

# Contact Lens Compliance

General Session #4

Moderator: Eef van der Worp Optometrist PhD FAAO FIAACLE FBCLA FSLs

Saturday, January 21st, 2022 – 02.30-4.20pm EST

## Course description

Contact lens care, maintenance & safety is highly undervalued. Much attention in our specialty lens field goes to the fitting process, the indication range - but a large part of the success, and failure, of specialty lenses relies on contact lens solutions, hygiene, and handling. This course explores the possibilities, pitfalls, and dangers.

Recent years have seen an increase in the use of specialty lenses, such as orthokeratology and scleral lenses. It would be simple enough for ECPs to apply the lens care and maintenance instructions and/or guidelines for standard contact lenses to specialty lenses, but it would not be adequate. With specialty lenses, there are special considerations. For example, with respect to orthokeratology. Adequate knowledge of the treatment is important, not only to the ECPs, but to all staff who may be in the position to introduce or advise parents about the therapy. In addition, ECPs need to manage follow-up care to encourage attendance of frequent, scheduled, aftercare consultations, which are essential to ensure safe lens wear. Proper parental education and assessment of their willingness to take on responsibilities to help monitor compliance on care and use of lenses at home are crucial. In this session we will discuss some good clinical practice that ECPs can consider ensuring healthy and safe in specialty lens practice.

## COURSE OBJECTIVES

- Understanding the importance of contact lens aftercare
- Know what to do and not to do regarding contact lens storage
- Know what to do and not to do regarding contact lens application & removal
- Understanding the safety issues with tap water
- Solutions interactions with the ocular surface - to understand the difficulties

- Understand risk factors for corneal infections

## SPEAKERS

- Melissa Barnett OD
- Mark Bullimore MCOptom, PhD
- Pauline Cho BOptom, MEd, PhD
- James Wolffsohn MBA, PhD

## Course outline

This section will discuss the typical ways of lens care regarding various specialty contact lenses, as well as the best practices.

Corneal Infection: what are the risks?

1. SOFT
2. CORNEAL GP
3. EXTENDED WEAR GP/SOFT
4. ORTHOKERATOLOGY
5. SCLERAL

Risk Factors for Microbial Keratitis in Contact Lens Wear

- Overnight wear
- Patient age
- Material
- Poor storage case hygiene and infrequent replacement

Microbial Keratitis and Contact Lens Wear

- Daily wear is safest
  - 1 to 2 per 10,000 years of patient wear
- Occasional overnight wear increases risk
  - 2 to 6 per 10,000 years of patient wear

- Regular overnight wear increases risk further
  - 20 to 25 per 10,000 years of patient wear
- 15% of cases of microbial keratitis result in vision loss
  - Lower in some studies

#### Corneal Infiltrative Events (CIEs) and Contact Lens Wear

- More common
- 300 to 400 per 10,000 years of patient wear

#### Contact Lenses in Children 1

- The Contact Lens Assessment in Youth (CLAY) Study
- 4,663 patient years of soft lens wear
- Incidence of microbial keratitis:
  - 0 per 10,000 years in 8- to 12-year-olds
  - 14 per 10,000 years in 13- to 18-year-olds
- Incidence of CIEs:
  - 97 per 10,000 years in 8- to 12-year-olds
  - 364 per 10,000 years in 13- to 18-year-olds

#### Contact Lenses in Children 2

- Seven prospective studies with >150 patient years of wear report safety
- Incidence of microbial keratitis:
  - 3 per 10,000 years in 8- to 12-year-olds
- Incidence of CIEs:
  - 53 per 10,000 years in 8- to 12-year-olds

#### Safety of Overnight Orthokeratology

- FDA-approved retrospective study of 1317 patients (677 children)
  - 2599 patient years (1435 in children)
  - Incidence = 8 per 10,000 years of wear
  - Two cases, both in children:
  - 14 per 10,000 years (95% CI = 1.7 – 50)
  - Neither case resulted in a loss of visual acuity
1. Expectation vs. reality
    - Is there a discrepancy between patient knowledge and clinical practice? What do the habits of a typical patient look like?
    - Is there a discrepancy between best clinical practices and clinical behaviors?
  2. Best clinical practices
    - Hand hygiene
    - Storage case hygiene
    - Selection of disinfection regimen
    - Rewetting/filling of specialty lenses

## SPECIAL ATTENTION TOWARDS SPECIALTY LENS CARE

Wearers of specialty lenses often have a compromised ocular surface and thus the care system of choice needs careful consideration. Avoidance of preservatives in severe dry eye cases is critical to comfort and ocular surface health. In addition, many specialty lenses now undergo surface treatments that provide substantial comfort benefits to the wearer but are impacted by abrasive cleaners and harsh periodic cleansers.

### 1. SOFT

Can we copy general lens care and hygiene protocols to specialty lens practice? There have been several studies examining compliance with soft contact lenses and while demonstrating the self-reported factors that influence this, it has been shown to be difficult to change patient habits. Whether this might be different with specialty lenses will be explored. In addition, new technology may help to

monito eye health and compliance remotely, objectively monitoring compliance, catching the consequences of poor compliance earlier and allowing more targeted intervention.

## 2. CORNEAL GP

- a. The gold standard in terms of corneal infection rates

## 3. EXTENDED WEAR GP/SOFT

- a. How (un-)safe is this
- b. What we we do about it

## 4. ORTHOKERATOLOGY

- a. An overnight modality
  - i. Is this the same as extended wear?

## 5. SCLERALS

- a. A risk analysis
- b. Compromised and challenging cornea's

## RESEARCH UPDATE ON LENS CARE & HYGIENE

- This course will cover in-office disinfection for various types of contact lenses, types of disinfection solutions that are safe to use with scleral lenses, COVID and contact lens solutions, different attributes of scleral lens application solutions. Also to cover are solutions that can be used with and enhance various scleral lens surface treatments.

## REPORT FROM THE CLEAR PAPERS (BCLA)

- The British Contact Lens Association (BCLA) recently delivered a global consensus report on evidence-based guidance to the profession on all aspects of prescribing and fitting contact lenses to allow for best patient care. The Contact Lens Evidence-based Academic Reports (CLEAR) were published in the April 2021 issue of Contact Lens and Anterior Eye and consist of 11 different reports ranging from anatomy and physiology to all types of lens modalities: and includes one on lens care & disinfection. Four speakers on this panel were involved in this report, and will discuss that from their angle – relevant to this topic of lens care & hygiene.

