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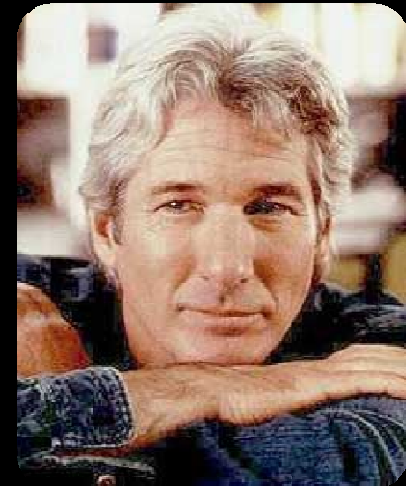


Lente accomodativa Crystalens HD: nostra esperienza

Cirone M, Romeo GF, Sindoni S, Prantera M.

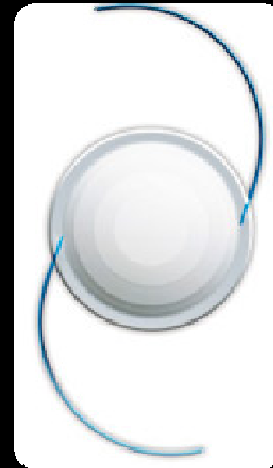
Presidio Ospedaliero "G.Fogliani" di Milazzo

Vecchie vs nuove aspettative



Vecchie vs nuove possibilità

- Bifocali
- Monofocali pseudoaccomodative
- Multifocali
 - Refrattive
 - Refrattive/toriche
 - Diffrattive asferiche
 - Diffrattive/refrattive



Perché scegliere una IOL accomodativa?

- Ripristinare l'accomodazione naturale
- Visione omogenea a tutte le distanze
- Nessun adattamento cerebrale
- Qualità ottica / lente monofocale!
- Basso indice di glare e aloni
- Alta sensibilità al contrasto
- Indipendenza pupillare?



Visual outcomes and optical performance with a monofocal intraocular lens and a new-generation single-optic accommodating intraocular lens.

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Abstract

PURPOSE: To compare the visual acuity outcomes and the ocular and intraocular optical quality in patients with a monofocal intraocular lens (IOL) or a new-generation single-optic accommodating IOL.

SETTING: Vissum Corporation, Alicante, Spain.

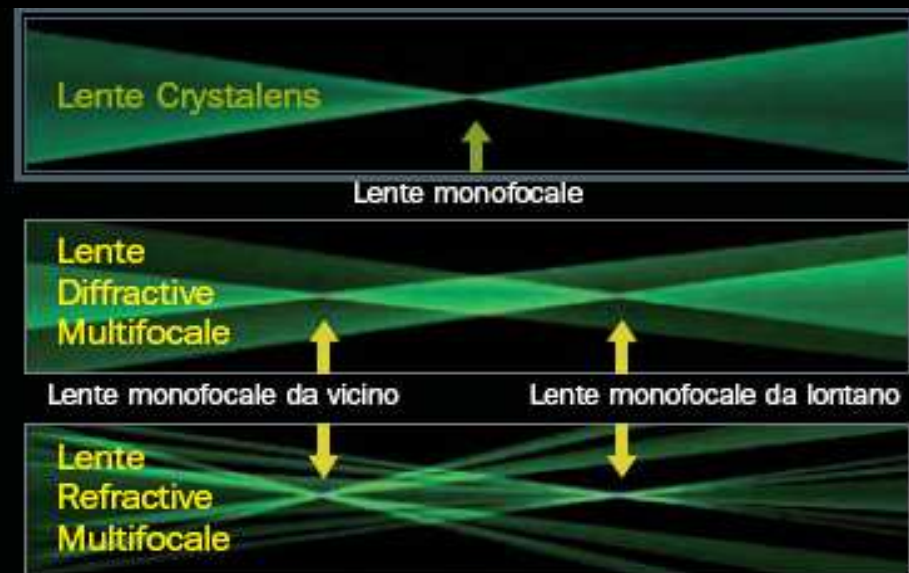
DESIGN: Comparative case series.

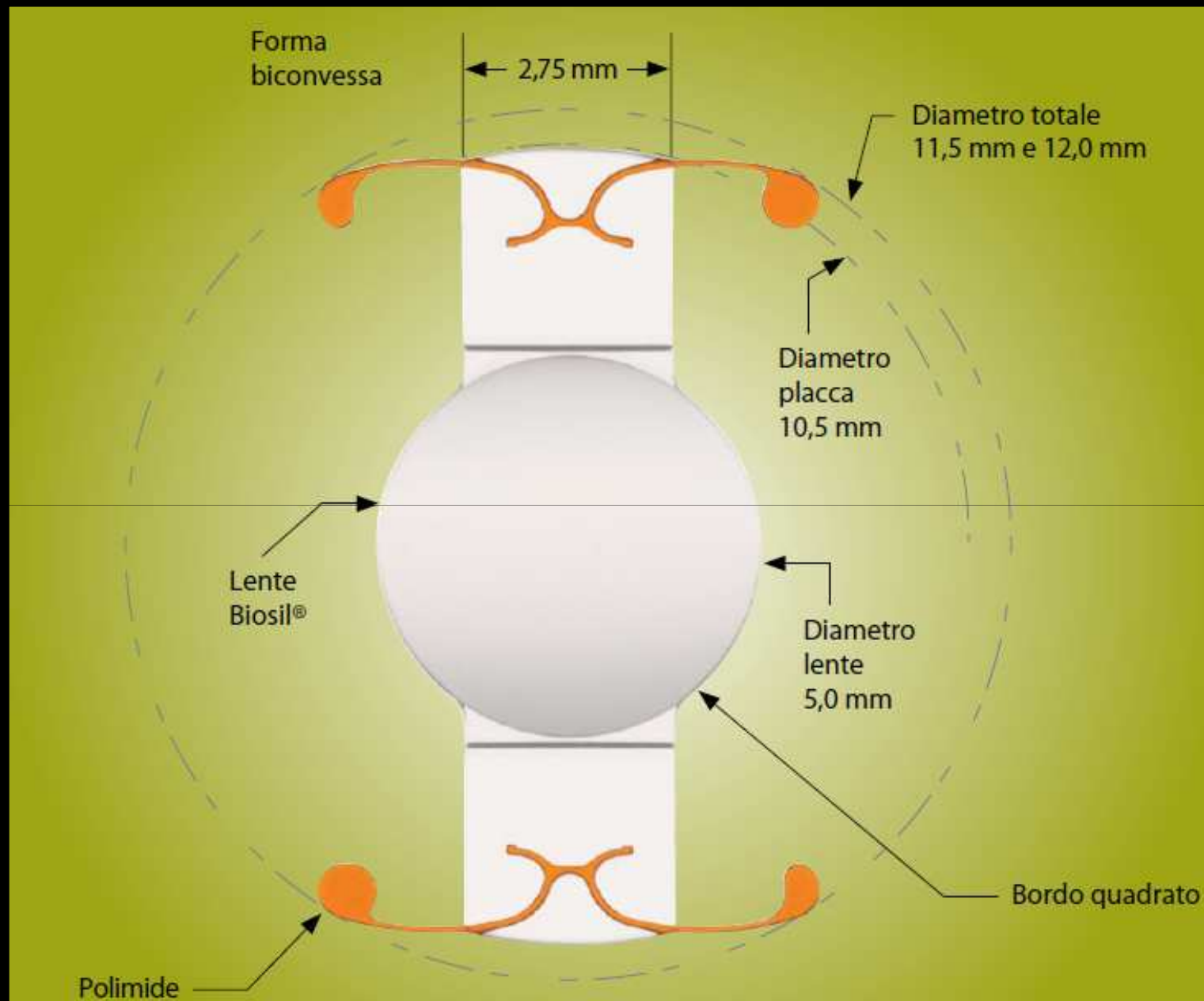
METHODS: Consecutive eyes of bilateral cataract patients were divided into 2 groups. One group had implantation of a monofocal IOL (Acri.Smart 48S) and the other group, of a single-optic accommodating IOL (Crystalens HD). Distance and near visual acuities were evaluated preoperatively and postoperatively. In addition, postoperative ocular optical quality, intraocular aberrations, and defocus curves were evaluated.

RESULTS: The 20 patients included in the study ranged in age from 50 to 87 years. The monofocal IOL group comprised 24 eyes and the accommodating IOL group, 16 eyes. In both groups, the uncorrected and corrected distance visual acuities improved significantly from preoperatively to postoperatively ($P \leq .03$). The distance-corrected near visual acuity also improved significantly in both groups ($P \leq .03$); the difference between groups was at the limit of statistical significance ($P = .05$). The uncorrected near visual acuity was significantly better in the accommodating IOL group (J5 versus J3; $P = .01$). The defocus curves showed significantly better visual acuity in the accommodating IOL group at several levels of defocus. There were no statistically significant differences between the 2 groups in any intraocular aberrometric coefficient ($P \geq .06$).

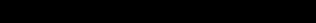
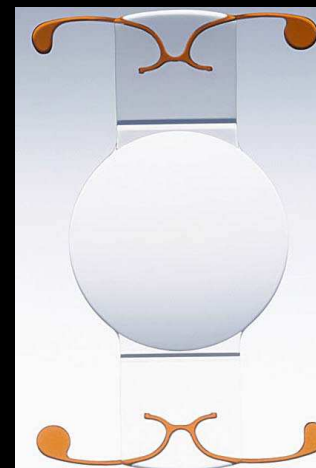
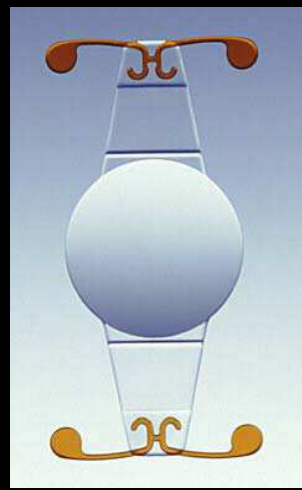
CONCLUSIONS: The new-generation single-optic accommodating IOL restored distance visual function after cataract surgery and improved near vision. The optical quality with the accommodating IOL was similar to that with the conventional monofocal IOL.

	Pupil	ReZoom	ReSTOR	Tecnis MF	Crystalens
Near	2 mm	0%	40%	41%	100%
	5 mm	32%	84%	41%	100%
Distance	2 mm	83%	40%	41%	100%
	5 mm	58%	10%	41%	100%
Intermediate	2 mm	17%	0%	0%	100%
	5 mm	10%	0%	0%	100%
Lost	2 mm	0%	20%	18%	0%
	5 mm	0%	6%	18%	0%



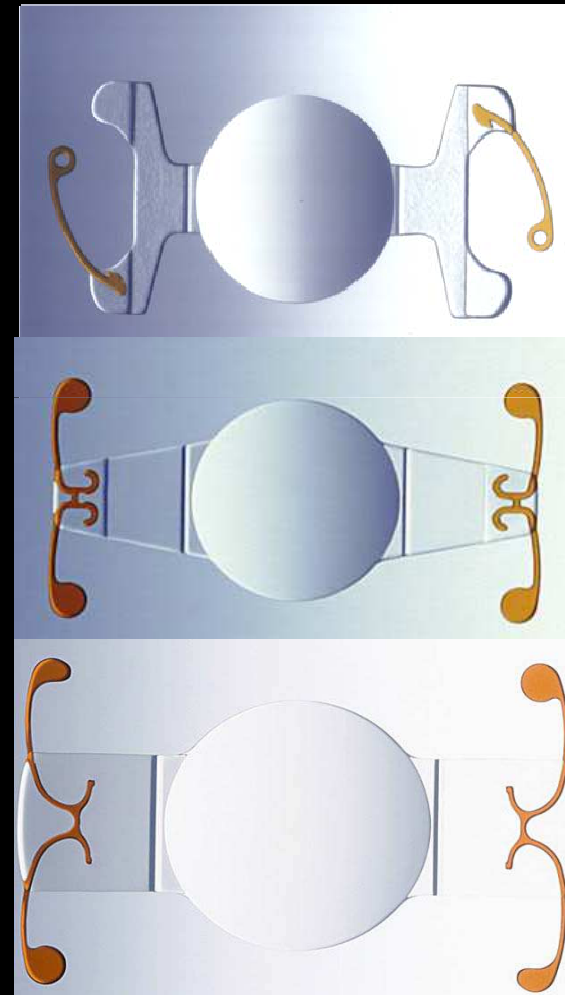


Evoluzione Crystalens 1989-2008



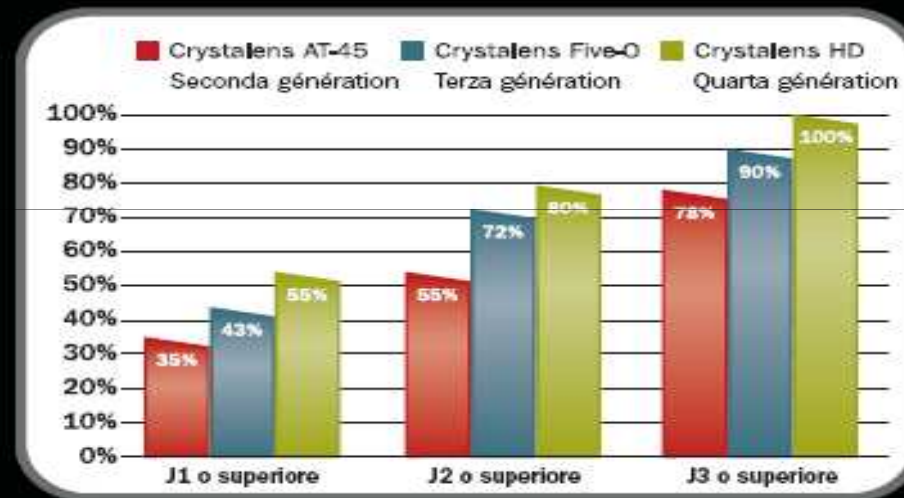
Com'è cambiata?

- STABILITA' aptiche
 - ora parallele (+32%)
- STABILITA' loops
 - arcata più ampia (+27%)
- MOVIMENTO ottica
 - cerniere più larghe (+17%)
- DIAMETRO ottica 5 mm
 - square edge 360°
- DIMENSIONI 11.5-12.0 mm

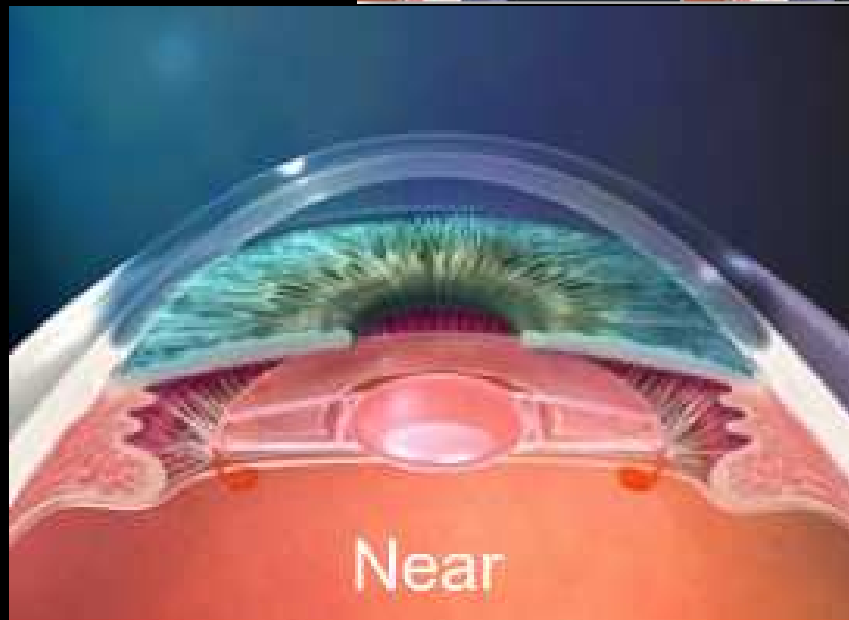
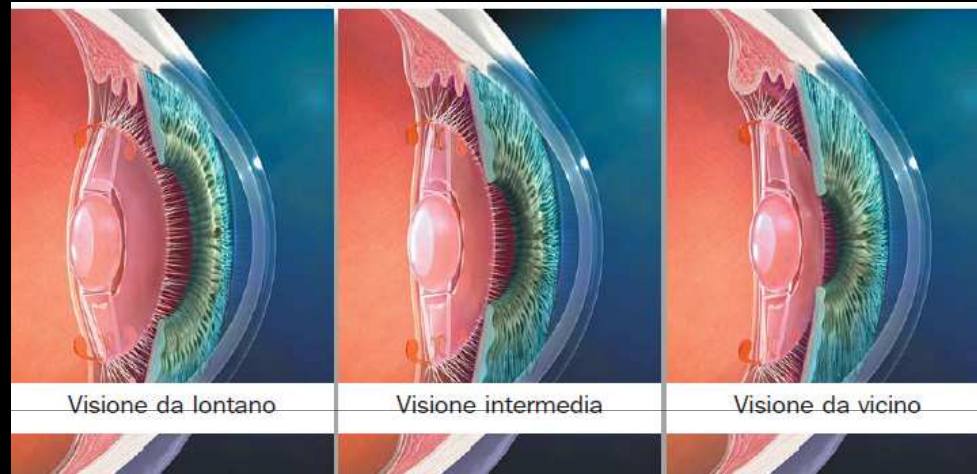


Ottimizza la qualità dell'immagine a tutte le distanze aumentando la profondità di fuoco: il 100% dei pazienti presenta un'acuità visiva per vicino maggiore o uguale a J₃, l'80% maggiore o uguale a J₂ e più del 50% maggiore o uguale a J₁

Acuità visiva da vicino non corretta raggiungibile con lenti monoculari Crystalens HD¹
entro +/- 0,50 diottrie di rifrazione prevista a 4-6 mesi dall'intervento, n=60



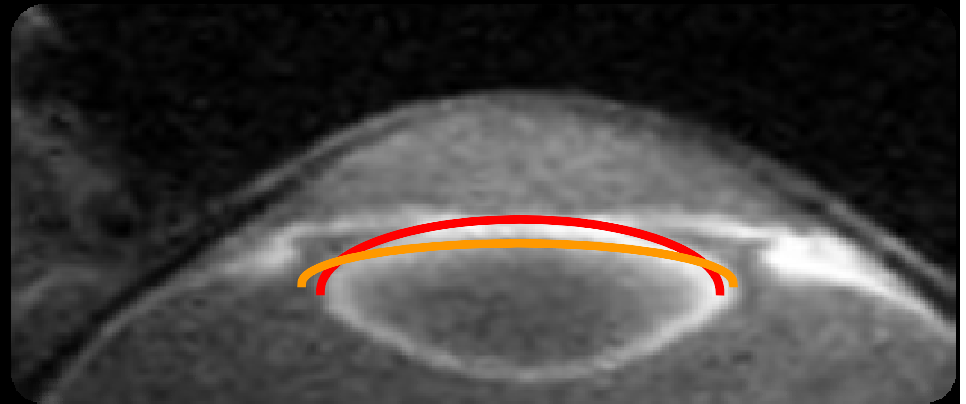
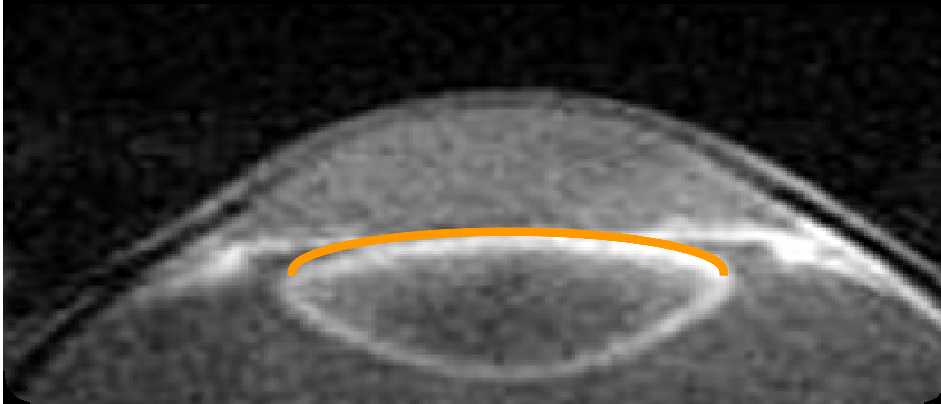
Come funziona? Vaulting



Come funziona? Arching

Accomodazione nel cristallino naturale
Effetto Arching del cristallino
Miopizzazione per vicino

RISONANZA MAGNETICA

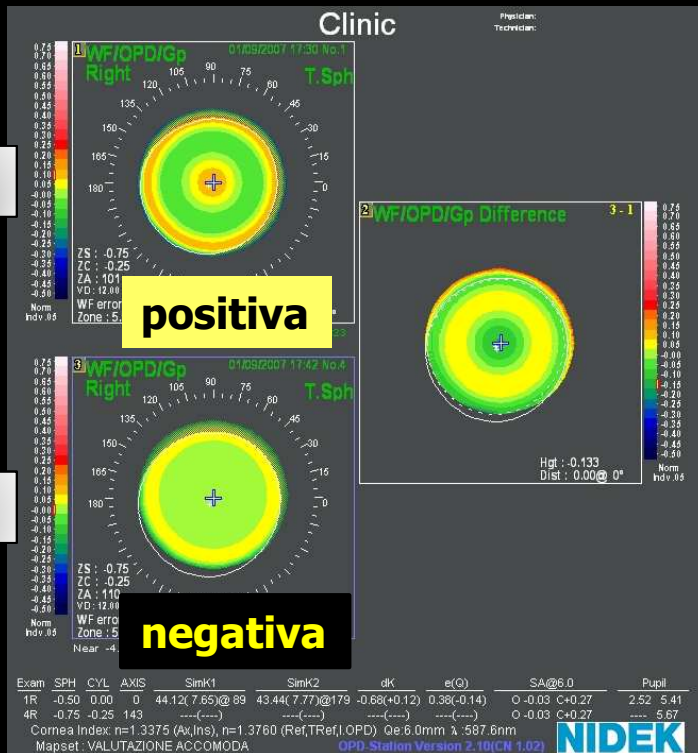


Arching

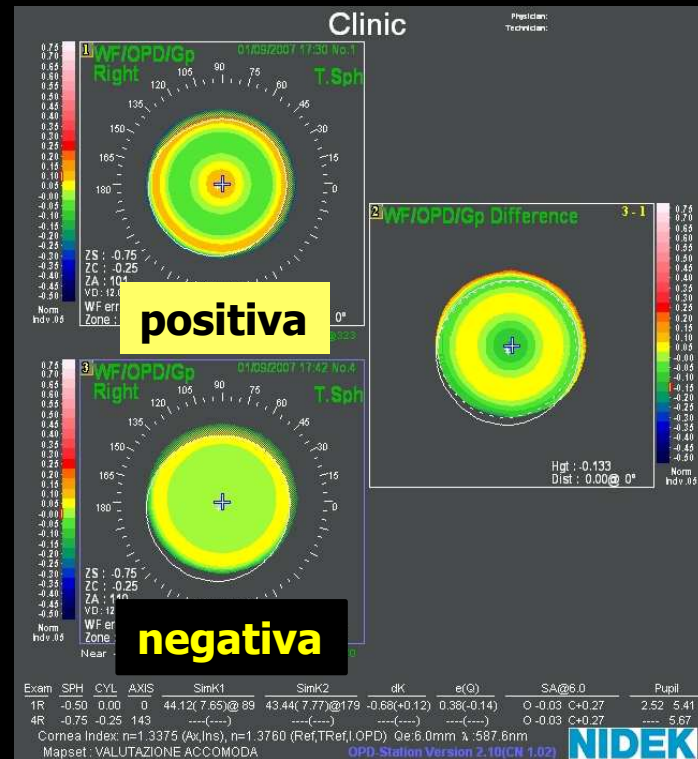
Ragazzo 35 anni

Crystalens HD

FAR

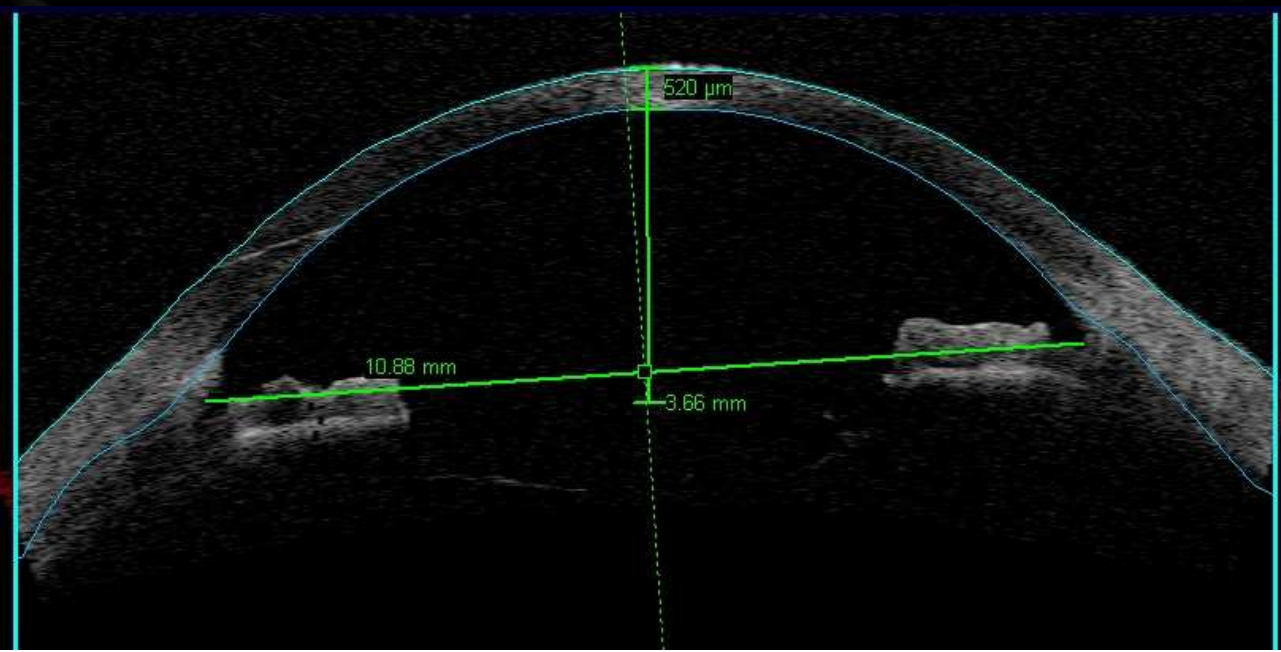
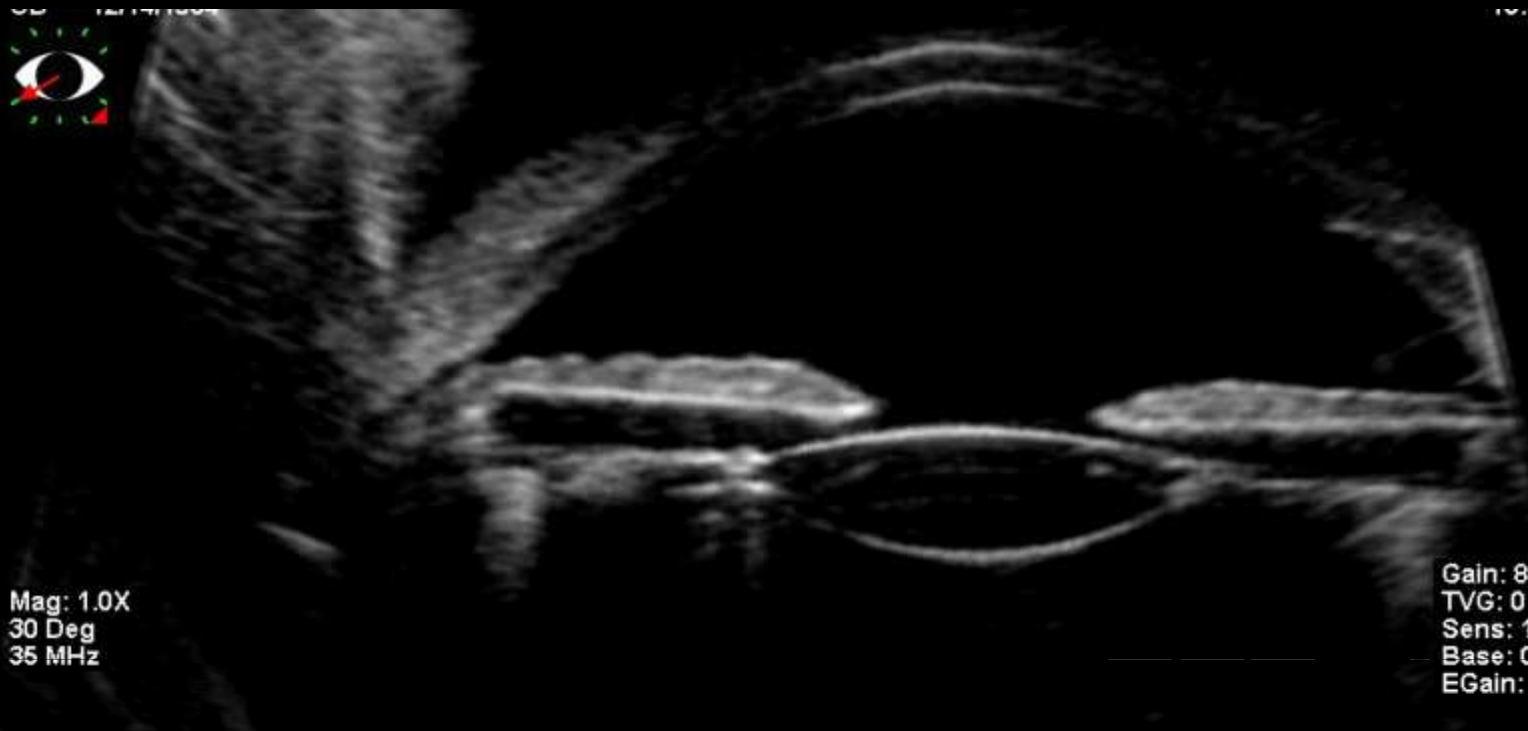


NEAR



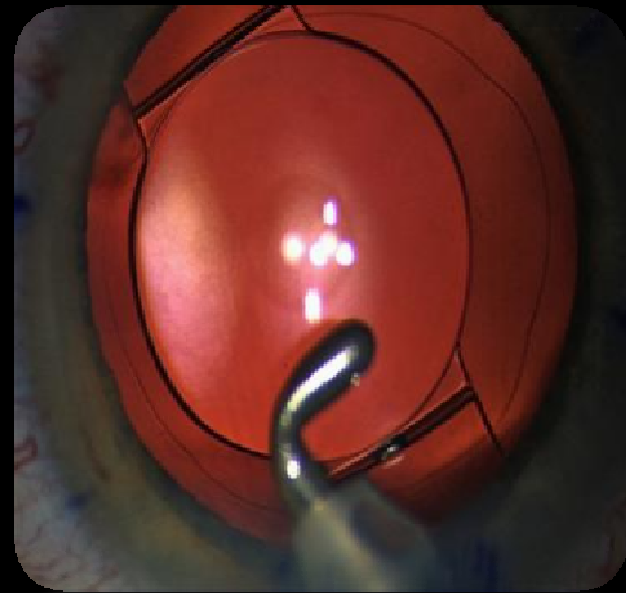
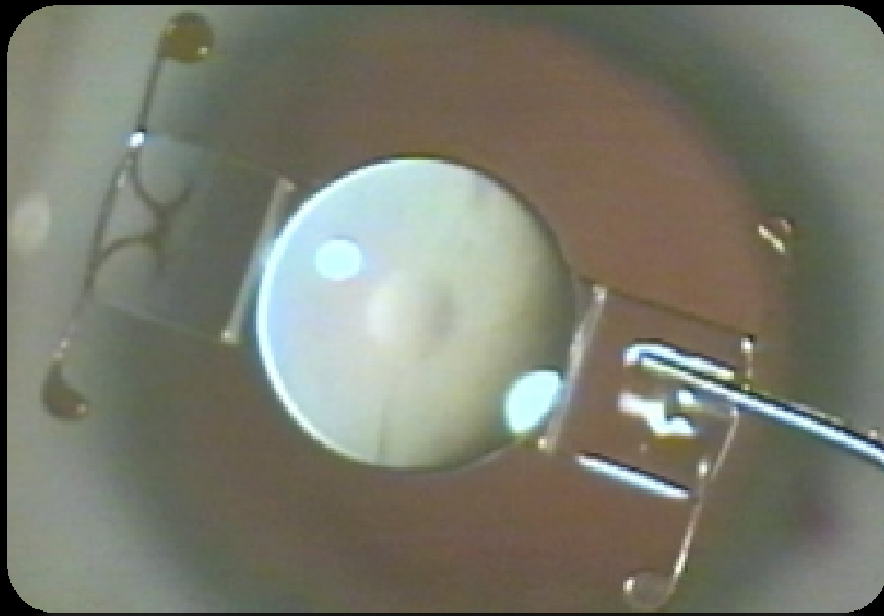
Courtesy by Dr E. Ligabue

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16



La nuova ottica HD

Blended Bispheric Monofocal Accomodating IOL
OTTICA POLISFERICA



Linee guida per l'impianto di Crystalens HD



Selezione del
paziente



Valutazione pre-
operatoria con
accurato calcolo
della IOL



Chirurgia della
cataratta e post-
operatorio



Selezione del paziente

Paziente con aspettative realistiche e psicologicamente stabile

In buono stato di salute generale e oculare

Lievemente ipermetrope con un astigmatismo corneale trascurabile



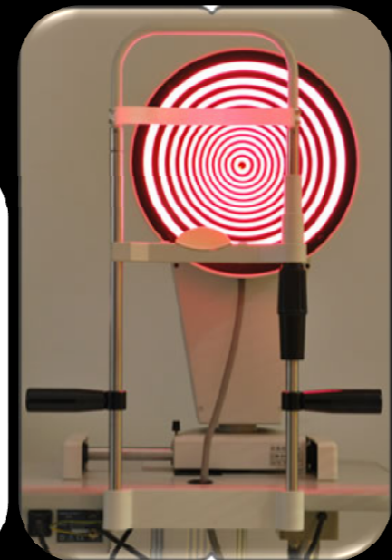
Valutazione pre-operatoria con accurato calcolo della IOL



Cheratometria

Dominanza
oculare

Calcolo IOL



Quale formula?

Crystalens® HD Nomogramma

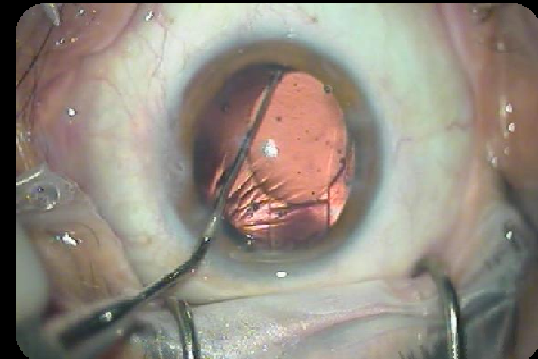
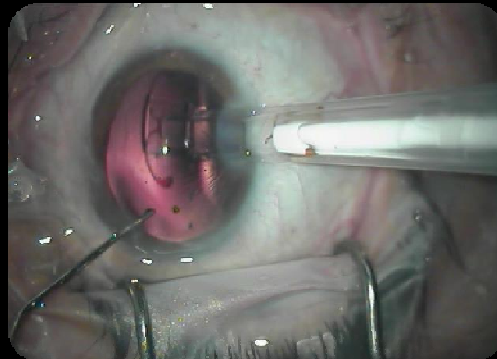
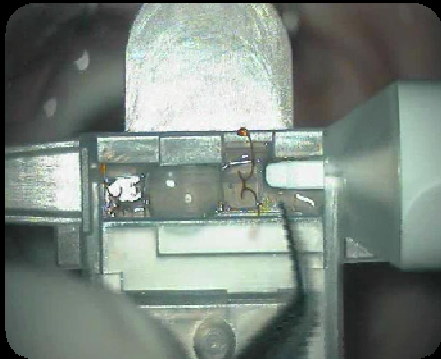
Lunghezza assiale & K	Usare Formula	TARGET Plano	TARGET -0,25
21,00 mm o inferiore	Holladay II	-0,50	-0,75
21,01 mm a 22,0 mm	Holladay II	-0,25	-0,50
22,01 mm o più	SRK-T	Plano	-0,25
22,01 mm o più & K 42.00D / 47.00D	SRK-T	Plano	-0,25
22,01 mm o più & K <42.00D o >47.00D	Holladay II	Plano	-0,25

Crystalens HD - Costante A: 119.0
Crystalens HD - Profondità teorica camera anteriore ACD: 5,55



Chirurgia della cataratta

- Tunnel corneale di 2.8 mm
- Capsuressi ampia 5.5-6 mm - regolare
- Accurata pulizia del sacco capsulare
- Preparazione lente
- Rotazione IOL 180°
- Rimozione completa del viscoelastico



Post-operatorio

- Atropina 1% coll
- Non accomodare per 2 settimane
- Evitare l'ipertono
- Visitare il paziente a 1 giorno (visus lontano)
 - 10-15 gg (visus lontano, intermedio, vicino)
 - 1 mese (visus lontano, intermedio, vicino)
 - 3 mesi (visus lontano, intermedio, vicino)
 - 6-12 mesi (visus lontano, intermedio, vicino)

La nostra esperienza con Crystalens HD

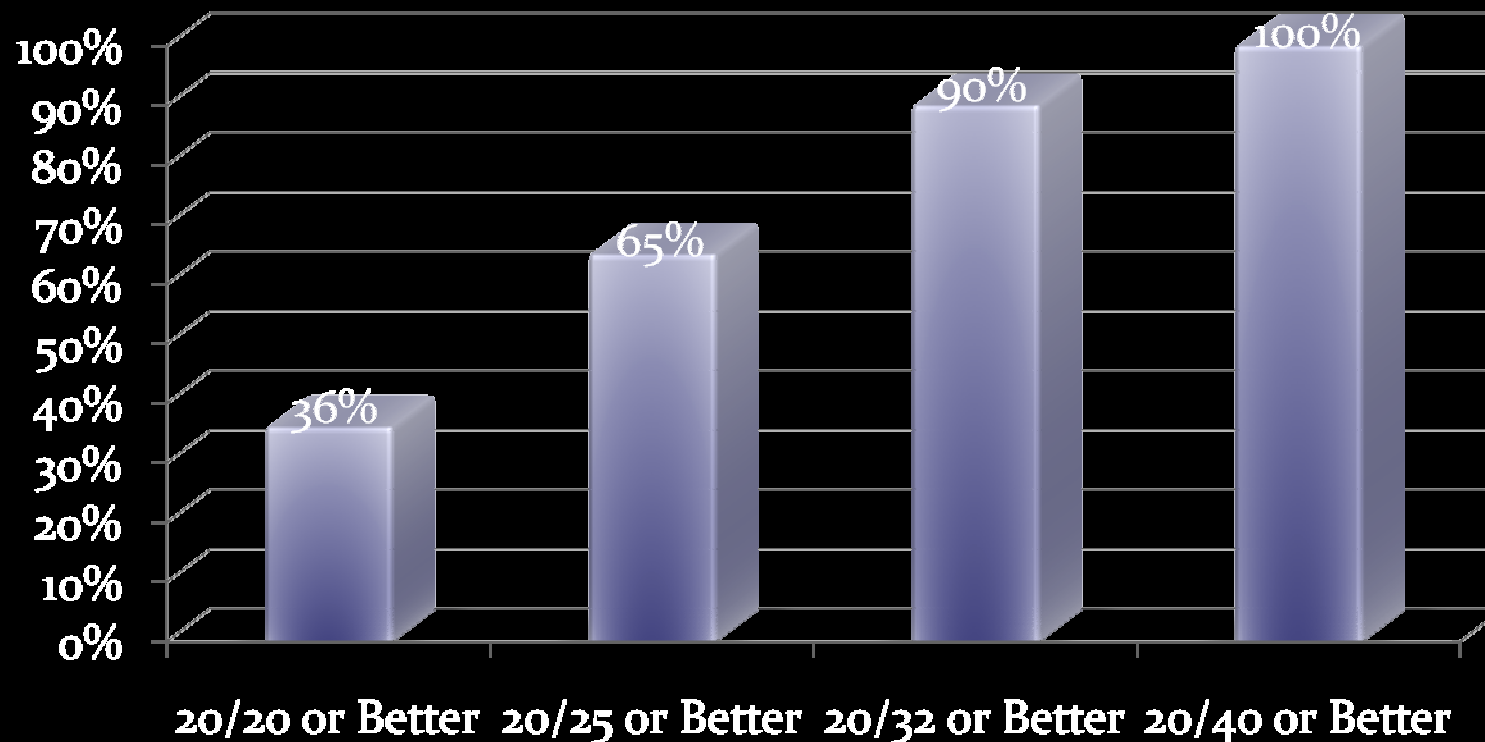
- 16 occhi di 8 pazienti
- età compresa tra 62 e 74
- facoemulsificazione con impianto bilaterale
- Pazienti in buono stato di salute generale e oculare
- Target emmetropia nell'occhio dominante
-0.25 D nel controlaterale

- Acuità visiva naturale e corretta da lontano, da vicino e per la media distanza (rispettivamente a 40 e 80 cm).

		Intermediate: Test at 32 inches.	Near: Test no closer than 16 inches.
2.0	Ten different kinds of flowers grow by the side of the road	20/50	J10 20/100
1.6	Put your first name on this paper if you will help tomorrow	20/40	J8 20/80
1.3	The father gave his children some fruit for lunch every day	20/32	J6 20/63
1.0	Please do not make noise while they are reading their books	20/25	J5 20/50
0.8	We sometimes take long walks together if it is warm outside	20/20	J3 20/40
0.6	The snow fell softly this morning before our family woke up	20/16	J2 20/32
0.5	Many people come to help me clean the place after the party	20/12.5	J1 20/25
0.4	It is useless to pretend to be kind through his words	20/10	J1+ 20/20

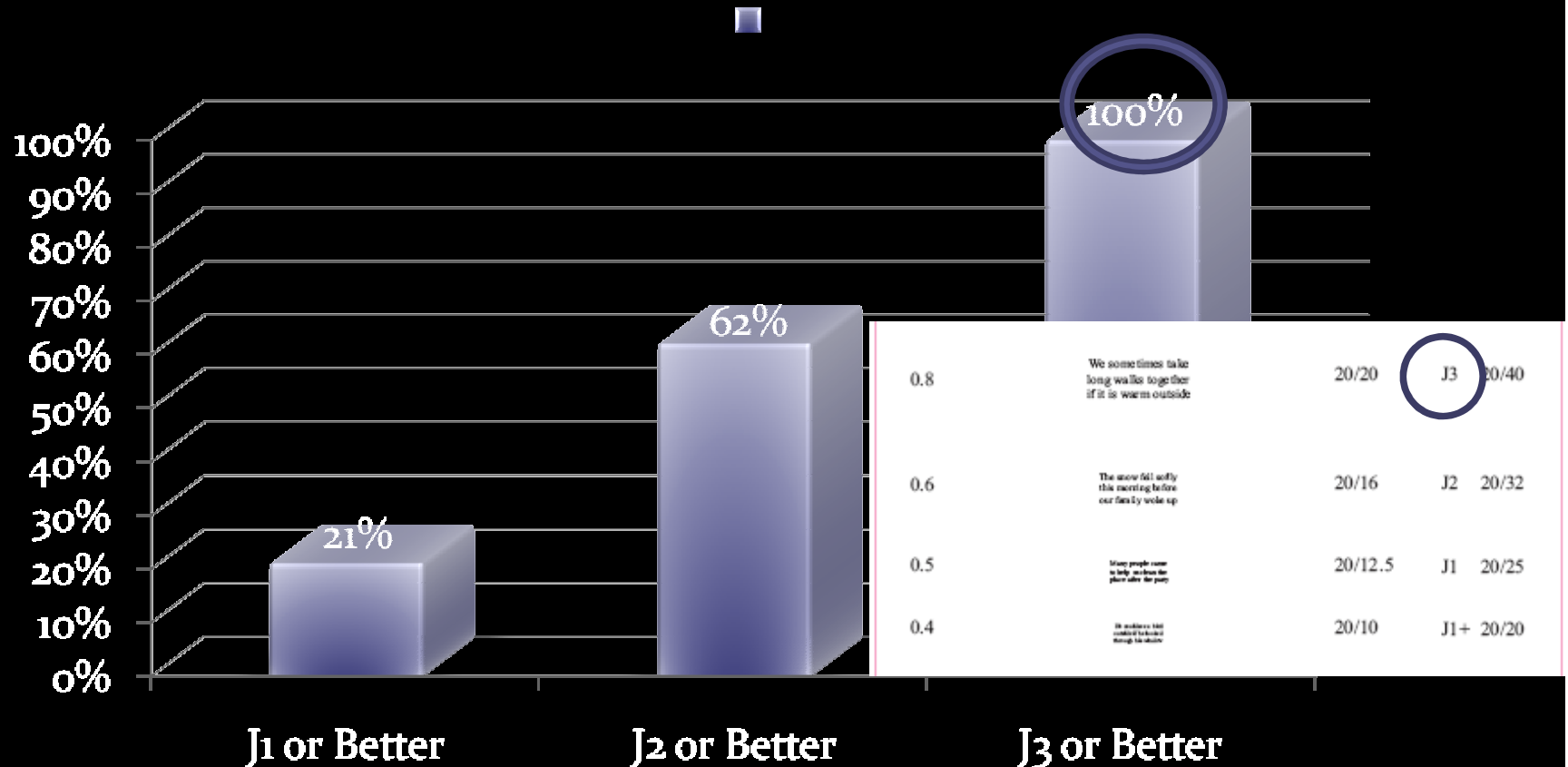
Risultati a 18 mesi

Acuità visiva non corretta per la media distanza



Risultati a 18 mesi

Acuità visiva non corretta per vicino





Take home message



Crystalens AO: Functionality and Real-World Performance



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