

**Indications
for
customized ablation**

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Wavefront-optimized profile

Theory:

- **remove sphero-cylindrical error**
- **correct average induced spherical aberration**

Reality:

- **increased keratectomy depth**
- **non-symmetrical terms: tilt, coma, ...**

Current 6 month results for wavefront-adjusted LASIK up to 7 D

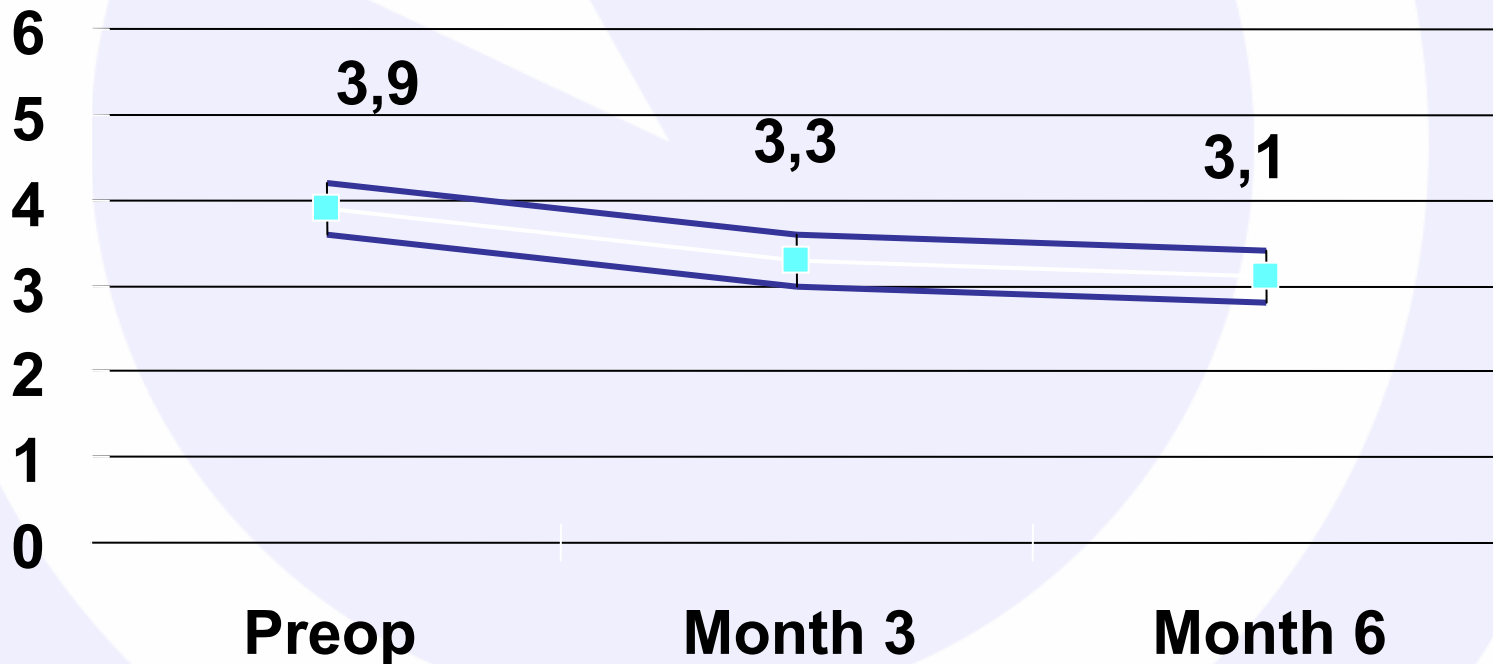
- **UCVA**
 - **20/10 or Better** **3.5%**
 - **20/12.5 or Better** **25.0%**
 - **20/16 or Better** **67.6%**
 - **20/20 or Better** **90.6%**
- **BSCVA**
 - **Improve 1 Line or More** **59.3%**

6 month results (FDA) in wavefront-adjusted LASIK up to 7 D - myopic astigmatism -

- **Postop refraction**
– **within ± 0.5 D** **89 %**
- **Complication rate**
– **loss of 2 lines** **0.9 %**

When you encounter bright light, such as headlights, streetlights, etc., how much glare do you experience?

**Improvement Preop to Postop:
 $p < 0.001$**



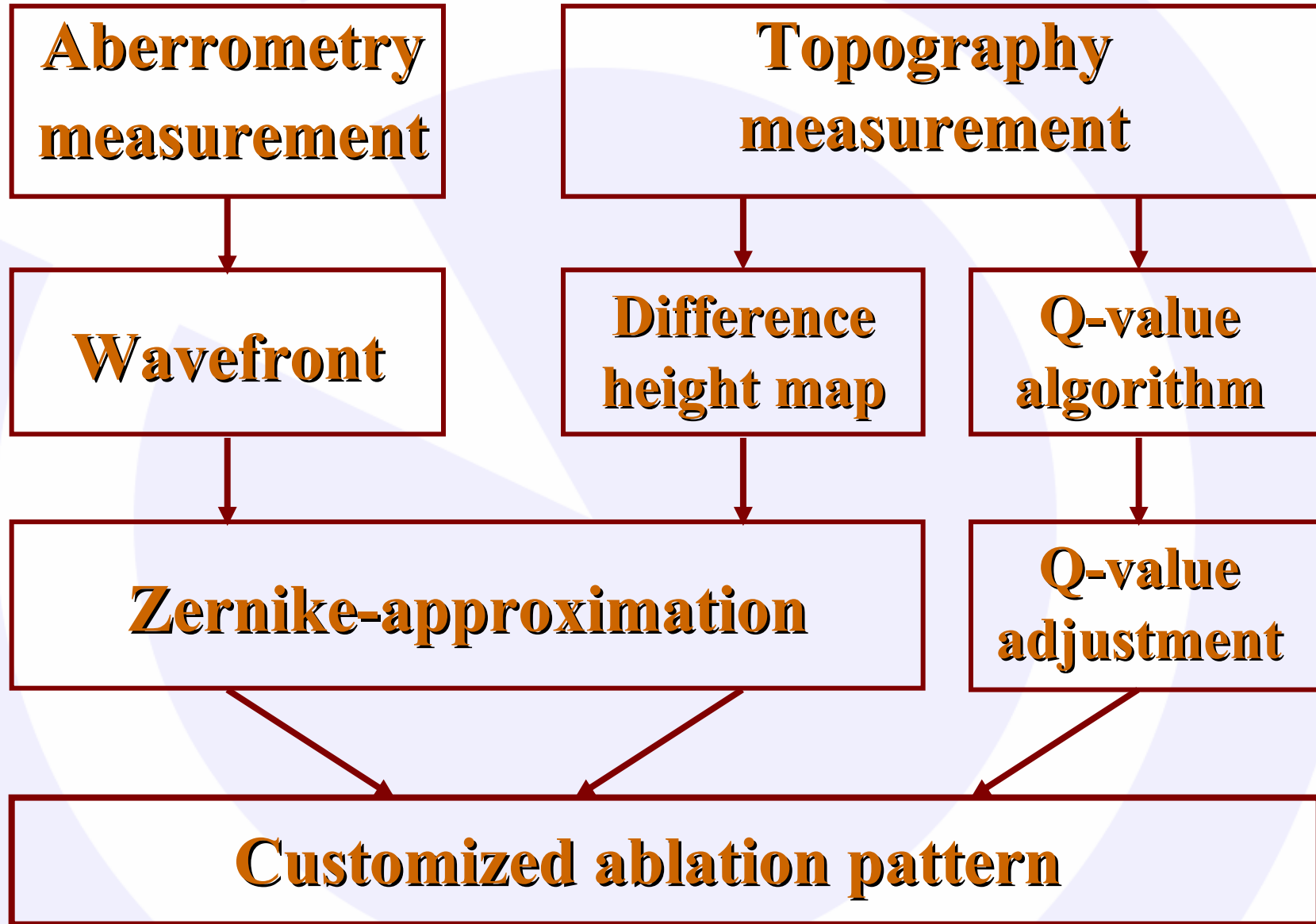
Clinical indications for wavefront-guided customized ablation

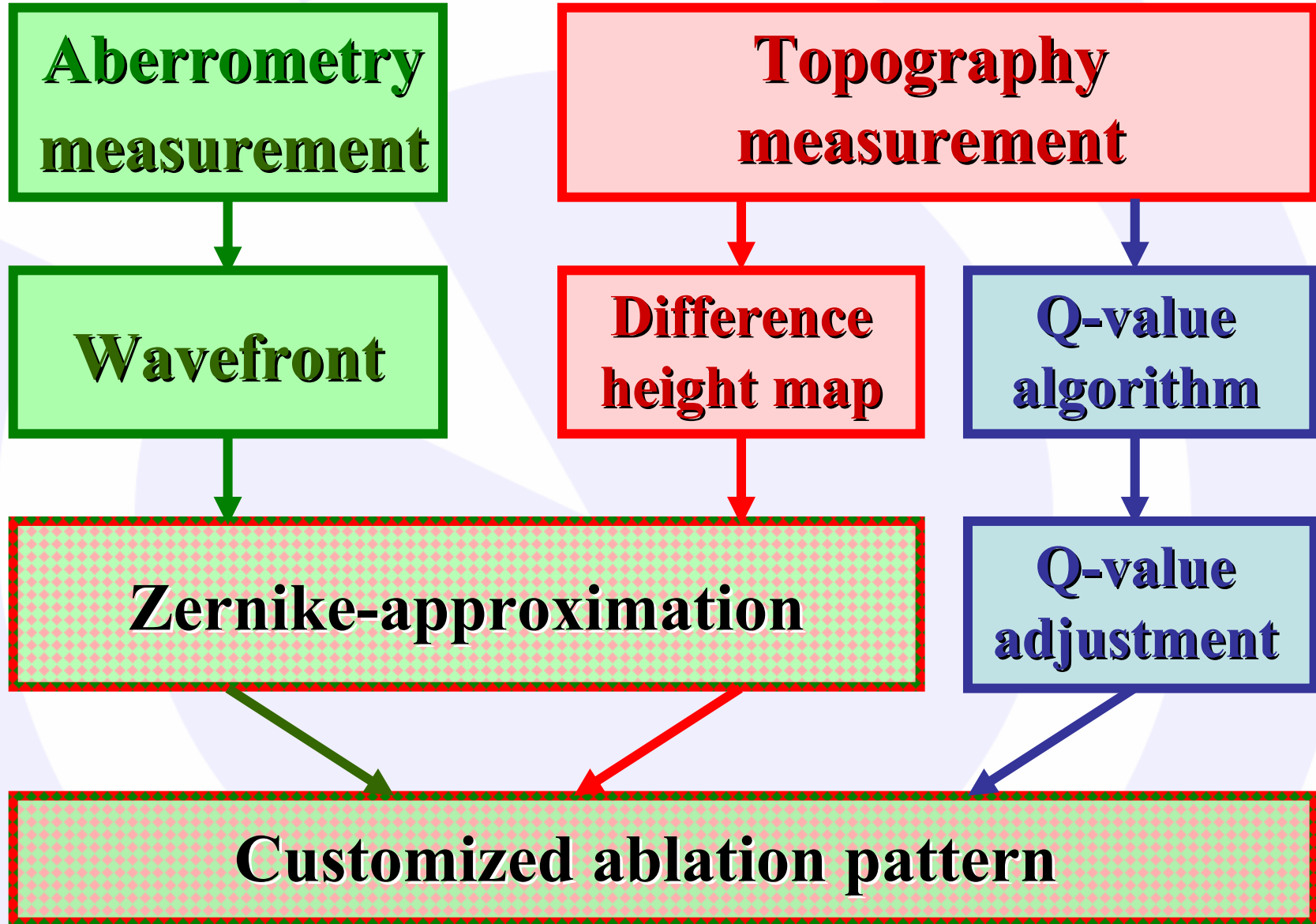
Question:

Is customized ablation necessary in primary cases ?

Regarding the results of the FDA-study:

most probably **NO**





rmsh [μm]

0,70

0,50

0,30

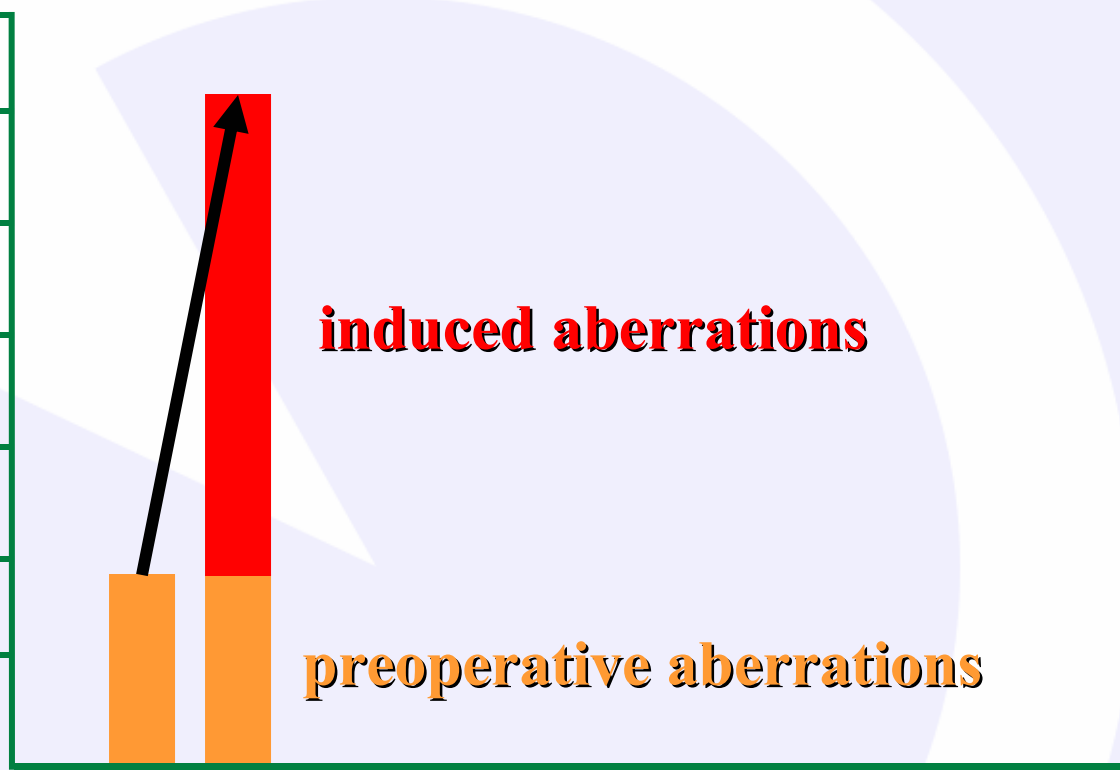
0,10

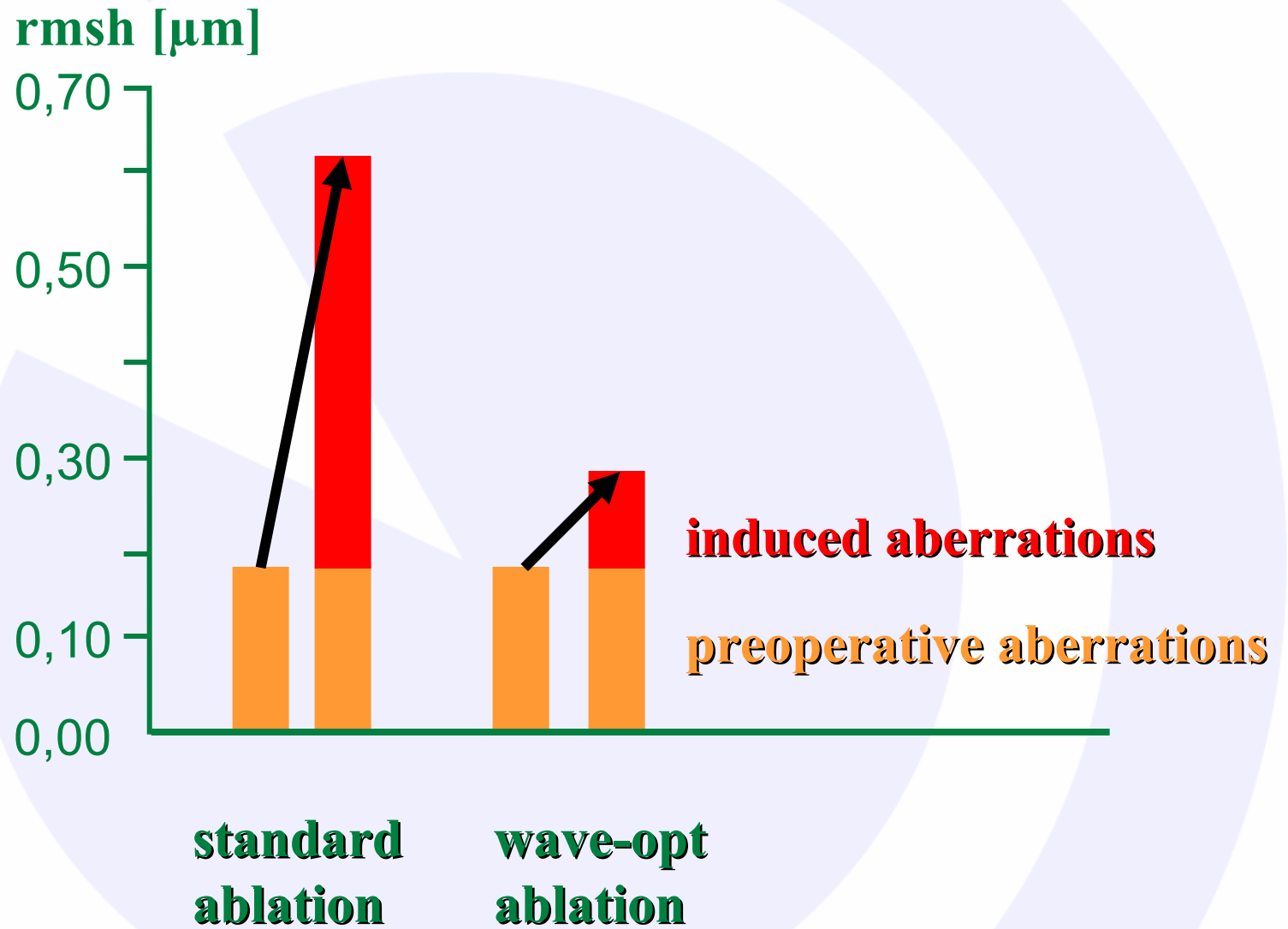
0,00

induced aberrations

preoperative aberrations

**standard
ablation**





rmsh [μm]

0,70

0,50

0,30

0,10

0,00

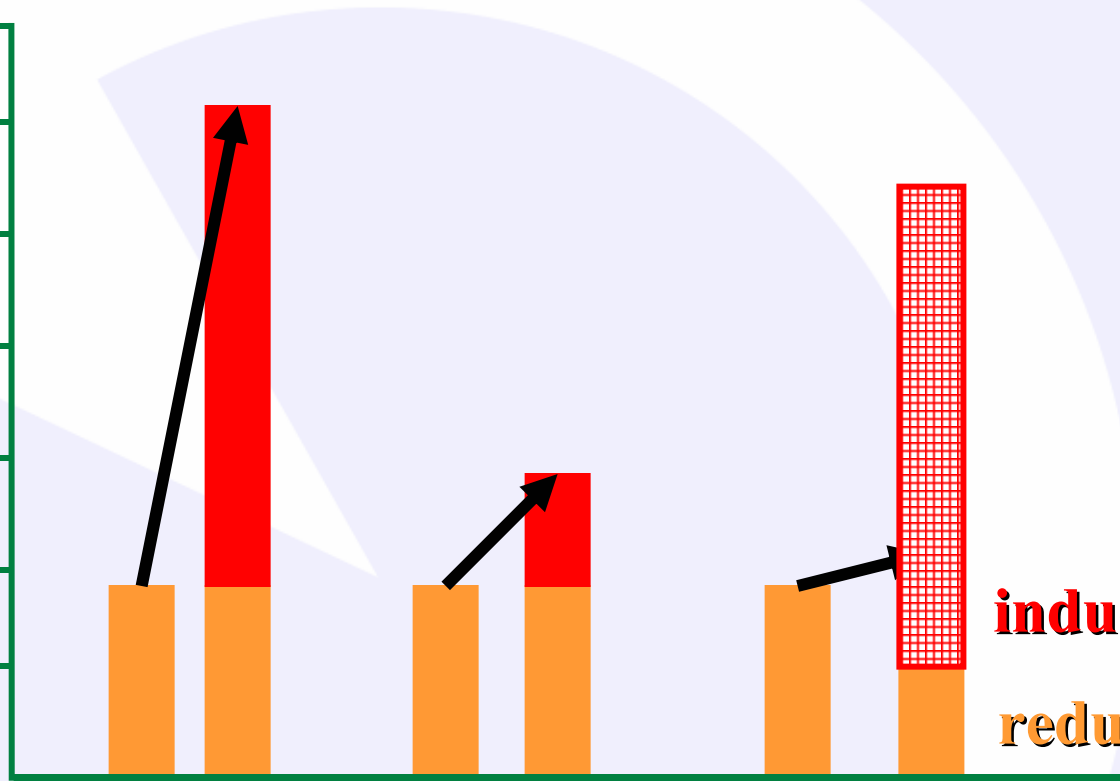
**standard
ablation**

**wave-opt
ablation**

**wave-guided
ablation**

induced aberr.

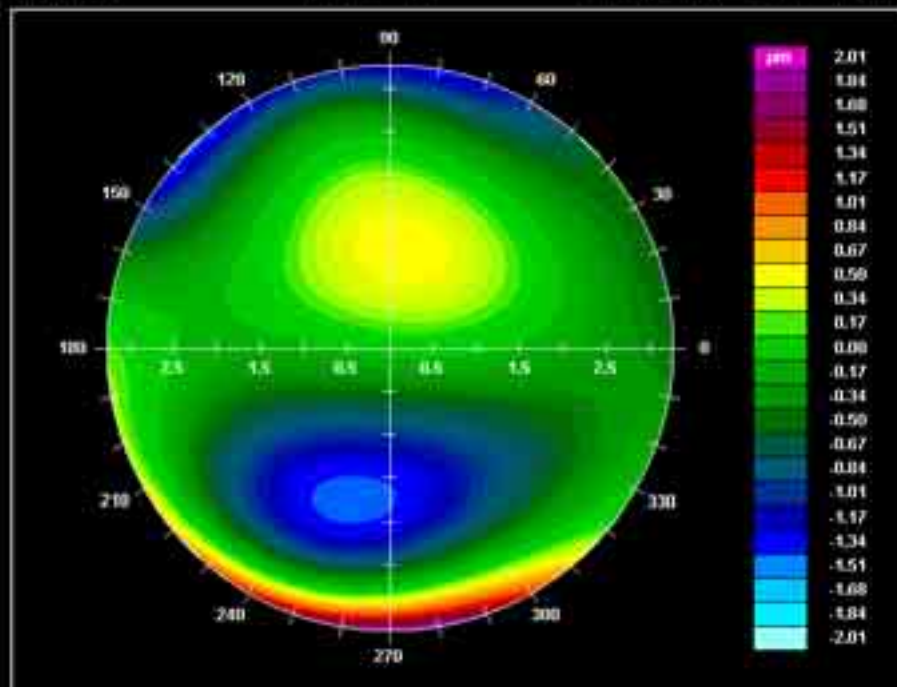
reduced aberr.



Beerhold, Julia
Right (OD)

PRE OP - 03

Date of Birth: 21-09-1965
Examination Date: 23-01-2002



Measured Refraction: $-3.98D \wedge -0.75D @ 164^\circ$

Manifest Refraction: $-3.50D \wedge +0.00D @ \dots^\circ$

AL/CL: -3.50 / -3.50

Edited Data
Selected Diameter: 6.5

3D An

Display only
higher Orders

Show Grid

μm /step MAX

Z-Order 1

OZ 0.5

TZ 1.00

Zernike

RMS1	0.47222
RMS2	2.71555
RMS3	0.27209
RMS4	0.09149
RMS5	0.03067
RMS6	0.02900
RMSg	2.76957
RMSb	0.29015

tilt: $0.47\mu m / 13.1\%$

ref: $2.71\mu m / 75.2\%$

coma: $0.30\mu m / 8.4\%$

sphcl: $0.12\mu m / 3.3\%$

Patient Data

(F1)

OK Case record

Analyzer

(F3)

Visualization

(F4)

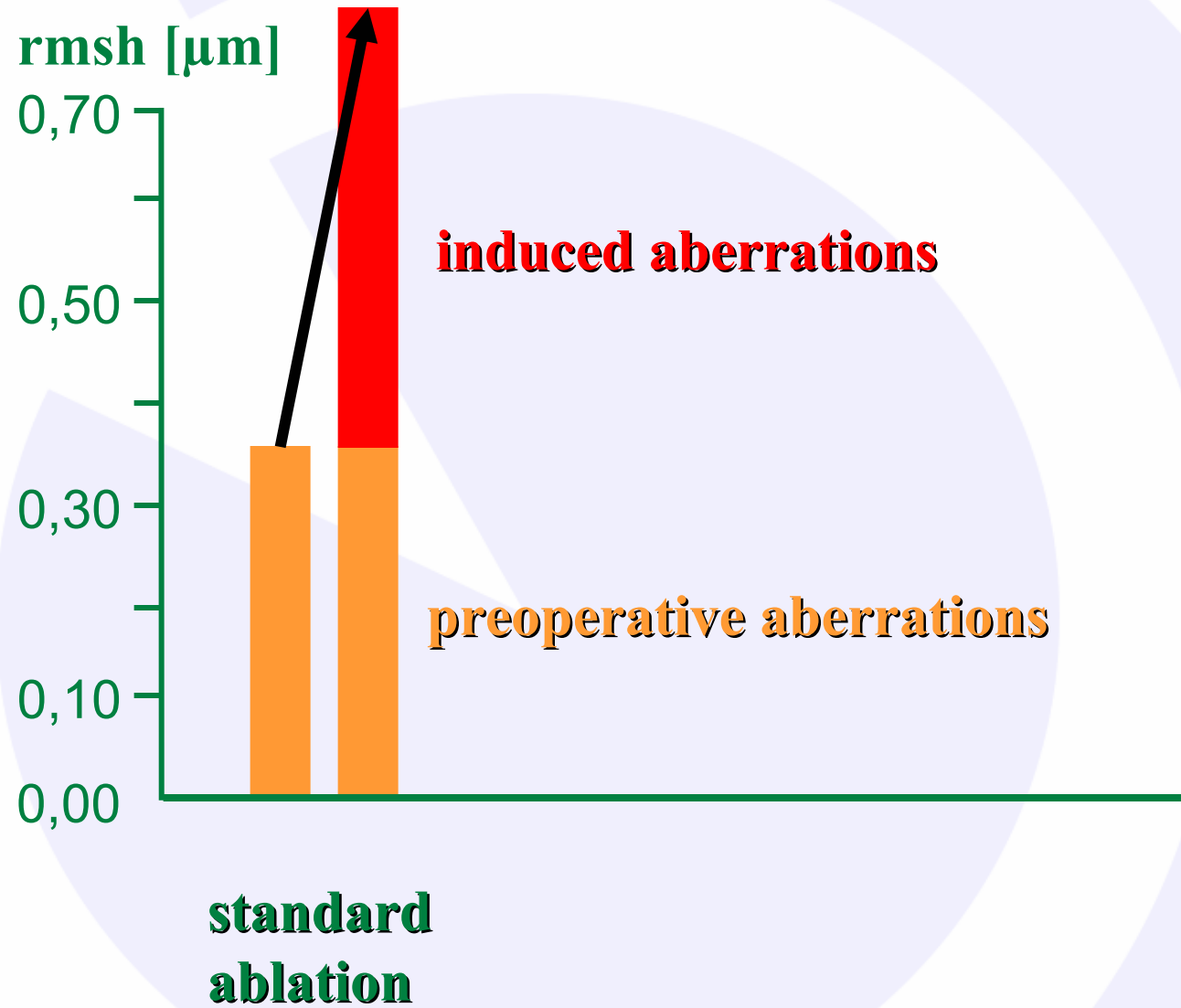
Export Data

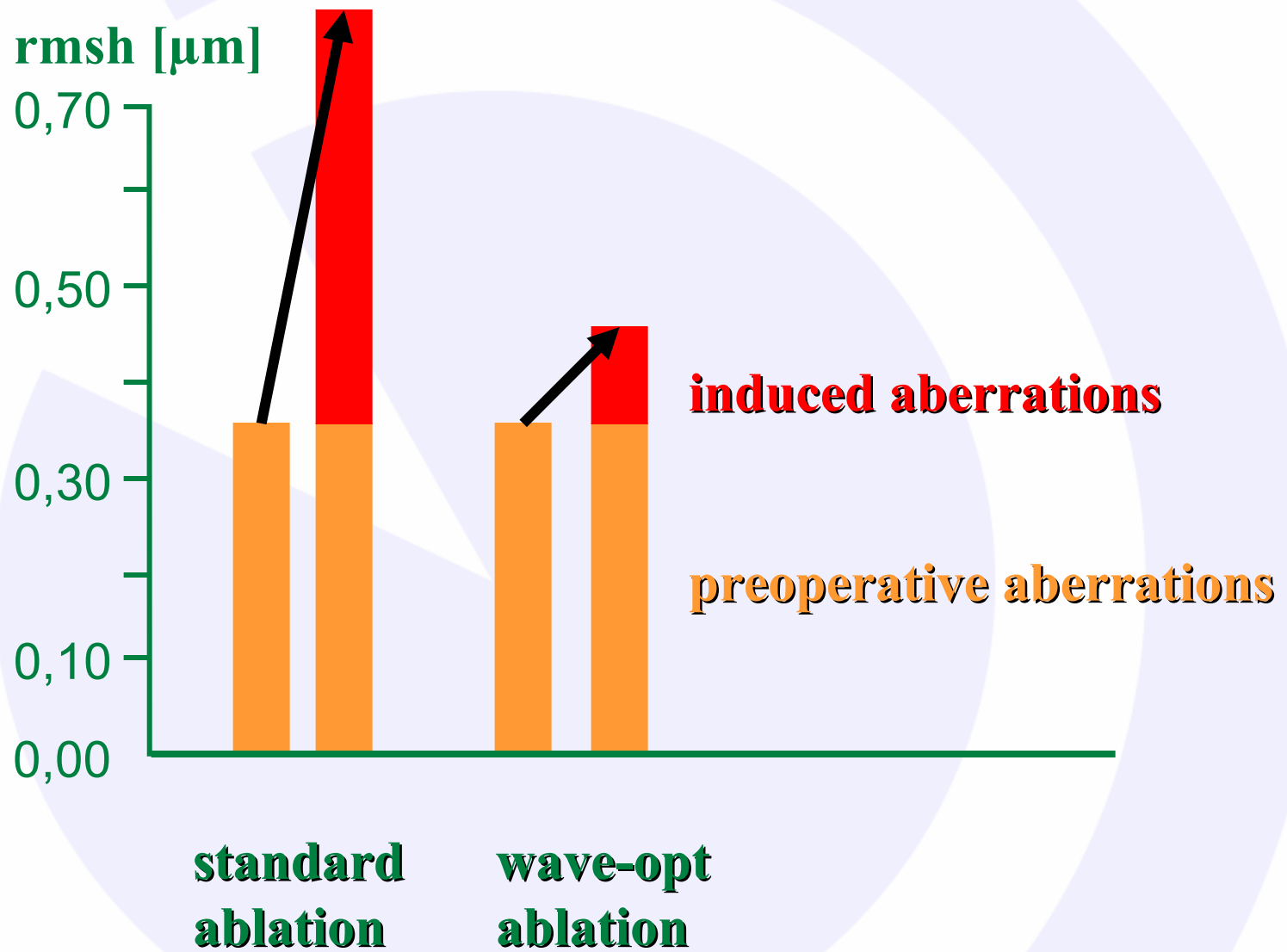
(F5)

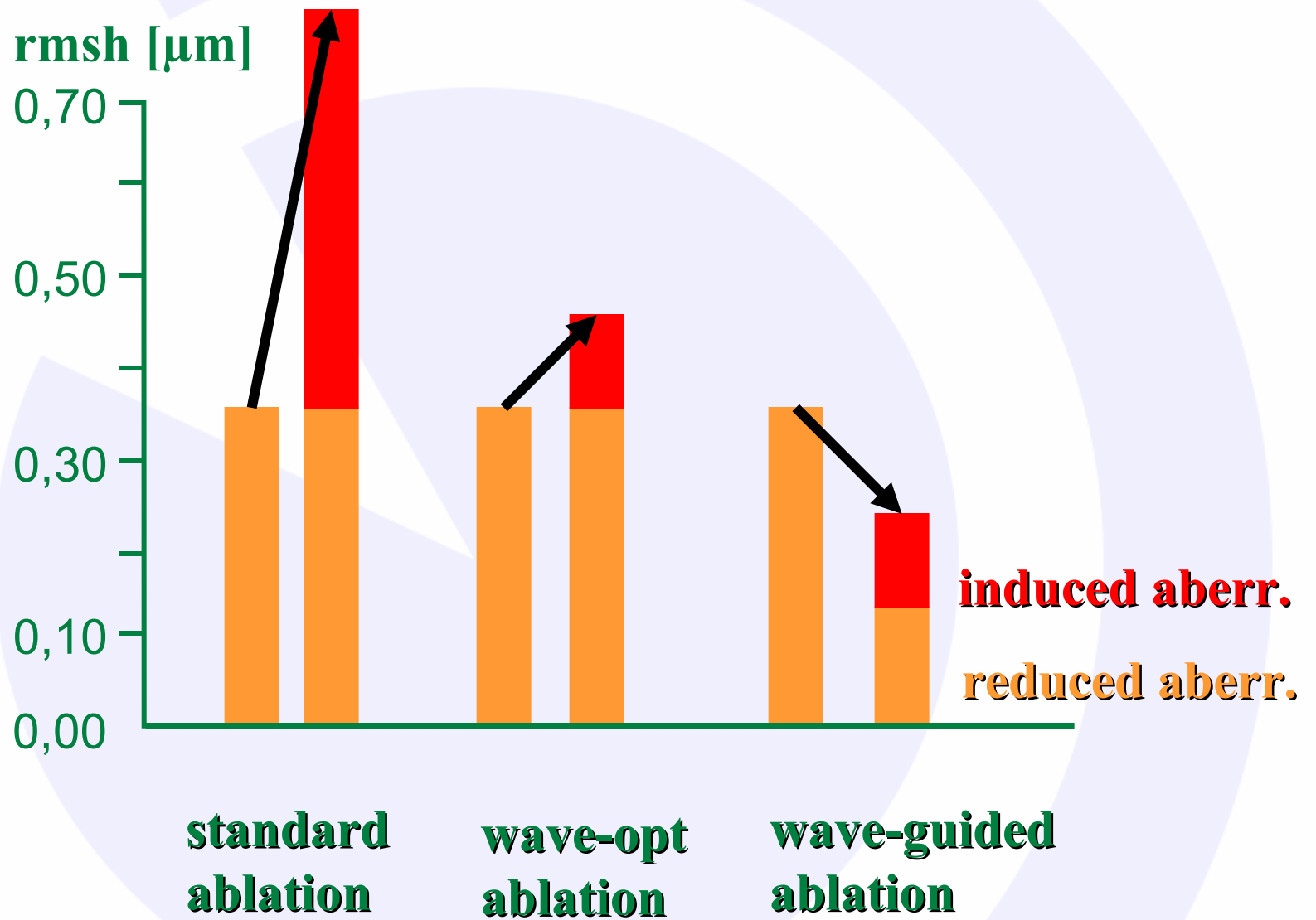
?

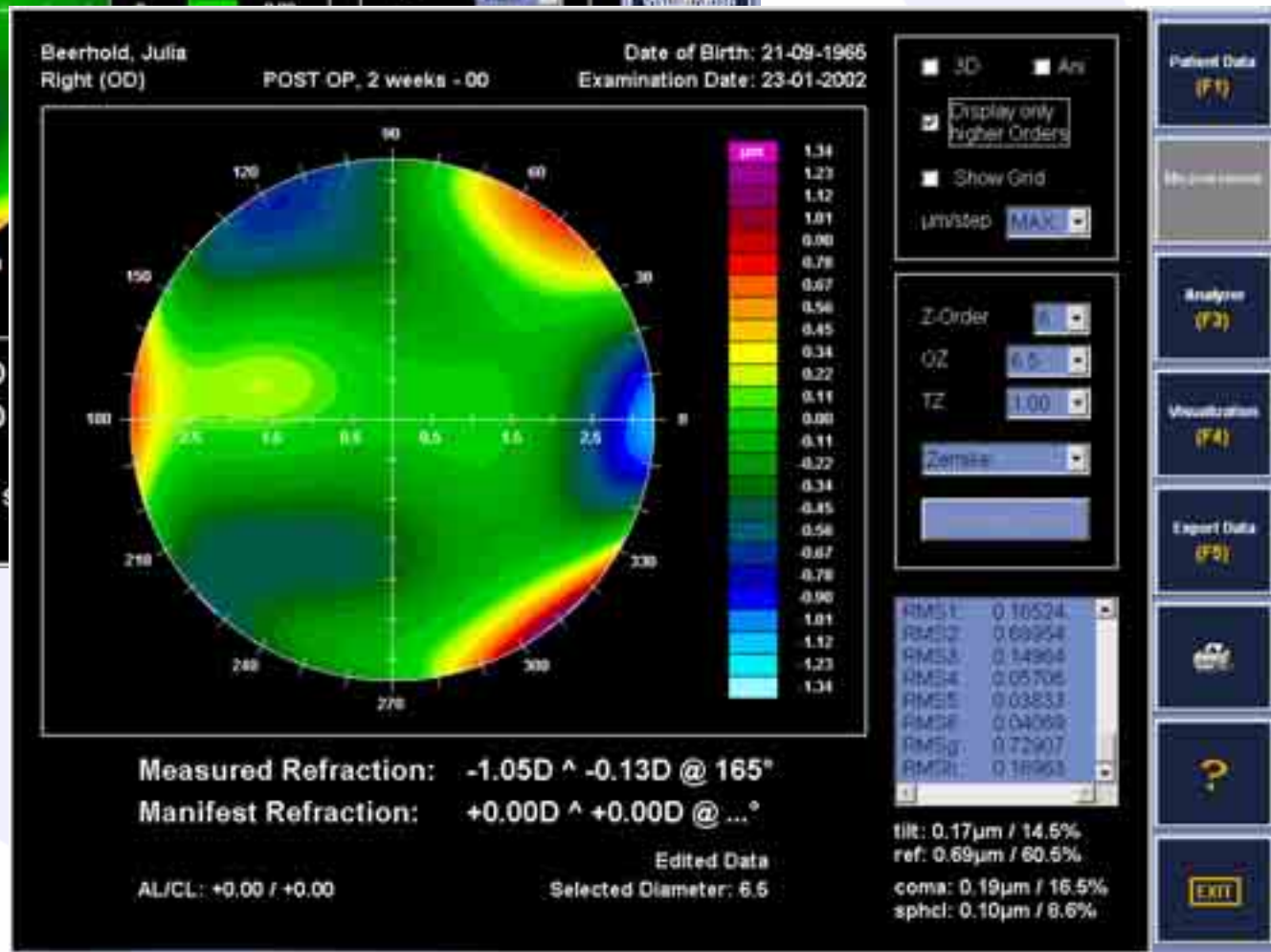
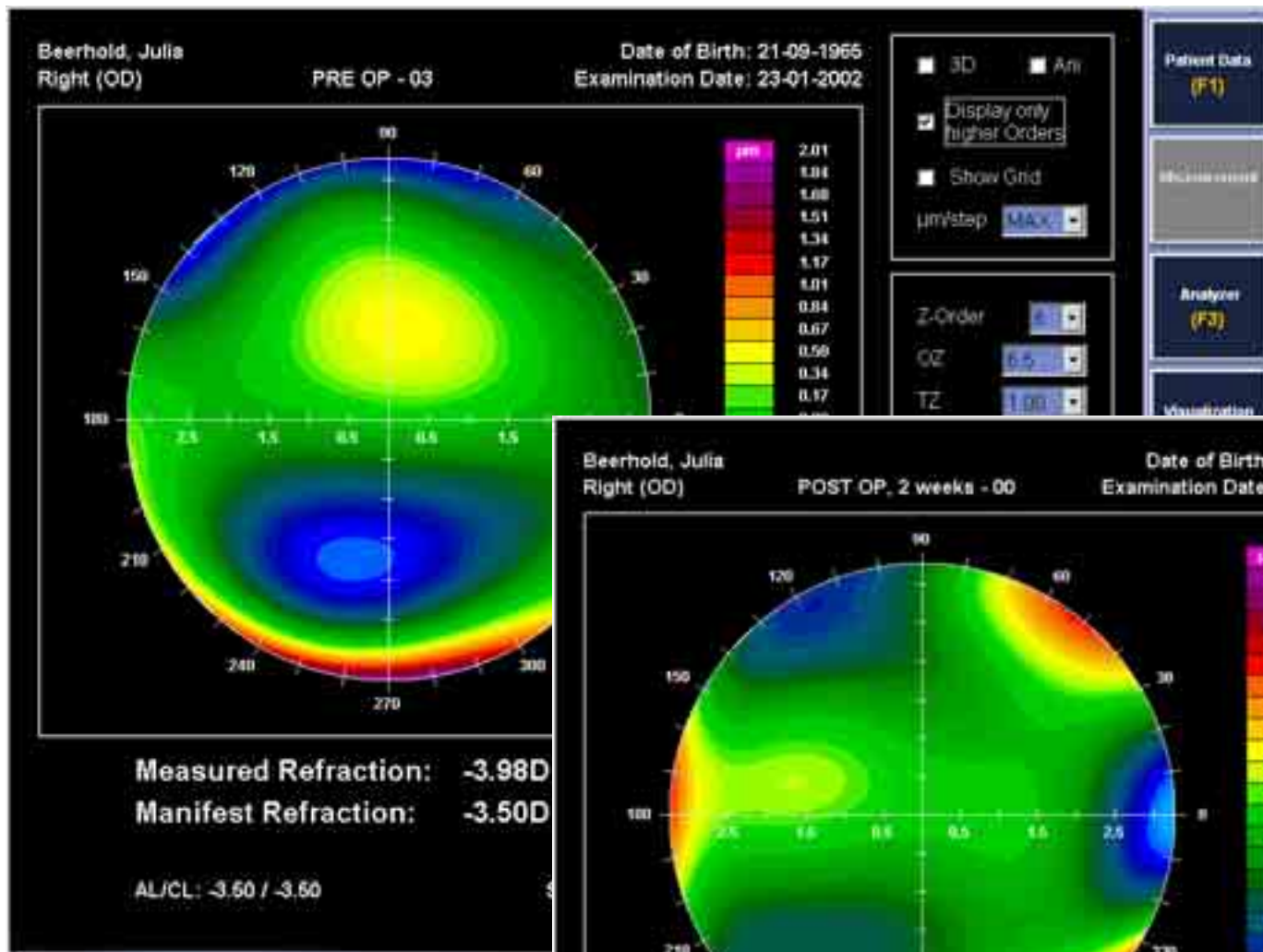
?

EXIT









Indications

for wavefront-guided customized ablation

- 1. Dominant eyes with rmssh > 0.2 to $0.3 \mu\text{m}$**
- 2. Eyes with wide pupils (mesopic pupil $\text{\O} > 5\text{mm}$)**
- 3. Patients who ask for it !**
- 4. Retreatments with reliable wavefront scans**