

# NEW-TECHNOLOGY MONOFOCAL IOLS

An overview of the products in this emerging category.

BY MICHELE CORRY, ASSOCIATE EDITOR

## Alsee

According to Alsanza, the Alsee is a dry-packed, glistening-free hydrophobic acrylic IOL with 24-hour aspherical correction. It features Alsanza's Arms2Fit haptic design, which consists of a narrow junction angle, stress dimmer curves on the inner arms, and a flexible yet strong design, according to the company. The Alsee IOL is available in Europe.<sup>3</sup>

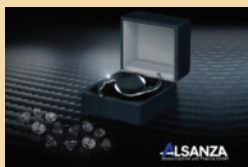


Photo courtesy of Alsanza.

## Aspira

The Aspira IOL (HumanOptics) is a hydrophilic, glistening-free, acrylic, UV-absorbing, foldable posterior chamber IOL with optional blue-light protection. It is available in one- and three-piece designs.

The one-piece Aspira IOL features an aspheric anterior surface, a 360° lens epithelial cell barrier, and a high-definition optic within the standard diopter range. The lens is also available in an XL delivery range of -20.00 to 60.00 D in 1.00 D steps and 10.00 to 30.00 D in 0.50 D steps.

The three-piece Aspira features an extended optic diameter of 13.0 mm and highly flexible polyethersulfone C-loop haptics that reportedly optimize axial stability and radial flexibility and are suitable for placement on sensitive sulcus tissue. It is designed with an aspheric posterior surface, a 360° sharp posterior edge, and high-definition optics manufactured using subnano-resolution technology, which, according to the company, can more precisely reproduce the calculated curvature for the optic than conventional manufacturing processes.

The Aspira IOLs are available in Europe.<sup>1</sup>



Photo courtesy of HumanOptics.

## Enova

According to VSY Biotechnology, the Enova is a dry-packed, 100% glistening-free hydrophobic acrylic IOL that does not require prehydration and storage in saline solution. The lens' unique material reportedly allows uniform hydration of specific sites to have controlled water uptake and resistance to glistening formation. Because of its low glass transition temperature (-2 °C) and optimized modulus of elasticity, the lens unfolds gently and in a well-controlled fashion, requiring no warming or special conditioning, according to the company. The Enova IOL is available in Europe.<sup>2</sup>

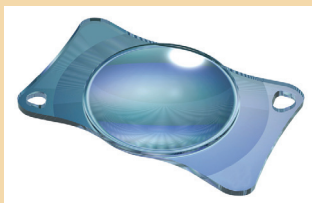


Photo courtesy of VSY Biotechnology.

## enVista

According to Bausch + Lomb, the enVista is an aspheric aberration- and glistening-free one-piece hydrophobic acrylic monofocal IOL. The lens features a continuous 360° posterior square edge that reportedly provides excellent contrast sensitivity and vision quality and uses a uniform power from center to edge, which allows it to compensate for common levels of decentration, per the company. The enVista monofocal is available in the United States and Europe.<sup>4</sup>

## LuxGood Preloaded

The LuxGood preloaded IOL (Bausch + Lomb) features Pure Refractive Optics technology, meaning it is based only on refractive profiles and has no diffractive areas. This monofocal lens is available both with and without a proprietary acrylic hydrophobic cross-linked 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 IOL is available in Europe.<sup>5</sup>



Photo courtesy of Bausch + Lomb.

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 order to bridge this gap, new-technology monofocal IOLs have been designed to offer focusing power at intermediate distance, and these products are becoming increasingly popular. This article provides an overview of the latest monofocal IOL technologies available.

### RayOne EMV

RayOne EMV (Rayner) was developed in collaboration with world-renowned surgeon Professor Graham Barrett specifically to enhance patient outcomes achieved with monovision. The lens includes a patented nondiffractive optic profile, reportedly enabling a depth of field similar to with many presbyopia-correcting IOLs but with reduced dysphotopsia and a shorter period of neural adaptation. RayOne EMV is offered on a hydrophilic optic platform through the RayOne fully preloaded two-step injector and is available in countries that accept the CE Mark.<sup>6</sup>



Photo courtesy of Rayner.

### Tecnis Eyhance ICBOO

A continuous change in power from the periphery to the center of the Tecnis Eyhance ICBOO 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 monofocal IOL is available in Europe and Canada.<sup>7</sup>

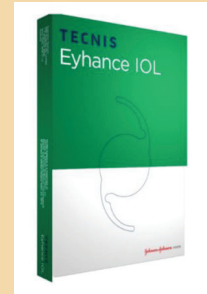


Photo courtesy of Johnson & Johnson Vision.

### Xact Mono-EDOF

Made of a hydrophobic acrylic material, the Xact Mono-EDOF (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 throughout Europe.<sup>8</sup>



Photo courtesy of Santen.

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## Chromophore IOLs: What Does the Evidence Say?

*Exploring the balance of trade-offs.*

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## DIGITAL EXCLUSIVE!

### Article in Brief

- ▶ The ideal transmission profile of chromophores involves a balance of trade-offs in visual quality and function, phototoxicity, and circadian rhythm. No chromophore is ideal under all circumstances.
- ▶ Chromophore IOLs can improve night vision symptoms by reducing light scatter.
- ▶ Chromophores that filter blue light can have a negative effect on vision in low light and on color perception.
- ▶ For optimal photoprotection, violet light should be maximally filtered. Blue-light filtering can also be protective but to a lesser degree.
- ▶ Reports have been inconsistent regarding the impact of blue-light-filtering chromophore IOLs on circadian rhythm.



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