

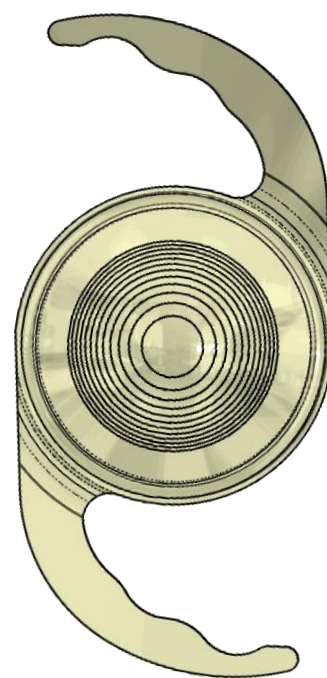


# RESULTADOS CLINICOS DE 2 PLATAFORMAS MULTIFOCALES HANITA MF – OCULENTIS Mplus

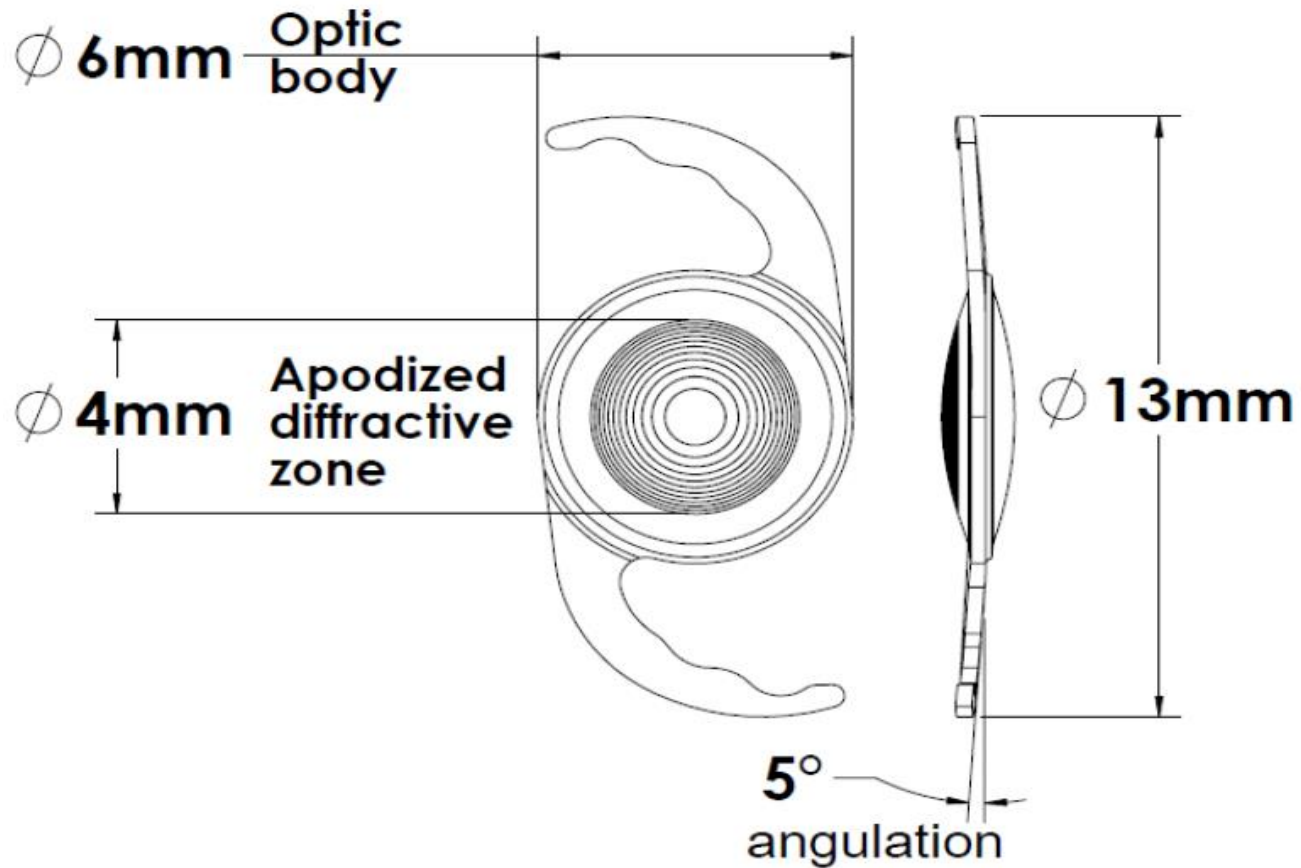
LUIS GUILLERMO PAPARO M. MD  
ZULMA VALERO F. OD

Unidad de Cornea y Cirugía Refractiva VISUALASER Centro Medico Imbanaco  
XII Congreso Internacional de Oftalmología  
Cali, Mayo 2013

# CARACTERISTICAS

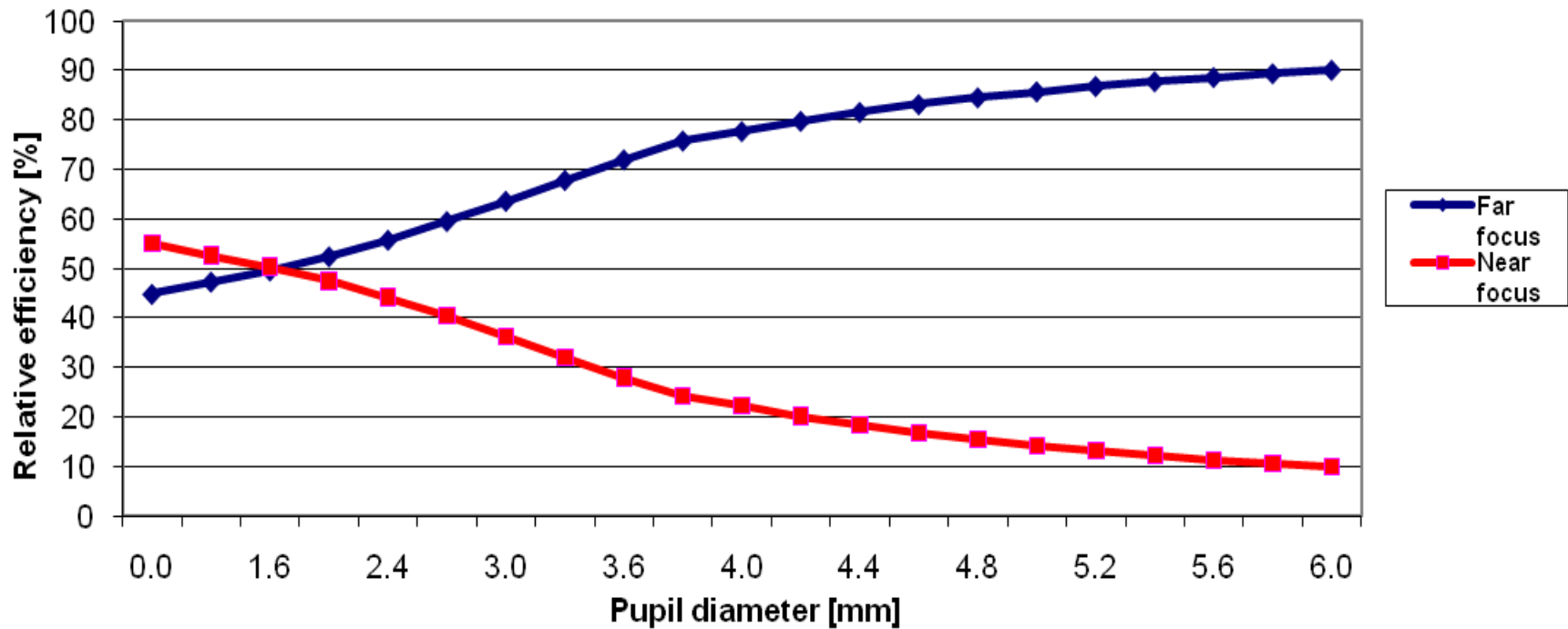
<b>Geometry</b>	<b>Total Diameter: 13mm Optic Diameter: 6.0 mm Haptic angulation: 5º</b>	
<b>Square edge</b>	<b>360º double square edge</b>	
<b>Material</b>	<b>Hydrophilic acrylic with UV-blocking and violet filtering chromo pore Refractive index: 1.46(35ºc)</b>	
<b>YAG laser</b>	<b>Compatible</b>	
<b>Power range</b>	<b>+10 to +30 (0.5D increments) +30 to +35 (1D increments)</b>	
<b>Addition</b>	<b>+3D</b>	
<b>Incision size</b>	<b>1.8mm</b>	
<b>Placement</b>	<b>Capsular bag</b>	
<b>Estimated A constant</b>	<b>118.6 IOL master (SRK/T)</b>	

# CARACTERISTICAS



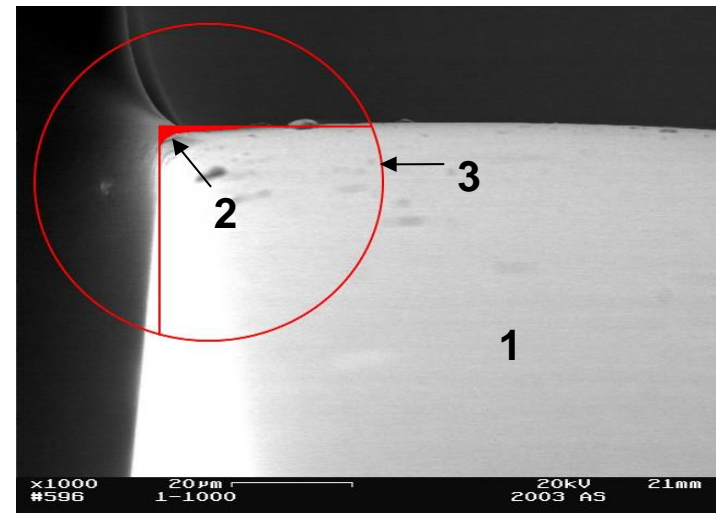
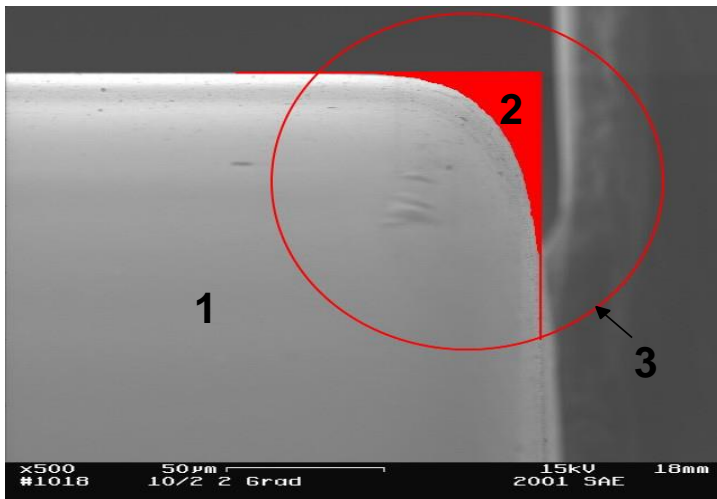
# DISTRIBUCION DE LUZ

Energy distribution between far (blue) and near (red) vision



# DOBLE BORDE CUADRADO

- LIO Multifocal Asferico Difractivo Apodizado
- Para alcanzar la precisión requerida de los escalones difractivos no debe haber pulimiento ( no polish)
- Esto significa que los bordes cuadrados tampoco deben ser pulidos



1 - LIO  
 2 -Area- Desviación ángulo de 90°  
 3 -círculo de referencia

Better PCO prevention results for IOLs with “square edges”, regardless of material.

Schauersberger J, Amon M, Kruger A, Abela C, et al. Comparison of the biocompatibility of two foldable intraocular lenses with sharp optic edges. *J Cataract Refract Surg* 2001; 27:1579-1585.

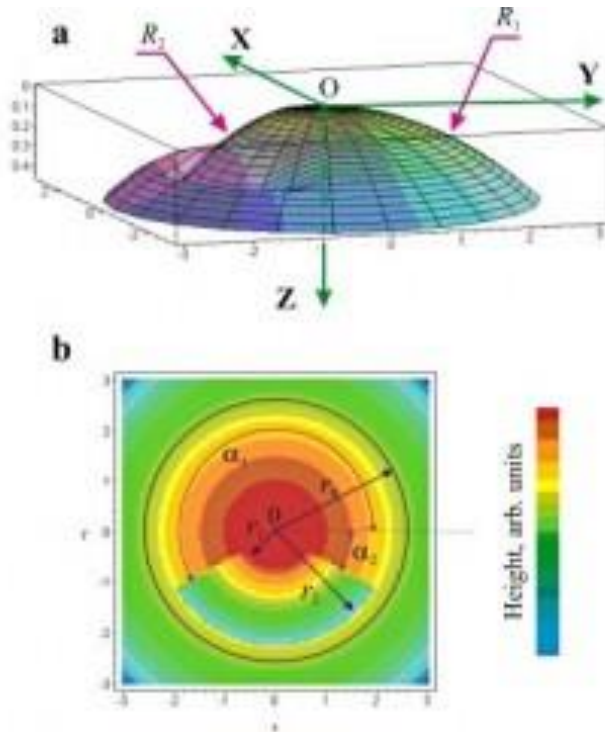
Buehl W, Findl O, Menapace R, et al. Effect of an acrylic intraocular lens with a sharp posterior optic edge on posterior capsule opacification. *J Cataract Refract Surg* 2002; 28:1105-1111.

# OCULENTIS Mplus



- Lente acrílica “hydrosmart”
- 11.00 mm x 6.00 mm
- +0.0 D a + 36.0 D (0.5D)
- Incisión 2.4 mm
- Asfericidad en superficie posterior
- Bordes cuadrados en 360
- Zona de visión lejana asimétrica esférica con una zona de visión cercana sectorial Add + 3.00 D
- Diseño concebido para evitar reflejos y saltos de imagen originados por reflexiones en condiciones de luz escotópica
- Independiente de la pupila ?

# CARACTERISTICAS



- Combina dos zonas esféricas con distintos radios de curvatura
- Los centros de curvatura de las 2 superficies están en el eje Z, para que no haya un desplazamiento de imagen.
- Cuando la luz incide en el área de transición de los segmentos sectoriales se reflejara lejos del eje óptico para prevenir difracciones e interferencias, menor perdida de intensidad de luz
- Menos efectos de halos e imágenes fantasma

# METODO

Estudio prospectivo, no aleatorizado, 20 ojos , 10 pacientes implantados bilateralmente

## **Criterios de Inclusión:**

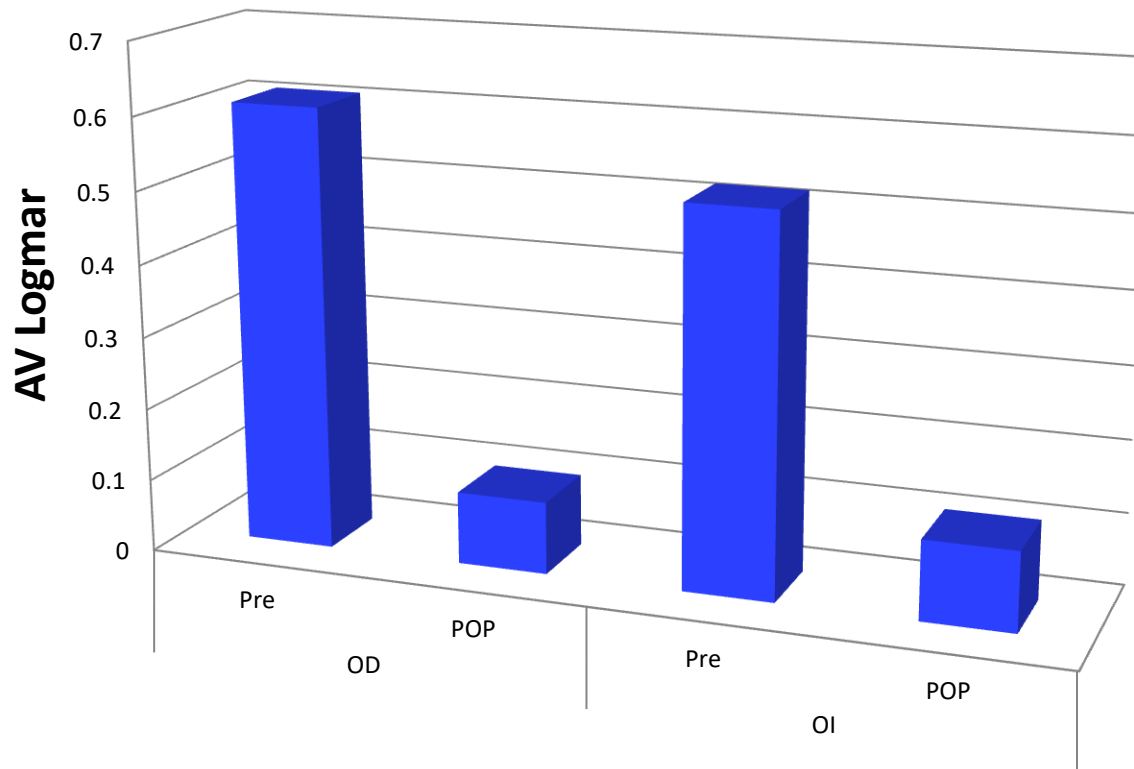
- Edad: 50 a 75 años
- Corneas sanas, <1.00D de astigmatismo regular.
- Fondo de ojo sano

## **Criterios de exclusión:**

- Antecedentes oculares/cirugía de cornea, trauma ocular.
- Capsula que no este sana
- Antecedente de enfermedad ocular diferente a catarata.
- Cualquier otra condición ocular que contraindique la implantación.

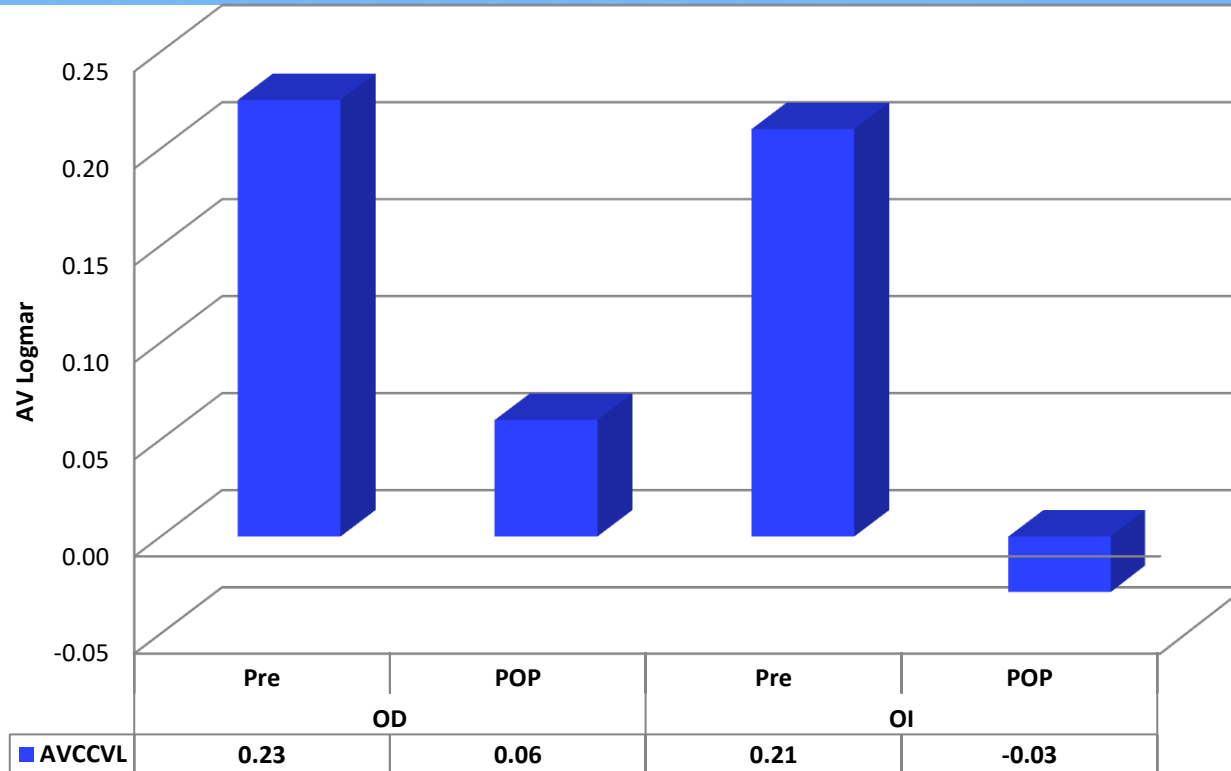


# RESULTADOS POP 3 MESES HANITA SEELENS MF



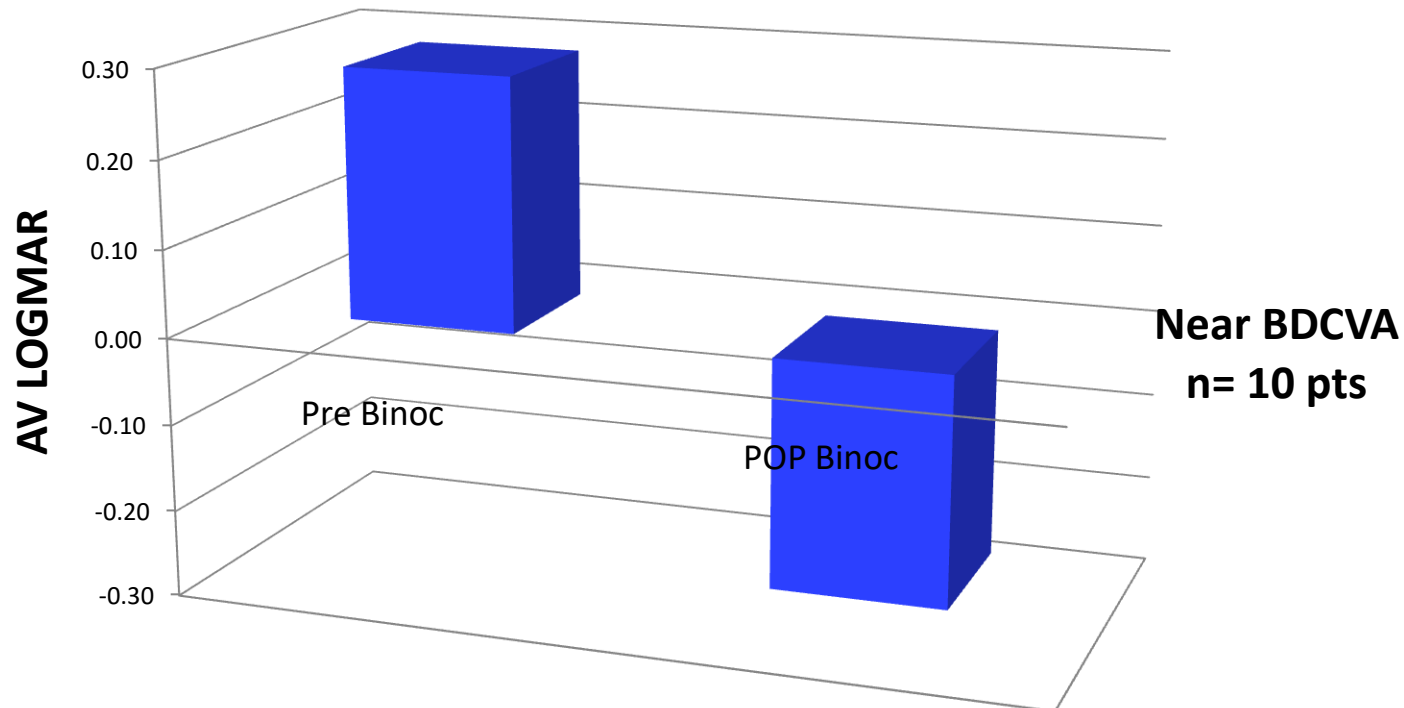
**UCDVA  
N= 20 Ojos**

# RESULTADOS POP 3 MESES HANITA SEELENS MF

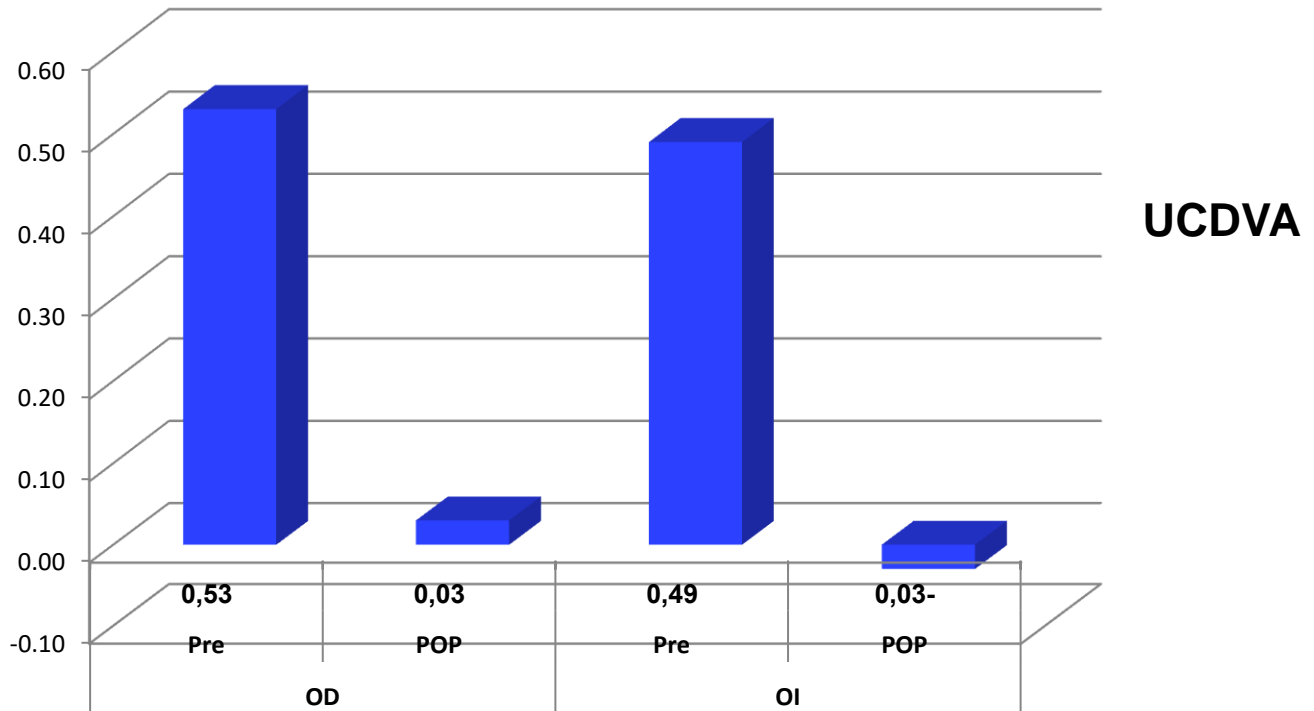


**BDCVA**  
**n = 20 Ojos**

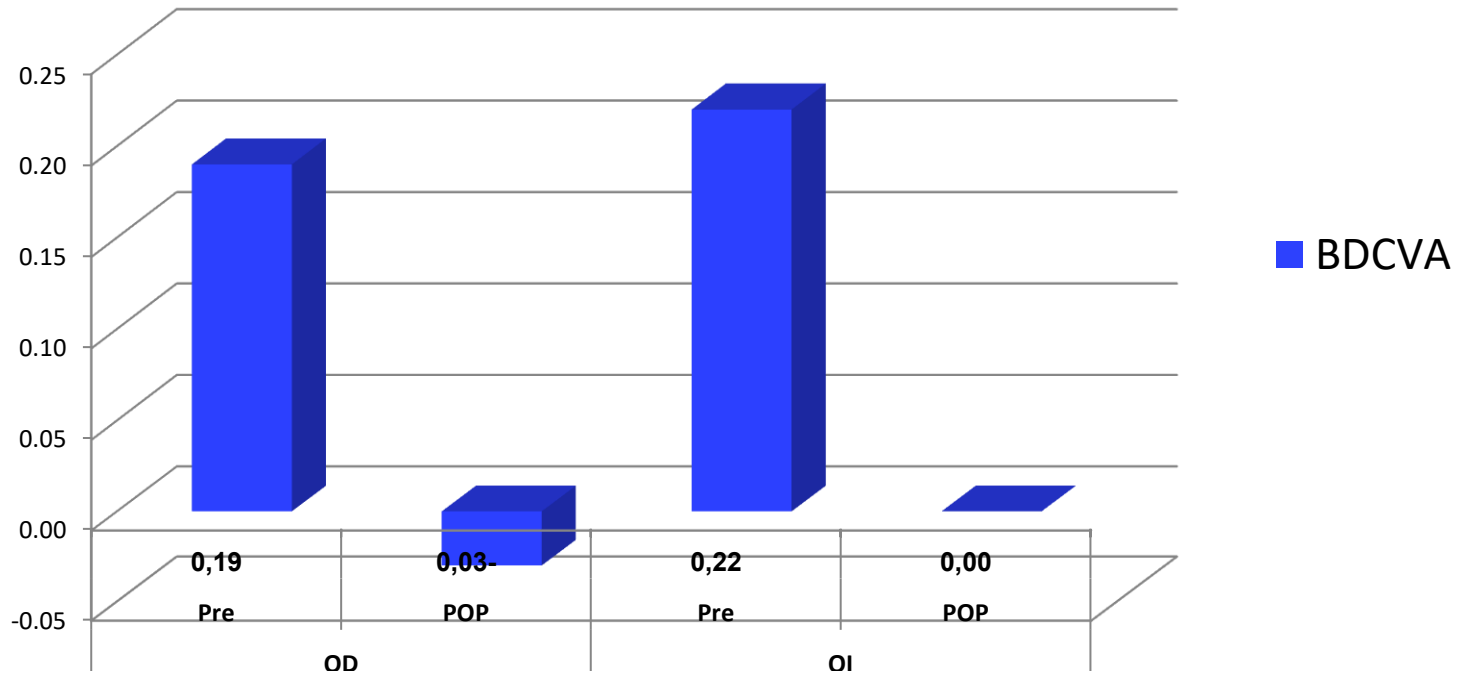
# RESULTADOS POP 3 MESES HANITA SEELENSMF



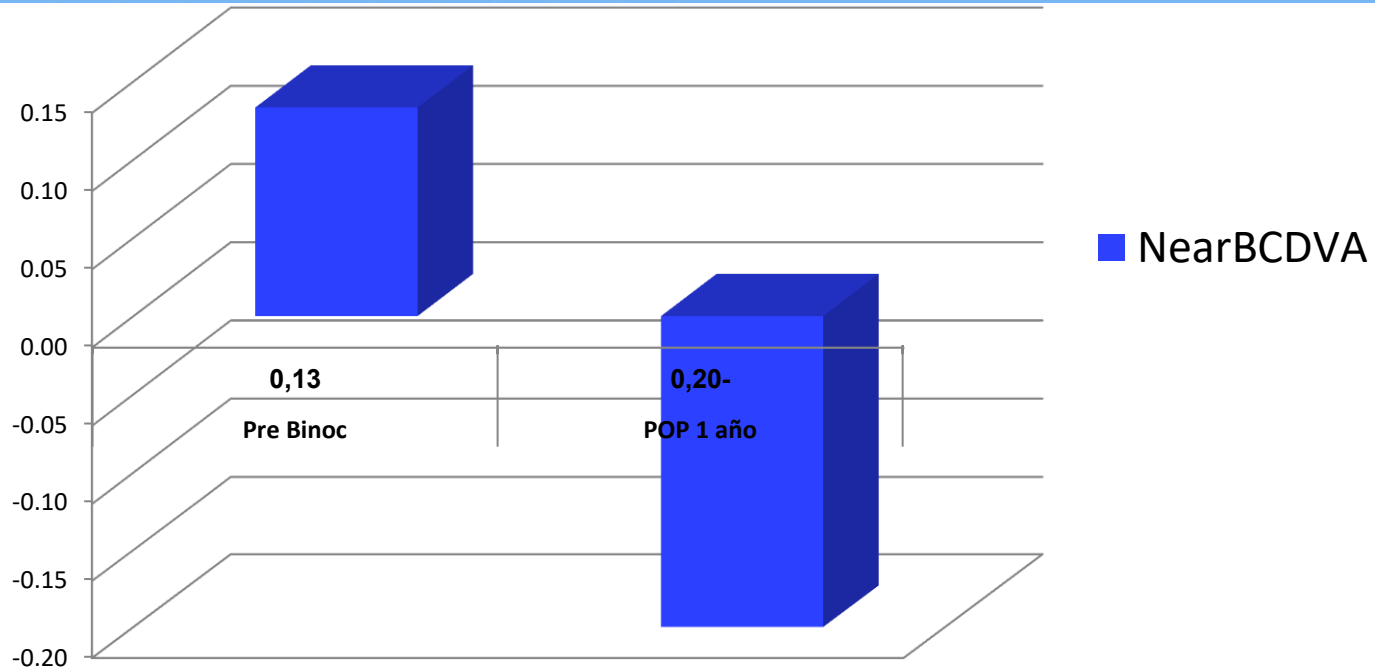
# RESULTADOS 1 AÑO HANITA MF



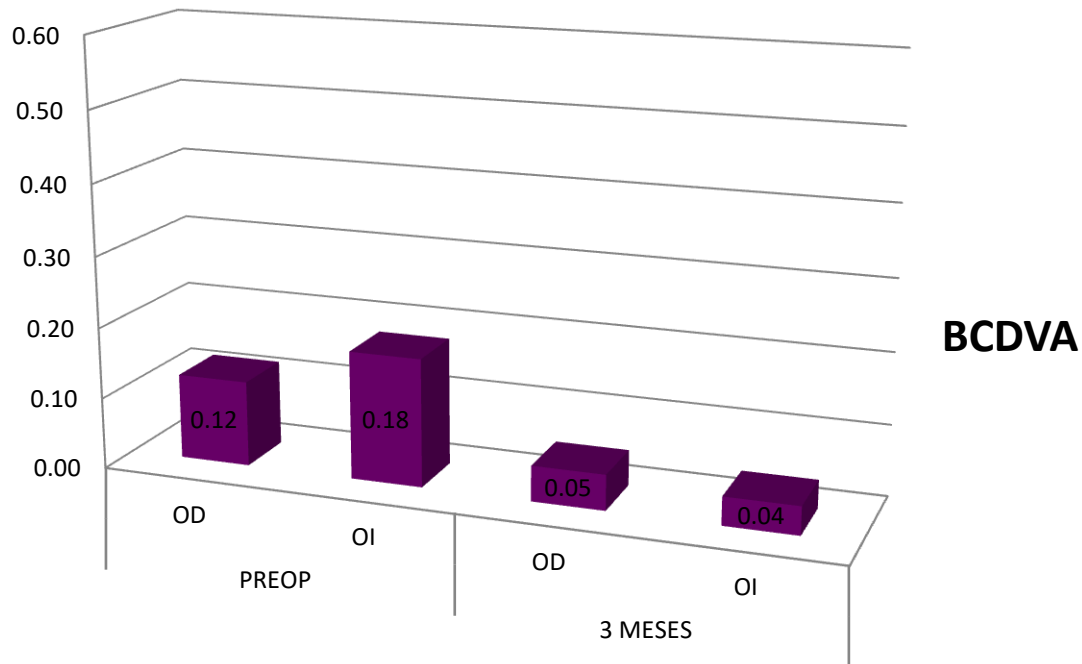
# RESULTADOS 1 AÑO HANITA MF



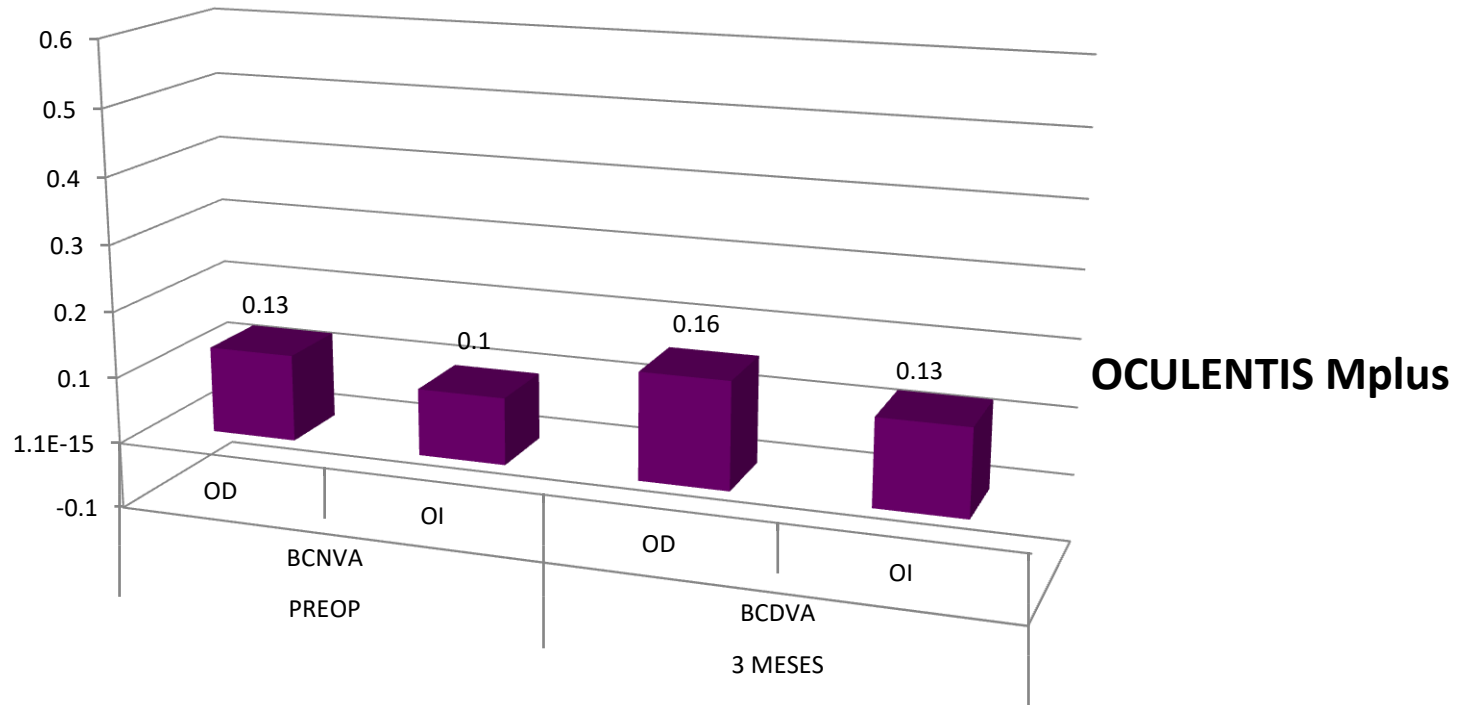
# RESULTADOS 1 AÑO HANITA MF



# RESULTADOS 3 MESES OCULENTIS Mplus



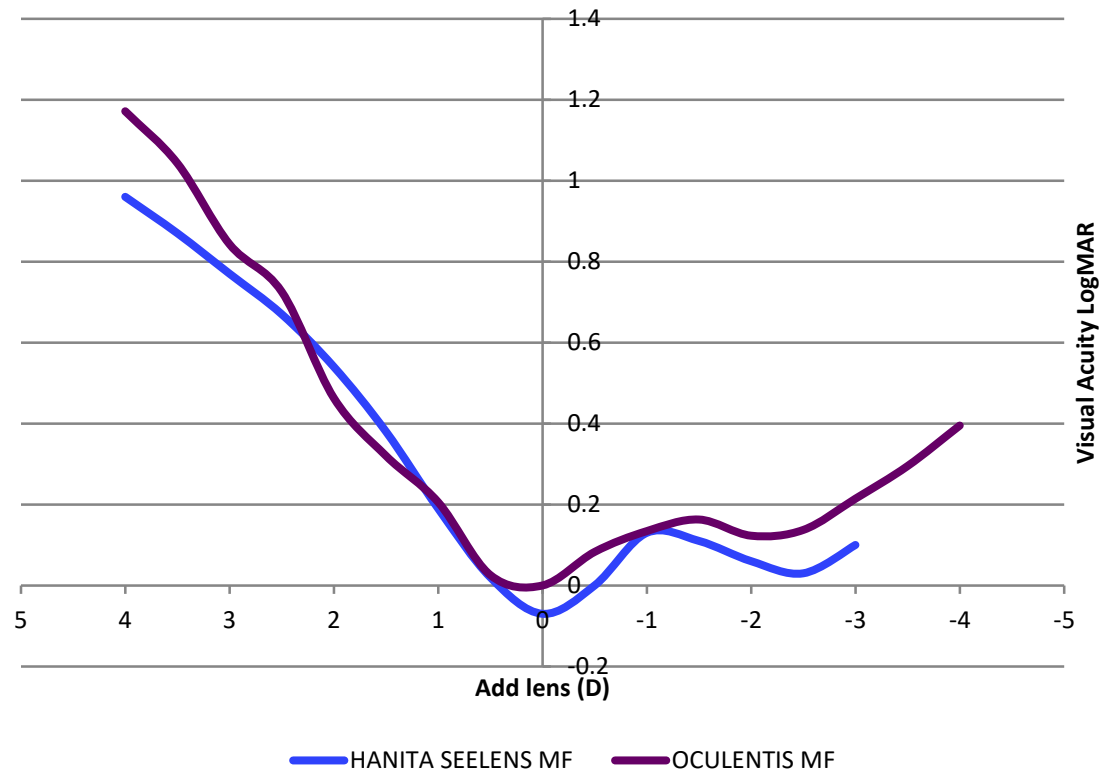
# RESULTADOS 3 MESES OCULENTIS Mplus



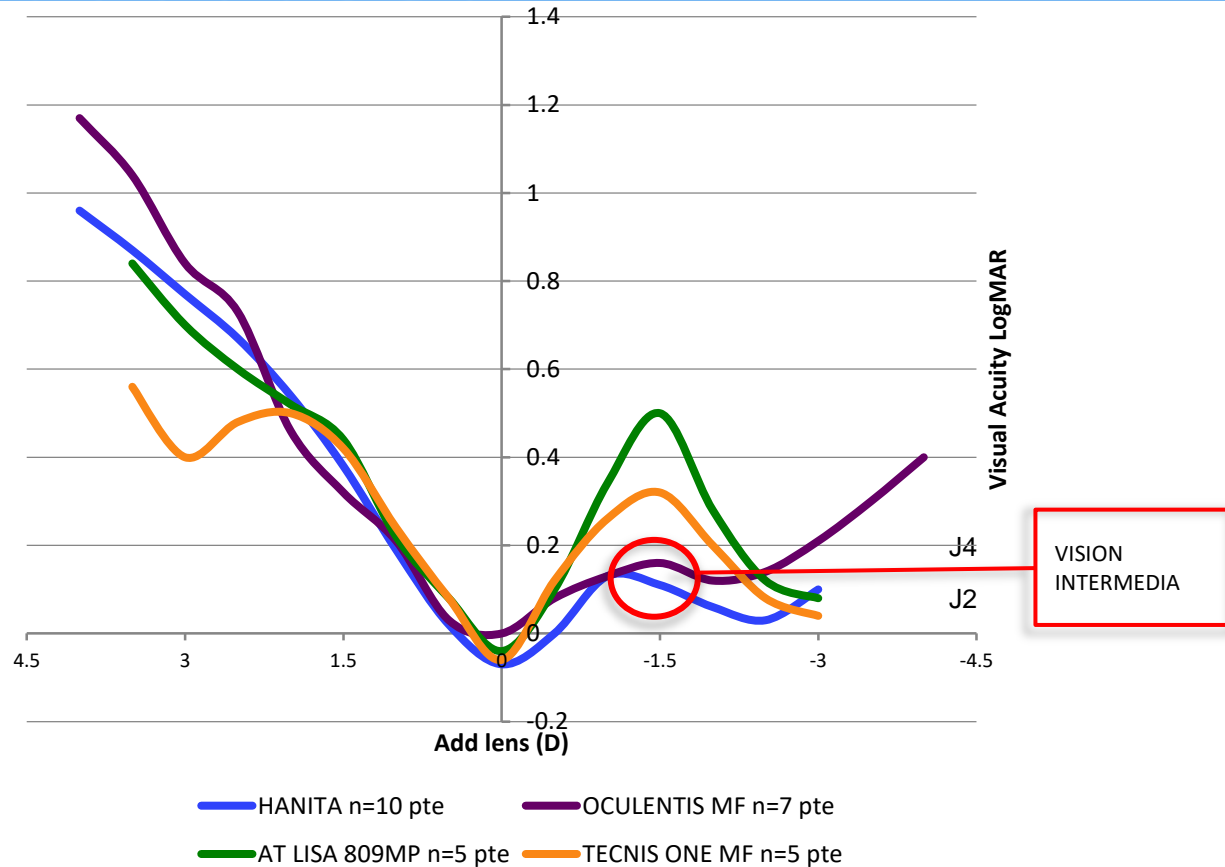


# CURVA DE DESENFUQUE POP 3 MESES

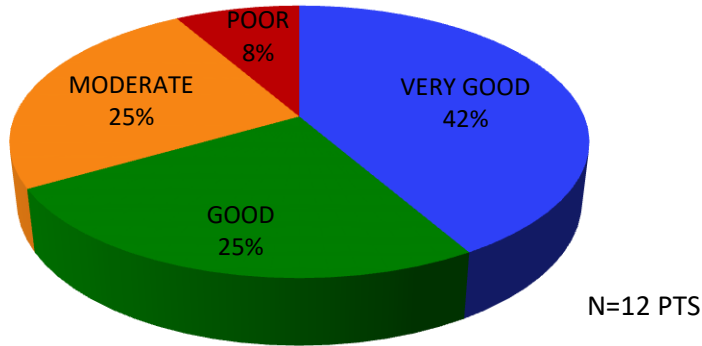
Defocus curve



# CURVA DE DESENFQUE COMPARATIVO

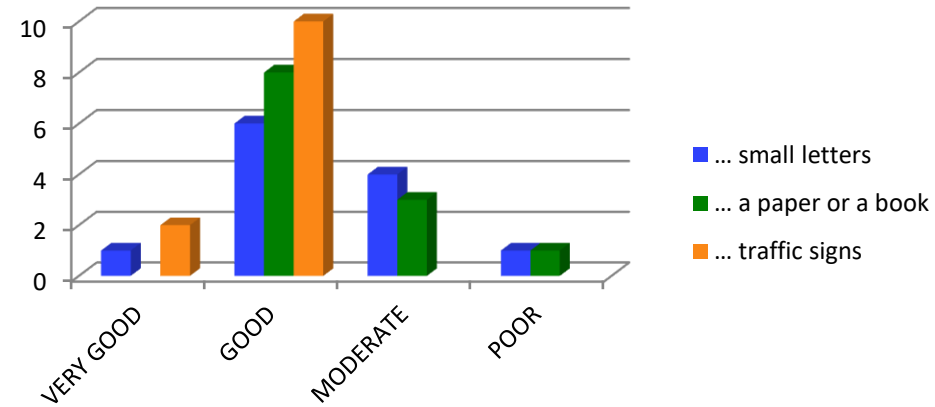


## How satisfied is the patient with the vision without spectacles

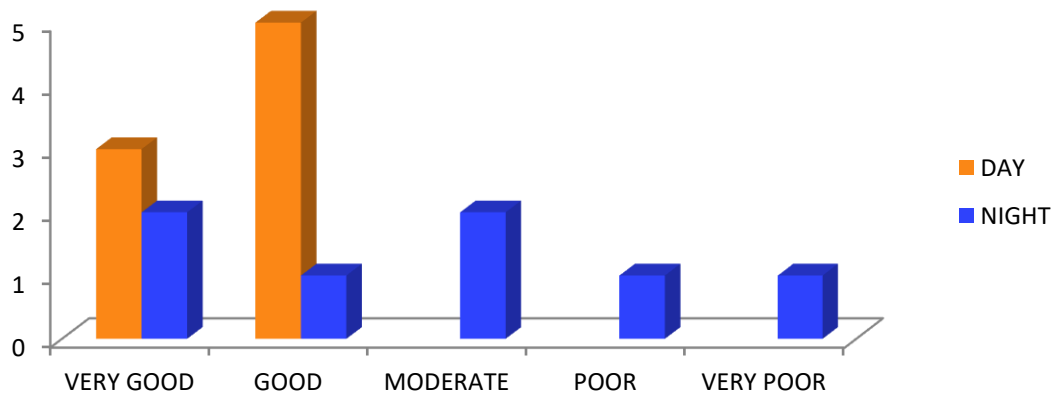


## OCULENTIS Mplus

### How is your vision without spectacles while reading of



### How is the vision at driving a car?

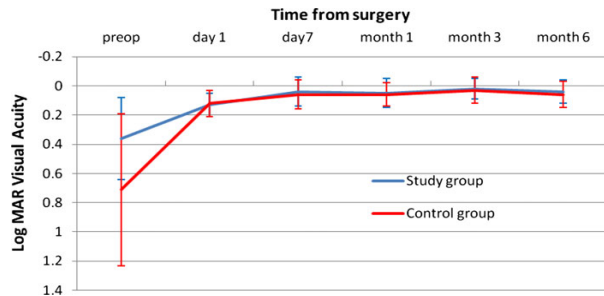


# ESTUDIO CLINICO

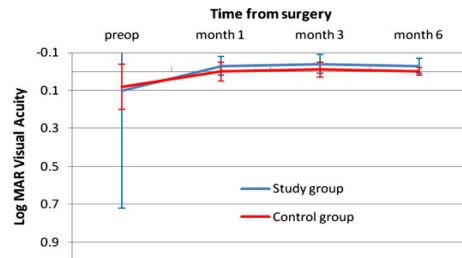
48 ojos study group (SEELENS MF) y 37 ojos control group(SN6AD1)

Van der Linden et al. Comparison of a hydrophilic and a hydrophobic apodized diffractive multifocal intraocular lens. Int Ophthalmol 2013

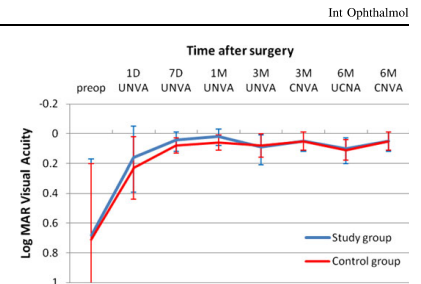
**Fig. 1** Mean uncorrected visual acuity up to 6 months after surgery. At all time-points measured post-operatively the study group and the control group performed equally in terms of uncorrected distance visual acuity and were not statistically significantly different



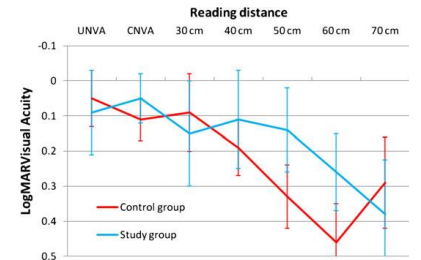
**Fig. 2** Comparison of the post-operative corrected distance acuity up to 6 months. The difference between the groups is small but statistically significant in favor of the study group ( $p < 0.019$ )



**Fig. 3** UNVA at 40 cm at different time-points in the follow-up period. The study group and the control group perform equally well. There were no clinical or statistically significant differences between the groups

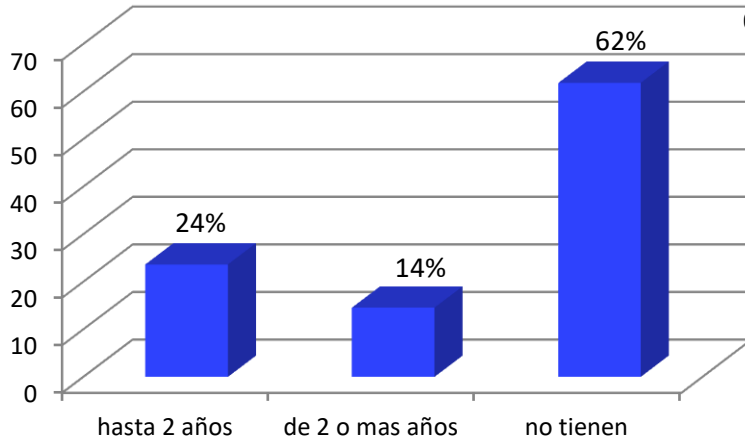


**Fig. 4** Difference in near acuity at different distances with or without correction. There is no clinical or statistical difference for the 30 and 40 cm distance between the study and control groups. However, there is a clinical and statistically significant better reading at 50 and 60 cm for the study group ( $p < 0.03$  at 50 cm and  $p < 0.007$  at 60 cm)

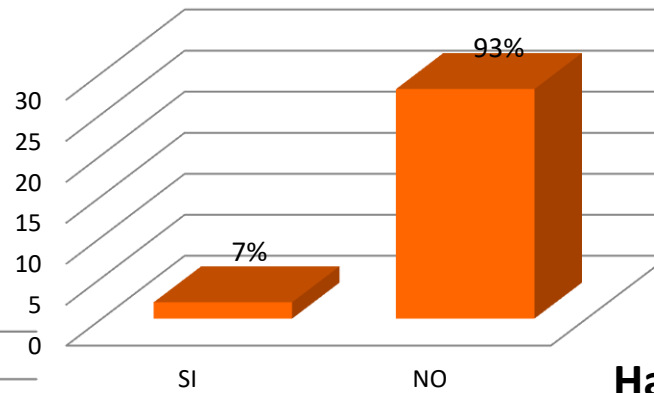


# CAPSULOTOMIA YAG

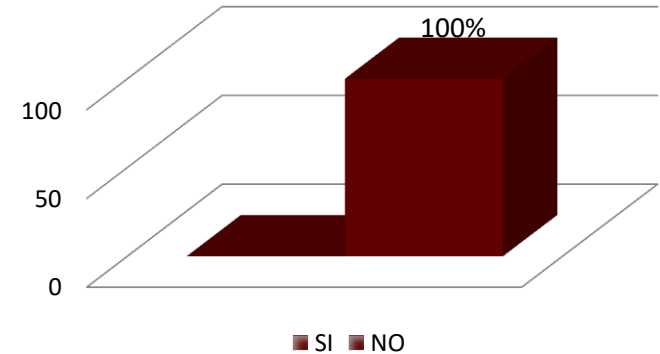
**AT LISA 809MP**



**Tecnis One MF ZMB00**



**Hanita SEELENS MF**



# CONCLUSIONES

- Estas nuevas plataformas muestran buenos resultados en visión lejana intermedia y cerca, después de cirugía de catarata.
- Al comparar la curva de desenfoque con el desempeño de otros lentes, se encontró un mejor comportamiento, principalmente en visión intermedia.<sup>1</sup>
- Durante el seguimiento (2 años SEELEN MF) no se presentó opacidad capsular, esto puede deberse al diseño óptico de borde cuadrado. Se debe hacer mayor tiempo de seguimiento.
- Implantación por microincisión (2.0 mm)
- Es necesario medir otras características de calidad visual para consolidar el desempeño óptico de estas nuevas plataformas

1. Van der Linden et al. Comparison of a hydrophilic and a hydrophobic apodized diffractive multifocal intraocular lens. Int Ophthalmol:2013

# Gracias

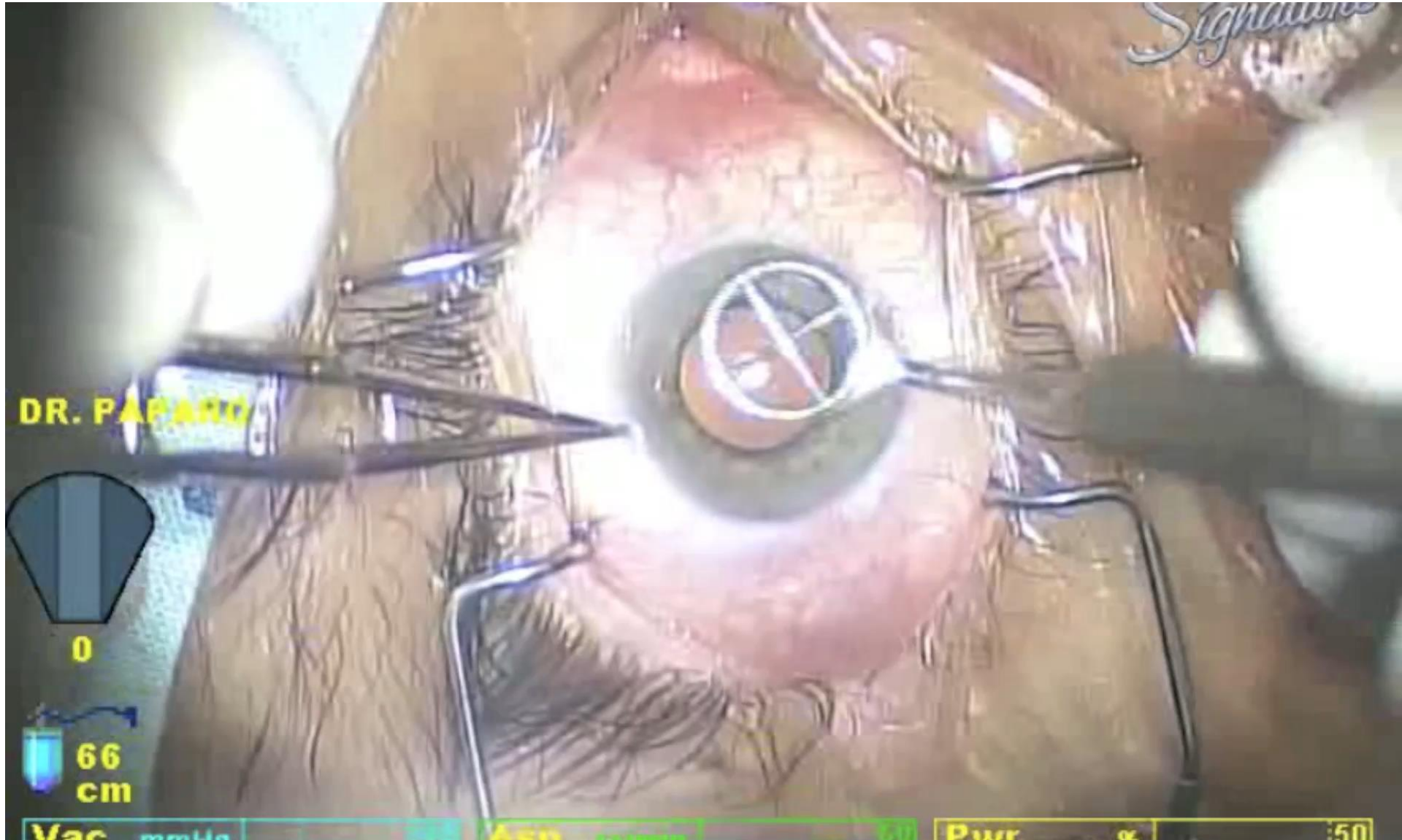


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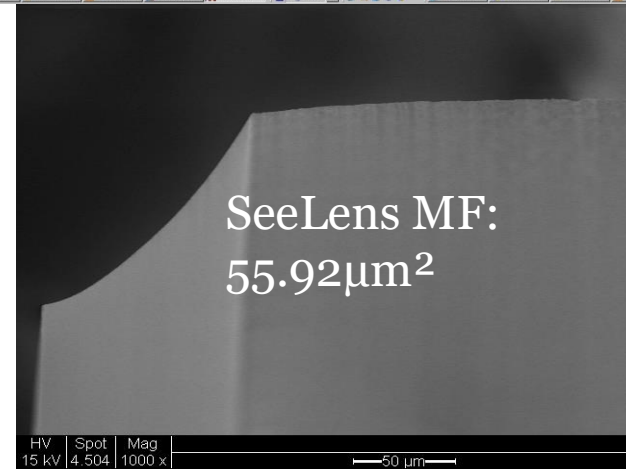
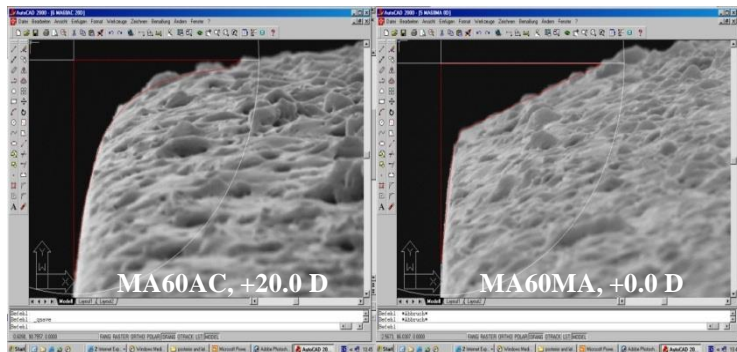
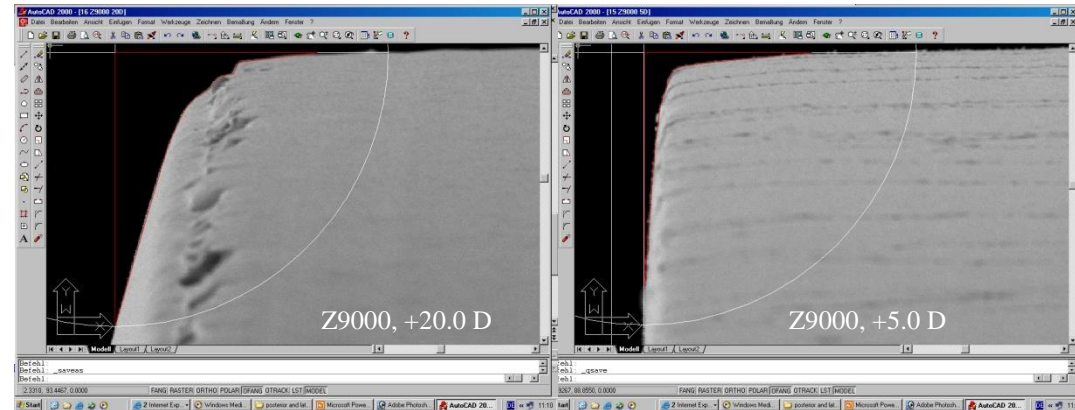
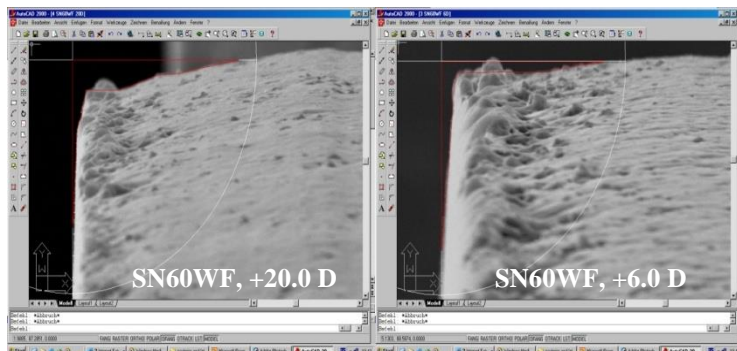
[www.imbanaco.com](http://www.imbanaco.com)

# VIDEO

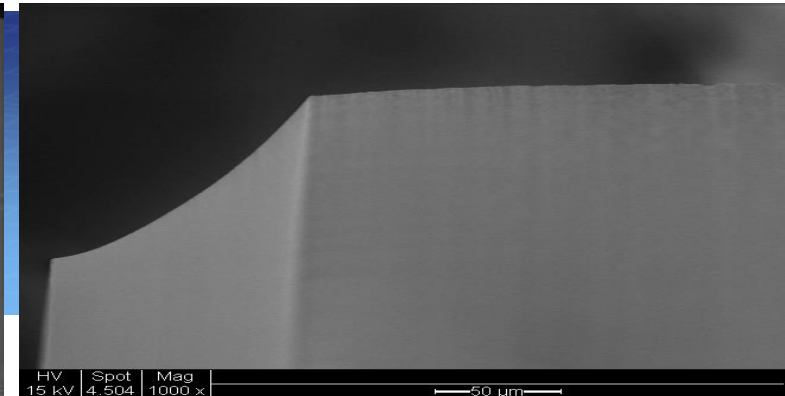
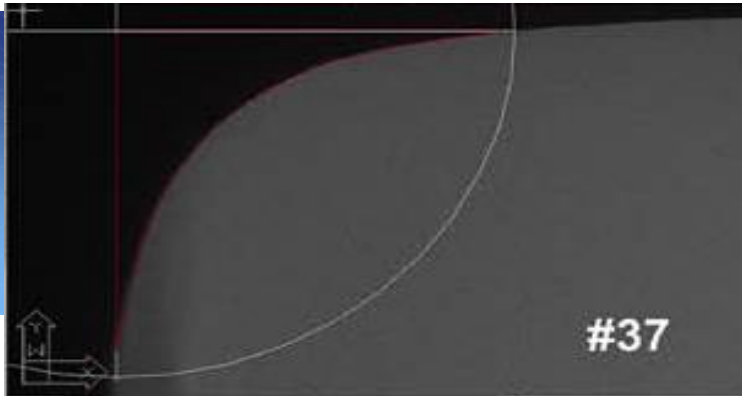




# OPACIDAD DE CAPSULA POSTERIOR



# OPACIDAD CAPSULA POSTERIOR



IOL model	IOL manufacturer	Dioptric power	Optic material	Area (40 Radius)
MF IOL	Hanita Lenses	20	Acrylic	55.92
SA60AT	Alcon	20.0	Acrylic	97.2
Hydromax	Zeiss	19.0	Acrylic	116.5
Matrix Acrylic	Medennium	20.0	Acrylic	133.8
SN60WF	Alcon (aspheric)	20.0	Acrylic	136.5
L450	Wavelight	20.0	Acrylic	138.8
ZA9003	AMO (aspheric)	20.0	Acrylic	188.4
AR40e	AMO	20.0	Acrylic	196.6
X-60	AVS	20.0	Acrylic	268.0
MA60AC	Alcon	20.0	Acrylic	278.9
VA60BB	Hoya	20.0	Acrylic	329.7

# PROTOCOLO

Parameter	Test*	Inclusion/ preop	OP	7-10 days	M1	M3	M6
Slit lamp examination	Pupillometer					X	
Monocular distant UCVA/BCVA	ETDRS	X		X	X	X	X
Binocular distant BCVA	ETDRS	X			X	X	X
Monocular near UCVA/BDCVA (40 cm)	ETDRS	X		X	X	X	X
Binocular near BDCVA (40 cm)	ETDRS	X			X	X	X
Monocular intermediate (63cm) UCVA/BDCVA	ETDRS			X	X	X	X
Binocular intermediate (63cm) BDCVA	ETDRS				X	X	X
Monocular intermediate (100cm) UCVA/BDCVA	ETDRS			X	X	X	X
Binocular intermediate (100cm) BDCVA	ETDRS				X	X	X
Subj. refraction		X			X	X	X
Obj. refraction		X			X	X	X
Corneal topography	CSO	X			X	X	X
Biometry	IOL Master	X					
Monocular contrast sensitivity (mesopic / photopic)	Optec 6500 (Stereo Optics) , FACT chart					X	X
Binocular contrast sensitivity (mesopic / photopic)	Optec 6500 (Stereo Optics) , FACT chart					X	X
Binocular Defocus curve	ETDRS					X	X
Control of PCO	Slit lamp						X
Control of lens / capsule	Slit lamp	X		X	X	X	X
Control of IOL position / rotation	Slit lamp			X	X	X	X
Control of ocular fundus	Ophthalmoscope			X	X	X	X
Other tests for inclusion		X					

\*recommended test method. In case of deviations please document details thoroughly.

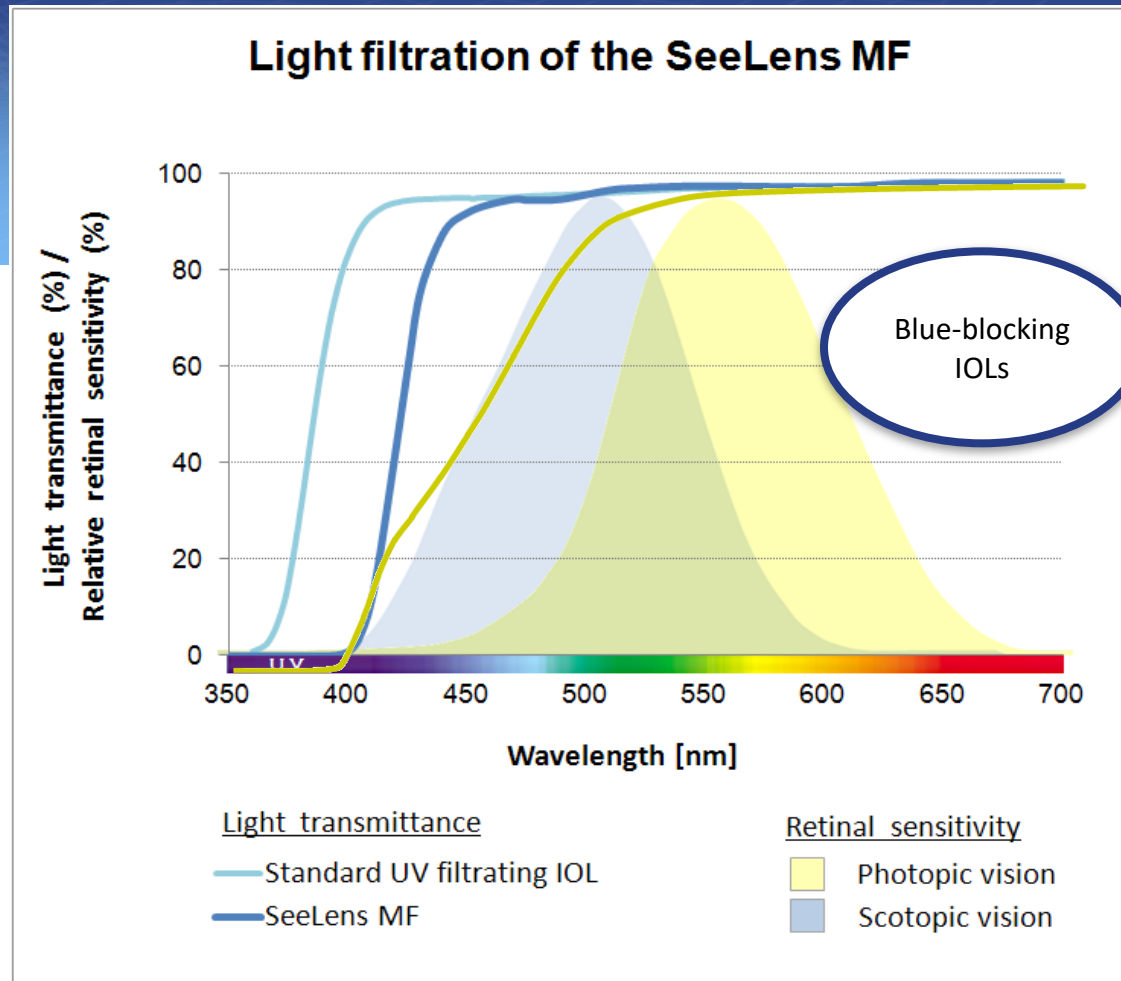
UCVA = uncorrected visual acuity; BCVA = best corrected visual acuity; BDCVA: best distance corrected visual acuity

# SEGUIMIENTO

- 1) Examen pre-quirurgico
- 2) POP 1 día
- 3) POP 7-10 días
- 4) POP 1 mes
- 5) POP 3 meses
- 6) POP 6 meses
- 7) POP 1 año



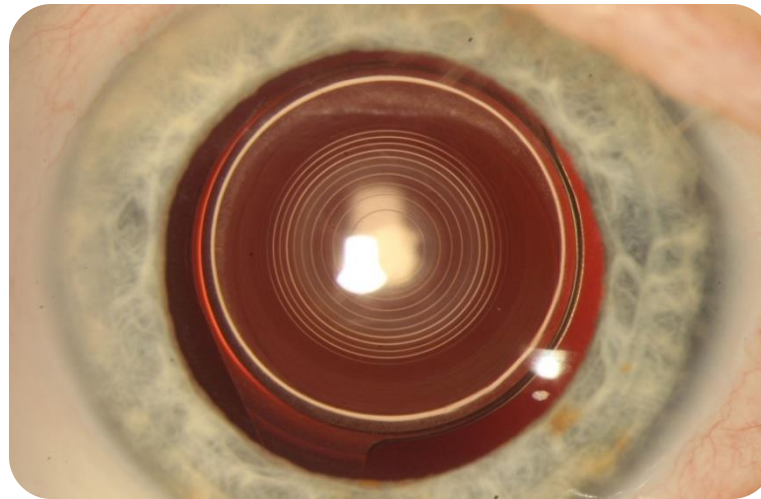
# SEELENS MF TRANSMISION DE LUZ (Bloqueo de Luz Violeta)



Original graph from Principles of Vision

Michael Kalloniatis<sup>1</sup> and Charles Luu<sup>2</sup> Department of Optometry and Vision Sciences University of Melbourne, Australia  
<http://www.ncbi.nlm.nih.gov/bookshelf/br.fcgi?book=webvision&part=ch24psych1>

# OBJETIVO



- Evaluar los resultados refractivos y de calidad óptica en los pacientes a los cuales se les implanto el nuevo lente Multifocal Asférico Apodizado, Acrílico, Hidrofílico (Hanita MF, Israel), después de cirugía de catarata por micro incisión.