

## Specialty Contact Lenses Safety & Compliance

**Pauline Cho** PhD, FAAO, FBCLA  
BCLA Global Ambassador

1

## Disclosures

- ⚡ Euclid System Corp.
- ⚡ Johnson & Johnson (Vision Care)
- ⚡ Menicon Japan/NKL
- ⚡ OphTECS Corporation
- ⚡ Precision Technology Services

**No proprietary interest in any products**

2

## 'Conventional' lens care & maintenance instructions

- ⚡ Inadequate for specialty lenses
- ⚡ Specialty lenses
  - ‡ Include high-risk patients (compromised ocular surface)
    - ⚡ Long wearing time (as this may be their only option for good vision)
    - ⚡ Overnight lens wear
  - ‡ Special care: Corneal condition/Children
  - ‡ More to lose
  - ‡ Reusable lenses

3

## Specialty lenses

- ⚡ Increasing in popularity
  - ‡ Orthokeratology
  - ‡ Scleral lenses
- ⚡ A unique niche in private practice
- ⚡ Challenging
  - ‡ Both financially & emotionally rewarding
  - ‡ Plan & prepare well

4

## Properly equipped

- ⚡ High mag slit lamp
  - ‡ Subtle corneal changes
- ⚡ Topographer
  - ‡ Changes in corneal surface
- ⚡ AL measurement
  - ‡ Myopia control (if serious about MC)
- ⚡ Anterior OCT (?)
  - ‡ Corneal and ocular surface disorders

5

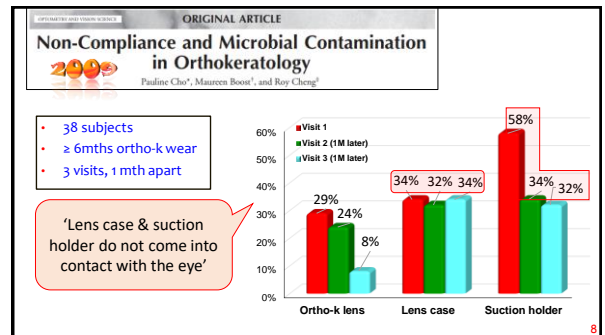


6

# NON-Compliance

**Major obstacle to safe lens wear**

7



8

## Most common and heavily contaminated items

- ⚡ Suction holder
- ⚡ Lens case

9

- 1 High level of contamination → increases risk of contamination of lens
- 2 Dependency on the suction holder → Loss?
- 3 Danger! Forceful removal of dislocated/bound lens

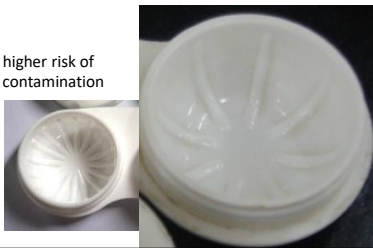
**Avoid unnecessary accessories**  
**Use fingers**



10

## Lens case design

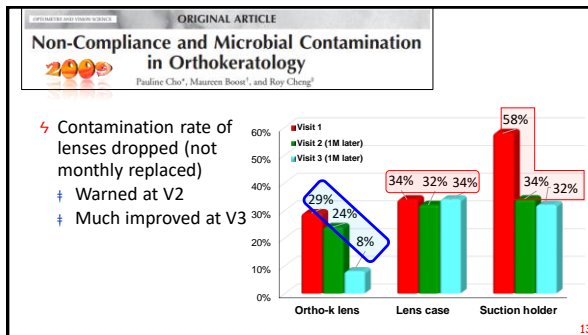
- ⚡ AVOID using cases NOT recommended with a disinfecting solution (unless ridged design)
- ⚡ Ridged wells
  - ‡ Biofilm & debris
  - ‡ Difficult to clean
 → higher risk of contamination



11

- ⚡ Avoid lens cases with ridges
- ⚡ No ridges
  - ‡ Easier to clean
  - ‡ Reduce contamination
- ⚡ Avoid suction holders, use fingers
- ⚡ **Monthly** replacement

12



13

### Trial lenses: In-office disinfection

- ⚡ Between patients
- ⚡ Dry storage
  - ‡ Wettability
  - ‡ Scratches
- ⚡ Hydrogen peroxide } Change solution the day before (if know in advance what lenses will be used)
- ⚡ Povidone-iodine }
- ⚡ MPS
- ⚡ Regular disinfection
  - ‡ Every 2-3 months?

14

### Wearing time

- ⚡ Too short – effect on level of MC?
  - ‡ Too long
  - ‡ Corneal oedema
  - ‡ Staining
- ⚡ Long WT
  - ‡ Microcysts
- ⚡ Increased prevalence of microcysts in ortho-k subjects
  - ‡ COVID-19 lockdown & school closures
  - ‡ Esp. in high myopes

15

### Case 1

- ⚡ 10 year old boy
- ⚡ Successful ortho-k lens wear
  - ‡ Good compliance
- ⚡ @18m visit
  - ‡ Infiltrative response

16

### Case 2

**CLINICAL AND EXPERIMENTAL OPTOMETRY**  
 https://doi.org/10.1080/09589235.2021.1988888  
**CLINICAL COMMUNICATION**  
**Microcystic corneal oedema associated with over-wear of decentred orthokeratology lenses during COVID-19 lockdown**  
 Biyue Guo<sup>a</sup>, Pauline Cho<sup>a</sup> and Nathan Efron<sup>a</sup>  
<sup>a</sup>Centre for Myopia Research, School of Optometry, The Hong Kong Polytechnic University, Kowloon, Hong Kong SAR, China; <sup>b</sup>School of Optometry and Vision Science, Queensland University of Technology, Brisbane, Australia

- ⚡ 11-year-old female student
- ⚡ Unremarkable ocular health
- ⚡ Initial refractive errors
  - ‡ R: -3.75/-1.00x175
  - ‡ L: -4.00/-0.75x180
- ⚡ Sept 2018
  - ‡ Ortho-k (HDS100)


17

- ⚡ Dec 2019
  - ‡ Significant lens decentration
- ⚡ New lenses
  - ‡ Resumed lens wear in early January 2020
  - ‡ Follow-up visit scheduled on 23 Jan, but cancelled
  - ‡ COVID-19 outbreak, clinic closed
  - ‡ Subject continued lens wear, reporting no problems

18



**Case 4**




67-year-old woman scheduled for routine cataract surgery

- Monthly disposable lenses for 35 years
- No complaint of any irritation  
(... Ocular discomfort, (she) thought to be due to dry eye & old age)

Morjaria et al. 2017. Retained contact lenses. *BMJ* 2017; 358 doi: <https://doi.org/10.1136/bmj.j2783>

25

**Doctors find 27 contact lenses in woman's eye**



Questions to ponder.....

- Did she attend regular AC?
- Was she offered AC when she refilled her contact lenses?
- 'More to lose patients'

26

**Case 5**

38-year-old male with keratoconus & Type II diabetes

Successful SoftPerm lens wearer >13 years

Could not find AOSept in local stores (>3mths)

→ use saline solution only

Noted symptoms of blur after 1 month

Used saline solution until he finally decided to contact his practitioner

(<http://life4u.ahlamontada.com/t67-contact-lens-complications>)

27

Although he realized something wrong with his LE, he continued CL wear for several weeks before he contacted his practitioner

**13 years of lens wear**

- Did not understand or have forgotten (?) the importance of disinfection
- Could this have been prevented?

→ **Cannot just rely on patients to do what they are supposed to do!!**

28

**Case 6**

Successful ortho-k wearer for 2 years (8-10 yo), under care of mother

After 2 years, the boy was put in charge of the care routine

This could have been prevented...!?

Be VIGILANT, very vigilant & diligent

**One MK is one TOO MANY!**

29

**Take home message from Cases 4 - 6**

Regular aftercare essential

- More frequent & diligent/careful aftercare for higher risk patients is essential
- Remind & reinforce the importance of proper lens wear & care habits

30

## Aftercare & Fees

- ⚡ Encourage/Facilitate aftercare consultations
- ⚡ Treatment fees
  - ↳ Package fee
  - ↳ Advance payment to encourage attendance of important aftercare consultations

31

# GO THE EXTRA MILE

*We catch the small problems  
before they become big problems.*

- ⚡ Little things can mean a lot !!
- ⚡ Patient safety should be our top priority

32

31

32

## Parental involvement (ortho-k)

- ⚡ Essential for safe lens wear as MC treatment usually starts young
- ⚡ Proper parental education & assessment Willingness to take on responsibilities
  - ‡ Monitor compliance on care & use of lenses at home
  - ‡ Bring child back for aftercare

33

## PREPARE & PREVENT?

## REPAIR & REPENT?

# YOU decide

33

34

thank you

35

35