

NEW-TECHNOLOGY MONOFOCAL IOLS

An overview of the latest entries in this emerging category.

BY MICHELE CORRY, ASSOCIATE EDITOR

Monofocal lenses continue to be the most common type of IOL used in cataract surgery because of the consistent visual outcomes they produce and their relative affordability compared to premium alternatives. Monofocal lenses, however, offer functional uncorrected vision at fewer ranges than premium IOLs. In effort to bridge this gap, new-technology monofocals have been designed to offer focusing power at intermediate distance, and these products are becoming increasingly popular. This article provides an overview of the available latest monofocal IOL technologies.

IPure Preloaded Aspheric Monofocal

The IPure preloaded aspheric monofocal (Beaver Visitec International) is available in both one- and three-piece designs. According to the company, the IOL's patented aspheric optic provides high-contrast, high-quality vision in various lighting conditions while maintaining natural corneal depth of focus for patients undergoing cataract surgery. The IPure preloaded aspheric monofocal IOL is currently available in the United States.⁴



Photo courtesy of Beaver Visitec International.

enVista One-Piece Hydrophobic Acrylic

The enVista (Bausch + Lomb) is an aspheric aberration- and glistening-free one-piece hydrophobic acrylic monofocal IOL. It features a continuous 360° posterior square edge. According to the company, this lens provides excellent contrast sensitivity and vision quality, and a uniform power from center to edge allows it to compensate for mild decentration. The enVista monofocal is available in the United States and Europe.¹

Tecnis Eyhance IC800

A continuous change in power from the periphery to the center of the Tecnis Eyhance IC800 monofocal IOL (Johnson & Johnson Vision) reportedly improves intermediate vision while maintaining distance image quality. According to the manufacturer, this IOL's continuous power profile is based on a higher-order asphere, resulting in a highly favorable contrast profile. The Tecnis Eyhance IC800 monofocal IOL is available in Europe and Canada.²



Photo courtesy of Johnson & Johnson Vision.

LuxGood Preloaded

The LuxGood preloaded IOL (Bausch + Lomb) features Pure Refractive Optics technology, meaning it is based only on refractive profiles and has no diffraction areas. This monofocal lens is available both with and without a proprietary acrylic hydrophobic crosslinked copolymer material with a UV absorber to protect the eye against damaging UV light. The platform has a four-point fixation haptic design to achieve lens centration and rotational stability, resist posterior capsular opacification, and improve refractive predictability. The LuxGood preloaded IOL is available in Europe.³



Photo courtesy of Bausch + Lomb.

RayOne EMV

The RayOne EMV (Rayner) was developed in collaboration with Graham D. Barrett, MB BCH SAF, FRACO, FRACS, specifically to enhance the outcomes achieved with monovision.

The lens includes a patented nondiffractive optic profile that reportedly provides a depth of field similar to that provided by many presbyopia-correcting IOLs but with fewer dysphotopsias and a shorter period of neural adaptation. The RayOne EMV is offered on a hydrophilic optic platform through the RayOne fully preloaded two-step injector and is currently available in countries that accept the CE Mark.⁵



Photo courtesy of Rayner.

Xact Mono-EDOF

Made of a hydrophobic acrylic material, the Xact Mono-EDOF IOL (Santen) is a monofocal lens with four diffractive rings and a broad single peak of focus. According to the manufacturer, this lens offers patients exceptional uncorrected intermediate and distance vision and contrast sensitivity equivalent to that with a monofocal IOL. The Xact Mono-EDOF IOL also reportedly has a higher tolerance of decentration and tilt than a conventional extended depth of focus IOL. The Xact Mono-EDOF IOL is available in Europe.⁶ ■



Photo courtesy of Santen.

1. enVista IOL. Bausch + Lomb. 2020. Accessed December 14, 2020. www.bausch.com/ecp/our-products/cataract-surgery/lens-systems/envista-iol

2. Johnson & Johnson Vision launches TECNIS synergy and TECNIS Eyhance intraocular lenses (IOLs) for the treatment of cataracts in Canada [news release]. Johnson & Johnson Vision. August 11, 2020. Accessed December 10, 2020. www.jjvision.com/press-release/johnson-johnson-vision-launches-tecnis-synergy-and-tecnis-eyhance-intraocular-lenses

3. Bausch + Lomb Announces European launch of a new platform of preloaded IOLs, LuxSmart and LuxGood. Eyewire News. May 27, 2020. Accessed December 10, 2020. eyewire.news/articles/bausch-lomb-announces-the-launch-of-a-new-platform-of-preloaded-iols-luxsmart-and-luxgood/

4. First and only preloaded aspheric monofocal IOL available in both a 1-piece and 3-piece. BVI. 2020. Accessed December 14, 2020. www.bvimedical.com/brands/ipure/

5. RayOne EMV product. Rayner. Accessed December 10, 2020. rayner.com/en/iol/monofocal/rayone-emv/

6. Santen introduces the xact Mono-EDoF in Europe – the monofocal IOL with true extended depth of focus [news release]. Santen. September 16, 2019. Accessed December 10, 2020. www.santen.eu/our-vision/emea-news/santen-introduces-xacttm-mono-edofm-europe-monofocal-iol-true-extended-depth