
AT LISA tri: The Closest Thing to Natural Accommodation

Patient satisfaction is very high with this trifocal lens design.

BY WOLFRAM WEHNER, MD

A young and healthy eye, one that has full accommodative amplitude, can switch between distance and near foci in approximately 350 milliseconds. However, as the eye ages and the degree of accommodative amplitude decreases, humans lose their ability to shift gracefully between images at different distances. An eye that once had up to 15.00 D of accommodative amplitude in youth quickly decreases to fewer than 2.00 D of accommodation by the time a patient hits their 40s or early 50s. By the age of 70, accommodation decreases to nearly 0.00 D.

Once accommodative loss occurs, there are several options for the patient: (1) spectacle correction with bifocal, reading, or progressive addition lenses, (2) multifocal contact lenses, (3) laser vision correction such as LASIK or presby-LASIK, or (4) clear lens extraction with implantation of a presbyopia-correcting IOL. Although none of these options is a true solution for presbyopia and the loss of accommodative amplitude that coincides with aging, I believe that the

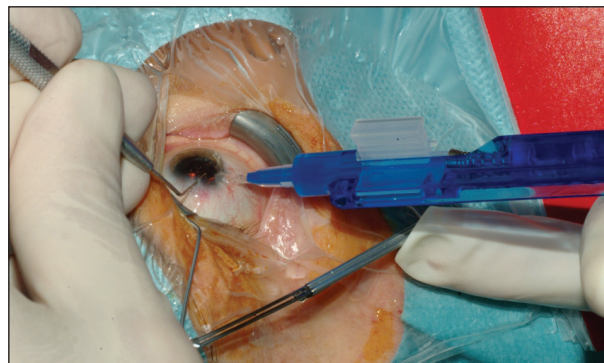


Figure 1. Implantation of the AT LISA tri with the preloaded BLUEMIXS 180. The lens is implanted through a 1.8-mm incision.

closest substitute for the natural accommodating lens is implantation of the AT LISA tri 839MP (Carl Zeiss Meditec). Simply put, there is no other IOL on the market that is as close to the natural accommodating process as the AT LISA tri. That is why this lens is the

QUESTION AND ANSWER WITH WOLFRAM WHENER, MD

Question: Are there any differences between the AT LISA tri 839MP and the AT LISA bifocal lens?

Answer: In my opinion, the trifocal lens has a slight advantage over the bifocal lens in that it enhances intermediate vision. To date, my patients have not reported any visual disturbances such as halos and glare. However, all of the other things about these two lenses are the same.

Question: Speaking of intermediate vision, can you elaborate on the intermediate visual quality with the AT LISA tri?

Answer: I will say that patients have mentioned that their visual acuity at 80 cm is better than it is at 40 cm with the AT LISA tri; however, there is no feeling that vision at 40 cm is worse than it was preoperatively with reading glasses. In general, patients are satisfied with their vision at 40 cm but notice that their vision at 80 cm is the sharpest range of vision that they have.

Question: Why do you think that patients feel that they have their best vision in the intermediate range?

Answer: The construction of the trifocal lens design distributes light to three foci: one for far (50%), one for intermediate (20%), and one for near (30%). With the bifocal lens, 65% of light distribution is designated for far and 35% for near vision. Patients may have less light distribution for far and near vision with the AT LISA tri, but they are gaining a new zone—the intermediate zone. The way I see it, there is no drawback to adding a third component to light distribution. They gain excellent intermediate vision and are able to maintain their vision at near and far.

best solution for our patients who present with presbyopia.

CLEAR LENS EXTRACTION, CATARACT SURGERY

As the newest design on the AT LISA platform, the AT LISA tri builds off of the successful platform of the AT LISA bifocal lens. Instead of splitting light between near and far foci, it splits light into three foci, one for each range of vision. Since I was introduced to the AT LISA tri, I have implanted this lens in more than 30 patients (Figure 1). In the majority of cases, my patients have not been able to distinguish between the AT LISA tri and their own natural lens before the incidence of presbyopia—that is how close the accommodative amplitude is with this IOL.

The AT LISA tri can be part of a clear lens extraction strategy for presbyopia correction, and it can also be advantageous as an implant after cataract surgery. The reason that I choose to implant this trifocal lens in presbyopic eyes is because its benefits are fully realized in those who need exceptional intermediate vision, such as young patients who are still working and patients who do a lot of computer work.

One of the largest benefits of the AT LISA tri compared with other multifocal IOLs that only have two foci is that patients achieve better intermediate vision without spectacle correction. This is especially appreciated in young presbyopes who have not yet learned to accept their loss of accommodative amplitude and do not wish to wear spectacles for any visual tasks.

TAKE CUES FROM THE PATIENT

Each patient has a unique set of visual needs and desires. In my opinion, we must learn to treat every patient as an

individual, customizing treatment to achieve his or her goals. I have treated retired patients as well as those who are still working full time; I have treated patients who do a lot of computer work and those who do little to none; I have

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treated patients who drive a lot at night and those who do not even get behind the wheel of a vehicle. Patients from all walks of life can have successful outcomes after IOL implantation, as long as a systematic preoperative process is used to educate and inform them of their choices.

In my experience, younger patients get the most benefit from presbyopia-correcting IOLs, because they are used to having almost complete accommodative amplitude. This option provides the best chance for achieving good vision at near, intermediate, and far ranges. On the other hand, older patients can also enjoy success with presbyopia-correcting IOLs, and specifically the AT LISA tri, if extra time is taken to explain the neural adaptation process. Older patients often need additional time, maybe weeks, to feel comfortable with their new visual system created with a bifocal or trifocal lens design.

Taking cues from your patients is the best way to ensure that visual requirements are met and that patients are satisfied after surgery. With that said, I believe that

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the AT LISA tri is one of the unique lenses that can be advantageous in the majority of patients I treat, regardless of their lifestyle or age. For this reason, it is the lens I see myself using with more frequency over the coming months and years.

PATIENT SATISFACTION

One of the reasons I am so readily embracing use of the AT LISA tri is that patients are satisfied with their visual acuity after surgery. Most specifically, they are impressed with the amount of intermediate vision they gain after lens implantation, and they have not reported visual disturbances such as halos and glare. In fact, I have had to explain what halos are to many of my patients. Even so, I am sure to mention the risk for halos and glare after surgery, as they are common side effects associated with all presbyopia-correcting lenses. Therefore, if halos are noticeable, the patient will understand that they will decrease over time as the eye adjusts to the optical artifacts.

In my experience, patients with hyperopia are the happiest with the AT LISA tri, as highly myopic patients are likely to need more time to adjust to the trifocality. I think that is because, at

-7.00 or -6.00 D, the myopic patient does not need glasses for near-vision tasks such as reading. After surgery, they will have a slight loss of these high myopic advantages. However, after just a few weeks or up to a maximum of 2 to 3 months, patients with myopia will adjust to this loss of high myopic advantages.

It is also important to tell patients specifically what they can expect to achieve after surgery. First, I ask the patient if he or she is aiming for spectacle independence and/or is uncomfortable wearing reading glasses. This is a good indication for a multifocal IOL, such as the AT LISA tri. I describe the advantages and side effects associated with these lenses, such as visual artifacts, and also inform the patient that after a period of neural adaptation these artifacts should disappear. This is especially important to explain to older patients, as in my experience they need more time adapting to their new visual system.

CONCLUSION

It is true that no one technology available today is the perfect solution for presbyopia correction, but the AT LISA tri is the best alternative we can currently offer our patients. No other lens design provides the same complete range of vision for near, intermediate, and far foci without compromises. ■

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Spectacle Independence: Now a Likely Outcome

In this small study, 100% of patients who received the AT LISA tri did not need spectacle correction for any distance.

BY ELISABETH FRIELING-REUSS, MD

One of the first things that many of my cataract surgery patients tell me in response to the question, "What do you want to achieve after surgery?" is that they wish to be spectacle independent. The second most desirable outcome my patients mention is being able to switch naturally between

near, intermediate, and far vision without any outside influences such as light conditions.

In the past, I used to tell my patients that spectacle independence for all visual tasks and in all situations is seldom achieved. However, I have had to modify my response since I began implanting the AT LISA tri 839MP