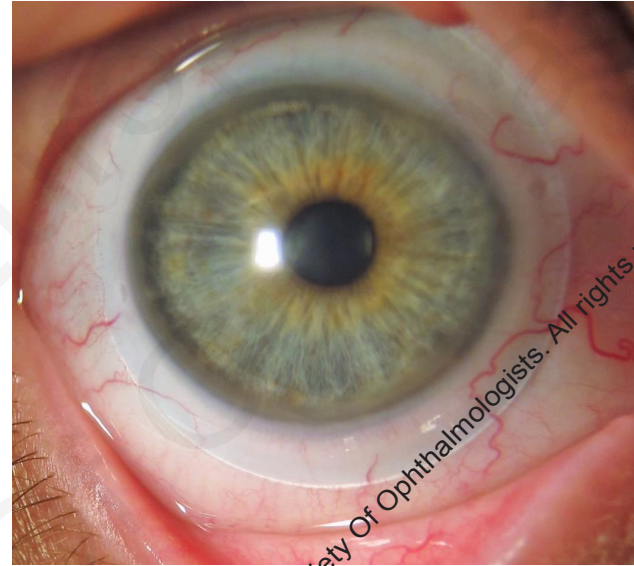


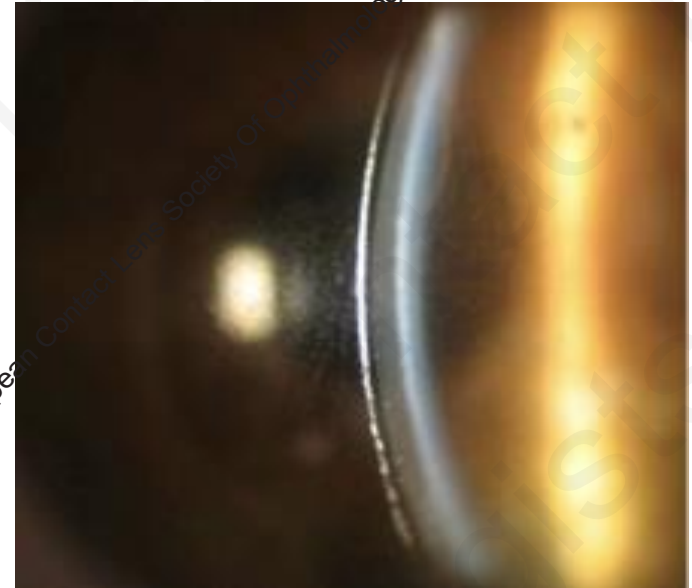
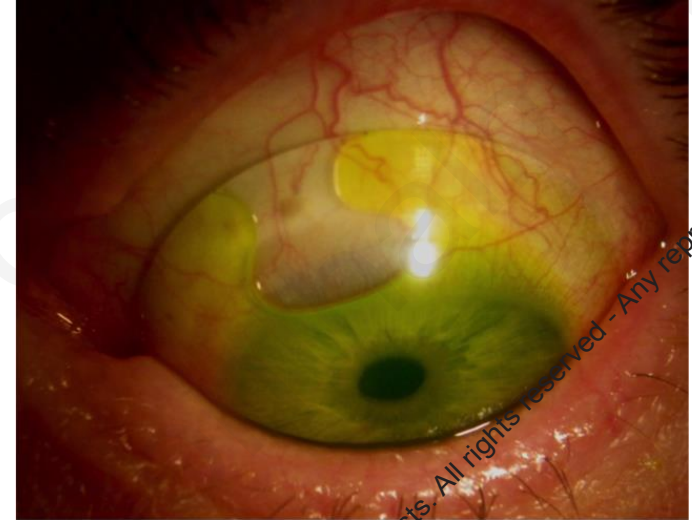
Disclosures

- **Visionary Optics**
 - Europa Scleral®
 - Elara Scleral®
- **Precision Ocular Metrology**
 - sMap3D™



Scleral Shape

- Sclera
 - Non-rotationally symmetric
 - Mismatch between lens haptic and eye create the most common fitting complications



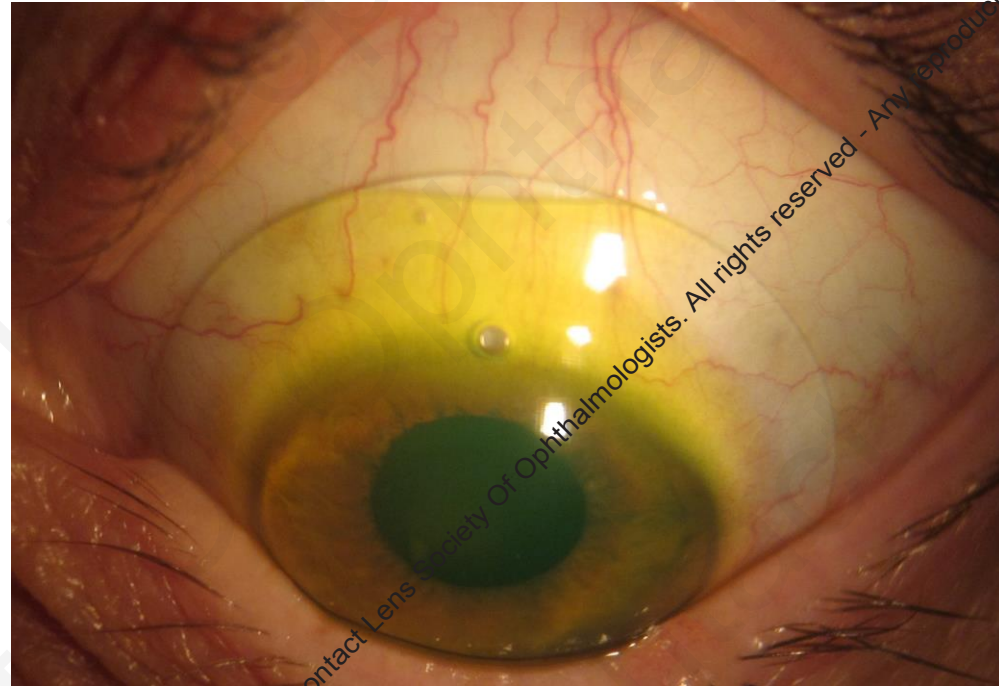
Modern Scleral Lenses Part II: Patient Satisfaction

Visser ES, Visser R, van Lier HJ, Otten, HM

Eye & Contact Lens: Science & Clinical Practice 2007; 33(1):21-25

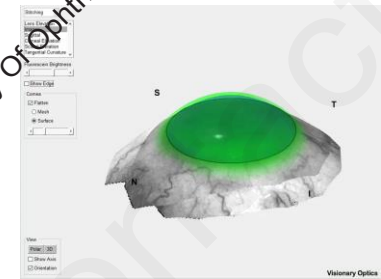
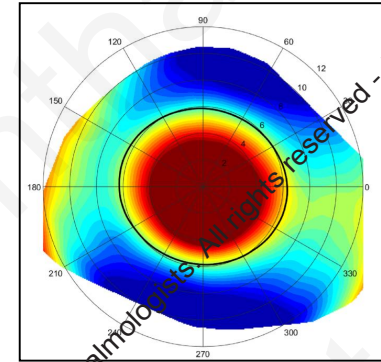
- Patients showed a preference towards back-surface toric sclerals.
- 99 eyes switched from spherical to back surface toric scleral lenses.
 - Increased Comfort
 - Improved visual quality
 - Improved overall satisfaction

Diagnostic Scleral Lenses Assessment



Topography

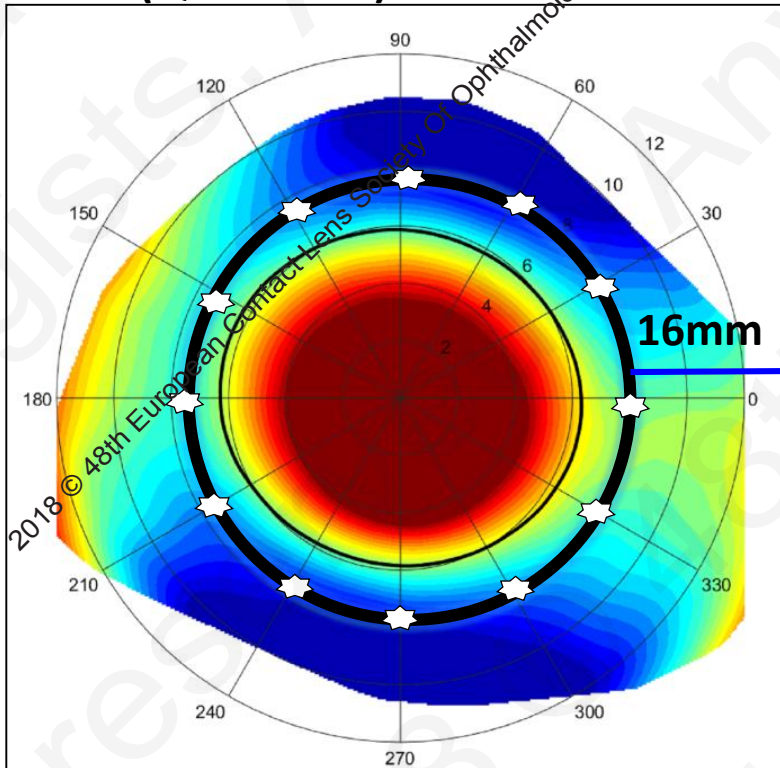
- Corneal Topography
 - Placido
 - Power maps cornea
- Corneo-scleral Topography
 - Elevation maps (shape)
 - Software for lens design



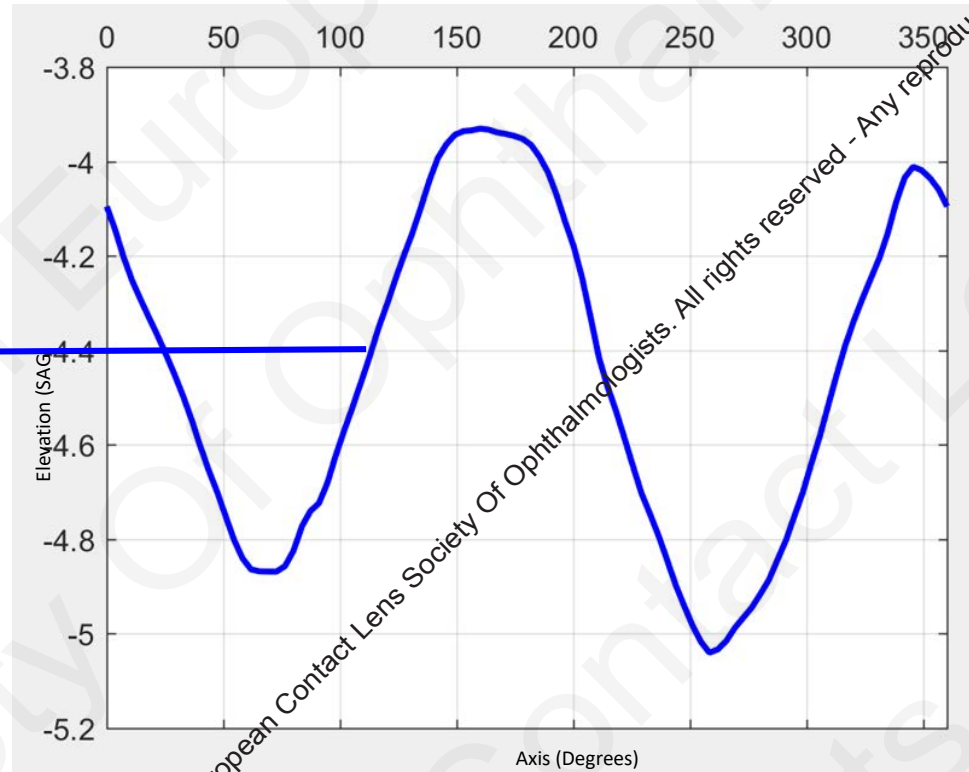
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Scleral Elevation Map (Qualitative)



Scleral Shape Plot (Quantitative)



Qualitative Assessment of Scleral Shape

- The Scleral Shape Study Group
 - Gregory DeNaeyer
 - Donald Sanders
 - Eef van der Worp
 - Jason Jedlicka
 - Langis Michaud
 - Sheila Morrison



Original Research
QUALITATIVE ASSESSMENT OF SCLERAL SHAPE PATTERNS USING A NEW
WIDE FIELD OCULAR SURFACE ELEVATION TOPOGRAPHER: THE SSSG STUDY
By Gregory DeNaeyer, OD¹, Donald R. Sanders, MD, PhD², Eef van der Worp, OD³, Jason Jedlicka, OD⁴,
Langis Michaud, OD⁵, Sheila Morrison, OD⁶

JCLRS.org

Objective: Examine new findings of conjunctival/scleral shape and to propose a new classification system for scleral shape

Sccleral Surface Patterns

**Table 1 Sccleral Surface Patterns
Observed in 140 Sccleral Lens Patients**

Group	Pattern Description	N(%)
1	Spherical	8 (5.7%)
2	Toric-Regular	40 (28.6%)
3	Asymmetric High or Low Points	57 (40.7%)
4	Periodicity different from 180°	35 (25%)

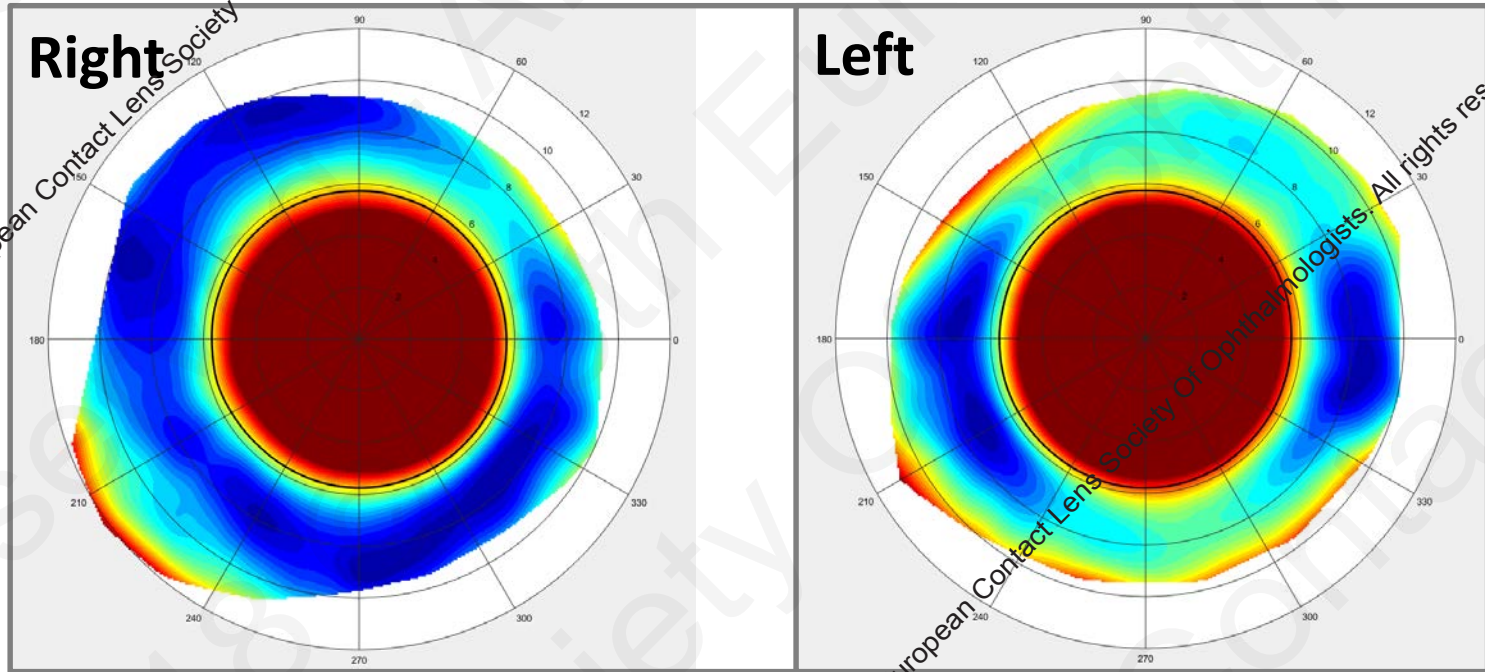
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Inter-ocular differences

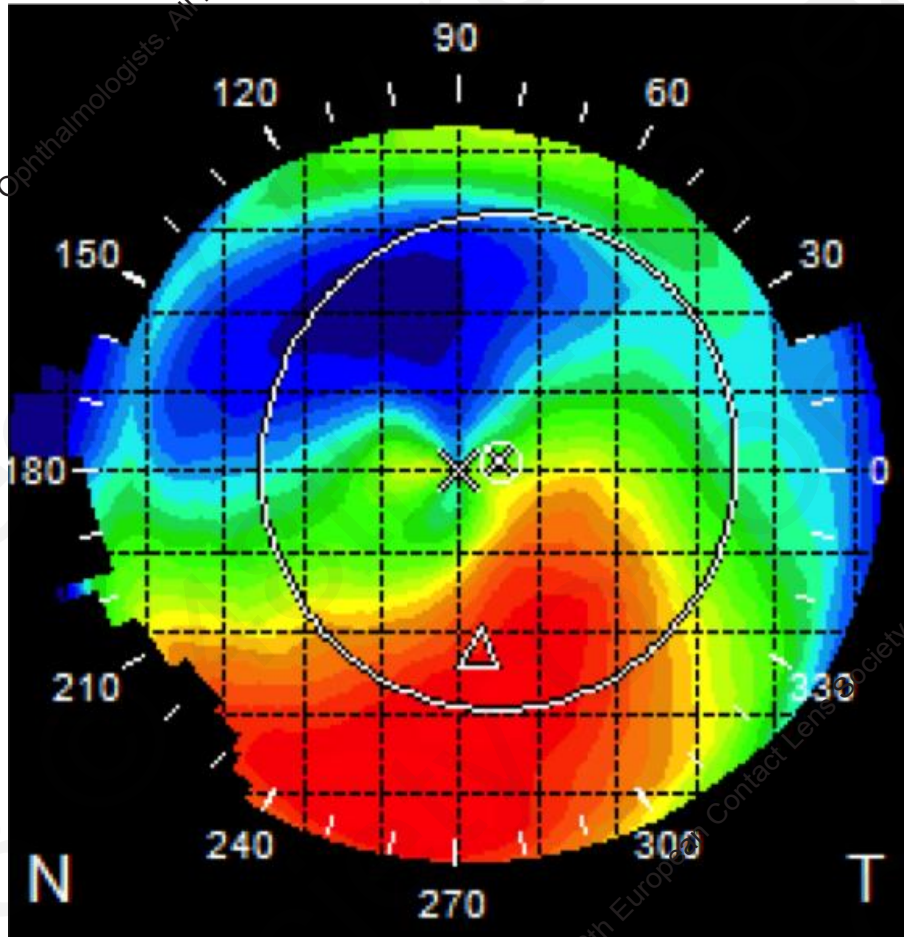
Sphere

Toric



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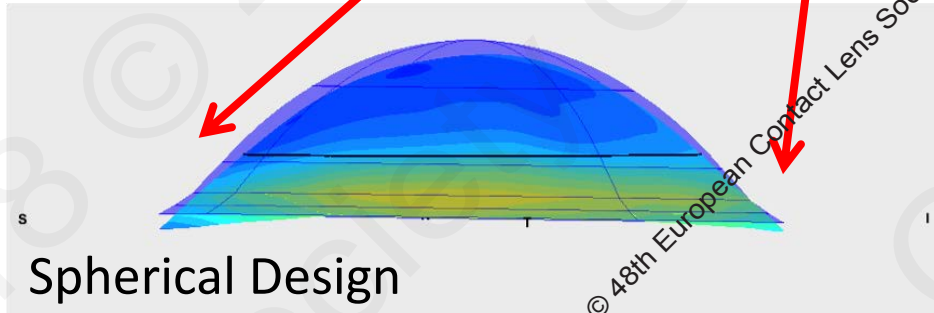
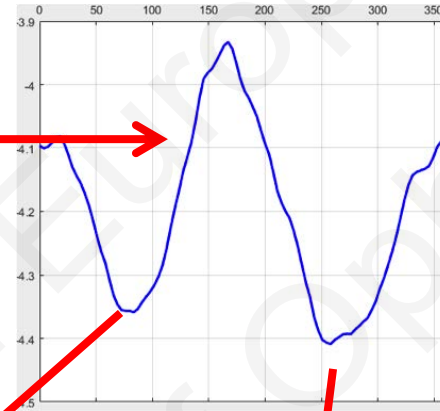
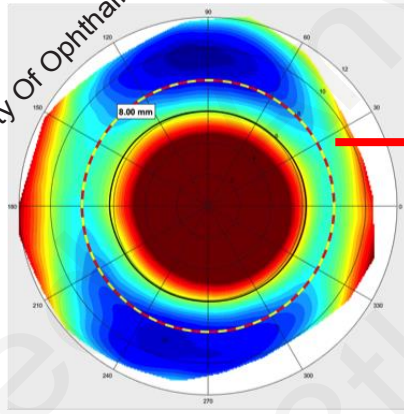
Back surface haptic toricity



Corneal Topography- Corneal Ectasia

Ectasia- Haptic Toricity

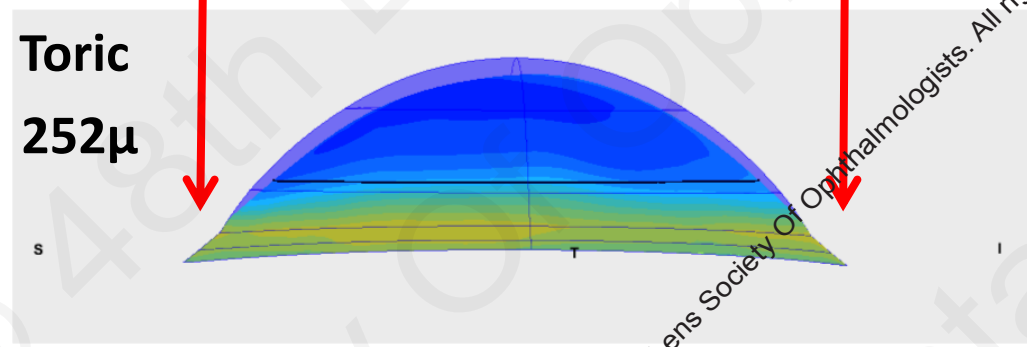
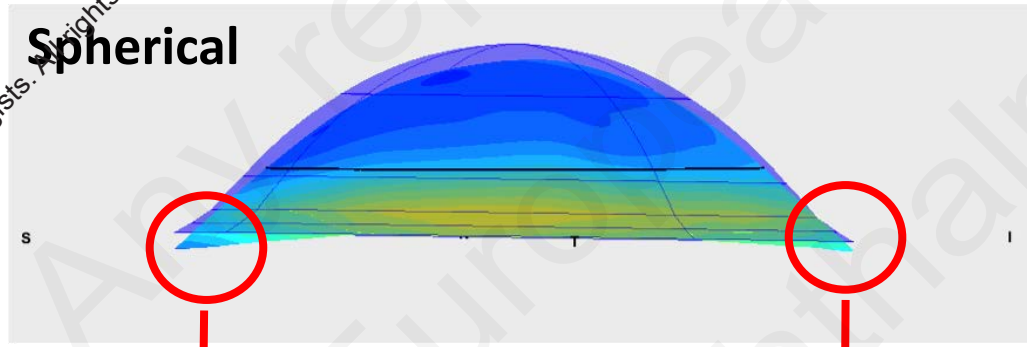
Scleral Elevation



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Ectasia- Toric Scleral Lens



SCOR -5.25 -1.00 X 075

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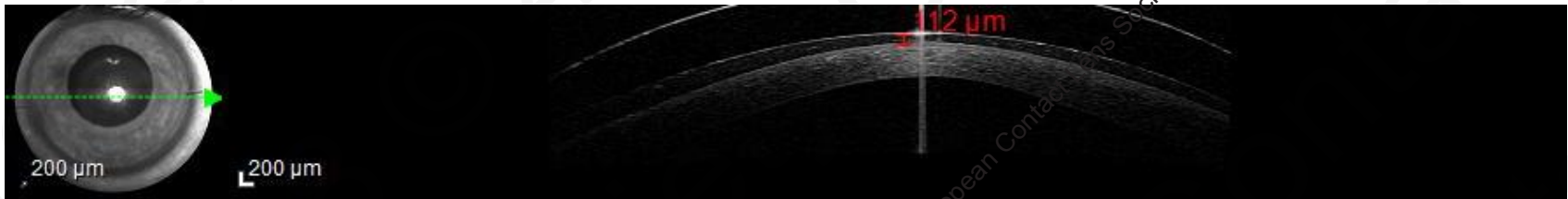
Front/Back Toricity

16.5 mm

Back Surface Toric 252 μ

Front Surface Toric

-1.62 -0.75 X 075 20/25



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Scleral Surface Patterns

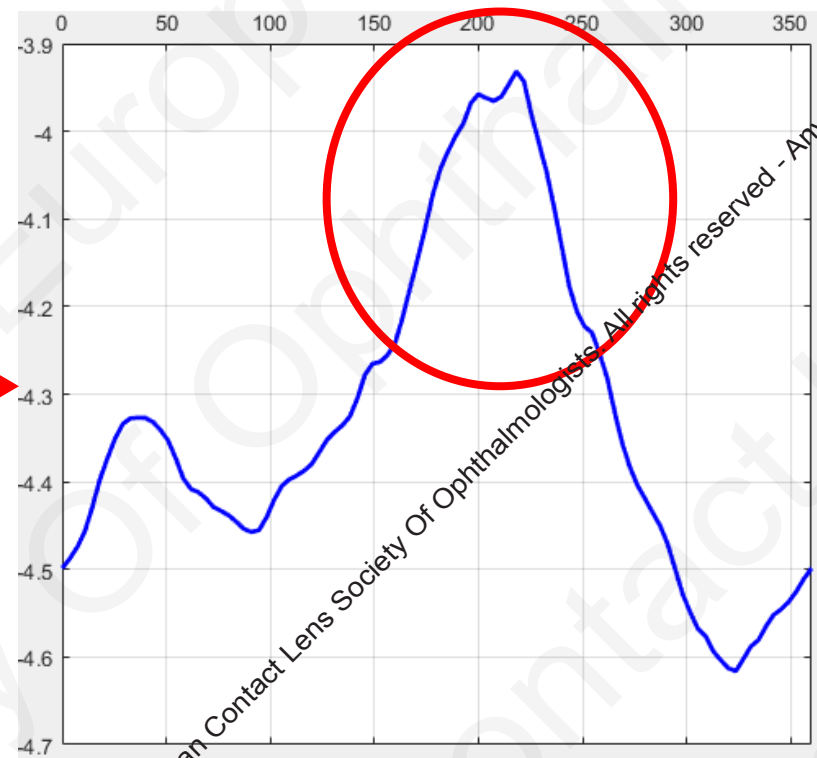
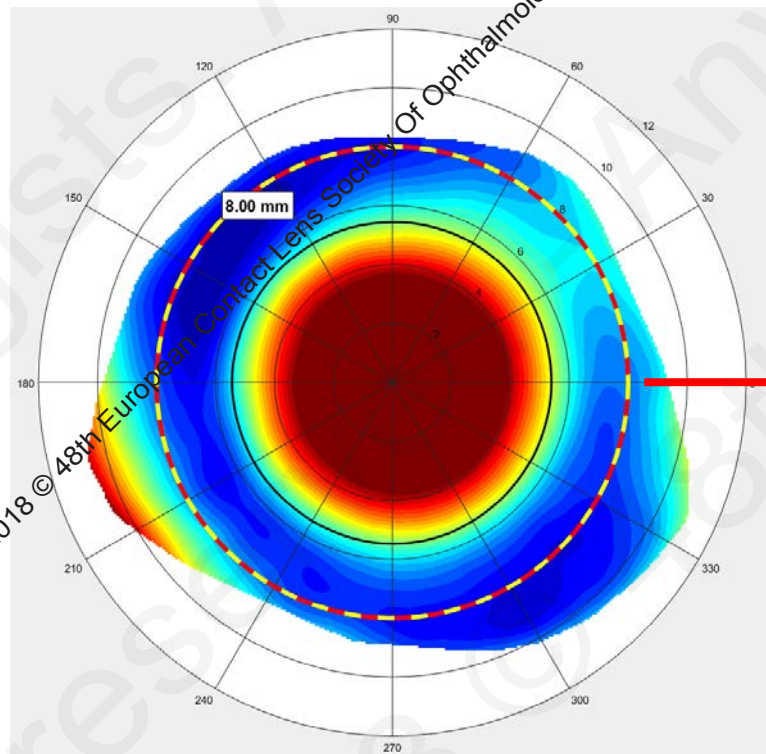
**Table 2 Scleral Surface Patterns
Observed in 140 Scleral Lens Patients**

Group	Pattern Description	N(%)
1	Spherical	8 (5.7%)
2	Toric-Regular	40 (28.6%)
3	Asymmetric High or Low Points	57 (40.7%)
4	Periodicity different from 180°	35 (25%)

65.7%

What happens when you fit an asymmetric sclera with a back toric haptic scleral lens?

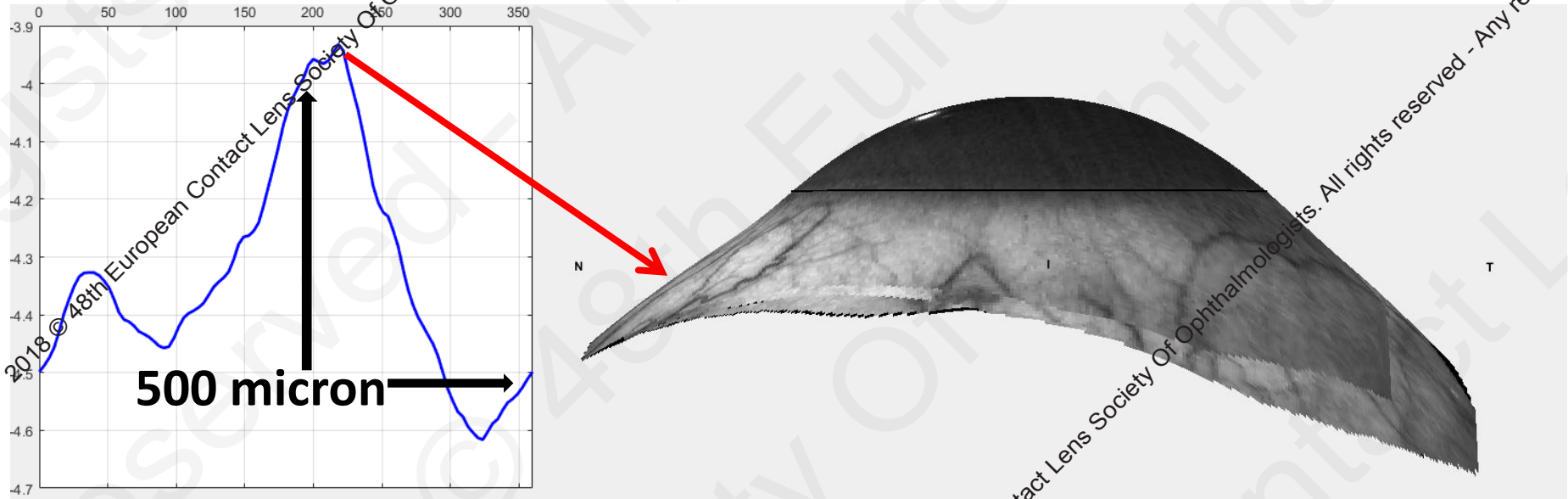
Scleral Asymmetry- Horizontal



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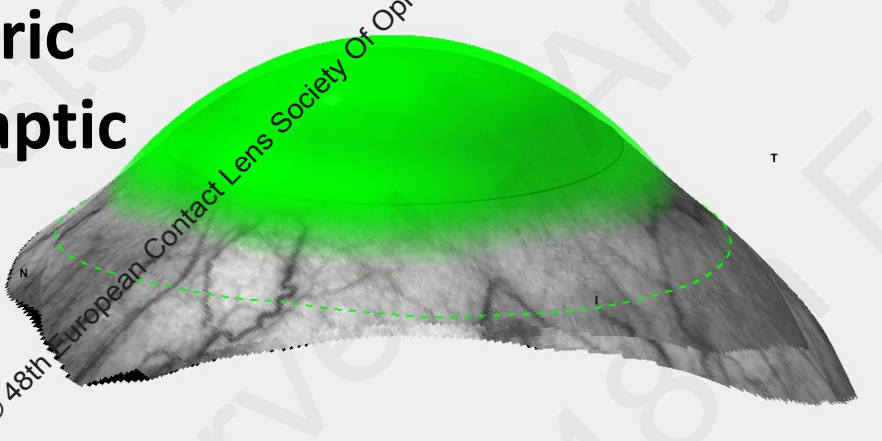
Scleral Asymmetry- Horizontal



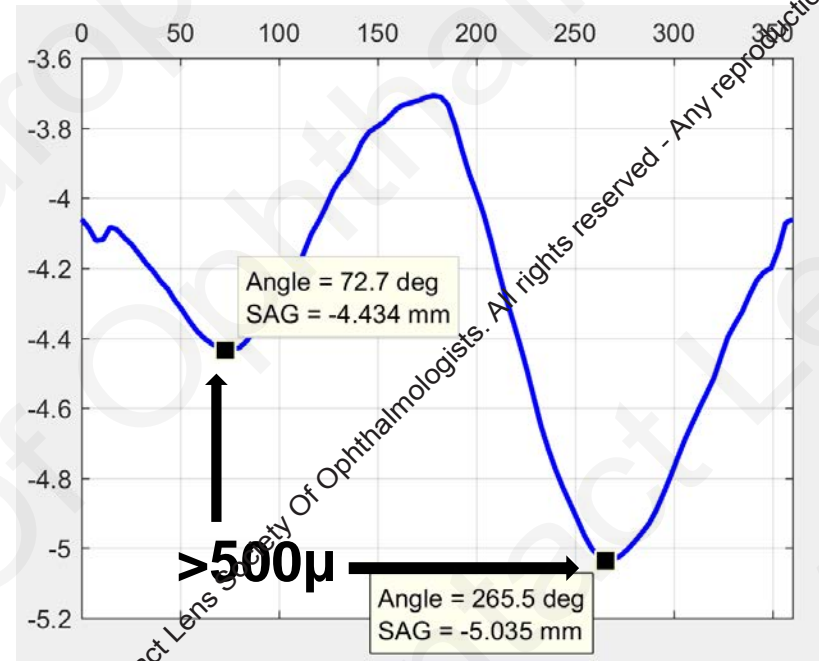
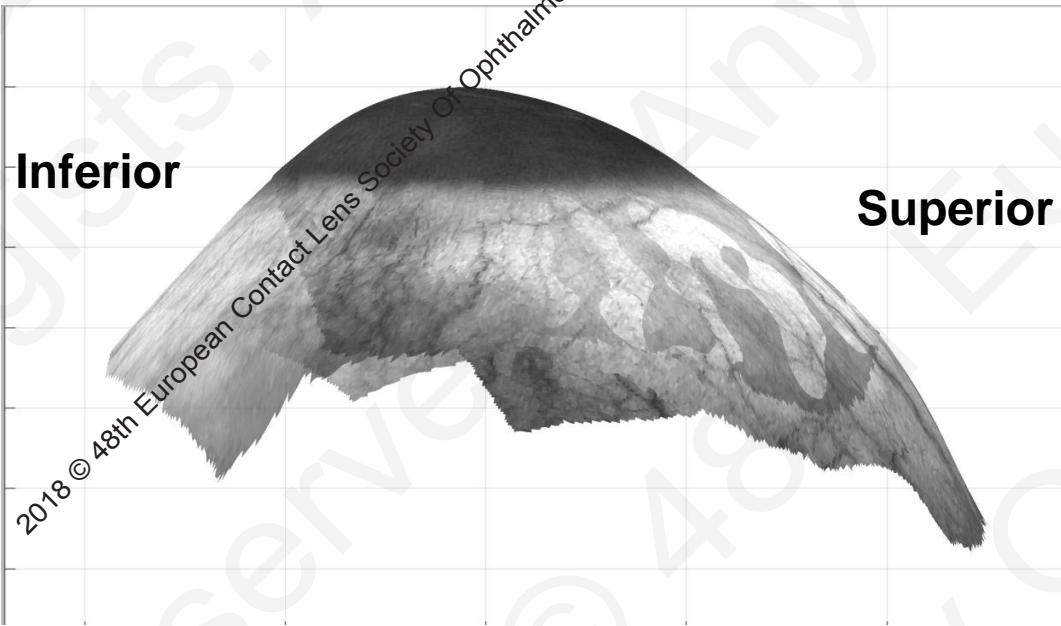
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Scleral Asymmetry- Horizontal

Toric
Haptic



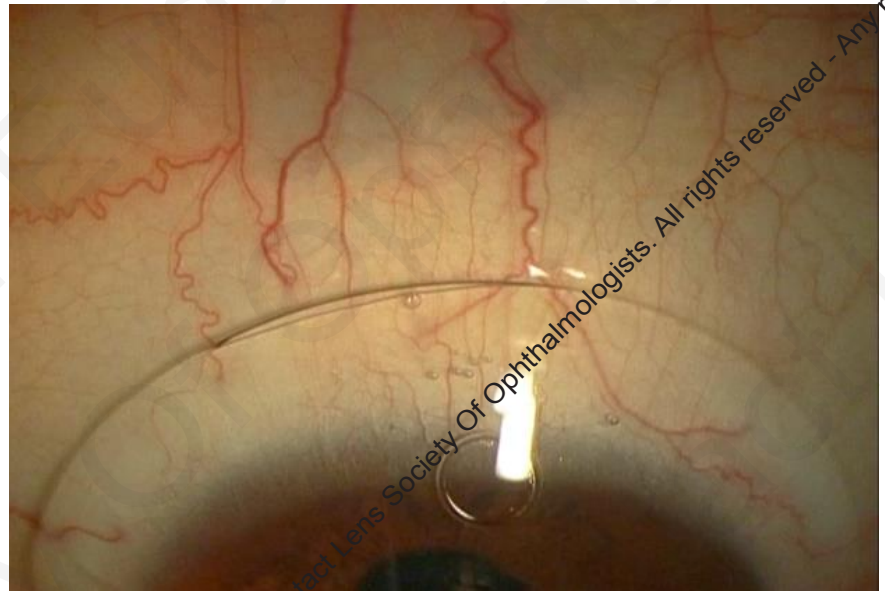
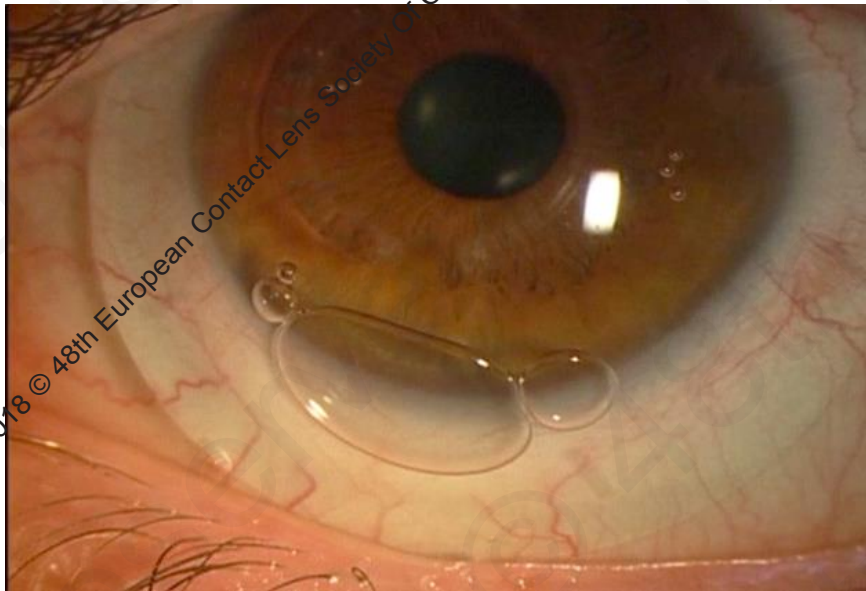
Scleral Asymmetry- Vertical



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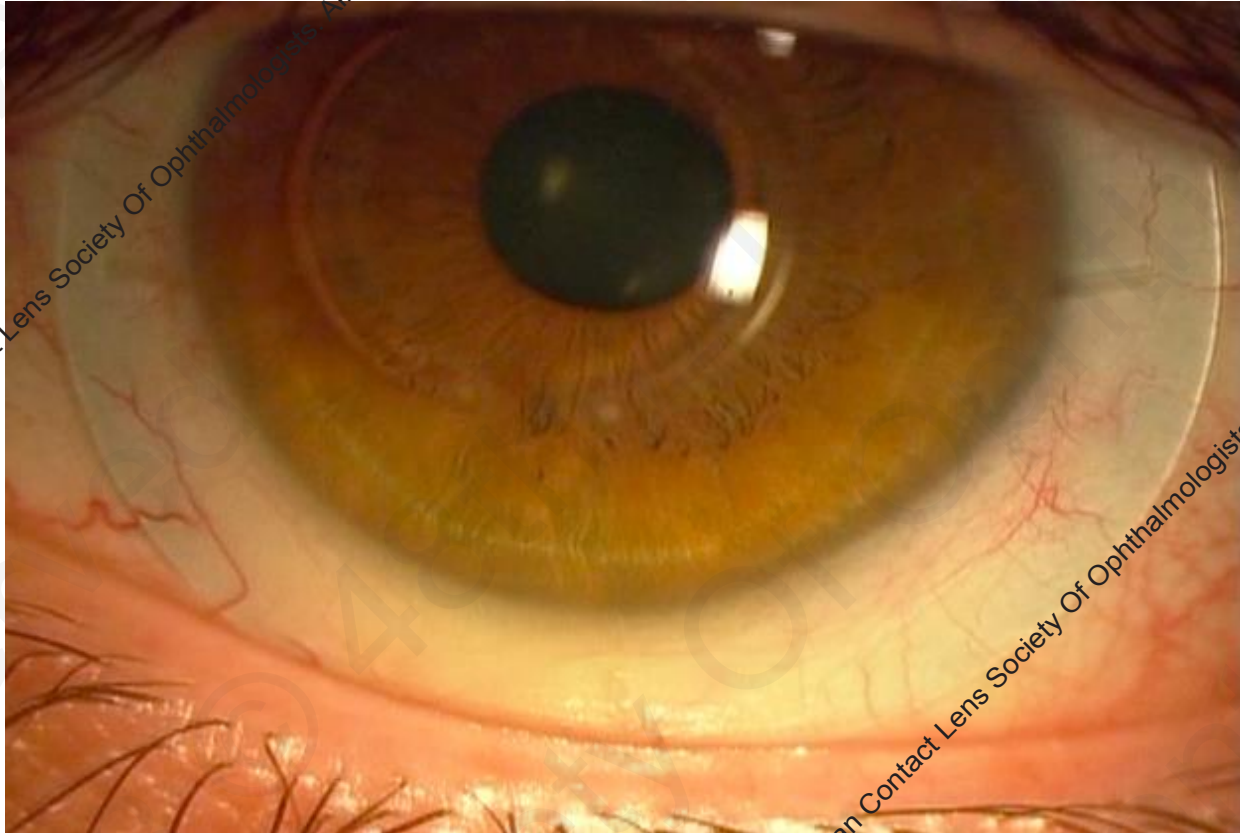
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Scleral Asymmetry- Vertical



Back Surface Toric Haptic

Scleral Asymmetry- Vertical Quadrant Specific Design



Back Toric Scleral Lenses- Conclusions

- Avoid on spherical eyes
- Ideal Toric Eyes
 - Ballast lens front toricity
 - Inter-ocular differences
 - Scleral Topography
- Asymmetric Scleras
 - Improved- Horizontal
 - Quadrant design may be needed for- Vertical

