

Global Specialty Lens Symposium
Scleral Lenses: Taking it to the Next Level
Advanced Scleral Lens Workshop

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Category: Contact Lenses

Abstract/Course Description:

This two hour presentation is an interactive workshop where practitioners will learn how to fit scleral lenses on patients with irregular corneas, post-surgical status or ocular surface disease. A short lecture reviewing the principles of advanced scleral lens fitting will be presented. Video demonstrations that include design principles, imaging the sclera with scleral topographers, and assessing the lenses under the slit lamp will be dispersed throughout the workshop. Instructors who are Fellows of the Scleral Lens Education Society will facilitate the workshop experience using scleral lens designs from several different lens companies.

Course Learning Objectives:

To provide participants with knowledge and training of scleral contact lens fitting and management of a wide range of medical conditions. Practitioners will be exposed to various advanced fitting applications and technology used in scleral lens customization. Guidelines and problem solving tips can be provided to participants in a clinical environment.

Practice Gaps:

Scleral lenses have significantly increased in popularity in the past few years, which has allowed for an expansion of lenses design and use capabilities that are different from the original basic scleral lens fitting techniques. This workshops aims to bridge that gap by covering advance scleral lens design options and capabilities, as well as advance scleral lens uses, to allow practitioners to provide a greater level of care for their scleral lens patients.

Outline:

1. Brief review of scleral lens fitting principles
 - a. Completely vault over the cornea and limbus
 - i. Photographs illustrating corneal clearance
 1. Excessive corneal clearance

- a. Greater than 400 um clearance
 - 2. Adequate corneal clearance
 - a. Around 200 um clearance
 - 3. Corneal touch
- ii. Tips to achieve adequate corneal clearance
 - 1. Compare to scleral lens center thickness
 - 2. Account for scleral lens settling
 - a. Full settling occurs after 4 hours of wear time
 - b. Ideal to assess fit after 30 minutes of in office wear
 - c. Smaller lenses tend to sink more on the eye than larger lenses which rests on subtenon's capsule
- b. Photographs illustrating limbal clearance
 - i. Excessive limbal clearance
 - 1. Limbal microcystic edema
 - ii. Adequate limbal clearance
 - 1. Around 50 um to minimize corneal hypoxia
 - 2. Difficult to assess when less than 40 um thick
 - iii. Limbal touch
 - 1. Compression ring or limbal staining
 - iv. Tips to achieve adequate limbal clearance
- c. Provide an adequate "landing" on the sclera
 - i. Photographs illustrating scleral landing
 - 1. Scleral impingement
 - a. Arcuate edge staining on conjunctiva
 - 2. Haptic compression
 - a. Blanching of conjunctival blood vessels
 - b. Rebound injection post scleral lens removal
 - 3. Edge lift
 - a. May cause late forming bubbles
 - b. May increase rate of chamber debris
 - 4. Adequate haptic alignment
 - a. Emphasis on paying attention to fine vessels
 - ii. Tips to achieve adequate haptic alignment

2. Advanced Lens Designs

- a. Toric haptics
 - b. Quadrant specific haptics
 - c. Multifocal scleral lenses
 - d. Front surface eccentricity
 - e. Notching
 - f. Vaulting
 - g. Truncation
3. Advanced Imaging Technology
- a. Demonstrations of various new scleral technologies
 - i. Scleral mapping technologies
 - 1. sMap3d
 - 2. Pentacam CSP
 - ii. Scleral evaluation technologies
 - 1. Anterior Segment OCT
 - iii. Corneal impression molding technologies
 - 1. Eyeprint PRO
 - iv. New gas permeable material and treatments
 - 1. Hyper-Dk materials (200 Dk)
 - a. Optimum infinite
 - b. Acuity 200
 - 2. Treatments
 - a. Tangible Science Hydra-PEG
4. Video demonstrations
- a. Application/removal
 - b. Anterior segment camera
 - i. Demonstrate the fit scleral lenses with various design parameters
 - 1. Excessive clearance
 - 2. Minimal clearance
 - 3. Spherical peripheral curve
 - 4. Toric peripheral curve
 - c. Slit lamp techniques
 - d. OCT
 - e. Pentacam
 - f. sMap3D

- g. EyePrint Pro
- 5. Case studies
 - a. Capture scleral topography of SLS fellow
 - b. Discuss fitting change philosophy