



39th Congress of the ESCRS



8 – 11
October 2021

Refractive and Visual Outcomes of a New Extended Depth of Focus (EDOF) Intraocular Lens

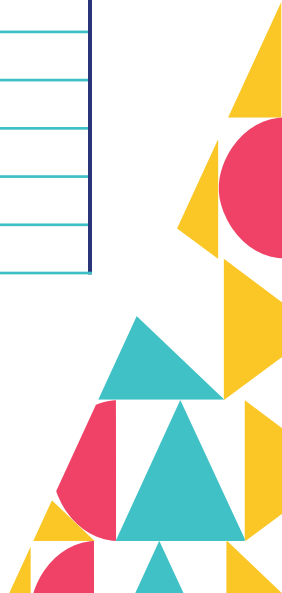
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Disclosure for Gilles Lesieur

In compliance with COI policy, ESCRS requires the following disclosures to the session audience:

Shareholder	No relevant conflicts of interest to declare.
Grant / Research Support	No relevant conflicts of interest to declare.
Consultant	Carl Zeiss Meditec
Employee	No relevant conflicts of interest to declare.
Paid Instructor	No relevant conflicts of interest to declare.
Speaker Bureau	No relevant conflicts of interest to declare.
Other	Royalties for BVI and Rumex instrumentation

Paul Dupeyre has no financial interest in any of the mentioned products or methods

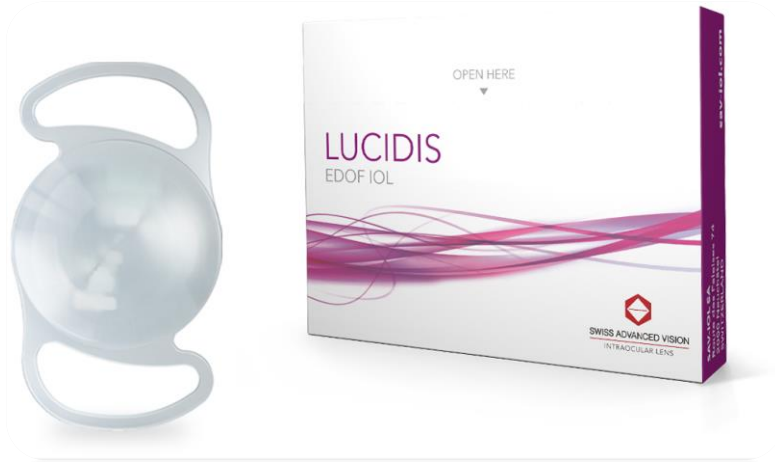


Purpose

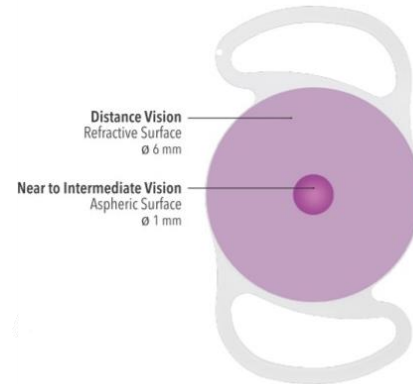
- To assess the refractive and visual outcomes after implantation of a new extended depth of focus (EDOF) intraocular lens (IOL)
- To compare the results with an earlier analysis of 2 others EDOFs (ESCRS 2020)



LUCIDIS - Swiss Made EDOF IOL



- 2 Diameters (108 & 124mm)
- Toric version
- Spherical Refractive surface for Distance vision
- Near-Intermediate vision with 1mm Aspheric Surface (Axicon, Bessel Beam and Pseudo-Nondiffracting Beam **PNDB**)



Technical Information

Hydrophilic Acrylic 26%
Unpolished IOL
Accuject 2.0 Medical

IOLMaster Cste
108M/MT 118
124M/MT 118.5

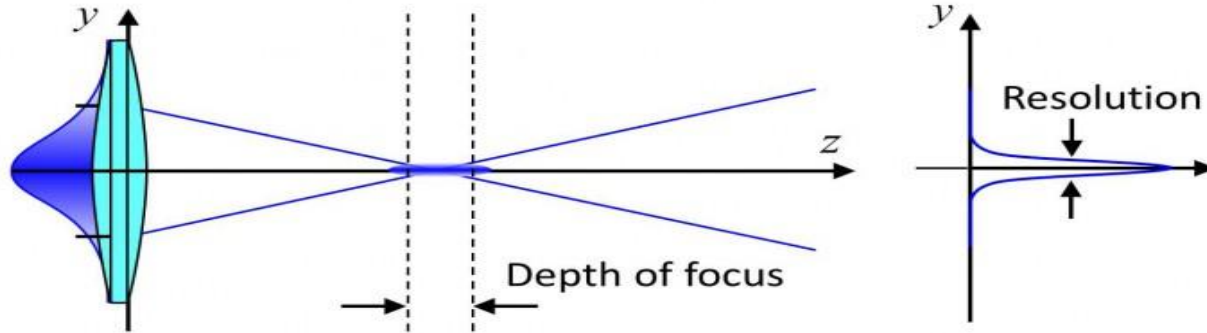
To be optimized « +0.3D »

Lens Model	LUCIDIS  Lucidis 108M Ø 10.8 mm Lucidis 124M Ø 12.4 mm	LUCIDIS ^{Toric}  Lucidis 108MT Ø 10.8 mm Lucidis 124MT Ø 12.4 mm
Lens Type	Pseudophakic single piece foldable IOL	Pseudophakic single piece foldable IOL
Power Range	+5.0 to +30.0 D (by 0.5 D steps)	SE: +5.0 to +30.0 D (by 0.5 D steps) Cyl.: 1.00 / 1.50 / 2.25 / 3.00 / 3.75 / 4.50 D
Optical Diameter	6.0 mm	6.0 mm
Optical Design	Multizone (refractive, aspheric)	Multizone (refractive, aspheric)
Add/EDOF	+3.0 D (nominal value)	+3.0 D (nominal value)
UV Protection	Cutoff at 370 nm	Cutoff at 370 nm
Material	Hydrophilic acrylic (26% water content)	Hydrophilic acrylic (26% water content)
Square Edge Design	360° (posterior face)	360° (posterior face)
Haptic Design	Closed loop (0° angulation)	Closed loop (0° angulation)
Packaging	Plastic blister	Plastic blister
Recommended Injector Size	≥ 2.2 mm	≥ 2.2 mm

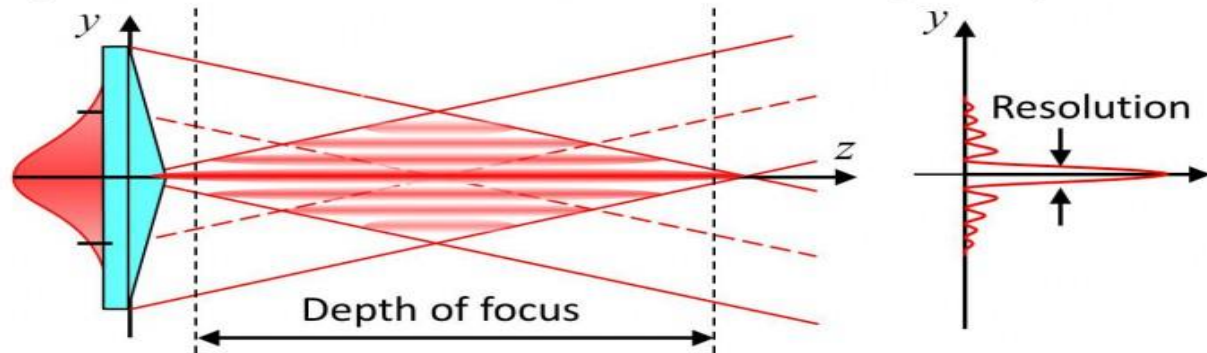


EDOF - Aspherical Refractive & Axicon with Bessel Beam

a) Gaussian beam focused with a spherical lens



b) Gaussian beam focused with a conical lens (Axicon)



Methods

23 LUCIDIS

BMICS, without any pathology and no astigmatism to correct

1.8mm Incision

1 Day, 1M, 3M Follow Up

Defocus Curve

Visual Acuity

5 lost to follow-up



LUCIDIS

Compared to previous personal study on
20 Synthesis Plus (Cutting Edge) and
20 IsoPure (BVI)

EDOFs IOLs implanted in 2018/2020



Synthesis Plus

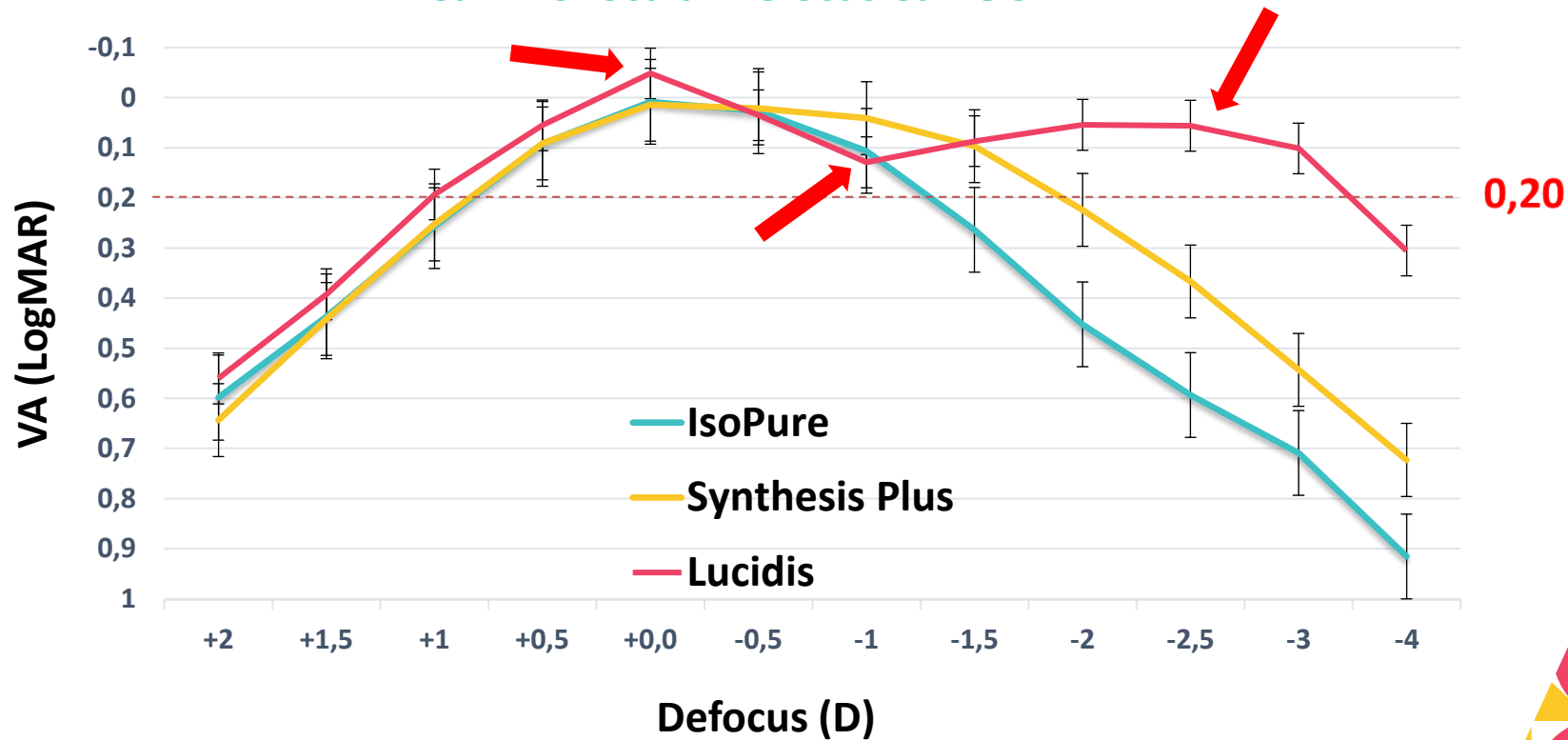


IsoPure



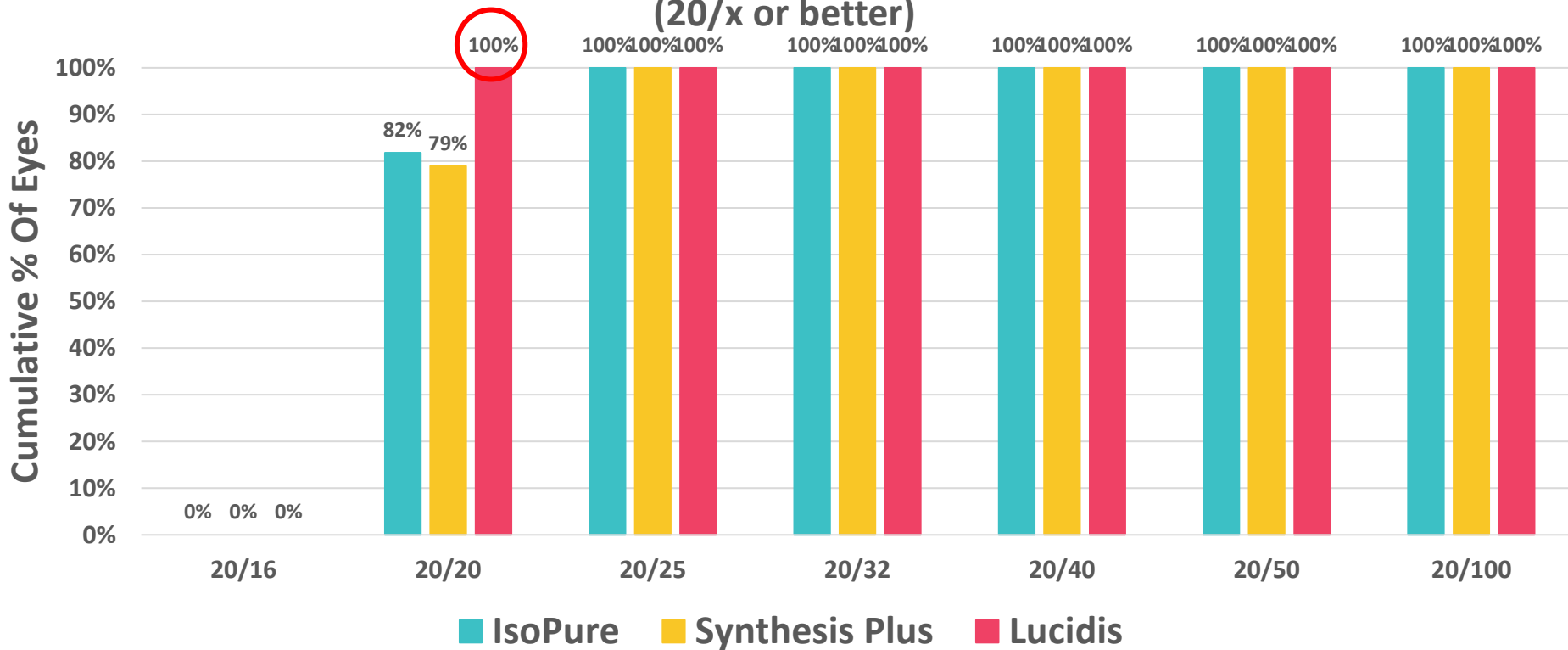
Results

Mean Monocular Defocus Curve 3M



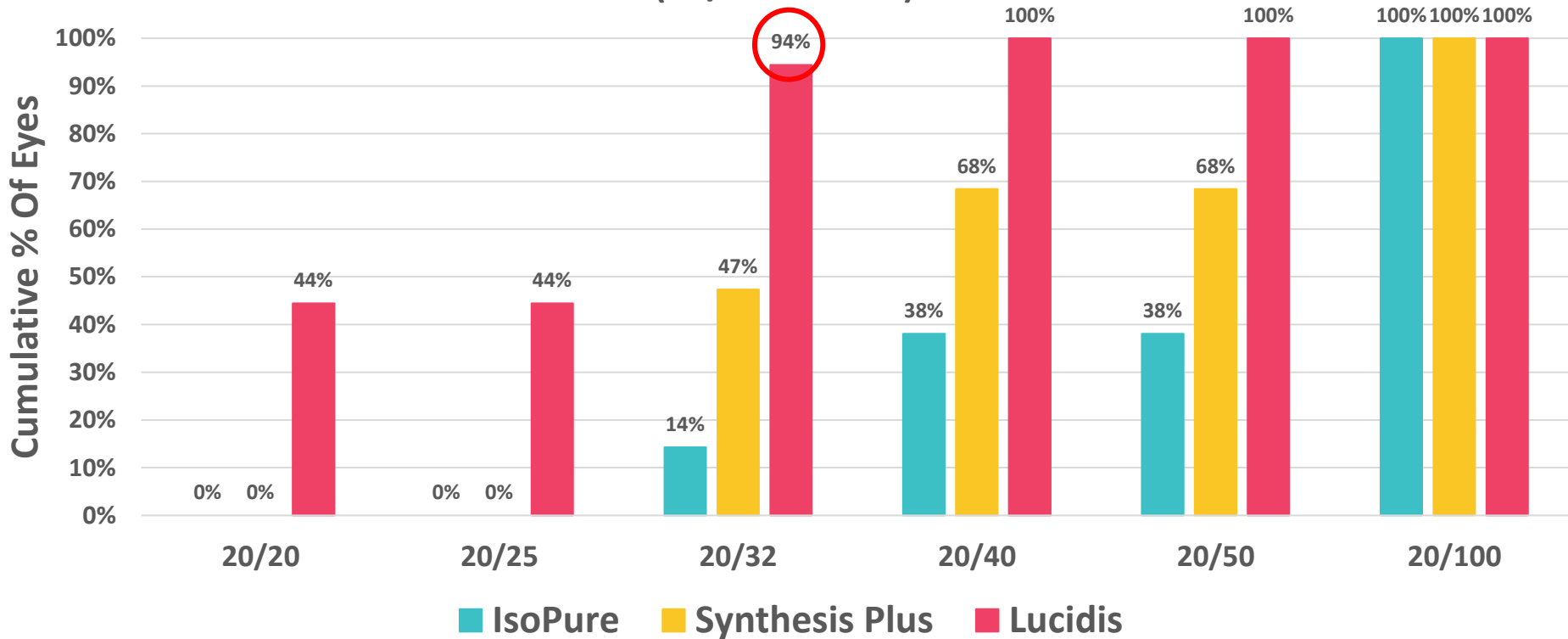
Results CDVA

Corrected Distance Visual Acuity (20/x or better)



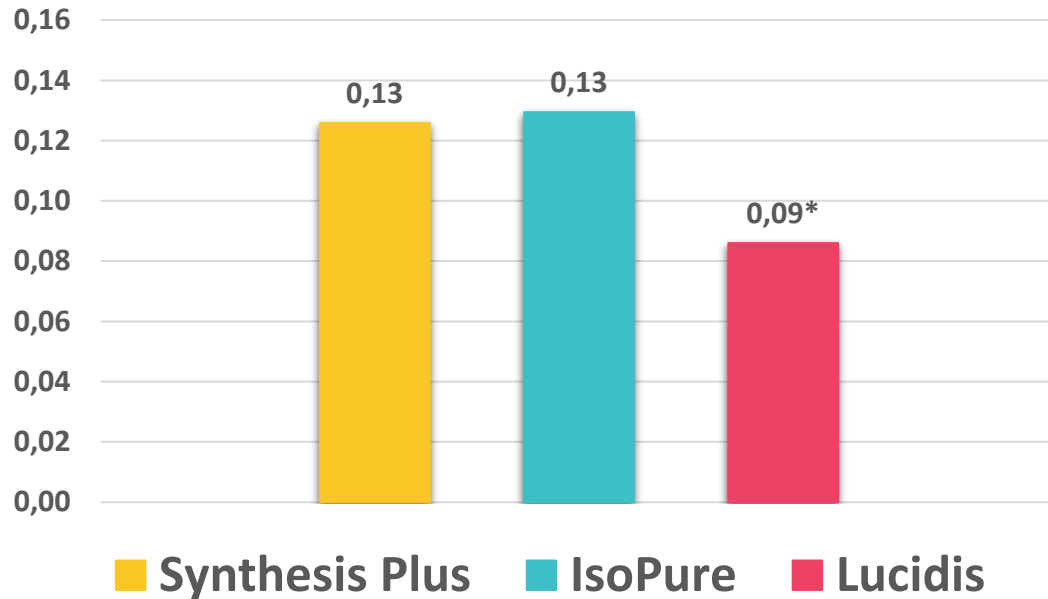
Results DCNVA

Distance Corrected Near Visual Acuity (20/x or better)



Results

Mean SD of VA



Better and more regular results
with **less dispersion for LUCIDIS**

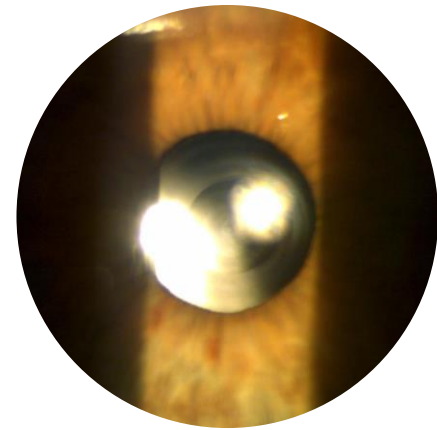
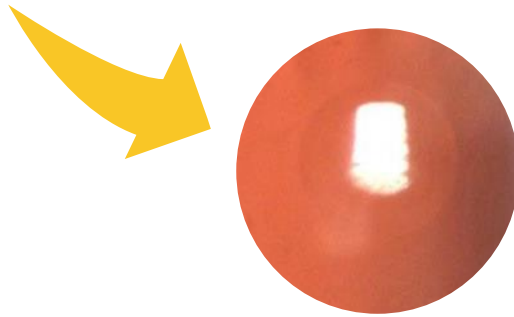
*Statistically significant



Personal practice

Since 08/2020

- 58 Lucidis 108M/T (small)
- 413 Lucidis 124M/T (large)
- **Good distance vision thanks to the refractive zone**
- **Good intermediate and near vision thanks to the axicon on the anterior surface**



- Some capsular folds
- Some rare patients are uncomfortable in photopic situation on early post op (inflammation, PD <2.5?)
- Anterior capsule retraction with 124M in small eyes: AL <21,5 and/or WTW <11,5
- Some rotation with 108MT



Personal practice and stability

High stability with large diameter (124MT)



Rotation Post Op	AT TORBI	ANKORIS	Synthesis Toric	LUCIDIS 124MT
N	285	259	30	113
MEAN	3,93°	6,64°	16,20°	2,77°
STD	5,36°	6,31°	19,96°	2,55°
MEDIAN	2°	5°	6,5°	2°
MIN	0°	0°	0°	0°
MAX	39°	37°	74°	11°



Conclusions

LUCIDIS showed better results for **far and near vision** than IsoPure and Synthesis Plus

Toric version is already available with **good stability (124MT)**

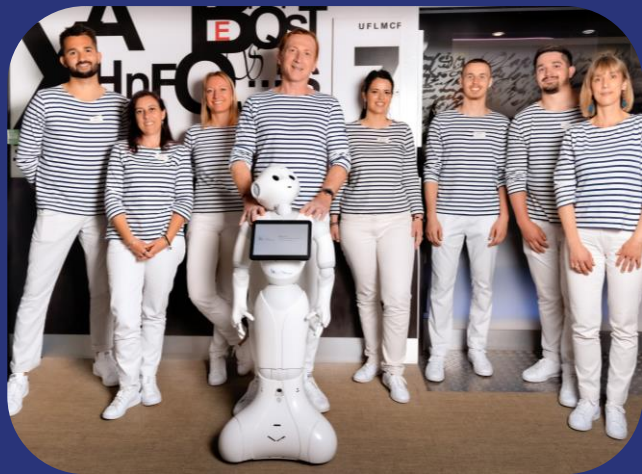
For AL <21.5mm and/or WTW <11.5mm, 108M/T is a better choice with enlargement of capsulorhexis at 5.5mm

High satisfaction for patient, sometimes with full **spectacle independence**

No Dysphotopsia or concern for the patients at 3M

We must continue the analysis to **optimize the interferometric constant**





Thank you
for your attention

