

Sécheresse oculaire et lentilles de contact: Pourquoi, et comment la prévenir?

Marc Fankhauser

M.Sc. Vision Science & Business (Optometry)

eyeness ag, Bern / Switzerland

mfankhauser@eyeness.ch



CLD

Contact Lens Discomfort

Marc Fankhauser

M.Sc. Vision Science & Business (Optometry)

eyeness ag, Bern / Switzerland

mfankhauser@eyeness.ch

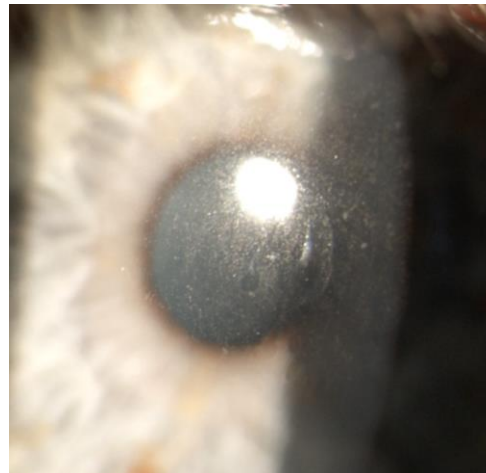
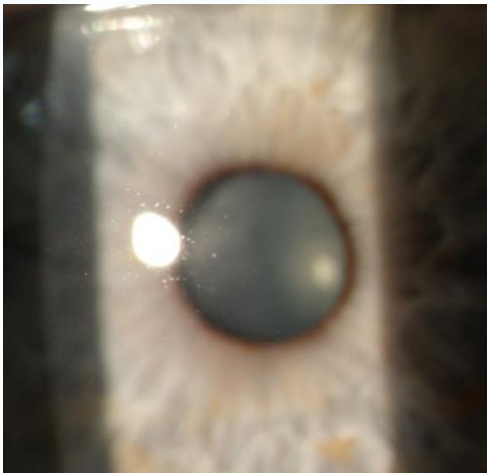


Content

- Definition
- Detection
- Prevalence
- Symptoms
- Solution / Management
- Challenges
- Take home message

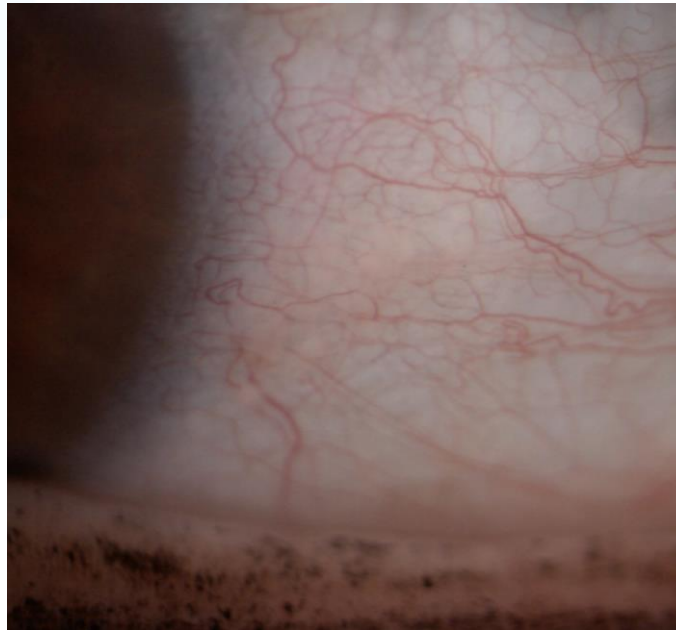
Definition

- CLD (Contact lens discomfort)
 - Terminated by TFOS (Tear Film and Ocular Surface Society) in 2013
 - Foreign body sensation (feeling the contact lens on the eye)
 - Symptoms lead to unsatisfied contact lens wearers



Definition

- CLD (Contact lens discomfort)
 - Leads to drop out
 - A lot of wearers discontinue wearing the CL
 - Even though that the industry has realised new materials and designs

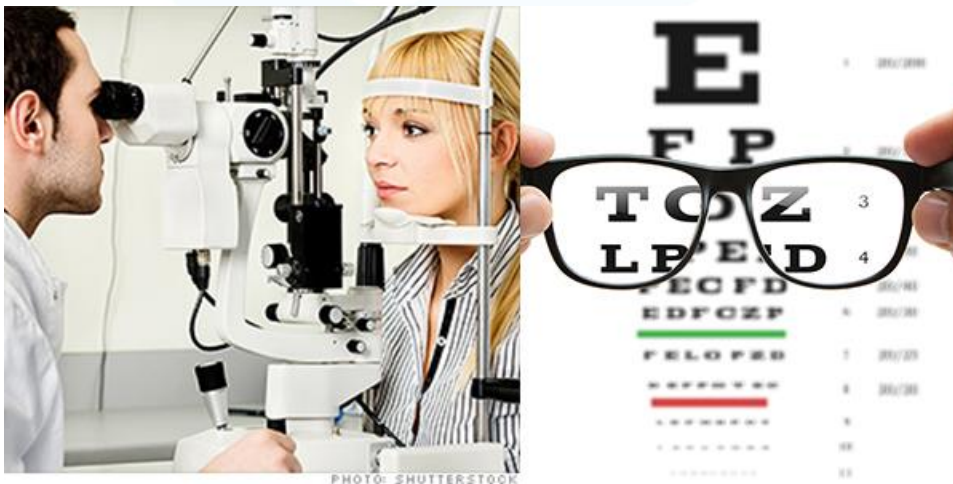


Detection

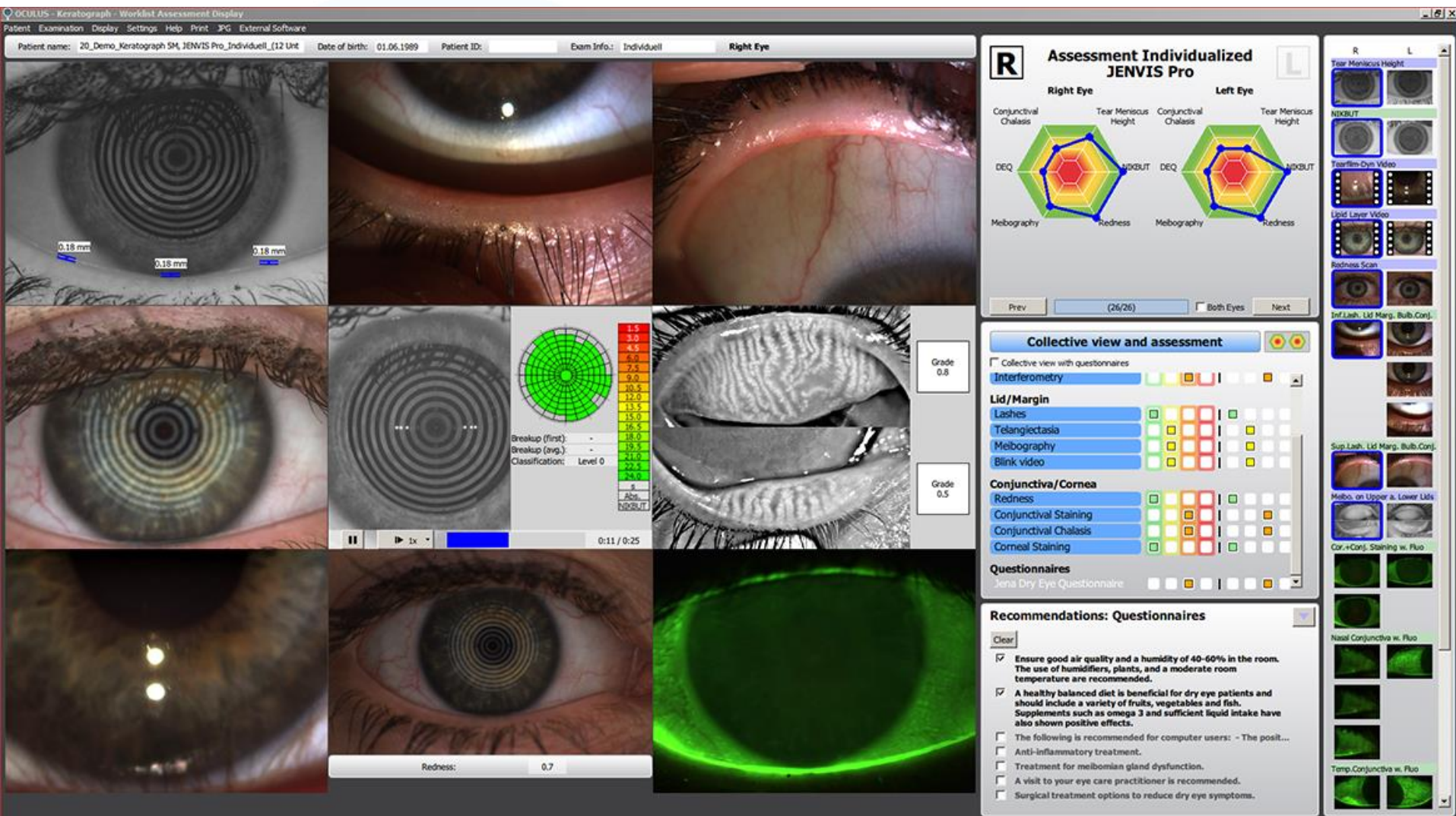
- Ocular surface

- Healthy or not

- ECP (Eye Care Practitioner) has to detect pre-existing abnormalities
 - ECP has the responsibility, cause results have influence on how well a contact lens can be worn/used
 - Using different test and instruments



Detection



Detection

- Ocular surface

- Tests separating normal and not
 - Tear film meniscus
 - Tear film stability
 - MGD (Meibomian gland dysfunction)
 - Corneal surface
 - Conjunctival hyperemia
 - Tarsal conjunctival smoothness
 - LWE (Lid wiper epitheliopathy)
 - LIPCOF (Lid parallel conjunctival folds)

Detection

- Ocular surface
 - Tests separating normal and not
 - Tear film meniscus



Detection

- Ocular surface
 - Tests separating normal and not
 - Tear film meniscus



Question

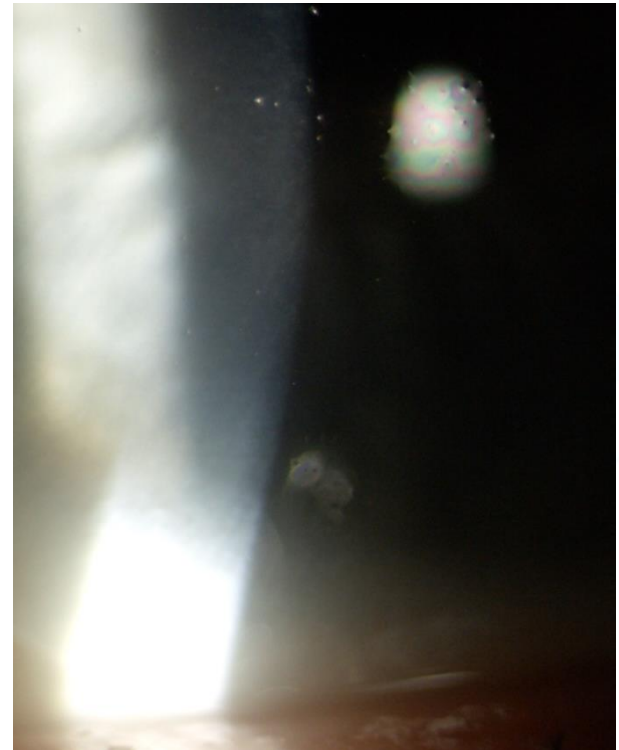
- At what point of the control with the microscope/slit lamp the tear film meniscus has to be measured?
 - A In the beginning
 - B In the middle
 - C At the end

Answer

- At what point of the control with the microscope/slit lamp the tear film meniscus has to be measured?
 - A In the beginning
 - B In the middle
 - C At the end

Detection

- Ocular surface
 - Tests separating normal and not
 - Tear film stability
 - Due to interferential pattern the ECP can detect the thickness of the lipid layer



Detection

- Ocular surface
 - Tests separating normal and not
 - MGD (Meibomian gland dysfunction)



Question

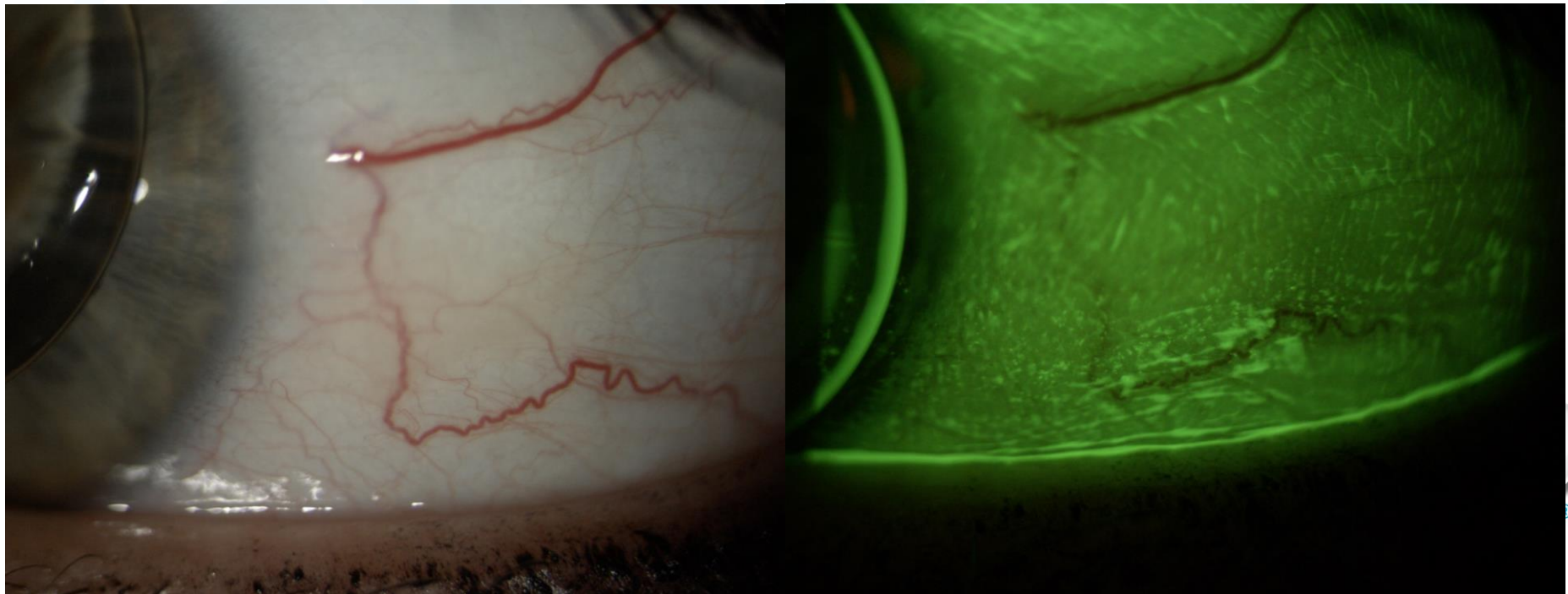
- What can be done in first place to reduce MGD?
 - A Surgery
 - B Heat, massage, cleaning of lids
 - C Artificial tears
 - D Liposomal spray

Answer

- What can be done in first place to reduce MGD?
 - A Surgery
 - B Heat, massage, cleaning of lids
 - C Artificial tears
 - D Liposomal spray

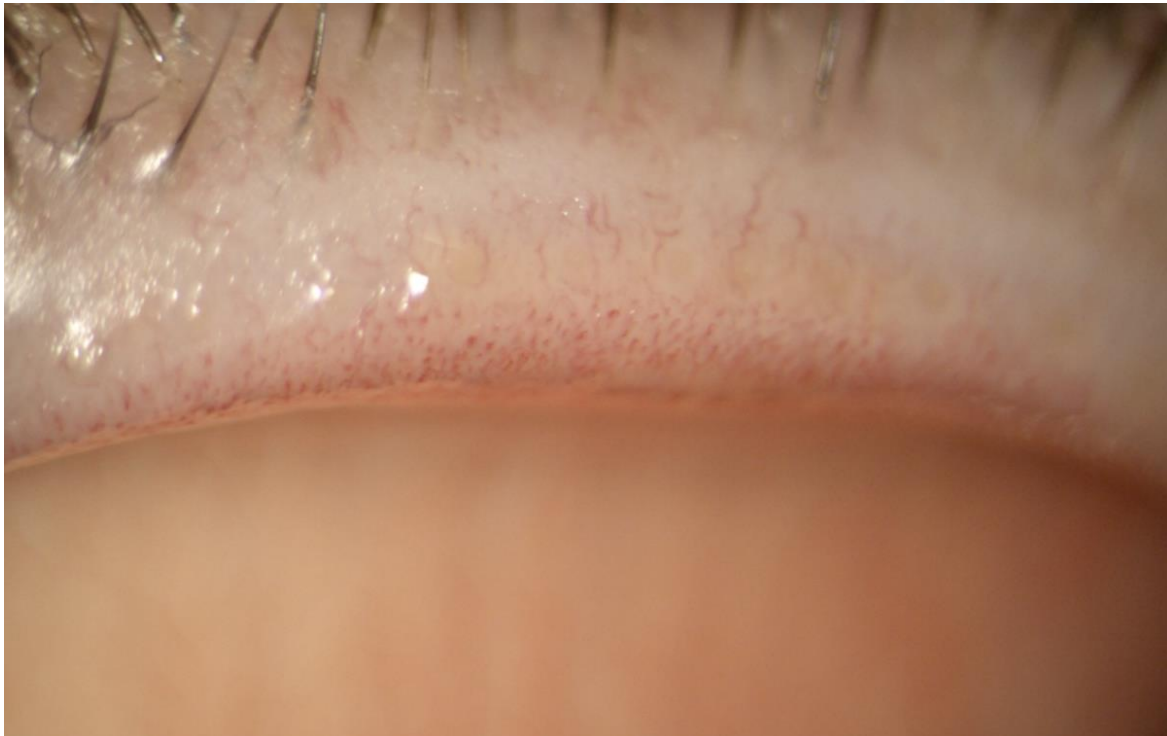
Detection

- Ocular surface
 - Tests separating normal and not
 - Conjunctival hyperemia



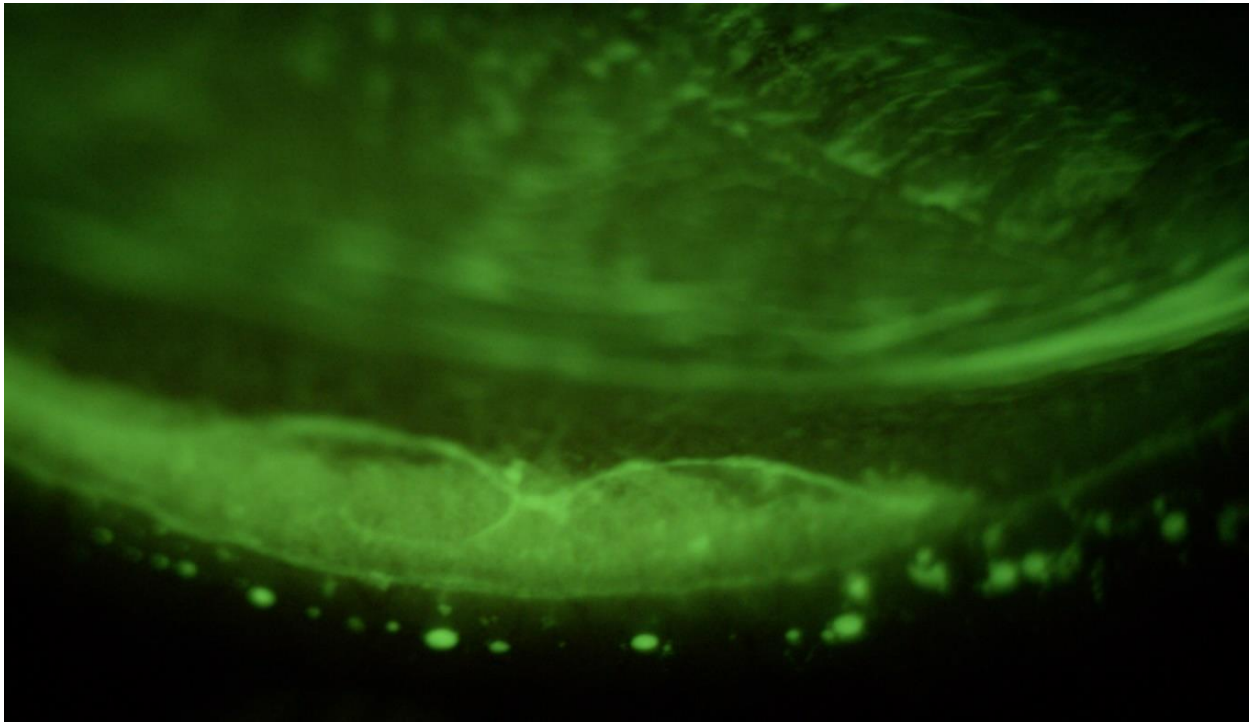
Detection

- Ocular surface
 - Tests separating normal and not
 - LWE (Lid wiper epitheliopathy)



Detection

- Ocular surface
 - Tests separating normal and not
 - LWE (Lid wiper epitheliopathy)



Detection

- Tear film

- The contact lenses interacts with the tear film
 - It decreases the tear film stability, increases the tear evaporation, reduces the tear film turn over
- There is a decrease in tear volume towards the end of the day
- Contact lens dryness can be used to describe a specific symptom of CLD
 - That drying of the contact lens causes more friction while blinking and this is felt as uncomfortable

Detection

- Ocular surface

- Questioner

- Px can fill out in advance

- Comfort score

- Asking the patient about the sensation
 - From comfortable to very uncomfortable

- Systemic conditions

- Often potential contact lens wearer are younger and therefore less likely to have

- ECP has to do a proper anamnese

- Coexisting pathologies like autoimmune disease,...

- Mx like “Anti Baby Pille” are often forgotten and may have an influence on the tearfilm

DEQ 5

1. Questions about **EYE DISCOMFORT**:

a. During a typical day in the past month, how often did your eyes feel discomfort?

0 ☐ Never
 1 ☐ Rarely
 2 ☐ Sometimes
 3 ☐ Frequently
 4 ☐ Constantly

b. When your eyes felt discomfort, how intense was this feeling of discomfort at the end of the day, within two hours of going to bed?

Never have it Not at all intense Very intense
 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

2. Questions about **EYE DRYNESS**:

a. During a typical day in the past month, how often did your eyes feel dry?

0 ☐ Never
 1 ☐ Rarely
 2 ☐ Sometimes
 3 ☐ Frequently
 4 ☐ Constantly

b. When your eyes felt dry, how intense was this feeling of dryness at the end of the day, within two hours of going to bed?

Never have it Not at all intense Very intense
 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

3. Question about **WATERY EYES**:
 During a typical day in the past month, how often did your eyes look or feel excessively watery?

0 ☐ Never
 1 ☐ Rarely
 2 ☐ Sometimes
 3 ☐ Frequently
 4 ☐ Constantly

| | | | | | | | | | | | |
|--------|-----|---|-----|---|-----|---|-----|---|-----|---|-------|
| Score: | 1a | + | 1b | + | 2a | + | 2b | + | 3 | = | Total |
| | ___ | + | ___ | + | ___ | + | ___ | + | ___ | = | ___ |

Detection

- Once all the above has be done and improved if necessary, a contact lens fitting can be realised
- During and after the fitting, it is very important to ensure in regular checkups that everything is fine
 - Frequent wearers every six months
 - Spontaneous wearers once a year



Detection

- If CLD is eliminated by lens removal it is confirmed that the presence of the contact lens is responsible for the symptoms and the associated problems



Question

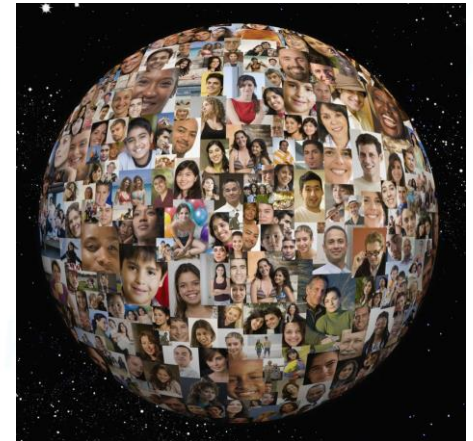
- How many hours should a contact lens be worn for the first checkup?
 - A The contact lens can be put while the first checkup
 - B 1 to 2 hours
 - C 2 to 4 hours
 - D more than 4 hours

Answer

- How many hours should a contact lens be worn for the first checkup?
 - A The contact lens can be put while the first checkup
 - B 1 to 2 hours
 - C 2 to 4 hours
 - D more than 4 hours

Prevalence

- 32 to 50% of wearers have symptoms of ocular dryness and irritations, but!!!
 - The studies published have a lot of variabilities
 - Gender
 - Ethnical origin
 - Geographic location
 - Sample range (from 105 to 3285 people)
 - Clinical studies, studies in private practices
 - Prospective and retrospective
- These numbers do not have to apply to us, but still it is clear that there is a lot of unknown out there about CLD



Symptoms

- Visual disturbance
 - Sometimes yes, sometimes no
- Reduced comfortable wearing time
 - Persistent or episodic adverse ocular sensation
- Reduced total wearing time
- Temporary discontinuation
- Permanent discontinuation

The estimated annual range of contact lens dropout is between 10 to 30% ☹️



Management

- Regular checkup
 - Make sure patients have best material and care products for their needs
 - Give advices that may improve comfort
 - Blinking exercises
 - 20/20/20
 - Avoid adverse environment (AC, dust,...)
 - Use supplement products
 - Artificial tears
 - Sprays
 - Gels
 - Nutrition (Fatty acids)
 - Punctal occlusion



Question

- Since when silicone hydrogel material (material with a high oxygen permeability) exist?

- A ~1980
- B ~1990
- C ~2000
- D ~2010

Answer

- Since when silicone hydrogel material (material with a high oxygen permeability) exist?

A ~1980

B ~1990

C ~2000

D ~2010

Management

- Material

- Larger diameter, steeper base curve, thinner center thickness, better edge shape and/or different backside of the lens may reduce CLD

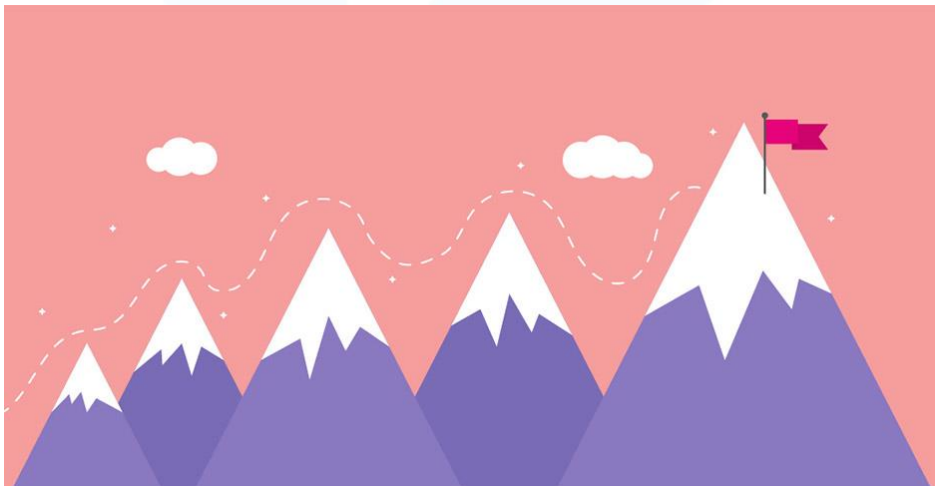
- Cleaning regime

- Reduce deposits on contact lenses
 - Rub, rinse and soaking (cleaning and disinfection) helps to keep the contact lens as proper as possible
- Increase the frequency of replacement (Daily disposable reduce the use of cleaning product to a minimum)



Consequences

- Higher penetration would create higher financial possibilities
- If so, the industry can continue their research and development on contact lens materials and designs



Take home message

- It is essential that the ECP identifies the shown challenges first
- Then the ECP has to manage the identified challenges
- And then, in a further step a contact lens fitting can be realised
 - If the ECP doesn't follow that rule, it can lead to CLD and therefore to the related problems