Therapeutic contact lenses
## Disclosures

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<th>Clinical Investigator:</th>
<th>Consulting Mandate:</th>
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<tr>
<td>Abbott</td>
<td>Falco Kontaktlinsen</td>
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<tr>
<td>Alcon Vision Care</td>
<td>Haag Streit Diagnostics</td>
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<td>Bausch&amp;Lomb</td>
<td>RaayonNova</td>
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<td>Contamac</td>
<td>Vistakon (Johnson&amp;Johnson)</td>
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<td>Cooper Vision</td>
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Learning objectives

• Get to know the main clinical fields of application for therapeutic contact lenses

• Understand, when to consider the different possible contact lens designs, materials and types
Voting 1

• Have you ever used therapeutic contact lenses before?
  
  a) This is my daily business
  
  b) Never – wasn’t aware of the possibility
  
  c) Rarely, only in a few cases a year
  
  d) Never – this is way to dangerous
Fundamentals

• Tx contact lenses offers protection of the weak cornea from negative influences:
  o They accelerate wound healing and support the stabilisation process
  o They offer protection from foreign body sensation and pain
  o They can sometimes be used as a drug carrier
Fundamentals

- Fitting is professionally enriching, sometimes challenging but always satisfying
  - Goal is to over-bridge the weak parts of the cornea
  - Requires empathy and both good ocular knowledge and in the field of contactology
- Interdisciplinary co-management with the treating ophthalmologist is of benefit for both sides
Voting 2

- What kind of contact lenses are suitable for therapeutic reasons?
  a) Scleral lenses
  b) Silicon Hydrogels
  c) High water content (80%) Hydrogels
  d) Gas permeable (GP) rigid contact lenses
  e) All of the above
Suitable Materials

• Highly hydrophilic Hydrogel (water 80%)
  o Up to 4 weeks CW approved
  o High drug absorption
  o Low oxygen permeability

• Disposable, Silicon-Hydrogel
  o 1-4 weeks CW approved
  o Lower drug absorption due to the low water content
  o High oxygen permeability
  o More surface debries, than with conventional materials
Suitable Materials

• Rigid gas permeable lenses
  o Bridging the affected cornea region (perilimbal contact lenses, scleral lenses)
  o for additional optical rehabilitation in case of irregular astigmatism

• Hybrid Kontaktlinsen
  o Bridging the affected cornea region
  o for additional optical rehabilitation in case of irregular astigmatism, but less parameter available compared to sclerals
# Cases from our Portfolio

<table>
<thead>
<tr>
<th>Category</th>
<th>Conditions</th>
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<tr>
<td>Dystrophies</td>
<td>Epithelium Basalmembran Distrophy EBMD</td>
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<td>Lattice Distrophy</td>
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<td>Multifactorial Syndrome</td>
<td>Status post congenital Cataract and secondary Glaucoma</td>
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<td>Trigeminus Neuralgia</td>
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<td>Sicca Syndrom</td>
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<tr>
<td>Infections</td>
<td>Adeno Virus (Kerato-Conjunctivitis Epidemica)</td>
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<td>Syphilis</td>
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<td>Auto-immun Disease</td>
<td>Lyell Syndrom / Stevens-Johnson Syndrom</td>
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<td>Epidermolysis Bullosa EB (Butterfly Children)</td>
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<td>Graft vs Host Disease GvHD</td>
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<td>Exposition Keratitis</td>
<td>Facialis Paresis</td>
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<td>Nocturnal Lagophthalmus</td>
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<td>Hyperthyroidism</td>
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<td>Status post Trauma</td>
<td>Recurrent Erosion</td>
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<td>Scarring</td>
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<td>Aniridie</td>
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Auto-immun Disease

- Patient MZ, 26, female, caucasian, business woman
- Anamnese
  - Epidermolysis Bullosa - Dystrophica EB (butterfly children)
  - Extreme photophobia and hyperemia OU, frequent pain, visual problems, symblepharon formation
  - Ophthalmologist every 1-2 months (surgery and eyelash epilation)
EB – objective findings
EB – objective findings
EB – Topography
EB - Plan

- overcome recurrent erosions with therapeutic contact lenses
  - Accelerate wound healing
  - Minimize recurrent erosions
  - slow down symblepharon neoplasm

- contact lenses CW:
  
  2006 – 2012 toric SiHy Senoflicon A 1W CW
  
  since 2012 Bitoric Scleral lenses
EB - Results

Status after 9 years
EB - Results

- Only 1x per year nasal symblepharon removal by ophthalmologist
- Eyelashes epilation no more necessary
- No more photophobia or pain
- Vacc 1.00-2 OU
Status after Trauma

• Patient DS, 54, male, business owner and passionate rally! driver
  o Status after trauma (car accident) with aniridia, aphakia and cornea involvement
  o severe sicca symptoms and photophobia OD>OS
  o Visual acuity OD significantly reduced and monocular double images
Trauma - objective findings

extreme Photophobia OD
Trauma - Plan

• Bridging the entire cornea with a therapeutic contact lens
  o Reduce sicca symptoms
• Visual rehabilitation
• Artificial pupil for reduction of photophobia
• Contact lens:
  o Scleral lens including iris print with clear pupil
Trauma - Results
Trauma - Results

- Sicca symptoms completely eliminated
- Hyperemia reduced from grade 2-3 to grade 1
- Photophobia significantly reduced and only disturbing on bright days
- Vacc OD 0.63, without monocular double images!
Sicca Syndrome

• Patient MP, 33, caucasian, male

• Anamnese
  o Status after LASIK (Switzerland) 3 years ago
  o Dry eyes when wearing contact lenses was the main reason for LASIK
  o Since LASIK, increased Sicca symptoms, especially in the morning, drops every 2 hours artificial tears
Sicca – Objective findings
Sicca – Analysis and Plan

• Inferior staining grade 3 and BUT only 2 seconds
  o Since the biggest problems occur in the morning, an evaporative sicca is unlikely
  o A nocturnal lagophthalmus could be the cause
• Therapeutic contact lenses only at night
  o To protect cornea from drying out overnight
  o Plano SiHy monthly disposable lens Lotrafilcon A
Sicca – Results

Status after 6 Month
Sicca - Results

• Sicca symptoms significantly reduced
• Wetting solutions only sporadic used
• It may be assumed that the previous failure of contact lenses and the resulting LASIK is to a large extent due to nocturnal lagophthalmus
Summary

- Indication for Tx contact lenses is more frequent than one thinks
- Therapeutic contact lenses are a real blessing for the patients
- The spectrum of materials and geometries possible today is enormous
- Interdisciplinary co-management with the treating ophthalmologist is of benefit for both sides
Voting 3

• How often do you consider therapeutic contact lenses in the future?

a) less frequent than today

b) as frequent as today

c) More frequent than today