



## Toric , Bifocal IOL - Acri.Lisa TD and Coaxial MICS (CO-MICS) One Year Results

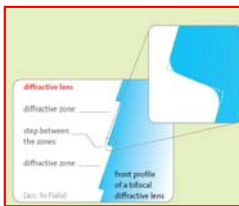
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DGII Munich 2009

Paid Consultant to Carl Zeiss Meditec  
No financial interest

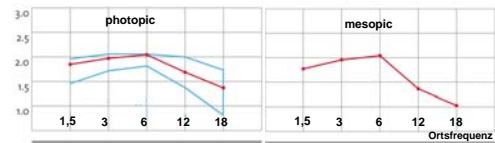
### Background

Acri.LISA results: very promising: best intermediate vision, very good contrast vision, less light scattering



(Aggarwal, Mester, Pietrini, Zaldivar Alio)

### Binocular Contrast Sensitivity



Binocular contrast sensitivity measured with best distance correction through F.A.C.T with the \*Acri.LISA (red line) compared to the normal distribution (green line)

### Problem: Restricted Indication due to Astigmatism

#### Problem:

The visual outcome of patients with a **bifocal IOL** and an **astigmatism above 0,75 cyl** is poor

#### Solution:

Reduction of astigmatism via corneal incisions or Lasik – **Bioptics**

or

Implantation of a **toric, bifocal IOL** through an astigmatism **neutral incision**

### First Implantations

Wolff und Breyer December 2007

Wolff in ON: "...very precise, promising results..."

Breyer ASCRS 2008 CO-MICS and toric Acri.LISA first study results

### Monomanual CO-MICS or Bimanual Sleeveless MICS

**Bimanual MICS Problems**

- incision too wide: no sleeve phaco → intraoperative leakage
- incision too tight: irreversible stretching of collagen fibers → postoperative leakage

**Obvious solution:** coaxial phaco with sleeve → no leakage & quiet fluidics

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### Monomanual Coaxial Microincision Cataract Surgery

19G 20G CO-MICS 1 CO-MICS 2

Graphics courtesy of Oertli

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### CO-MICS Tip Geometry

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### Emulsification Power

Phaco tip	Design	Incision Size	Emulsification power
19G	Traditional	2.8 mm	100%
20G	Traditional	2.2 mm	54%
CO-MICS	Traditional	1.6 mm	29%
CO-MICS 2	Smart	1.6 mm	146%

19G 20G CO-MICS 1 CO-MICS 2

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### Holdability

Phaco tip	Design	Incision Size	Holdability
19G	Traditional	2.8 mm	100%
20G	Traditional	2.2 mm	59%
CO-MICS	Traditional	1.6 mm	34%
CO-MICS 2	Smart	1.6 mm	106%

19G 20G CO-MICS 1 CO-MICS 2


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### Results - Videokeratography

No surgically induced astigmatism with CO-MICS (see studies by R. Menapace)

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**Method – Solution II**



Front face toric  
 Back surface bifocal  
 Pupil independence  
 Light allocation 65:35  
 Light intensity refractive distant focus 65%,  
 Light intensity diffractive near focus 35%  
 Near addition: + 3,75 dpt  
 MICS-Technology:  
 an incisionwidth of only 1,5 mm allows an  
 astigmatism neutral operation

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**Marking With Gerten Plumb Marker - ON 05/08**

...the plumb marker is a precise and reliable surgical tool..."

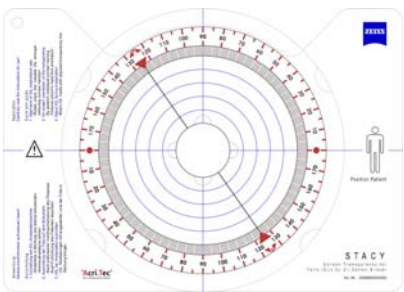


Original photographs courtesy to Dr. Gerten

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**STACY - Screen Transparency for Toric IOL**

Emmel, Breyer DOC 2006



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**Video**

VIDEO

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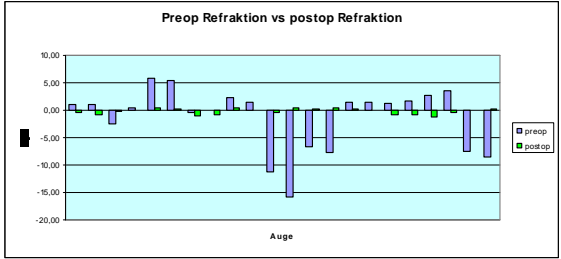
**Method – Study Design (ProspectiveInternationalMulticenter)**

27 European Study Centers  
 CO-MICS was done through a 1.6mm incision  
 A toric bifocal IOL was then implanted through a 1.6mm incision  
 Pre- and postoperative astigmatism was measured with a Pentacam HR and an Oculus videokeratography  
 Pre- and postoperative VA and Cylinder was documented  
 Rotation stability was marked  
 Contrast Sensivity under mesopic and photopic conditions  
 22 eyes of 11 patients were examined (1,7,30,90 and 180 days postop)

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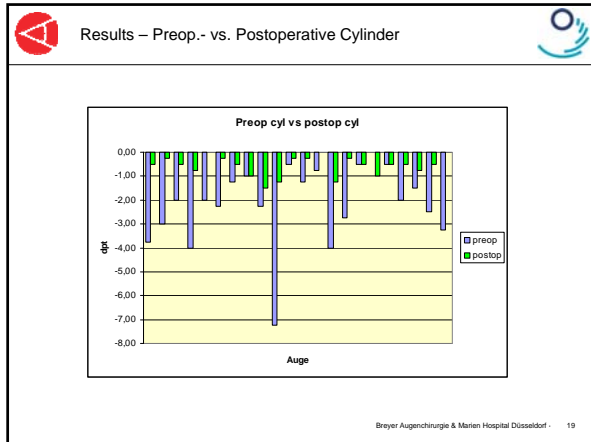
**Results – Preop.- vs. Postoperative Refraction (Sphere)**

Preop Refraktion vs postop Refraktion



Auge

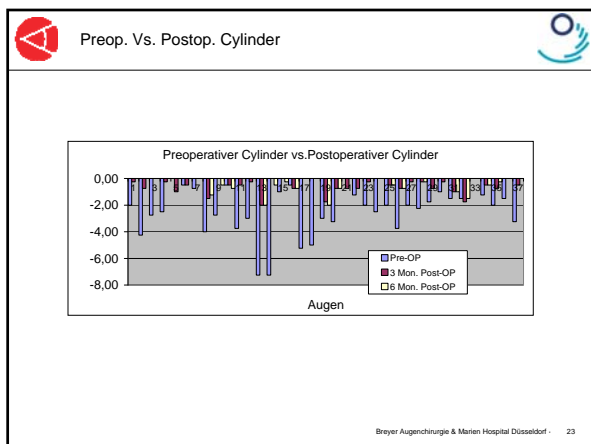
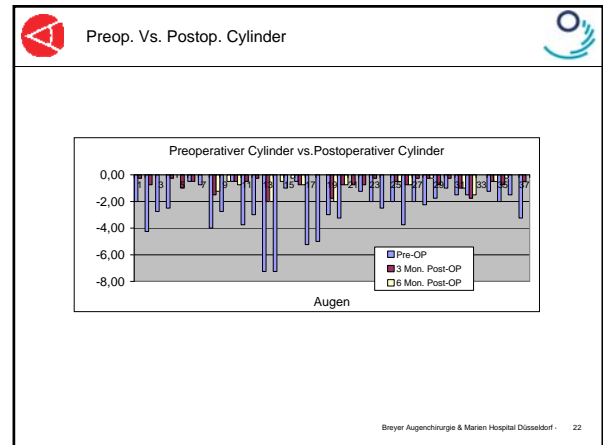
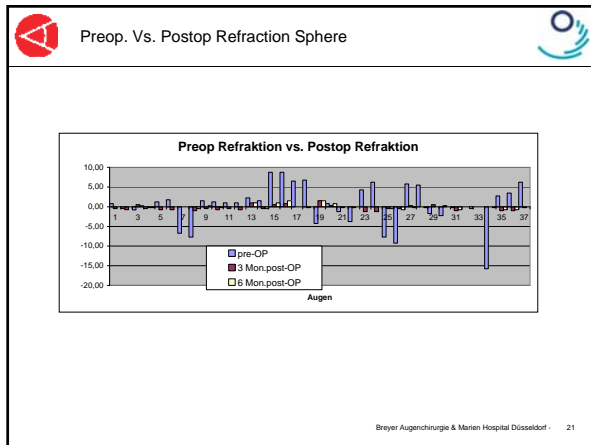
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### Results – Patient Questionnaire

Did the IOL meet your expectations?	Yes 11/11	No 0/11
Do you wear glasses at any time?	Yes 1/11	No 10/11
Would you recommend the IOL to a relative?	Yes 11/11	No 0/11
Would you like to have a Lasik to improve your UCVA?		No 11/11

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### Conclusion

The CO-MICS procedure **avoids** any surgically induced **astigmatism**

The objective **measurements** and especially the subjective patient statements are **very satisfying** and promising

By using the Acri.Lisa TD one can **avoid a biopic** procedure in patients with higher astigmatism and the wish for bifocal IOL

CO-MICS and the Acri.Lisa TD are a **perfect match** in phacorefractive surgery

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Thank You for Your Kind Attention



The rhine river traveling through Düsseldorf

