Scleral Contact Lenses
For the Novice and the Expert
James Deom OD, MPH, FSLS
Scleral Lens Institute
Hazleton Eye Specialists and Stroudsburg Eye Specialists

Hello

The rise, fall and rise again of the scleral lens and lab
- Early 1800s - first lens described in the medical literature
- Adolf Fick

The rise, fall and rise again of the scleral lens and lab
- Mid 1900s - PMMA invented
- Mid 1900s - PMMA Corneal GP, improved ease of fitting
- Mid 1900s - RGP Material
- 1960/70 First soft lens
- 1990s first SiHi
The rise, fall and rise again of the scleral lens and lab

- 1970s first reports of scleral lenses produced of RGP materials
- Decades later computer assisted lathes and laser etching processes = modern day scleral lenses

Scleral Lens Mania

Scleral Lens Mania: Current Contact Lens Education

- 2015 Optometry's meeting
- 9 hours of non scleral CL
- 6 scleral workshops (4 student/2.5hours 2 OD/2hours) + 2 hours of education = 16 hours scleral education
- 2015 American Academy of Optometry
- 14 hours of non scleral CL
- 10 hours of scleral education

Scleral Lens and YOU!

Scleral lens indications

• NONE
### Scleral Lens Indications

#### What do you think?

- Irregular Cornea
- Keratoconus
- Post RK
- High ametropia
- Emmetropic with first time presbyopic need
- Soccer mom complaining of CLD
- Soft contact lens wearer that has fluctuation of vision with TSCL
- Corneal RGP persistent depositer
- Trichiasis patient

#### Scleral Indications:

**A home run every time**

- Keratoconus / Pellucid / Pterriens
  - <1% of the population, no gender, 13% appear hereditary, eye rubbing, atopy, allergy
- Post Lasik-Ectasia
  - Difficult to please and want a non optical solution but like new technology

- Non healing corneal defect
- Sjogrens Syndrome
- Dry Eye Disease - Mild / Moderate / Severe
- Athlete
- Graft vs Host Disease
- Ectropion / Entropion
- Ptosis
- Ocular Cictricial Pemphygoid

#### Scleral Lens Indications:

**A home run every time**

- Irregular corneas
  - Post PKP, will do anything for better vision
  - Post RK
- High Cylinder
  - Have been told can’t have Cls or aren’t happy with SCLs

- RGP wearer dropping out due to discomfort
  - hate SCLs, will try any RGP modality
- Corneal Scars, central or near central
  - can drastically improve vision like no other option

- Lid Issues
  - protection / Correction
  - Entropion / ektropion / Ptosis / Recurrent Trichiasis
Scleral Lens Indications:
More advanced applications

- Dry Eye Disease/ Sjogrens / GVHD
  - more particular, treat the disease concurrently
- Normal Eyes
  - Comfort! Stability, no lid interaction, O2, Fluid,
    Improved VA, Completely customizable

What is a scleral lens?

Rigid Gas permeable material

- Glass or plastic/polycarbonate?
- Rigid Gas permeable material vs silicon material

Rigid Gas Permeable Material

Lands on the ...

- SCLERA .... Wrong
- Conjuntiva !
Making it Perfect for ...

Case 1 - The Homerun

New patient no job, no insurance
Pellucid Marginal Degeneration. Wearing acuvue oasys for astigmatism - bcv 20/60 ou
Educated about condition, asked to show vision with Scleral, patient agreed.

OD - 20/20
OS - 20/20

Patient broke down in tears, and is on a monthly payment plan to pay for his lenses, he has since referred 2 patients for comprehensive eye exams.

Scleral Lens Prescribing
Rethink your Specialty Lens Approach

How do you “Prescribe” a specialty lens?

1. Come Back at another visit?
2. Full Fit on the spot?
3. Test fit and return?

The Deom Approach – Normalization of the modality and embracing the technology on a regular basis

1. Potential Scleral Patient Presents
2. Explain to patient that I am a specialist in a new lens design that offers unparalleled comfort and vision and that I would like the opportunity to place the lens on their eye without any obligation
3. Quick evaluation and over-refraction
4. Discuss the fitting process, cost, and set expectations

******DEOM GUARANTEE******
If you can quickly insert and remove the lens without any complications the comfort and clarity of the lens will do the rest and you will then be able to discuss the process with the patient

The ultra super secret to successful Scleral lens practice

---

Insertion and Removal!!!!

• If you can do this by the end of the day even moderately well you can start your practice with this on Monday
Lens prep

- Most lenses are stored dry
- Boston conditioner - scrub 1 minute, MPS rinse
- If beading occurs remove lens - rinse with MPS again
- If beading occurs again - squeegee method

Lens Prep

- Place the lens on your Insertion tool of choice

Lens Prep- The scleral cocktail

- Non preserved .09% NaCl from inhalation fluid ampules
- Non preserved Unisol
- Non preserved Refresh/ PF Oasys tears
- NaFl in the bowl for initial evaluation

Patient Prep

- Positive terms
- Awareness, refreshing, cooling, blink and look normally, avoid anesthetic if possible
- Paper towels or surgical mats on patient’s lap and in their shirt
Head lock of scleral love

Insertion tricks
- Proparacaine
- Wiggle your toes
- Fixation point
- BE QUICK, CONFIDENT AND POSITIVE --- Patients smell fear

Insertion
Extreme Scleral lens makeover

OD 20/60
OS 20/50

Diagnostic lenses
OD- 20/25
OS- 20/25

“Best vision I ever remember having”

Removal

1. DMV Assisted
2. Finger method

Removal

• DMV assisted

Removal

• Finger method

Insertion and removal teach

• Same as SCL, technician led, in and out two times
• Have them watch insertion and removal videos in week leading up to dispense

https://www.youtube.com/watch?v=P0xO9bZsTnU
https://www.youtube.com/watch?v=9fTAW_HANZY
https://www.youtube.com/watch?v=WvgPNn585-Y
https://www.youtube.com/watch?v=9TDW_HANZY
Scleral Lens Institute at Hazleton Eye Specialists Custom Stable Protocol

Visit 1
Initial evaluation and fit with fitting set
Exam, fit, topo
spec mic, pachy,
ant seg photos---WOW factor

Visit 2 and 3 - same day
Dispense ordered size and Rx - VL, SLE, Ant Seg Photos.
Return after 2 or more hours of wear, observe clarity of solution, conj impingement, Nafl disappearance test
Lenses are dispensed or re-ordered

2 week follow up -
topo, spec mic, pachy, slit top, pupils conf field, over ref, ant seg photos
- One month
- Three Month
- Three, four or six month

Whose got the Bill-ing?

- Not a billing and coding lecture
- Billing and Coding is very important in a successful practice.
- Embrace the medical model and view Ocular Surface Disease and other corneal conditions ie KCN ---- Like Glaucoma

Example 1-KCN

New Keratoconic Patient

- 99214 - E and M level 4
- 92015 - Refraction
- 92285 - External photography
- 76514 - Pachymetry
- 92025 - Corneal topography
- 92072 - Prescribing for Keratoconus
- V2531 - Scleral Lens

Total $2,344.00

Time to be a doctor!

- Bullet proof 5 step scleral lens evaluation and prescribing technique

Whose got the Bill-ing?

- Average Markup on Frame and Lenses is anywhere from 2.5% - 3.0%
- Good positioning of a Specialty lens is to compare it to a high quality progressive lens or high quality lenses with antiglare coating
- Average cost of lenses is around $200-$300 / pair, which would make the markup ---$800-$900/pair

****not in anyway price fixing or colluding to price fix****

A 5 step program

1. Blue light evaluation - gross observation for areas of touch, special attention to limbal area
A 5 step Program

2. Evaluate the vault, central to peripheral Nasal and temporal

Pearls: It won't be the same throughout, goal is 200-400microns
feather superior touch is ok

Lenses will settle 60-150 microns on average

Know the thickness of the lens and the cornea you are working

3. Conjunctival assessment / landing zone Assessment

PEARLS: DON'T LET A LITTLE COMPRESSION SCARE YOU

LISTEN AND LET THE EYE FIT THE LENS

Scleras are OFTEN TORIC!!!!

4. Over refraction

PEARLS do everything you can to avoid cyl, (min of 1D, 2 Vs lines)

Don't push it initially if you can get 20/25 or 20/50 leave it be

If possible use loose lenses, be quick and dirty initially

5. Recheck steps 2-4, vault, and conjunctival assessment, order a first lens
Sceral lens Basic Anatomy

- Most lenses are 3 lens curve system

Making basic adjustments

- Central Touch --- More Vault!
- Steepen the Roof (steeper BC)

Sceral lens Basic Anatomy

- Central Touch
- Raise Da Roof!

Sceral lens Basic Anatomy

- Compression / Impingement
- Flatten SLZ-

Troubleshooting

- Bubbles

- Lens awareness / discomfort

Pearls
- All about the angle
- PF Refresh / oasys tears for bowl
- If you can get it in w/o bubbles ...
- For an experienced fitter not a problem
- If appearing after insertion, SLZ problem

Pearls
- Check vault
- Most often SLZ issue
- Consider Toric Periphery if pt can point to irritation
- Don’t forget about DES, bullae and Corneal edema! (over 800cells)
Troubleshooting

- Inferior lens displacement
- Most common displacement inf and temporal

Pearls
- Do nothing!!!
- Thin the lens
- Reduce the vault/sag
- Tighten periphery (if possible)
- Consider toric periphery

Fogging of the tear prism after wear

Pearls
- Set expectations (4 hours)
- Check for TF communication (toric periphery)
- Try PF Tears
- Sicker eyes (pKPs/severe DES/GVHD)

Cases if we have time

Helpful resources
- Gpli website - great free webinars on scleral lens practice and billing and coding http://www.gpli.info/webinars/
- Scleral lens society website http://www.scleralens.org
- Join Facebook group “scleral lens fitters”
- ME ! Dr.deam@gmail.com, Like my facebook page - “Scleral Lens Institute”

Thank you
- Pennsylvania Optometric Association
- Dr. Kislan and Hazleton Eye Specialists staff
- Kurt R - First KCN patient cried in my chair and I caught the bug
- Valley Contax