

What's New In ATIOLs?


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Cataract Surgery and the Shift to Advanced Technology IOLs



Agenda

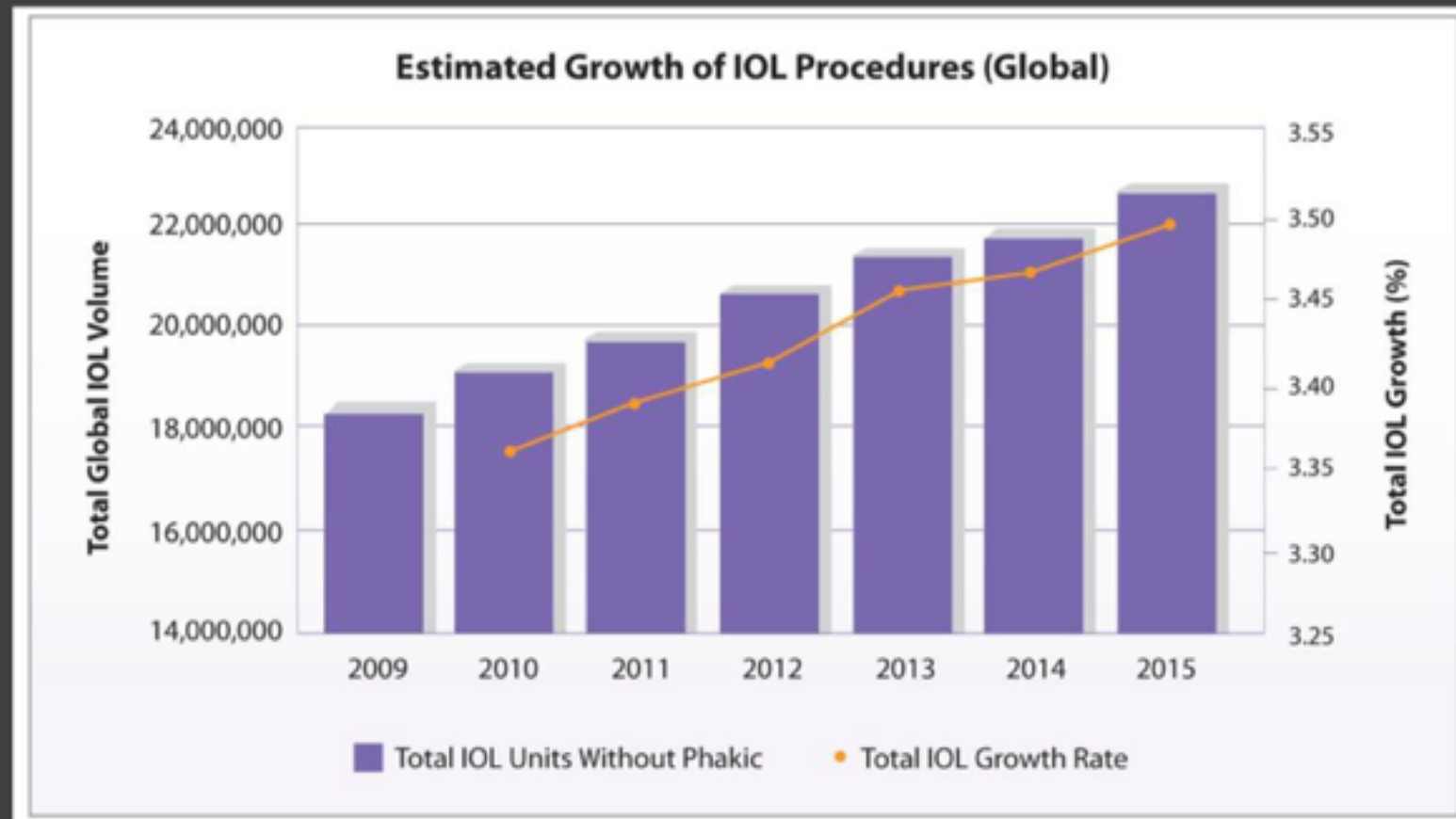
- The Cataract Surgery Market
 - Understanding Today's Cataract Patient
 - Shifting Your Surgical Approach
 - Recommending with Confidence
- 



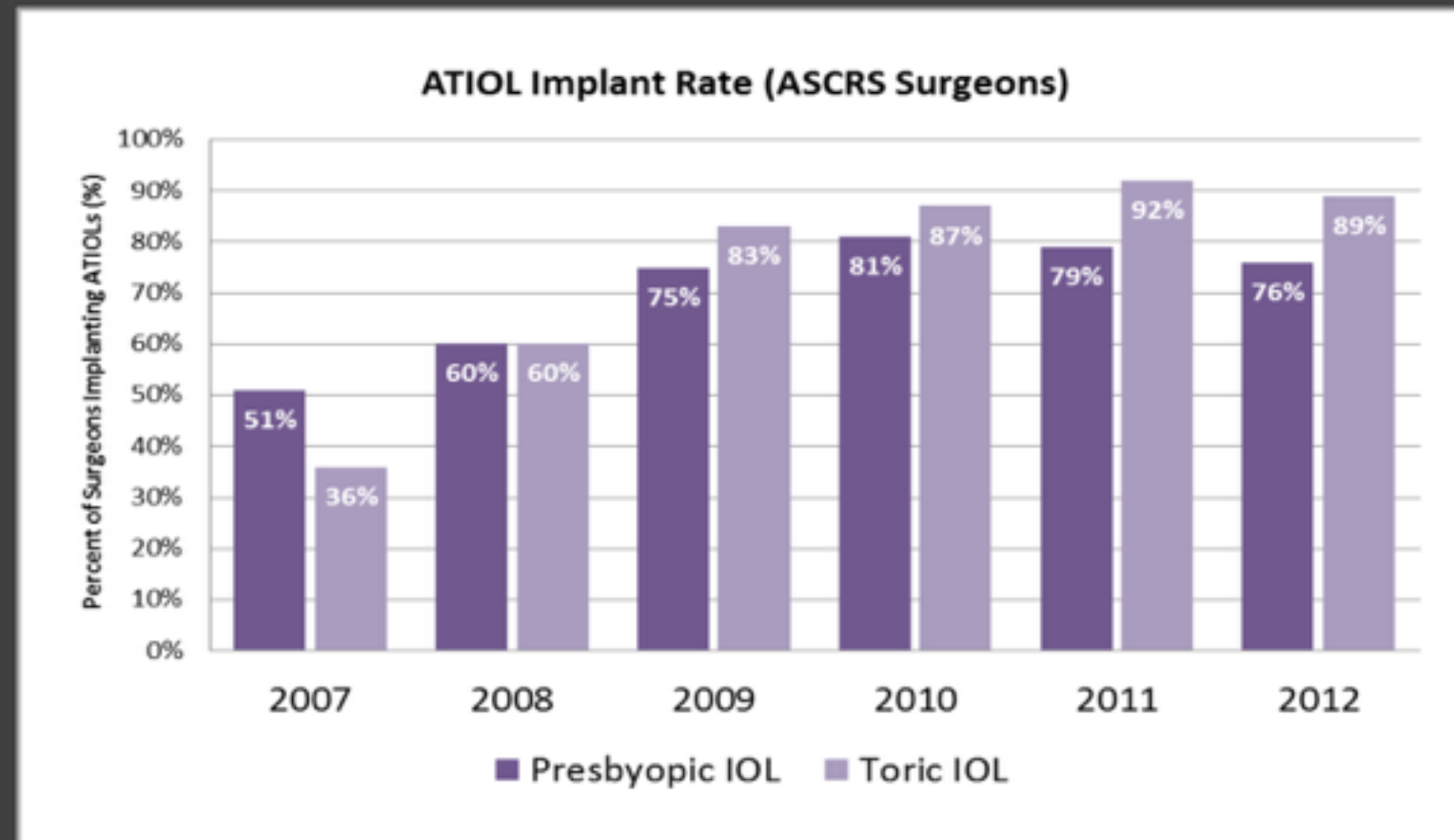
The Cataract Surgery Market



Cataract Procedures Are Growing¹



More Surgeons Are Implanting ATIOLs¹



1. 2012 ASCRS/ESCRS Member Survey (Learning Report).

An Aging Population Means Increasing Presbyopia and Cataract Prevalence

2005: 1 Billion Presbyopia Patients Worldwide¹

- Approximately 50% without spectacles or with inadequate spectacles
- Approximately 40% unable to ideally perform near tasks

2014: US Vision Statistics²

- More than 11 million Americans could improve their vision to 20/40 or better with refractive correction
- An estimated 20.5 million Americans age 40 years and older have cataracts in one or both eyes

Future Projections

- 30.1 million Americans with cataracts by 2020²
- 1.4 billion presbyopia patients globally by 2020¹
- 1.8 billion presbyopia patients globally by 2050¹

1. Holden BA, Fricke TR, Ho SM, Wong R, Schlenker G, Cronje S, Burnett A, Papas E, Naidoo KS, Frick KD. Global vision impairment due to uncorrected presbyopia. Arch Ophthalmol. 2008;126(12):1731-1739. 2. Centers for Disease Control and Prevention. (2010). Vision Health. Retrieved from http://www.cdc.gov/visionhealth/basic_information/eye_disorders.htm

Getting to Know Today's Cataract Patient

- Large, rapidly growing demographic (i.e., baby boomers)
- Educated, financially secure
- Increased life expectancy
- Longer working careers

Rate of Baby Boomers Turning 65 Yrs. Old in the U.S.

- 3.5 million per year; 10,000 per day¹
- 416 per hour; 7 per minute



1. Baby Boomers Retire. Pew Research Center. <http://www.pewresearch.org/daily-number/baby-boomers-retire/> Published December 29, 2010. Accessed September 30, 2014.



Getting to Know Today's Cataract Patient

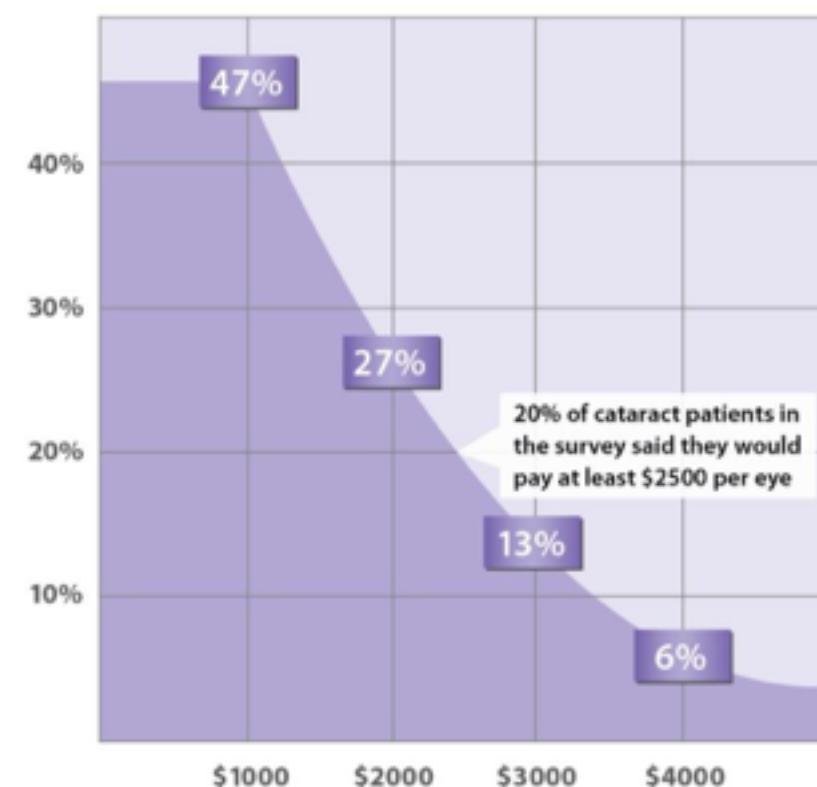
- Are unwilling to compromise active lifestyle
- Embrace demand-driven health care
- Demand high-quality vision (e.g., reading, distance, night)
- Have new requirements for intermediate vision (e.g., tablets, smart phones, etc.)

More Patients Willing to Pay for Reduced Spectacle Dependence

Recently Diagnosed Cataract Patient Survey¹

- **Nearly half (47%)** indicated they are willing to pay at least **\$1,000 per eye**
- **One-fourth** said “**money is no object**” when investing in improving their vision

Amount Patients Are Willing to Pay
Percent of Patients at Each Threshold (N=279)



1. Mahdavi S. A Survey of Consumer Demand for Premium Cataract Surgery. <http://sm2strategic.com/wp-content/uploads/2012/02/A-Survey-of-Consumer-Demand-for-Premium-Cataract-Surgery.pdf>. Published 2009. Accessed October 8, 2014.



Identifying Multifocal IOL Candidates

Patients who may be best served by a multifocal lens should:

- Desire reduced spectacle dependence
- Be able to achieve <0.5 D of astigmatism post-op
- Fit within the available IOL diopter range
- Have no contraindicated ocular pathology

Recommendation Pearls

When recommending an ATIOL:

- Review patients' lifestyle and wants
- Explain all of their IOL options
 - Presbyopia correction
 - Astigmatism correction
 - Monofocal correction
- Educate on benefits
- Set expectations appropriately
- Make a strong clinical recommendation
 - Allow patients to manage their own finances

So what's new?



SV25T0 AcrySof IQ ReSTOR +2.5 D

SV = Sharp Vision

25 = +2.5 D add

T = Toric

0 = Zero astigmatic correction

Who is this lens for?

Aspheric Monofocal
AcrySof® IQ IOL

Aspheric Apodized
Diffractive Multifocal
ReSTOR® +2.5 D IOL

Aspheric Apodized
Diffractive Multifocal
ReSTOR® +3 D IOL

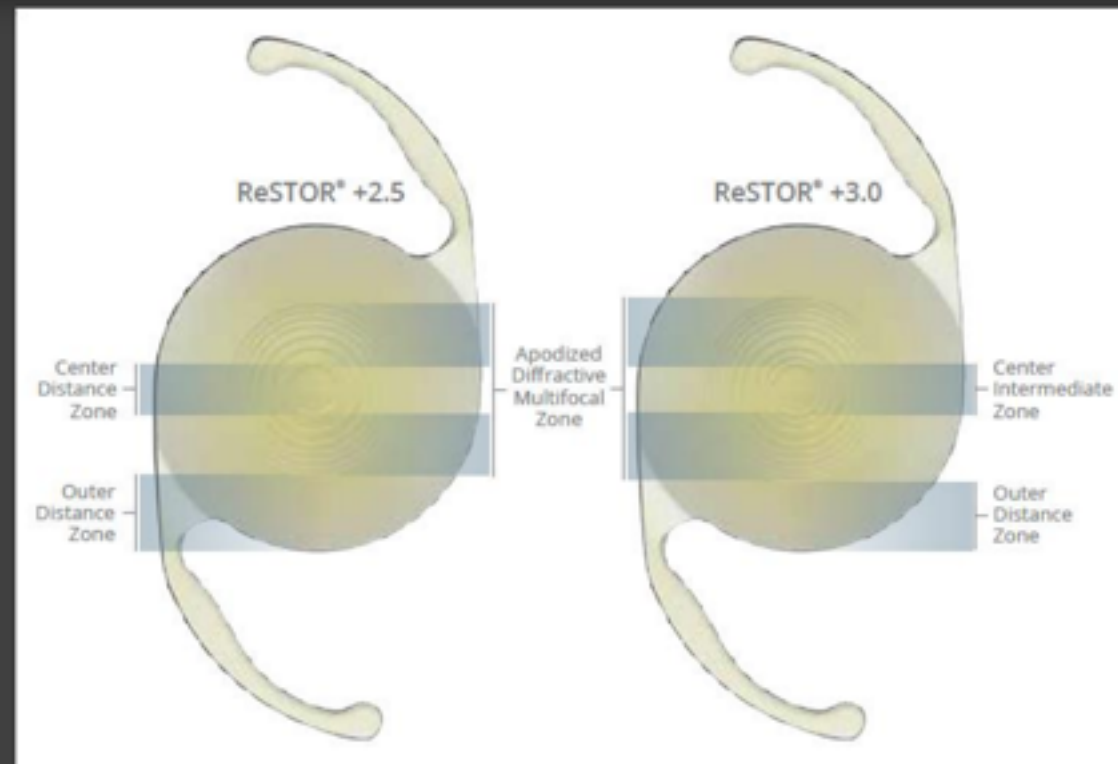
The ReSTOR® +2.5 Patient

- Patients with an active lifestyle that demands more intermediate (53cm/21in) and distance (4m/13ft) vision*
 - Not willing to compromise distance for a full range
- Desires more opportunity for a range of vision versus monofocal
- Desires increased spectacle independence at 21 inches and beyond
- Patient understands that +1.00 reader may be needed for 16-20 inches (40-50cm)

* Active lifestyle patients participate in activities that require intermediate and distance vision such as golf, tennis, theatre, and driving.

**Compared to models SN6AD1, SN6AD3 and MN6AD1

Optic Design Differences: ReSTOR® +2.5 vs. ReSTOR® +3.0



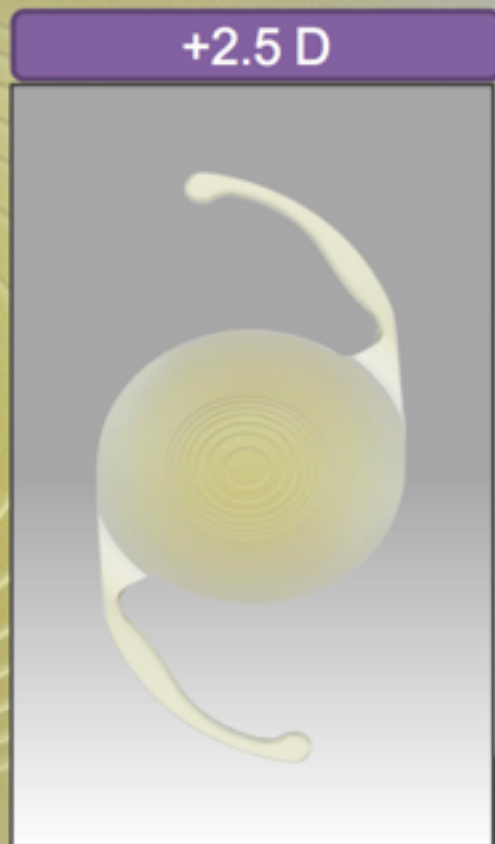
Reduced the add power from 3.0D to 2.5D by:

- Reducing diffractive steps from 9 to 7 and increasing spacing

Altered the light distribution by:

- Increasing the distance energy of the center zone from 40% to 100%
- Reducing apodized diffractive area by 18%
- Increasing the outer distance area by 6%

AcrySof® IQ ReSTOR® IOL



+2.5 D¹	Parameter	+3.0 D¹
SV25T0	Model number	SN6AD1
+2.5 D	ADD power @ IOL plane	+3.0 D
+2.0 D	ADD power @ Spectacle Plane	+2.5 D
0.94 mm	Central ring diameter	0.86 mm
7	# Diffractive Steps	9
8.4 mm²	Apodized Diffractive Area	10.2 mm²
Dist: 69% Near: 18.0%	Energy distribution (3 mm IOL plane)	Dist: 59% Near: 25.5%
-0.2μm	Asphericity	-0.1μm

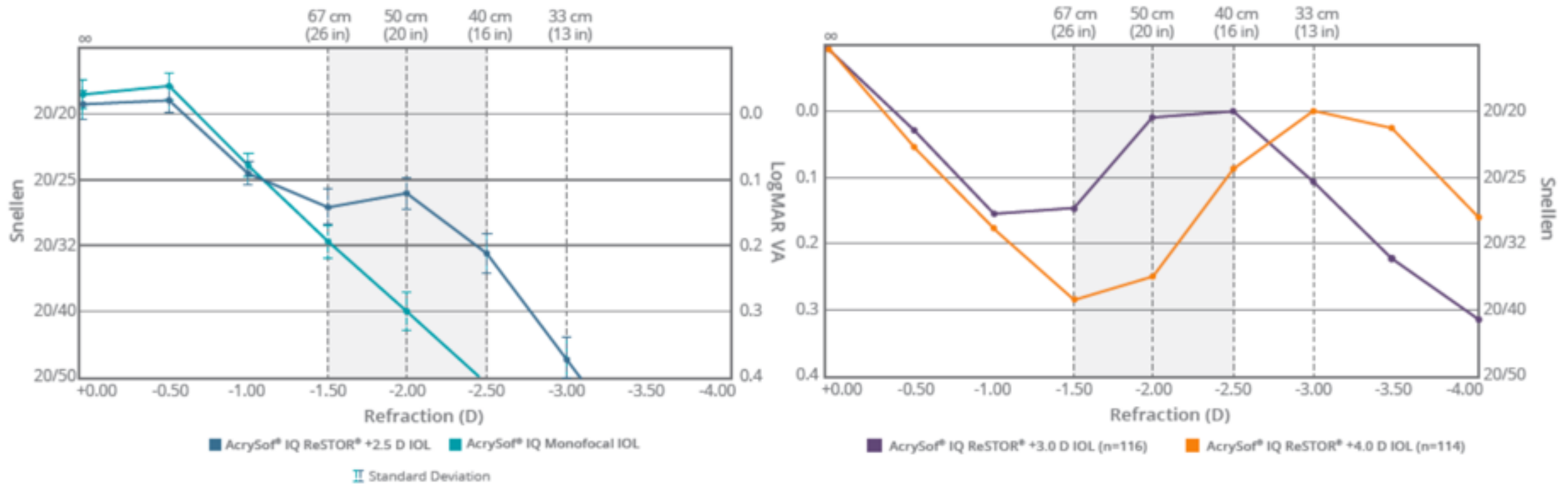


RES15034SK

1. Alcon data on file

Defocus Curves^{1,2}

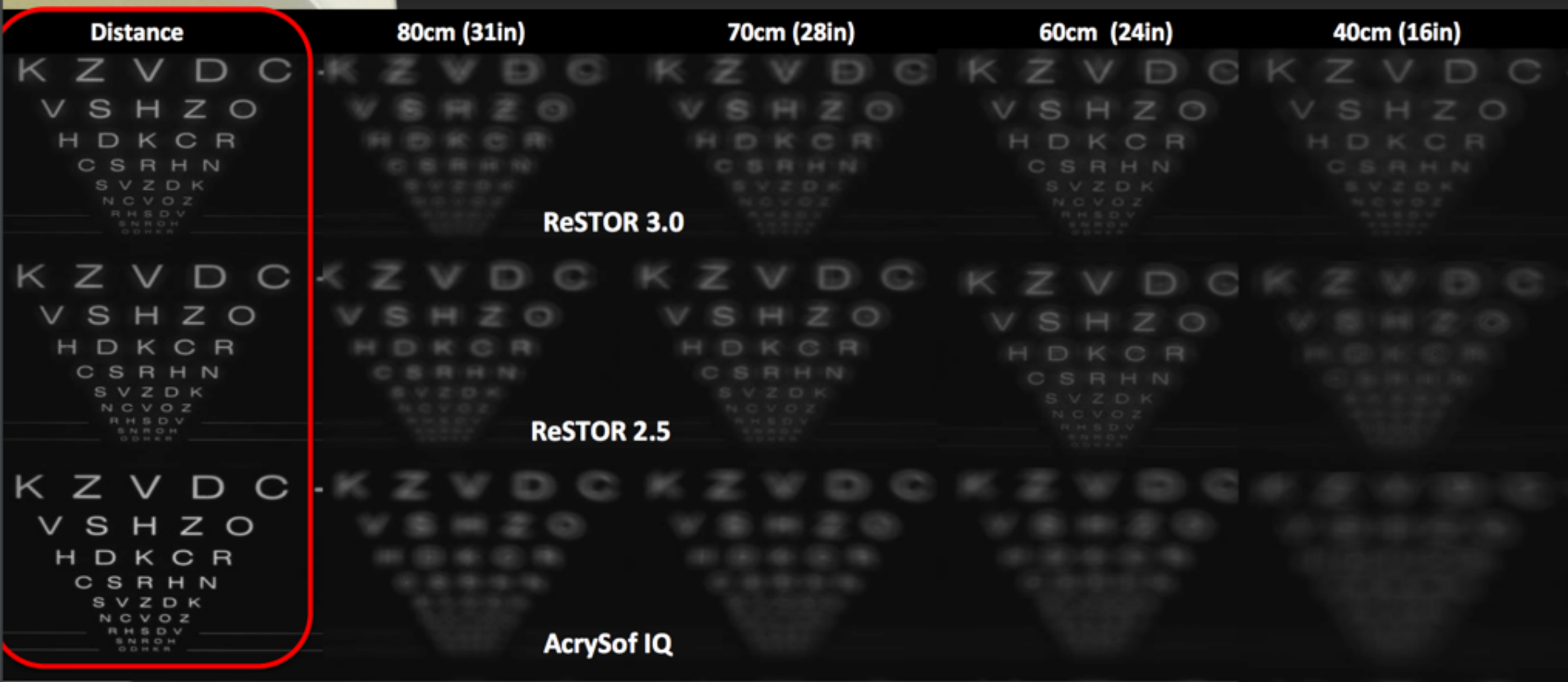
Binocular Defocus Curve



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1. AcrySof® IQ, AcrySof® IQ ReSTOR® +3.0 D 2. AcrySof® IQ ReSTOR® +2.5 Directions for use.

Simulated Retinal Images using a Badal Optometer (3 mm Pupil)¹



Visual Disturbances¹

Visual Disturbances 6 Months Postoperative Following Second Eye Implantation¹

Visual disturbance	AcrySof® IQ ReSTOR® +2.5 Model SV25T0 (n=153)	AcrySof® IQ Monofocal Model SN60WF (n=160)
Glare/Flare		
None/Mild	75.8%	83.2%
Moderate	20.9%	13.1%
Severe	3.3%	3.8%
Halos		
None/Mild	67.4%	88.8%
Moderate	22.2%	7.5%
Severe	10.5%	3.8%

Patients implanted with AcrySof® IQ ReSTOR® +2.5 D IOLs experienced 3.3% severe glare.

Patients implanted with AcrySof® IQ Monofocal IOLs experienced 3.8% severe glare.

Patient Profiling for ReSTOR®

AcrySof® IQ ReSTOR® +2.5 D IOL Candidates

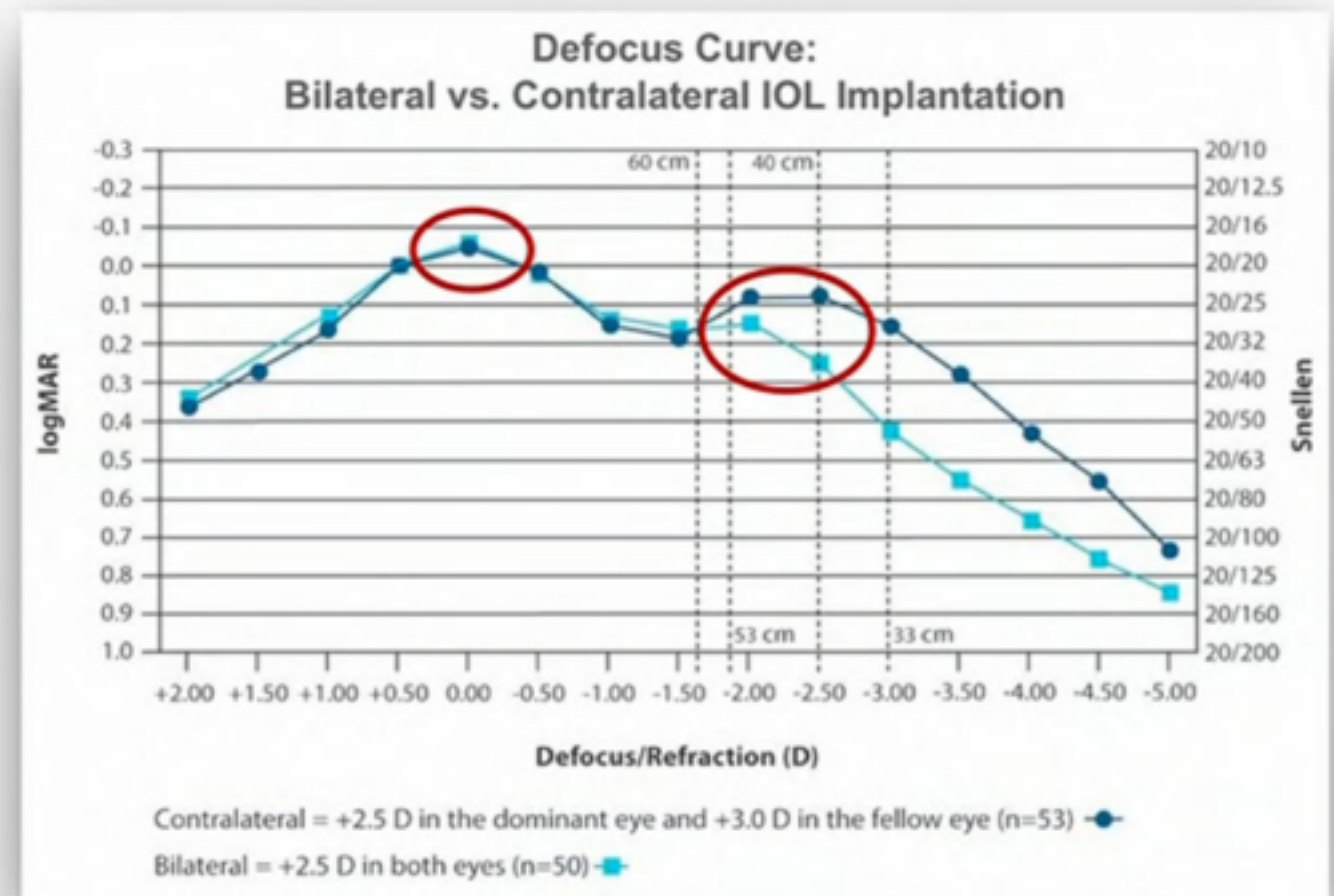
- Higher amount of intermediate (53cm) and distance (4m) activities
- Preference for range of vision but not willing to compromise sharp distance vision
- Desire increased spectacle independence from 53cm and beyond.

AcrySof® IQ ReSTOR® +3.0 D IOL Candidates

- Balance of near, intermediate, and distance activities desiring a broad range of vision
- Seek true performance at all distances from multifocal capabilities
- Increased spectacle independence for near, intermediate, and distant activities

Blending ReSTOR® +2.5 and ReSTOR® +3.0¹

- Bilateral ReSTOR® +2.5 D IOL with ACTIVEFOCUS™ optical design provides functional visual acuity at distance through near
- ReSTOR® +2.5 D IOL with ACTIVEFOCUS™ in dominant eye paired with ReSTOR +3.0 IOL in fellow eye provides the same excellent distance vision with approximately 2 additional lines of functional near vision



Study design: primary endpoint was non-inferiority of contralateral vs. bilateral implantation for corrected intermediate visual acuity. Secondary endpoint was non-inferiority of near vision.

1. Nuijts RM, Jonker SM, Kaufer RA, et al. Bilateral implantation of +2.5 D multifocal intraocular lens and contralateral implantation of +2.5 D and +3.0 D multifocal intraocular lenses: Clinical outcomes. J Cataract Refract Surg. 2016;42(2):194-202.



Conclusion

Many of today's cataract patients enjoy an active lifestyle, participating in activities that require intermediate and distance vision such as driving, golfing, shopping and playing tennis.

- **The AcrySof® IQ ReSTOR® +2.5 D IOL joins the ReSTOR® family as a new multifocal option and the only IOL with an ACTIVEFOCUS™ optical design.**
 - **Potential to expand overall number of ReSTOR® IOL candidates**
 - Allows surgeons to more confidently recommend a ReSTOR® lens that best suits the vision needs of their patient
 - Provides visual acuity over a full range but with improved distance vision
 - May be most appropriate for patients with active-lifestyles
 - Designed on a proven platform for excellent refractive outcomes

TECNIS Symphony® IOL Merges Two Complementary Enabling Technologies



Proprietary Echelette Design

Extends the depth of focus

Proprietary Achromatic Technology

Corrects chromatic aberration for enhanced image contrast¹

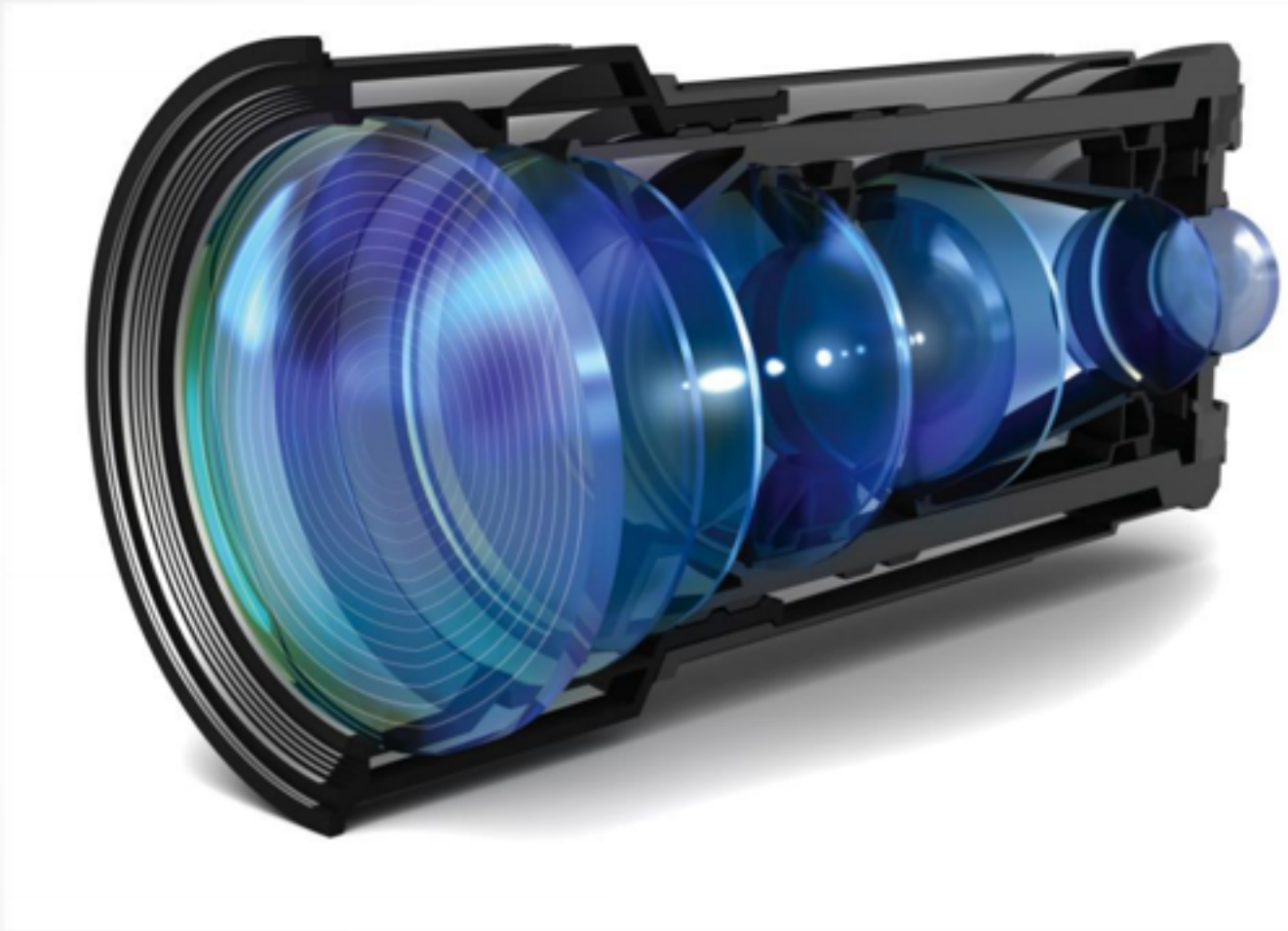
TECNIS® Symphony Design Characteristics^{1,2}

TECNIS® Symphony Lens Design	
Optic Design ¹	Full Diffractive Optic
Add Power ² (at IOL Plane)	+1.75 D
Peak Near Performance ¹	26 inches
Central portion ¹	Intermediate
Design Feature ¹	Achromatization



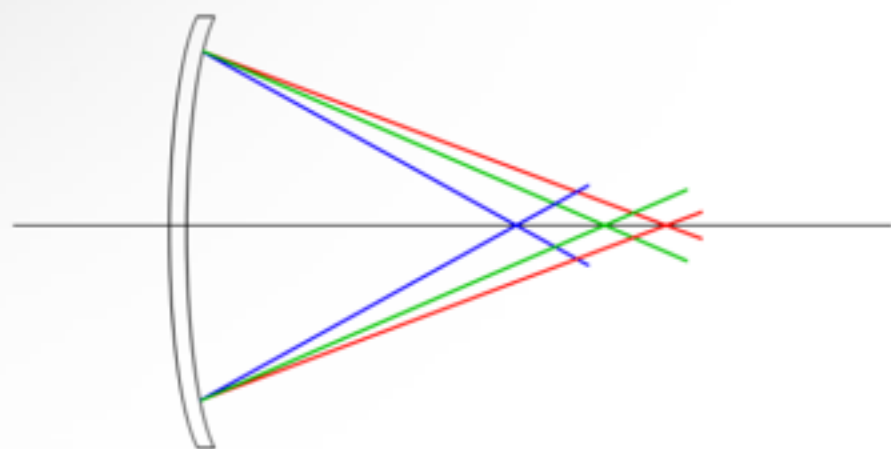
1. TECNIS® Symphony IOL Directions for Use

2. Gatinel D, Loicq J.. Clinically Relevant Optical Properties of Bifocal, Trifocal, and Extended Depth of Focus Intraocular Lenses. J Refract Surg. 2016; 32 (4):273-280.



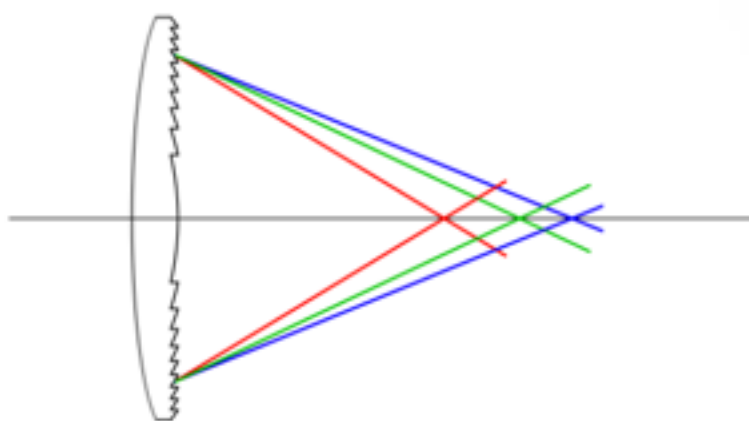
- Diffractive technology has been associated with multifocal IOLs, but it can be used in different ways
- Other industries use diffractive lenses (cameras, telescopes, microscopes) to optimize optical performance under constrained conditions

Cornea



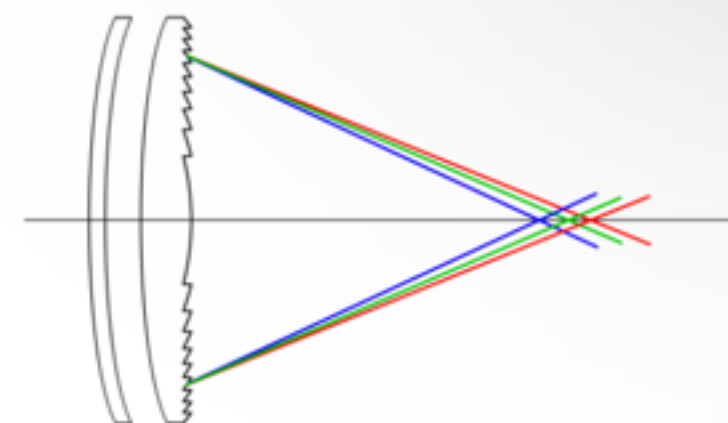
All corneas have a similar amount of chromatic aberration

Lens with Achromatic Technology



Proprietary Achromatic Technology is optimized to counteract the chromatic aberration of the cornea

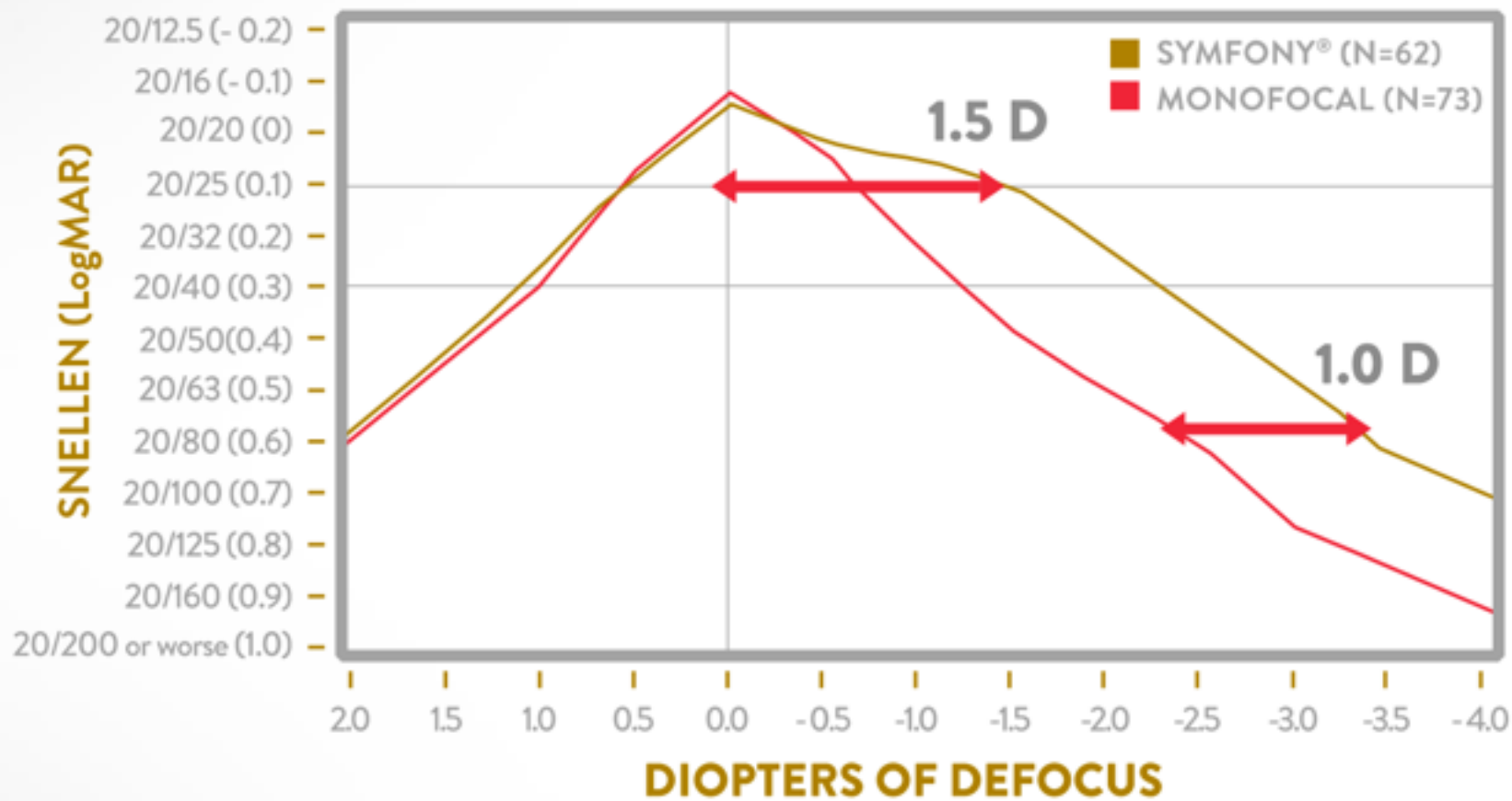
Cornea+ Lens with Achromatic Technology



The net result is reduced chromatic aberration

TECNIS Symphony® IOL provides continuous, high-quality vision at all distances

BINOCULAR DEFOCUS CURVE AT 6 MONTHS

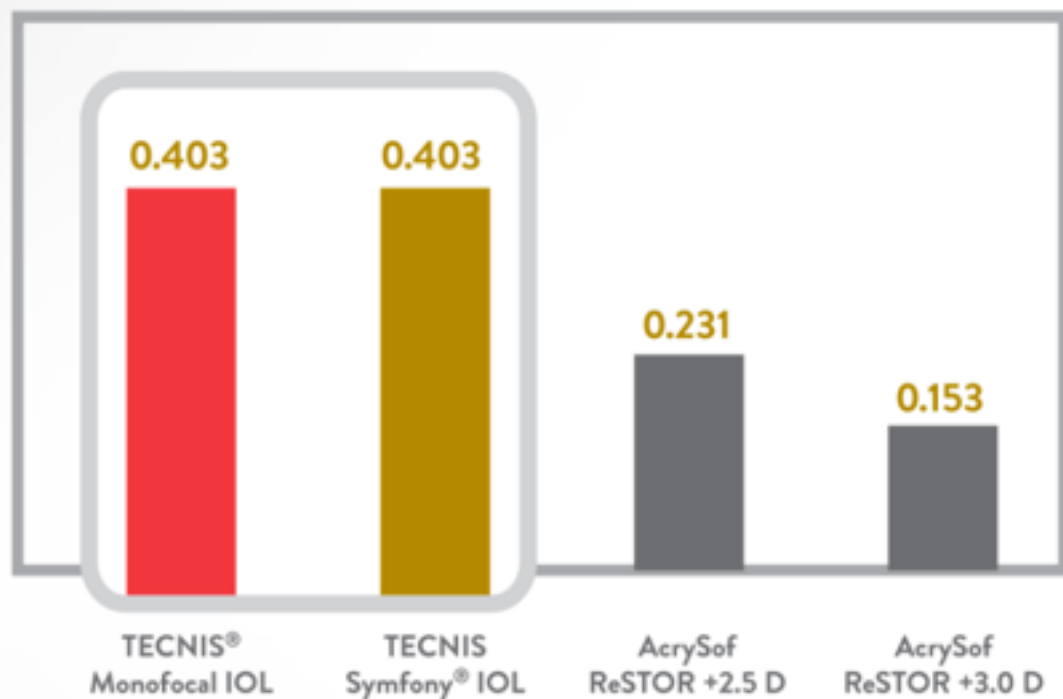


TECNIS Symphony® IOL delivers:

- Sustained mean visual acuity of 20/25 or better through 1.5 D of defocus
- Increase of 1.0 D range of vision throughout the defocus curve compared to a monofocal

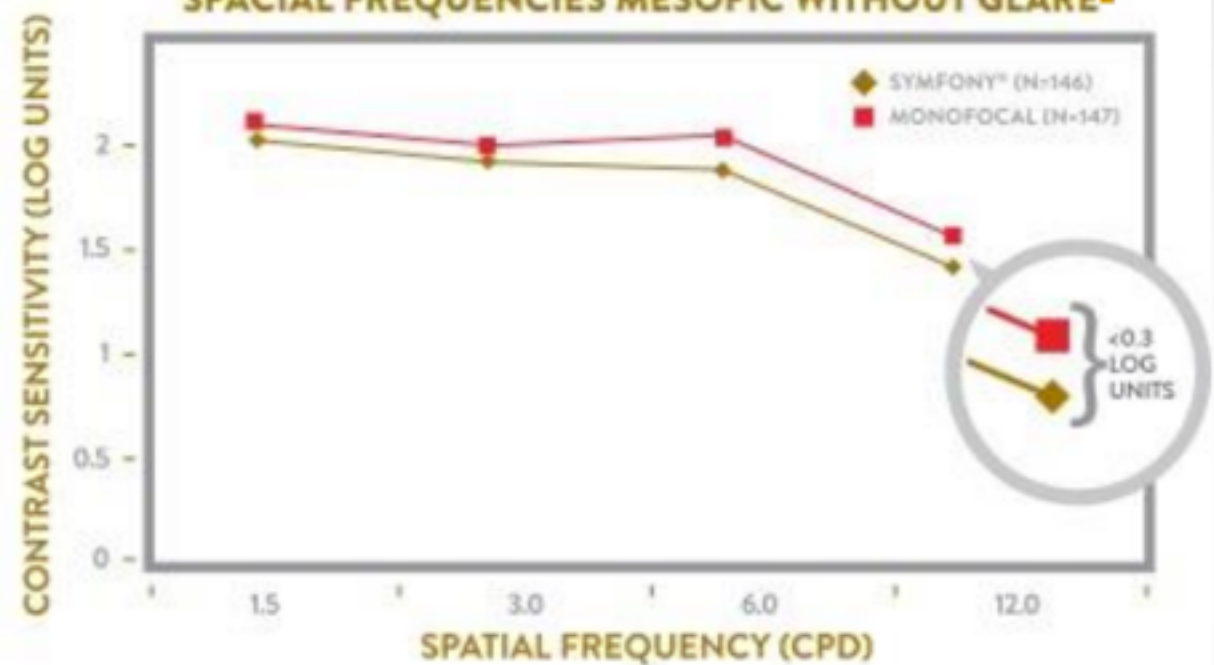
TECNIS Symphony® IOL delivers contrast sensitivity with no clinically significant difference compared to a monofocal IOL

MTF50 FAR 5MM IN ACE EYE MODEL¹



TECNIS Symphony® IOL maintained image contrast comparable to that of the TECNIS® Monofocal IOL (at 5 mm aperture).

CONTRAST SENSITIVITY MEASURED AT MULTIPLE SPACIAL FREQUENCIES MESOPIC WITHOUT GLARE²

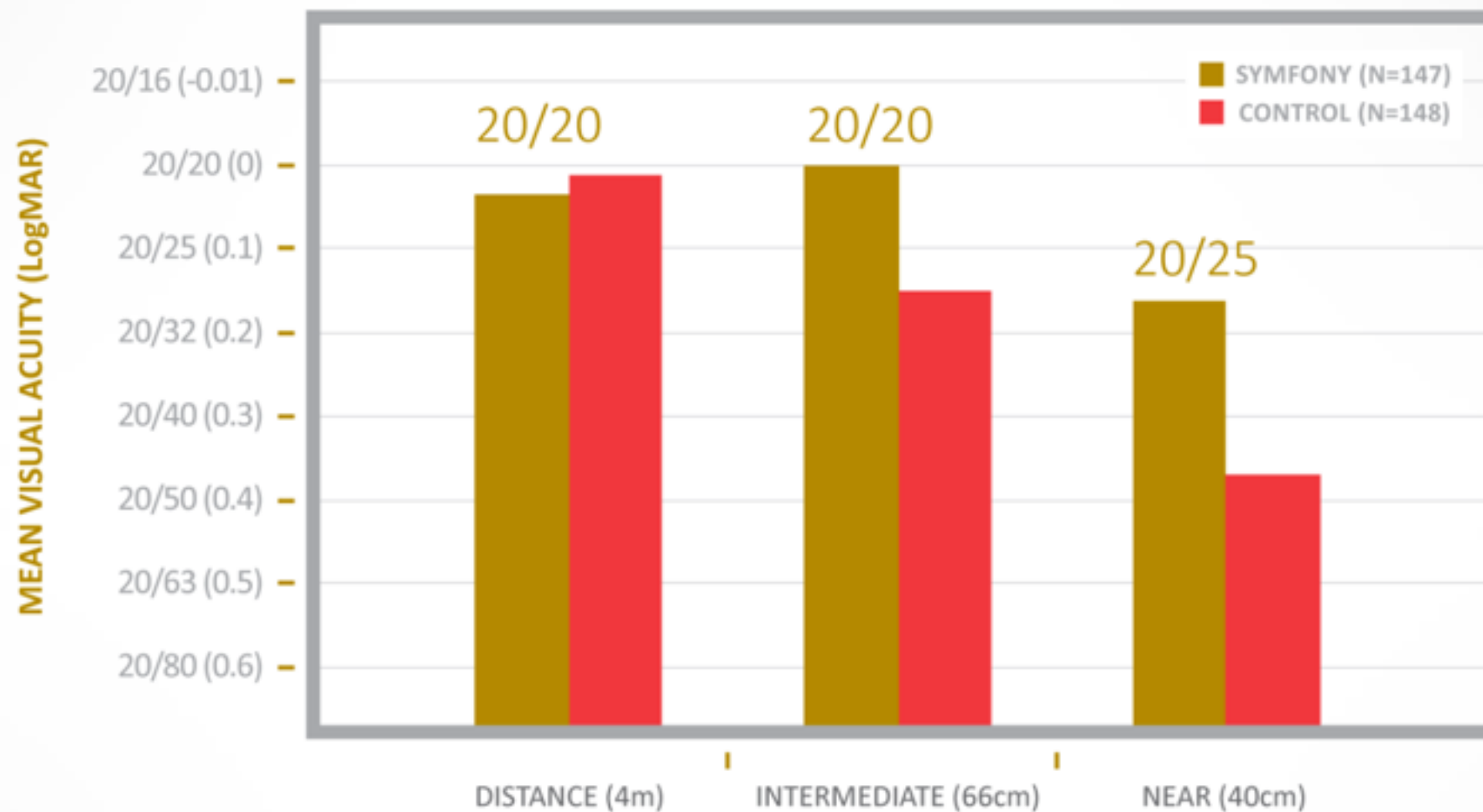


None of the differences exceeded 0.3 log units at two or more spatial frequencies.

Significant loss in contrast sensitivity has been linked to increased incidence of crashes and increased risk of falls^{3,4}

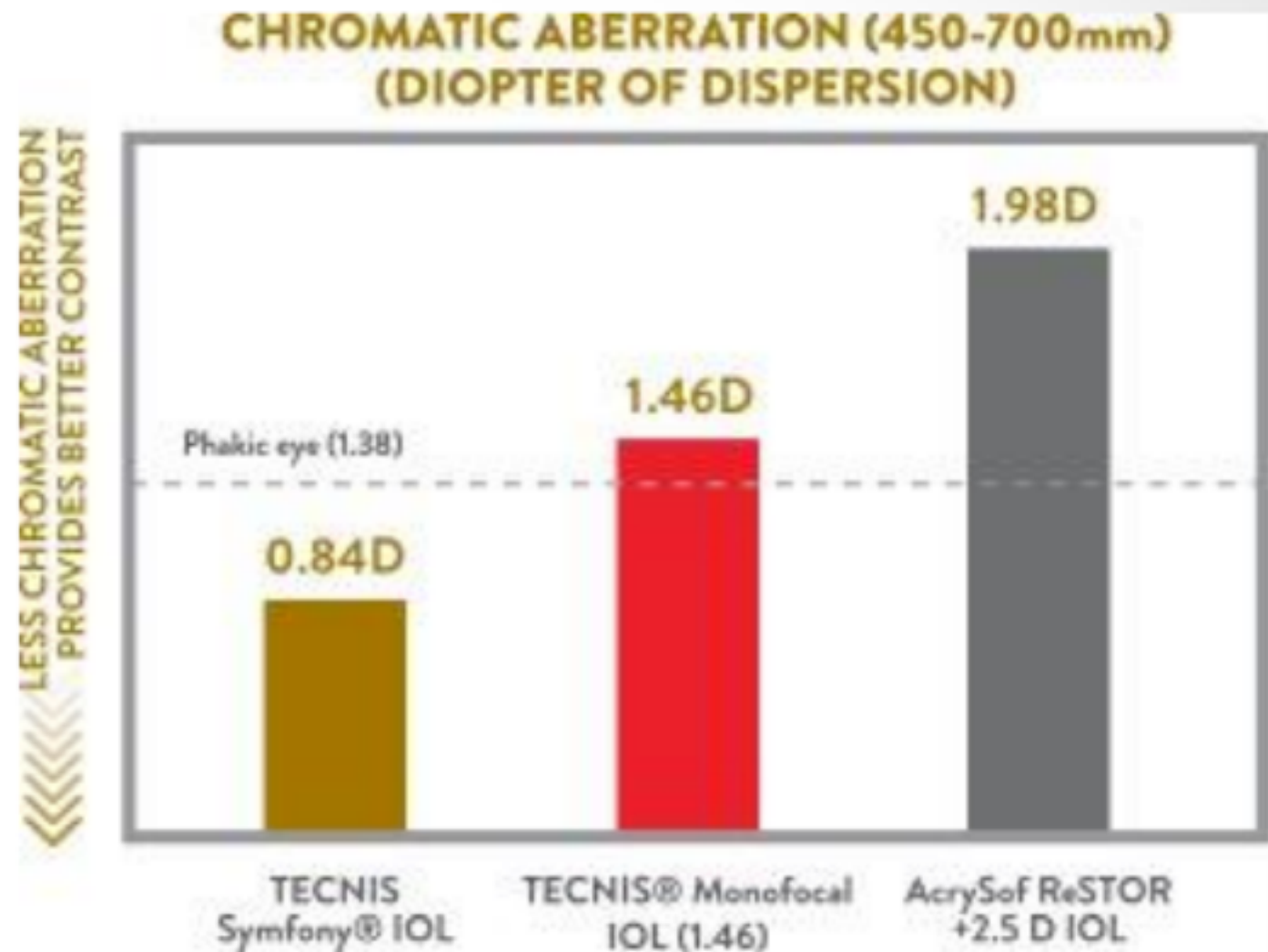
TECNIS Symphony® IOL delivers excellent uncorrected visual acuity at all distances¹

UNCORRECTED BINOCULAR VISUAL ACUITY AT 6 MONTHS POSTOPERATIVE



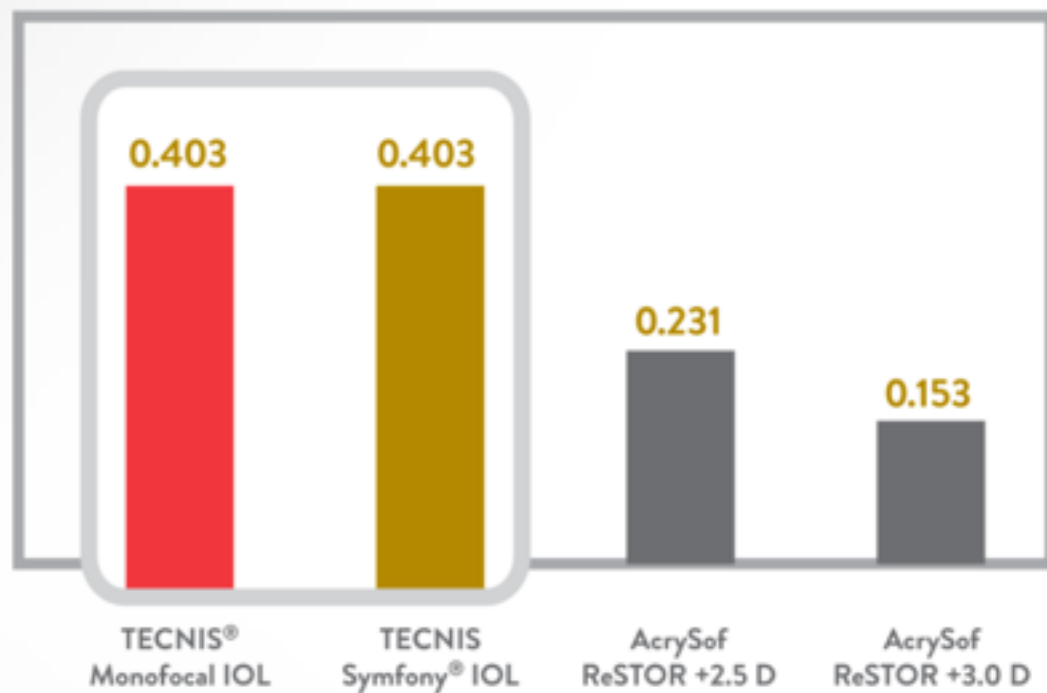
TECNIS Symphony® IOL actively corrects chromatic aberration¹

- TECNIS material minimizes chromatic aberration
- In addition the ACCEL™ Achromatic Technology of TECNIS Symphony® IOL actively corrects the chromatic aberration of the eye¹
- AcrySof® IQ ReSTOR® IOLs induce chromatic aberration of the eye¹



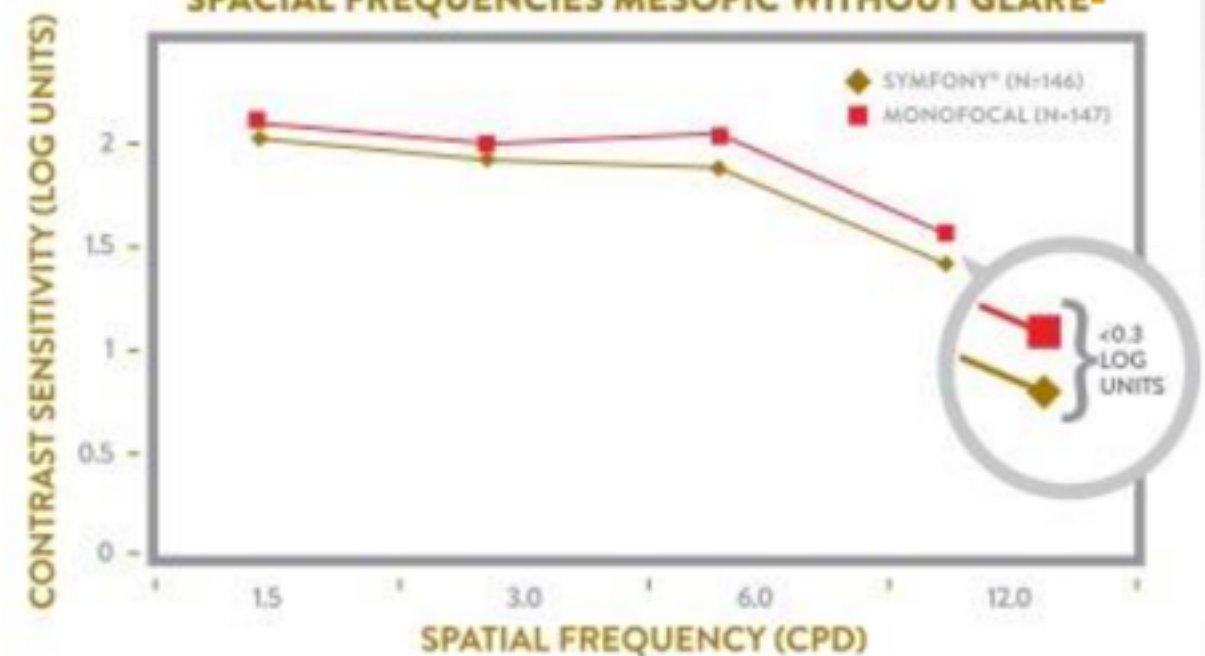
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MTF50 FAR 5MM IN ACE EYE MODEL¹



TECNIS Symphony® IOL maintained image contrast comparable to that of the TECNIS® Monofocal IOL (at 5 mm aperture).

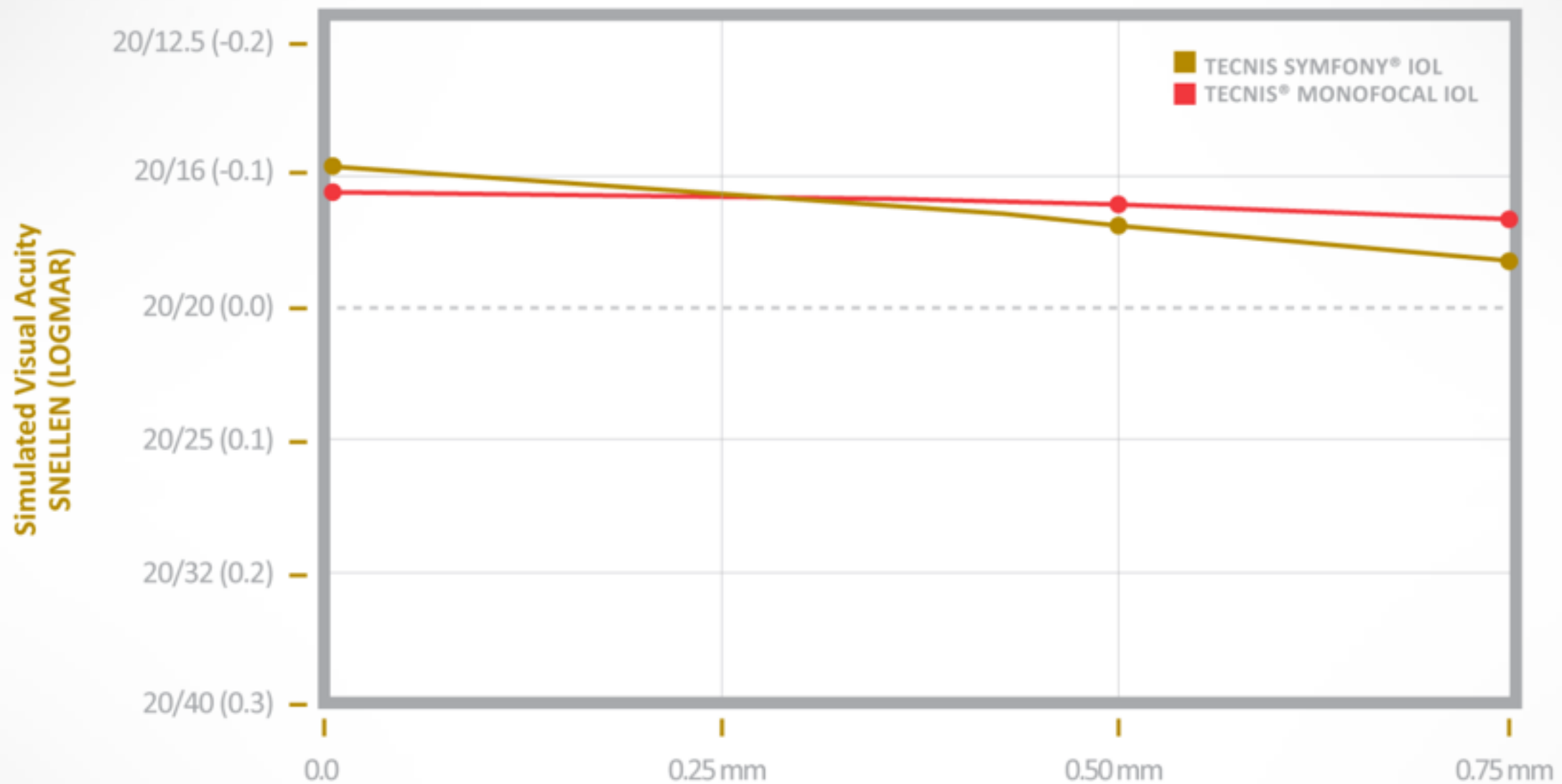
CONTRAST SENSITIVITY MEASURED AT MULTIPLE SPATIAL FREQUENCIES MESOPIC WITHOUT GLARE²



None of the differences exceeded 0.3 log units at two or more spatial frequencies.

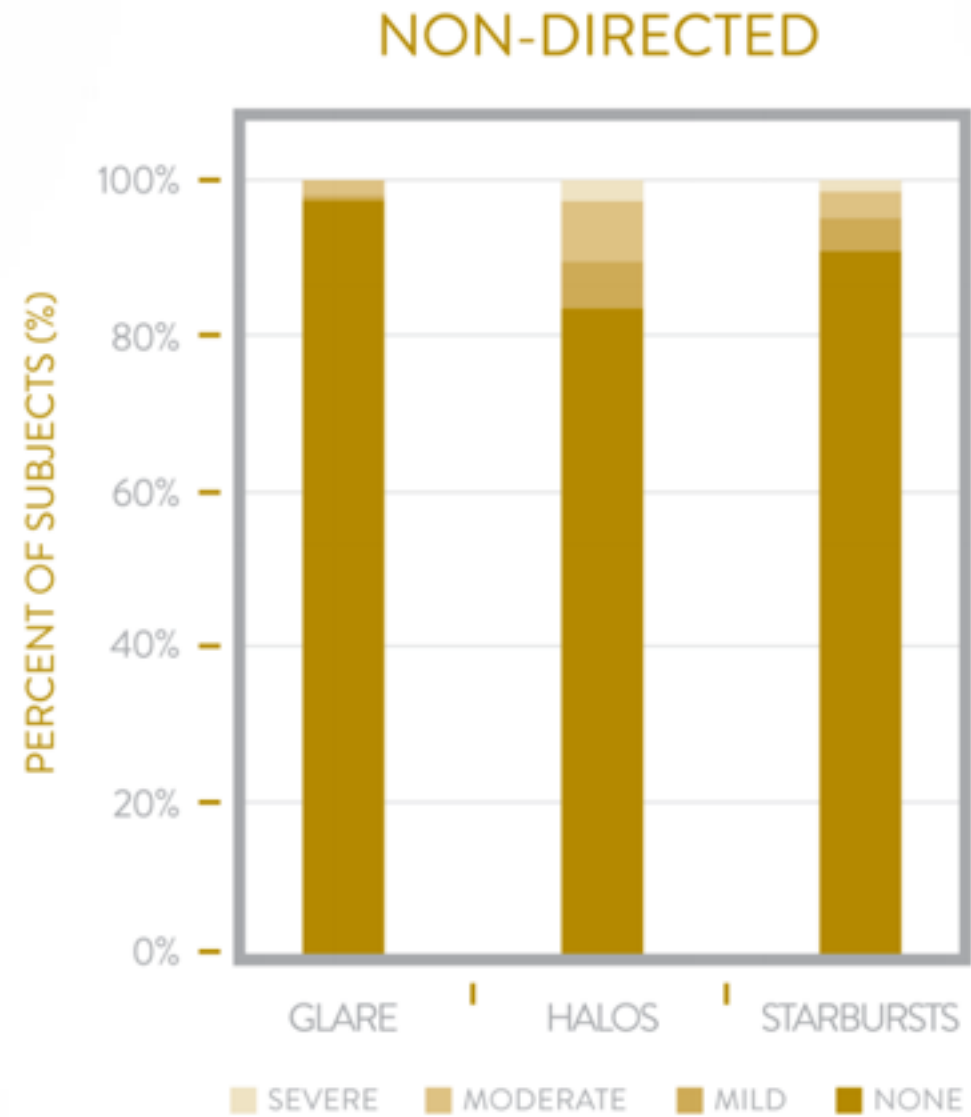
Significant loss in contrast sensitivity has been linked to increased incidence of crashes and increased risk of falls^{3,4}

TECNIS Symphony® IOL maintains image quality throughout 0.75 mm of decentration¹

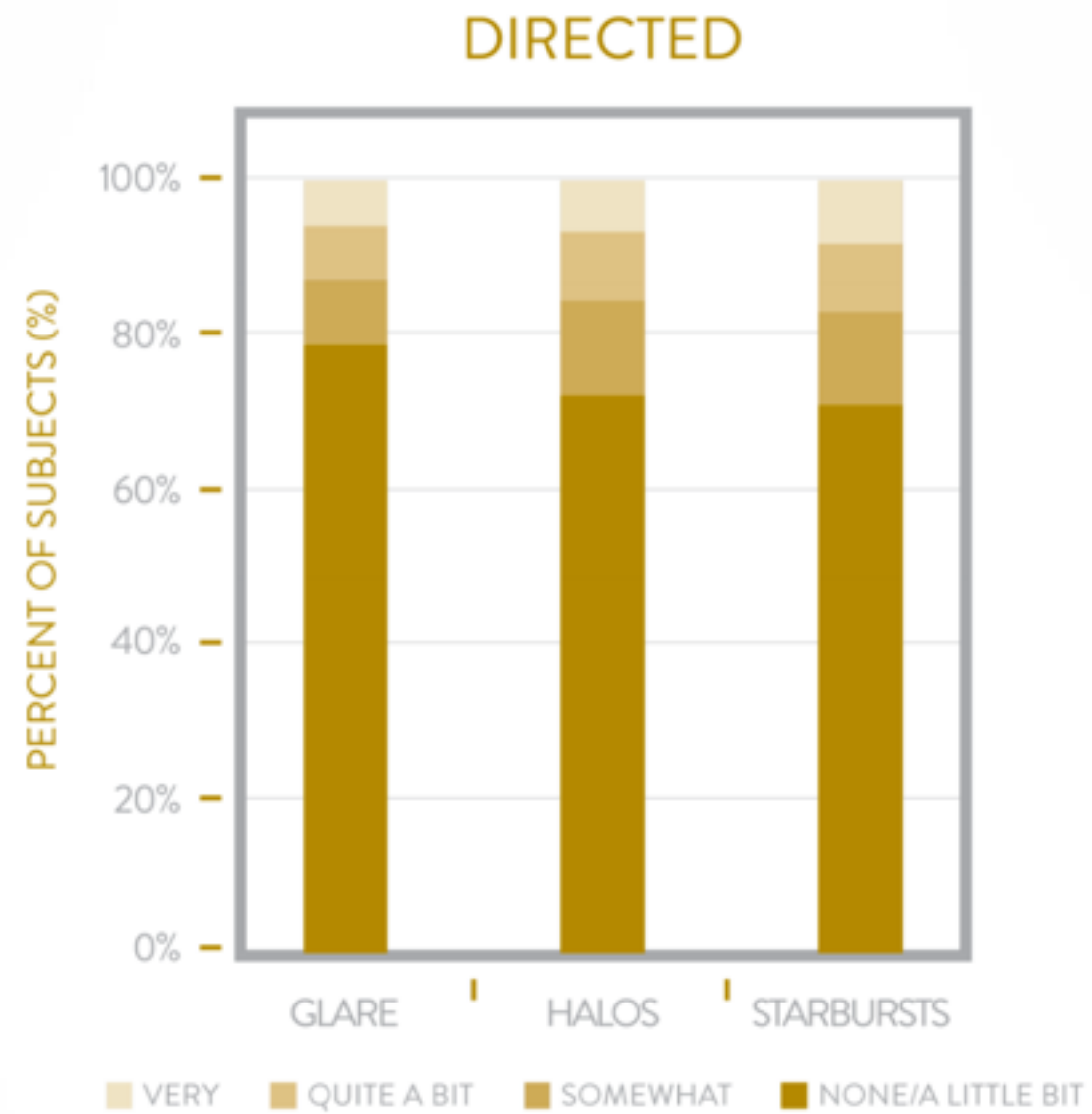


These calculations were performed with theoretical calculations.¹
In the US Clinical Trial there was no report of decentration at 6 months.²

Less than 3% of patients spontaneously reported incidence of severe night vision symptoms

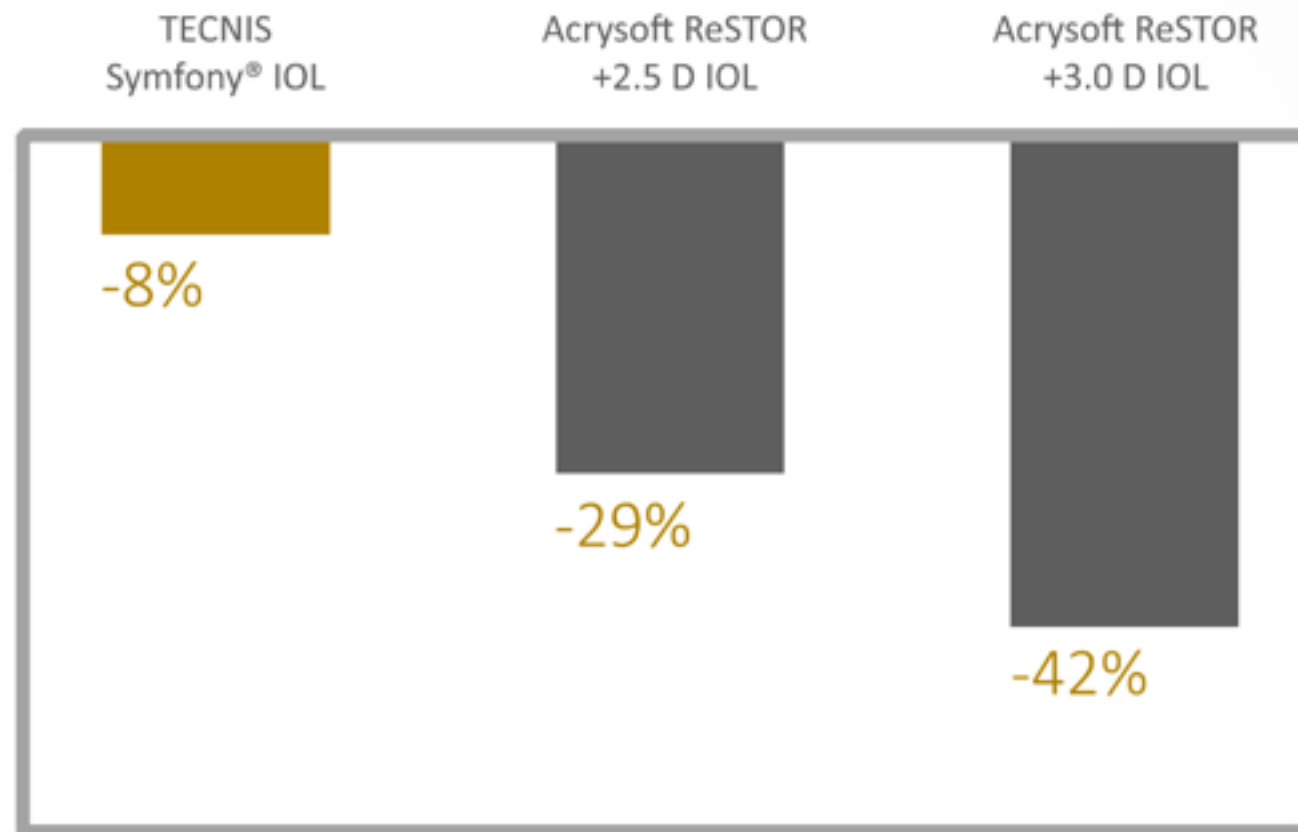


TECNIS Symphony® IOL demonstrated a low incidence of halo and glare



TECNIS Symphony® IOL pupil independence enables optimal performance in all lighting conditions^{1,2}

MTF LOSS WHEN THE PUPIL OPENS FROM 3mm TO 5mm

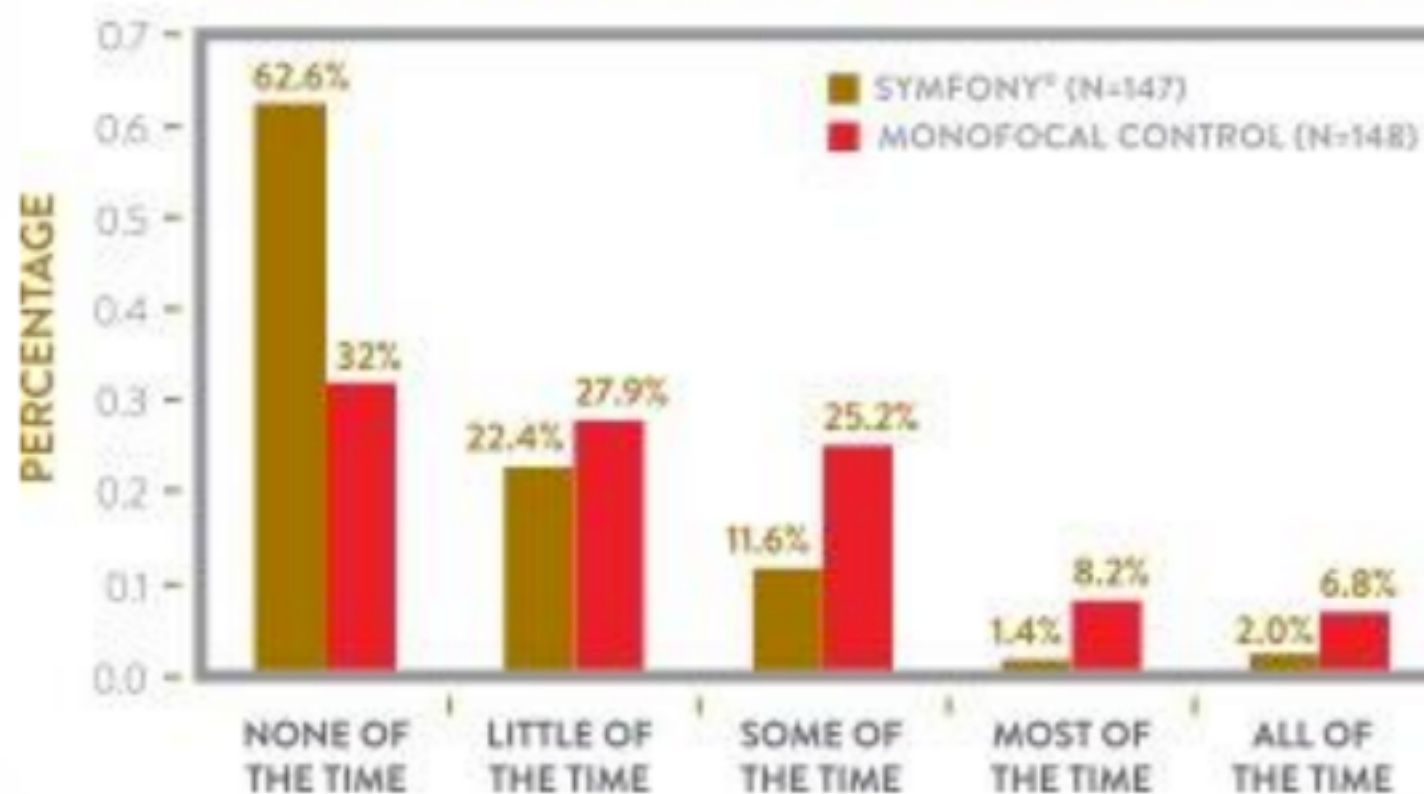


Distance MTF at 50 c/mm in white light

Less MTF loss provides better contrast under low-light conditions

85% of TECNIS Symfony® IOL patients wore glasses none or a little bit of the time*

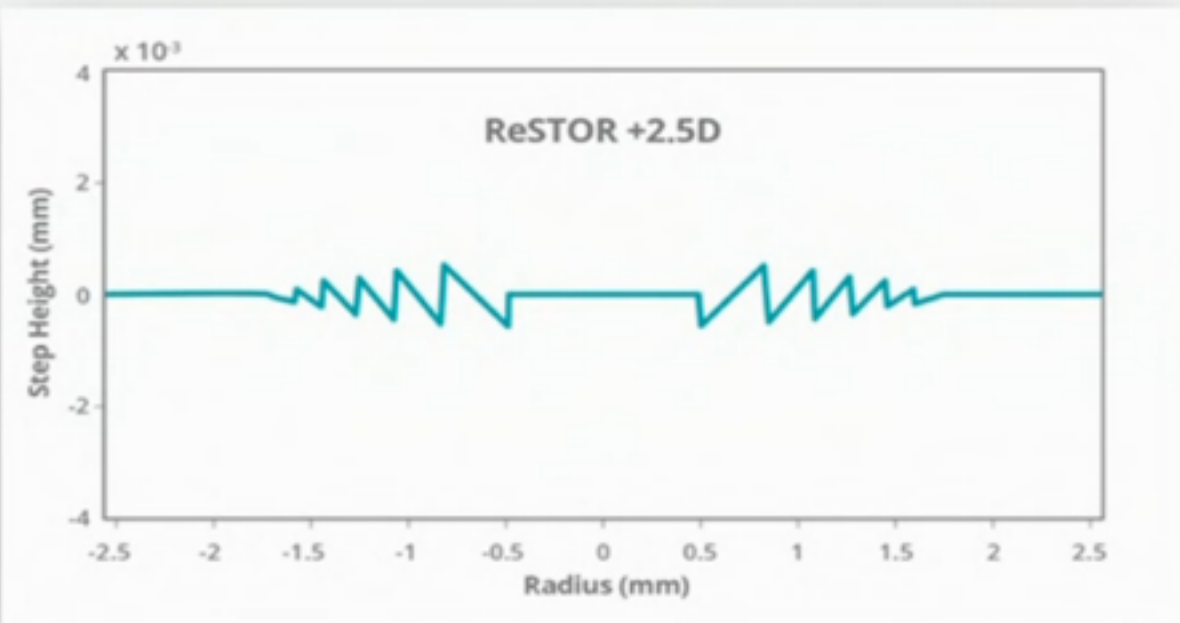
FREQUENCY OF GLASSES / CONTACTS WEAR DURING LAST 7 DAYS, ASKED AT 6 MONTH VISIT



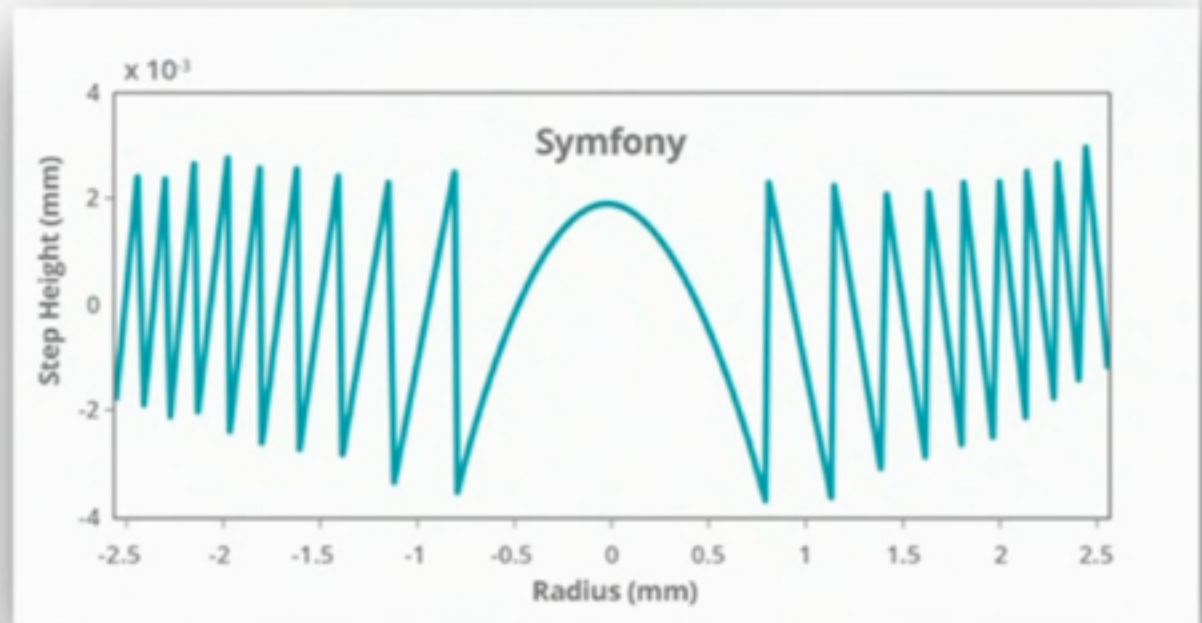
Central Portion 100% Dedicated to Distance Vision

Optical Profiles*

ReSTOR +2.5 with ACTIVEFOCUS Optical Design



TECNIS Symphony†



*Scale to mm from microns (μ) for readability.

Alcon Data on File. TDOC-0052187(18 Jul 2016).

† Surface profile of the TECNIS Symphony 28.0 D IOL was measured using Bruker Contour white light interferometer on the posterior surface and the diffraction efficiency calculated. Optical profile of the ReSTOR +2.5 D, model SV25T0 is based on its design profile.

Questions?

1. TECNIS Symphony DFU
2. DOF2016CT0025 TECNIS Symphony Toric Results
3. SC20160OTH004 Preclinical Evaluation of Tolerance to Astigmatism with an ERV IOL
4. DOF2016CT0023 TECNIS Symphony® IOL Tolerance to decentration.
5. DOF2015CT0018_MTF of TECNIS Symphony IOL, and other lens models
6. Data on File 150_Sensar not associated with glistenings – Literature analysis. Abbott Medical Optics, Inc., 2013.
7. Christiansen G, et al. Glistenings in the AcrySof® intraocular lens: Pilot study. *JCRS* 2001; 27:728-733. REF2014MLT0005.
8. Colin J, et al. Incidence of glistenings with the latest generation of yellow-tinted hydrophobic acrylic intraocular lenses. *JCRS* 2012; 38:1140-1146. REF2014MLT0006.
9. Gunenc U, et al. Effects on visual function of glistenings and folding marks in AcrySof® intraocular lenses. *JCRS* 2001; 27:1611-1614. REF2014MLT0011.
10. Nagata M, et al. Clinical evaluation of the transparency of hydrophobic acrylic intraocular lens optics. *JCRS* 2010; 36:2056-2060. REF2015CT0080.
11. Bousquet M, PhD, Health Canada. Intraocular lenses and the development of glistenings. Canadian Adverse Reaction Newsletter 2013. REF2015CT0254.
12. Miyata A, Yaguchi S. Equilibrium water content and glistenings in acrylic intraocular lenses. *JCRS* 2004; 30:1768-1772. REF2014OTH0032.
13. van der Mooren, et al. Explanted multifocal intraocular lenses. *JCRS* 2015; 41:873-877. REF2015OTH0117.
14. DOF2016CT0024 Concerto Study Report
15. DOF2015CT0028 Symphony Harmony Observational Study