ZEISS AT LISA tri family

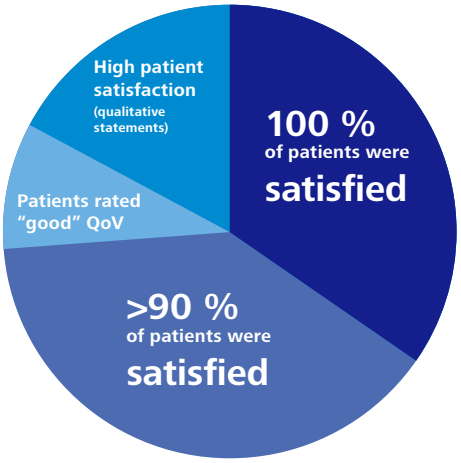
A trifocal lens for repeatedly excellent outcomes

A meta analysis of peer-reviewed ZEISS AT LISA tri publications

AT LISA tri® 839MP from ZEISS has set the bar for multifocal IOLs

Since its launch, the ZEISS AT LISA tri 839MP IOL has accumulated a wealth of clinical evidence in scientific literature attesting to its robust visual and refractive performance and predictability.

With over 75 peer-reviewed publications by 60 different first authors detailing the results of over 9,000 eyes of 4,500 implanted patients, ZEISS AT LISA tri 839MP offers surgeons an IOL that has proven consistently to deliver excellent outcomes in terms of visual quality and patient satisfaction.



Ensuring patient satisfaction

Of peer-reviewed ZEISS AT LISA tri 839MP publications, 23 have so far explicitly investigated patient-reported outcomes. In this cohort of studies, 8 have reported patient satisfaction to have reached 100 % [3, 12, 19, 22, 28, 35, 45, 47] and a further 9 studies rated patient satisfaction as greater than 90 % [2, 4, 6, 18, 24, 29, 30, 34, 36]. The three remaining studies did not explicitly rate patient satisfaction as a percentage, but included qualitative assessments of patients, which equally attested the lens to ensure satisfied patients: Boehm et al [7] for example asked patients to rate their quality of vision on a scale from 1 – 6, with ZEISS AT LISA tri scoring for quality of uncorrected vision for daily-life tasks of 2.1.

In more detail, a prospective study by Kretz et al [19] found that all patients (100 %) were satisfied with the outcomes of surgery. Specifically, *"all patients were satisfied in terms of their ability to read, their intermediate and distance vision, quality of vision at all distances, and independence from spectacles for performing daily activities and computer use"*.

"The good visual and refractive outcomes, high level of spectacle independence, and low level of visual disturbances obtained in our series led to high levels of patient satisfaction."

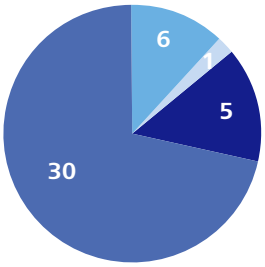
Florian Kretz MD et al.

Consistency in visual performance

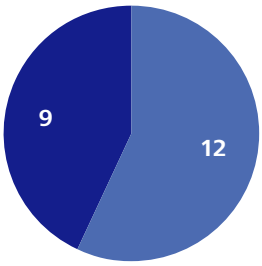
A meta-analysis of the studies investigating visual acuity for ZEISS AT LISA tri family IOLs showed that the lens reliably ensures excellent outcomes regarding visual acuity at far, intermediate, and near distances.

Among all studies that evaluated binocular uncorrected distance visual acuity (UDVA), all confirmed excellent binocular UDVA with AT LISA tri [1-8, 10-23, 25-29, 31-35, 37-39, 41-47]:

Av. monocular UDVA
# of cohorts out of 42



Av. binocular UDVA
# of cohorts out of 21

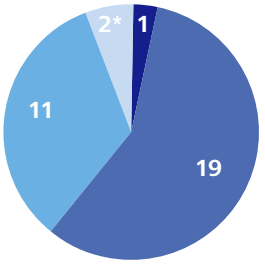


0.0 logMAR or better
0.1 – 0.01 logMAR
0.2 – 0.11 logMAR
> 0.2 logMAR

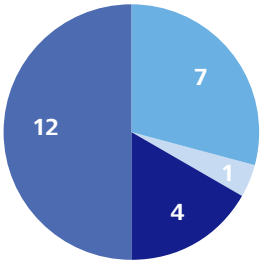
To note should be the monocular UDVA > 0.2 logMAR, in which cases the patients had previously had LASIK surgery undergone.

A critical distance often discussed for trifocal technologies is the ability to restore vision at intermediate distances. Data on the below summerizes intermediate VA data from peer-reviewed studies. [1-4, 6+7, 9, 11, 13-25, 27-29, 31-33, 35, 39-47]

Av. monocular UIVA 60 – 80 cm
# of cohorts out of 33



Av. binocular UIVA 60 – 80 cm
# of cohorts out of 24



* One of the 2 studies was on Mix and Match with a bifocal IOL where LISA tri was implanted only in the non-dominant eye.

0.0 logMAR or better
0.1 – 0.01 logMAR
0.2 – 0.11 logMAR
> 0.2 logMAR

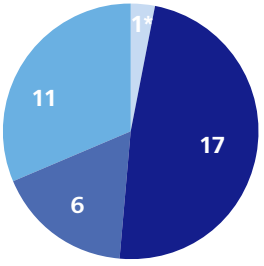
Excellent vision at intermediate distance is key to meeting patient's digital reading requirements

For ZEISS AT LISA tri 839MP, a vast number of studies reports that patients achieved an average binocular UIVA of 0.1 logMAR or better [14, 16-19, 22, 28. 34, 39]. Data for intermediate distances thereby covers a range from 60cm to 80cm, including critically important for day-to-day tasks such as shopping, computer and smartphone use, and reading the instruments on a car dashboard.

In individual studies, Kretz et al [17] reported that the intermediate visual outcomes in a series of 50 patients were very good, with 79 % of eyes achieving UIVA of 0.1 logMAR or better, 94 % of eyes achieving 0.2 logMAR or better,and all eyes achieving 0.3 logMAR or better. The mean postoperative logMAR UIVA was 0.09 when measured at 66 cm.

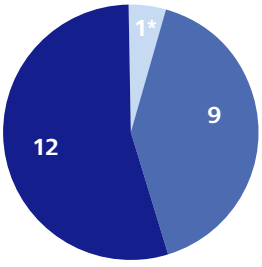
One of the main goals of presbyopia-correcting IOLs is to be able to also have good vision at near distance to be spectacle independent. ZEISS AT LISA tri 839MP repeatedly achieves the goal of excellent vision at near distance [2-4, 6, 7, 9-25, 27-29, 31-35, 37, 39-47]:

Av. monucular UNVA 40 cm
# of cohorts out of 35



* in non-dominant eye blended vision

Av. binocular UNVA 40 cm
# of cohorts out of 22



* measured at 30 cm

0.1 – 0.01 logMAR
0.2 – 0.11 logMAR
0.2 – 0.11 logMAR
0.31 logMAR

"The importance of intermediate vision cannot be overemphasized […]. This diffractive trifocal AT LISA platform provides excellent intermediate vision without compromising distance and near vision."

Abdulmohsen K. Almulhim MD

Looking at an individual study, Kretz et al [5] reported that 91 % of patients reached binocular UDVA of 0.0 logMAR, 79 % attained binocular uncorrected intermediate visual acuity (UIVA) of 0.0 logMAR and 87 % binocular UNVA of 0.0 logMAR. Furthermore, 100 % of patients reached at least binocular UDVA, UIVA and UNVA of 0.3 logMAR or better.

Predictable and reliable outcomes

Results of ZEISS AT LISA tri family IOLs have shown that the lens delivers predictable and stable results over time. Kretz et al [2] reported that 90 % of 100 eyes treated had a spherical equivalent (SE) within ±0.50 D three months after surgery. Mendicute et al [1] reported that postoperative SE was within ±0.50 D in 177 cases (85.9 %) and 171 cases (83.0 %) 1 month and 3 months after surgery, respectively. At 1 month and 3 months, 196 eyes (95.1 %) and 201 eyes (97.6 %), respectively, were within ±1.00 D of intended refraction.

In terms of stability of the visual outcome, there were no statistically significant differences in the intermediate, distance, and near visual acuity results between the 1-month postoperative visit and the 3-month visit except for monocular corrected distance visual acuity (CDVA).

In a prospective study of 50 eyes of 25 patients, Ganesh et al [8] found good long-term stability of the refractive outcome, with no statistically significant difference in SE between 1 month, 6 months and 12 months postoperatively.

"Overall, postoperative visual function improved and remained stable following AT LISA tri 839MP IOL implantation under photopic and mesopic conditions."

Yang Yang MD

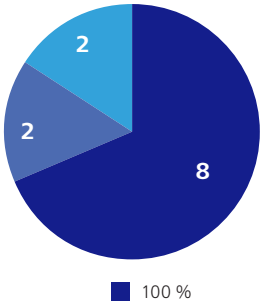
High levels of spectacle independence

Today's patients expect to achieve spectacle independence, not just for near vision but at all distances.

Of all peer-reviewed publications several studies specifically tested the levels of spectacle independence with ZEISS AT LISA tri 839MP, repeatedly achieving high scores at all distances [4, 6, 7, 10, 12, 17, 18, 20, 23, 25, 27, 29-30, 36, 45, 47]:

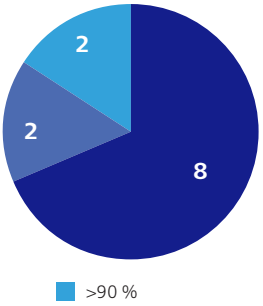
Overall level of spectacle Independence at far distance

# of cohorts out of 12



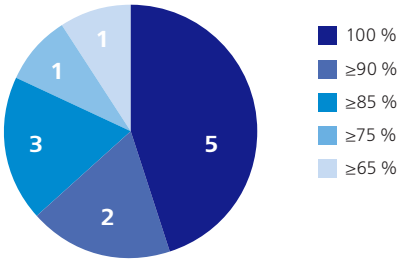
Overall level of spectacle Independence at intermediate distance

# of cohorts out of 12



Overall level of spectacle Independence at near distance

# of cohorts out of 12



To cite a multicentre prospective study, Mendicute et al [28] reported that spectacle independence at all distances was higher than 90 % after 3 months. The breakdown for each category was 99 % for distance, 95.1 % for intermediate and 89.2 % for near vision at 3 months.

"The combination of good visual outcomes at all distances, high spectacle independence (over 90 %), and a low incidence of disabling photic phenomena is the main reason for the high level of satisfaction (over 90 %) reported by patients in our sample."

Javier Mendicute MD

Conclusion

Seven years after its launch on the European market, the ZEISS AT LISA tri 839MP has proven its credentials in numerous peer-reviewed studies. The lens delivers on its promise to repeatedly ensure optimal outcomes. Its tried-and-trusted technology offers excellent distant, intermediate, and near visual outcomes. It is also associated with a high level of refractive correction predictability, with a positive impact on the performance of vision-related daily activities. It frees the vast majority of patients from their dependence on glasses and delivers consistently high levels of postoperative patient satisfaction.

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