

Visual outcomes, spectacle independence and satisfaction after RayOne trifocal intraocular lens implantation

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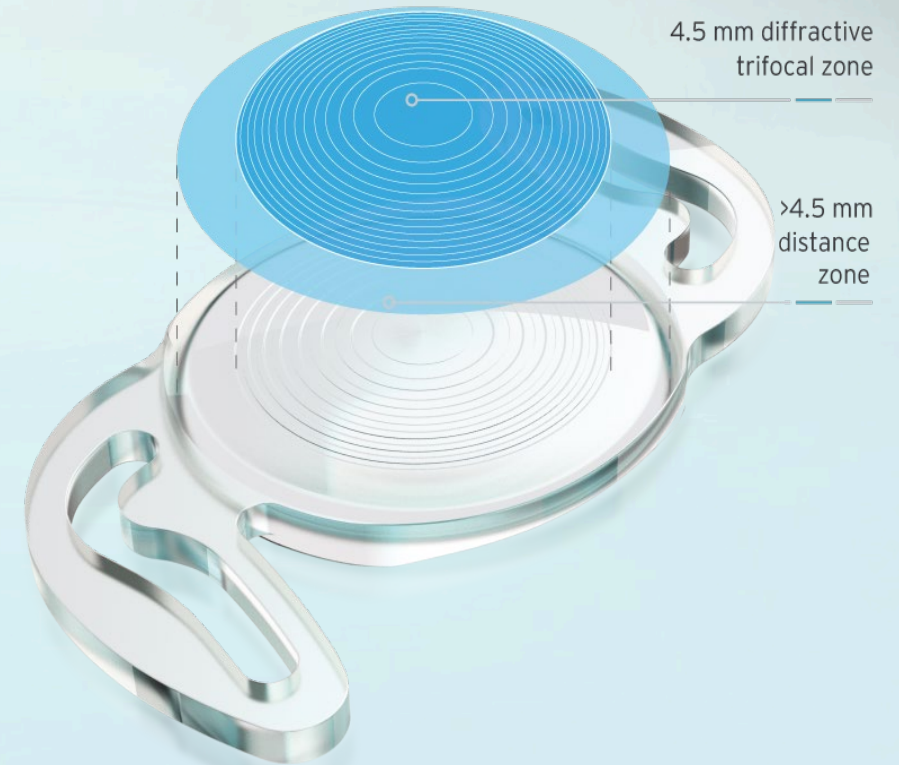
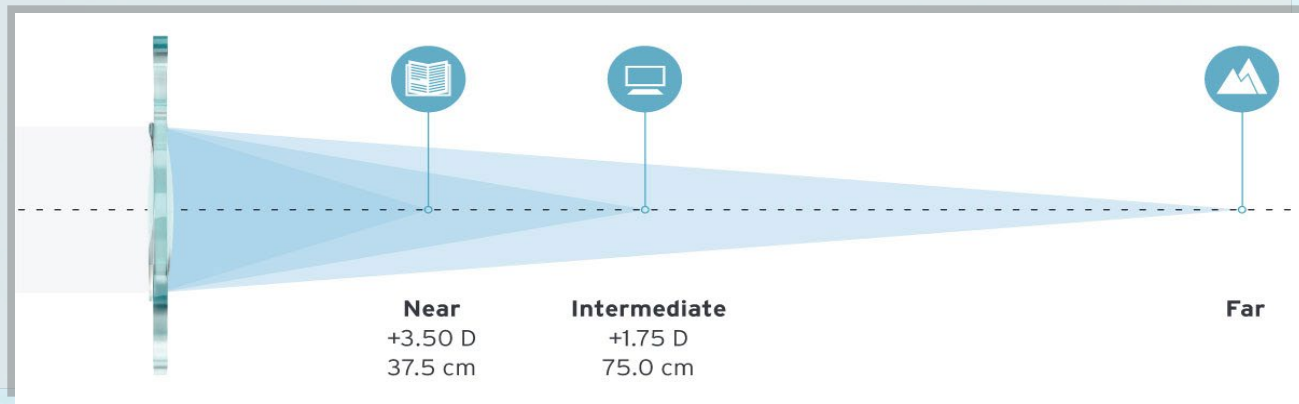
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Purpose

To investigate visual outcomes, spectacle independence, and patient satisfaction after RayOne trifocal intraocular lens implantation



Clinica Baviera -AIER Eye Group. Madrid, Spain

No financial interests



Methods

*A prospective study conducted on 222 patients (**444 eyes**)*

*who underwent **phacoemulsification** and*

*were implanted with a diffractive trifocal intraocular lens (**RayOne trifocal**, Rayner Surgical, England)*

- ❑ **Prospective study**
 - Multicenter , Clinica Baviera, Spain
 - Multisurgeon
 - Performed in accordance with the principles of the Declaration of Helsinki
 - Approval from the Clinica Baviera Medico-Legal Committee
 - Information and Informed Consent

- ❑ **Inclusion criteria:**
 - Age < 80
 - Corneal astigmatism < 2,50 D
 - **Bilateral** implant
 - **RLE or cataract with phacoemulsification**
 - Target **emmetropia** in both eyes
 - Follow-up ≥ 3 month

- ❑ **Exclusion criteria:** amblyopia, previous corneal surgery, clinically significant corneal endothelial dystrophy, history of corneal disease, history of retinal detachment, neuro-ophthalmic disease, pregnancy, and intraoperative or postoperative complications



Results: refractive and visual

Pre-operative

sphere 1.77 ± 2.28 , cylinder -0.60 ± 0.57 D, SE 1.47 ± 2.30 D

Pre-operative

UDVA 0.37 ± 0.25 (Snellen), UIVA 6.62 ± 1 (Jaeger), UNVA 6.26 ± 2.59 (Jaeger) and CDVA 0.91 ± 0.15 (Snellen)

- **Refractive status**
- Uncorrected **distance** visual acuity (UDVA) (Snellen test)
- Corrected distance visual acuity (CDVA)
- Uncorrected **intermediate** visual acuity (UIVA) at 80 cm (Jaeger test)
- Uncorrected **near** visual acuity (UNVA) at 40 cm (visual acuities were tested under photopic conditions, at approximately 85 cd/m²) (Jaeger test)

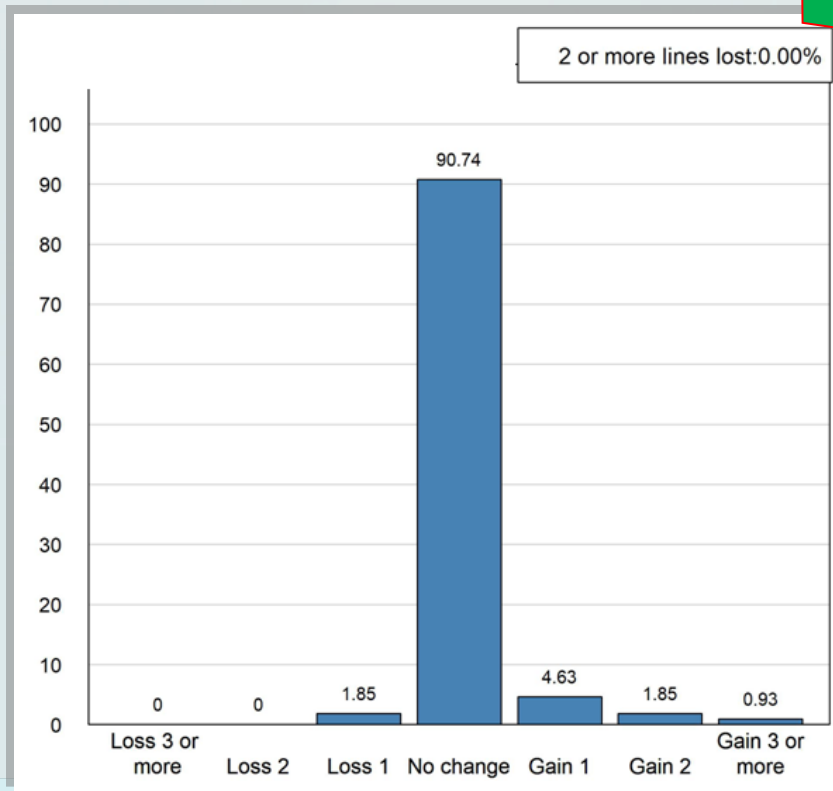
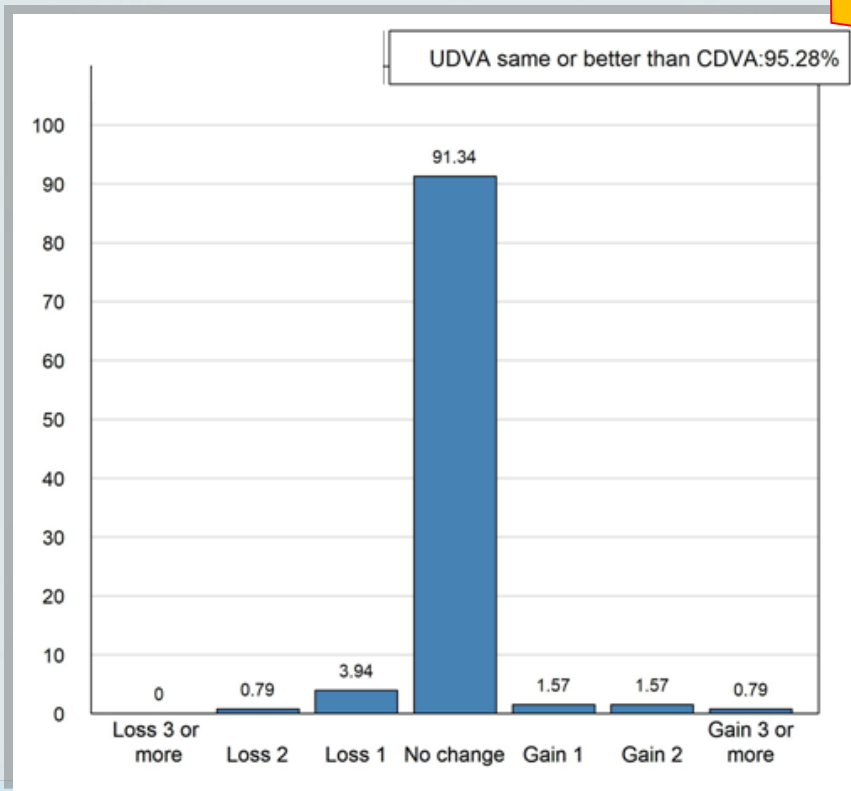
Variable	N	Min	Max	Mean	SD	Median	Q25	Q75
Sphere (D)		-2.50	1.75	-0.02	0.43	0.00	-0.25	0.00
Cylinder (D)		-3.50	0.00	-0.37	0.50	-0.25	-0.50	0.00
Spherical Equivalent (D)		-2.88	1.00	-0.20	0.45	-0.06	-0.50	0.00
UNVA	444	1.00	11.00	2.74	1.57	2.00	2.00	3.00
UIVA		0.00	11.00	3.65	1.89	3.00	3.00	5.00
UDVA		-0.08	1.00	0.07	0.12	0.05	0.00	0.10
CDVA		-0.08	1.00	0.03	0.09	0.01	0.00	0.05
Efficiency (distance)		0.10	18.00	1.03	0.97	1.00	0.86	1.03
Safety (distance)		0.10	19.00	1.12	1.04	1.00	0.98	1.09
UNVA Binocular		1.00	7.00	2.08	1.17	2.00	1.00	3.00
UIVA Binocular	222	1.00	9.00	3.24	1.51	3.00	3.00	3.00
UDVA Binocular		-0.08	0.32	0.02	0.06	0.00	0.00	0.03
CDVA Binocular		-0.08	0.18	0.00	0.04	0.00	0.00	0.01
Efficiency Binocular (distance)		0.54	3.00	1.01	0.24	1.00	0.95	1.02
Safety Binocular (distance)		0.69	3.00	1.06	0.24	1.00	1.00	1.11



Results: efficacy and safety

Efficacy index: 1.03 ± 0.97

Safety index: 1.12 ± 1.04



- The data is obtained from the central computerized medical file system, Clínica Baviera
- Routine preop and postop outcomes and complications were collected and analyzed
- Results are expressed as the mean \pm standard deviation. A P value of less than .05 was considered statistically significant
- Statistical calculations were performed using R software version 3.2.1. Preoperative outcomes were compared with postoperative results using a paired test



Results: spectacle independence

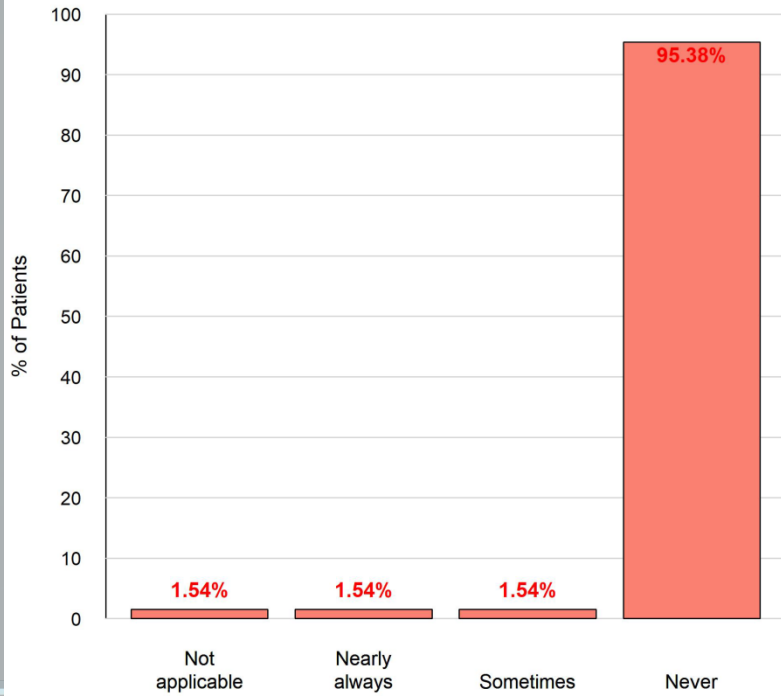
*Never depend on glasses:
95.38% reading, 98.46% computer, 100% driving*

Validation of the Spanish Catquest-9SF in patients with a monofocal or trifocal intraocular lens

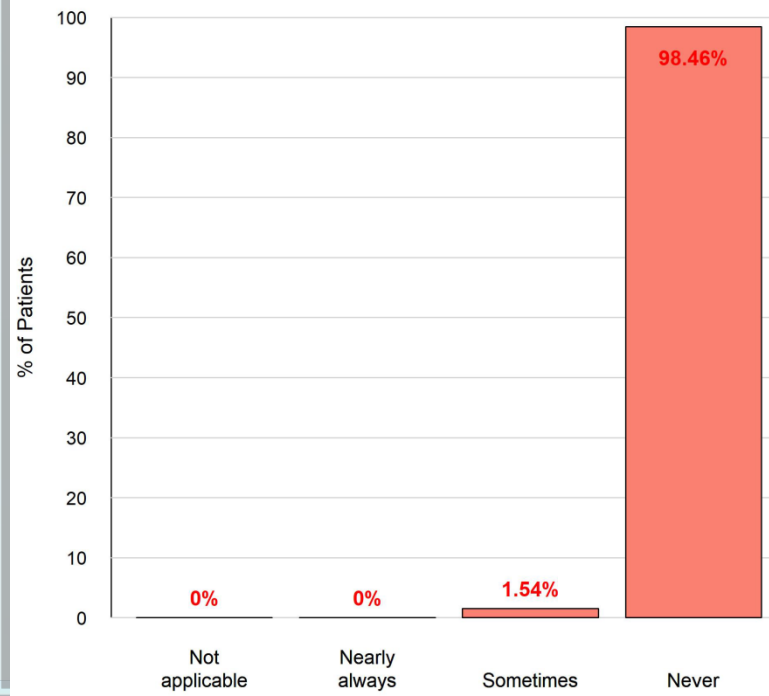
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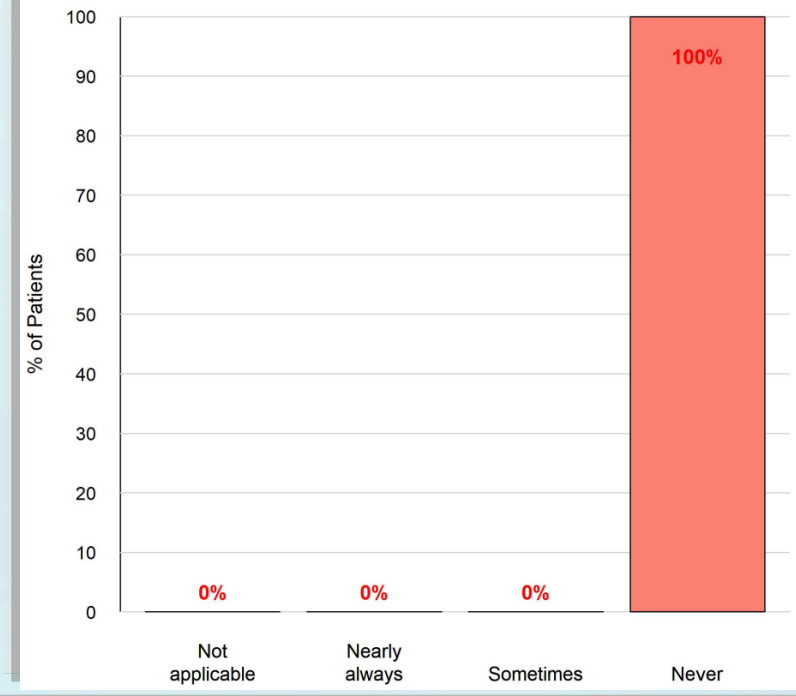
Do you still depend on glasses after the treatment?
Reading



Do you still depend on glasses after the treatment?
Computer



Do you still depend on glasses after the treatment?
Driving

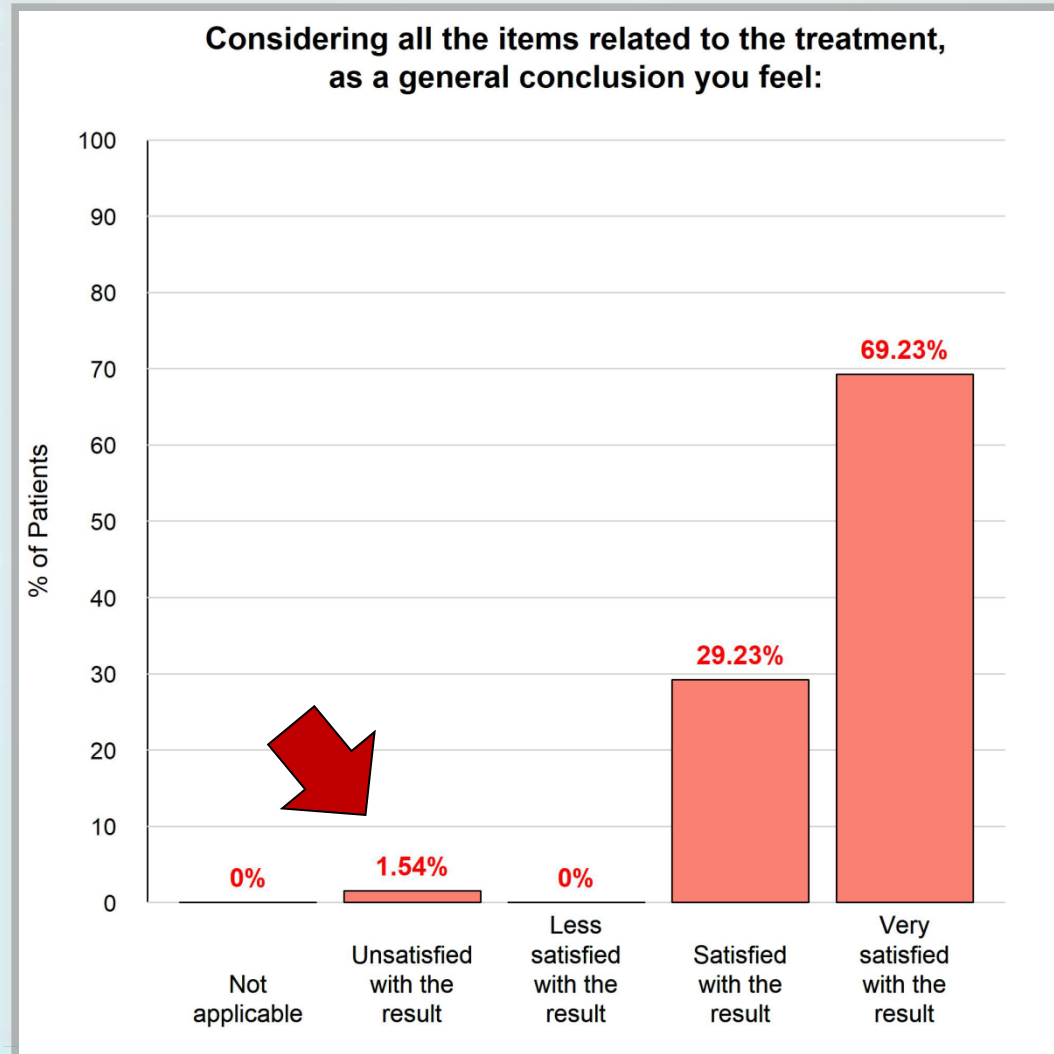




Results: satisfaction and dissatisfaction

98.46% satisfied

1.54% dissatisfied

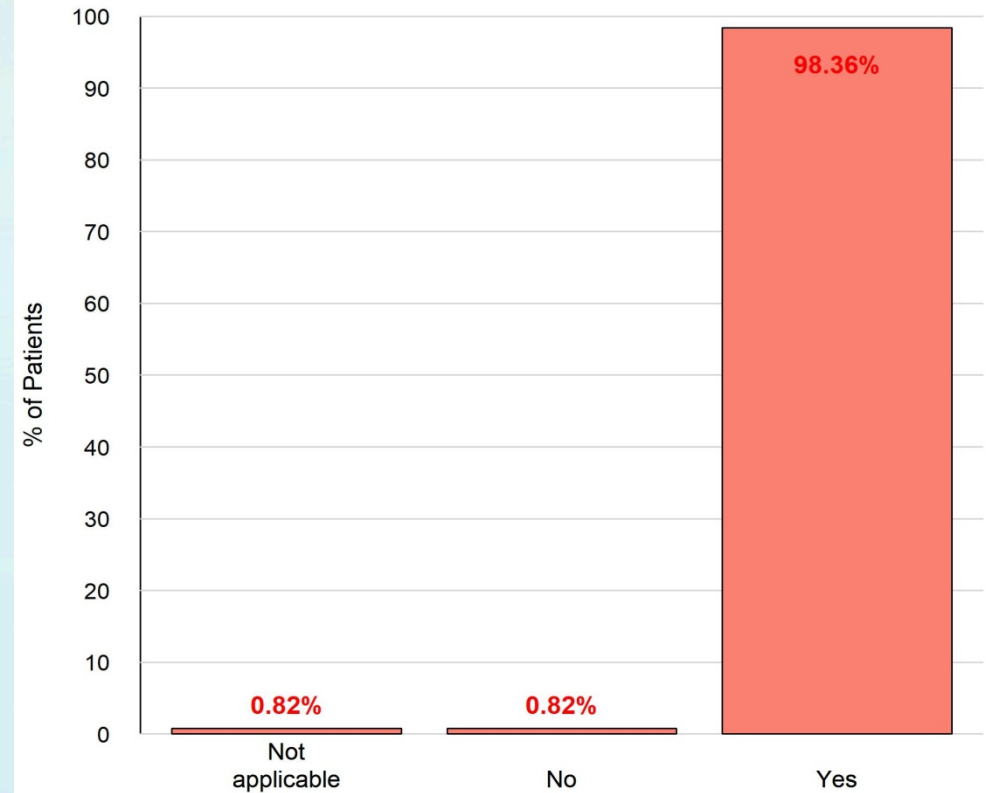


Conclusions



*The implantation of this model of IOL trifocal provided **good visual** performance in all distances, as well as high levels of **spectacle independence and satisfaction***

Would you repeat the treatment with the same procedure?



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