

ANTERIOR CHAMBER PHAKIC IOLS

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Financial Interests

- ◉ Consultant to AMO Inc.
- ◉ Consultant to Alcon Inc.
- ◉ Consultant to Alcon LenSx Inc.

- ◉ Clinical investigator for AcuFocus Inc.


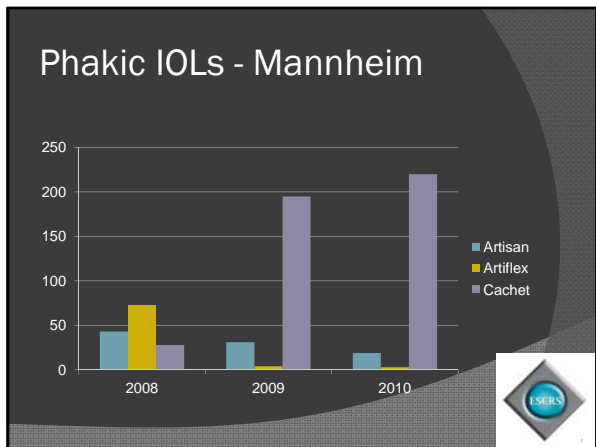
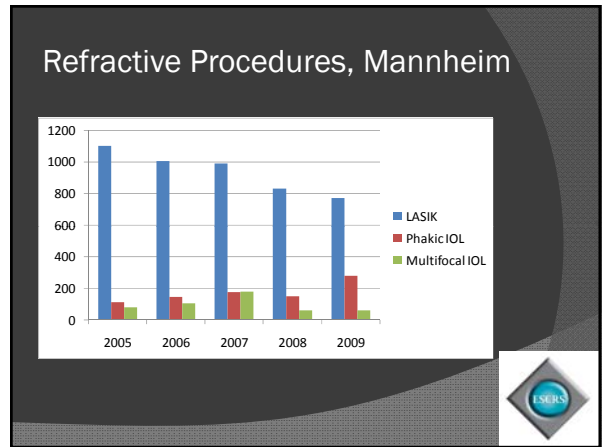


Do We Need Phakic IOLs ?

YES !

- ◉ The range of LASIK is limited
- ◉ LASIK in high myopia causes halos etc.

- ◉ No expensive lasers required
- ◉ Phakic IOLs are reversible

Phakic IOLs – Personal Experience


- ◉ Nuvita IOL
- ◉ Vivarte / GBR IOL

- ◉ Artisan / Verisyse IOL
- ◉ Artiflex / Veriflex IOL

- ◉ AcrySof Cachet Phakic IOL




HOW MUCH ENDOTHELIAL CELL LOSS IS ACCEPTABLE ?



ISO 11979-10:2006

- Ophthalmic implants – intraocular lenses
Part 10: phakic intraocular lenses
 - Assumes annual loss of 2%, which means less than 2% per year should be acceptable



ANTERIOR CHAMBER HISTORICAL DESIGNS




Nuvita IOL

- Sizing very difficult
 - Pupil ovalization in 50 %
 - IOL exchanged in many cases



Unacceptable results



Vivarte / GBR

- Sizing very difficult
 - Decentration frequent
 - Pupil ovalization occurs frequently
 - Significant endothelial cell loss




Unacceptable results




ICARE®


- HEMA 26%
- Large vault, close to endothelium
- Progressive endothelial cell loss



Unacceptable results



ANTERIOR CHAMBER CURRENT DESIGNS




Artisan / Verisyse IOL


- FDA approved for myopia
- Outside US
 - Hyperopia
 - Toric design
- Surgery
 - Large incision, causing astigmatism
 - Iridectomy
 - Difficult




- Saxena R, Boekhoorn SS, Mulder PG, Noordzij BG, van Rij G, Luyten GP
Long-term follow up of endothelial cell change after Artisan phakic intraocular lens implantation.
Ophthalmology 2008; 115:608-613
- 82 eyes at 1 year, 13 eyes at 7 years
Endothelial cell loss 8.3% at 5 years (1.7% per year)





- Tahzib NG, Nuijts RM, Wu WY, Budo CJ
Long-term study of Artisan phakic intraocular lens implantation for the correction of moderate to high myopia: ten-year follow up results
Ophthalmology 2007; 114:1133-1142
- 89 eyes
endothelial cell loss 8.9% at 10 years (0.9% per year)

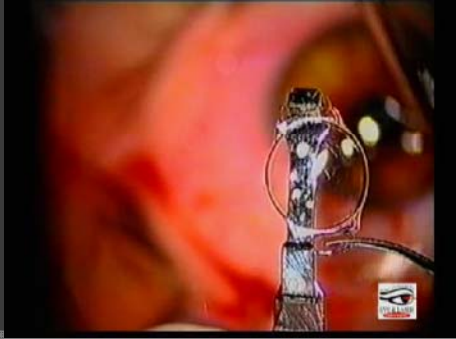



Summary Artisan / Verisyse IOL

- Long-term safety established
- Difficult to implant
- Iridectomy required
- Large incision causes astigmatism
- Prolonged visual rehabilitation






Artiflex / Veriflex IOL

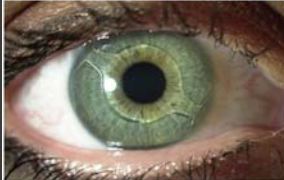

Summary Artiflex / Veriflex

- not FDA approved; no long-term data
- Advantages
 - Small incision
 - No suture
- Disadvantages:
 - Difficult surgery
 - Iridectomy required
 - Uveitis frequent

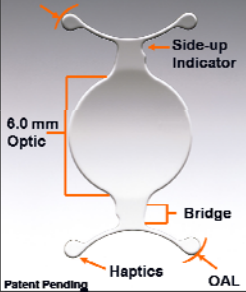



AcrySof CACHET Phakic IOL


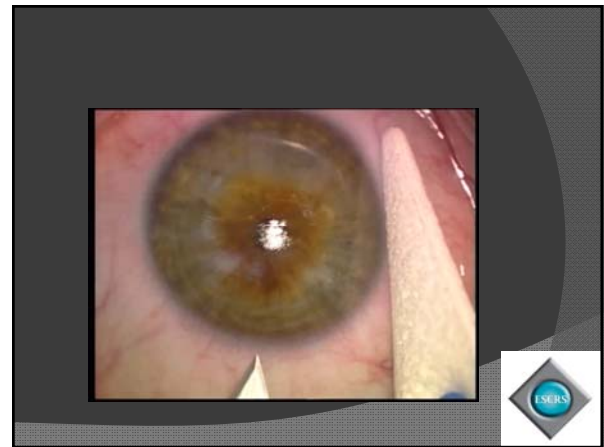
- not FDA approved (but CE marked)
- Single piece, AcrySof® material, angle supported
- Foldable

AcrySof CACHET Phakic IOL



Optic	6.0 mm
Overall Length	12.5 to 14.0 mm
Diopter Range	-6.0 to -16.5 D

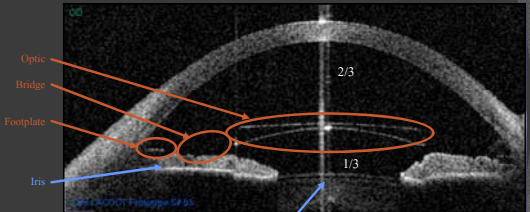




1st Implant 6. Dec. 1999, Mannheim




Cachet IOL Position *in vivo* (no iridectomy/iridotomy required)

Anterior Chamber OCT

- Kohnen T, Knorz MC, Cochener B, Gerl RH, Arné JL, Colin J, Alió JL, Bellucci R, Marinho A

Acrysof angle-supported phakic intraocular lens for the correction of moderate-to-high myopia: one-year results of a multicenter European study. *Ophthalmology* 2009; 116:1314-1321

- 190 eyes, 161 at one year endothelial cell loss from preop to one year 4.8% (includes surgical loss !)



- Knorz MC, Lane SS, Holland S
Acrysof angle-supported phakic IOL for the correction of moderate to high myopia: Three-year interim results of an international multicenter study (*JCRS* 2011; 37: 469-480)

- 360 eyes
Surgical ECC loss: (pre-op to 6 months) 3.31% centrally and 2.98% peripherally
Chronic ECC loss: (annualized from 6 months to 3 years) 0.4% centrally and 1.1% peripherally



Summary Acrysof Cachet IOL

- Not FDA approved, CE marked
- Long-term safety established
- Easy to implant
- No iridectomy required
- Fast visual rehabilitation



Summary Phakic IOLs

- Long-term proved phakic IOLs today
 - ICL (FDA approved)
 - Verisyse IOL (FDA approved)
 - Acrysof Cachet Phakic IOL (CE marked, investigational use only in US)
- AcrySof Cachet Phakic IOL my favorite
 - Extremely easy to implant
 - No iridectomy required
 - No chronic ECC loss, no pupil ovalisation



THANK YOU !

