

Inspire Your View

Premium Multifocal Options

WRITER Nicole Grasso



Personalised Progressive
Designs by Hoya

As we age it is inevitable that our crystalline lens will gradually harden, making it difficult for our eyes to accommodate to create a clear image for up-close tasks. When our patients' arms can't seem to extend quite far enough to get text into clear focus, we need to consider what visual aids will be best suited to their lifestyle needs.

Nicole Grasso reviews the options for multifocal lenses and contact lenses.

Since 1959, we have been able to mimic natural vision in a seamless design, providing a blend of function and fashion in a single pair of spectacles.

Manufacturers use advanced computer-aided design and simulation tools to create and refine progressive lens designs. Additionally, advancements in manufacturing technologies, such as freeform surfacing, allow for customisation and precise control over the lens's optical properties, further improving the performance and comfort of progressive lenses. Overall, the science behind progressive design ophthalmic lenses combines optics, geometry, and a deep understanding of the visual system to provide wearers with clear vision at all distances. From the incorporation of artificial intelligence (AI) to neuroscience studies on how our brains detect distortion, the production of lenses has evolved, and we should evolve our dispensing along with it.

As Adam Fletcher from CR Surfacing said, "The introduction of freeform over the last 15 years has provided a freedom in lens design, manufacturing processes, and end user satisfaction. Benjamin Franklin created the bifocal – freeform is the single greatest achievement since."

With a multitude of lens designs available, lifestyle requirements play a huge role in selecting the best progressive design for your patient. We should never assume that the lens they are currently wearing is their lens of choice; the patient may not be aware of a lens that is better suited to their needs. There are specific progressive lenses with biased focal lengths depending on the patients' main visual concerns. Progressive lenses are also now available in an array of corridor lengths, opening a wider range of frames to patients rather than the traditional deep-set lenses.

Lens Distortion

In all progressives, the main concern is distortion in the lens. Advanced digital lens designs use sophisticated algorithms to reduce this distortion and improve visual clarity.

Justin Chiang, of Tokai, said it was "impossible" to eliminate distortion from progressive lenses. "However, using neuroscience, it is possible to drive the distortion to a level where the brain does not care or is unaware. By using neuroscience principles, Tokai Optical has been able to develop lenses that are both comfortable and effective," Mr Chiang said.

Rodenstock has taken tailored lenses to another level with its B.I.G. Norm lenses. Nicola Peaper of Rodenstock explained, "the DNEye scanner takes measurements so that Rodenstock can build a biometric eye model

of the patient's individual eye and then use that to calculate the spectacle lens".

"It takes over 500,000 DNEye scans that we have in our database and uses AI to calculate an approximate biometric eye model from just the patient script, add, and PD (pupillary distance)."

Zeiss has harnessed Augmented Design technology in the production of its progressive lenses with the Zeiss SmartLife Progressive Individual3.

"The lenses make use of Zeiss Intelligence Augmented Design technology to match an individual wearer's data to a set of more than 12.5 million data points of visual behaviour in specific age groups. This allows us to predict how an individual will use their eyes in daily life and we are able to create their best matched lens design," said Jess Kingsley of Zeiss.

Almost three-quarters (73%) of presbyopes have a different prescription for their right and left eyes. Hoya uses Binocular Harmonization Technology and 3D Binocular Vision to balance the addition power difference between the lenses. This innovative 3D Binocular Vision significantly reduces distortion and swaying effects along all dimensions. The Hoyalux iD MySelf premium progressive lens is easy to adapt to and gives more accurate vision corrections.

Selecting high quality, digitally optimised lenses, and consulting with lens representatives, will ensure that you get the best progressive lenses for your patients' needs, providing clear and comfortable vision at all distances.

IMPORTANT MEASUREMENTS

Traditionally, labs needed monocular PDs and monocular fitting heights to edge and fit a pair of lenses into a selected spectacle frame.

With the improvement in lens technology, some extra measurements may be required for these lenses to perform as intended. An 'as worn' progressive lens needs tailored measurements to compensate for the prescription to suit the customers' visual needs. The back vertex distance, pantoscopic angle, and face form angle should all be measured to account for the patient's facial anatomy when in the position of wear. Potentially, the most critical part of progressive spectacle lens measurements is adjusting the frame into final fit to ensure all your tailored measurements are taken in the correct position.

For each lens design we should consider the patient's posture, direction of gaze, and head and body movement to analyse how best to position the lens for their specific movements.

THE SHIFT TO CONTACT LENSES

Keep in mind, however, that spectacles may not be a patient's first choice of progressive

correction anymore. As Amelia Haywood from Bausch and Lomb explains, “we have really noticed a shift in the market with upward trend in multifocal contact lenses penetration”.

“This correlates to the contact lens millennials now hitting presbyopia stage and wanting more options,” she said.

From a store front perspective, we are seeing an uptake in presbyopic patients trying contact lenses for the first time. With an increased variety of progressive contact lens designs available, more customers are willing to ditch the face furniture and experience the freedom progressive contact lenses can provide.

Sometimes, people expect multifocal contact lenses to provide perfect near and distance vision simultaneously, leading to disappointment. Multifocal lenses typically offer a balance between near and distance vision. Optometrist Dianne Duong described multifocal contact lenses as “a great alternative to spectacles when they work well”. However, she warned that “not everyone is suitable for them, and expectations need to be managed well”.

To provide simultaneous vision, your brain needs to select the right focus for what you need

to see. This can take a few weeks of adaption and may require a follow-up visit in store.

Aspheric multifocal contact lenses consist of bi-aspheric surfaces to create an even transition from near to distance, being the closest adaption to progressive spectacles.

High quality materials are used to provide excellent oxygen permeability and moisture retention. These features promote ocular health, reduce dryness, and enhance wearing comfort, especially for extended wear. Bausch and Lomb’s Ultra for Presbyopia monthly silicone hydrogel lenses use Advanced MoistureSeal Technology to achieve oxygen transmissibility. The lens offers moisture retention for a full 16 hours, and helps to prevent dehydration blur. In a study conducted by Bausch and Lomb, out of 441 patients, 90% agreed their near and distance vision was clear and 91% of patients agreed intermediate vision was clear when using a computer.¹

Alcon’s Dailies Total1 Multifocal is a great option for those presbyopic patients that want an occasional break from wearing spectacles. The lens has a silicone hydrogel core that allows for breathability and is almost 100% water at the outer surface of the lens for comfort. Its SmarTears technology features

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the release of an ingredient found naturally in tears that helps stabilise the eye’s tear film.

With the increasing range of multifocal lenses and contact lenses hitting the market, you may want to try out some of the offerings below.

Nicole Grasso is a trainer at the Australasian College of Optical Dispensing and has worked in the optical industry since 2015. She is a qualified optical dispenser and a qualified trainer and assessor.

Reference

1. [bausch.com.au/contact-lenses/monthly-contact-lenses/ultra-monthly](https://www.bausch.com.au/contact-lenses/monthly-contact-lenses/ultra-monthly).

Premium Contact Lenses

Dailies Total1 by Alcon

Alcon Dailies Total1 is the first and only water gradient daily disposable multifocal contact lens for exceptional comfort¹ and seamless vision.²

To address the varying needs of your presbyopic customers, an adaptive minus power profile provides negative power at the periphery of the optic zone, allowing you to ‘push plus’ at distance. This premium contact lens is designed to improve near vision without compromising distance.³

Contact: Alcon (AUS) 1800 224 153 or (NZ) 0800 101 106

References available at [mivision.com.au](https://www.mivision.com.au)
ANZ-DTM-2300003



Acuvue Oasys Multifocal by Johnson and Johnson

Acuvue Oasys multifocal contact lenses with pupil optimised design offer exceptional visual performance^{1^} for patients with presbyopia.

These lenses have been designed to provide patients with clear vision at all distances: near, far, and in-between.¹ According to Johnson and Johnson, Acuvue Oasys is never beaten in comfort[†] and helps provide excellent quality of vision when using digital screens.²

Contact: Johnson and Johnson Vision Account Manager

[^]Compared to prior Johnson and Johnson Vision multifocal design; technology optimised for both the parameters of refractive error and add power for a multitude of viewing distances and light levels.

[†]Helps protect against transmission of harmful UV radiation to the cornea and into the eye.

References available at [mivision.com.au](https://www.mivision.com.au)



Ultra for Presbyopia by Bausch and Lomb

Bausch and Lomb’s Ultra for Presbyopia monthly silicone hydrogel lens uses Advanced MoistureSeal Technology¹ to create a lens with unsurpassed oxygen transmissibility² and a Dk/t of 163.² The technology also optimises wettability and creates a high-water content of 46%.² Bausch and Lomb Ultra for Presbyopia offers a 3-Zone progressive design, which provides a seamless transition between three zones³ to allow easy adaption between key distances.

Designed for a successful first time fit,⁴ the Ultra for Presbyopia offers two add powers⁵ for ease and simplicity.

Contact: Bausch and Lomb Account Manager

References available at [mivision.com.au](https://www.mivision.com.au)

