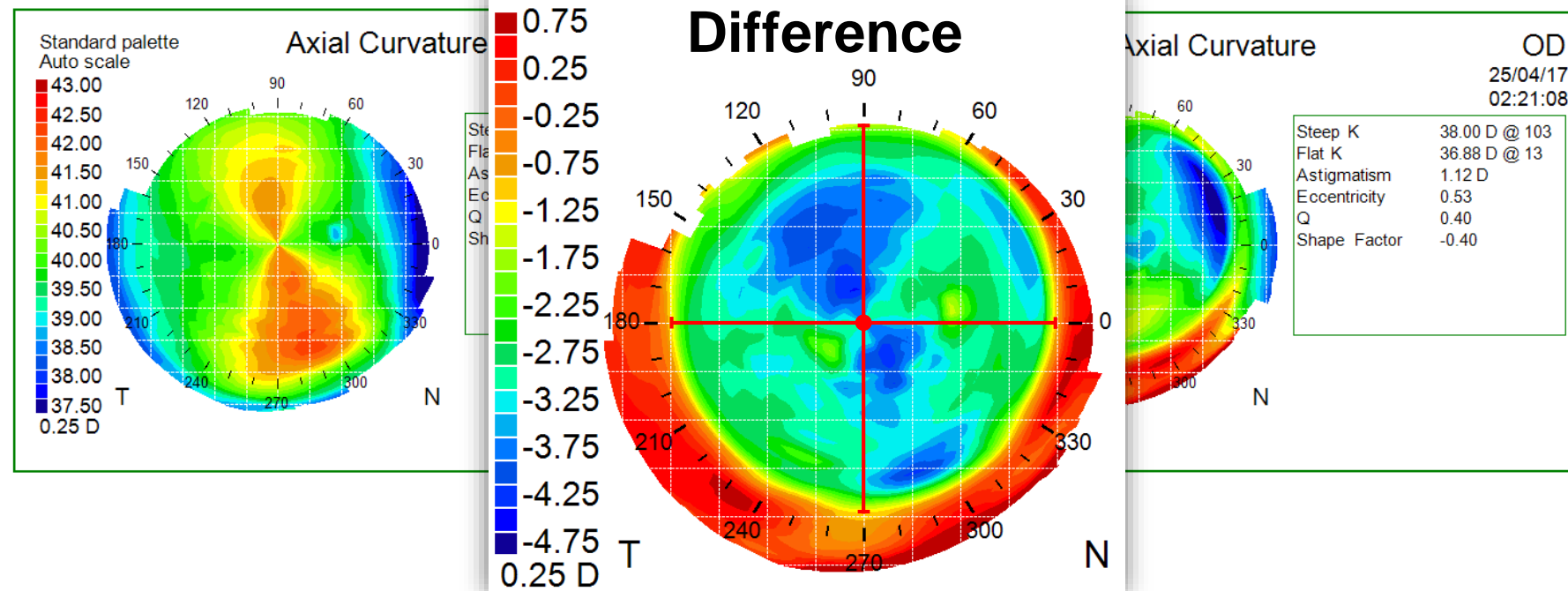
UDVA	UNVA	CDVA	DCNV
200	N8	16 <sup>+2</sup>	N14

## 2 months post SMILE

+0.50 -0.50 x 147

Target: 0.00 0.00 x 0

UDVA	UNVA	CDVA	DCNV
12.5	N8	12.5	N14





# Docking Pearls – Parallax Error



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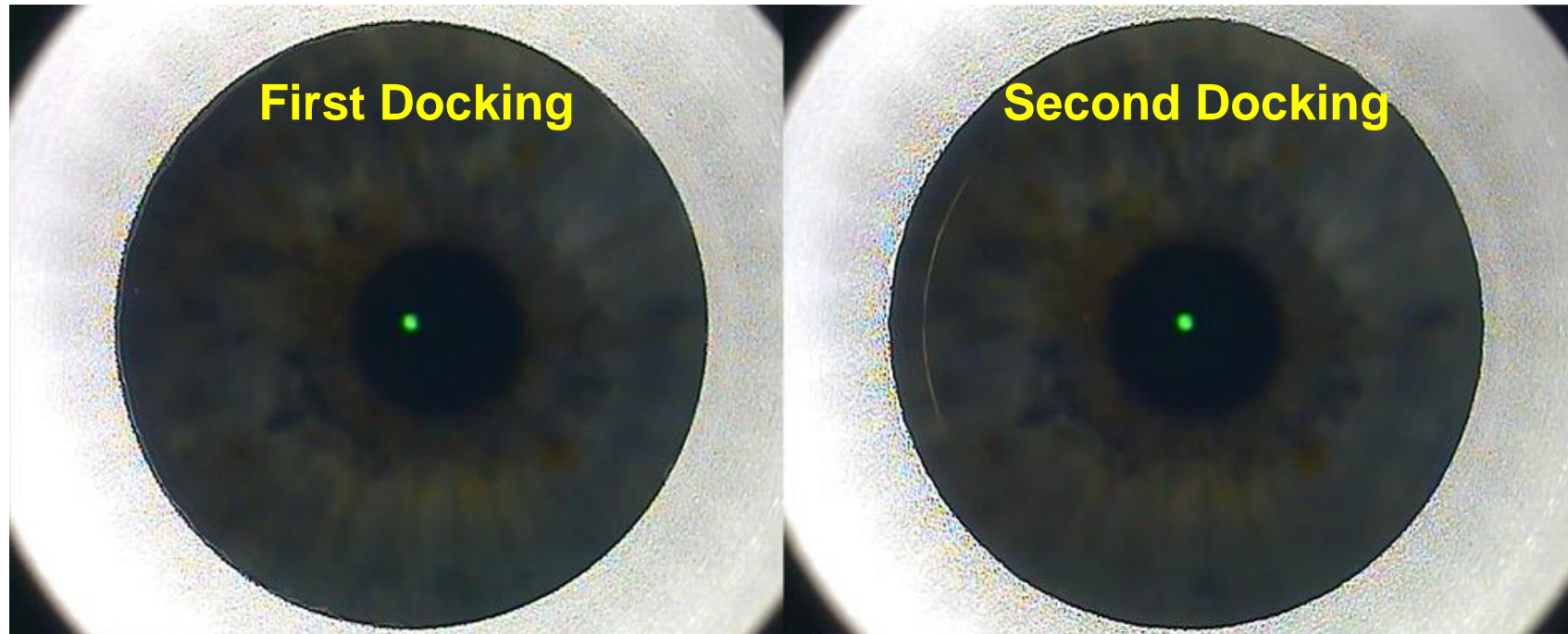
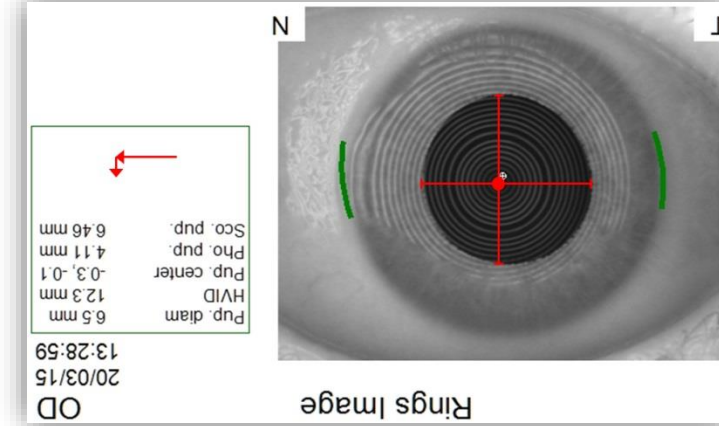


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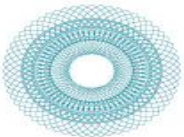
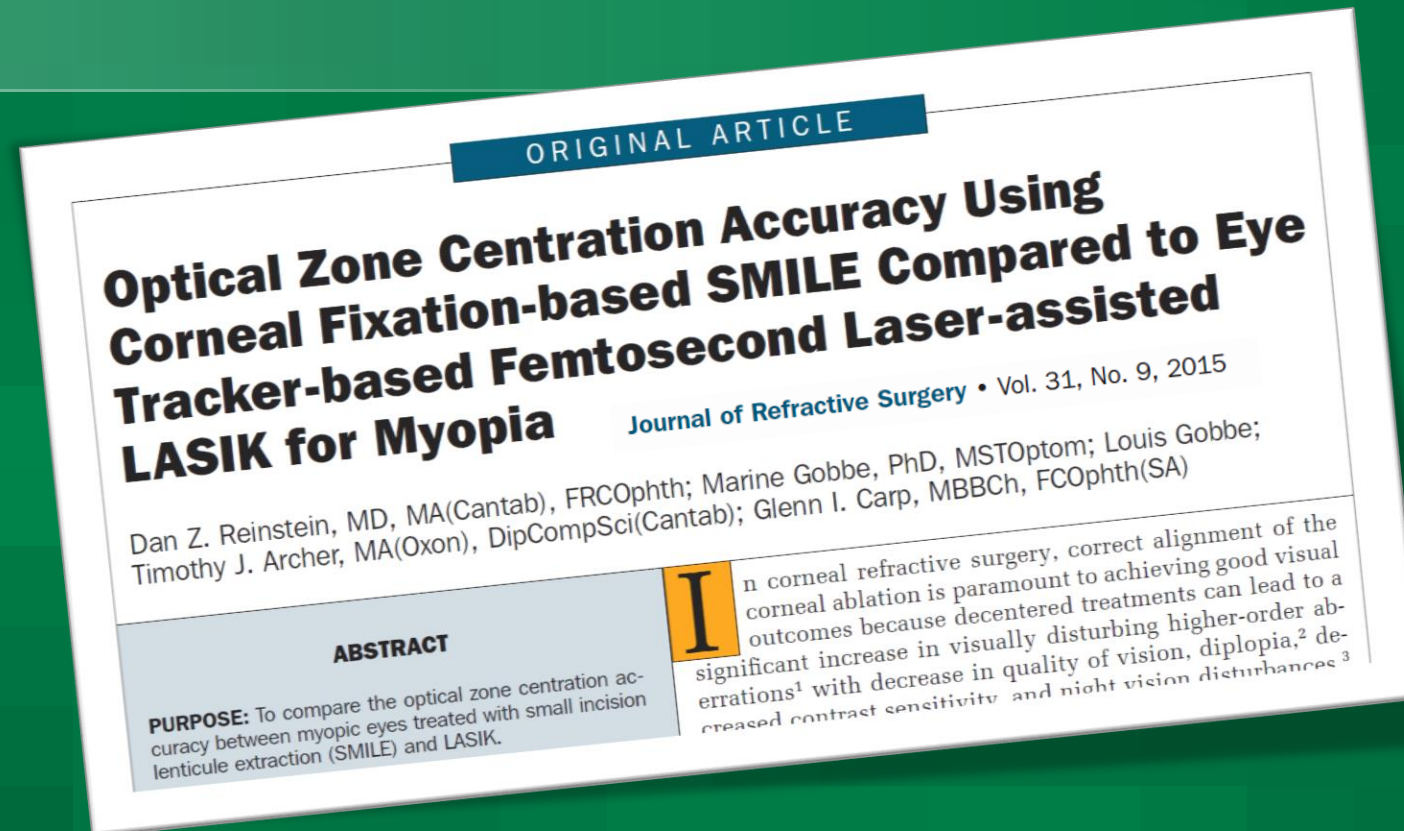


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# Docking Pearls – Parallax Error



# Centration: SMILE vs LASIK



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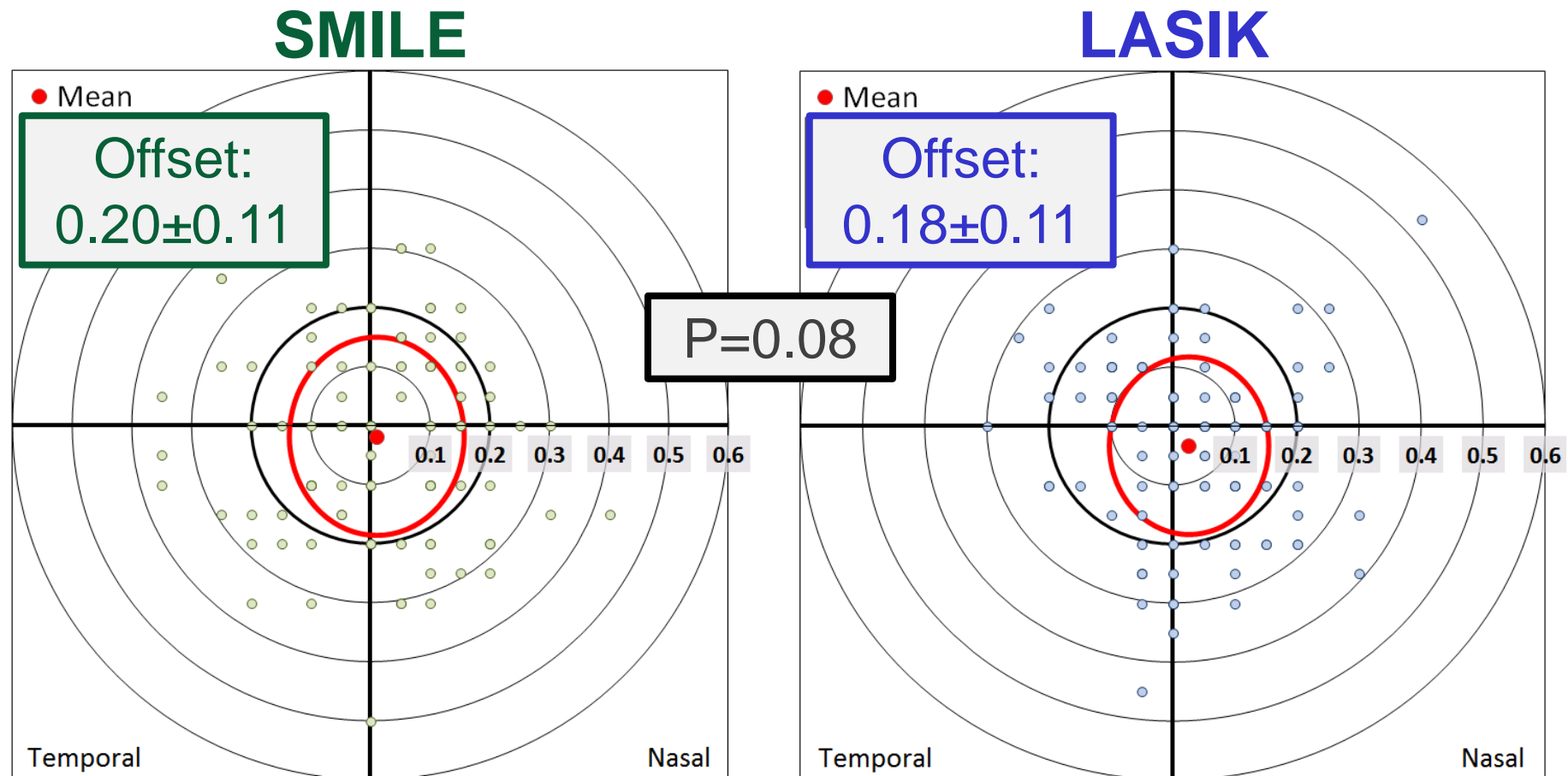


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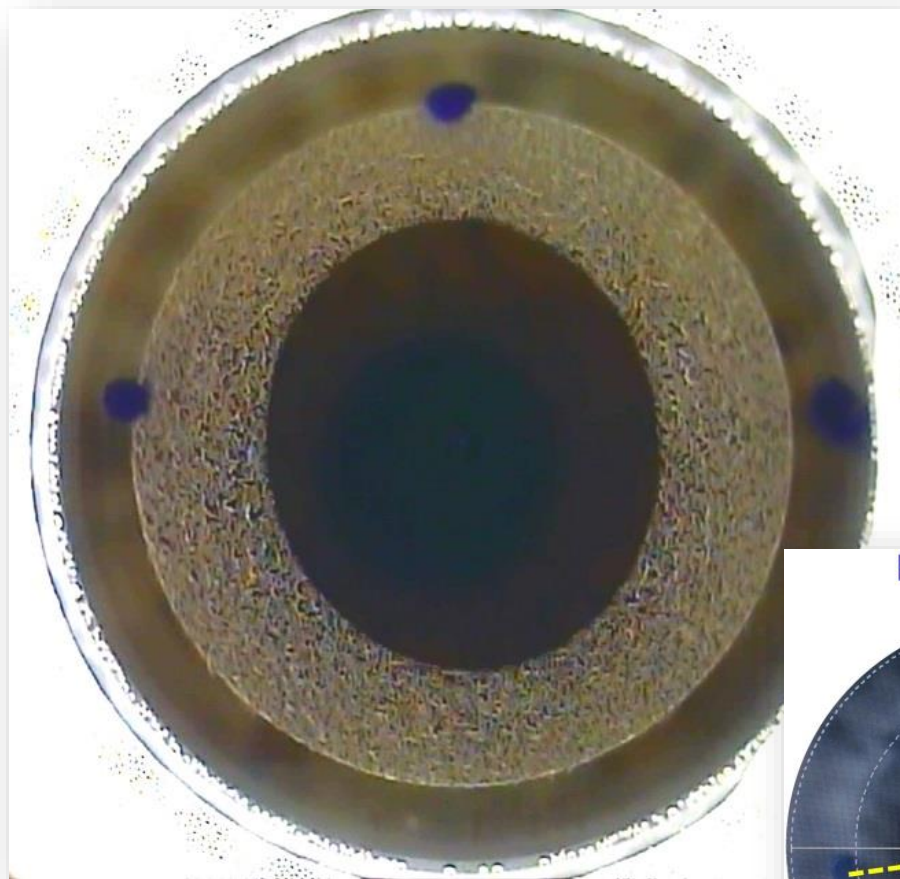
# Centration: SMILE vs LASIK

- 100 consecutive SMILE (SEQ  $-4.39 \pm 1.93$  D)
- LASIK control group matched for SEQ treated



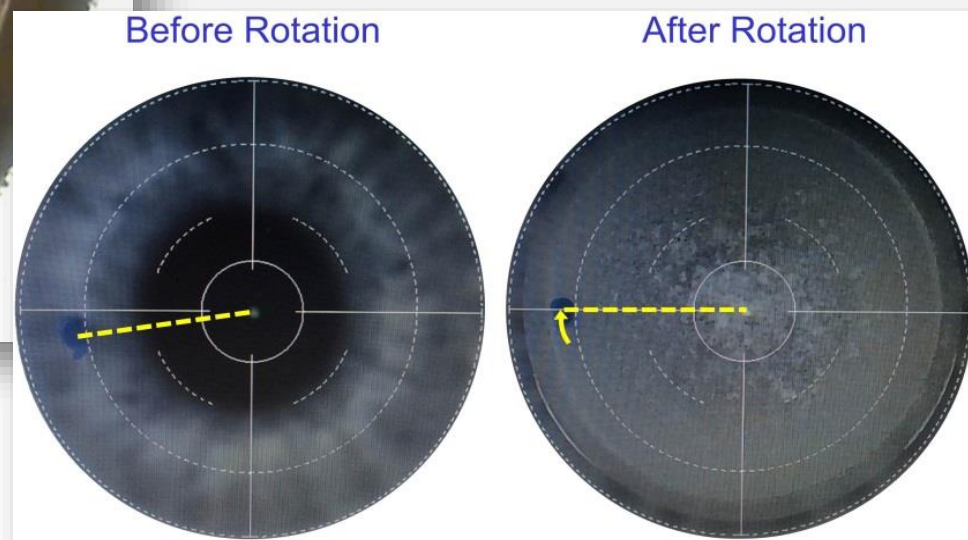


# Centration tip



**DO NOT** rely on the reticle within the operating microscope

**USE** the reticle on the screen





# Thank You

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