

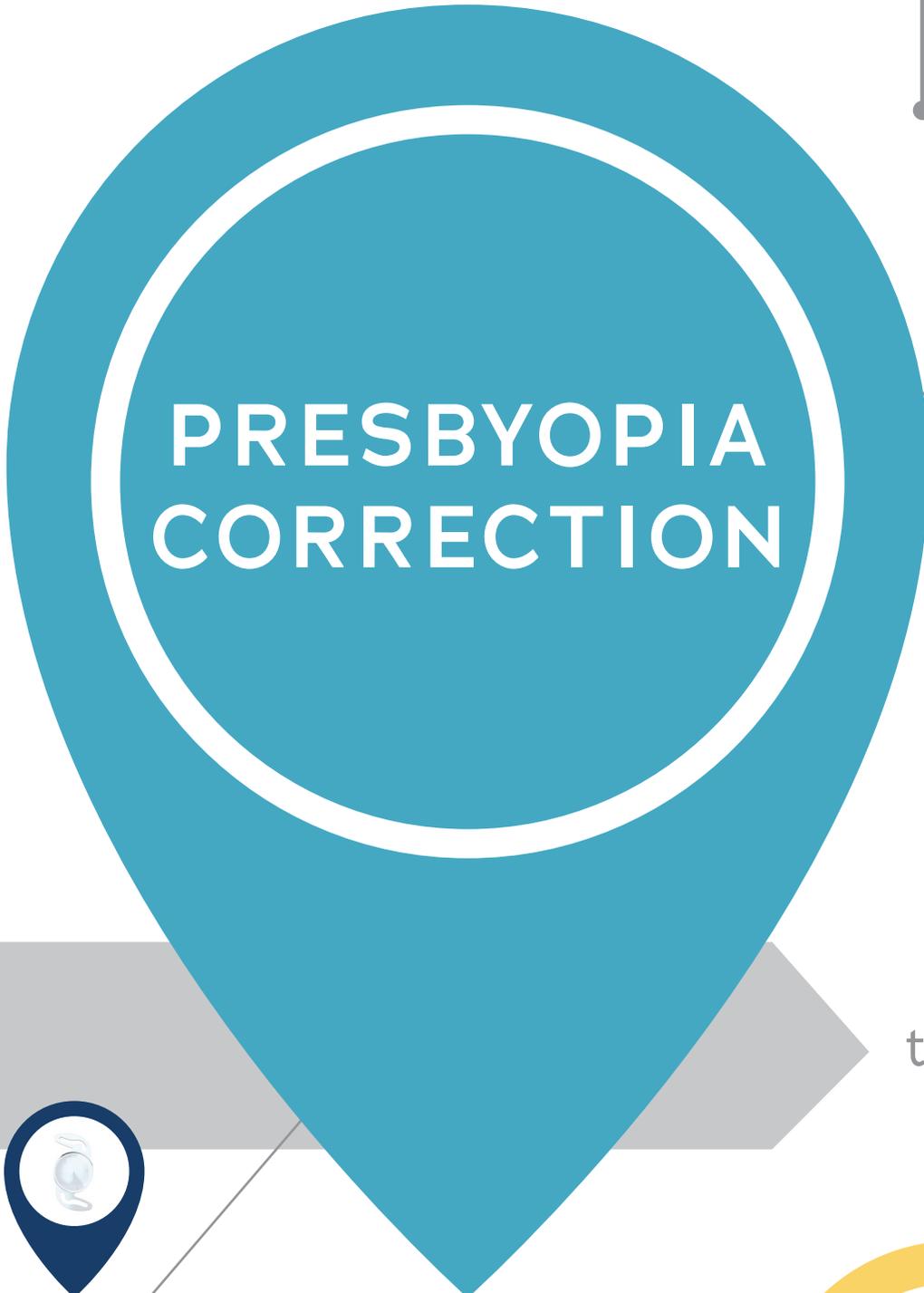
Supplement to

April 2021

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CRST EUROPE

Cataract & Refractive Surgery Today



How to Choose
the Right Solution
for Your Patients





PRESBYOPIA CORRECTION

How to Choose the Right Solution for Your Patients

The needs of cataract patients are changing, and with this change comes an increasing demand for spectacle independence and presbyopia correction. Patients now expect clear and excellent vision at all distances after cataract surgery, with particular emphasis on the near and intermediate ranges.

How do you achieve these expectations in patients who present at your practice, and how do you cater to their individual needs and unique ocular characteristics? The answer is simple: by implementing a treatment approach that incorporates various IOL solutions to meet the needs of all your patients.

Rayner's family of IOLs encapsulates a broad range of innovative presbyopia-correcting solutions, including a new non-diffractive extended range IOL that was developed in collaboration with Professor Graham D. Barrett, the RayOne EMV. This past summer, Allon Barsam, MD, MA, FRCOphth, implanted the world's first RayOne EMV IOL. In this supplement, learn from Mr. Barsam and

other leading surgeons who have extensive clinical experience with Rayner's presbyopia-correcting IOL options on how to achieve excellent long-term visual outcomes. The pearls of wisdom shared by these surgeons relay the importance of offering patients a custom vision procedure, which includes not only the premium lens but also a strategy for tear film management and the collection of patient-reported outcomes.

With its total presbyopia correction solution encompassing IOLs, OVDs, eye drops, and patient-reported outcomes software, Rayner is leading the way in ophthalmic innovation and patient satisfaction. Find out more in Rayner's Total Ophthalmic Solution Patient Pathway infographic below and in the following pages. ■

1. Ferreira TB, Ribeiro FJ. Prospective comparison of clinical performance and subjective outcomes between two diffractive trifocal intraocular lenses in bilateral cataract surgery. *J Refract Surg.* 2019;35(7):418-425.
2. RayOne Trifocal & Sulcoflex Trifocal: Leading the way to offer more patients a trifocal solution. Eurotimes, February 2019.
3. Bhogal-Bhamra GK, Sheppard AL, Kollit S, et al. Rotational stability and centration of a new toric lens design platform using objective image analysis over 6 months. *J Refract Surg.* 2019;35(1):48-53.
4. Data on file with Rayner.

Learn about the latest RayOne EMV clinical outcomes on page 10-11. **RayOne EMV is now FDA approved!**



PRE-SURGERY SURGERY RECOVERY POST-SURGERY

- RayOne Trifocal**
 - Patented diffractive trifocal design for industry-leading 11% light loss¹
 - Less photic phenomena and increased patient satisfaction²
- RayOne Trifocal Toric**
 - Superb centration with only 0.08 mm average centration offset at 3 to 6 months postoperative³
 - Excellent rotational and torsional stability with only 1.83° mean rotation at 3 to 6 months postoperative³
- Sulcoflex Trifocal**
 - A reversible, supplementary trifocal IOL for cataract and pseudophakic patients
 - Comparable visual acuity results to Rayner's capsular bag RayOne Trifocal²
- RayOne EMV**
 - Up to 2.25 D of extended depth of vision (with 1.00 D offset)⁴
 - Developed with Professor Graham D. Barrett to specifically enhance monovision patient outcomes
- AEON**
 - The only eye drop family indicated for use before and after cataract surgery
 - All AEON products are preservative- and phosphate-free
- RayPRO**
 - Telehealth solution for collecting patient-reported outcomes
 - Supports accreditation, auditing, clinical studies, and the promotion of surgical services
 - Designed for GDPR and HIPAA compliance



RayOne EMV: Extended Range of Vision for Patients With or Without Monovision

When a trifocal IOL is not the answer, there are other options.

BY ALLON BARSAM, MD, MA, FRCOPHTH; AND MASARA LAGINAF, MBBS BSC (HONS), FRCOPHTH



Over the past several years, we have seen increasing interest in trifocal IOLs. These lenses represent the new gold standard of care in many instances, but they

are not indicated for every patient. Those with recalcitrant ocular surface disease, irregular corneal astigmatism, macular pathology including epiretinal membranes and age-related macular degeneration, high corneal astigmatism, pseudoexfoliation, glaucoma, and Fuchs dystrophy and other corneal diseases, for instance, typically should not receive a trifocal IOL. For that matter, they probably should not receive any other kind of traditional presbyopia-correcting IOL.

Trifocal IOLs should also not be forced on patients who do not have a strong desire for complete spectacle independence or for those who do not mind wearing reading glasses. For these patients, my IOL of choice is now the RayOne EMV (Rayner).

PERSONAL EXPERIENCE

This past summer, one of us (A.B.) performed the world's first implantation of the RayOne EMV. What drew me to this lens is that it represents a premium option for monofocality; it is designed for patients to achieve more range of vision and less dependence on glasses than they typically would with a standard monofocal lens.

The advantages of monofocal IOLs are plentiful. They are cheap, forgiving of ocular pathologies, independent of pupil size, and generally do not produce glare or halos. In order to give a useful range of vision with these lenses, many surgeons target a level of monovision. This approach, however, can have downsides. Among these are a loss of stereopsis, loss of vision in the intermediate range, and anisometropia/aniseikonia. For these reasons, many patients will not accept a modest (traditional) monovision set-up with a standard monofocal IOL, and preoperative testing for acceptance with glasses or contact lenses can be necessary.

The RayOne EMV represents an alternative to standard monofocal IOLs and also to multifocal and trifocal IOLs. Developed in collaboration with Professor Graham D. Barrett, this lens is built on Rayner's RayOne fully preloaded platform. The lens extends a patient's range of vision with a patented nondiffractive optic profile that provides a depth of field similar to many presbyopia-correcting IOLs but with reduced risk of visual symptoms including dysphotopsia and a shorter time for neural adaptation. In my experience, the lens provides reliable outcomes with high patient satisfaction. An added bonus is that it is more affordable for patients than trifocal IOLs.

CLINICAL RESULTS

To date, I have implanted the RayOne EMV in more than 100 eyes. Results with this lens are excellent. If we look at the cumulative vision in the first 24 bilateral implantations I performed with a target of emmetropia, uncorrected intermediate vision (UIVA) was N6 (J4) or better in 70% of patients. These patients all achieved N8 (J6) or better uncorrected intermediate and near vision with no loss of distance vision. Based on our results (Figures 1–3), I feel comfortable advising patients that they will be independent of glasses for intermediate tasks and for social reading tasks. I also explain to patients that they should not expect to be spectacle independent for reading small print. Some patients are able to read small print without correction, with 20% of our bilateral implantations achieving N5, but it is always better to underpromise and overdeliver.



Figure 1. Uncorrected distance visual acuity at 2 weeks postoperative.

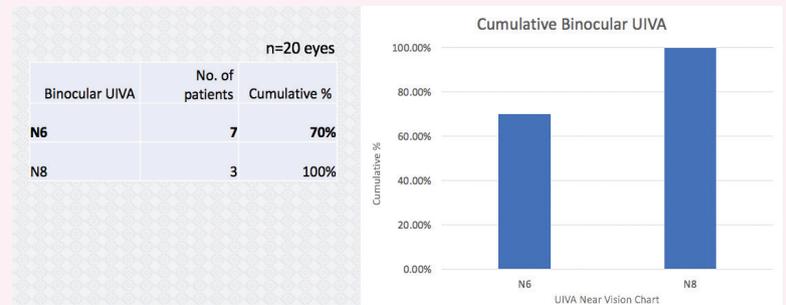


Figure 2. Uncorrected intermediate visual acuity at 2 weeks postoperative.

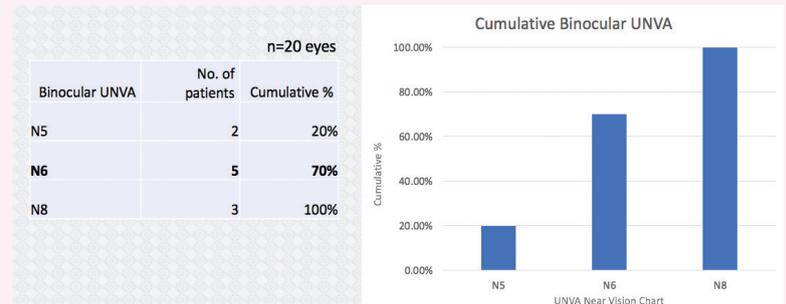


Figure 3. Uncorrected near visual acuity at 2 weeks postoperative.



There have been no complaints from patients about dysphotopsias or quality of vision and no compromise in distance vision. Overall, I have found that this lens achieves the distance vision one would expect with a monofocal lens. Additionally, I have not needed to perform a single refractive enhancement with the RayOne EMV.

The refractive accuracy with this IOL is also encouraging. Even in my earliest cases, 42% of patients were between -0.50 to -0.14 D and 46% were between -0.13 and +0.13 D of the target refraction.

PATIENT COUNSELING

Many patients understand that a standard monofocal IOL will either provide good distance vision or good reading vision, but they don't think about the consequence of the loss of intermediate vision, particularly in a traditional monovision set-up. In my experience, patients who are not counseled on this loss will be unhappy about that postoperatively.

Another important part of the informed consent process is counseling patients on the benefits and drawbacks of all IOLs. The aspheric optic of the RayOne EMV induces a small amount of extra positive spherical aberration designed to give patients increased depth of focus without compromising their quality of vision. Patients must understand, however, that spectacle correction may be required for reading small print.

The RayOne EMV is my go-to lens because it provides almost all patients with good uncorrected intermediate vision without sacrificing distance vision, and patients may also gain useful near vision. I don't believe that there's another monofocal IOL available like this. An added benefit is that it does not require the chair time that is typically spent counseling patients on a trifocal IOL.

If using a traditional monovision approach, the best patient population to start with would be those who do well with monovision contact lenses or spectacles. Personally, I do not like to target significant monovision—in other words, more than 1.50 D of anisometropial difference between the two eyes—because it can increase the chance that a refractive enhancement will be needed (Table).

The only patients for whom I would shy away from using this lens would be those with specific contraindications, such as when there is concern over the centration of the lens (zonular problems), those who want total spectacle independence, and those with significant corneal astigmatism (a toric version is not currently available).

PREOPERATIVE CONSIDERATIONS

With the RayOne EMV, I use the same A constant that I use for all of the IOLs on the RayOne platform, which is 118.6 with the SRK-T formula. I've found that the postoperative refraction can be slightly more myopic than you might expect. The manufacturer has confirmed that this is an expected function of the extra positive spherical aberration on the optic. I have observed

TABLE. TYPES OF MONOVISION

Type of Monovision	Mini	Modest	Full/Traditional
Diopter Offset (differential in refractive target)	0.25 to 0.75 D	0.75 to 1.50 D	1.50 to 2.50 D

that, with this lens, a plano outcome is not required to achieve excellent distance vision. This is presumably due to the broader refractive landing zone. Rather than targeting 0 or the closest negative number to what is expected in the dominant eye, with this lens I target the closest positive number to what is expected. I now target about -0.25 to -0.50 D in the nondominant eye.

Using the RayOne EMV with this low amount of monovision will still give the patient good distance vision if the refractive target is not spot on in the dominant eye. It is a very forgiving IOL.

PRACTICE PEARLS

Initially, I targeted emmetropia bilaterally with the RayOne EMV. Over time, I found that the lens is forgiving of mini-monovision. Now, I target on average -0.37 D in the nondominant eye. With this target, the lens provides about an extra 1.50 D of depth of focus compared to a standard monofocal IOL. This amount of extra depth of focus, paired with a slightly myopic aim, helps patients achieve significantly more reading vision in their nondominant eye, without compromising intermediate and distance vision. Patients also have a better chance of achieving spectacle independence for near-vision tasks. I wouldn't expect them to be able to read small print in a newspaper or book for extended lengths of time, but they may be able to scan text or see something up close. Most patients are ecstatic with this.

I have also been using the RayOne EMV more often in my laser vision correction patients. I find that patients who already have some negative spherical aberration do well with this lens because it improves their quality of vision. And in patients with a small amount of positive spherical aberration, this lens will amplify that and increase their depth of focus.

There remains a huge unmet need in presbyopia correction. Many patients and even some cataract surgeons don't think about refractive cataract surgery as a treatment for presbyopia. But patients' visual demands and expectations can be met with a variety of IOL designs, including the RayOne EMV. Lens technologies can make a huge difference to the lives of our patients, and I think they should always be considered as a strategy for refractive correction, including presbyopia.

CONCLUSION

The RayOne EMV can easily be the lens that helps surgeons go from being a standard lens surgeon to a premium lens surgeon. It is a natural, easy transition for most surgeons to make, and it provides patients with good quality distance and intermediate vision along with useful near vision for many, particularly with a mini-monovision approach. ■



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Catering to the individual needs and ocular characteristics of cataract patients is crucial. The only way to meet the expectations of all patients is to incorporate a treatment approach that includes a broad range of IOL solutions. Rayner's line of innovative presbyopia-correcting IOLs ensures that you have a solution for every patient (Figure). To learn more about the company's market-leading presbyopia-correcting lens portfolio and total IOL solution, contact your local Rayner representative today or email marketingteam@rayner.com.

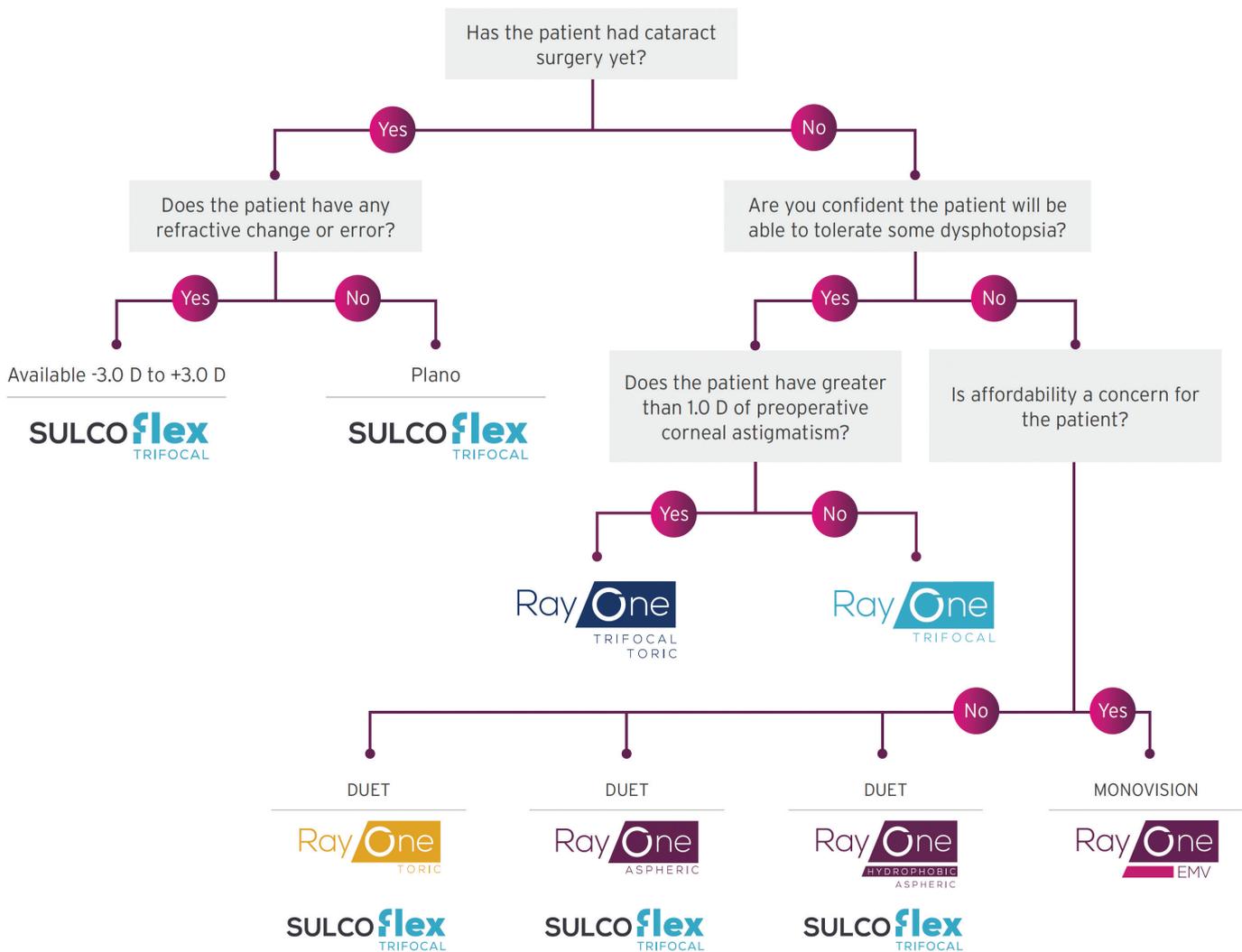


Figure. Rayner's line of innovative presbyopia-correcting IOLs.

Disclaimer: Nothing presented herein is intended to give instruction or guidance on the use of any Rayner products; it is not designed to replace a surgeon's independent judgement about the appropriateness or risks of a procedure for a given patient. Rayner does not endorse off-label use. Users must refer to the product labelling and instructions for use for Rayner products in all cases.