

Scleral Topography - Why It Matters



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Financial Disclosures

- Co-Founder Dr. Contact Lens
- Co-Founder Techifeye
- Co-Founder Myopia Patrol
- Medical Advisory Board- OSRX Pharmacy
- Principle Investigator- STAAR Study
- Principle Investigator- MiSight Study
- Medical Advisory Board- Visus
- PAC- Johnson & Johnson



**Open eyes.
Open ears.
Open hearts.**


- Want to work smarter not harder
- If you want to see more of the types of patients you want to see
- If you are excited to take your practice to the next level



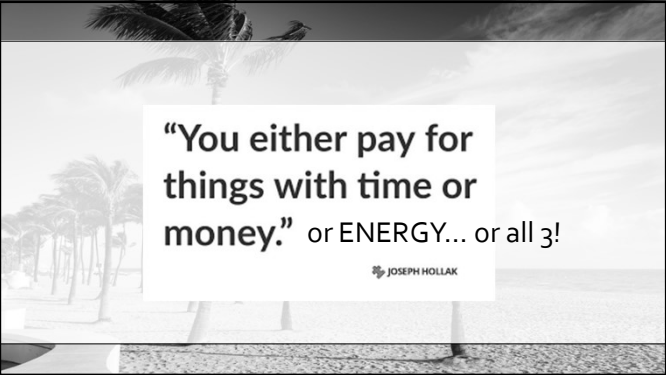
My Why




Goals



- Introduce scleral topography/profilometry
- How to simplify the scleral lens fitting process b technology
- Get and stay in the mindset of being patient centric

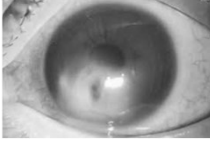



Patient Centric Care



- Starting with the patient in mind with everything you do
- Taking care of the patient from start to finish
- Innovating for the patient experience
 - This includes charging patients the right amount for what you do
- Giving them the control they are asking for and needing
 - Some patient's know how to ask, most don't or worse won't (even if they wanted to)
 - They may not even know what to ask for

Scleral Lens Uses



- Keratoconus
- Pellucid Marginal Degeneration
- S/p transplants, glaucoma surgeries
- Post op corneal ectasia - RK, LASIK, PRK
- High ametropia
- Severe Dry Eye

Poll #1

- Are you fitting scleral lenses?
 - a. Yes
 - b. No
 - c. I am dabbling
 - d. I am here to learn more

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Poll #2

- Do you own a corneal topographer?
 - a. Yes
 - b. No
 - c. Thinking about purchasing one this weekend

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Where to learn

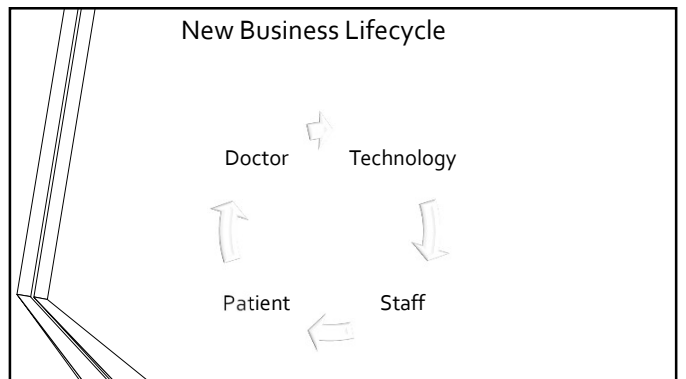
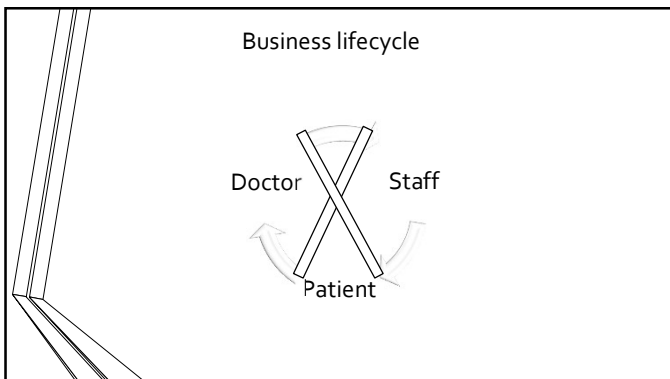
- GPLI
- Scleral Lens Education Society
- Consultants
- Conferences
- FB Groups
- Woo University

Poll #3

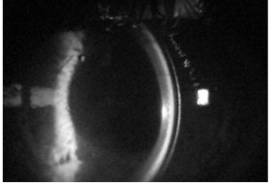
- What is your biggest pain point in your practice?
 - a. Staff
 - b. Figuring out what technology you should use
 - c. Optical pricing and sales
 - d. Adapting new technology
 - e. Patient adoption to new technology

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Scleral Lens Fitting... Start!

- Need to have patience because you have the patients
- The more you do the more experience you will have which leads to more patients
- Lean on Consultants
- Take images!



Fitting Sets


- Consultation
 - Are they readily available
 - Willing to walk through design process
- Wide array of parameters available
 - Diameters
 - Front Surface Toricity
 - Peripheral haptic toricity
 - Quadrant Specific
 - Conjunctions
 - (Microvaults, Controlled Peripheral Recess)
 - Ability to integrate with Scleral profilometry
 - Materials/coatings
 - Hydrapog
 - Prolate/Oblate
 - Multifocal



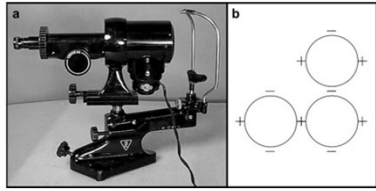
Room Setup... Do you have everything you need?



This Patient...




Who has one of these...

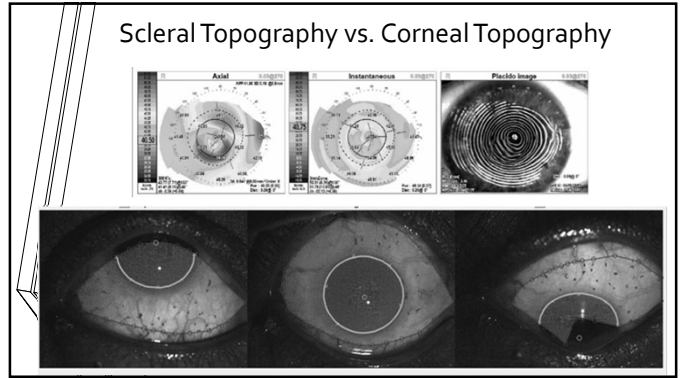
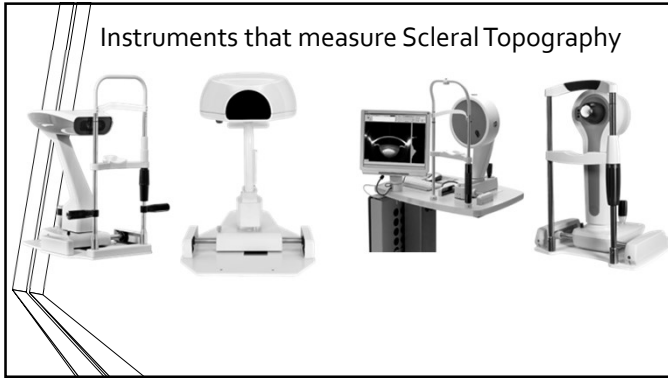


Scleral Topography and What it Can Do

ELIMINATES GUESSWORK & SAVES VALUABLE CHAIR TIME

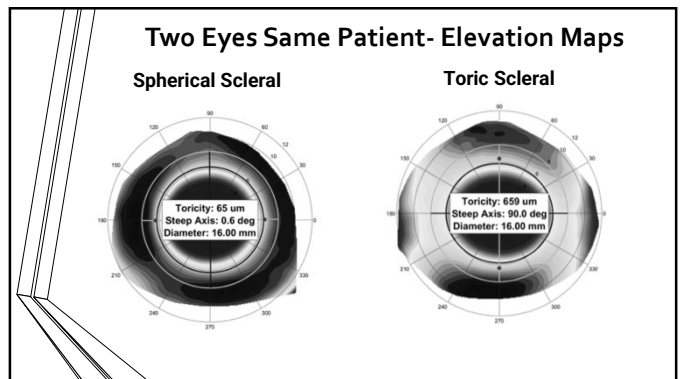
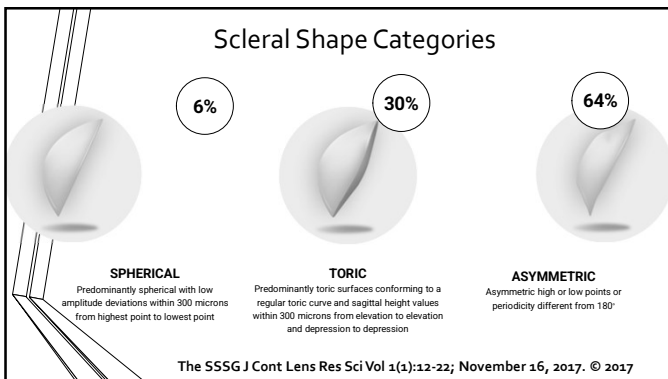


- KNOWLEDGE & DATA DRIVEN**
 - Combines multiple gaze directions into a complete model of the ocular surface
 - Minimizes eyelid interference
- INNOVATIVE TECHNOLOGY**
- NON-INVASIVE SURFACE MAPPING**
- ENHANCED VISUAL ASSESSMENT**
- ADVANCED CUSTOMIZATION**



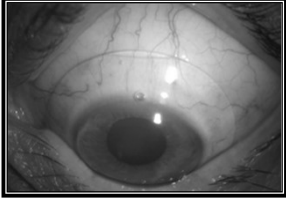
5 Things I wish I knew about Scleral Topography

#1 How TORIC the sclera actually was and how this can make or break a fit

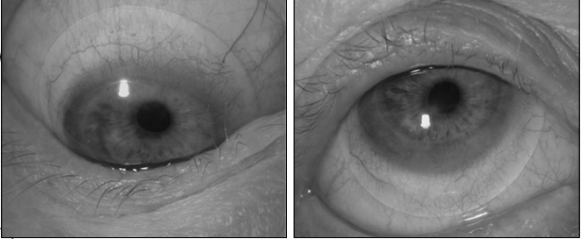


Landing Zone Mismatch of a Toric Sclera

- **Fitting**
 - Edge lift
 - Uneven compression
- **Symptoms**
 - Discomfort
 - Decreased wearing time
 - Midday Fogging
- **What Happens**
 - Fluid exchange under the lens and accumulation of tear and metabolic debris

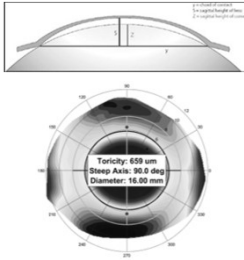


Spherical Landing Zone on a Toric Sclera



Data Provided by Scleral Mapping

- **SAG** **Sagittal Height of the Eye**
Can measure the sag of the eye at any diameter, along with the sag at any individual point(s).
- **TPC** **Scleral Toricity – HOW MUCH**
Knowing exactly how much toricity is required will help to eliminate potential under or over correction of scleral toricity; cutting back on remakes.
- **TPC** **Scleral Toricity - WHERE**
Knowing exactly where the steep axis of scleral toricity is will assist in rotationally stabilizing the lens and ensuring front toricity is manufactured correctly.



Lens Diameter and the Sclera

- The further away from the limbus, the greater the variability in scleral shape.
- The larger the diameter the more you will need toric peripheral curves.

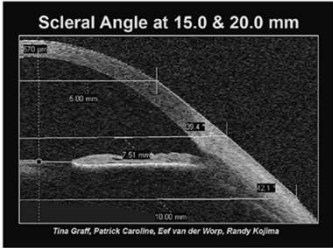
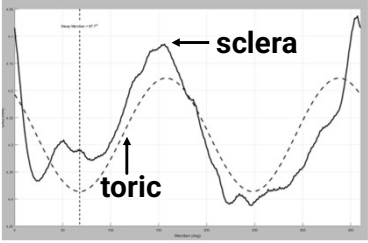



Figure 3. The Pacific Scleral Lens Study measured the scleral angles at chords of 15mm and 20mm.

Matching the Toric Landing Zone

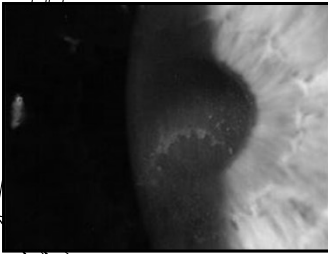


Matching the Toric Landing Zone

- Efficiently identifying and precisely matching the scleral toricity from measurement allows for:
 - Alignment
 - Comfort
 - Decrease in remakes
 - Less office visits

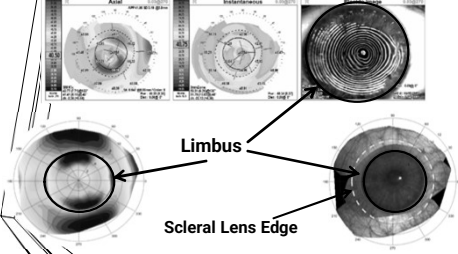


Case: S/P Lasik with Central Toxic Keratopathy



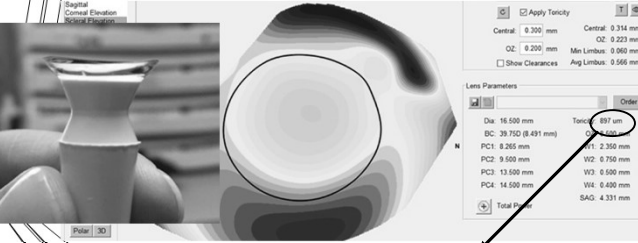
- Rare, acute, non-inflammatory complication after LASIK
- Causes:
 - photoactivation of povidone-iodine by the excimer laser
 - laser-induced keratocyte apoptosis of corneal matrix
 - Intraoperative exposure to meibomian gland secretions
 - Marking pen ink
 - Talc from latex surgical gloves
 - Post-surgical debris from the microkeratome blade
- Signs typically begin on post-operative day 2-6 with
 - diffuse lamellar keratitis (DLK) on post-surgery day 1 or 2
 - Followed by dense opacification of the central corneal stroma
- CTK is centralized and extends anteriorly or posteriorly from the interface vs DLK
- Creates Hyperopic shift and irregular astigmatism

Corneal vs. Corneal-Scleral Topography



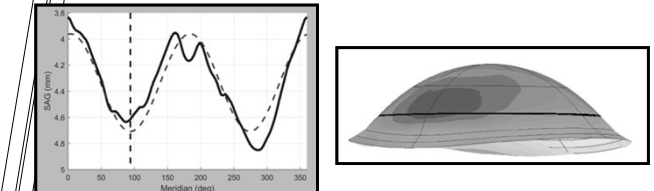
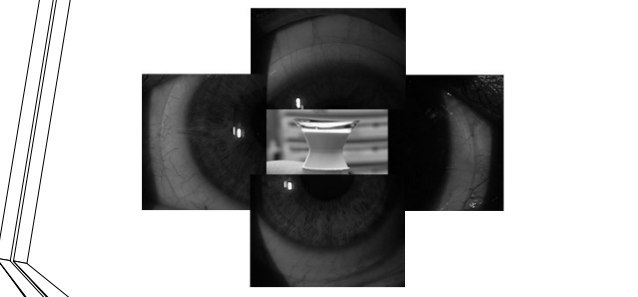
- Pre-op Refraction:
 - OD: +2.75-5.00x005 20/2
 - OS: +1.75-5.00x170 20/20
- Post-op Refraction:
 - OD: +4.00-2.50x180 20/100
 - OS: +0.50-0.50x146 20/20

Scleral Topography



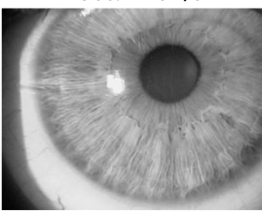
897 microns

Scleral Toricity | Almost 700µ at Lens Edge

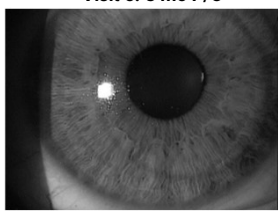
Where is he now?

Visit 3: 2 mo P/O



OD: +3.50-0.50x170 20/20

Visit 5: 3 mo P/O

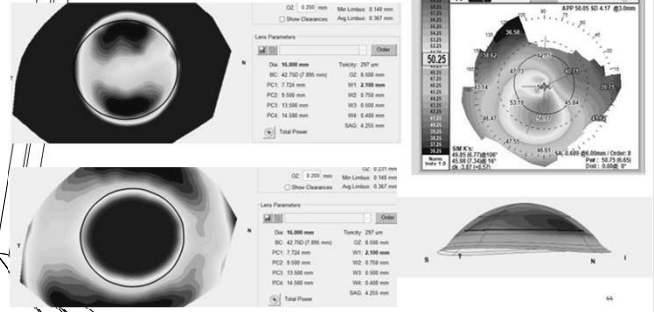


OS: +3.50-0.50x170 20/20

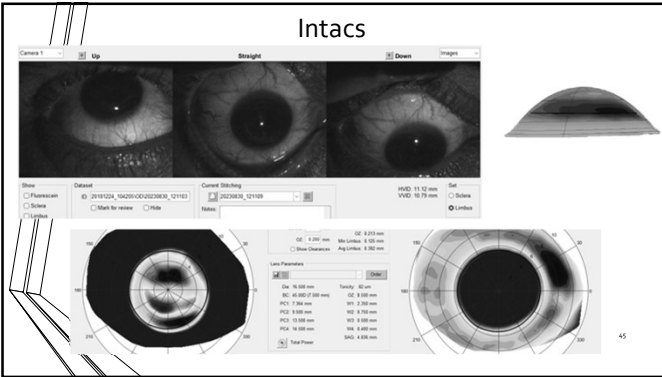
CTK Treatment

- Commonly mistaken for DLK onset is key to diagnosis
- Due to non-inflammatory nature steroids are avoided
- Typically resolves spontaneously at 18 months
- Copious lubrication
- Manage refraction
- Serum tears inside scleral lens
- Patient resolved and is now in a single use soft lens 4 months post op

Central Cone

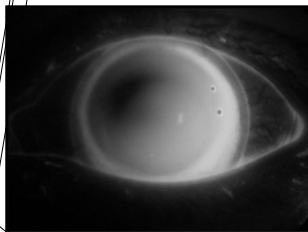


Intacs



#2 | The ever-dreaded DECENTRATION

Scleral Lens Decentration

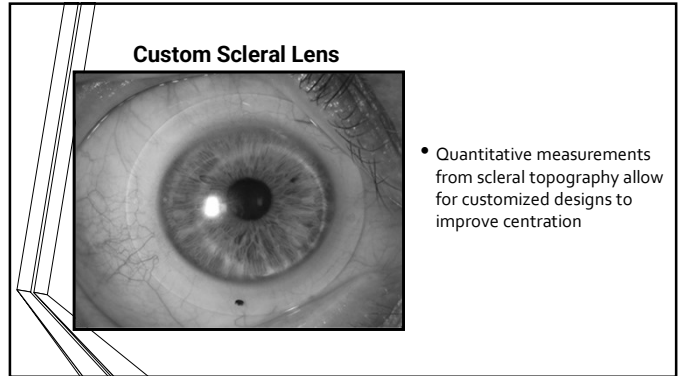
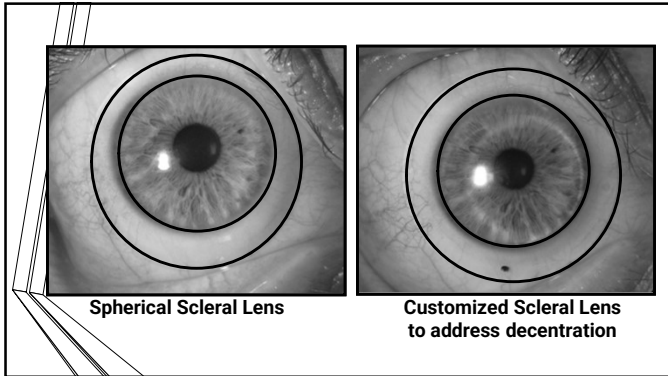


- Results from mismatch between the scleral LZ and the ocular surface
- **Fitting**
 - Inferior-nasal decentration
 - Increased HOA
- **Symptoms**
 - Decreased comfort
 - Decreased vision

Superior

Inferior





Elevate Your Fitting

- Quadrant-Specific & Toric Haptic fitting sets
- Resolves DECENTRATION Complications
- Quantifying Fitting Challenges
- User-Friendly Markings & Labeling

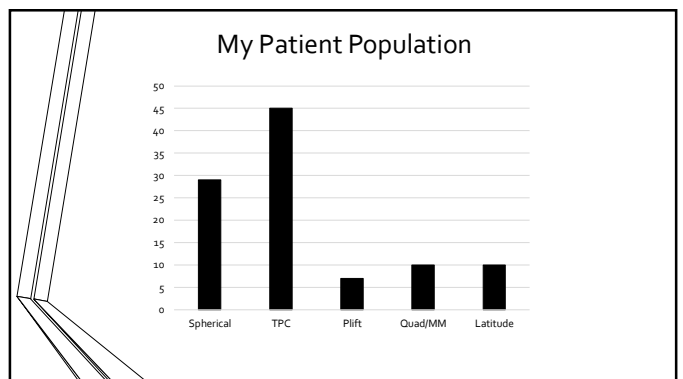
<p>QUADRANT TORIC HAPTIC</p> <p>46(7.34)</p> <p>45(6)</p> <p>0</p> <p>20(4)</p> <p>Hashmarks at 3, 6 & 9 + back dot at 6</p>	<p>LENSES Q15-Q22</p> <p>LENSES T7-T12</p> <p>Base Curve D (mm)</p> <p>Sag (µ)</p> <p>Sphere Power (D)</p> <p>Toric haptic (µ)</p> <p>Hashmarks at 12 & 6 (STEEP axis)</p>
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#3 To customize or not to customize? That is the question.

Poll #4

- What percentage of patients need a fully customized lens?
 - 10-20%
 - 50%
 - 75-100%

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Method Behind The Match

Universal Scleral Lens

Custom Scleral Lens

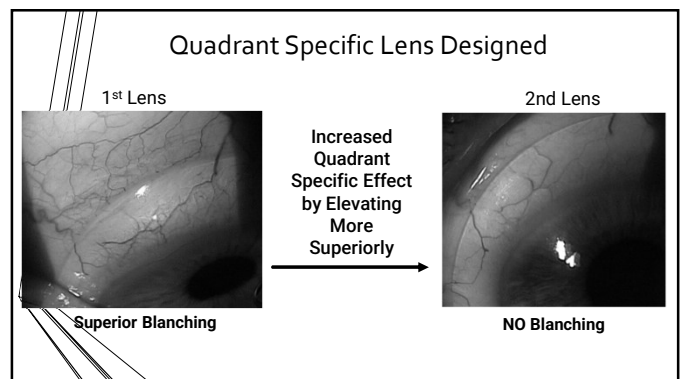
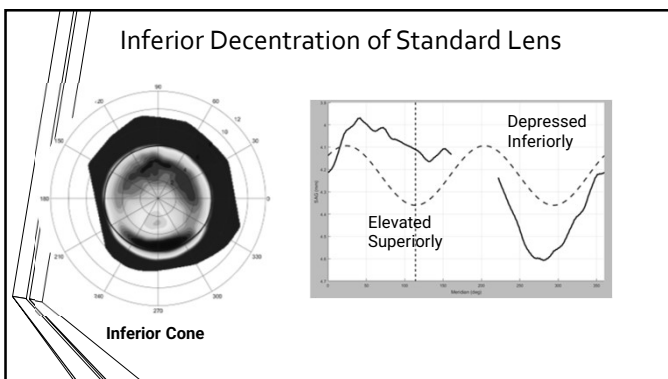
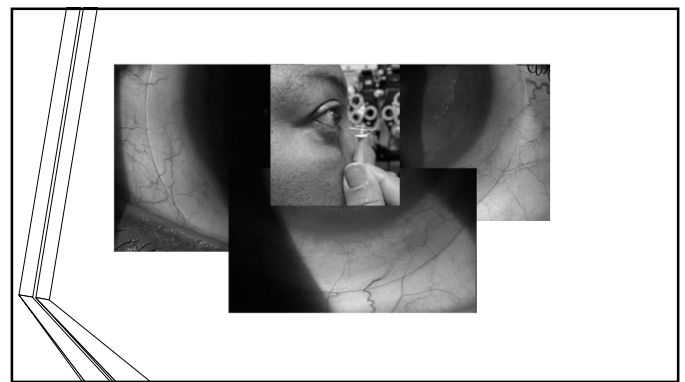
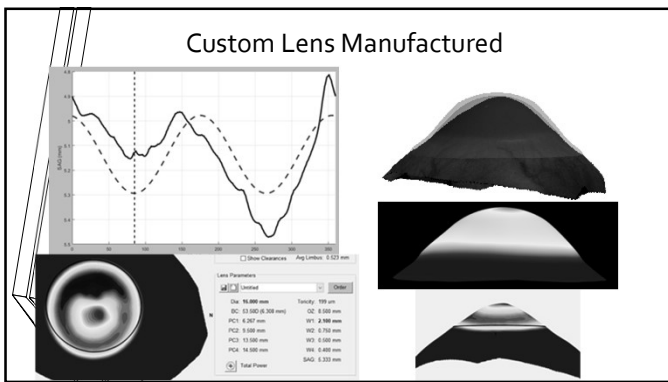
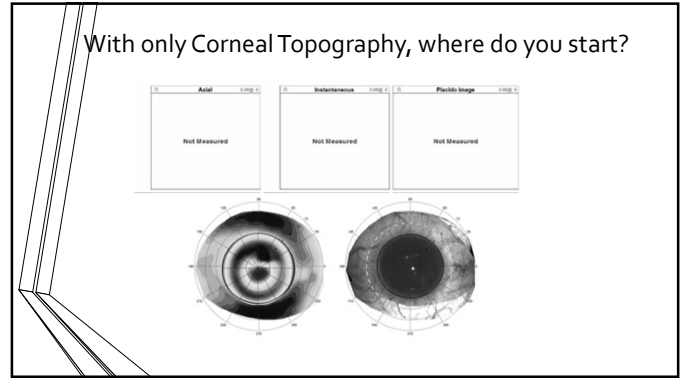
Key Takeaways

- Don't **overcomplicate** fits – unless topography data or clinical observation warrant it
 - Stick to as basic as possible
- Even without scleral topography you can observe and reiterate your findings to your consultant
- **Match patients with the best lens possible for them!**

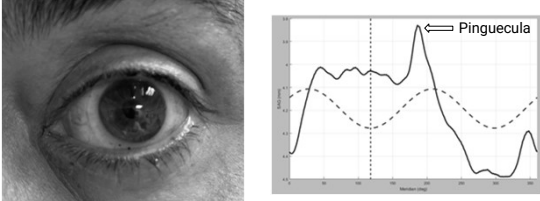
Corneal vs. Corneal-Scleral Topography

Labels: **Limbus**, **Scleral Lens Edge**

Poor Peripheral Fit to a Toric PC | Latitude Used



Pinguecula Nasally Plus Irregular Scleral Shape | Latitude Ordered

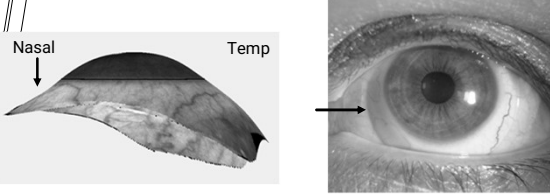


The image shows a clinical photograph of a patient's eye with a pinguecula on the nasal side. To the right is a topographic map of the sclera, showing an irregular shape with a prominent peak on the nasal side labeled 'Pinguecula'.

Customized Lens Ordered & Dispensed



The image shows a customized scleral lens held in a lens holder next to a clinical photograph of the patient's eye, demonstrating the lens's fit.

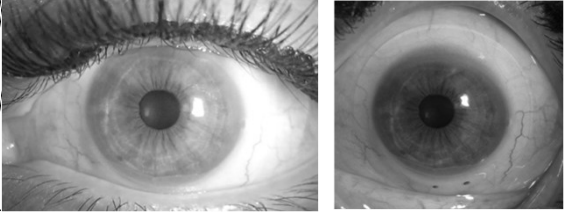


Nasal Temp

Patient failed with a 200 μ toric haptic scleral secondary to impingement

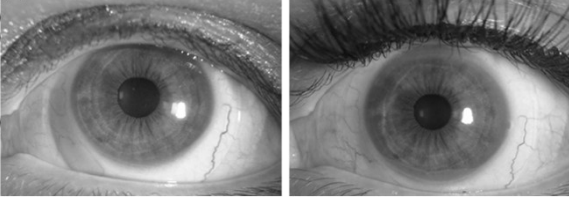
The image shows a diagram of a scleral lens with 'Nasal' and 'Temp' labels. To the right is a clinical photograph of the patient's eye showing a crack in the sclera. Below the images is a text box stating: 'Patient failed with a 200 μ toric haptic scleral secondary to impingement'.

Customized Lens



The image shows two clinical photographs of the patient's eye, demonstrating the scleral lens in place.

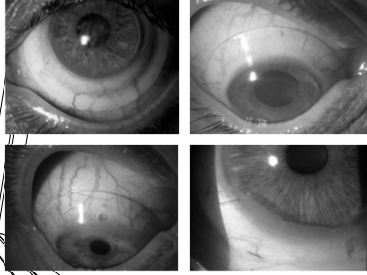
Customized Lens



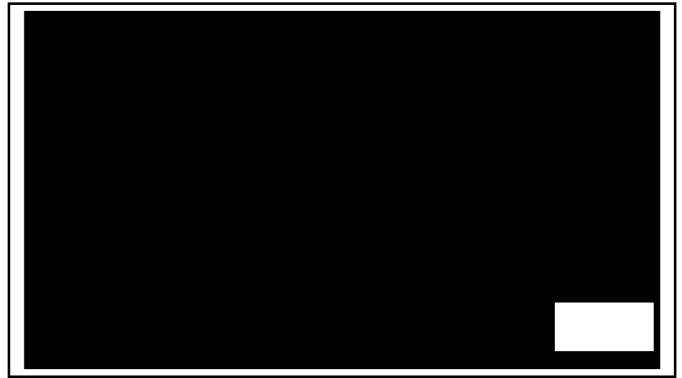
The image shows two clinical photographs of the patient's eye, demonstrating the scleral lens in place.

#4 | I got 99 problems...
But the scleral is not one

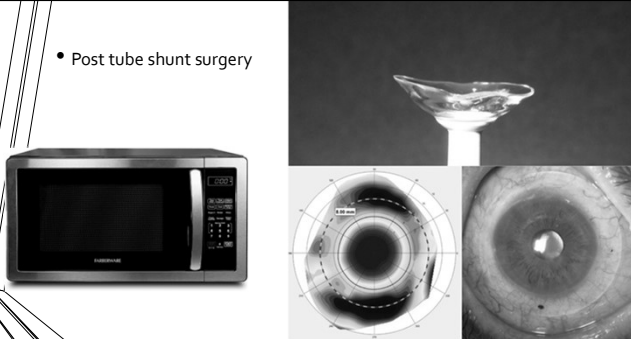
Fixing the scleral landing zone



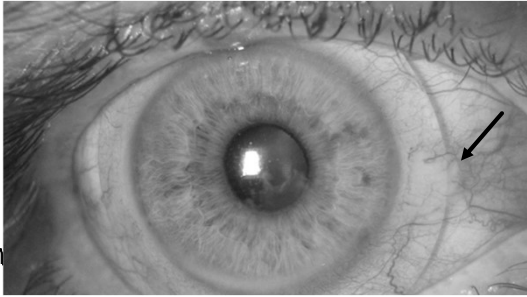
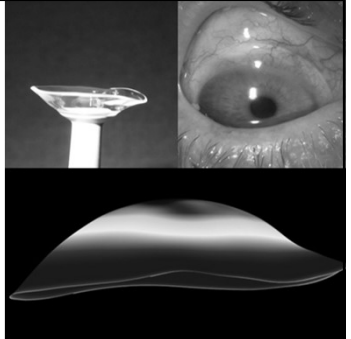
- Relieves:
 - Blanching
 - Edge lift
 - Discomfort
 - Fogging
 - Rebound redness
 - Conjunctival prolapse
 - Tear debris



- Post tube shunt surgery



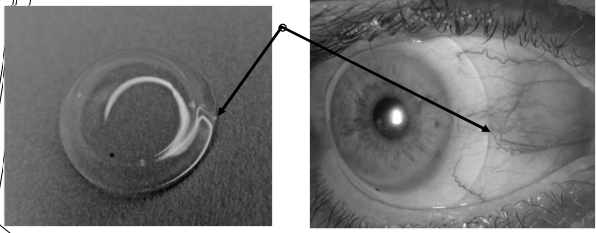
- Dry Eye
- Post- Trabeculectomy




Pin

16mm Scleral Lens with spherical landing


Custom Landing Zone




#5 | Time is money.



Before Scleral Mapping...




#6 | Bonus round:
Charge for your time & expertise



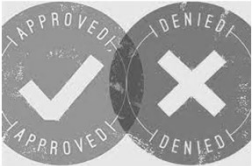
Booking the Appointment

- Who is paying?
 - VCPs
 - VSP/Eyemed/Spectera/Versant
 - Medical Insurance
 - Medicare/BCBS/Aetna/Cigna/etc
 - Patient
 - Private pay
 - Financing - Care Credit, Sunbit, Scratchpay




Verifying Benefits - VCP

- Medically Necessary CL Benefits
- What are requirements
- How do you bill
 - Pre Auth?
 - Specific form vs CMS vs online portal
 - What diagnosis, modifiers
- Typically global reimbursement schedule
 - Includes all visits and materials



Medical Insurance

- Need to verify what is covered
 - Office visit
 - Diagnostic Testing
 - Materials
 - All are billed separately
 - Many will cover OV and Diagnostic testing, but not materials
- Medicare - DME provider
 - Pay a fee, able to bill materials



Under Promise, Over Deliver

- Block 30mins-1 hour for first evaluation
 - Topography
 - Refraction
 - Slit lamp (with dyes)
 - Scleral Diagnostic Evaluation
- Expect several visits, with several changes
 - Set expectation that this is normal and to be expected
 - Can take time to adapt
 - Scleral Profilometry may help!
- Teaching
 - Review proper I/R, cleaning/conditioning/disinfection
 - Video on Scleral Lens Education Society website
 - Recomm specific products -> sell in office
 - But still readily available for patient to purchase by other means
 - Practice web store
 - Available at other stores
 - Advised normal to take over an hour initially to do I/R, keep practicing, can take weeks/months to improve, but everyone does

Under promise and over deliver

Don't forget about...

Gas Permeable (GP) Hybrid Scleral

Insertion and Removal Techniques

- Watch your patient's and discuss at every visit
- Discuss cleaning and solutions
- Discuss complications and what to avoid
- Upon removal insert a couple of drops of saline to loosen lens, push up with lower lid

Poll #5

- What do you feel is your biggest threat in optometry?
 - a. Market consolidation
 - b. Online retailers
 - c. Competing with cost of goods and services
 - d. Vision plan reimbursements
 - e. Vision plans competing for patients

Profitability Pearls

- Be up front with the process
- Stay organized with warranties and patient follow up evaluations
- Track what is billed and what is collected it might surprise you
- Charge for your expertise
- Get your staff involved... Your excitement is their motivation
- Sell what you recommend

Now What... Monday Morning

- Staff Meeting- they want to know where you were and what you learned
- 1 year plan broken into 90 day focused sessions
 - Education- Submit Fellowship
 - Fee structure, staff training
 - Website, brochures, welcome kits
 - Community outreach

