

Limbal Relaxing Incisions

John F. Doane, M.D., F.A.C.S.

Discover Vision Centers

Kansas City, Missouri, U.S.A.

How Much Corneal Cylinder Can You Correct?

2.5 diopters is probably the maximum

If placing a presbyopic IOL

I will use LRI for “with-the-rule” or
oblique corneal astigmatism

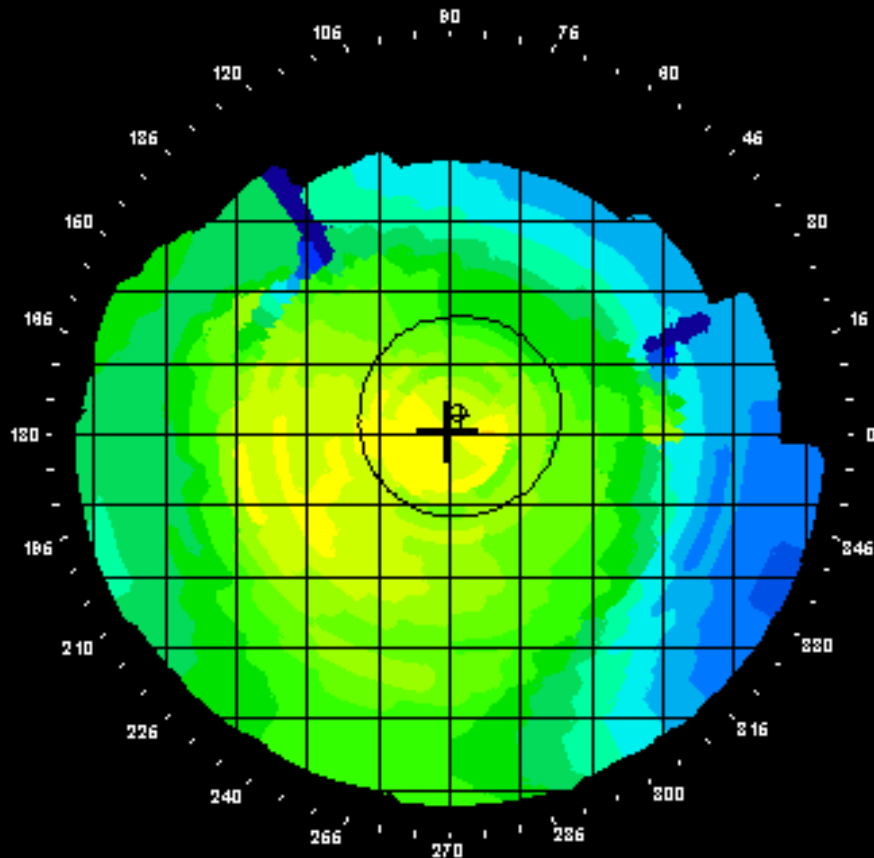
If “against-the-rule” I use LVC

Spherical

Patient:
JOHN F. DOANE, M.D.

EYE CARE INC. **Corneal Power Map**

47.0
46.5 **Power:** 44.7 D
46.0 **Radius:** 7.55 mm
45.5 **From vertex:**
45.0 **Distance** 0.00 mm
44.5 **S-merid** 0°
44.0 **From pupil:**
43.5 **Distance** 0.30 mm
43.0 **S-merid** 242°
42.5 **Simulated Keratometer:**
42.0 **44.25D (7.63 mm) @180**
41.5 **43.87D (7.69 mm) @90**
Astigmatism: 0.38D
CIM:
Shape Factor:
Insufficient Data



Diopter

OS

09:16 AM

05/20/97

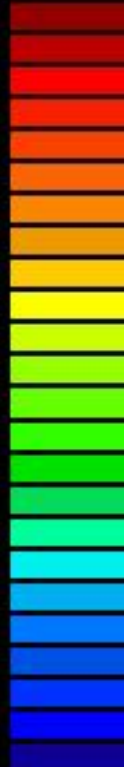
Lasik Evaluation

Vertical or "WTR" Astigmatism

Patient:

DISCOVER VISION CENTERS **Axial Map**

50.0
49.0
48.0
47.0
46.0
45.0
44.0
43.0
42.0
41.0
40.0
39.0



Power: 44.1 D
Radius: 7.66 mm
From vertex:
Distance 0.00 mm
S-merid 0°
From pupil:
Distance 0.18 mm
S-merid 97°
Simulated Keratometer:
46.25D (7.30 mm) @98
41.37D (8.16 mm) @8
Astigmatism: 4.88D
CIM: 0.93
Shape Factor: 0.39

Diopter

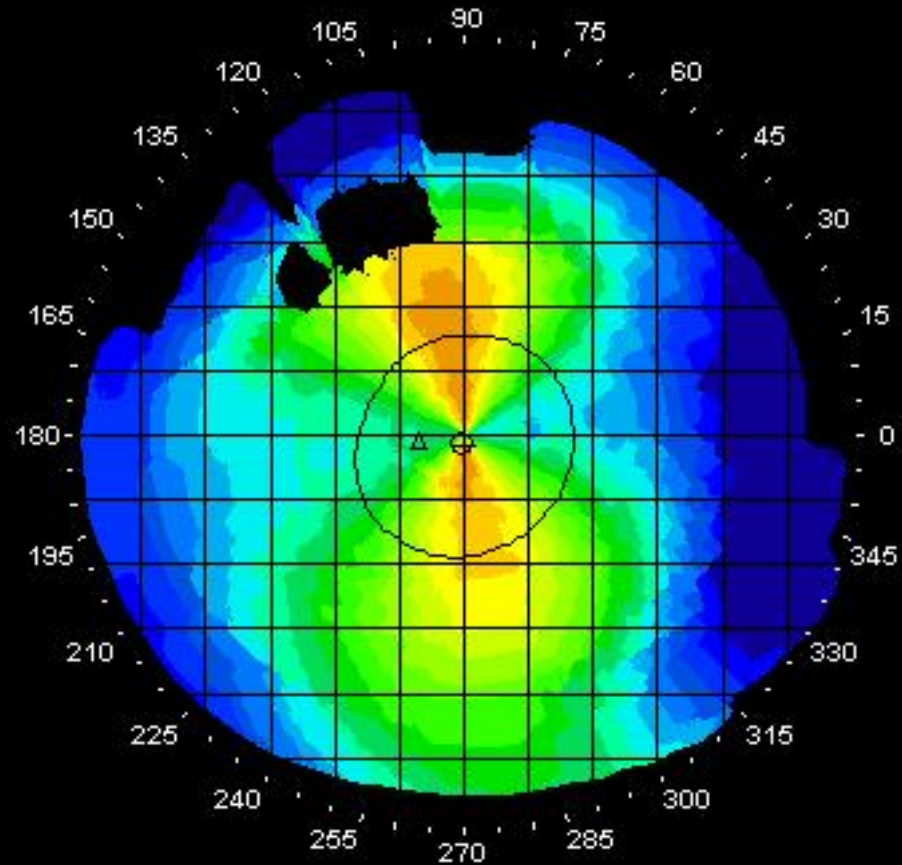
Pupil Size: 3.43 mm

OD

1/31/00

10:36 AM

[JN] CAT EVAL



D

Horizontal or "ATR" Astigmatism

Patient:

Dr. John Doane

DISCOVER VISION CENTERS

Axial Map

46.5
46.0
45.5
45.0
44.5
44.0
43.5
43.0
42.5
42.0
41.5
41.0



Power: 44.7 D
Radius: 7.55 mm
From vertex:
Distance 0.00 mm
S-merid 0°
From pupil:
Distance 0.13 mm
S-merid 329°

Simulated Keratometer:
45.25D (7.46 mm) @2
43.62D (7.74 mm) @92

Astigmatism: 1.63D

CIM: 0.52
Shape Factor: 0.37

Diopter

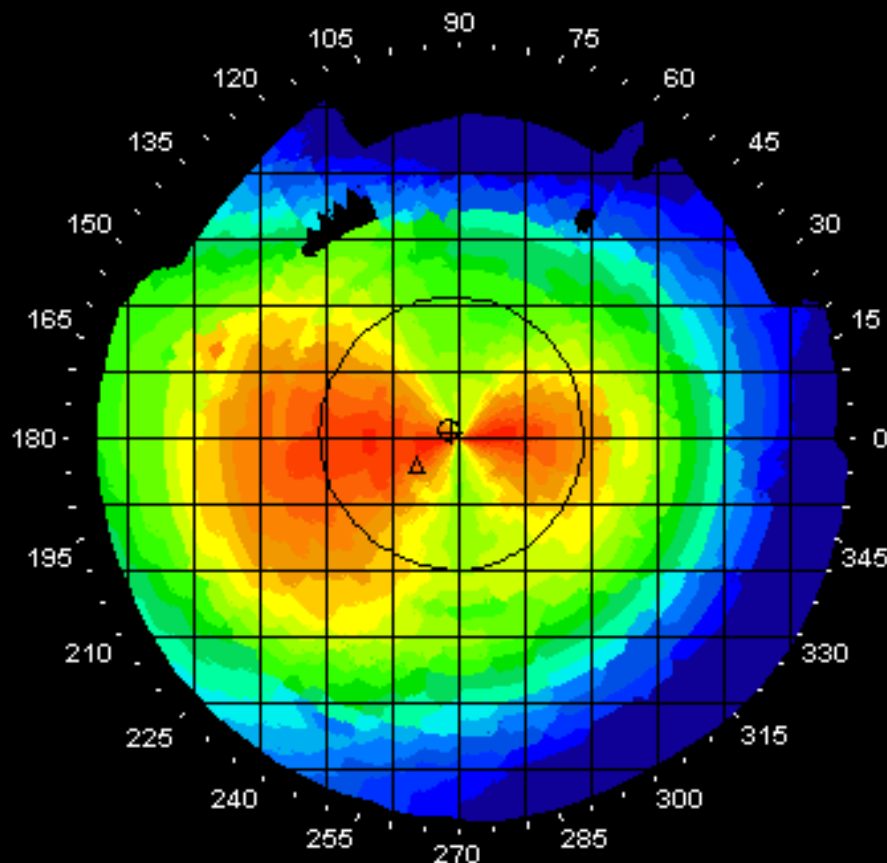
Pupil Size: 4.03 mm

OD

03/07/05

5:15 PM

lsk eval



D

ZEISS USA

Oblique Astigmatism

Patient:

JOHN F. DOANE, M.D.

EYE CARE INC.

Corneal Power Map

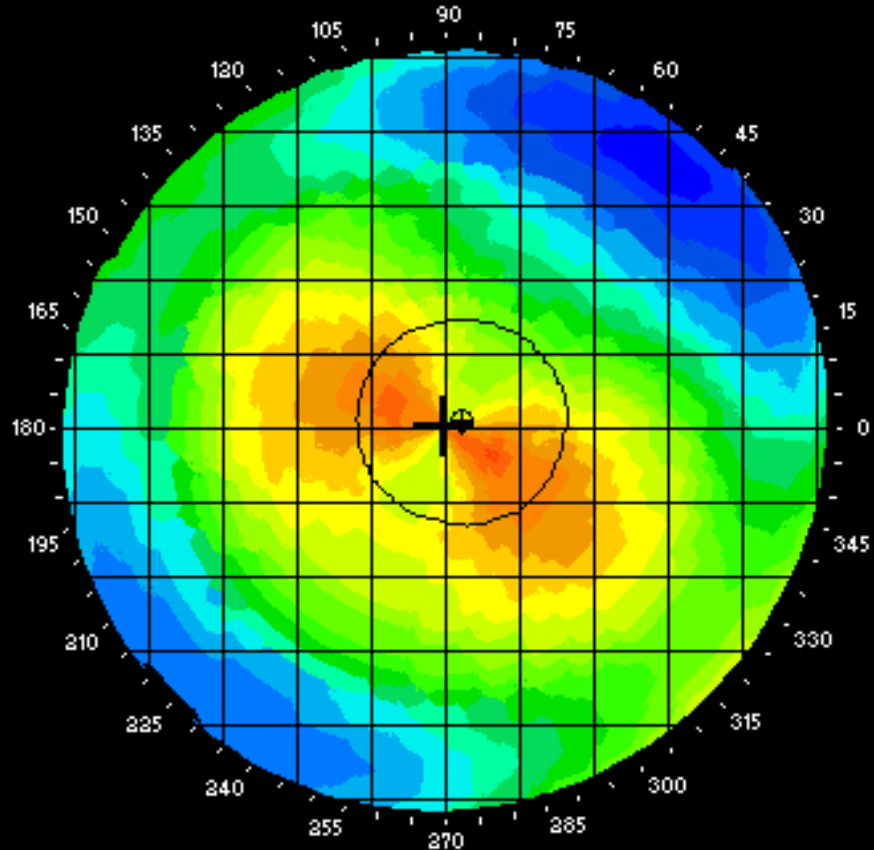
46.5
46.0 **Power:** 44.4 D
Radius: 7.59 mm
45.5 **From vertex:**
45.0 **Distance** 0.00 mm
S-merid 0°
44.5 **From pupil:**
44.0 **Distance** 0.25 mm
S-merid 201°
43.5
43.0 **Simulated Keratometer:**
42.5 44.75D (7.54 mm) @148
42.0 43.62D (7.74 mm) @58
41.5 **Astigmatism:** 1.13D
41.0 **CIM:** 0.57
Shape Factor: 0.42

Diopter

-
-
-

OS

10:32 AM
12/08/97
LSK EVAL



D

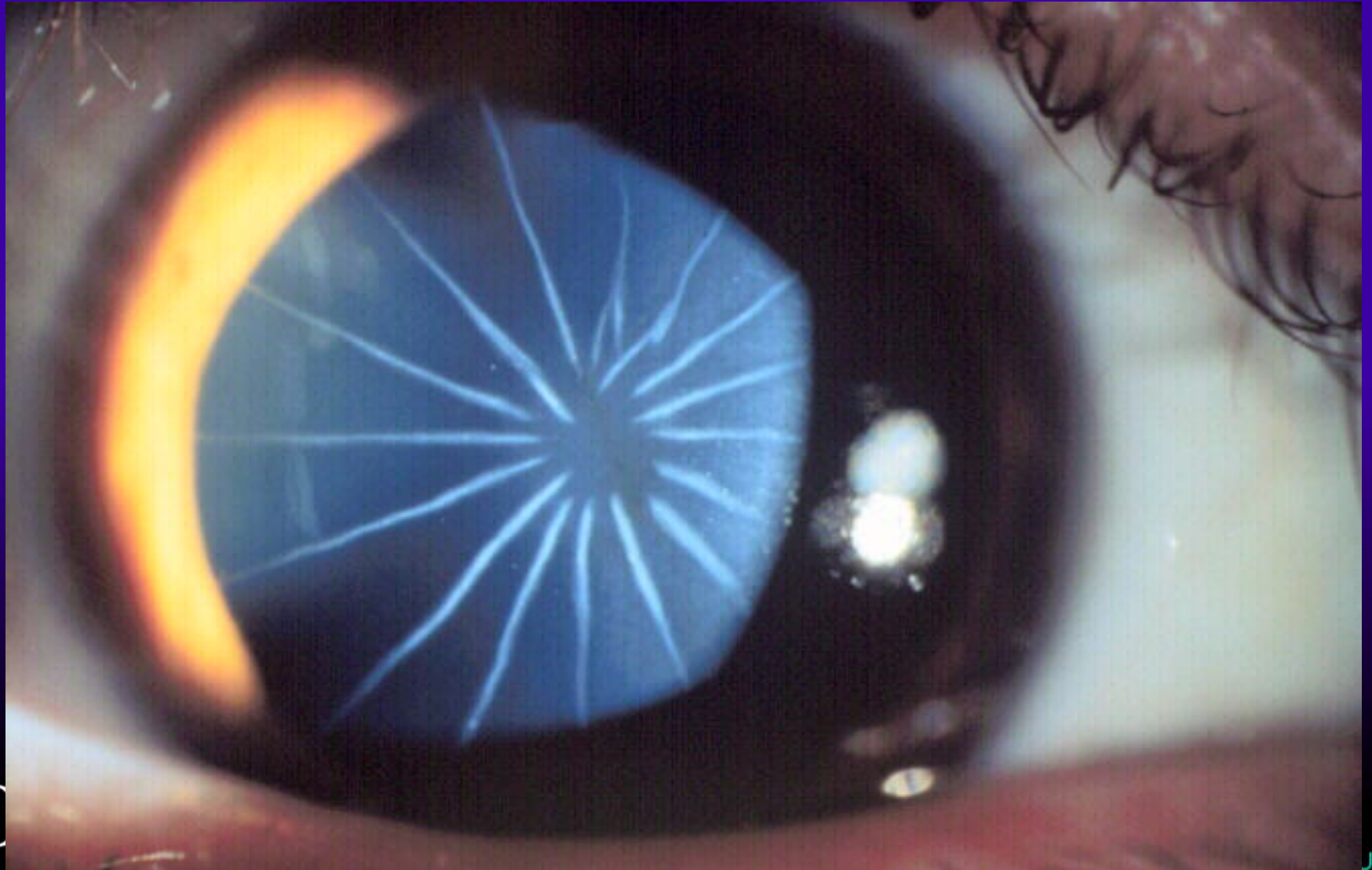
Three Shortcomings of LRI's

Irrational Exuberance

Wrong Axis

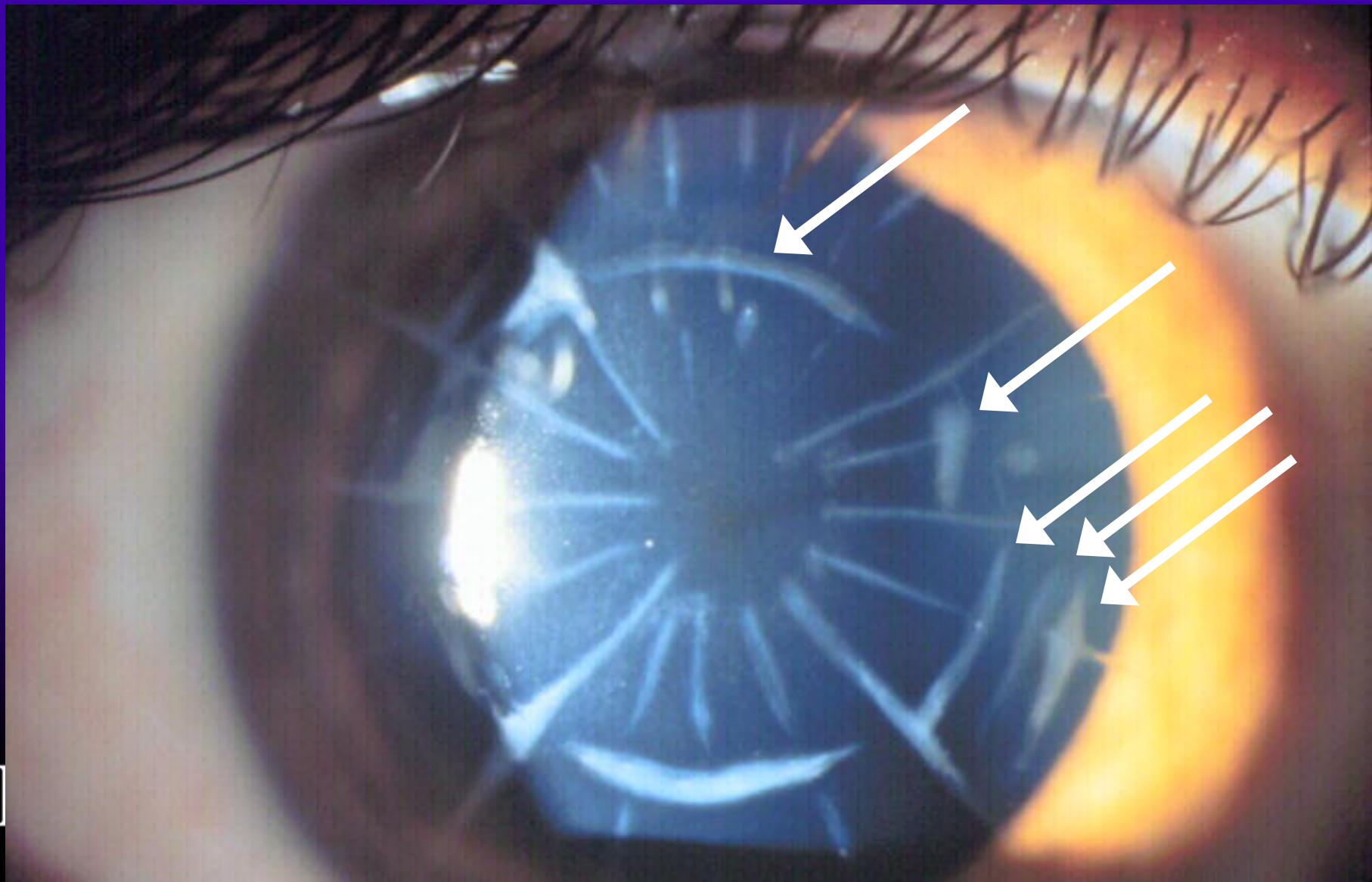
Overcorrection / Undercorrection

Irrational Exuberance



D

Chasing One's Tail



Recommendations

Find a system and try to master it

Gill's stlukeseye.com/professionals/lri_nomogram.htm

Nichamin mastel.com/pdf/napa.pdf lricalculator.com

Wallace www.eyetube.net/limbalrelaxing/

Donnefeld - DONO www.lricalculator.com

Correct tools: markers, LRI diamonds

adjustable blades – 500,
550, 600, 625, 650

Track your data, learn from prior cases

Basics

We treat the keratometry or topographic cylinder magnitude and axis

We do not treat the refraction with LRI's

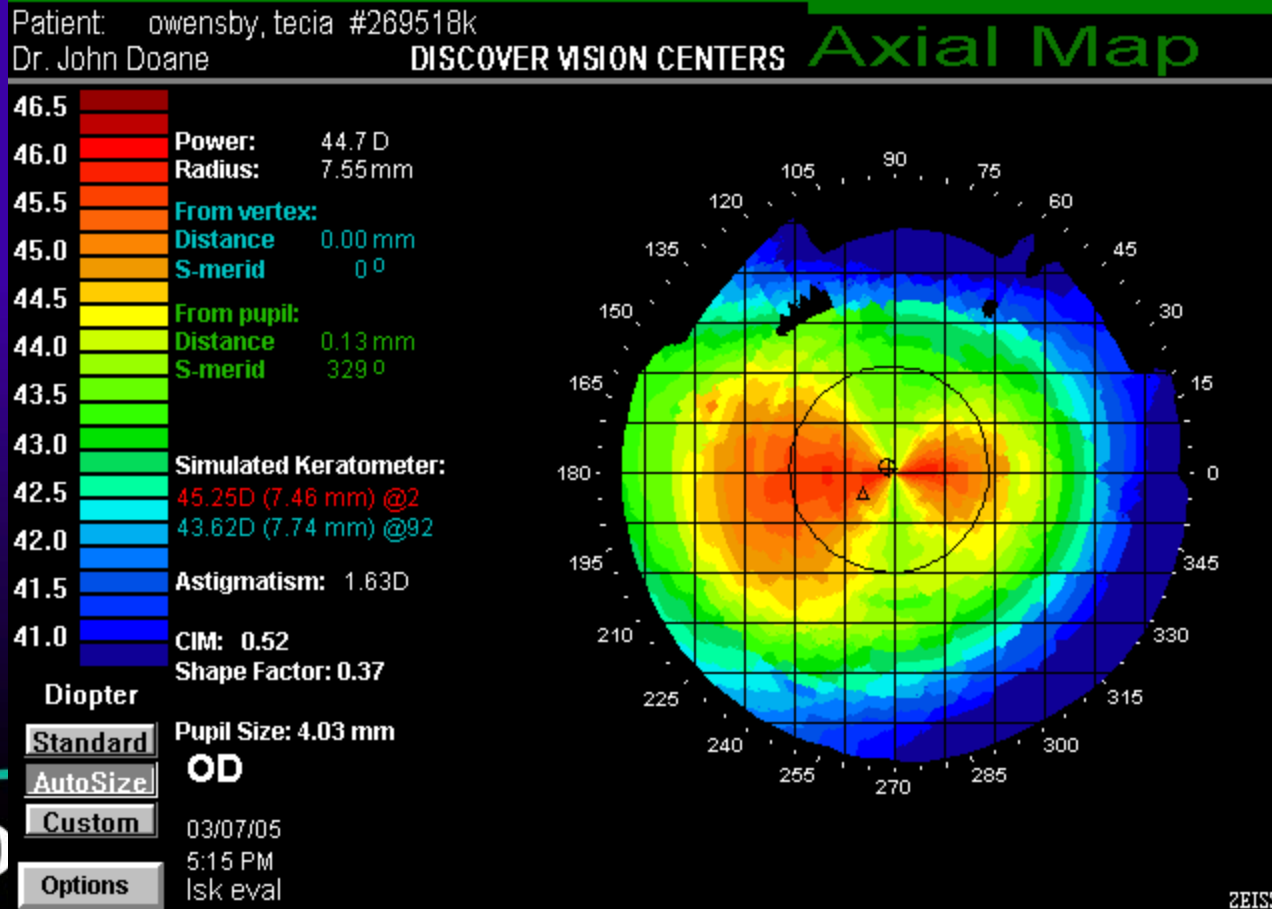
Basics

1 Diopter requires one - 6 mm LRI on the steep axis

2 Diopters requires two – 6 mm LRI on either side of the steep axis

My Toughest Case

Against the Rule Astigmatism



ATR – What to do?

2 LRI in Horizontal Meridian

Overcorrection common for me

How to deal with temporal approach?

> Superior scleral tunnel main incision?

What about two – 8 mm Horizontal LRI's?

Induced dry eye risk

Punt: A. LVC, B. Toric Presbyopic IOL

Conclusion

A “ Rational “ approach & understanding
Limits

Topography to Detect and Guide

Master an Algorithm

Review case specifics with a mentor

Watch another surgeon / eyetube /
ASCRS -eyeconnect

Thank You
For Your
Attention