

# Transepithelial Custom Ablation for Retreatment After Refractive Surgery

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# Why a new strategy for PTK? (1)

- Not enough tissue available for standard or custom PTK
- Unpredictable epithelial thickness (CL-related or other scarring) masks real stromal thickness and makes it impossible to assess if the problem can be fixed

## Why a new strategy for PTK? (2)

- Using the epithelium as if it were stroma, and applying custom ablation to the epithelium, makes it possible to focally ablate the stroma and still achieve significant visual improvement. This at the cost of only a minimal amount of stromal tissue

# Technique of transepithelial approach

- **Step 1**

- Custom ablation of the corneal surface (Epithelium and stroma)

- **Step 2**

- Dry ablation of 60 micron of tissue with an even 10 mm diameter zone

- **Step 3**

- Smoothing with masking fluid and intraop topography

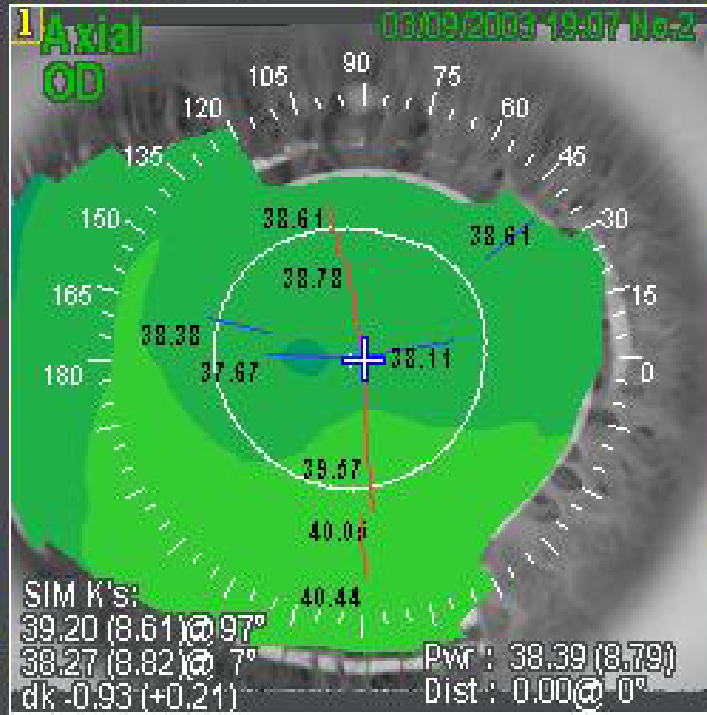
- **Step 4**

- Custom refinement if needed

- **Step 5**

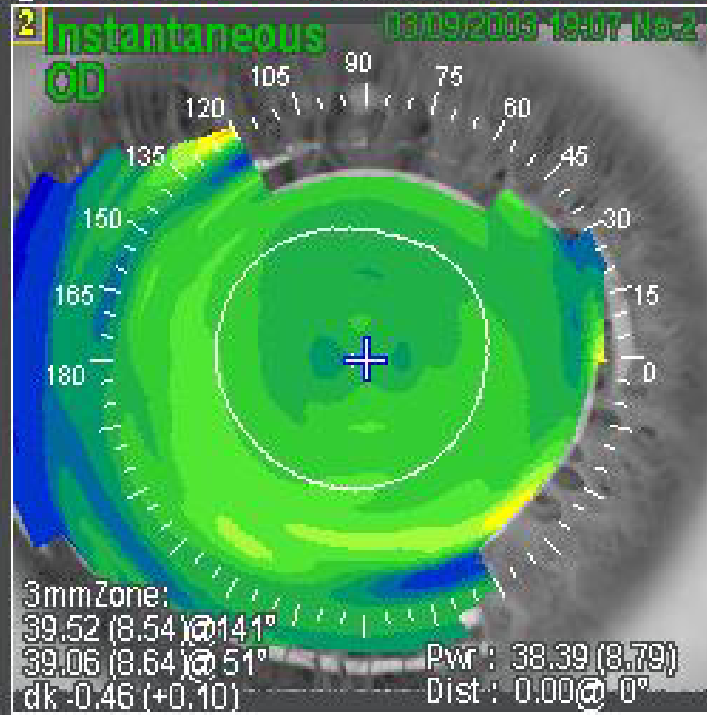
- Repeat if needed steps 3,4

101.50  
96.50  
91.50  
86.50  
81.50  
76.50  
71.50  
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61.50  
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Offsets: 0.02 @ 90

101.50  
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Offsets: 0.02 @ 90

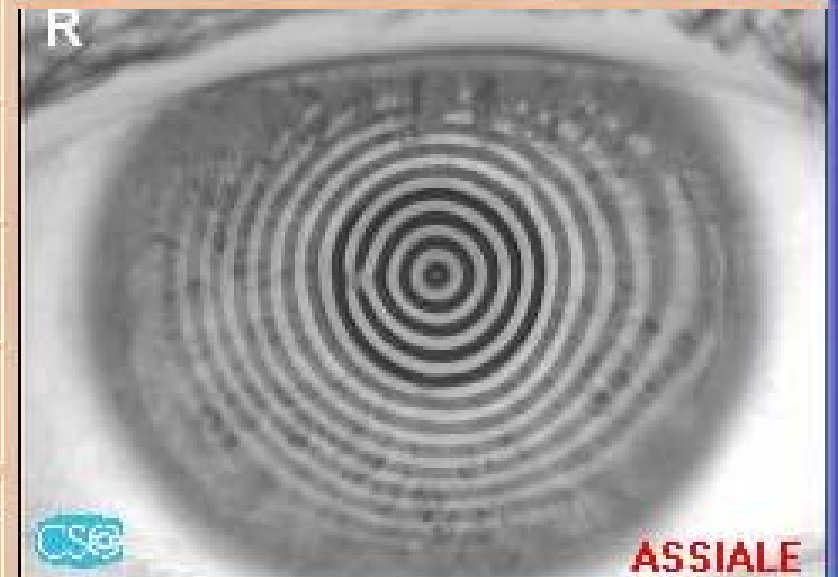
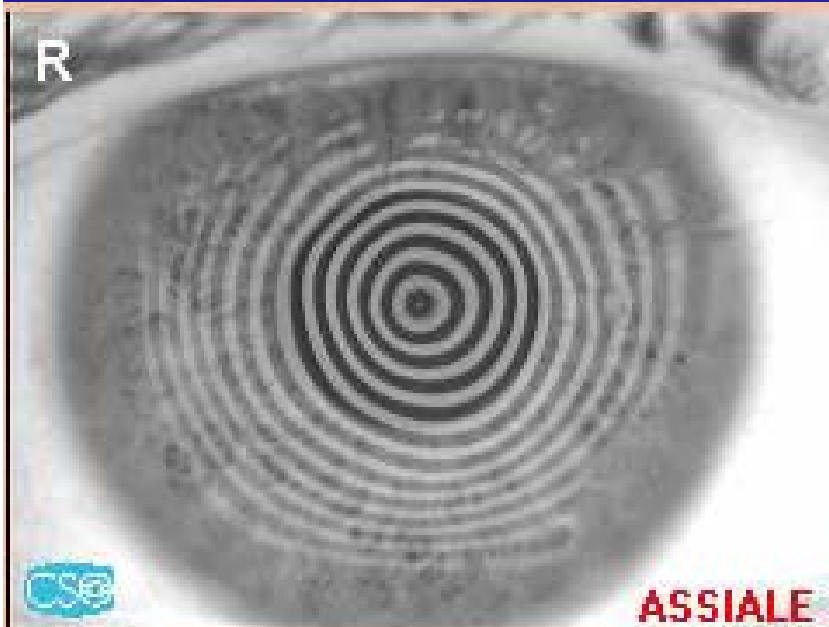
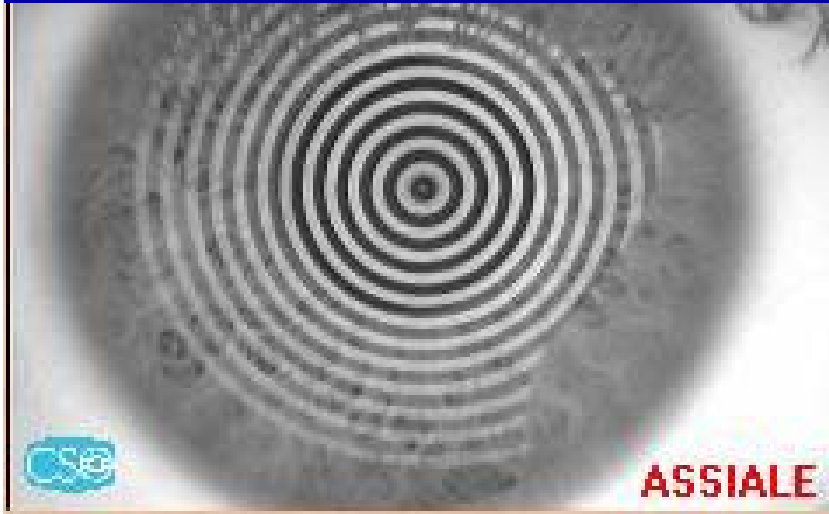


Offsets: 0.02 @ 90

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# Non-transepithelial Intraoperative



Diootrie
101.50
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19.00
14.00
9.00

**P (D)**  
N. C.

**r (mm)**  
N. C.

**d (mm)**  
d = 8.76

**g (°)**  
g = 143

**Dec. p.**

**D.p.me.**

**P.p.me.**

**ISTANTANEA**

**P (D)**  
N. C.

**r (mm)**  
N. C.

**d (mm)**  
d = 8.76

**g (°)**  
g = 143

**Dec. p.**

**D.p.me.**

**P.p.me.**

**ISTANTANEA**

**P (D)**  
N. C.

**r (mm)**  
N. C.

**d (mm)**  
d = 8.76

**g (°)**  
g = 143

**Dec. p.**

**ISTANTANEA**

**P (D)**  
N. C.

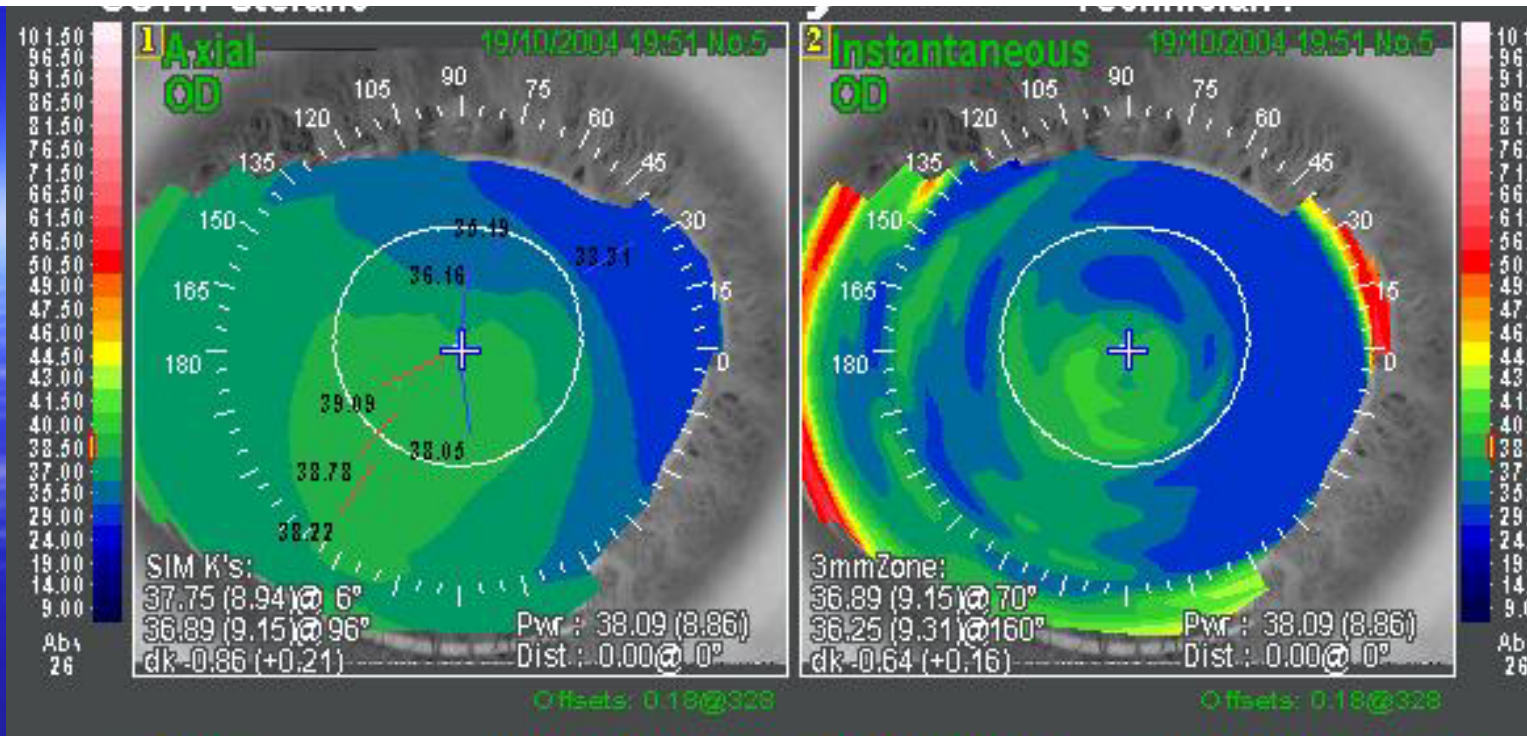
**r (mm)**  
N. C.

**d (mm)**  
d = 8.76

**g (°)**  
g = 143

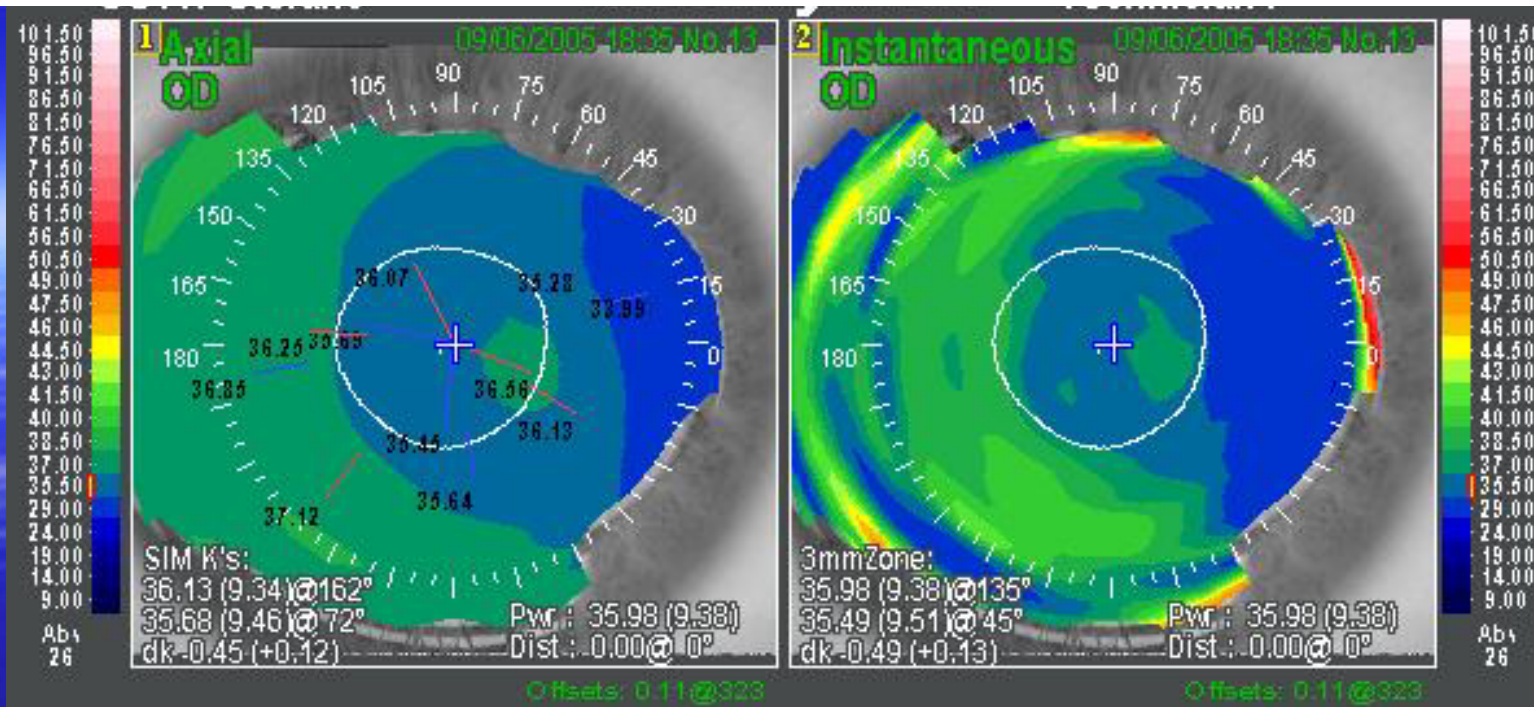
**Dec. p.**

**ISTANTANEA**



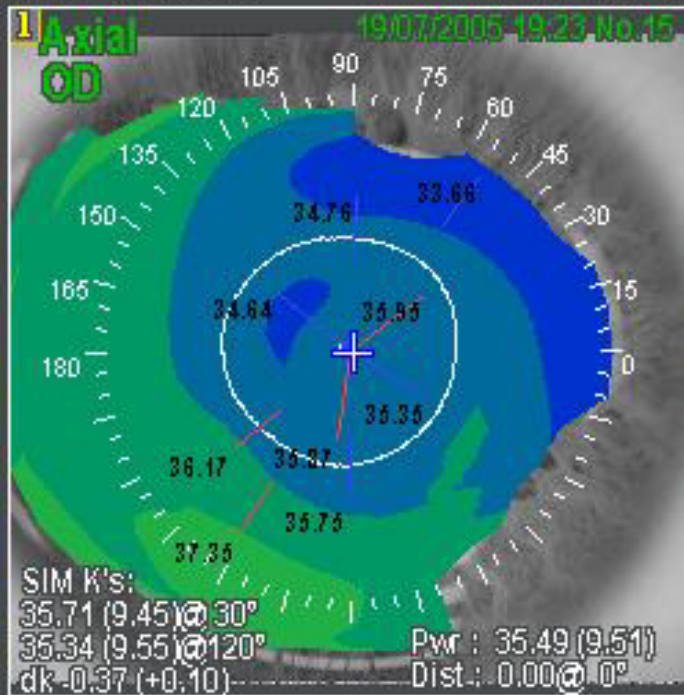
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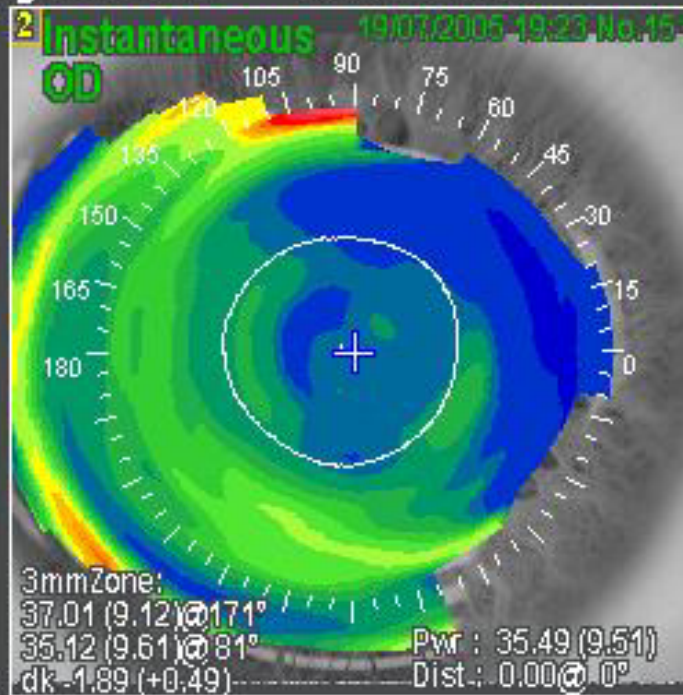


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26



Offsets: 0.04@217

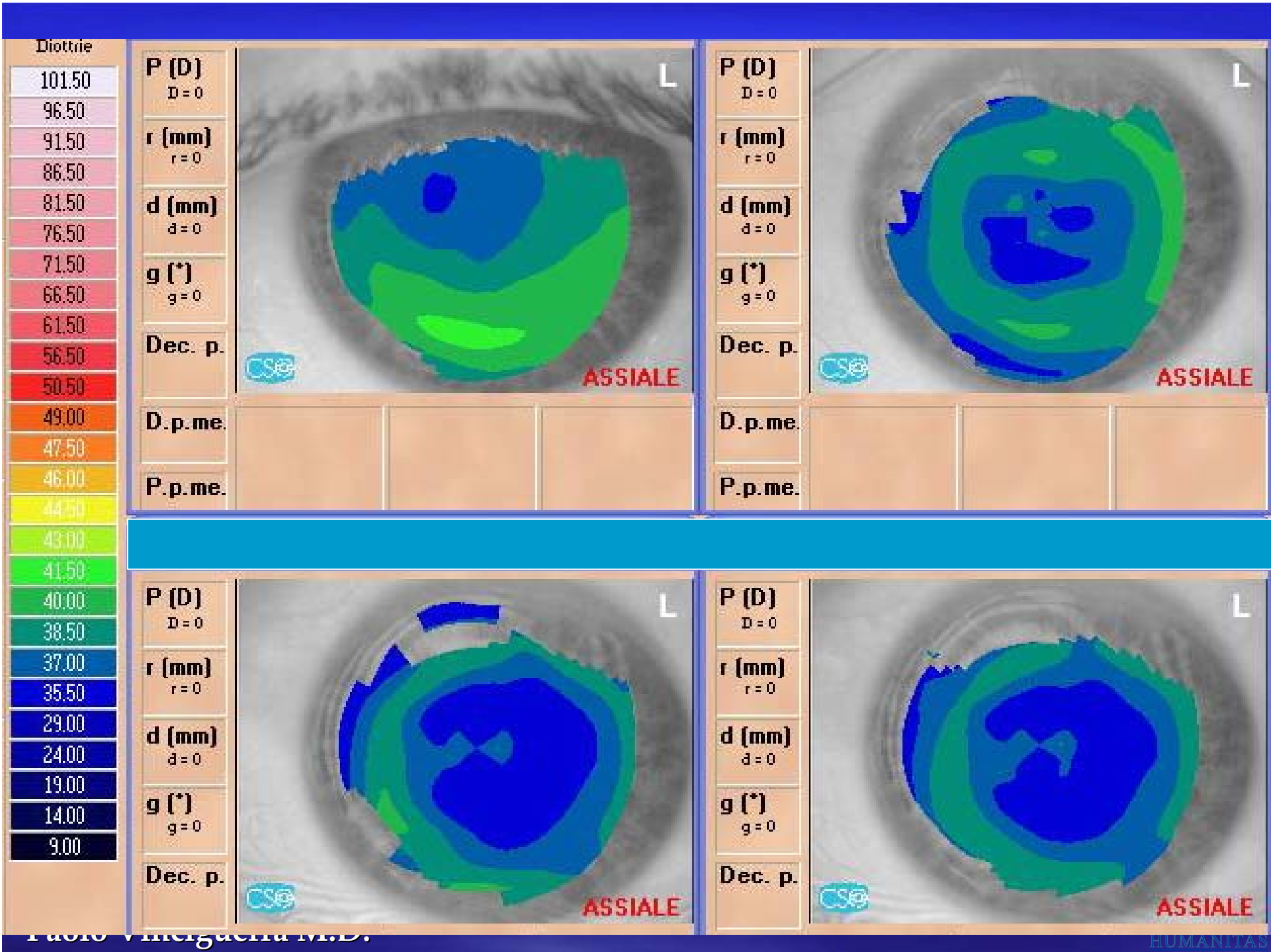


Offsets: 0.04@217



Offsets: 0.04@217

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# Materials and Methods

- 23 eyes
- Mean age 39 years (from 20 to 68)
- OPD-based NIDEK Final Fit
- EC 5000 NIDEK excimer laser

pre SR equiv: mean  $-1,02 \text{ D} \pm 4,57 \text{ D}$  (from  $-9,00$  to  $12,38$ )

pre SR sph: mean  $-0,52 \text{ D} \pm 4,71 \text{ D}$  (from  $-9,00$  to  $13,50$ )

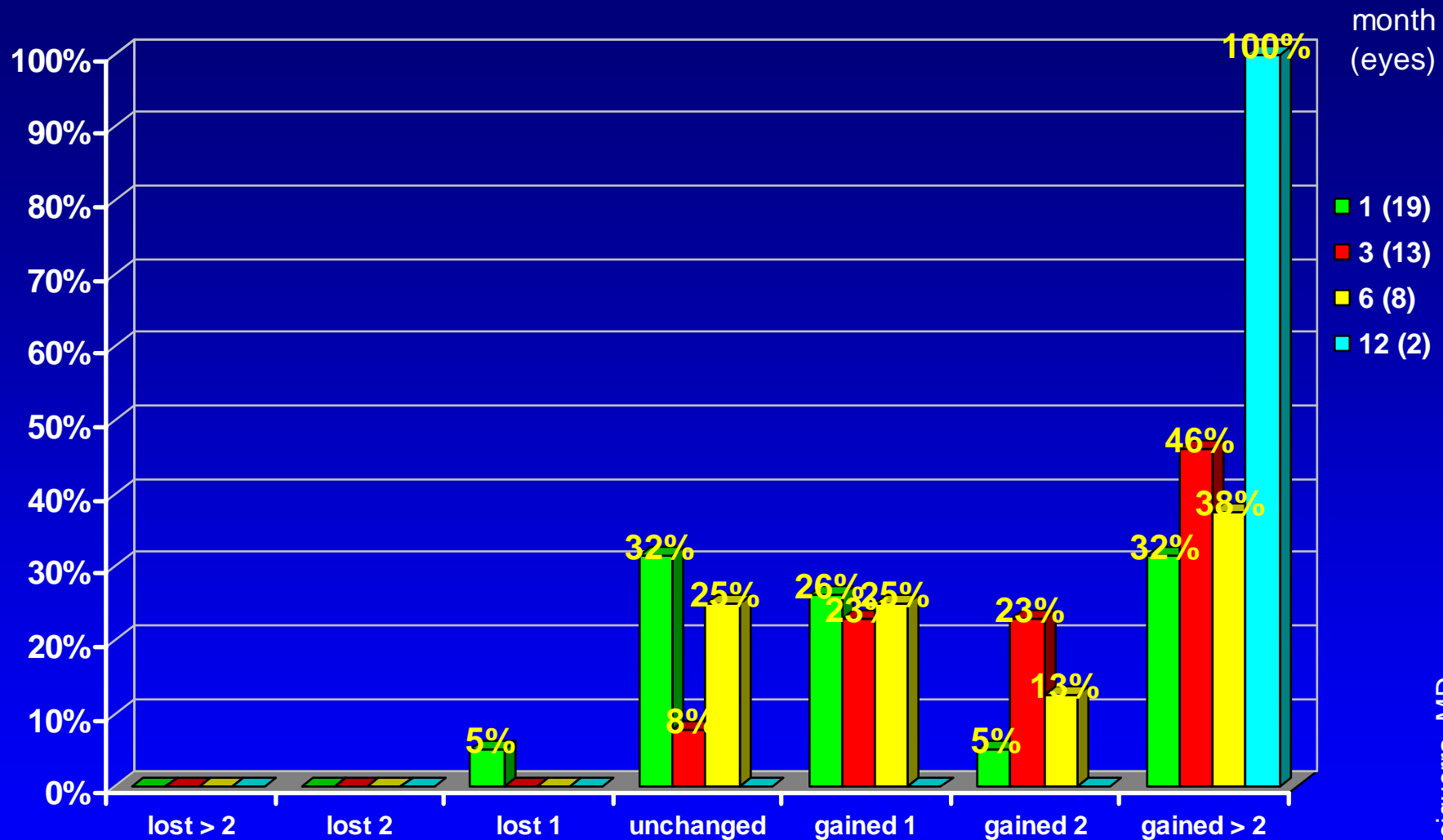
pre SR cyl: mean  $-0,99 \text{ D} \pm 1,18 \text{ D}$  (from  $-4,00$  to  $2,00$ )

- Follow up: one year
- 20 eyes (87.0% follow up rate)

post SR equiv: mean  $1,04 \text{ D} \pm 5,54 \text{ D}$  (from  $-9,75$  to  $11,25$ )

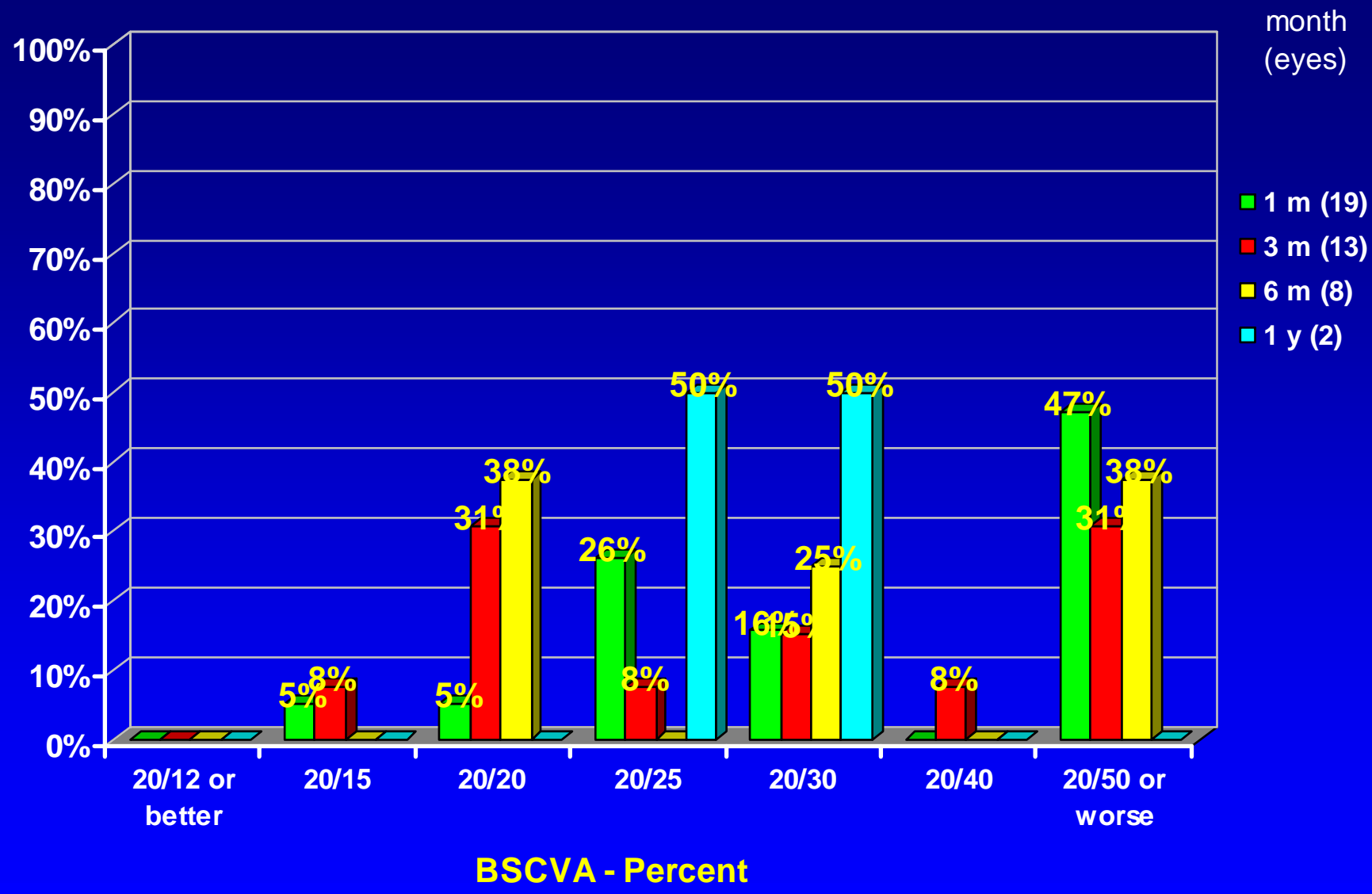
post SR sph: mean  $1,75 \text{ D} \pm 5,47 \text{ D}$  (from  $-8,50$  to  $13,00$ )

post SR cyl: mean  $-1,43 \text{ D} \pm 1,29 \text{ D}$  (from  $-4,75$  to  $0,00$ )

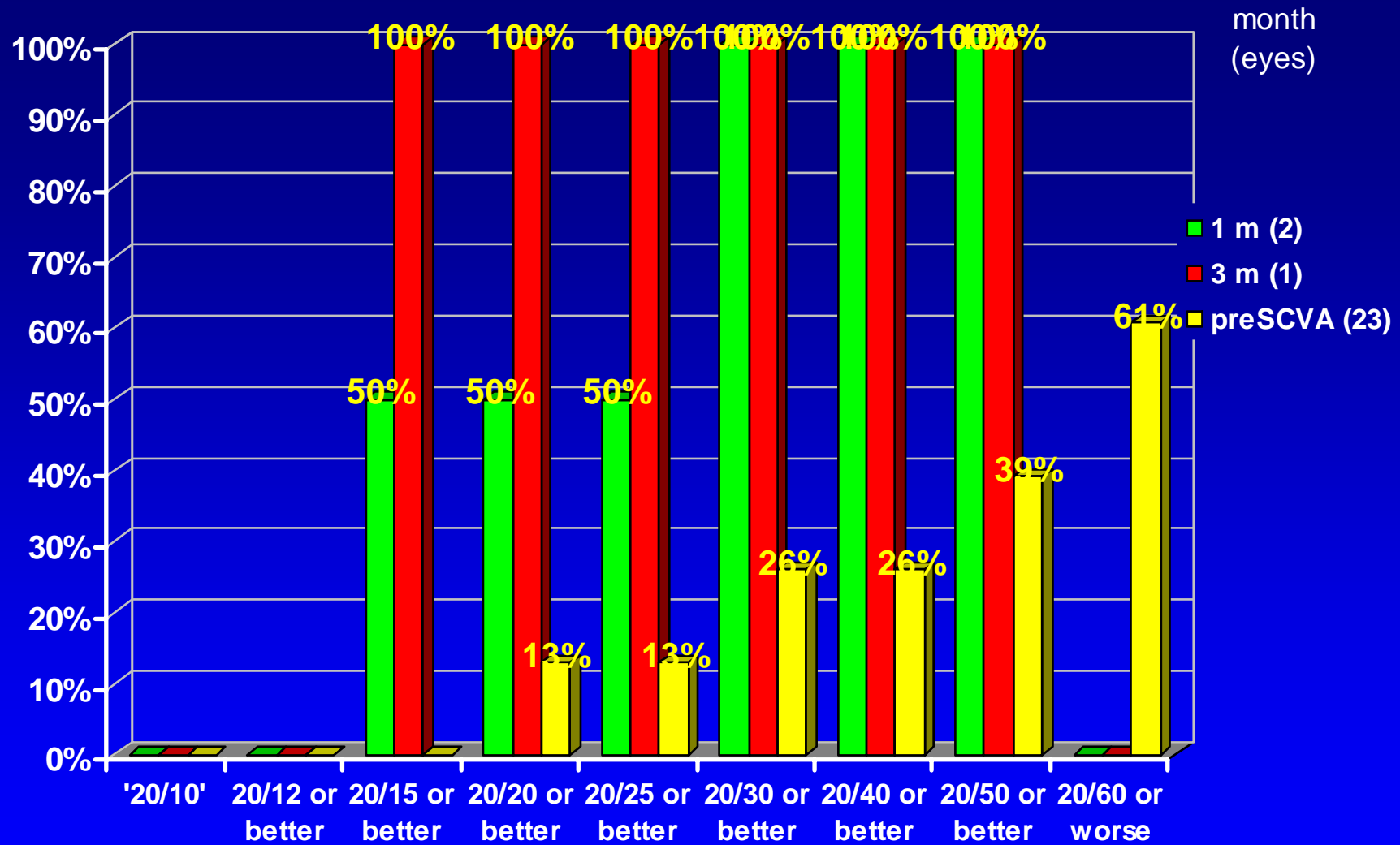


**SAFETY: Change in BSCVA - Percent**

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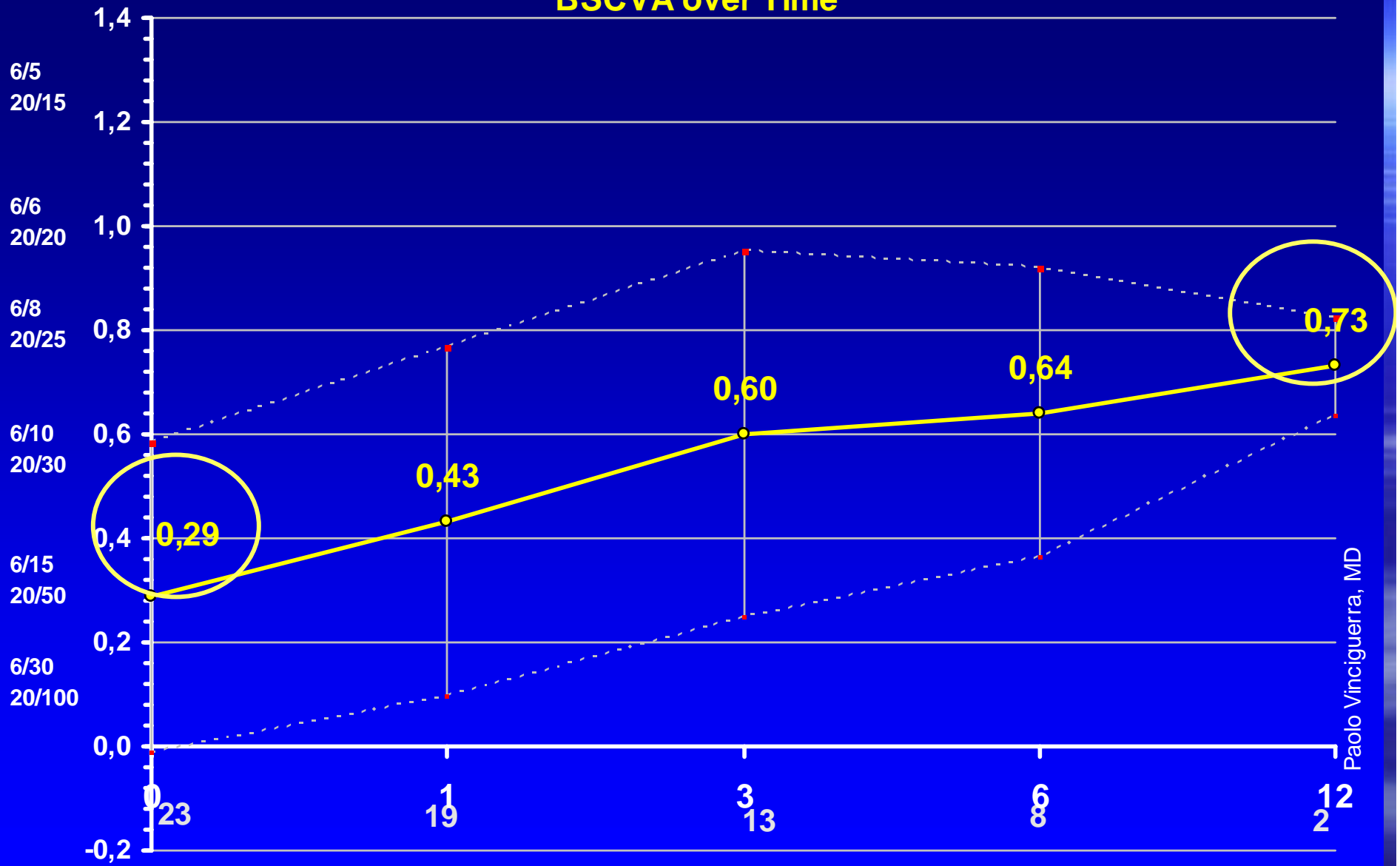
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preOP BSCVA vs. postOP UCVA - Percent

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# BSCVA over Time



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## BSCVA over Time



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**Arrivederci**  
**September 16-18,**  
**2006**

**Refr@ctive.on-line**