Take advantage, use **Advanced**

VSY BIOTECHNOLOGY
we inspire...

enova Advanced™
Preloaded Extended Depth of Focus (EDOF) IOL

Enova Advanced™ Non-Diffractive Hydrophobic EDOF IOL

Our new A-class product - The Enova Advanced™ non-diffractive EDOF IOL Available on our hydrophobic material platform - Enova®.

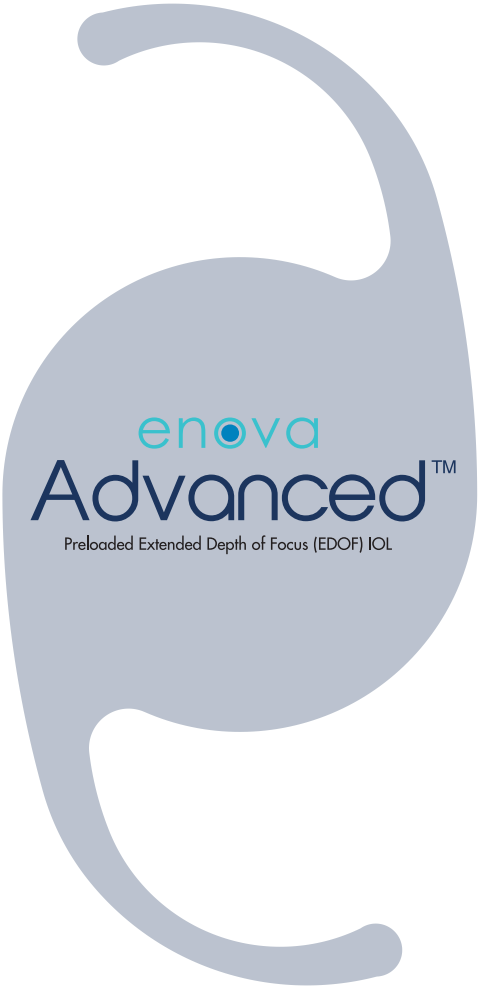
Non-diffractive "Light Tailoring Technology" providing:

- Excellent visual acuity for far vision.
- Great visual acutiy for intermediate vision reaching into near vision zone.
- Monofocal-like halo and glare profile.

Launched on next generation hydrophobic Enova® IOL material platform combining:

- 100% glistening-free.
- Dry-packed.
- Controlled unfolding even in operating room temperature settings.

Take advantage, use **Advanced**



Sharp
Far Vision[1]

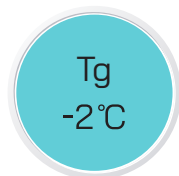
Monofocal-like
Halo and Glare Profile[1]

Strong
Intermediate Vision[1]

100%
Glistening-Free Material[2]

Near
Vision Effect[1]

Pre-Conditioning
Free[3]



Preloaded

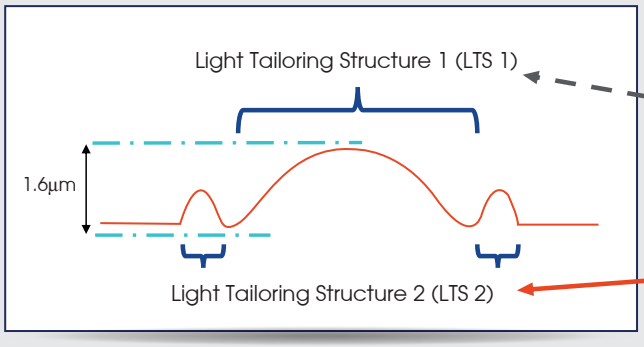
1.Data on file. Medical Report MR_EA_230605. VSY Biotechnology Laboratories. 06.2023.
2.Data on file. L. Werner at. al. In vitro study evaluating the tendency of different intraocular lenses to form intraoptical glistenings. Study report. RDR_EGF3_05072020. Utah, USA 07.2020.
3.Data on file. Technical Report TR_EA_200511. VSY Biotechnology Laboratories. 05.2020

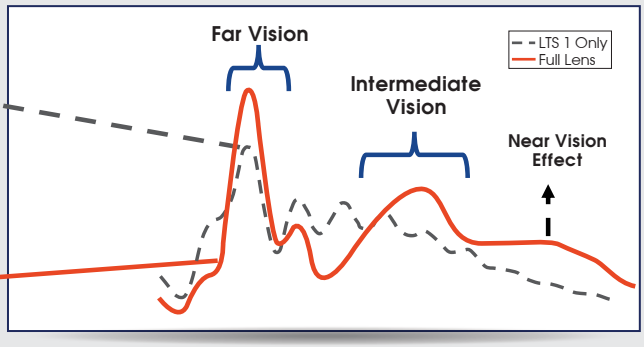
Light Tailoring Technology

Discover VSY Biotechnology's groundbreaking "Light tailoring technology" for exceptional optical performance even in challenging lighting conditions. Experience the new A-class product, the non-diffractive Enova Advanced™ EDOF IOL.

Light Tailoring Technology

The unique Light Tailoring Technology uses two structures (LTS 1 and 2) placed in the central 2 mm aperture to broaden and fine-tune the provided light.





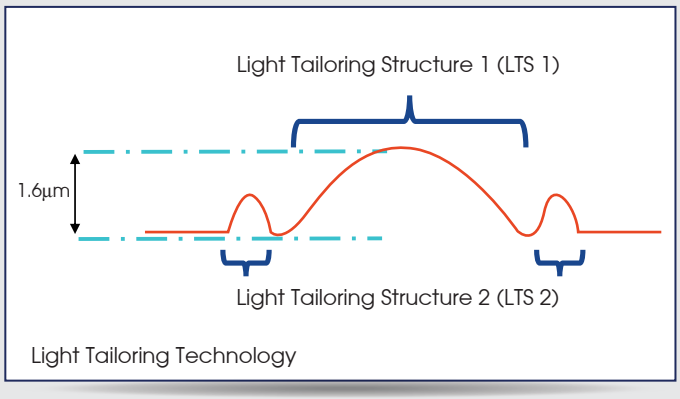
- LTS 1 widens and distributes light beyond the far focus into intermediate and near vision ranges.
- LTS 2 Fine-tunes light for a more refined intermediate visual acuity and basic near visual acuity.

- LTS 1 distributes light broadly for EDOF.
- LTS 2 Fine-tunes the light distribution to strengthen the relevant distances (far, intermediate and basic near).

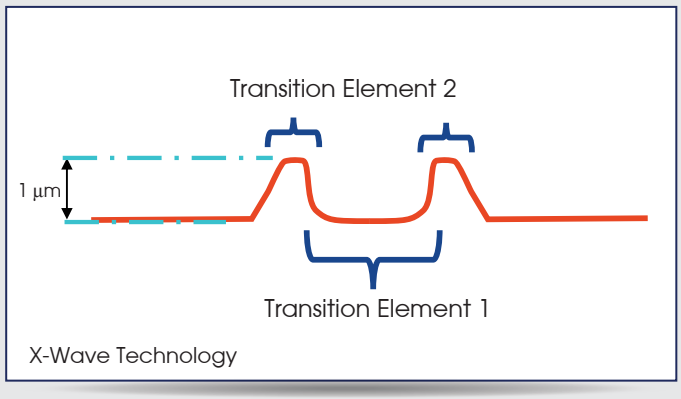
Light Tailoring Technology

"Light tailoring technology" delivers outstanding distance vision in photopic, mesopic, and scotopic light conditions along with excellent intermediate vision.

ENOVA ADVANCED™



AcrySof VIVITY®



Light Tailoring Technology Working Principle

- Light Tailoring Structure 1 provides a broader far and intermediate distribution of light energy.
- Light Tailoring Structure 2 improves the light distribution for "tailor-made" visual acuity for far, intermediate, and basic near vision.
- Enova Advanced™ has a minimal spherical aberration design thanks to its light tailoring structure.

X-Wave Technology Working Principle

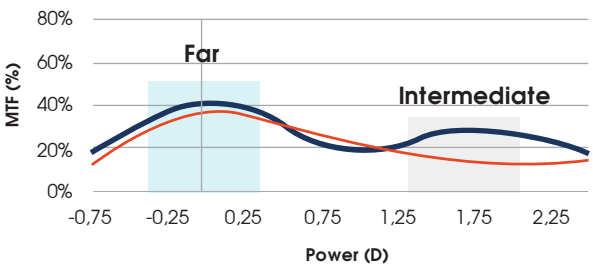
- Transition Element 1 stretches the light for EDOF.*
- Transition Element 2 shifts the wavefront for maximum energy usage.*

*Tognetto, Daniele, et al. "Profile of a new extended range-of-vision IOL: a laboratory study." Graefe's Archive for Clinical and Experimental Ophthalmology (2022): 1-4. Ferrando, Vicente, et al. "Profile of a new extended range-of-vision IOL: comments on the laboratory study by Tognetto et al." Graefe's Archive for Clinical and Experimental Ophthalmology 260.12 (2022): 4021-4022.

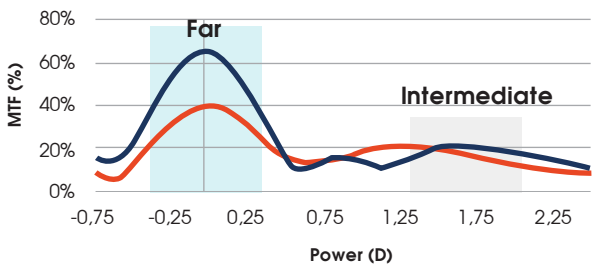
Optical Benchmark Results
Enova Advanced™ vs. AcrySof Vivity®

Enova Advanced™ distributes more light energy to the far vision and thus shows higher modulation transfer function (MTF) values compared to AcrySof Vivity®.

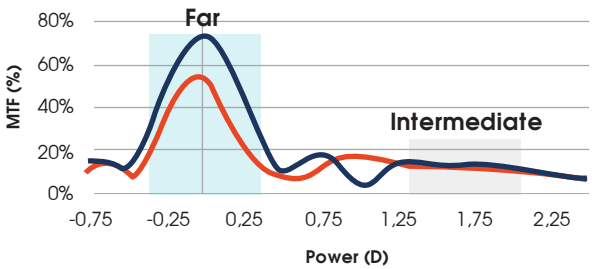
2 mm Aperture (50 lp/mm)



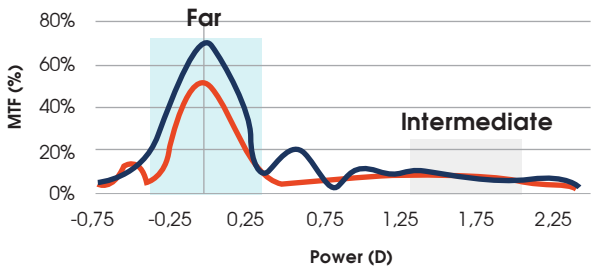
3 mm Aperture (50 lp/mm)



3,75 mm Aperture (50 lp/mm)



4,5 mm Aperture (50 lp/mm)



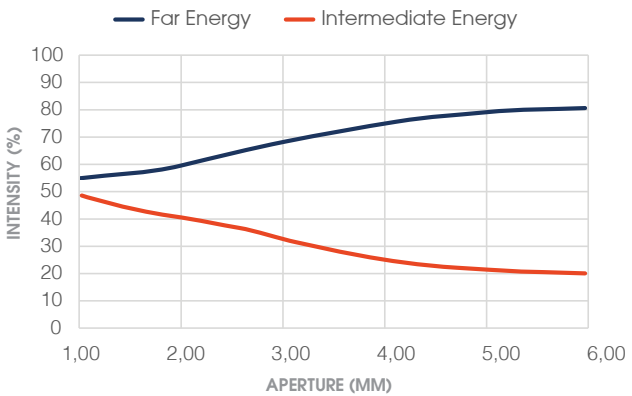
Enova Advanced™ AcrySof Vivity®

Measurement Equipment: Lambda PMTF device (Belgium) / In house measurement. Eye Model: ISO Eye Model / with minimal spherical aberration.
Samples: Advanced and Vivity lenses with 21 D. Measurement Date: 06.2023

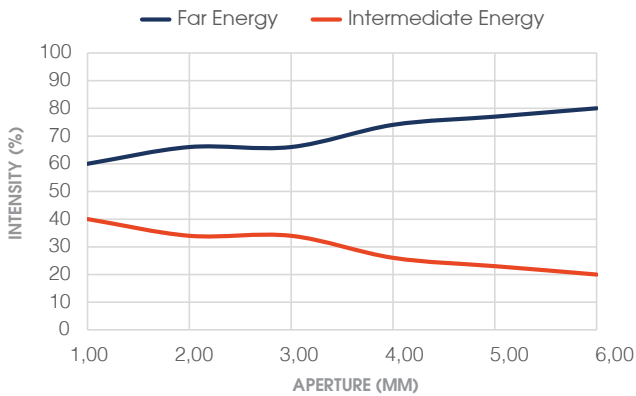
Optical Benchmark Results
Enova Advanced™ vs. AcrySof Vivity®

Enova Advanced™ has a higher focus on the far foci and thus providing excellent visual acuity even in challenging lighting conditions.

ENOVA ADVANCED™ ENERGY DISTRIBUTION



ALCON VIVITY® ENERGY DISTRIBUTION

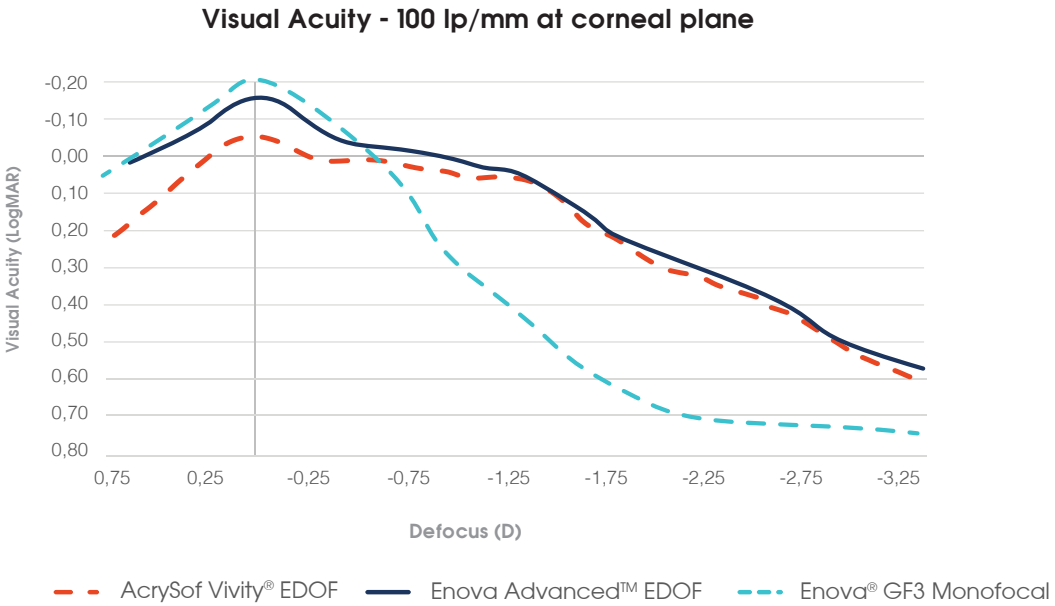


Measurement Equipment: Lambda PMTF device (Belgium) / In house measurement. Eye Model: ISO Eye Model / with minimal spherical aberration.
Samples: Advanced and Vivity lenses with 21 D. Measurement Date: 06.2023

Theoretical Defocus Curve Comparison

Enova Advanced™ EDOF vs. AcrySof Vivity® EDOF vs. Enova® GF3 Monofocal

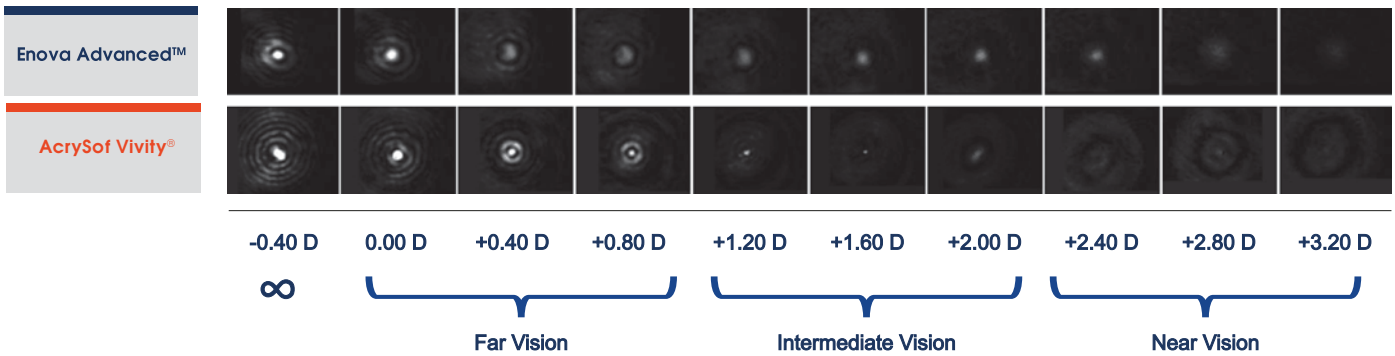
Compared to AcrySof Vivity®, the theoretical defocus curve values demonstrate excellent far vision without deficiencies in the intermediate range.



Measurement Equipment: Theoretically derived from inhouse MTF measurements (1).
Samples: ENOVA GF3, Advanced and Vivity lenses with 21 D.
Measurement Date: 06.2023
(1) Alarcon, A., Canovas, C., Rosen, R., Weeber, H., Tsai, L., Hileman, K., & Piers, P. (2016). Preclinical metrics to predict through-focus visual acuity for pseudophakic patients. Biomedical Optics Express, 7(5), 1877. https://doi.org/10.1364/BOE.7.001877

Enova Advanced™ vs. Alcon AcrySof Vivity® PSF Measurements

The Enova Advanced™ has less Halo & Glare compared to AcrySof Vivity® according to the in-vitro lab measurements performed on a bench setup constructed specifically to assess PSF (1).

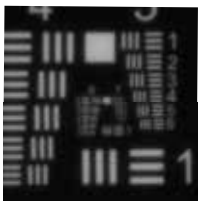
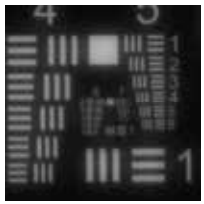
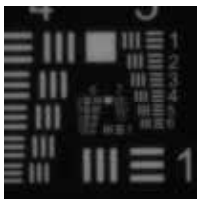
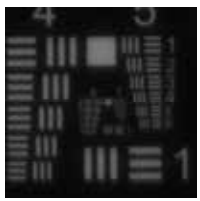
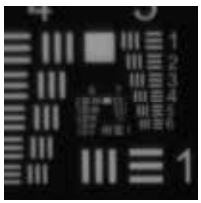
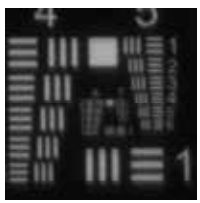


Measurement Equipment: Inhouse optic benchmark setup (1).
Samples: Advanced and Vivity lenses with 21 D.
Measurement Date: 08.2023

(1) Sievers J, Elsner R, Bohn S, Schünemann M, Stolz H, Guthoff RF, Stachs O, Sperlich K. Method for the generation and visualization of cross-sectional images of three-dimensional point spread functions for rotationally symmetric intraocular lenses. Biomed Opt Express. 2022 Feb 1;13(2):1087-1101. doi: 10.1364/BOE.446869. PMID: 35284182; PMCID: PMC8884235.

USAF Target Images
Enova Advanced™ vs. AcrySof Vivity®

Far

	Enova Advanced™	AcrySof Vivity®
PHOTOPIC 3 mm		
MESOPIC 3.75mm		
SCOTOPIC 4.5mm		

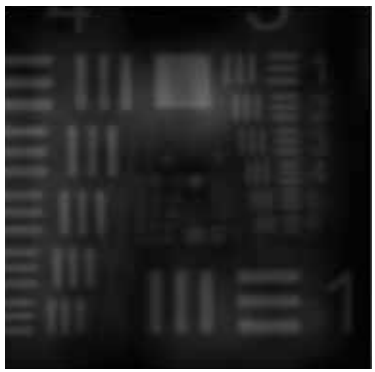
Measurement Equipment: Lambda PMTF device (Belgium) / In house measurement. Eye Model: ISO Eye Model / with minimal spherical aberration.
Samples: Advanced and Vivity lenses with 21 D. Measurement Date: 06.2023

USAF Target Images
Enova Advanced™ vs. AcrySof Vivity®

Intermediate

PHOTOPIC

3 mm

Enova Advanced™	AcrySof Vivity®
	

Measurement Equipment: Lambda PMTF device (Belgium) / In house measurement. Eye Model: ISO Eye Model / with minimal spherical aberration.
Samples: Advanced and Vivity lenses with 21 D. Measurement Date: 06.2023

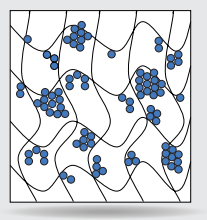
Enovation of 100% Glistening-Free IOL Material

The Enova Advanced™ IOL Material is the first 100% Glistening-Free hydrophobic acrylic IOL that does not require pre-hydration and storage in saline solution!

The Enova Advanced™ EDOF IOL is dry-packed and boasts exceptional optical and mechanical properties.

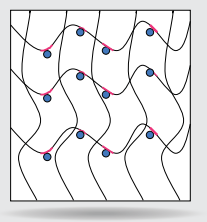
Glistening Formation in IOL

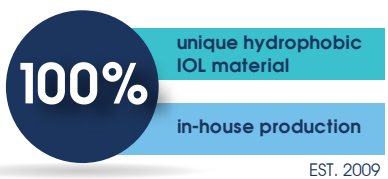
Water molecules bind to certain chemical groups through weak hydrogen bonds. Over time, more water molecules diffuse into the polymer network and bind preferably to other water molecules, which forms clusters referred to as "glistening."



ENOVA® 100% Glistening-Free IOL

The unique composition of Enova® material allows the uniform hydration of specific sites, controlled water uptake, and resistance to glistening formation.





100% Glistening-Free IOL Material

Conclusion by the University of Utah

Study: In vitro study evaluating the tendency of different intraocular lenses to form intraoptical glistenings

STUDY REPORT

Intermountain Ocular Research Center
John A. Moran Eye Center
University of Utah

Sponsor: VSY Biotechnology

In vitro glistenings study; University of Utah

Conclusions: Enova® hydrophobic acrylic intraocular lenses exhibited no glistening formation after hydration and variation of the temperature. Tecnic intraocular lenses exhibited trace glistening formation, and AcrySof intraocular lenses exhibited mild glistening formation in these in vitro test conditions. The new Enova® intraocular lenses showed no surface haze and glistenings when compared with other commercially available hydrophobic acrylic IOLs as AcrySof and Tecnis intraocular lenses.

Liliana Werner, MD, PhD

Nick Mamalis, MD

Week 1: The findings at this time point were generally similar to those on Day 1. Overall, whenever glistening formation was observed in this study at week 1, it was mostly within the central 4.0 mm of the IOL optic.

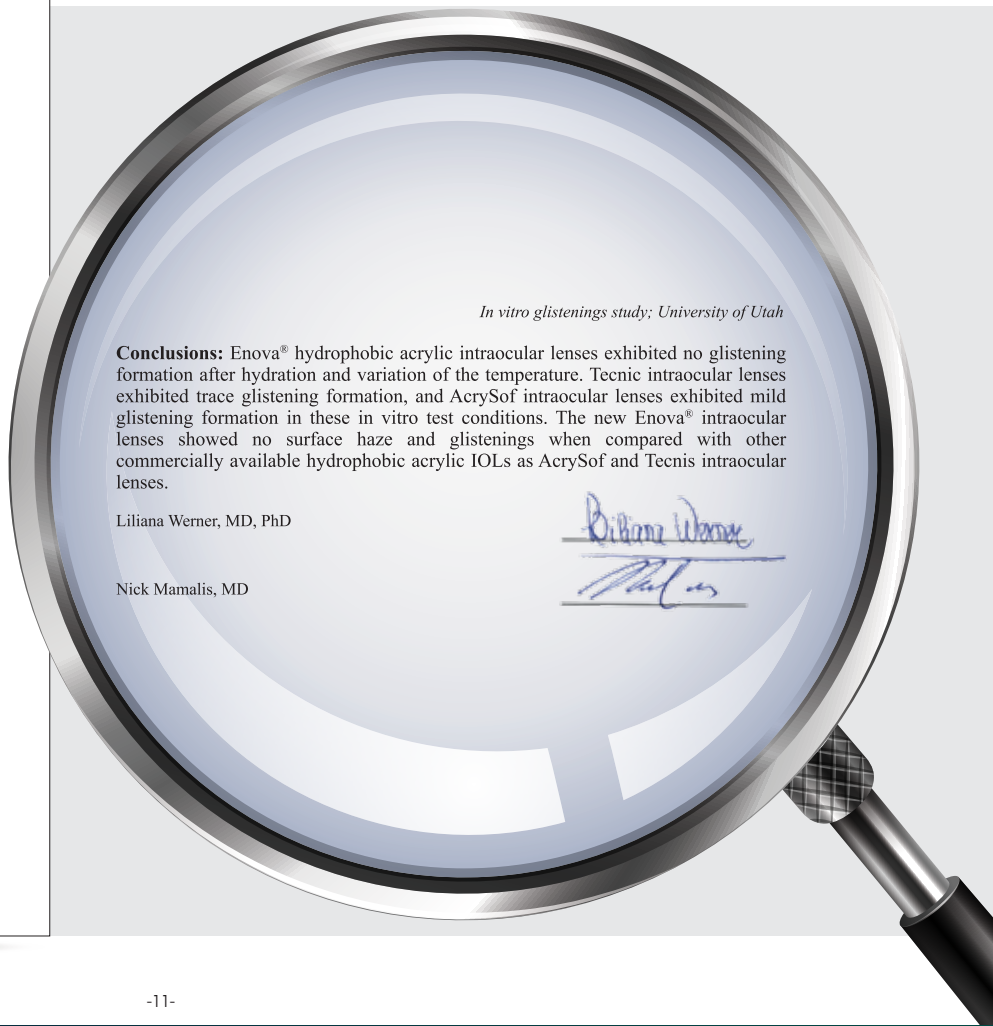
- Enova® IOLs: No glistening, no haze.
- Acrysof IQ IOLs: Mild optic haze (giving the lens a slight yellowish/brownish discoloration under light microscopy) and mild glistening formation. Diameter of the glistenings: 10 to 20 microns.
- Tecnis IOLs: Moderate central optic haze (giving the central part of the optic a yellowish/brownish discoloration under light microscopy) and trace glistening formation. Diameter of glistenings: 25 microns.

In an attempt to quantify glistening formation within the lenses, the number of glistenings or microvacuoles (MV) that were well focused in the X200 light photomicrographs (area of 0.35 mm^2) were counted, and the results were converted to MV/mm^2.

IOL	MV/mm^2 Week 1
Enova®	0
AcrySof IQ	8.7
Tecnis	2.9

Table 1 : Number of Microvacules Converted to MV/mm^2

THE UNIVERSITY OF UTAH



No Pre-Conditioning Required

A polymer's Glass Transition Temparature (Tg) is reached when the polymer changes from a rigid material to a soft material. Having a Tg of –2.0°C, all IOLs with the unique Enova® material undergo a gentle and controlled unfolding process below standard operating room temperatures.

Thus, no warming or special pre-conditioning is required.

IOL	Tg (°C)	Glistening	Packaging State
enova®	–2.0	No	Dry
AcrySof Vivity®	15	Yes	Dry
Tecnis®	14	Yes	Dry

Ready-to-Go Preloaded System

Due to its patented Rotaryjet technology, the Enova Advanced™ Hydrophobic IOL with the Rotaryjet Preloaded IOL system provides a safe, efficient, and user-friendly delivery procedure. Its smart design allows for reliable surgery with smooth IOL implantation and reduced post-op risks.

Step 1

Apply BSS, followed by the OVD

Step 2

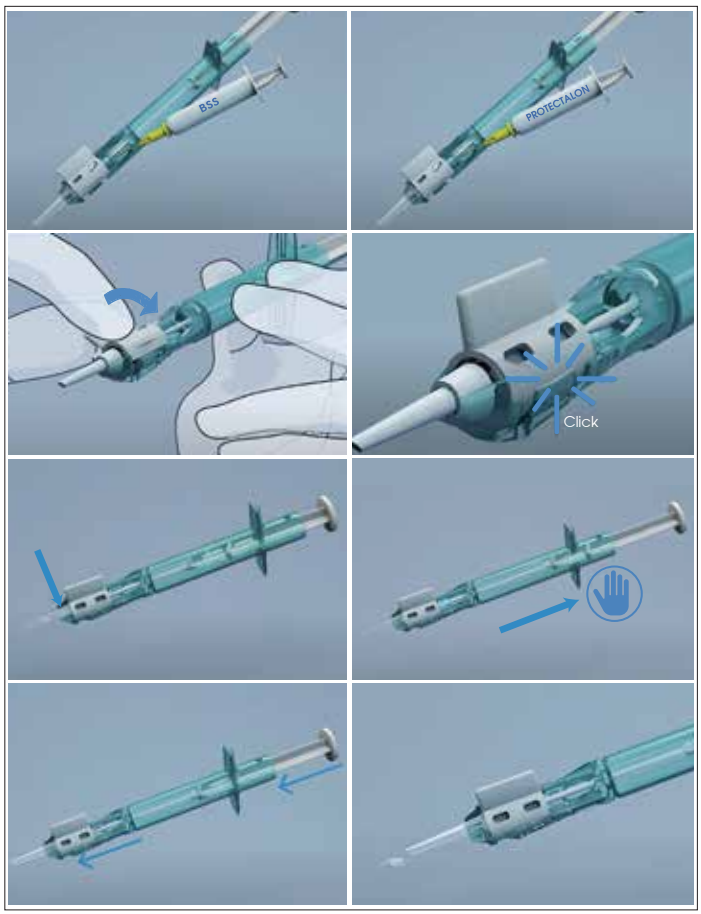
Rotate the mechanism through 90 degrees until you hear a 'click'

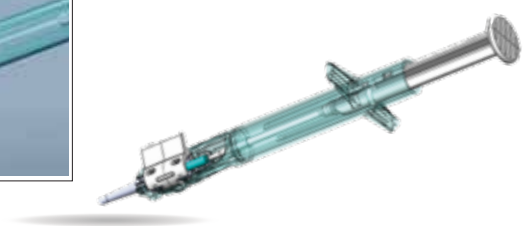
Step 3

Push the injector until the blue cushion is visible through the cartridge. Then, pull it back gently until it is automatically stopped by the barrier

Step 4

Now it is ready to inject



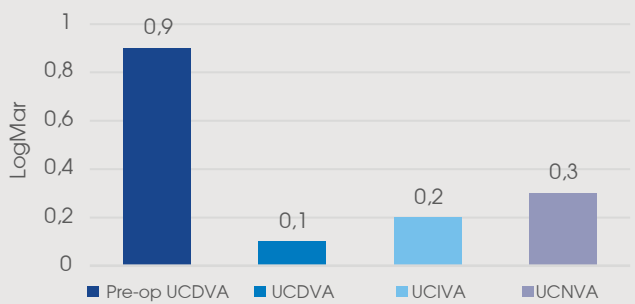


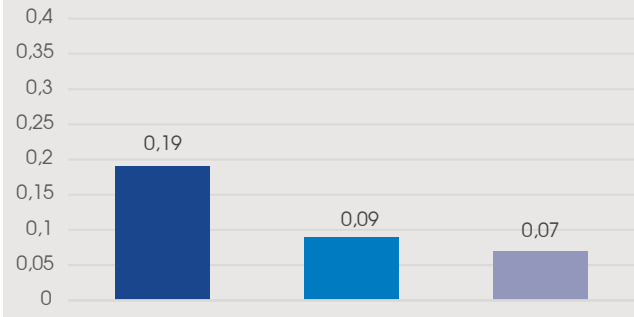
*Patented in

Early Multi-Center Clinical Results

Number of eyes n=92
Number of patients n=63

VISUAL ACUITY ANALYSIS





Conclusion

The first post-operative visual acuity results are extremely positive regarding the far and intermediate vision and even basic reading capabilities when it comes to the near vision.
Refractive errors were in an acceptable range of -0.50 D and +0.50 D. No glistening was observed.
IOL Centralization is very good. No decentralization and tilt were observed.
No adverse event was reported. Early patient satisfaction rates were excellent.

Technical Features

Enova Advanced™				
Material	Single Piece, 100% Glistening-Free, Hydrophobic Acrylic, Dry-Packed			
Optic Design	Non-diffractive EDOF IOL with Light Tailoring Technology, Biconvex Aspheric, Aberration Neutral			
Refractive Index	1.53 (546 nm)			
Glass Transition Temperature (Tg)	-2°C			
Water Content	7%			
Optic Diameter	6.00 mm			
Overall Diameter	13.00 mm			
Haptic Design	C-Loop			
Haptic Angle	0°			
Spherical Power Range	+10.00 D to +30.00 D (with 0.50 increments)			
Enova Advanced™ Toric				
Spherical Power Range	+10.00 D to +30.00 D (with 0.50 D increments)			
Cylindrical Power Range	ADC3	ADC4	ADC5	ADC6
	+1.50 D	+2.25 D	+3.00 D	+3.75 D
Optical Power Addition	2.2 (approx.)			
Lens Color	Clear			
Photo Protection	UV Filtration			
Recommended Constants	Ac A constant: 118.0 SRK-II : 119.03 SRK-T: 118.7 Haigis a0, a1, a2: 1.11, 0.4, 0.1 HofferQ pACD: 5.33 Holladay sf:1.55 Barrett Universalll LF:1.73			
Recommended Injector System	Rotaryjet Preloaded System			

enova
Advanced™
Preloaded Extended Depth of Focus (EDOF) IOL

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VSY BIOTECHNOLOGY
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