

Personalizing Trifocal IOLs

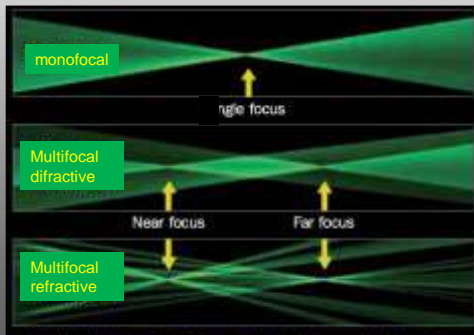
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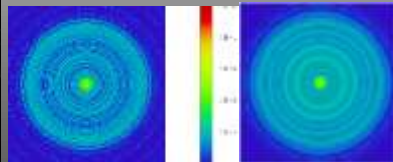
MONOFOCAL vs MULTIFOCAL IOLs



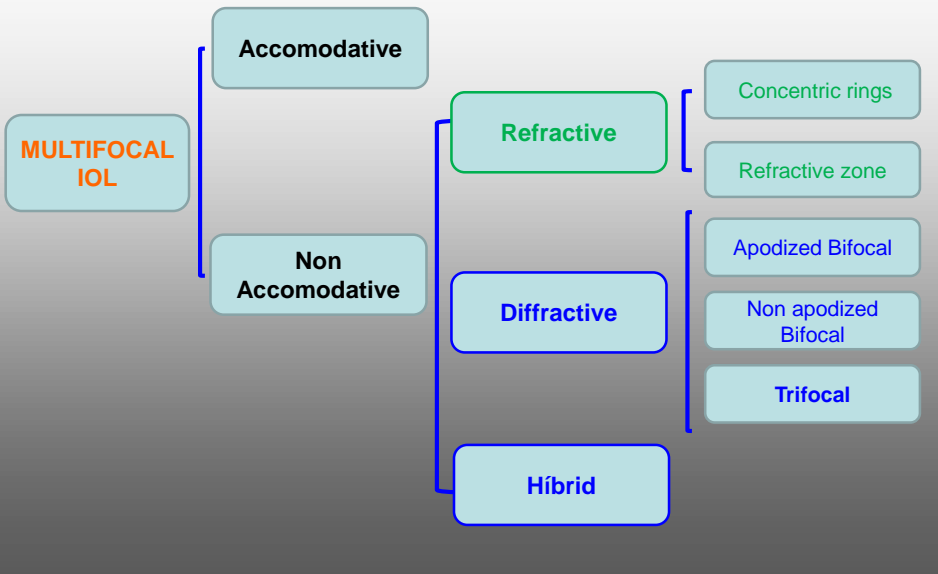
Corrección simultánea lejos - cerca



HALO EFFECT



MULTIFOCAL IOL CLASSIFICATION



BIFOCAL IOL

Bifocal IOL offers high spectacle independence but has some disadvantages:

1. Photic phenomena (Glare/Halo)
2. Ligth loss / Contrast sensitivity reduction
3. Provide Intermediate Visión or Near vision

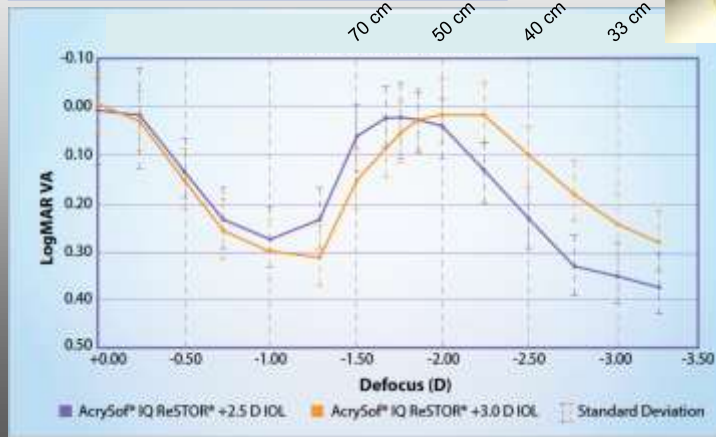


Images source: <http://www.qvision.es/blogs/joaquin-fernandez/2014/03/lentes-intraoculares-multifocales-pacientes-insatisfechos-complicaciones/>; <http://blog.acepto.es/wp-content/uploads/2014/01/bombillas-acepto.jpg>; <http://www.dicafemininas.net/presbiopia-ou-vista-cansada-o-que-e>

BIFOCAL IOLs

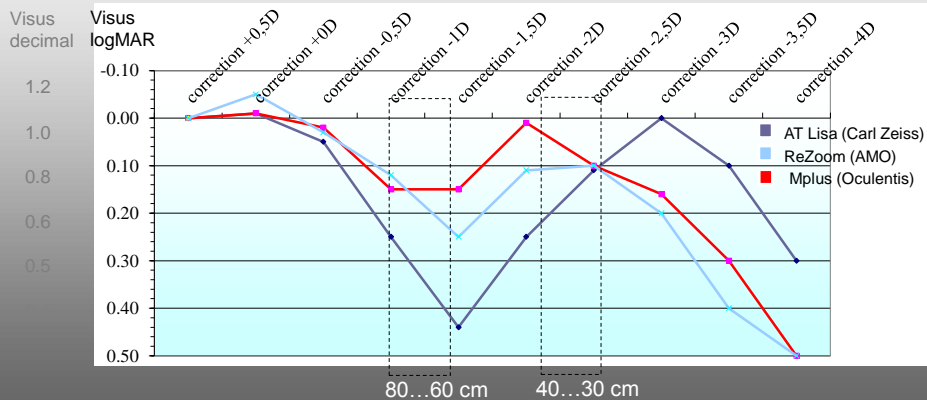
DEFOCUS CURVE

- BIFOCAL OPTIC ZONE
- NEAR ADDITION: +3.0D vs + 2.5D



BIIFOCAL IOLs

DEFOCUS CURVE



NOCHEZ Y, DEBOIS A, SALAH S, PISELLA PJ (ASCRS 2011) Visual and refractive outcomes following implantation of innovative Premium multifocal toric IOL after cataract surgery

4.- SURGICAL BIFOCAL OPTIONS

REAL LIFE STYLE

NEAR	INTERMEDIATE	FAR
Read book / news papers Read medical prospect Watch Mobile phone Sewing	Make up Shave Play carts Computer Tablet	Theather / Cinema Play sports TV Drive Drive nighth
NEAR Read book / news papers Read medical prospect Watch Mobile phone Sewing	INTERMEDIATE Make up Shave Play carts Computer Tablet	FAR Theather / Cinema Play sports TV Drive Drive nighth

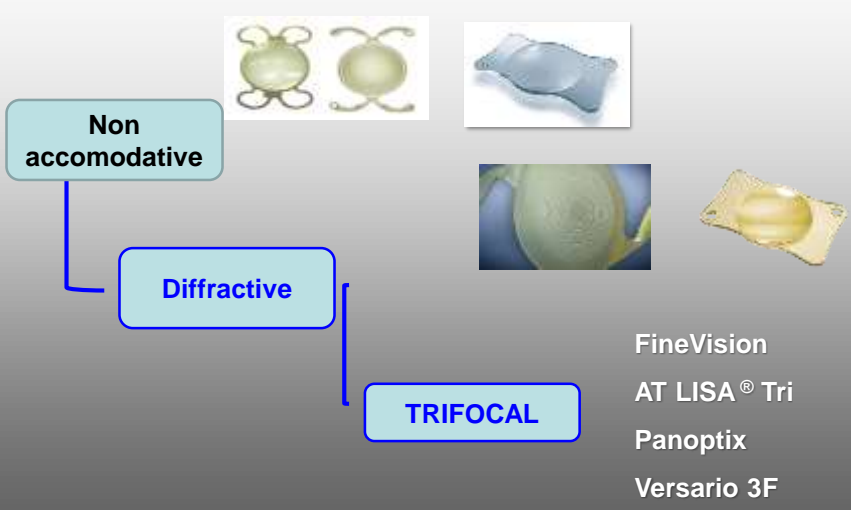
SURGICAL OPTIONS

REAL LIFE STYLE

When I ask my patients about their preferencesThey want it all

NEAR	INTERMEDIATE	FAR
Read book / news papers Read medical prospect Watch Mobile phone Sewing	Make up Shave Play carts Computer Tablet	Theather / Cinema Play sports TV Drive Drive nighth

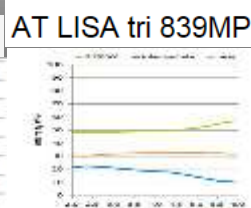
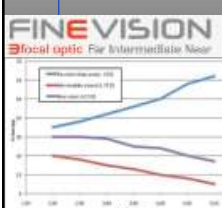
TRIFOCAL IOL CLASSIFICATION



TRIFOCAL IOL

Energy distribution

IOL	Far	Intermediate	Near	Ligth transmission
Fine Vision	50	18	32	86 %
AT-LISA	50	20	30	85,7 %
PanOptix	50	25	25	88 %
Versario	46	25	29	89 %



TRIFOCAL IOL

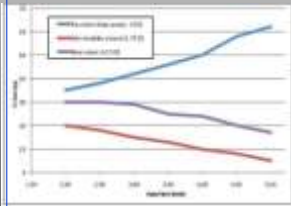
Light transmission

Versario 3F

Effective light transmission **89.1%**

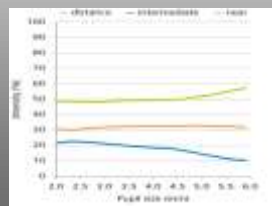
Ligth loss **10.9%**

FINEVISION
focal optic For Intermediate Near



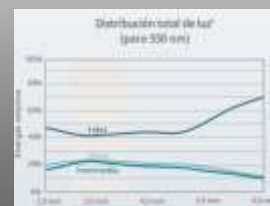
14.0%

AT LISA tri 839MP



14.3%

AcrySof IQ PanOptix
PRESBYDIA-CORRECTING IOL



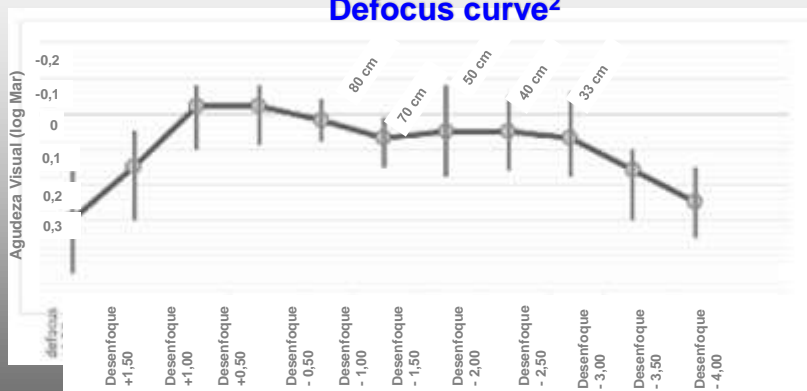
12.0%

TRIFOCAL IOL

Versario 3F



Defocus curve²



2. Torum Acar B, Duman E, Simsek S. (2015, Septiembre) Clinical outcomes of a new trifocal intraocular lens: revIOL Tri-ED. E-Poster presentado al XXXIII Congreso de la ESCRS Barcelona, España

COMPARATIVE TRIFOCAL IOL

Addition

IOL	NEAR VISION			INTERMEDIATE VISION		
	IOL	Spectacle	Distance	IOL	Spectacle	Distance
Fine Vision	+3.50	+2.55	34 cm	+1.75	+1.28	68 cm
AT-LISA	+3.33	+2.43	36 cm	+1.66	+1.21	72 cm
PanOptix	+3.25	+2.37	42 cm	+2.17	+1.66	60 cm
Versario	+3.00	+2.40	40 cm	+1.50	+1.20	80 cm

* Data on file: First Clinical Findings.

** Comparison of a bifocal and a trifocal intraocular lens. E.Law R. Aggarwal. H. Kasaby. Free Paper Session ESRCs 2014 London.

*** Diffractive multifocal IOLs: a comparative study of Finevision versus ReSTOR 2.5 and 3.0D. K.Gundersen. Free Paper Session ESRCs 2014 London.

**** Alcon Sales Brochure.





COMPARATIVE TRIFOCAL IOL





MTF

The more resolution is The more patient is...

Modelos	Lejos	Intermedio	Cerca
Versario 3F	43	22	23
AT LISA tri	44	16	21
Finevision	41	17	20
Panoptix	45	15	20

*

	Versario ® 3F	AT LISA tri	PanOptix	Finevision
				
Optic	Trifocal Semi-apodized (Continuous vision)	Trifocal (center) + Bifocal (periphery)	Diffractive (center) Diffractive (periphery)	Trifocal (low step)
PUPIL	Independent	Independent	Dependent	Dependent
Material	Acrylic hidrofílico with hydrophobic surface (25%)	Acrylic hidrofílico with hydrophobic surface (25%)	Hydrophobic	Acrylic Hydrophobic
Addition Intermediate/ Near	1.5D – 3.0D	1,66D – 3,66D	2,17D - 3,25D	1.75D – 3.50D
Dioptic range	0.0D – 32.0D 0.5D increase	0.0D – 32.0D 0.5D increase	13.0 -34.0 increase 0,5 – 1D	10.0D – 35.0D 0.5D increase

	Versario ® 3F	AT LISA tri	PanOptix	Finevision
				
360 ° border	Yes	Yes	Yes	Yes
Angle	0°	0°	0°	5°
Haptics	Plato 6.0mm – 11.0 mm (MICS)	Plato 6.0mm – 11.0 mm (MICS)	STABLEFORCE® en L. modificada (C-Loop) 6.0mm -13.00	Micro F 6,15mm – 10.75 mm Pod F 6.0 mm – 11.40 mm
Filter	UV / yellow	UV	UV/ yellow	UV/ yellow

TRIFOCAL IOL

EUROPEAN MULTICENTER STUDY OF TRIFOCAL IOL

ARTICLE

Evaluation of visual outcomes and patient satisfaction after implantation of a diffractive trifocal intraocular lens

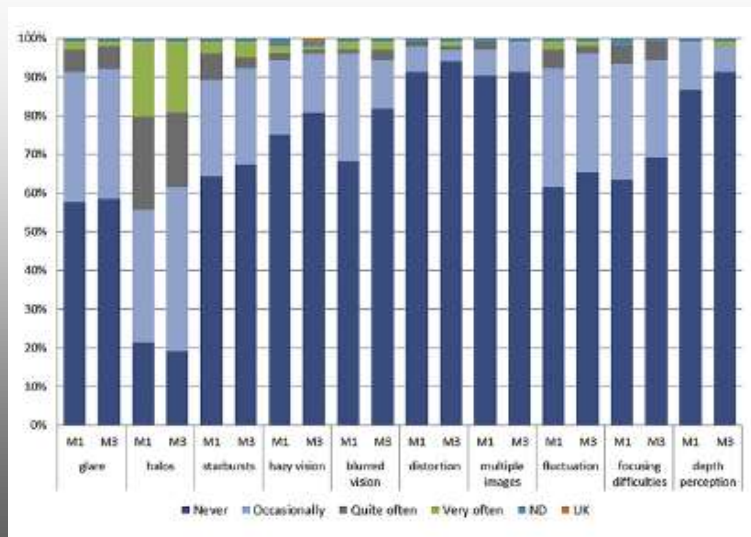


Javier Mendicutte, MD, PhD, Alexander Kapp, MD, Pierre Lévy, MD, Gero Krommes, MD, Alfonso Arias-Puente, MD, PhD, Mark Tomalla, MD, Elena Barraquer, MD, PhD, Pascal Rozot, MD, Pierre Bouchut, MD

J Cataract Refract Surg 2016; 42:203–210 © 2016 ASCRS and ESCRS

TRIFOCAL IOL AT-LISA Tri

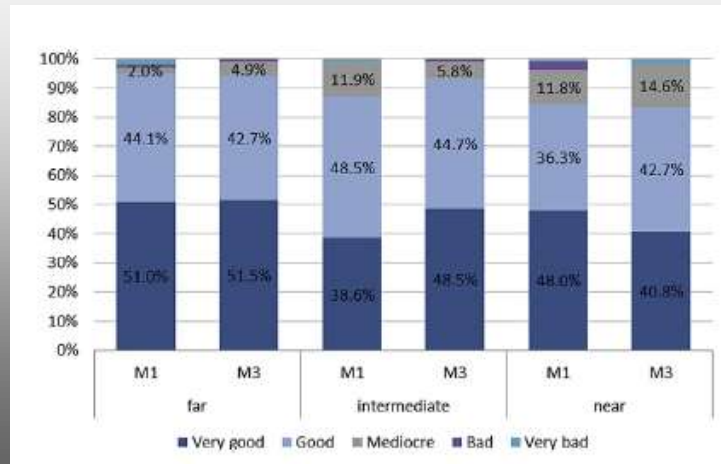
Frequency of visual disturbances



Evaluation of visual outcomes and patient satisfaction after implantation of a diffractive trifocal intraocular lens. Mendicutte J., Kapp A., Levy P., Kromes G., Arias-Puente A., et al. *J Cataract Refract Surg* 2016; 42: 203-210

TRIFOCAL IOL AT-LISA Tri

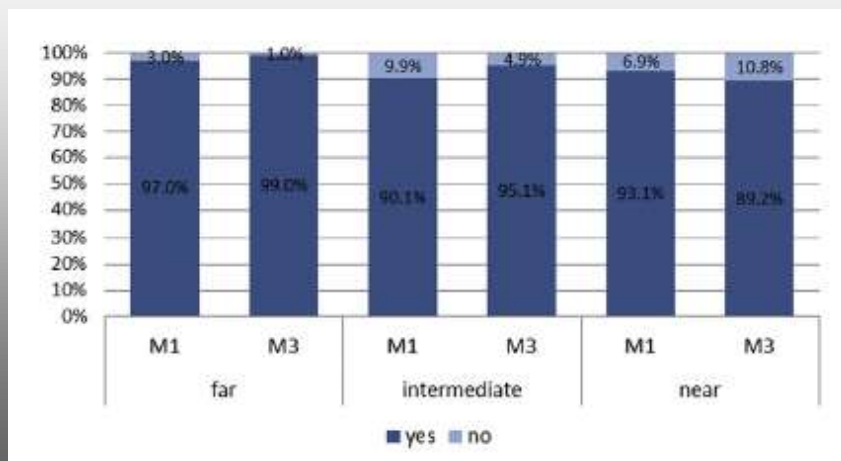
Patient satisfaction with uncorrected visual outcome achieved at different distances including intermediate distance (70-80 cm) after the implantation of the diffractive trifocal IOL (M1 Z 1 month; M3 Z 3 months)



Evaluation of visual outcomes and patient satisfaction after implantation of a diffractive trifocal intraocular lens. Mendicutte J., Kapp A., Levy P., Kromes G., Arias-Puente A., et al. *J Cataract Refract Surg* 2016; 42: 203-210

TRIFOCAL IOL AT-LISA Tri

Rate of spectacle independence at different distances



Evaluation of visual outcomes and patient satisfaction after implantation of a diffractive trifocal intraocular lens. Mendicutte J., Kapp A., Levy P., Kromes G., Arias-Puente A., et al. *J Cataract Refract Surg* 2016; 42: 203-210

TRIFOCAL IOL

BIFOCAL IOL offers high spectacle independence but:

1. Photic phenomena (Glare/Halo)
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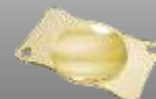
TRIFOCAL IOL yielded high spectacle independence :

1. Low incidence of severe disabling phenomena: glare, halo (6.25%)
2. Good light transmission / Minimum contrast sensitivity reduction
3. Provide excellent efficacy outcomes for uncorrected and corrected visual acuity at all distances embedded in the IOL profile, including at intermediate distance (60-80 cm).

Evaluation of visual outcomes and patient satisfaction after implantation of a diffractive trifocal intraocular lens. Mendicutte J., Kapp A., Levy P., Kromes G., Arias-Puente A., et al. *J Cataract Refract Surg* 2016; 42: 203-210

TRIFOCAL IOL

First choice for Refractive Crystalline Lens Surgery



TRIFOCAL IOL

Recomendations

Adecuate IOL to patient 's needs & lifestyle

High Myopic patients : larger diameter IOL

Higher addition for near

Very short Axial Length: avoid the plate design



TRIFOCAL IOL

IOL Power Calculation

Myopic patients : Haigis , SRKT,

short Axial Length: Hoffman Q

Patients with previous corneal refractive surgery: Haigis L



Muchas Gracias

