



A forgiving lens for patients, surgeons

by Ehsan Sadri, MD, FACS

Some intraocular lenses are a little more forgiving for patients and surgeons, while providing exceptional quality of vision, than others. Such is the case with the aberration-free enVista® IOL (Bausch + Lomb, Bridgewater, N.J.), which offers uniform power from edge to edge.

Surgeons in our practice have found that serious visual impacts can occur among lenses that lack a uniform power design following any lens decentration due to natural changes in the capsular bag, asymmetric contraction of the bag, or decentration from pseudoexfoliation syndrome—which includes some patients who have glaucoma. Any of those changes can naturally decenter the lens, and a lack of uniformity in the way the lens works can produce image distortions and dysphotopsias, which are symptomatic for the patient. This decentration manifests as patient complaints of glare or halos at night or the presence of an extra arc of light.

The uniformity of the enVista IOL optic design means that even if decentration occurs for any reason, patients may not suffer a loss of visual acuity or other changes, depending on the extent.^{1,2} Since our practice starts with the goal of providing excellent visual outcomes for all of our patients, this uniformity is a feature of the lenses to get excited about.

Our patients—whether we want to admit it or not—judge us based on our delivery of high quality visual outcomes. The patient is not going to come to us and say, “The lens you put in has negative asphericity or positive asphericity or positive aberrations or negative aberrations.” They don’t know any better. If they have surgery and don’t see well or are not able to get the desired quality satisfaction scores, then you are at fault.

Another advantage of the enVista lens design, practically speaking, is the larger surgical sweet spot due to the lack of aberrations in the lens optic.^{1,2} This makes it a much more forgiving lens to implant, especially in



Beauty shot of the enVista® IOL

the high-volume practice that can not afford to tie up chair time on patients who are not happy. The effects of such unhappy patients can extend to their contacts and to the referring physicians. You don’t want a practice killer, you want a practice promoter. In my experience, this lens lends itself to that.

I try to use aberration-free lenses in all of my premium IOL patients. However, in patients who have had laser refractive surgeries, sometimes a positive aberration lens may lend itself to better acuity. But even those patients require spectacles. So at the end of the day you want to have minimal aberrations.

The leading factors that have driven my use of the enVista lens over the last 3 years are the advantages offered by the AO optic and the glistening-free quality of the optic.^{1,2,3}

Glistenings are a manufacturing byproduct caused by vacuoles throughout the lens material, which have been shown to cause retinal stray light and unfortunately produce changes in the visual acuity of recipient patients.^{4,5} Research has shown that implantation of such lenses in high volumes is likely to produce a subset of patients who can experience a decrease in visual acuity.^{4,5} In our large volume clinic we have seen changes consistent with a drop off in visual acuity, so we’re concerned about it.

Any time we can move away from technology that leads to glistenings is a plus for patients. If there are lens materials out there more effective in reducing the incidence of glistenings, that is a clear advantage. The enVista platform is among those that address this concern, but it has the additional advantage of the aspheric, aberration-free optic.⁶

Another advantage of the enVista that makes it attractive to me as a surgeon is its hardened lens surface. The surface provides the potential for increased resistance of scratching the lens⁷—especially when loading the lens. Surgeons with an inexperienced technician who fumbles loading the lens or a technician who is rougher with the technology may discover a permanently scratched anterior aspect of the lens.

All surgeons know that any lack of perfection in a lens—regardless of who damaged it—becomes their problem. So familiarity with such lens nuances is important.

A final noteworthy advantage of the enVista lens in my experience is its consistent strength in providing patients with quality vision. I continue to experience excellent results with this lens and will continue to utilize it in my practice.

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The increasing number of post-refractive patients looking for premium intraocular lenses has led my practice to shift completely away from multifocal platforms.

That void has been filled in my practice by the enVista® and TRULIGN® toric intraocular lenses (Bausch + Lomb, Bridgewater, N.J.), which have become the first choices for nearly all of my IOL patients.

Many of my patients want great intermediate vision to read their tablets or smartphones. This is the strength of the Crystalens® IOL platform, on which the TRULIGN toric IOL is based.⁸ I also have some patients with early macular changes, and multifocal IOLs are contraindicated for these patients.

The enVista IOL, which I have used since it received U.S. Food and Drug Administration (FDA) approval in 2012, is ideal for a wide range of patients. There are several unique features of this lens that I'll highlight below.

Additionally, there are very few patients who could not benefit from the TRULIGN toric IOL, which I have implanted since 2013. I exclusively use this lens in post-refractive patients due to the multifocality of their cornea and because there is no need to worry about angle kappa. It does not induce any more halos or glare than their corneas may already have.⁹

In my experience, the TRULIGN toric IOL really is a lens for a lifetime. As with most lenses, there are a few key steps that are important to ensure patient satisfaction and optimal outcomes, including the size and shape of the capsulotomy, the corneal health, postop regimens, communication, total understanding, and preop counseling.

The use of the premium platform—especially the TRULIGN toric IOL—has certainly increased with the greater use of laser-assisted cataract surgery (LACS). Since incorporating a femtosecond laser into my practice I have increased my premium channel from about 25% to 80%.

The monofocal platform with femto and astigmatic incisions is also becoming more important, especially with the enVista IOL.

Lenses with leading patient appeal

by Dee Stephenson, MD

I think of this lens as a premium monofocal due to its pristine aspheric, aberration-free optic that provides patients great outcomes without compromising depth of field.^{1,2}

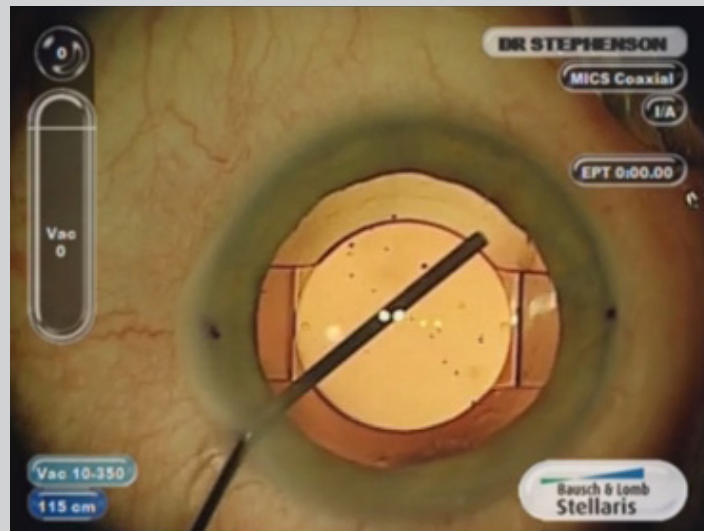
With all of the post-refractive patients needing cataract surgery, placing an aberration-free aspheric optic in these patients is a must in my opinion. Bausch + Lomb is the only major IOL manufacturer to utilize this type of optic.

Among the clinical considerations for the enVista IOL is its lack of glistenings,^{3,6} the presence of which can make a difference in the quality of vision. A pristine optic that

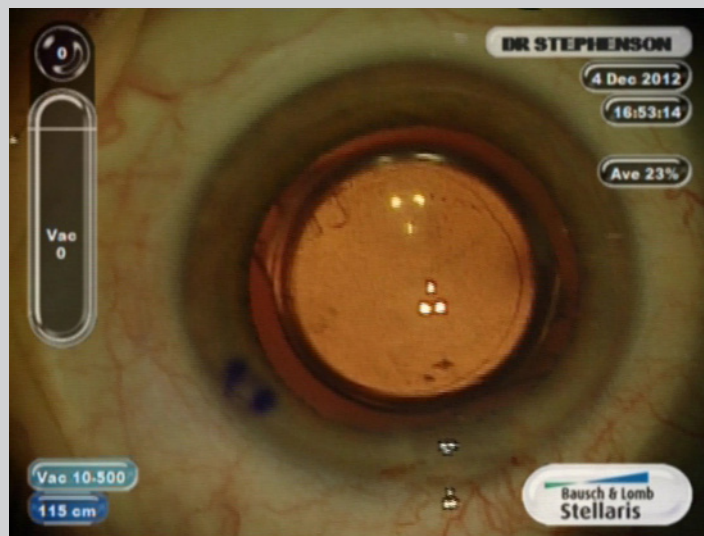
yields predictable outcomes irrespective of slight decentration or tilt is key. I work too hard on my outcomes and on refining my surgical technique to implant a lens that may have its own optical imperfections. To me it makes no sense to use anything less.

In my practice, patients want to see well at night for driving. This makes a reduction in dysphotopsias important to them. Also, the increase in post-LASIK and RK patients who already have a multifocal cornea has increased the importance of not inducing any

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Implanted Trulign Toric IOL centered on the axis



A well-centered pristine optic of the enVista



Finding the right lens for a premium experience

by Jeffrey Whitman, MD

A key for every surgeon implanting premium IOLs is finding the tools most likely to produce a higher percentage of 20/happy patients.

The Crystalens® AO and TRULIGN® toric intraocular lenses (Bausch + Lomb, Bridgewater, N.J.) have become a big part of my premium practice because their visual side effects have been less than those of multifocal lenses in my practice, and they can be used in a broader range of patients.

For surgeons just beginning to implant these lenses, the ideal patients are mild to moderate hyperopes. Ideal patients for experienced surgeons could range from a high myope to a hyperope. Using the Crystalens and TRULIGN toric as premium lenses allows us to help a wider selection of patients than we can with multifocals because we don't

have to worry about the amount of aberrations such as coma or contrast sensitivity loss that can be an issue with multifocals.⁹

Another type of patient who we sometimes forget is the post-refractive surgery patient, such as those who have undergone LASIK, PRK, or radial keratotomy. The development of very accurate formulas to calculate powers for these previous refractive surgery patients allows many of these patients who already decided that they wanted to get rid of glasses to have improved outcomes with less spectacle dependence.

Additionally, the TRULIGN toric is a great lens for a toric patient who wants a wider range of vision.⁸

A key element in satisfactory postop outcomes for these lenses is setting postop expectations preoperatively. It's very important to have very good preop discussions—either with the physician or a counselor—which should include reviewing the well-known pros and cons. We tell TRULIGN toric and Crystalens patients that our goal is to get very good to excellent distance and intermediate vision. It's one of the best intermediate-type

lenses available today in terms of looking at computers, cell phones, and handhelds. But they may need light readers if they are going to read fine print, particularly in less-than-ideal lighting.^{8,9}

Our alternative to that is that we may decide to overcorrect the non-dominant eye by 0.5 to 0.75 D to give them better reading vision. If they can accept that they may need to wear light readers, either option can usually work out very well.

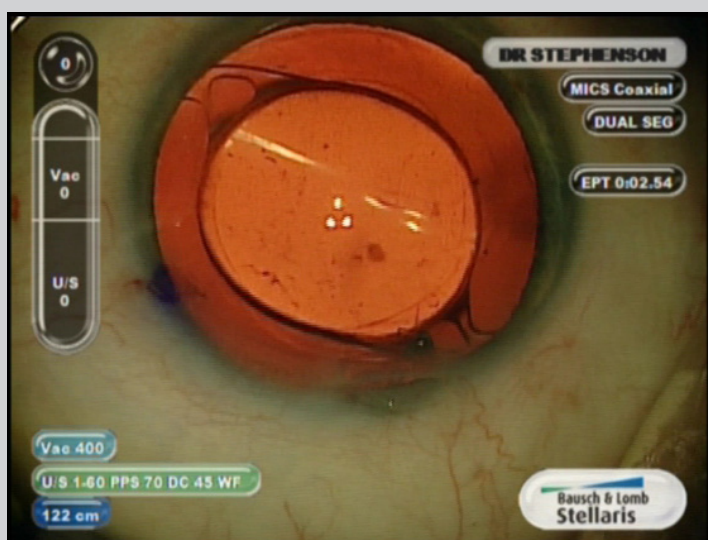
In my hands, up to only 10% of these patients may need some type of enhancement surgery, such as laser vision correction. We like to let them know beforehand so they're not surprised if they end up a little overcorrected or a little undercorrected. We want the patient to know we can fix that.

If it's premium lens surgery, they deserve a premium experience and as premium a result as we can get.

Additionally, we ask that they initial next to J3 on a reading card if they could be happy with that level of vision. Otherwise, that patient may not be a good candidate, and we may need to look for alternatives.

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Post-injection view of the enVista almost fully unfolded

Source: Dee Stephenson, MD

aberrations. Glare and halos with multifocals are not tolerated well by my patients.

Among current toric IOLs, the TRULIGN® toric IOL is elevated above the rest as the first toric IOL that offers a broader range of vision.⁸ Its rotational stability has been outstanding in my experience.⁸

I target the non-dominant eye from -0.25 to -0.50 and target the dominant eye plano to -0.25 , and this has led to many happy patients in my practice.

The current market offers toric IOLs based solely on monofocal platforms, and although they can correct astigmatism and distance vision, the patient still must wear glasses for near and intermediate vision. The TRULIGN toric IOL is set apart from other toric IOLs by providing a presbyopia-correcting toric lens that gives the broadest range of vision currently available.⁸

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The best visual outcomes from the Crystalens AO and TRULIGN toric begin with preop tools and techniques, including preop measurements like macular OCT to check the health of the macula. While changes in the macula would not preclude the use of the lens, you need to let patients know that there may be some limitations.

We follow the Bausch + Lomb guidelines for IOL power correction. That means for the majority of patients we use the SRK/T formula. But for small eyes of axial lengths less than 22 we use Holladay II, and for corneal curvature either more than 47 D or less than 42 D, we also use Holladay II.

I always try to do the dominant eye first, targeting from plano to minus a quarter. We can usually hit that, and it is good for our patients who want to be able to drive right away.

For the power in the non-dominant eye, I look at the eye we have already treated, put some plus lenses in front of it, and see how much they need to see J2. Then I will use that to find what lens overcorrection I want in the second eye. If they already see J2 or J3 in the dominant eye, I will again go for

plano to -0.25 D in the non-dominant eye, as binocularly they will usually see one line better up close.

Key surgical points include the need for polishing the anterior and posterior capsule; rotating the lens at least 180 degrees; and ensuring complete wound closure to prevent even micro wound leaks that could compromise the positioning of the lens implant.

As long as you are willing to do a little extra work in a small percentage of patients, the majority of patients should be very happy with the extended range of vision offered by these lenses.

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Crystalens® AO Accommodating IOL

INDICATIONS FOR USE: The Crystalens is intended for primary implantation in the capsular bag of the eye for the visual correction of aphakia secondary to the removal of a cataractous lens in adult patients with and without presbyopia. The Crystalens provides approximately one diopter of monocular accommodation, which allows for near, intermediate, and distance vision without spectacles. **WARNINGS:** Careful preoperative evaluation and sound clinical judgment should be used by the surgeon to decide the risk/benefit ratio before implanting a lens in a patient. Some adverse events that have been associated with the implantation of intraocular lenses are: hypopyon, intraocular infection, acute corneal decompensation, and secondary surgical intervention. **PRECAUTIONS:** Do not resterilize; do not store over 45°C. **ATTENTION:** Refer to the Physician Labeling for complete prescribing information.

TRULIGN® Toric Posterior Chamber IOL

INDICATIONS FOR USE: The TRULIGN Toric Posterior Chamber Intraocular Lens is intended for primary implantation in the capsular bag of the eye for the visual correction of aphakia and postoperative refractive astigmatism secondary to removal of a cataractous lens in adult patients with or without presbyopia who desire reduction of residual refractive cylinder with increased spectacle independence and improved uncorrected near, intermediate and distance vision. **WARNINGS:** Careful preoperative evaluation and sound clinical judgment should be used by the surgeon to decide the risk/benefit ratio before implanting a lens in a patient. Some adverse events that have been associated with the implantation of intraocular lenses are: hypopyon, intraocular infection, acute corneal decompensation, and secondary surgical intervention. **SAFETY AND PRECAUTIONS:** Do not resterilize; do not store over 45°C. **ATTENTION:** Please see Directions For Use for important safety information.

enVista® Hydrophobic Acrylic IOL

The enVista IOL is indicated for primary implantation for the visual correction of aphakia in adult patients in whom the cataractous lens has been removed. The lens is intended for placement in the capsular bag. Physicians considering lens implantation under any of the following circumstances should weigh the potential risk/benefit ratio: 1. Severe anterior or posterior segment inflammation or uveitis. 2. Patients in whom the intraocular lens may affect the ability to observe, diagnose, or treat posterior segment diseases. 3. Surgical difficulties that increase the potential for complications (e.g., persistent bleeding, significant iris damage, uncontrolled positive pressure, or significant vitreous prolapse or loss). 4. Any trauma or developmental defect in which appropriate support of the IOL is not possible. 5. Circumstances that would result in damage to the endothelium during implantation. 6. Suspected microbial infection. 7. Children under the age of 2 years are not suitable candidates. 8. Patients in whom neither the posterior capsule nor zonules are intact enough to provide support. The safety and effectiveness of the enVista IOL have not been substantiated in patients with preexisting ocular conditions and intraoperative complications. Careful preoperative evaluation and sound clinical judgment should be used by the surgeon to decide the benefit/risk ratio before implanting a lens in a patient with one or more these conditions; vitreous loss (significant), anterior chamber bleeding (significant), uncontrollable positive intraocular pressure. Patients with preoperative problems such as corneal endothelial disease, abnormal cornea, macular degeneration, retinal degeneration, glaucoma, and chronic drug miosis may not achieve the visual acuity of patients without such problems. Potential complications accompanying cataract or implant surgery may include, but are not limited to the following: corneal endothelial damage, infection (endophthalmitis), retinal detachment, vitritis, cystoid macular edema, corneal edema, pupillary block, cyclitic membrane, iris prolapse, hypopyon, transient or persistent glaucoma, and secondary surgical intervention. Secondary surgical interventions include, but are not limited to: lens repositioning, lens replacement, vitreous aspiration or iridectomy for pupillary block, wound leak repair, and retinal detachment repair. For complete storage and handling information and for physician labeling information, refer to the enVista product package insert.

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