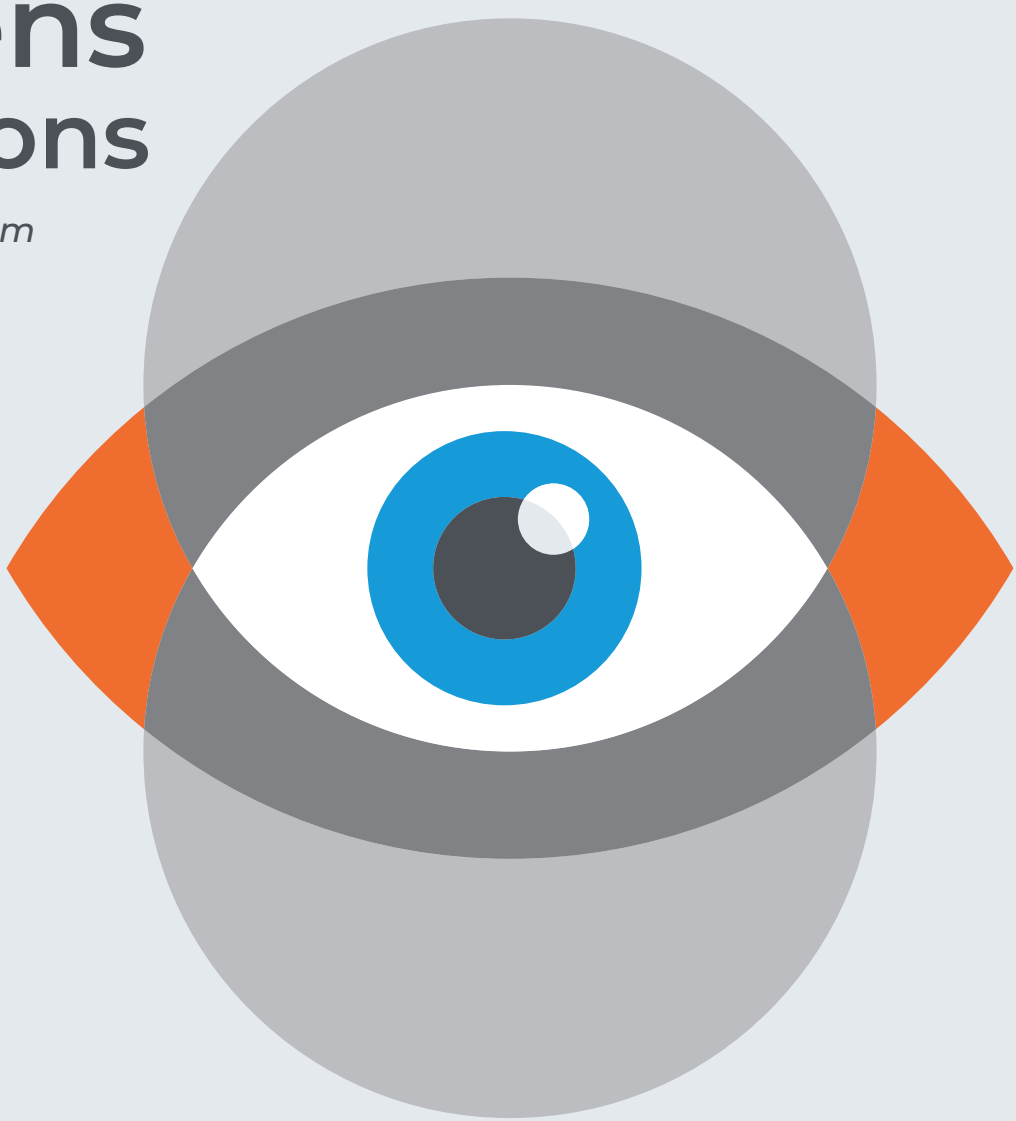
Planned
Dual Lens
Applications

Presbyopia correction from a different perspective



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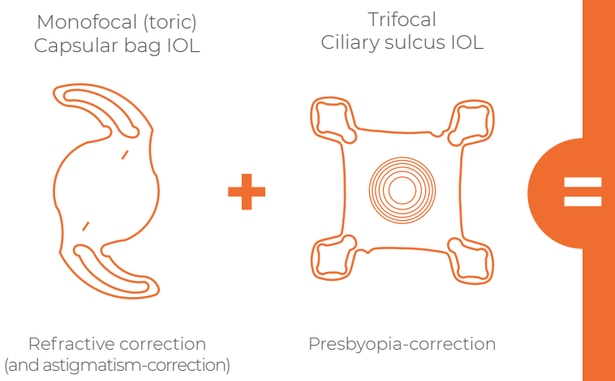
1stQ AddOn®

Background

Preoperative presbyopia, affecting a high proportion of patients above 40-45 years of age is usually treated by the implantation of multifocal intraocular lenses (MFIOLs), and hence is able to provide complete visual comfort without further visual correction.

Surgeons know the situations well, when the patient is highly motivated for presbyopia-correction, but one or two questions are raised about its long-term success. In these cases the reversibility aspect of the dual lens solution may represent a safe and low-risk management option.



Planned Dual Implantation Approach

The planned dual lens procedure is an innovative solution that places a monofocal or monofocal toric IOL in the capsular bag, and a multifocal IOL - such as the 1stQ AddOn® Trifocal in the ciliary sulcus. **The procedure can be performed simultaneously (in one session), or sequentially (in two sessions).**

More and more surgeons have been choosing to extend their services with implementing the planned dual approach, as it has been shown to be **safe and beneficial** for the patients.[1-3]

Reversibility makes the approach even more attractive: although no cases have been reported about explanting the trifocal supplementary lens neither from the doctor's, nor from the patient's initiation, it could be removed anytime after surgery. In this case, presbyopia-correction is lost, but the patient will still benefit from their optimized distance vision (and astigmatism-correction, if needed) provided by the monofocal or monofocal toric capsular bag lens.[1-3]

Reversible Trifocality

Indications

In the following cases alternatives to conventional MFIOL-implantation - such as the planned dual lens procedure - may be considered for presbyopia-correction:[1]

- Potential for late development of an eye disease that would require the removal of the multifocal primary lens (such as macular disease),
- There is a risk of failure to neuro-adapt post-surgery,
- There are difficulties determining preferred working distances.

Anatomical prerequisites

Although the planned dual approach is an attractive and flexible solution, based on current clinical practice, the following anatomical features of the eye are required to provide safe implantation and long-term visual comfort:[4]

- Photopic pupil > 2.5 mm; adequate pupil dilation
- Plausible measurement of corneal astigmatism (use corneal topography to confirm primary readings)
- Phakic ACD measured from the corneal endothelium ≥ 2.45 mm,
- Pseudophakic ACD measured from the corneal endothelium ≥ 2.80 mm (if the AddOn IOL will be implanted during a second surgery),
- Adequate zonular support.

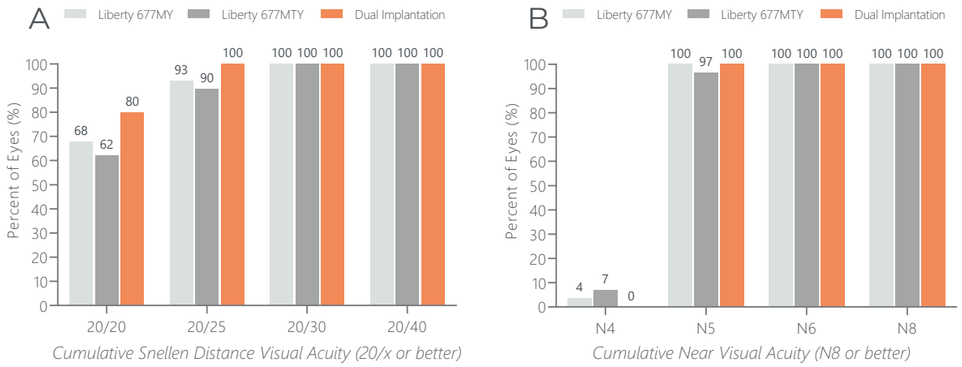
The 1stQ AddOn is a **customizable** and **reversible** solution that extends the surgeon's toolbox and facilitates decision making even in more challenging cases.

Clinical Experiences

Significant improvement of far, intermediate and near vision – trifocal performance. Visual acuities are comparable with that achieved with a capsular bag MFIOL. All patients were highly satisfied with the visual outcomes, and given that no further ocular pathologies are present, complete spectacle independence could be achieved.[1]

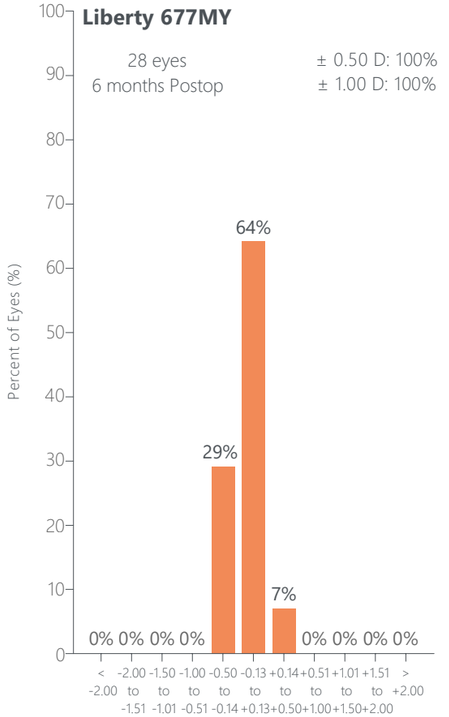
	Liberty 677MY	Liberty 677MY Toric	Dual Implantation	p=
UDVA	0.03 ± 0.07	0.04 ± 0.07	0.02 ± 0.08	0.2520
CDVA	-0.01 ± 0.04	0.02 ± 0.06	0.02 ± 0.06	0.0968
UNVA	0.18 ± 0.02	0.18 ± 0.02	0.19 ± 0.06	0.4430
CNVA	0.18 ± 0.02	0.17 ± 0.02	0.18 ± 0.00	0.8624

Postoperative visual acuities of the three cohorts are comparable. Data are presented in logMAR, as mean ± SD.

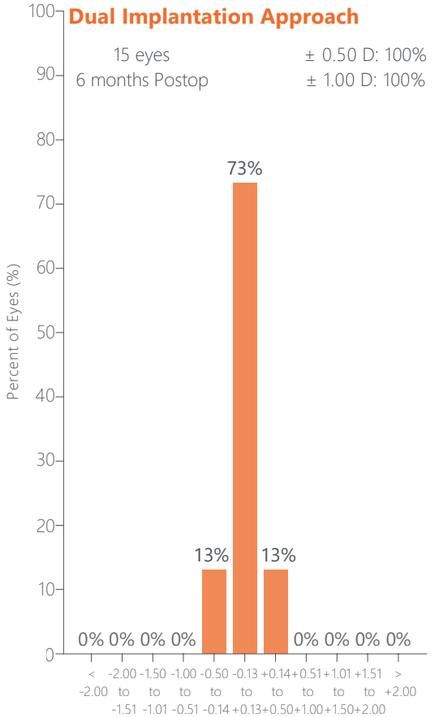


Cumulative monocular uncorrected visual acuities at far (A) and near (B) distances following the implantation of a trifocal / trifocal toric capsular bag IOL, or the dual implantation approach.[1]

Refractive and astigmatism-correction are as efficient as with a capsular bag MFIOL of similar optics. Refractive outcomes are predictable both for the spherical and cylindrical correction. Eyes usually result in or close to the target refraction. Efficacy and predictability do not differ from that observed with a similar primary MFIOL.[1]



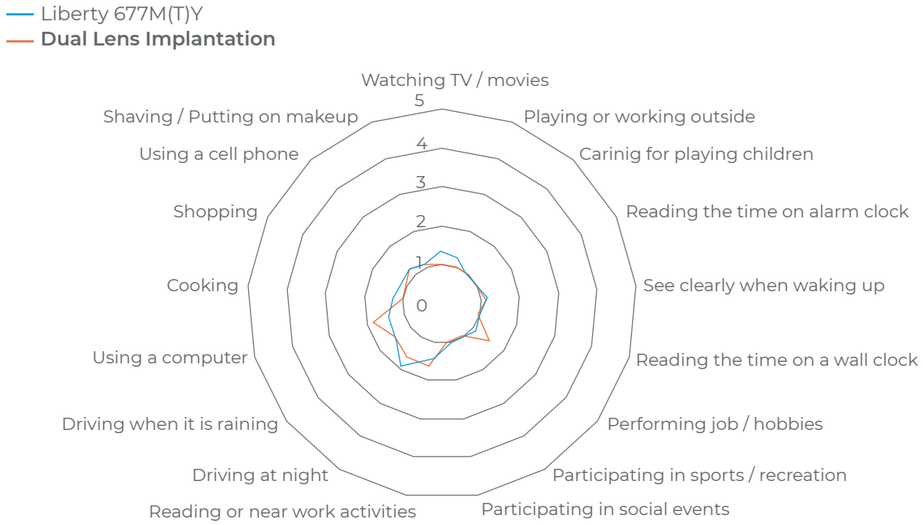
Postoperative Spherical Equivalent Refraction (D)



Postoperative Spherical Equivalent Refraction (D)

Excellent visual function and low levels of dysphotopsia

Patients who have undergone the planned dual implantation report on their ability to perform daily activities without remarkable difficulties – regardless of the required range of vision. Low rate of dysphotopsia was observed; however, none of these visual phenomena were mentioned as bothersome.[1]



Postoperative assessment of visual lifestyle activities show easy performance of all activities.[1]
(1: No difficulty; 2: Minor difficulties; 3: Moderate difficulties; 4: Major difficulties; 5: Cannot accomplish)

The Surgeon's perspective

Dr. Brian Harrisberg
Sydney, Australia

„A planned dual procedure using the 1stQ AddOn® Trifocal IOL with a monofocal or monofocal toric IOL in the bag for distance correction allows for reversibility of multifocality. This flexibility is reassuring for patients and allows me to offer them an opportunity for restoring vision that would otherwise be lost."[2,3]

Prof. Dr. Gangolf Sauder
Stuttgart, Germany

„Due to the combination possibilities of the two lenses, the planned dual procedure is highly adaptable to any refractive situation. Handling and safety of the dual system is plausible."[6]

Prof. Dr. Ramin Khoramnia
Heidelberg, Germany

„Due to the additional interfaces compared to a classic MFIOL, no loss of optical quality occurs. The advantage of the dual approach is that the multifocality principle is reversible, and can be individually tailored to the needs of the patient." [6]

*1. **Harrisberg B.** Comparison of refractive and visual outcomes in cataract patients implanted with either premium primary IOLs or with dual implantation approach. Presented in the RANZCO NSW Congress in 2020, Newcastle, NSW, Australia. **2. Sulcus-based** enhancement of visual quality. EuroTimes. 2021 Feb; Supplement:1-4. **3. Apel A and Harrisberg B.** 1stQ Secondary sulcus supplementary IOLs: Innovative applications for multifocal correction. MiVision The Ophthalmic Journal; 1 November, 2020. Available from: https://www.mivision.com.au/2020/11/1stq-secondary-sulcus-supplementary-iols-innovative-applications-for-multifocal-correction/ **4. Medicontur** Supplementary (AddOn) Intraocular lenses Instructions For Use. Available from: http://www.medicontur.com/files/For_professional-s/eIFU/2020/-CE%20Change/EN/LB-003-5100-00-V01%20PACKA%20ADDON%20IFU%20EN_v01.pdf and from: https://www.1stq.de/en/intraocular-lens **5. Palomino-Bautista C** et al. Spectacle independence for pseudophakic patients – Experience with a trifocal supplementary add-on intraocular lens. Clin Ophthalmol. 2020; 14:1043–1054. **6. 1stQ Germany** website. Available from: https://www.1stq.de/en/liberty2*