

Hands-on Workshop: Scleral & Ortho-K Fitting

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2 hours

Description:

This interactive workshop introduces the core fitting principles of scleral contact lenses and orthokeratology lenses. Attendees will learn the fundamentals of lens design, fitting strategies, and troubleshooting. The session then transitions into hands-on application, with participants fitting lenses on one another under guided supervision. Instructors will provide step-by-step instruction, clinical tips, and decision-making support. By the end, attendees will gain both knowledge and practical experience to improve confidence in managing these specialty lens modalities.

Learning Objectives:

- Describe the fundamental fitting principles of scleral contact lenses and orthokeratology lenses.
- Identify key lens parameters and their impact on fit, vision, and ocular health.
- Demonstrate the ability to evaluate a diagnostic fit and apply troubleshooting strategies.
- Practice hands-on fitting techniques with scleral and orthokeratology lenses under guided supervision.
- Apply clinical decision-making skills to select and adjust lens designs for individual patient needs.

Outline

1. Scleral Lens Fitting

- Scleral Lens Terminology, Design and Indications
- Lens designs and parameters
 - Scleral lens geometry
 - Optical zone
 - Transition zone
 - Landing zone
- Scleral lens indications
 - Regular cornea patients
 - Presbyopes
 - High refractive error
 - Irregular cornea patients

- Primary and secondary corneal ectasias
 - Post-surgical/refractive
 - Ocular surface disease
- Scleral Lens Fitting Principles
 - Completely bridge over the cornea and limbus
 - Photographs illustrating corneal clearance
 - Excessive corneal clearance
 - Adequate corneal clearance
 - Around 200um to minimize corneal hypoxia
 - Corneal touch
 - Tips to achieve adequate corneal clearance
 - Compare to scleral lens center thickness
 - Account for scleral lens settling
 - Ideal to assess fit after 30 minutes of in office wear
 - Photographs illustrating limbal clearance
 - Excessive limbal clearance
 - Limbal microcystic edema
 - Adequate limbal clearance
 - Around 60um to minimize corneal hypoxia
 - Difficult to assess when less than 40um thick
 - Limbal touch
 - Compression ring or limbal staining
 - Tips to achieve adequate limbal clearance
 - Provide an adequate “landing” on the sclera
 - Photographs illustrating scleral landing
 - Scleral impingement
 - Arcuate edge staining on conjunctiva
 - Haptic compression
 - Blanching of conjunctival blood vessels
 - Rebound injection post scleral lens removal
 - Edge lift
 - May cause late forming bubbles
 - May increase rate of chamber debris
 - Adequate haptic alignment
 - Tips to achieve adequate haptic alignment
 - Heel vs toe effect
 - Toric haptics, especially if scleral lens OAD is greater than 15.0mm
 - Account for scleral lens settling
 - New scleral mapping technologies
- Selection of base curve/SAG

- Insertion with plunger vs finger techniques
 - Demonstrate patient positioning
 - Suction vs non-suction
 - Exposure to various scleral lens insertion tools that may benefit patients
- Assessing scleral lens fit in free space, slit lamp and anterior segment OCT
 - Bubble formation
 - Vault and fluorescein evaluation
 - Assessing peripheral fit (landing)
 - Assessing tear flow
- Removal technique
 - Plunger
 - Importance of slightly decentered plunger placement
 - Hands/finger
- Solutions
 - Insertion solutions
 - Non-preserved 0.9% sodium chloride solution vials
 - Non-preserved saline solution
 - Preservative free artificial tears
 - Disinfection solutions
 - Hydrogen peroxide solutions
 - Scleral lens compatible RGP cleaning solutions
 - Additional cleaners

2. Orthokeratology Lens Fitting

- Indications
 - Basic Designs
 - Myopia control (off label)
 - Myopia management (FDA approved)
 - Mild-moderate astigmatism (FDA approved)
 - More sophisticated designs
 - Hyperopia
 - Presbyopia
- Candidate considerations
 - Age
 - Maturity
 - Ocular Health
 - Contact lens History
 - Hobbies/occupation
 - Topography

- Data needed to design lenses
 - Topography (K-values)
 - May not need topography to design lenses but will need to troubleshoot
 - HVID
 - Manifest sphere
- Basic Lens Design
 - Reverse Geometry
 - Treatment Zone (base curve)
 - Return Zone (reverse curve)
 - Landing Zone (alignment curve)
- Insertion tips
 - Anesthetic or not?
 - Direct application to cornea
 - Insertion with NaFl
- Assess lens on eye
 - View lens fit with cobalt blue light and Wratten filter
 - Photos demonstrating Ideal Fit
 - Bull's Eye Pattern
 - Centration
 - Proper movement
 - Photos demonstrating common issues with lens fit
 - Decentration
 - Bubbles in return zone
 - Poor edge lift
 - Too much central clearance
- Assessment of vision
 - Expectation of 20/25 or better in each with lens on
 - Spherical over-refraction
 - +0.50D is ideal
 - Myopic OR = under-correction
 - Hyperopic OR = over-correction
- Removal tips
 - Application of preservative free eye drop
 - Removal with and without plunger
- Follow-up schedule
 - 1 day
 - 1 week
 - 1 month
- Photos

- of ideal topography after intervals of wear
- of potential issues seen on topography
 - High Riding Lens
 - Low Riding Lens
 - Lateral Decentration
 - Central Island

3. Q&A / Final Discussion