

Optometry

when refraction enters the eye

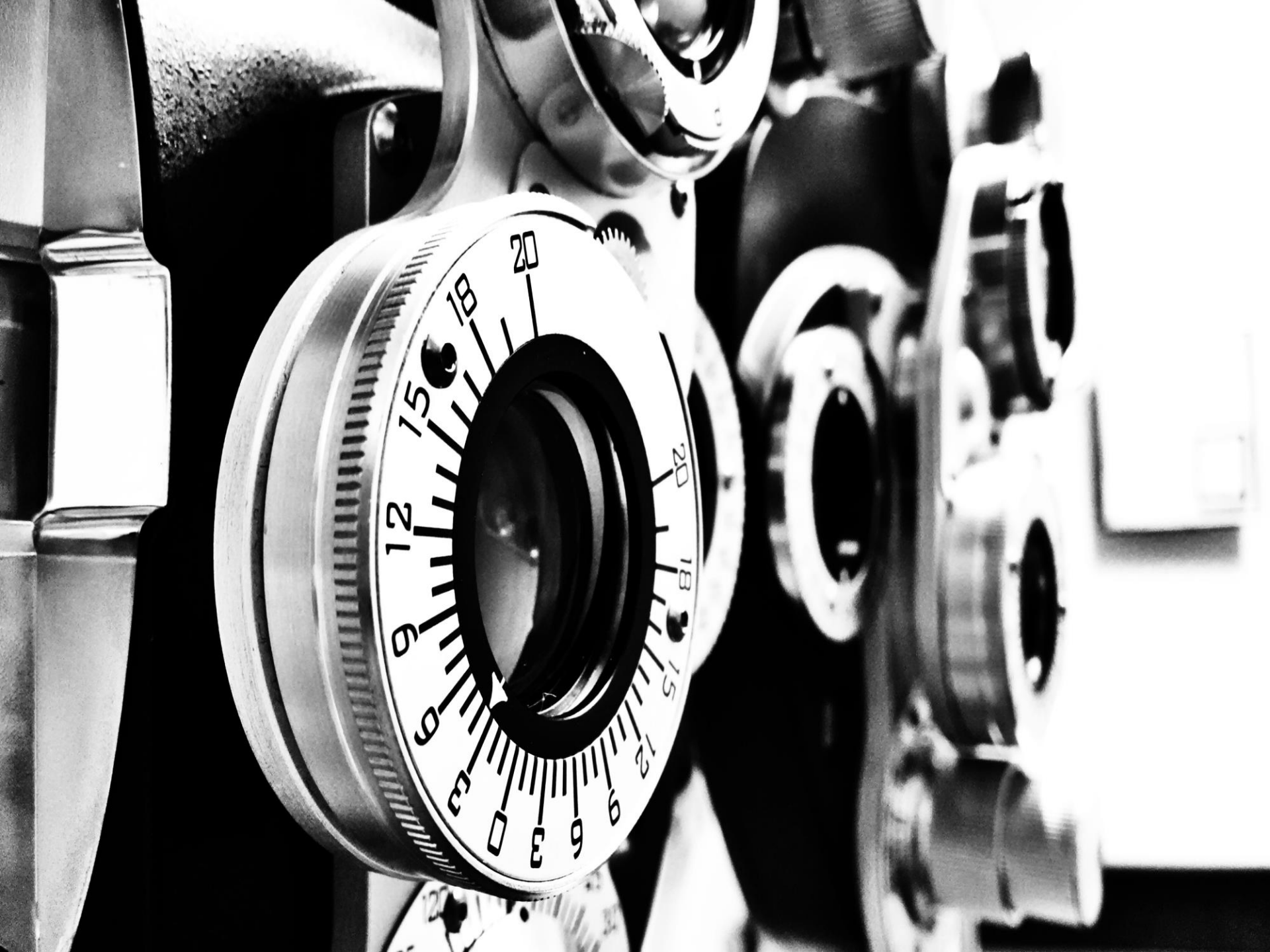
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Real Life

- Refraction with the goal of the perfect optical solution for the customer
- extremely precise, quick, relaxed, **for free**



PasKal 3D

Mit Apple TV und Kino-Effekt zur perfekten Gleitsichtbrille

Optometry

- „Optometrists check eye health, analyze vision problems and determine correction values“
 - Anamnese
 - Refraction, inclusive binocular Status
 - Functional tests: Neurology and motor skills
 - Evaluation of anterior Segment
 - Evaluation of posterior Segment
 - Tonometry
 - Perimetry

Optometry

- What's all the effort for??



Case 1

- Patient SB, 20 y, female, caucasian, Business woman
- Anamnese
 - Myopia OD -3.0 / OS -2.25 Vacc 1.00 OU
 - Diabetes Mellitus
 - Medicamentation: Insulin, Contraceptiva
 - Family Hx: negativ
 - contact lens wearer, monthly disposable since 2014
 - Annual ophthalmologist examinations, no abnormalities

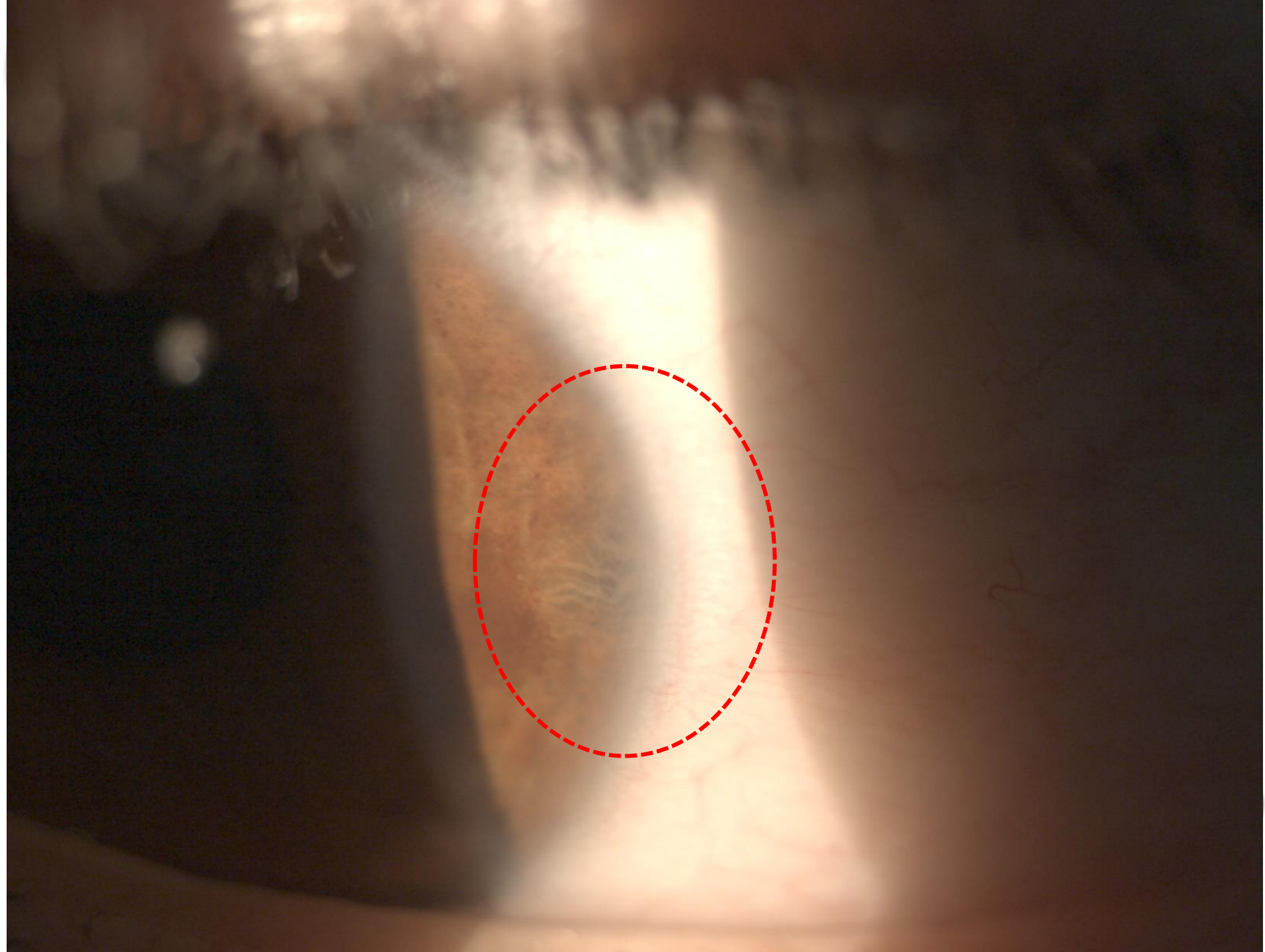
SOAP

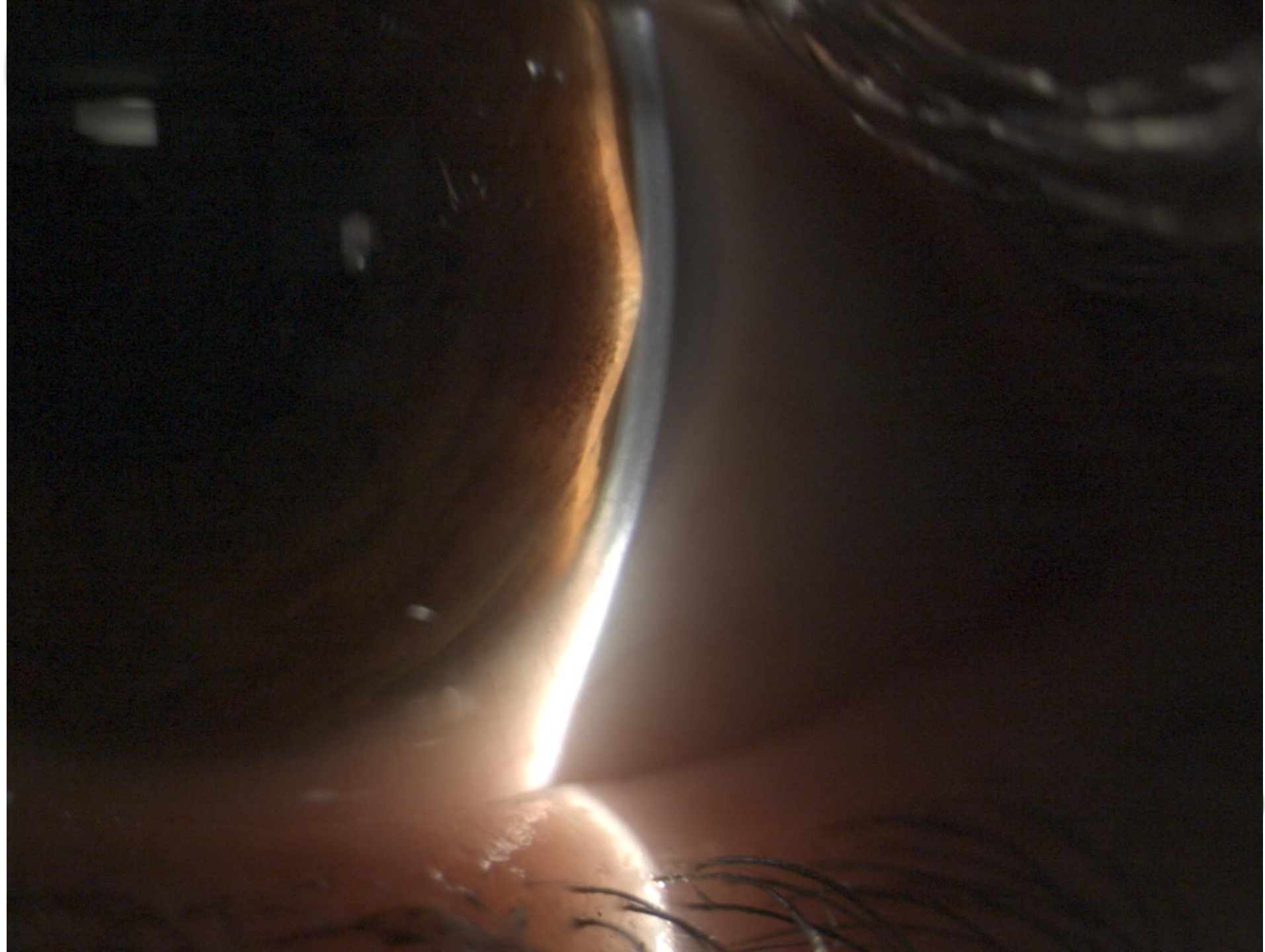
- Subjectiv

- Dry Eye after 15h wearing time, vision at all distances comfortable, handling on / off without problems, medication unchanged

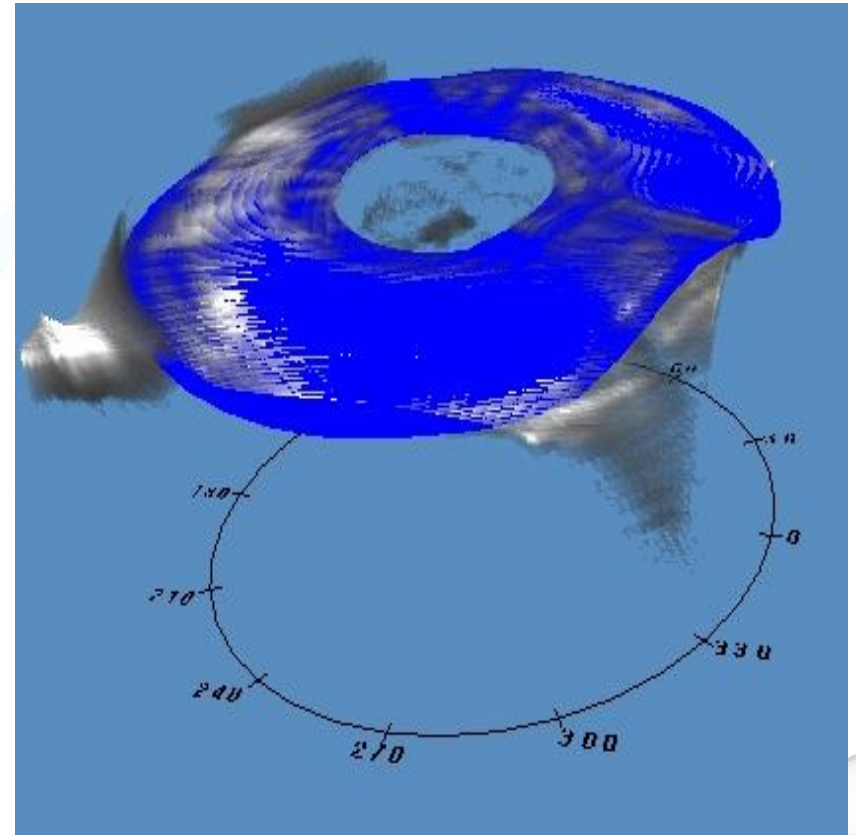
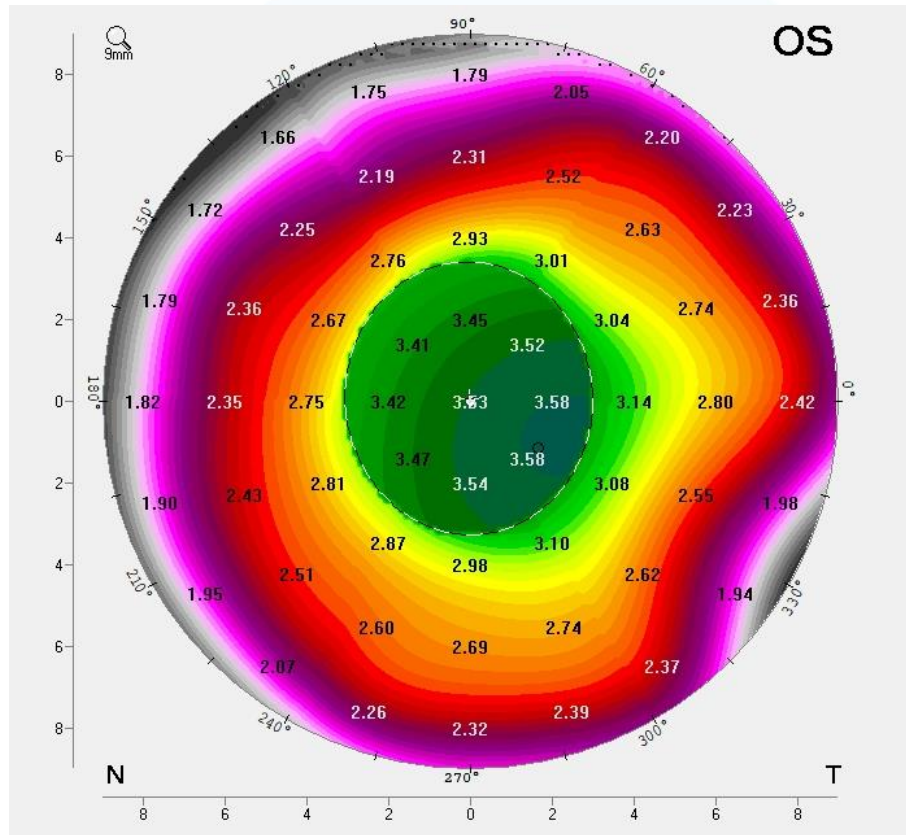
- Objectiv

- Refraction unchanged OD -3.0 / OS -2.25 Vacc 1.00 OU
- Cover Ortho for Distance / mild Exophoria for Near
- Pupil PERRLA (-) APD
- Motility full without restrictions
- NPC <10cm

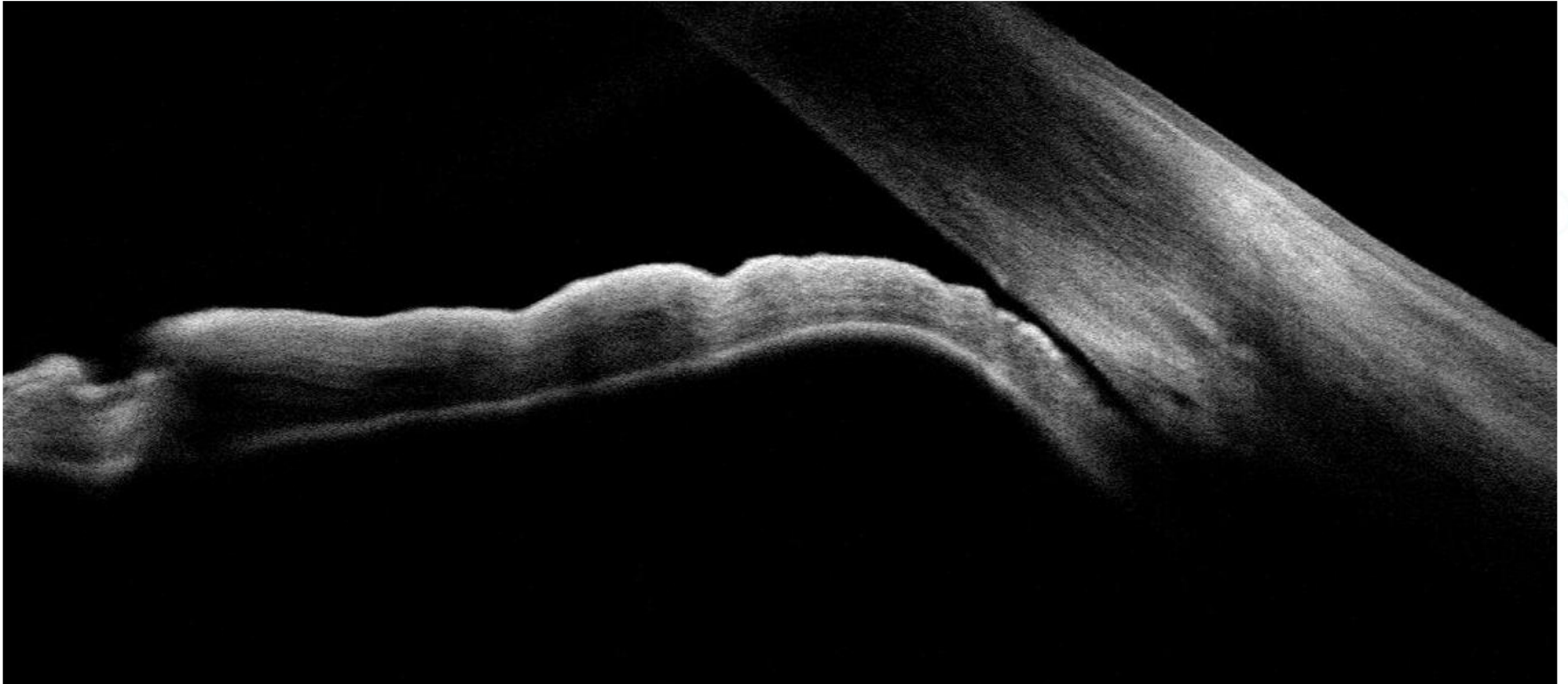




Pentacam anterior chamber



OCT anterior Segment



posterior Segment



Zeit 16:21:18

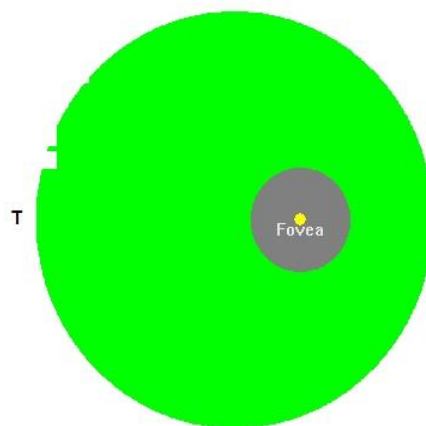
Gut 56

Scanqualitäts-Index

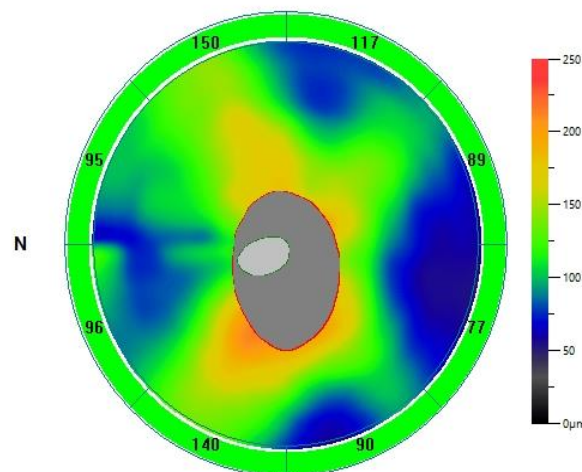
Gut 57

Zeit 16:21:42

NDB Referenz



Sehnervenkopf Karte

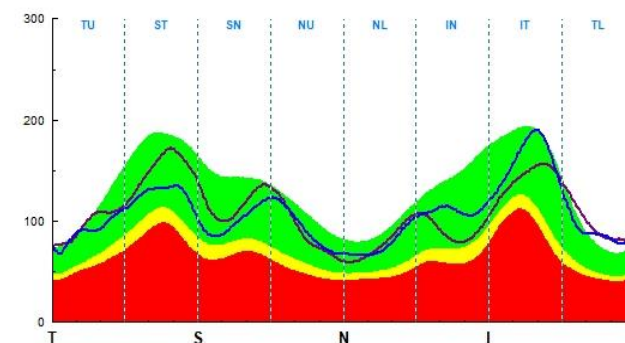


Parameter RNFL-Zusammenf.

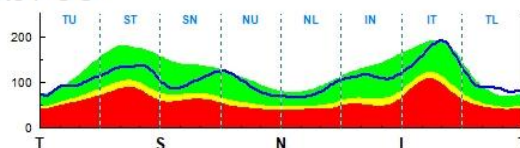
RNFL Analyse (μm)	OD	OS	Unterschied beider Augen
Ø RNFL Dicke	107	105	2
Ø RNFL superior	113	101	12
Ø RNFL inferior	101	108	-7
Intra Augen Diff. (S-I)	12	-7	N/A

ONH Analyse	OD	OS	Unterschied beider Augen
C/D Fläche	0.12	0.11	0.01
V. C/D	0.24	0.25	-0.01
H. C/D	0.43	0.41	0.02
Randsaumfläche (mm²)	1.77	1.42	0.35
Papillenfläche (mm²)	2.01	1.60	0.41
Exkavationsvolumen (mm³)	0.016	0.012	0.004

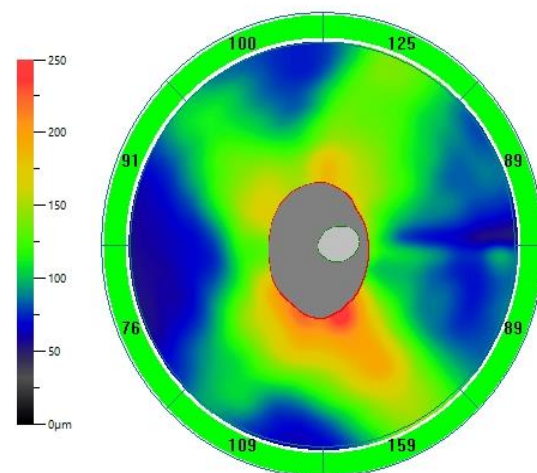
TSNIT Normdatenref.



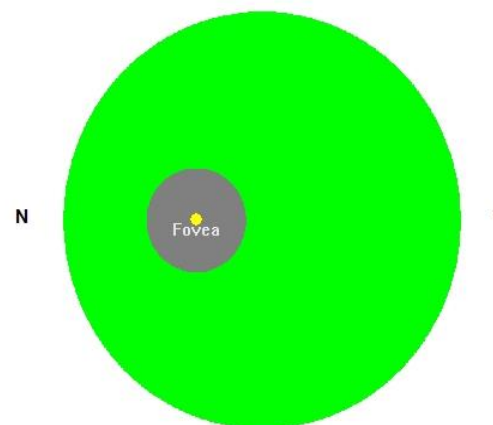
Links / OS



Sehnervenkopf Karte



NDB Referenz



Parameter GCC-Zusammenf.

Durchschn. GCC (μm)	OD	OS	Unterschied beider Augen
Gesamt	106	108	-2
Superior	102	103	-1
Inferior	111	112	-1
Intra Augen Diff. (S-I)	-9	-9	N/A
FLV (%)	0.042	0.007	0.035
GLV (%)	0.058	0.008	0.050

Zeit 16:23:07

Gut 47

Scanqualitäts-Index

Gut 55

Zeit 16:22:56

Ausdruck

OU Bericht

Perimetry Octopus

OS 18.09.2018 / 16:52

Untersuchungsparameter:
Refraktion, Korrekturglas (S/C/A), Pupille:

G, TOP, Pulsar, Weiss/Weiss, Pulsar
-, -, 3,6 mm

Falsch positive/negative:

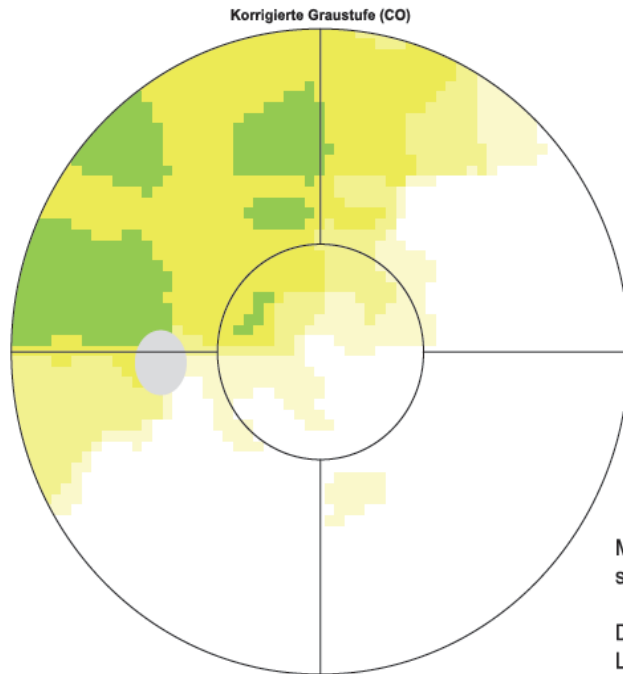
0% (0/2), 0% (0/5)

Dauer, Fragen/Wiederholungen:

02:47, 75/7

Fixationskontrolle:

Aus



Zuverlässigkeit und Indizes:

MD: [src]: **5.9** ($p < 5\%$)

sLV: [src]: **5.2** ($p < 5\%$)

DD: [src]: **2.4** ($p < 10\%$)

LD: [src]: **5.0** ($p < 5\%$)

Stimulus: Weiss, Pulsar, Pulsar, 200 asb, 500 ms

Hintergrund: Weiss/100 asb

Graustufe (CO): Defekt [% von normal] 100 0



OD 18.09.2018 / 16:48

Untersuchungsparameter:
Refraktion, Korrekturglas (S/C/A), Pupille:

G, TOP, Pulsar, Weiss/Weiss, Pulsar
-, -, 3,9 mm

Falsch positive/negative:

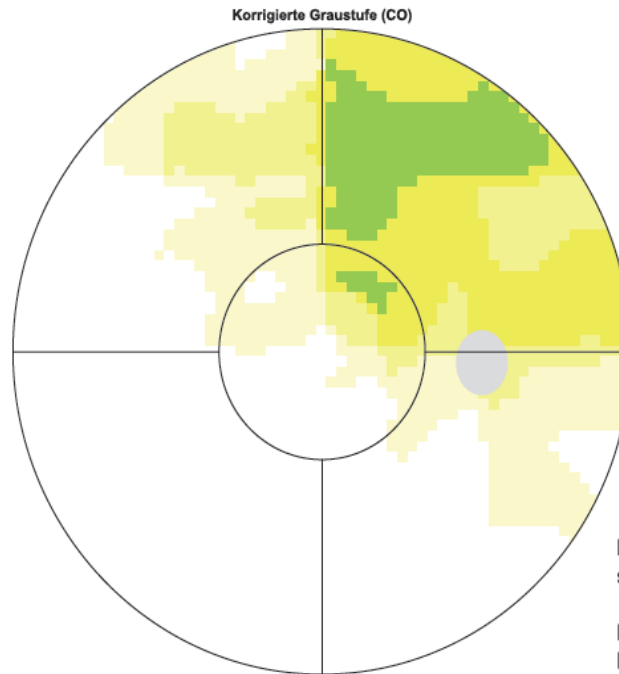
0% (0/4), 0% (0/4)

Dauer, Fragen/Wiederholungen:

02:41, 74/5

Fixationskontrolle:

Aus



Zuverlässigkeit und Indizes:

MD: [src]: **3.4** ($p < 5\%$)

sLV: [src]: **4.5** ($p < 5\%$)

DD: [src]: **0.5** ($p > 10\%$)

LD: [src]: **4.1** ($p < 5\%$)

Stimulus: Weiss, Pulsar, Pulsar, 200 asb, 500 ms

Hintergrund: Weiss/100 asb

Graustufe (CO): Defekt [% von normal] 100 0



Analysis and Plan

- OS Iris with grayish elevation in 4-5 o'clock, which seems to originate from the ciliary body
ciliary body cyst
- Perimetry with bitemporal quadrantanopsia, defect located at Chiasma
pituitary gland hyperplasia (ev Diabetes correlation)
- Referral and ophthalmological examination indicated

Case 2

- Patient DB, 55 y, female, caucasian, Translator
- Anamnese
 - Wants new glasses, everything else OK
 - wearing glasses and contacts (myopia)
 - Last eye check 5 years ago (ophthalmic optician)
 - Had never visited an ophthalmologist, be healthy
 - Medication: negative

SOAP

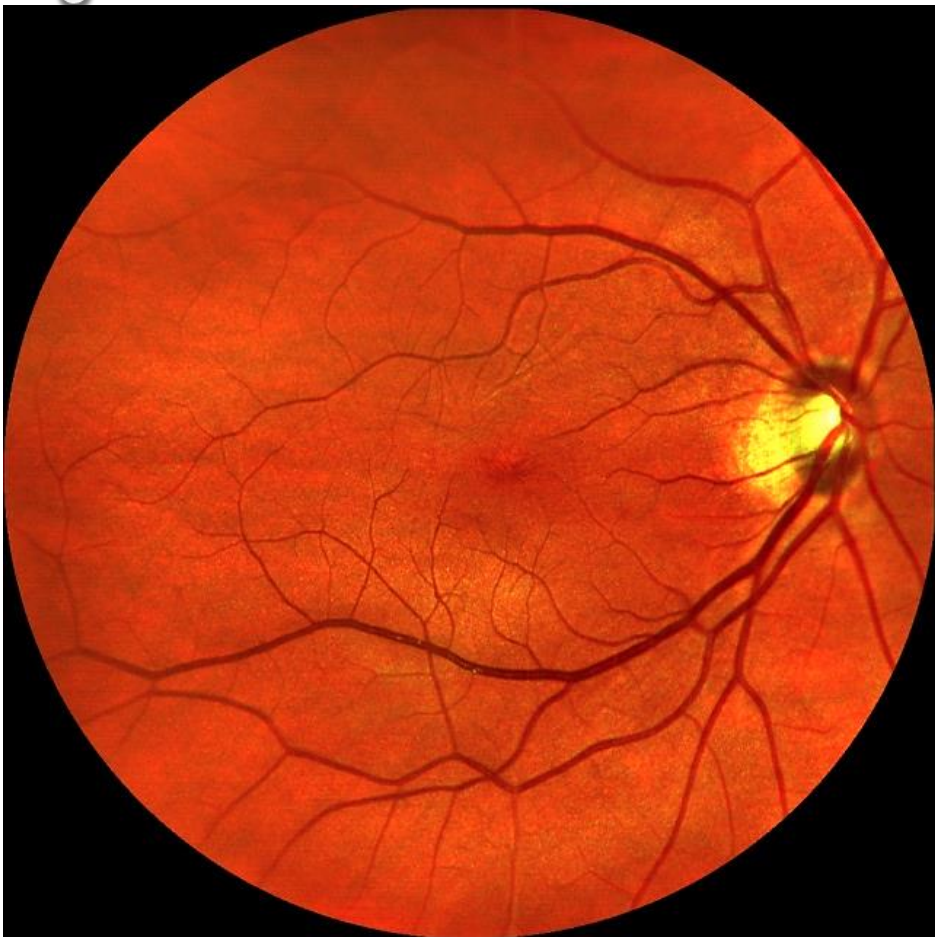
- Subjectiv

- Vision at all distances with 5 year old glasses OK, OD but no longer optimal for distance and near

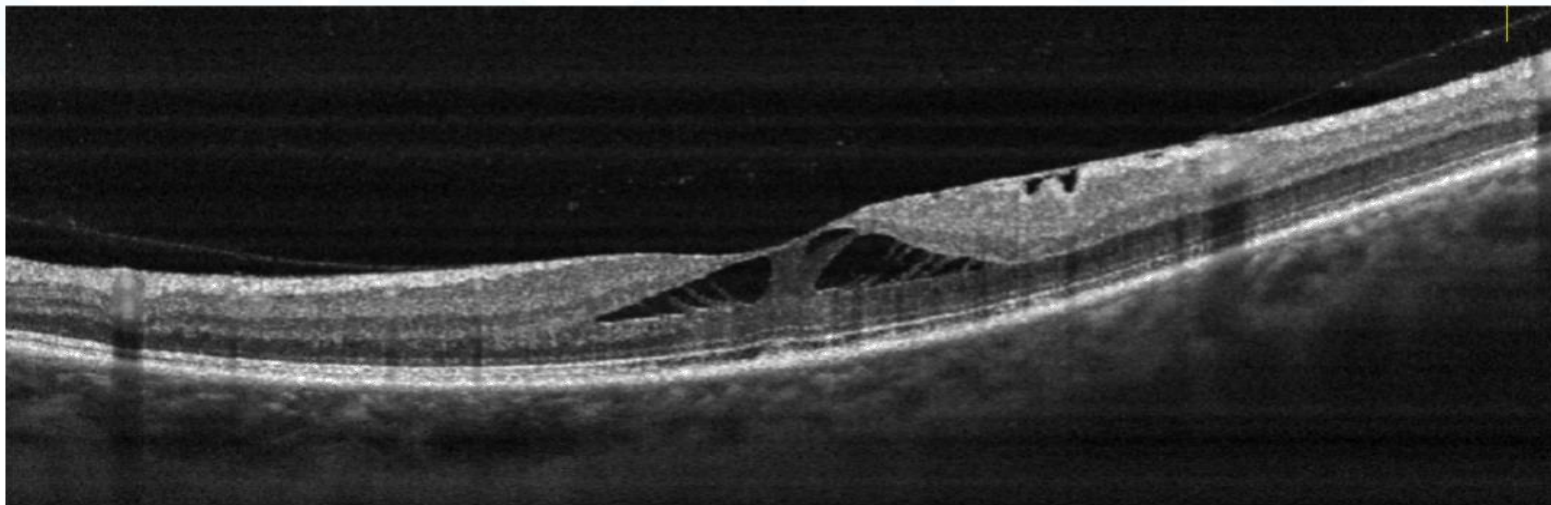
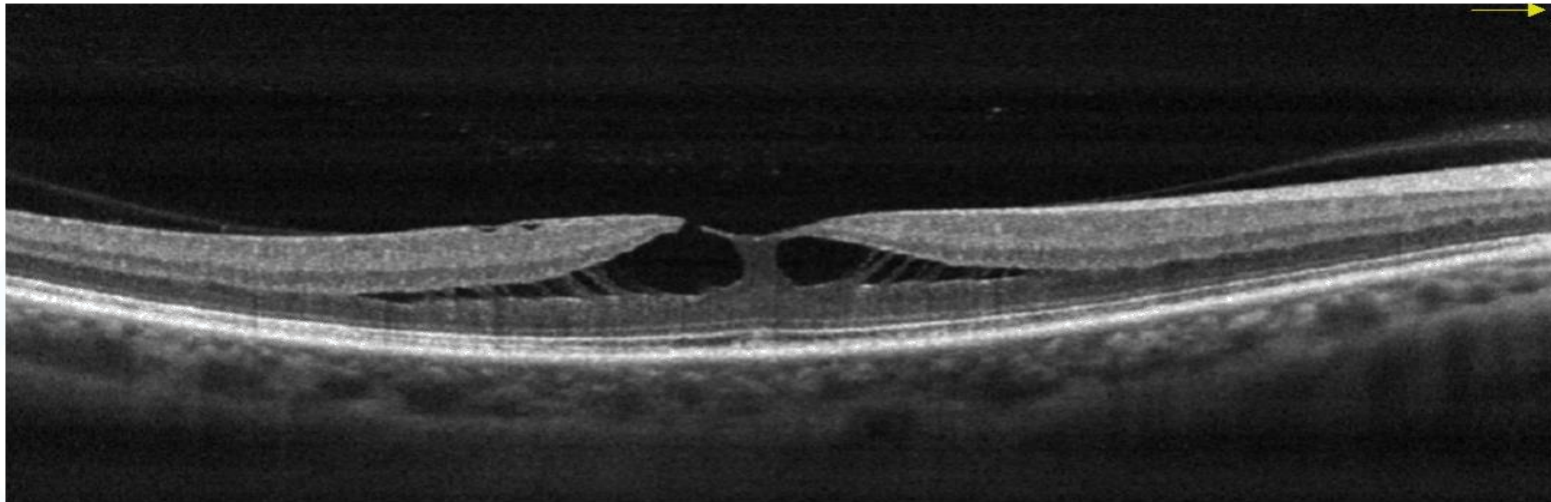
- Objectiv

- Refraction OD -4.50 -0.25 22° Vacc 0.80/ OS -4.75 Vacc 1.00
// Addition +2.0 in 40cm Vacc 0.63 OD / Vacc OS 1.0
- Cover Ortho for distance / Exophoria for Near (Addition)
- Pupil PERRLA (-) APD
- Motility full, without any restrictions
- NPC <10cm

posterior Segment



posterior Segment



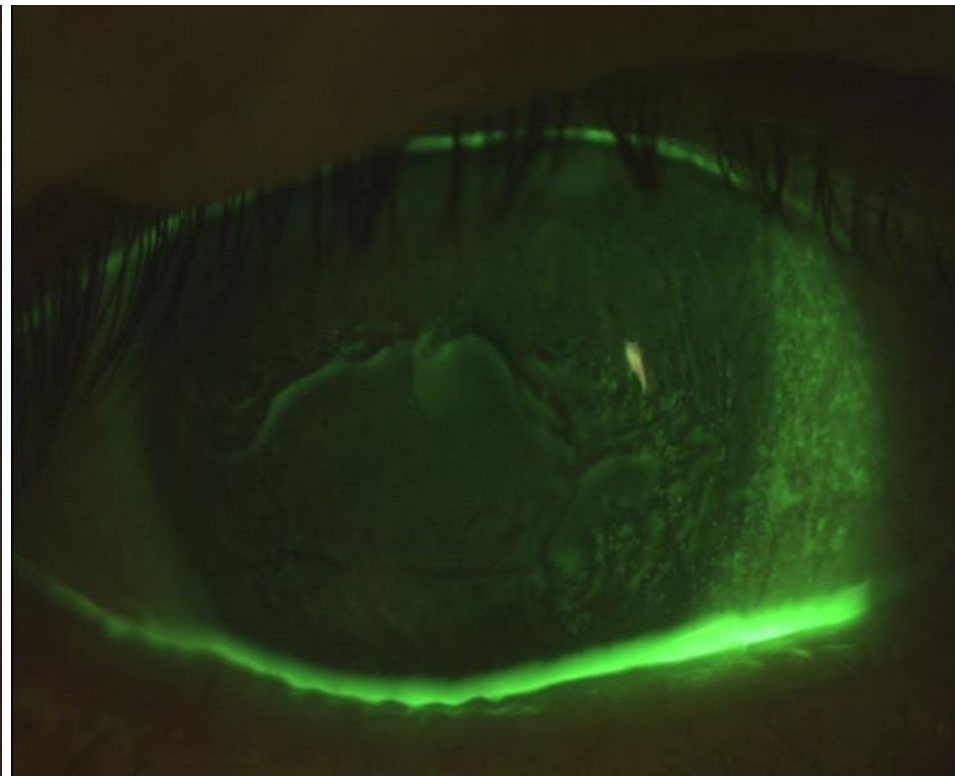
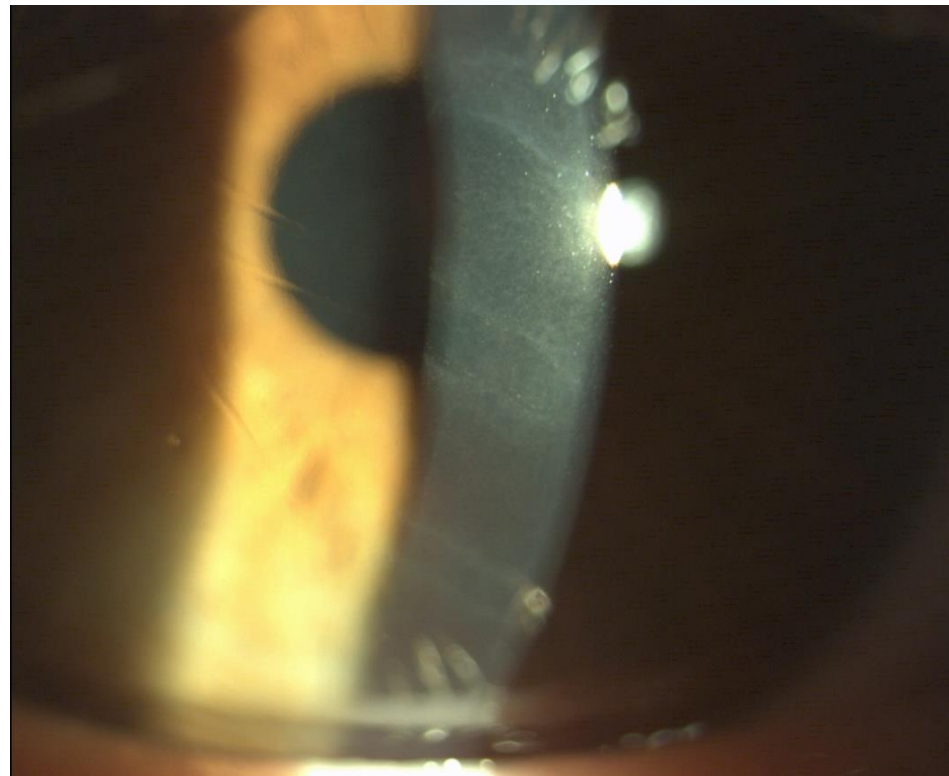
Analysis and Plan

- OD Epiretinal membrane, plus vitreous detachment with traction of the macula and resulting layer foramen or lacunae
- Referral and ophthalmological examination indicated
 - Treatment Options: Peeling of the membrane vs. Observation, as good visual acuity still provided

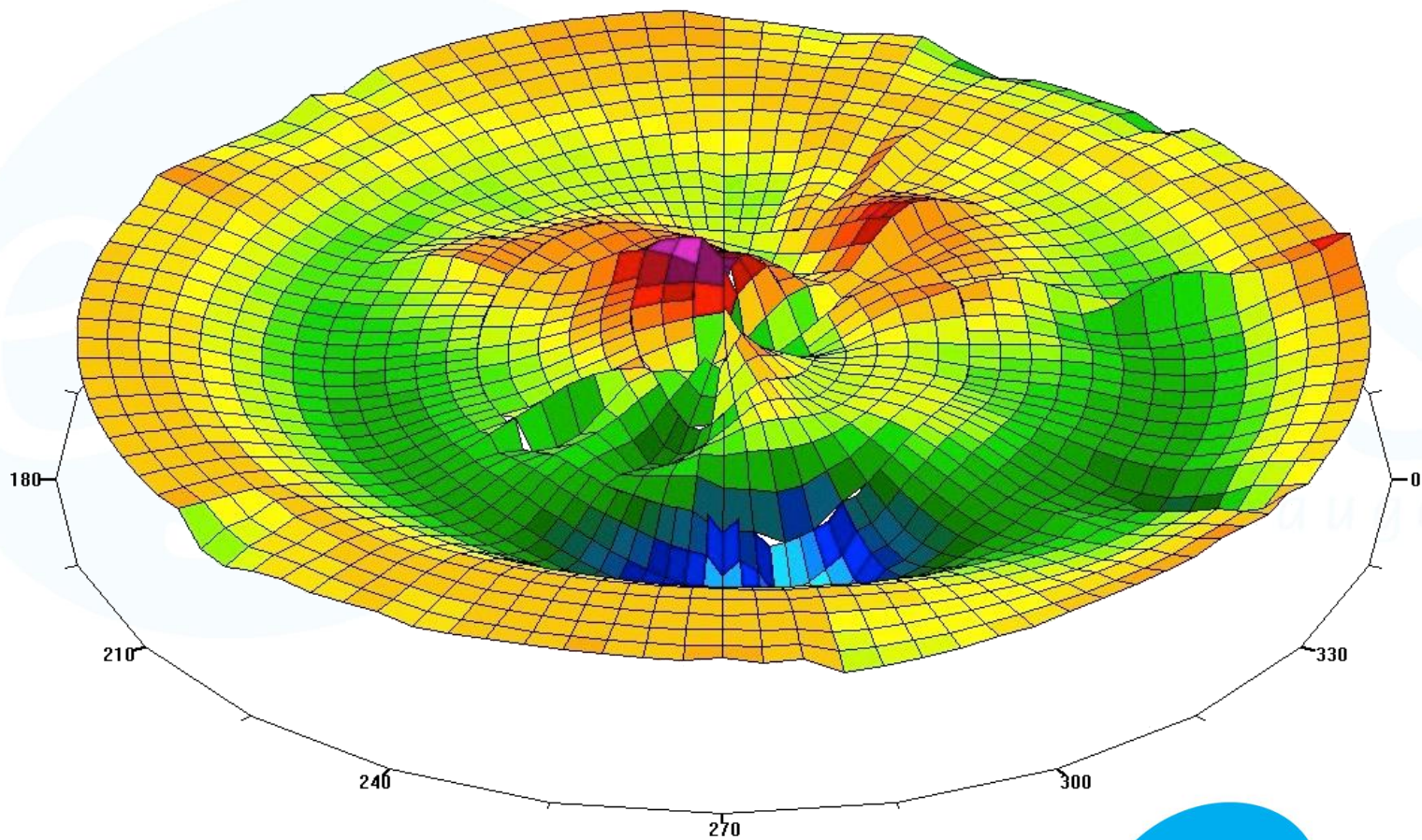
Case 3

- Patient EA, 68y, male, caucasian, retired graphic artist
- Anamnese
 - OD Amblyopia? Increasing reduction of visual acuity
 - Since 10 years, recurrent pain OU (usually in the morning, sand feeling)
 - Ophthalmological examinations "ok" so far
 - Refraction:
+2.50 -8.50 170 Vacc 0.63 / +2.50 -4.50 22 Vacc 1.0
Addition +2.25 40cm

Slitlamp



Topography

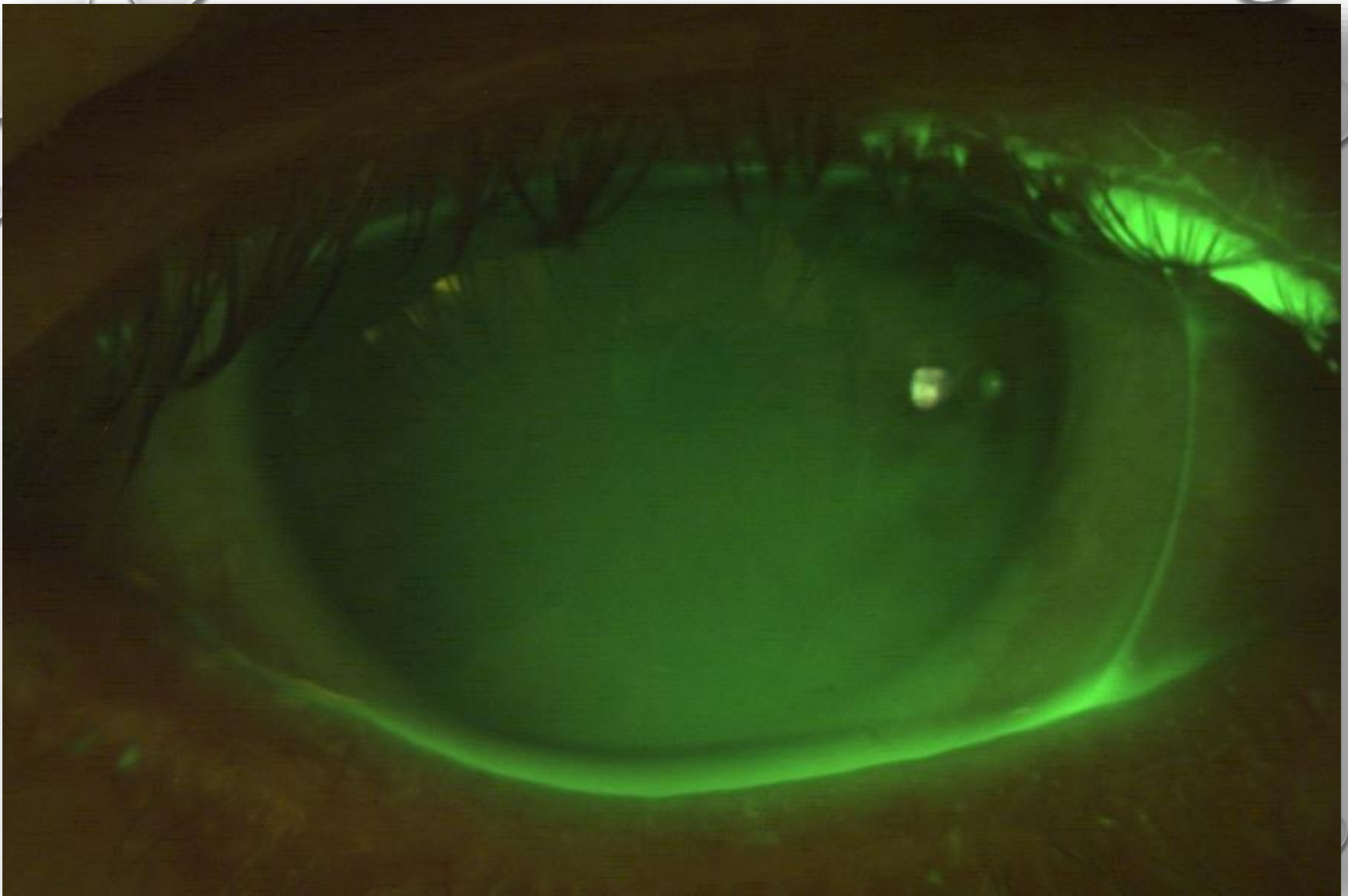


Analysis

- Epithelium Basal Membran Dystrophie (EBMD)
 - Fluorescein positiv, no diffusion into Stroma
 - Pain and Sicca Symptoms as a result from recurrent erosions of the EBMD
- Irregular astigmatism due to EBMD, suspected to cause decreasing visual acuity
- Meibomian Gland Dysfunction Grad 3
 - Does ev play a minor role?

Plan

- EBMD – to overbridge recurrent Erosions with therapeutic contact lenses
 - Accelerate wound healing
 - Minimize Recurrence
- Visual Rehabilitation
- Used Tx contacts:
Front-toric Sclerals (Dynamic Stabilisation) Ø 16.00



Status after 6 Month

Results

- **No** recurrent erosion with pain for 4 years now
 - no more fluorescein positive areas observed
 - EBMD still visible
- Vacc OU 1.0 distance **and** near!
 - Presbyopia corrected with Monovision

Summary

- Only a complete optometry screening with a standardized procedure is the requirement to detect abnormalities
- A complete, preferably digital documentation and referral is of essential value for the future

Summary

«Optometry is far more than selling services or offering an accurate refraction , it is about the health of our patients . . .

. . . and yes, sometimes it is about life or death!»



www.eyeness.ch/news/downloads