



# Scleral Lens Basics

Alex D. Nixon, OD, MS  
East/West Eye Conference  
October 2, 2015

---

---

---

---

---

---

---

---



## Scleral Lens Learning Objectives

- Fitting indications
- Benefits vs corneal GP lenses
- Insertion and removal (self and patient)
- Additional accessories
- Cleaning and care

---

---

---

---

---

---

---

---



## Contact Lenses for Irregular Corneas

- Corneal



---

---

---

---

---

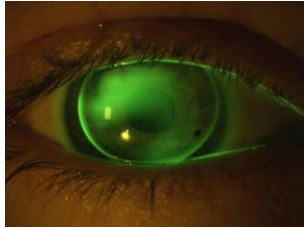
---

---

---

### Contact Lenses for Irregular Corneas

- Intralimbal



---

---

---

---

---

---

---

---

### Contact Lenses for Irregular Corneas

- Hybrid

---

---

---

---

---

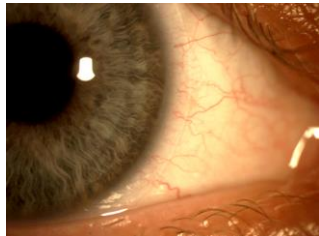
---

---

---

### Contact Lenses for Irregular Corneas

- Soft



---

---

---

---

---

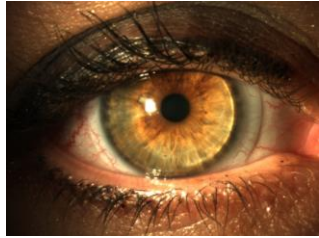
---

---

---

## Contact Lenses for Irregular Corneas

- Scleral




---

---

---

---

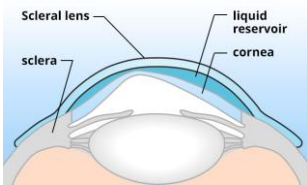
---

---

---

---

### What is a Scleral Lens?



• <http://www.allaboutvision.com/contacts/scleral-lenses.htm>

---

---

---

---

---

---

---

---

### What is a Scleral Lens?

Lens Type	Description	Definition of Bearing Area
Corneal		Lens rests entirely on the cornea
Corneo-scleral		Lens rests partly on the cornea, partly on the sclera
Scleral	Mini-Scleral <i>Lens is up to 6mm larger than HVID</i>	Lens rests entirely on the sclera
	Large Scleral <i>Lens is more than 6mm larger than HVID</i>	

2193 Farleigh Rd, Columbus, OH 43221  
[www.scleralens.org](http://www.scleralens.org) / [scleralsociety@gmail.com](mailto:scleralsociety@gmail.com)

---

---

---

---

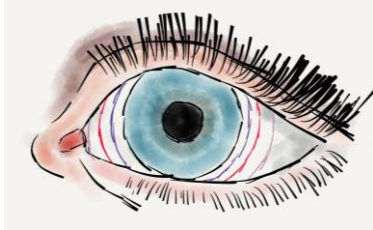
---

---

---

---

### How Big is the Lens?



---

---

---

---

---

---

---

### Why Are Scleral Lenses Used?

- Excellent quality of vision
- Able to fit highly irregular corneas\*\*\*
- More comfortable than GP
- More stable than GP

---

---

---

---

---

---

---

Exhaust all contact lens options  
before pursuing corneal transplants!  
Scleral lenses may help where other  
lenses have failed.

---

---

---

---

---

---

---



### Who Can Wear Scleral Lenses?

- Keratoconus or Pellucid Marginal Degeneration
  - Radial Keratotomy
- Post Refractive Surgery
- Post Corneal Transplant
  - Severe Dry Eye
- Corneal Astigmatism

---

---

---

---

---

---

---

---



### How Can You Help?

- Insertion/removal during fitting process
- Understanding common issues during fitting process
- Teaching proper insertion and removal
- Teaching cleaning and maintenance of sclerals
- Discussing necessary accessories/products

---

---

---

---

---

---

---

---



### Getting Started



---

---

---

---

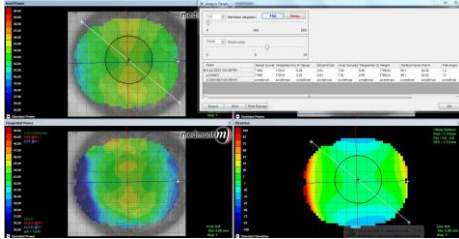
---

---

---

---

### Getting Started



---

---

---

---

---

---

---

---

### Getting Started

- Select Lens
- Clean and **condition** the lens
- Grab necessary products



---

---

---

---

---

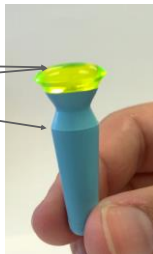
---

---

---

### Scleral Lens Insertion

- Needs
  - Non-preserved saline
  - Fluorescein
  - Applicator or other stable base
  - Mirror
  - Paper towels



---

---

---

---

---

---

---

---



### Necessary Products

- Non-preserved saline
  - Unisol 4 (Alcon)
  - 0.9% Sterile Saline Solution Vials (5mL)
  - Other non-preserved saline solutions




---

---

---

---

---

---

---

---



### Necessary Products

Tripod Method



DMV Corp




---

---

---

---

---

---

---

---



### UNnecessary Products

- Inactive Ingredients:
  - Purified Water
- Active Ingredients:
  - Buffers
  - Salts
  - Edetate Disodium (EDTA)
  - Benzalkonium Chloride (BAK)




---

---

---

---

---

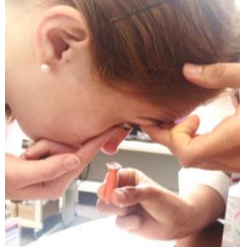
---

---

---

### Scleral Lens Insertion on Patient

- Set expectations
  - Process
  - What will patient feel?
  - What will patient see?



---

---

---

---

---

---

---

---

### Scleral Lens Insertion on Patient



---

---

---

---

---

---

---

---

### Scleral Lens Insertion on Patient



---

---

---

---

---

---

---

---



### Scleral Lens Insertion on Self



---

---

---

---

---

---

---

---

### Video

---

---

---

---

---

---

---

---

### Scleral Lens Removal

- Have patient look down (or up)
- Place plunger near limbus
- Pull straight out
- Difficulty?
  - Push eyelid under lens edge to break suction



---

---

---

---

---

---

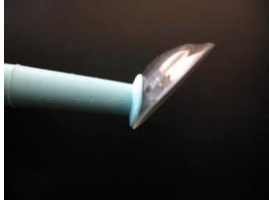
---

---



### Scleral Lens Removal

- Have patient look down (or up)
- Place plunger near limbus
- Pull straight out
- Difficulty?
  - Push eyelid under lens edge to break suction



---

---

---

---

---

---

---

---



### Scleral Lens Removal W/O Plunger

- Hold lens in place
- Push eyelid under lens edge and break suction
- Push lens out with eyelids



---

---

---

---

---

---

---

---



### Video

---

---

---

---

---

---

---

---



## Scleral Lens Care

- Different providers may recommend different products for the care and cleaning of your lenses. However, most care/cleaning regimens will include the following components:
- Daily cleaner: After you have removed your lens, place the lens in the palm of your hand. Add several drops of cleaning solution, and gently rub both sides of the lens for 10-15 seconds.
- Rinse: Rinse your lens with either non-preserved or gently preserved saline to remove all traces of the cleaning solution.
- Conditioning/soaking solution: Place the lens in its case with the soaking solution recommended by your eye care provider.
- Saline/application solution: When you are ready to apply your lens, remove it from the conditioning solution. Rinse with saline. Fill the bowl of the lens with non-preserved saline (or other non-preserved solution as recommended by your provider), and apply to the surface of your eye.

From the Scleral Lens Education Society

---

---

---

---

---

---

---

---

---

---



## What Rinsing/Filling Solutions are Okay?

- Non-Abrasive (Clear colored)
  - All in one or multistep available
- Peroxide based

---

---

---

---

---

---

---

---

---

---

## What Rinsing/Filling Solutions are Okay?

- Non-preserved saline
  - Unisol 4 (Alcon)
  - 0.9% Sterile Saline Solution Vials (5mL)
  - Other non-preserved saline solutions




---

---

---

---

---

---

---

---

---

---



### Common Fitting Issues

Bubble(s) under lens



Jedlicka, Jason  
<http://www.clspectrum.com/articleviewer.aspx?articleid=107514>

---

---

---

---

---

---

---

---

### Remedy

- Remove lens and reinsert
- Overflow the bowl
- Ensure proper fixation target
- Position patient parallel to ground
- Add Celluvisc to solution in bowl



---

---

---

---

---

---

---

---

### Common Fitting Issues

Whoops!  
Wrong Solution!



---

---

---

---

---

---

---

---

### Remedy

- Remove lens
- Flush eye with PF artificial tear or Unisol
- Discontinue fit for the day
- Notify Doctor




---

---

---

---

---

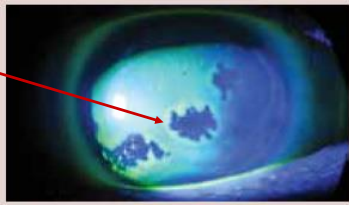
---

---

---

### Common Fitting Issues

Poor Wettability



1. A non-wetting scleral lens.

DeNaeyer, Greg  
[http://www.reviewofoptometry.com/continuing\\_education/tabviewtest/lessonid/108308/](http://www.reviewofoptometry.com/continuing_education/tabviewtest/lessonid/108308/)

---

---

---

---

---

---

---

---

### Remedy

- Remove lens
- Condition and thoroughly rub lens
  - Some recommend using Biotrue or Puremoist off-label
- Do not rinse of conditioner
- Fill and reapply lens




---

---

---

---

---

---

---

---



### Useful Websites

- <http://www.sclerallens.org/>
- <http://www.gpli.info/>
- <http://www.dmvcorp.com/index.htm>



---

---

---

---

---

---

---



THE OHIO STATE UNIVERSITY

### Case Examples

---

---

---

---

---

---

---