

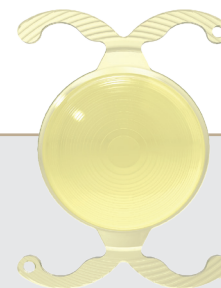
Sponsored by PhysiOL
www.finevisiontriumf.com

The FineVision Triumf IOL: The First Lens Combining Trifocal Technology With EDOF Optics

A detailed description of the lens and a report on early clinical results.

BY DAMIEN GATINEL, MD, PHD; AND ROBERT EDWARD ANG, MD

The FineVision IOL (PhysiOL), launched more than 9 years ago, was the first trifocal IOL available in the world. The concept of a trifocal lens technology represented a solution to the intermediate vision problems that many patients experience with multifocal and bifocal IOLs. After much success with the introduction of the FineVision trifocal IOL in 2010, a new innovation, the FineVision Triumf, was recently unveiled. In this article, readers get a firsthand look at the design of the lens, as well as an overview of the early clinical results and patient satisfaction scores.



FINEVISION TRIUMF IOL: DESIGN DETAILS

BY DAMIEN GATINEL, MD, PHD



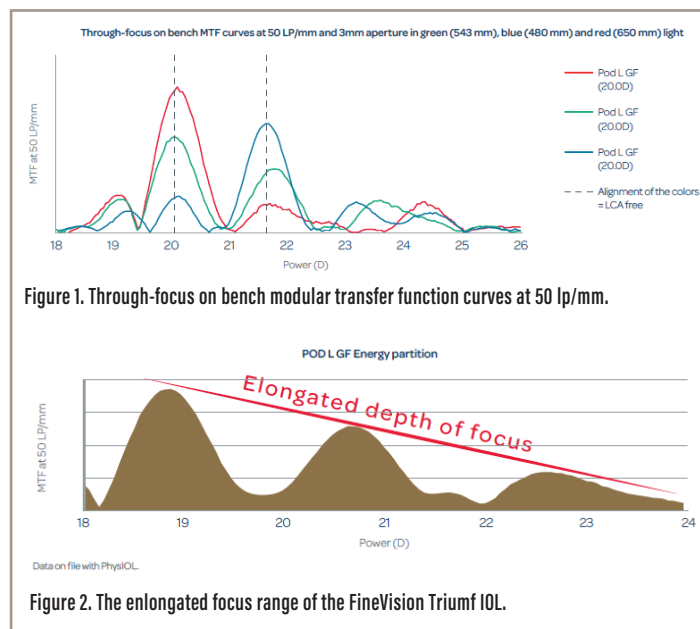
The first FineVision trifocal IOL was implanted in March 2010. In less than a decade after the launch of the FineVision IOL, trifocality has become the gold standard in premium IOLs in Europe and Asia. According to ESCRS Clinical Survey data, trifocal IOLs accounted for 45% of the market share in 2017, and they have almost replaced classic bifocal IOLs in our practices.

Over the years, results with the FineVision trifocal IOL have continued to be encouraging, and this lens has continued to evolve with the latest evolution, the FineVision Triumf (Pod L GF). The FineVision Triumf IOL is designed to broaden the indications of premium trifocal lens technology. Another idea behind this lens design is to further increase the optical quality that patients experience, especially for distance and intermediate vision.

The FineVision Triumf is the first extended depth of focus (EDOF) trifocal IOL created with PhysiOL's proprietary glistening-free hydrophobic acrylic lens material. The overall diameter and the optic diameter of the FineVision Triumf are 11.4 and 6 mm, respectively, and the lens is UV- and blue light-filtering.

EXPECTED BENEFITS OF THE FINEVISION TRIUMF

Expected Benefit No. 1: Improved quality of vision and contrast sensitivity. The FineVision Triumf lens' chromatic aberration-free design corrects longitudinal chromatic aberration. Like the original FineVision trifocal IOL, the FineVision Triumf is designed with two bifocal elements, one for distance and near and one for distance and intermediate. The width of the steps is the same in both lenses, with additions of 3.50 and 1.75 D for near and intermediate vision, respectively, but the step heights between the two elements are higher in the FineVision Triumf, and that's the major difference in the design. This difference in design controls chromatic aberration. What this means is it does not correct the natural chromatic aberration of the eye, but it



does correct any chromatic aberration that is introduced into the eye by the diffractive optic of the IOL (Figure 1). The expected benefit is an improvement of visual quality and high contrast sensitivity.

Expected Benefit No. 2: A full range of vision at all distances. The FineVision Triumf is a trifocal lens, meaning it improves vision from distance to intermediate, but it also has an EDOF optic, with the near power offering an elongated focus range to ensure good near vision (Figure 2). Therefore, with the EDOF/trifocal concept, the idea is to provide excellent visual quality for distance and intermediate vision, and also provide good near vision with lower risk of photic phenomena.

Expected Benefit No. 3: Fewer unwanted visual side effects from negative dysphotopsia. The FineVision Triumf has what the company calls an Edge+ design. This concave edge technology on the back surface of the lens reduces the unwanted side effects of negative dysphotopsia.

FIRST CLINICAL RESULTS WITH THE FINEVISION TRIUMF SHOW PROMISE

BY ROBERT EDWARD ANG, MD



Zoltan Z. Nagy, MD, and I were lucky to be the first two surgeons worldwide to implant the FineVision Triumf EDOF trifocal IOL, and we are now participating in a prospective multicenter study. To date, we have implanted the IOL in 78 eyes of 40 patients, and we presented results from their 6-month follow-up at the ESCRS meeting in Paris earlier this year.

Mean age of patients enrolled in the study was 65.6 ±9 years. In total, 18 of the 40 patients were Asian, and 22 were white. This is important, because Asian eyes tend to be more myopic, and this study gave us valuable information on how the IOL behaves in both populations. Visual acuity and contrast sensitivity in all patients were tested with computer-based Clinical Trial Suite software.

Target refraction in this population was plano to -0.25 D. This is important for two reasons: First, we wanted the sphere to be consistently on target to create an universal A constant, and second, slight myopic spherical equivalent aids in the patient achieving better near vision.

RESULTS

The mean monocular uncorrected distance vision (UDVA) was 20/22, with 75% of patients achieving 20/20 or better and 79% achieving 20/25 or better UDVA. When we looked at monocular best corrected distance visual acuity (BDVA), the mean was 20/20, with 11% of eyes achieving 20/16 or better and 96% achieving 20/20 or better. It is hard to obtain these results on a multifocal IOL platform, and we attribute these excellent

results to the FineVision Triumf's level of chromatic aberration, which cannot be explained by the simple optics of the lens.

Monocular uncorrected intermediate visual acuity (UIVA) was also impressive at 6 months postoperative. The mean UIVA was 20/23, with 46% of patients achieving 20/20 or better and 89% achieving 20/25 or better. When UIVA was corrected for distance, the mean was approximately 20/22, and 64% of patients achieved 20/20 or better and 89% 20/25 or better.

Regarding patients' monocular near vision with the FineVision Triumf, the mean uncorrected near visual acuity (UNVA) was 20/25. Further, 46% of patients achieved at least 20/20 and 68% achieved at least 20/25 UNVA. This result shows that the lens does not sacrifice near vision, even when the distance and intermediate vision is strong. When the influence of the slight myopia was eliminated, about 75% of patients still achieved 20/25 distance corrected near visual acuity.

From these results, we determined that the mean visual acuity through all distances is expected to be about 20/25. These outcomes in visual acuity follow the energy distribution of the FineVision Triumf EDOF trifocal IOL (Figure 3), as does the defocus curve (Figure 4). The defocus curve confirm that visual acuity outcomes from distance, intermediate, and near visual acuity tests provide patients with a very broad range of vision (monocular: -3.20 to +1.30 D [31 cm to ∞]; binocular: -3.80 to +1.50 D [26 cm to ∞]).

Patients enrolled in the study to date have been highly satisfied, with an excellent recommendation rate. All patients reported

spectacle independence for distance and intermediate, and 95.7% reported spectacle independence for near. Only 4.3% of patients reported needing glasses for near vision tasks some of the time, and none reported needing them all or most of the time.

CONCLUSION

The FineVision Triumf IOL provides very good distance, intermediate, and near vision. The defocus profile and direct visual acuity measurements for distance, intermediate, and near vision in our study confirm the energy distribution of this lens, and support its use in clinical practice. Our patients have been happy, and most have achieved total or near spectacle independence. In my experience to date, the benefits of a trifocal IOL with EDOF properties can provide your patients with the best of both worlds—and maximized vision at all distances. ■

1. Nuijts RMMA. ESCRS clinical survey data: Maximising outcomes with presbyopia and toric IOLs. <https://www.eurotimes.org/wp-content/uploads/2018/12/Premium-IOL-Supplement-Dec18Jan19.pdf>. Accessed October 23, 2019.

ROBERT EDWARD ANG, MD

- Senior Ophthalmologist and Head of Cornea and Refractive Surgery, Asian Eye Institute, Makati City, Philippines
- angbobby@hotmail.com
- Financial disclosure: Consultant (PhysiOL)

DAMIEN GATINEL, MD, PHD

- Assistant Professor and Head, Anterior Segment and Refractive Surgery Department, Rothschild Ophthalmic Foundation, Paris
- Director, CEROC, Paris
- gatinel@gmail.com
- Financial disclosure: Research grant (PhysiOL)

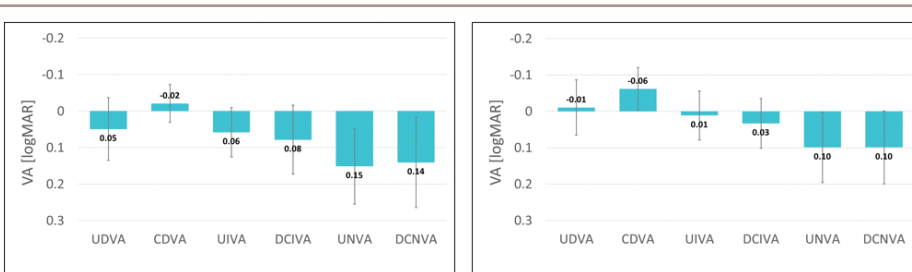


Figure 3. Monocular and binocular visual acuity outcomes at 3 months postoperative followed the energy distribution of the FineVision Triumf EDOF trifocal IOL.

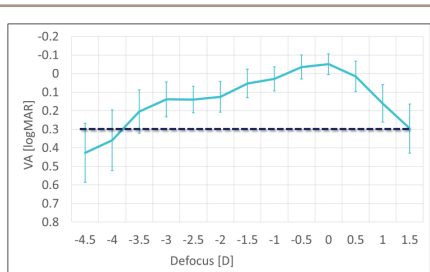
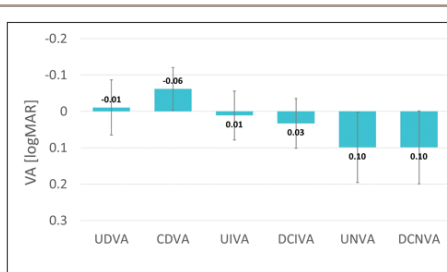


Figure 4. Defocus curve of the FineVision Triumf EDOF IOL in the study population at 3 months postoperative.