

# Cataract & Refractive Surgery TODAY

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## Now's the Time to Adopt Elective IOLs

Tips and strategies for  
increasing conversions  
in your practice.

It's About the Refraction  
By Kerry D. Solomon, MD

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By Edward J. Holland, MD

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By Eric D. Donnenfeld, MD

# Now's the Time to Adopt Elective IOLs

## The Current Market for Elective IOLs

According to Market Scope, LLC (St. Louis, MO), since Q4 2008, market share for the AcrySof IQ ReSTOR IOL (Alcon Laboratories, Inc., Fort Worth, TX) rose from 45.47% in Q4 2008 to 54.5% in Q3 2009 (Figure 1). This represents significant growth in three quarters and encompasses the launch of the new AcrySof IQ ReSTOR IOL +3.0 D in late Q1 2009. In the same timeframe, market share for competing elective IOLs dipped to 46% of the total presbyopia-correcting IOL market in the United States. Thus, more surgeons are currently implanting AcrySof IQ ReSTOR IOL +3.0 D lenses than any other presbyopia-correcting IOLs.

Looking at the entire category of elective IOLs, however, presbyopia-correcting implants represent less than 11% of the entire market (Figure 2). During Q4 2009, growth in presbyopia-correcting IOLs was flat, because surgeons have been switching back from accommodating IOLs to multifocals. The growth in elective IOLs during the last quarter of 2009 came from toric implants.

If we want to raise our clinical volume of elective IOLs to 30% to 35%, we have to focus on patient satisfaction. Patients are thrilled when we can help them perform more daily activities without the aid of glasses. I feel confident that the elective IOLs market share can rise to 15% to 20% over the next 12 to 18 months.

—Kerry D. Solomon, MD

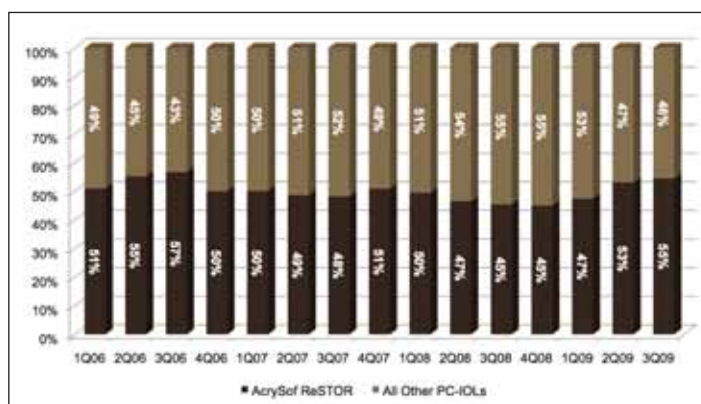


Figure 1. Presbyopia-correcting IOL market share in the United States, from Q1 2006 through Q3 2009.\*

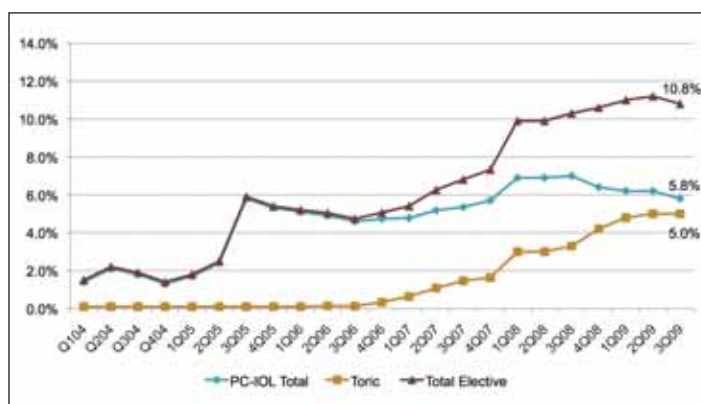


Figure 2. Quarterly elective IOL market share in the United States, from Q1 2004 through Q3 2009.\*

\*Market Scope's Quarterly Survey Reports: Q1 2004 through Q3 2009. St. Louis, MO: Market Scope, LLC; 2009.

# It's About the Refraction

Why the AcrySof IQ ReSTOR IOL +3.0 D is taking off.

BY KERRY D. SOLOMON, MD



Defocus curves for the AcrySof IQ ReSTOR IOL +4.0 D and +3.0 D (Figure 1) show that patients with the +3.0 D have a greater range of functional reading ability, from 13 inches to 24 inches, in which they can maintain 20/20 to 20/25 UCVA. This is the range of visual acuity that patients

most rely on for daily tasks, and it is why they are enjoying the vision the AcrySof IQ ReSTOR IOL +3.0 D provides. The AcrySof IQ ReSTOR IOL +4.0 D has a narrower range of vision that suits a smaller group of patients (those who want near vision at 12 inches). Furthermore, AcrySof IQ ReSTOR IOL +3.0 D patients can maintain 20/32 UCVA from 1 inch out to infinity, which is why this lens can claim good visual performance at all distances (Figure 2).<sup>1</sup> The lens' safety data from its FDA clinical trials are as good as that for the AcrySof IQ ReSTOR IOL +4.0 D.<sup>2,3</sup> When patients in the trials were asked to qualify their visual symptoms as mild, moderate, or severe, none responded beyond "mild" at 3 and 6 months postoperatively (Figure 3).

## IT'S ABOUT THE REFRACTION

Making patients happy with elective IOLs in particular is all about nailing the refraction (within 0.50 D of the targeted refraction). Achieving such reproducibility requires tracking outcomes, optimizing IOL calculations, and treating astigmatism and other postoperative errors. Surgeons who are considering adopting elective IOLs are interested in learning how to educate patients about them and also manage their expectations about what elective IOLs can provide.

## HOW TO TALK ABOUT ELECTIVE IOLs

I have learned that when discussing elective lenses with prospective patients, it is not so much what I say, but how I say it. I suggest that when you are presenting the option of elective IOLs, take a step back. Patients are paying cash for these lenses, which means they expect face time with their surgeon. Therefore,

"AcrySof IQ ReSTOR IOL +3.0 D patients can maintain 20/32 UCVA from 1 inch out to infinity, which is why this lens can claim good visual performance at all distances."<sup>1</sup>

we must slow down in the lane, speak clearly, and make sure all the patient's questions are answered. They have a lot of information to digest: what is a cataract, how is it removed, and what choices of IOLs are available. I try to make sure that what I am going to discuss with the patient is not new information. All my patients receive an informational packet in the mail before their first office visit. My practice's Web site also contains a lot of the same information that is in the packet as reinforcement for the patient. The surgical counselor reviews the information with the patient during his first visit, and the technician can also go over it during the work-up. By the time my patients see me, they have specific questions, which I can take the time to answer carefully. I also employ some strategies to put my patients at ease: I sit lower than they do during our consultation, I look them in the eye when speaking, and I invite them to bring a friend or family member in the room during the consultation.

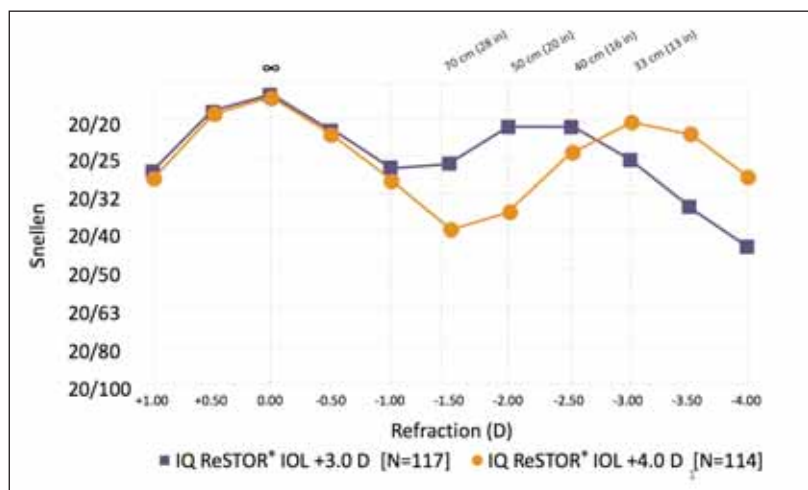


Figure 1. This graph shows the binocular defocus curves for the AcrySof IQ ReSTOR IOL +3.0 D (purple) and +4.0 D (orange).<sup>1</sup>

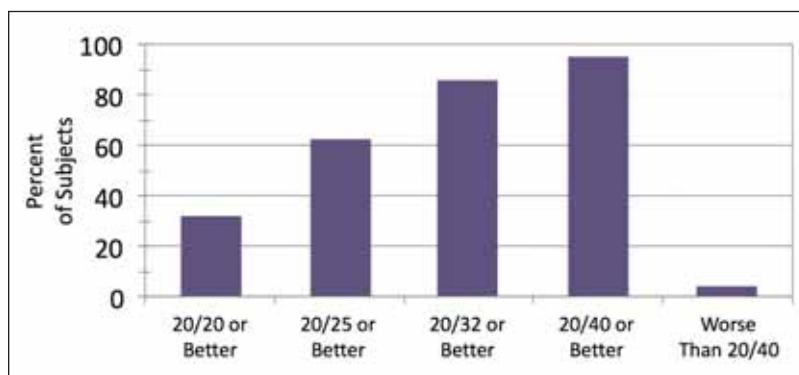


Figure 2. This graph shows binocular visual acuity at all three testing distances for the AcrySof IQ ReSTOR IOL +3.0 D (n=138).<sup>1</sup>

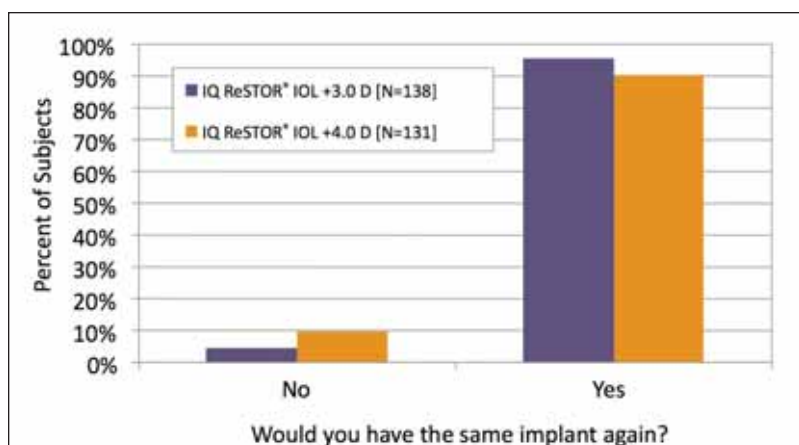


Figure 3. In the FDA clinical trial, more than 95% of the AcrySof IQ ReSTOR IOL +3.0 D patients said they would have the same implant again.<sup>1</sup>

A recent survey conducted by *Ophthalmology Times*<sup>4</sup> found that patients who selected elective IOLs were 60 times more likely to use the Internet to research their lens options and to rate their physician on public Web sites. It also found that diffractive multifocal IOLs have a higher rate of patient satisfaction compared with refractive lenses. Furthermore, the survey found that of the patients who had received a presbyopia-correcting lens and were dissatisfied, the most common reasons cited were that the surgeon did not spend enough time with the patient and the patient's questions were not answered.

We must also make sure to ask patients the right questions. For example, ask them for which activities they would prefer to reduce their dependence on glasses: driving, cooking, reading, using a computer, etc. Ask them, "Would you prefer to be less dependent on glasses at near or at distance?" Never use the phrase "free of glasses." You want to underpromise and overdeliver. It is better to have a patient return and say he or she can do more than just read without glasses than the reverse.

## INFORM, EVALUATE, AND RECOMMEND

Once you determine the patient's goals, evaluate his data. Does he have astigmatism? Are you comfortable treating astigmatism postoperatively (performing LRLs, PRK, or LASIK)? If not, you may choose to offer this patient a toric IOL, which is a reliable and predictable way to treat astigmatism at the time of cataract surgery. After you have learned the patient's goals and evaluated his needs, recommend a lens for him. This is the expertise patients expect from us.

If patients choose a monofocal lens, reassure them that this is a decision between convenience and lifestyle, not visual quality. The last thing we want to do is convey that the monofocal option is a lesser-quality lens.

Offer elective IOLs to all your patients; it is impossible to predict who will choose them and who will not. Listen to your staff if they tell you that a patient's goals and expectations are not realistic. Do not be afraid to talk about cost. It may be helpful to put the price of the procedure into perspective, such as compared with a flat-screen TV or a vacation.

Finally, I always end my consultations with two questions: (1) Have I answered all of your questions today?" and (2) "Is there anything more my staff or I can do for you today?"

## CONCLUSIONS

Remember that the surgeon's goal is not to implant more elective IOLs. Our goal is to improve our patients' quality of life by providing them with the technology that best suits them. If we describe elective IOL technology properly, patients will request it and then thank us for providing it. ●

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1. AcrySof IQ ReSTOR IOL Directions for Use. (models SN6AD1 and SN6AD3).

2. AcrySof IQ ReSTOR +3.0 D package insert.

3. AcrySof ReSTOR +4.0 D package insert.

4. Hagan JC III, Kutryb MJ. Eye care patient satisfaction is weighed with online health forums. *Ophthalmology Times*. <http://ophthalmologytimes.modernmedicine.com/ophthalmologytimes/Modern+Medicine+Now/Eyecare-patient-satisfaction-is-weighed-with-onli/ArticleStandard/Article/detail/627821?contextCategoryId=416>. Accessed February 2, 2010.



# Treating Astigmatism With Torics

The benefits of toric correction.

BY EDWARD J. HOLLAND, MD



It seems that many surgeons are still on the fence about whether they should incorporate multifocal, accommodating, and/or toric IOLs into their practices. I think this decision is easier for surgeons if they first start with toric IOL technology.

Considering the safety and accuracy of these lenses, there is no reason why all refractive cataract surgeons today should not be using toric IOLs to treat astigmatism at the time of cataract surgery.

## BARRIERS TO ADOPTION

Cataract surgeons who do not perform refractive surgery do not have much experience with asking patients to pay out of pocket for services that exceed the cost of a standard cataract operation. Moreover, surgeons may be intimidated about being able to meet the increased expectations of elective surgical patients and how to manage these patients if they do not achieve a perfect outcome. The greatest barrier to surgeons' adopting elective IOLs, however, may be how to manage residual refractive error. This is one concern that toric IOL technology assuages.

## WHY START WITH TORICS?

Postoperative astigmatism is very common. Warren E. Hill, MD, from Mesa, Arizona, amassed data about postoperative astigmatism from 6,000 of his cataract patients. He found that 37.7% of the subjects had 1.00 D or more of cylinder, and 52.5% had greater than 0.75 D (unpublished data) (Figure 1). It is my experience that if there is more than 0.75 D of cylinder, then the patient will suffer reduced UCVA. Thus, a significant number of post-cataract patients will benefit from astigmatic correction. The key is to identify these people after they get biometry measurements.

The concept of astigmatism management may not be entirely new to many patients who have previously worn toric contact lenses or had astigmatic correction in their spectacles. These individuals will be open to the treatment, knowing it improves the quality of their vision. Furthermore, surgeons do not need a different skill set to implant a toric IOL; they simply have to mark the eye preoperatively and place the lens on the desired axis. In contrast, creating limbal relaxing incisions (LRIs) is more like refractive surgery.

Aside from those who do use toric IOLs, some surgeons say they do not manage astigmatism; others say they may move the visual axis; and still others believe that LRIs are just as accurate as toric IOLs and prefer the former. The modern refractive cataract surgeon should use all these modalities. Primarily, we must understand the power of our incisions and how they can affect our outcomes. In the past, LRIs have been the hallmark of astigmatism management, and I still use them when implanting multifocal IOLs. I believe that toric implants correct astigmatism more accurately and reliably, however.

## DRAWBACKS OF LRIs

Despite having multiple nomograms at our disposal to make LRIs more accurate, there is great variability in the effectiveness of these incisions. They are much longer than phaco incisions, and we cannot always control their precision or how a given cornea will respond to them. Other disadvantages of LRIs include regression of effect and a relatively limited treatment range (approximately 1.00 to 1.50 D). LRIs are too unpredictable to use in abnormal corneas, such as those with forme fruste keratoconus and other causes of irregular astigmatism. I have used toric IOLs in such eyes with great success, however. Finally, the longer the LRI, the greater the risk for complications, including a neurotrophic effect, dry eye, and epithelial problems.

## WHY CHOOSE TORIC IOLs OVER LRIs?

Toric IOLs are safe and efficacious. They do not require additional incisions. Toric IOLs are efficient; they do not

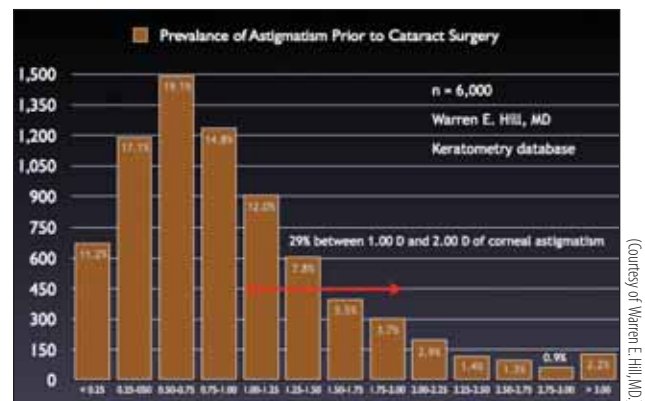


Figure 1. Out of 6,000 cataract patients, Dr. Hill found 52.5% had 0.75 D or more of corneal astigmatism preoperatively.

greatly increase the surgeon's time in the OR. The design I prefer is the AcrySof IQ Toric IOL, built on the familiar AcrySof IQ IOL platform. This lens is very stable within the capsular bag; if the surgeon places it on the correct axis, the outcome will be excellent.<sup>1</sup> The AcrySof Toric IOL has also demonstrated very good distance UCVA and spectacle freedom.<sup>2</sup> The data from the AcrySof Toric IOL's clinical trial (AcrySof IQ Toric n=211, control n=209) showed less than 4° of mean rotation, and 98% of the lenses in the trial rotated less than 15° of mean rotation, which is far superior to earlier designs of toric IOLs by other manufacturers.<sup>3</sup> For distance UCVA, 92% of the patients achieved 20/40 or better, and 97% reported that they did not need spectacles at distance. This spectacle freedom is the outcome we should relay to our patients. The vast majority of my patients implanted bilaterally with the AcrySof Toric IOL do not wear glasses for distance viewing. Also of note, the investigators in the clinical trial were not allowed to change the location of the incision, which is a powerful tool to further enhance the effect of the AcrySof Toric IOL.

**"The vast majority of my patients implanted bilaterally with the AcrySof Toric IOL do not wear glasses for distance viewing."**

#### THE ASPHERIC OPTION, THE T3, AND THE ACRYSOF TORIC CALCULATOR

The newest change to the AcrySof Toric IOL is the option of an aspheric optic, the AcrySof IQ Toric, which enhances the quality of vision and reduces higher-order aberrations. This lens has a thinner profile than the standard optic, which makes it easier to insert with the D cartridge (Alcon Laboratories, Inc.) through incisions as small as 2.2-mm.

Many surgeons are uncomfortable treating astigmatism of less than 1.50 D. For these eyes, my staff and I recently began using the AcrySof IQ Toric T3 lens, which corrects approximately 1.00 D of astigmatism at the corneal plane.

The AcrySof Toric Calculator (<http://www.acrysoftoric-calculator.com/>) is a powerful tool built around this lens that helps surgeons place incisions so as to enhance their results. The surgeon enters his or her preoperative data, including keratometry (I base all my lens calculations on preoperative keratometric measurements, which I have found to be more important than topography and manifest

AcrySof® Toric IOL Model	Cylinder Power @ IOL Plane	Cylinder Power @ Corneal Plane*
SN60T3	1.50	1.03
SN60T4	2.25	1.55
SN60T5	3.00	2.06

**Table 1. The AcrySof IQ Toric IOL T3-T5.**

refraction), the IOL's power, and the location of the incision. Also, every surgeon should know how much astigmatism his or her incision induces, because it factors into outcomes significantly. With all of this information, the calculator will determine the residual refractive error. For example, in a right eye that has the steep axis of astigmatism at 36°, I would place the incision at the 0° meridian, and the AcrySof Toric calculator would determine the residual astigmatism to be 0.55 D at the 36° meridian. This outcome could be better, so I would move the incision toward the steep axis (toward 36°). Then, the calculated residual refractive error would be 0.15 D.

In this way, we use the incision to augment our outcomes with the AcrySof IQ Toric IOL. We know that we want to achieve within 0.50 D of the intended refraction in toric IOL patients, and the AcrySof Toric Calculator enables us to do that in most patients. AcrySof IQ Toric IOLs are available in T3 through T5 powers (Table 1).

#### SUMMARY

Surgeons should look to the AcrySof IQ Toric IOL as their first choice for managing astigmatism. In my opinion, it is safe, effective, and more predictable and reliable than other methods of correcting astigmatism at the time of cataract surgery. The new aspheric optic of the AcrySof IQ Toric IOL provides enhanced image quality and contrast sensitivity and gives excellent outcomes that patients appreciate. ●

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1. Zuberbuhler B, Signer T, Gale R, Haeffliger E. Rotational stability of the AcrySof SA60TT toric intraocular lenses: a cohort study. *BMC Ophthalmol*. 2008;6:8:8.

2. Based on unilateral clinical study results (Models SN60T3, SN60T4, SN60T5). See package insert.

3. Hashem AN, El Danasoury AM, Anwar HM. Axis alignment and rotational stability after implantation of the toric implantable collamer lens for myopic astigmatism. *J Refract Surg*. 2009;25(10 Suppl):S939-943.

# Pearls for Adopting Elective IOLs

How to incorporate these lenses into practice and make patients happy.

BY ERIC D. DONNENFELD, MD



Elective IOLs are changing the way we ophthalmologists are practicing cataract surgery. As the baby boomers continue to age and demand treatments for presbyopia and cataracts, they will drive the elective IOL market, and all cataract surgery will increasingly become refractive surgery.

The common denominator in all previous revolutions that have changed the way we practice ophthalmology has been a faster return of improved UCVA that enables a better quality of life. If we cannot continue to offer this value to our patients, our services will become obsolete.

So, how do we incorporate elective IOLs into our practices? Here are eight strategies that I use in my clinic.

## PEARL No. 1: BEGIN WITH TORIC IOLs

As Dr. Holland explained, toric IOLs (Figure 1) are the easiest way to begin working with elective implants. These lenses perform just as well as monofocal IOLs and they correct astigmatism. Before surgery, 30% of cataract patients have more than 1.00 D of cylinder, and 50% have more than 0.50 D of cylinder (Figure 2).<sup>1</sup> Thus, approximately 35% to 45% of our patients will likely benefit from astigmatic correction. They are the low-hanging fruit. We should offer these individuals toric IOLs as a way to manage their astigmatism at the time of cataract surgery and improve their vision.

To start with toric IOLs, I suggest first targeting patients with more than 0.50 D of cylinder on the axis where your incision will make the cylinder worse, or those with 1.25 D or more of cylinder if it is in the axis of your incision. If your incision creates more than 0.40 D of astigmatism, you do not want to end up with



Figure 1. The AcrySof Toric IOL.

0.90 D of astigmatism; it is preferable have 0.10 D of astigmatism in the opposite direction. You may also rotate the incision to the superior position if you feel confident doing so.

As long as the eye has good zonular support and the IOL will be well centered, a toric IOL is indicated in every type of eye except for those with keratoconus that wear gas-permeable lenses. Implanting a toric IOL in an eye that wears a gas-permeable lens will induce lenticular cylinder. Otherwise, I have implanted toric IOLs in the eyes of diabetics, those with macular degeneration, Fuchs' dystrophy, corneal transplants or DSEK, dry eyes, and monocular patients. There are no contraindications for toric lenses in these eyes.

## PEARL No. 2: EMBRACE MULTIFOCAL IOLs

Once you have mastered toric IOLs, you are ready to fully embrace elective IOLs. I suggest starting with the AcrySof IQ ReSTOR IOL +3.0 D (Alcon Laboratories, Inc., Fort Worth, TX), as it is an aspheric IOL with good distance, intermediate, and near vision. Hyperopes are the best candidates for multifocal lenses, followed by moderate myopes. Do not start with implanting these lenses in low myopes or emmetropes, because these patients are accustomed to good vision already and require more preoperative management.

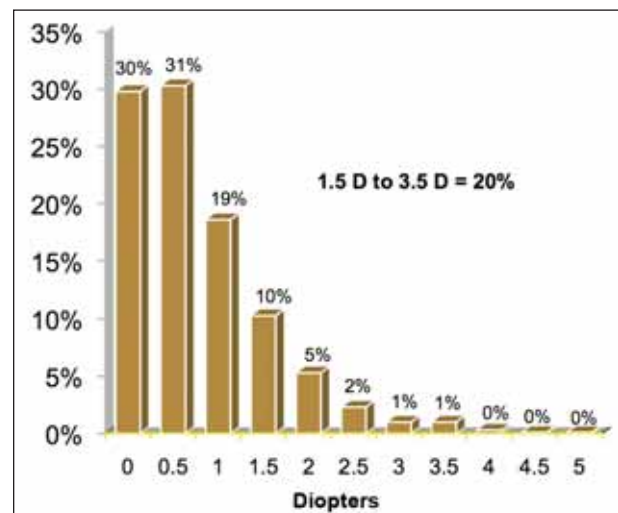


Figure 2. Seventy percent of patients have more than 0.50 D of preoperative astigmatism, and 39% of patients have more than 1.00 D of preoperative astigmatism.<sup>1</sup>

**RECOMMENDING THE TORIC OPTION**

Dr. Holland says that if the patient has 2.00 to 2.50 D of cylinder but really wants a multifocal IOL, you can tell him that you can give him the lens, but you will need to do a secondary enhancement to treat the residual error. Dr. Solomon says that as the surgeon, you should recommend your preference: "I recommend a toric lens for you. You could be a candidate for a multifocal IOL, but you will get a better quality of vision with a single procedure." Dr. Donnenfeld adds that he is blunt with his patients. "I tell my patients that what I am recommending for them is the same thing I would recommend for a member of my family."

Like toric IOLs, multifocal lenses are indicated for people with controlled diabetes and controlled glaucoma. Multifocal IOLs are also suitable for patients with monocular cataracts as well as those who have a monofocal IOL in the other eye. These patients need a little more counseling preoperatively since they will only have near vision in one eye, but they do fine with these lenses.

Multifocal IOLs are contraindicated for most individuals with active macular degeneration, diabetic retinopathy, cystoid macular edema, or uncontrolled glaucoma. I conduct optical coherence tomography in all multifocal IOL candidates to look for macular holes and epiretinal membranes. Also, I generally avoid implanting these lenses in patients with keratoconus and forme fruste keratoconus, unless they are highly motivated and are willing to sign a thorough informed consent.

**PEARL No. 3: YOU CAN IMPLANT MULTIFOCAL IOLs IN POST-LASIK EYES**

Patients who have undergone previous corneal laser ablation surgery overwhelmingly want multifocal IOLs, and they are familiar with the elective surgery model. These individuals see very well with multifocal implants as long as their ablation was well-centered, prolate, of -6.00 D or less, and had smooth edges. I warn these patients that they have an increased risk of needing a laser enhancement. I avoid placing multifocal IOLs in post-LASIK eyes with decentered or oblate ablations that have a square edge or those with a very small ablation zone.

**PEARL No. 4: LEARN TO MANAGE CYLINDER**

Unfortunately, there are no multifocal toric IOLs currently available in the US, although they are coming. For now, we must use LRIs or toric lenses to correct astigmatism. The choice of which one to use is a matter of preference.

**STICK WITH LRIs FOR MULTIFOCALS**

Lately, I have seen a trend toward using astigmatic or paracentral incisions instead of limbal incisions to correct astigmatism. Paracentral incisions have a greater risk of complications and of creating irregular astigmatism, so I suggest that beginners use only LRIs. —Edward J. Holland, MD

For less than 0.50 D of cylinder, I implant a multifocal IOL. Do not use LRIs for more than 2.00 D of error, because they might induce irregular cylinder. A toric IOL makes more sense for this amount of correction, and the patient will have great vision.

**LRIs**

Performing LRIs is well within the skill set of any ophthalmologist. The Web site <http://www.lricalculator.com> describes how to perform LRIs. You have to learn how to read topographic maps and tell the difference between regular cylinder and forme fruste keratoconus. You also have to mark your incisions; I usually mark the cornea at 12:00 o'clock with a modified Dell astigmatism marker (Accutome, Inc., Malvern, PA). Begin performing this procedure in the OR with the patient under peribulbar anesthesia. Once you become comfortable with LRIs, you can do them under topical anesthesia, and then eventually at the slit lamp.

I do not think it is necessary to take pachymetric measurements over the area where you want to make the LRI incision. An LRI will almost never perforate the cornea if it is made at the beginning of the surgery, before the cornea can dry out. I always perform LRIs at the start of the case.

My nomogram, the DONO nomogram, is very easy and effective. I use a 0.6-mm (600- $\mu$ m) calibrated knife (Accutome, Inc.), which I insert 0.5 mm away from the limbus. I fixate the eye 180° away. In the OR, I use topography, which I turn upside down to make certain my incisions are on the steep axis. The number-one complication of LRIs is placing them off-axis 90°. Also, I press the knife hard against the eye to make sure I embed it fully. I hold the knife perpendicular to the cornea, like a dart, and I allow the blade to seat fully before I pull it slowly toward me (Figure 3).

I routinely perform LRIs at the slit lamp, because I have learned that if you lie patients down on the OR table, they feel that they have had an operation. If they are seated upright, they consider it just a procedure, not an operation. To do LRIs at the slit lamp, I use lidocaine gel anesthesia, have the patient fixate straight ahead, use the phoropter to locate the incisions and center them on steep axis, and then make the incision 1.5 clock hours for 0.75 D of



correction (20/25- to 20/20+). That's it—the patient walks away with instantaneously improved vision.

### Laser Correction

If you are not comfortable performing LRLs to correct astigmatism, laser vision correction will produce great results, especially for errors of more than 1.00 D. In fact, laser correction is preferable to LRLs if the patient has residual myopia or hyperopia in addition to cylinder. However, you do not have to learn LASIK in order to work with elective IOLs. You can learn PRK fairly quickly. It is a simple procedure that uses small ablations with excellent results. PRK patients have a less adherent epithelium and less dry eye than LASIK patients.

### PEARL No. 5: HAVE THE PATIENT BRING A FRIEND OR FAMILY MEMBER TO THE CONSULTATION

This pearl is from Dr. Solomon. There are two reasons for asking the patient to bring an “advocate” to his or her consultation. First, many patients ask for the company anyway (albeit, sometimes after you have spent time talking with him or her). This support person can take notes, ask questions, and help the patient process and remember what you said. Second, a patient will often say that he or she does not want the more expensive lens, and then the husband or wife convinces their spouse that he or she should get it.

### PEARL No. 6: DEMONSTRATE THE VALUE OF THE SURGERY

We have to communicate the value of our services to our patients. I use a phoropter set at -2.50 D to show patients the difference between the vision they achieved with an elective IOL versus what they would have had with a monofocal lens. For example, after I implant the AcrySof IQ ReSTOR IOL +3.0 D, I ask patients to set the phoropter at -2.50 D. They see fine at a distance, because they are using the lens's reading add, but they cannot see reading material. I say that this is the vision they would have had with a conventional IOL. If you do this exercise with every happy patient, they will leave your office saying how worthwhile the surgery was.

### PEARL No. 7: MANAGE EXPECTATIONS

The more chair time you spend with the patient before surgery, the happier he or she will be after surgery. Patients must understand what to expect from elective IOL surgery. Consider residual refractive error: if you counsel the patient preoperatively to expect a secondary treatment, then in his mind, it is an enhancement. If you do not set this expectation and the patient needs a postoperative enhancement, he will consider it a complication, and he will feel that you are backpedaling when you try to explain it.

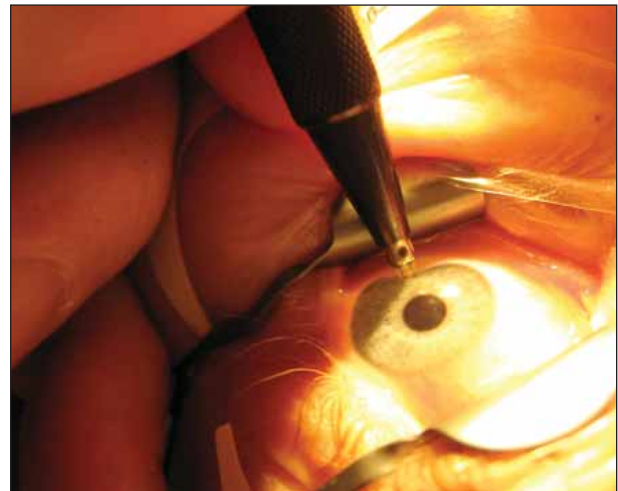


Figure 3. The author holds the knife perpendicular to the eye to perform an LRL.

### PEARL No. 8: NEVER ALLOW THE PATIENT TO BE UNHAPPY

You never want to walk into an examination room and be blindsided by an unhappy patient. I always send my technicians in to evaluate the patient first. If a patient is dissatisfied, the technician performs topography, optical coherence tomography, and a refraction before I see the patient. Then, I can walk into the room knowing what the problem is. Before the patient has a chance to voice his displeasure, I can say, “Mr. Jones, you must be unhappy with your vision, because you have some residual astigmatism. I feel confident that we can treat this astigmatism and greatly improve your vision.” Creating a collaborative atmosphere will diffuse the patient's anger.

### SUMMARY

Elective IOL patients are among the most demanding and challenging individuals in our practices. If we can give them a “wow” effect, we will have patient advocates who will sing our praises to the community. Since I adopted the AcrySof IQ ReSTOR IOL +3.0 D, my patients are experiencing this “wow” effect and are no longer dissatisfied. ●

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1. Sanders DR, Grabow HB, Shepherd J. The toric IOL. In: Gills JP, Martin RG, Sanders DR, eds. *Sutureless Cataract Surgery: an Evolution Toward Minimally Invasive Technique*. Thorofare, NJ: Slack Inc.; 1992; 183-197.

# Q & A With the Experts

Our expert panel answers frequently asked questions about elective IOLs.

## How many degrees of lens decentration can patients tolerate with toric IOLs?

**Dr. Donnenfeld:** Optimally, you want to be within 5° of the cylinder. Being off by 30° neutralizes the cylinder and negates the toric correction.

**Dr. Holland:** You will not induce astigmatism until there is 30° or more of decentration. You have to be significantly off axis to induce higher cylinder postoperatively compared to what there was preoperatively. One degree of decentration reduces the effect by 3.3% (slightly more so if the degree of astigmatism is large). The AcrySof IQ Toric lens has been shown in studies to have excellent rotational stability. Decentration is not an issue with this lens.

## What do you do if the preoperative astigmatism measurements do not match up? What if the keratometer does not match up with the optical biometer, the topographer, or the refraction?

**Dr. Holland:** First, determine if there is a problem with the ocular surface. Does the patient have dry eye or blepharitis, or does he wear contact lenses (contact lenses can throw off these measurements)? If so, keep the patient out of contact lenses longer before doing the testing. Although it is rare, if there is a large discrepancy between the measurements that you cannot reconcile, the safest option is not to implant an IOL.

**Dr. Solomon:** I am going to quote Warren Hill, MD, who is an expert with IOL calculations. Dr. Hill addresses this issue very simply: A sim K is just that, a simulated keratometry reading. The Ks on the IOLMaster are sim Ks. If you are measuring an eye and getting perhaps 0.25 D of difference between the various measurements, Dr. Hill says to go with manual Ks. The most reliable manual keratometer is the Javal-Schiotz (Haag-Streit AG, Koeniz, Switzerland). Use the manual Ks for the magnitude of astigmatism you're going to correct. Use the average Ks off of the 5.4 version of the IOLMaster for your IOL calculation, and use the topographer to create a straight line directly through the middle of the steep axis to pinpoint the axis of the astigmatism.

## Does the panel have any tips or new techniques for marking the eye preoperatively?

**Dr. Holland:** Have the patient sitting up instead of lying flat when you mark him. I place corneal marks at 3-, 9-, and 6 o'clock. Also, many patients have corneas that are wider at the horizontal axis, between 3- and 9 o'clock.

**Dr. Solomon:** You can mark patients at a slit lamp. Mastel Precision, Inc. (Rapid City, SD) and ASICO LLC (Westmont, IL) have weighted markers that help keep the eye level while you mark.

## When operating on an eye with a small amount of astigmatism, and you make the incision in the steep meridian (the axis of the astigmatism), what is the size of your incision? Do you vary the length or the location of your incision?

**Dr. Donnenfeld:** I do. When I make a 2.2-mm incision, I induce about 0.30 D of cylinder. When I make a 3-mm incision, I get about 0.50 of cylinder. If the cylinder is 0.50 D and is directly in the axis of my incision, I will extend my incision slightly, and that solves the problem.

**Dr. Solomon:** If you want to use a 3-mm incision to address astigmatism, do it at the end of the case. If you begin cataract surgery with a 3-mm incision, a lot of fluid will leak through it. Make your phaco incision 2.2- or 2.4 mm to fit the phaco sleeve, and then widen the incision at the end of the case.

## Now that we have both the AcrySof IQ ReSTOR IOL +3.0 D and +4.0 D, are there any instances for which you'd use an optic with a +4.0 D add?

**Dr. Holland:** I no longer use the +4.0 D add much at all; the +3.0 D add has great reading vision and better intermediate vision.

**Dr. Solomon:** I do not use the +4.0 D add much, either. Patients may say they want close-range vision (ie, to read the stock pages), but if you tell them that the +4.0 D add can give them that vision, but it will sacrifice a normal range of vision for reading or looking

### TOP TEN TIPS FOR IMPROVING CONVERSION RATES WITH ELECTIVE REFRACTIVE IOLs

1. Get your staff excited about elective IOLs. Perform a premium procedure on a staff member for free or at basic cost.
2. Bring in past patients once annually so they can tell your staff how happy they are with their outcomes.
3. Create a bonus plan for staff members based on the previous year's volume.
4. Give the refractive counselor an incentive bonus per eye that he or she converts to an elective refractive IOL (toric, multifocal, accommodative, etc.).
5. Keep a list of happy patients and their comments visible for prospective patients to read. Ask satisfied patients to send you their comments by mail, over e-mail, or on comment cards and post them on a wall in a high-traffic area of your practice.
6. Show your enthusiasm for elective IOLs. Tell patients that this is the lens you would recommend (or have recommended) for your family members. Make a strong recommendation for what you feel is the best lens for the patient.
7. Spend more time talking with elective IOL candidates. Pinpoint the range of vision they use most frequently on a daily basis. Ask about their interests, and determine if they will be unhappy if they are unable to perform a specific activity.
8. Set aside an hour every week to host a "Q&A With the Surgeon" open house or luncheon focusing on multifocal IOLs. Let patients ask any questions they want about the surgery and potential postoperative vision. Schedule this gathering for the same time each week so patients know that if they miss one, they can attend the next one.
9. Highlight the "wow effect" of elective implants. Approach the surgery as a refractive procedure, and use a phoropter set at -2.50 D postoperatively to show patients what their vision would have been with a monofocal IOL.
10. Have your technicians describe to patients what happened during their surgery to demonstrate value. For example: "Dr. Donnenfeld used two viscoelastics, he nudged your lens a little nasally, he gave you a small incision to treat your astigmatism..." etc.

at a computer screen, most patients will prefer to have the +3.0 D add and use glasses for reading the stock pages.

**We know that a significant number of people switch their axis of astigmatism (from with-the-rule to against-the-rule) with age. How do we know when that effect takes place and becomes stable? When is it safe to implant a toric IOL so that it will stay at that axis and the patient's corneal cylinder won't move?**

**Dr. Holland:** Say you have a 55-year-old patient with astigmatism at 90°. His astigmatism might change over the next 25 years of his life, but not by 1.50 D. I would still recommend a toric IOL so that this patient has 15 to 20 years of good uncorrected vision. The change with age is very slow, and I do not factor it into my decision.

**Dr. Donnenfeld:** The rate of change with axis of astigmatism is probably in the order of 0.02 D per decade. Remember that it always changes from with-the-rule to against-the-rule, so in choosing whether to leave

patients either a little with or a little against, I always try to leave them a little with-the-rule cylinder.

**What is your approach with presbyopia-correcting lenses in post-RK eyes?**

**Dr. Solomon:** I would implant an aspheric monofocal lens.

**Dr. Donnenfeld:** Agreed. My go-to lens for these patients is an aspheric monofocal IOL.

**I am an ocular surgeon and have had 20/20 UCVA all my life. I now have a cataract and 1.00 D of astigmatism. I want to preserve my ability to use the operating microscope. Am I better off with a regular lens or a refractive IOL?**

**Dr. Donnenfeld:** I would probably put a toric aspheric IOL in your eye for 1.00 D of cylinder. If you are willing to forgo treating the astigmatism with an IOL, then I think the AcrySof IQ ReSTOR IOL +3.0 D is a very reasonable option. I have implanted this lens in several ophthalmologists who are thrilled with it. ●

