Course Title:

Contact Lens Fitting Adventure: What Would You Do?

Speakers:

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Course Description:

This two-hour highly interactive course will allow participants to experience a variety of contact lens fittings for several commonly encountered conditions. Case history, corneal tomography, and anterior segment imaging will be presented for each case. Participants will have the opportunity to select initial diagnostic lenses and 'perform' the fitting from beginning to end, while troubleshooting along the way. For conditions presented, several contact lens modalities may be an appropriate option, and pros and cons of each lens will be highlighted. Cases reviewed will include corneal ectasia, myopia management, ocular surface disease, post-surgical cornea, high ametropia, and high astigmatism.

Learning Objectives:

1. Understand how to select an initial diagnostic lens based on case history, tomography, ocular health findings.
2. Review different contact lens modalities and tools that can be utilized for maximizing success.
3. Determine suitability of individual patients for specialty soft, corneal gas permeable, hybrid, scleral, free form, or impression-based lens wear.
4. Understand the pros and cons of each contact lens modality.
5. Select, apply, and troubleshoot fittings for cases presented.

Course Outline:

I. For each case presented, patient history, ocular condition and potential complications will be reviewed.
   a. Cases with the following will be featured:
      i. corneal ectasia, myopia management, ocular surface disease, post-surgical cornea, high ametropia, and high astigmatism.
II. Anterior segment photography, videography and corneal tomography will be shown to highlight unique features of each case to assist with initial contact lens selection.
III. Corneal tomographic evaluation has played a critical role in diagnosing patients with corneal irregularity and monitoring their disease over time.
   a. Review of normal tomography
   b. Review how to interpret abnormal tomography
      i. Irregular astigmatism versus scarring versus corneal ectasia
      ii. Form Fruste Keratoconus (sub-clinical)
         1. Tomography shows eccentric steepening
         2. Pachymetry is normal (500 microns or greater)
         3. Myopia and astigmatism <5.00D
         4. Mean central K <48.00D
      iii. Mild Keratoconus
         1. Tomography shows inferior steepening
         2. Pachymetry > two standard deviations from the normal 550 microns (<500 microns)
         3. Myopia and astigmatism 5D to 8D
         4. Mean K ranges from 40D to 48D
      iv. Moderate Keratoconus
         1. Tomography shows inferior steepening
         2. Mean K ranges from 48D to 52D
         3. Pachymetry 300-400 microns
      v. Severe Keratoconus
         1. Mean K >52D
         2. Pachymetry 200 to 300 microns
      vi. Surgical keratoconus
         1. CXL: pachymetry >300 microns with evidence of progression
         2. Intrastromal ring segments: pachymetry >250 microns in the corneal mid-periphery
         3. Keratoplasty: pachymetry <200 microns, significant central scarring, refraction not measurable
   c. Frequency of follow-ups
      i. Depends on choice of treatment/management, severity, age, and patients' concerns.
IV. For each case presented, participants will have the opportunity to fit contact lenses and troubleshoot via polling software with multiple lens modalities.

a. Participants will determine suitability of individual patients for specialty soft, corneal gas permeable, hybrid, scleral, free form, or impression-based lens wear for each case.
b. Participants will select, apply, and troubleshoot fittings for cases presented via polling software.
    i. Participants will be provided the patients case history, co-morbid ocular conditions, pertinent family and systemic history, and pertinent examination findings.
    ii. Via polling software, participants will select their initial contact lens for the patient.
    iii. Via polling software, participants will select parameters for initial lens.
    iv. Lens fitting will be demonstrated via anterior segment photography, videography and optimal coherence tomography.
    v. Based on initial fitting, participants will be able to select what parameters need to be modified via polling software to end up with an acceptable fit.
    vi. Multiple lenses will be fit for each case to demonstrate advantages and disadvantages of each modality.
    vii. The following lens options will be discussed:
        1. Specialty soft contact lenses
            a. Lens Selection: base curve and diameter
            b. Properties of lens: material
            c. Review handling/wear schedule, contact lens solutions
            d. Discuss benefits and disadvantages
            e. Discuss why a practitioner might select one lens over another lens modality
            f. Fitting process highlighted for lens:
                i. What is ideal
                ii. What is shown
                iii. Troubleshooting
                iv. Participants will be able to select next lenses for improve fit and to select next modality to demonstrate how multiple lenses can be fit for same condition.
        2. Corneal gas permeable contact lenses
            a. Lens Selection: base curve and diameter
            b. Properties of lens: material
                i. Discuss when coatings may be beneficial/needed
            c. Review handling/wear schedule, contact lens solutions
            d. Discuss benefits and disadvantages

      e. Discuss why a practitioner might select one lens over another lens modality

      f. Fitting process highlighted for lens:

         i. General principles when fitting:

            1. Avoid mechanical pressure on the corneal apex

            2. Avoid hypoxic corneal stress

            3. Maximize comfort through lens design

            4. Optimize vision through lens design

         ii. What is ideal

         iii. What is shown

         iv. Troubleshooting

         v. Participants will be able to select next lenses for improve fit and to select next modality to demonstrate how multiple lenses can be fit for same condition.

3. Hybrid contact lenses

      a. Lens Selection: base curve and diameter

         i. Empirical vs fitting set

      b. Properties of lens: material

         i. Discuss when coatings may be beneficial/needed

      c. Review handling/wear schedule, contact lens solutions, fill solutions

      d. Discuss benefits and disadvantages

      e. Discuss why a practitioner might select one lens over another lens modality

      f. Fitting process highlighted for lens:

         i. What is ideal

         ii. What is shown

         iii. Troubleshooting

         iv. Participants will be able to select next lenses for improve fit and to select next modality to demonstrate how multiple lenses can be fit for same condition.

4. Scleral lenses

      a. Lens Selection: diameter and sagittal depth

         i. Fitting set versus free form software versus impression-based lenses

      b. Properties of lens: material,

         i. Discuss when coatings may be beneficial/needed

      c. Review handling/wear schedule, contact lens solutions, fill solutions

      d. Discuss benefits and disadvantages

        e. Discuss why a practitioner might select one lens over another lens modality

        f. Fitting process highlighted for lens:
           i. What is ideal
           ii. What is shown

        g. Troubleshooting

        h. Participants will be able to select next lenses for improve fit and to select next modality to demonstrate how multiple lenses can be fit for same condition.

    5. Post-Surgical Contact Lens Options

        a. Considerations when fitting the post-surgical cornea

        b. When to fit

        c. Considerations when selecting lens design and material
           i. Oxygen transmission

        d. Care & handling of lenses

        e. Follow up care

        f. Co-morbid ocular and systemic disease

        g. Physiological limitations
           i. Endothelial cell loss
           ii. Hypoxia

        h. When to refer back to co-managing physician for further surgical procedures?

V. In summary, several contact lens modalities may be an appropriate option for corneal conditions encountered in clinical practice.

VI. Review how contact lens modalities and tools can be utilized for maximizing success.