

# Cataract & Refractive Surgery **TODAY**

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Delivering Clinical  
Success and Patient  
Satisfaction With

# Presbyopia- Correcting IOLs

A Roundtable Discussion  
of an Aspheric Multifocal  
and an Accommodative IOL

**FEATURING:**

**Samuel Masket, MD (Moderator)**

**Brad S. Elkins, MD**

**Robert P. Lehmann, MD**

**Jerome A. Swale, MD**

**J. Trevor Woodhams, MD**

# Delivering Clinical Success and Patient Satisfaction With Presbyopia-Correcting IOLs

A Roundtable Discussion of an Aspheric Multifocal and an Accommodative IOL

## PARTICIPANTS



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**Dr. Masket:** Presbyopia-correcting IOLs have created many new options for our patients and new opportunities for us as surgeons to improve vision at distance, intermediate, and near. Our expert panel, some of whom were investigators for early multifocal IOLs, have seen their practices evolve with each new technology.

Among the topics we will discuss today are our clinical experiences with accommodative and multifocal IOLs, our patient selection criteria, surgical techniques, and best practices.

First, we will briefly describe our practices with respect to presbyopia-correcting IOLs.

### BREAKING NEW GROUND

**Dr. Masket:** I have had an interest in IOLs to help achieve spectacle independence for a long time. In fact, I was an investigator for several lenses, including the original Array (Advanced Medical Optics Inc., Santa Ana, CA).

In my practice, which is near Beverly Hills, CA, I tend to have very high-end, demanding clientele. I often say there is no such thing as a happy patient in Los Angeles. I found that the Array lens did not satisfy my patient base. As soon as the AcrySof ReSTOR IOL (Alcon Laboratories Inc., Fort Worth, TX) became available, I quickly adapted the practice to that lens, and it has been my first-choice lens ever since.

**Dr. Elkins:** I had some experience implanting the original AcrySof ReSTOR IOL. After some patients described “smudging” of their distance vision, my partners and I switched to the Crystalens (Bausch & Lomb, Rochester, NY). Now, however, we are using the AcrySof ReSTOR Aspheric, and we are quite happy with it.

**Dr. Lehmann:** I was one of the US investigators of the Iolab NuVue (Bausch & Lomb). I was also an investigator of the 3M (St. Paul, MN) diffractive multifocal.

In December 2001, I had the opportunity to implant the first AcrySof ReSTOR lens in the country, when I initiated the FDA study in Nacogdoches, Texas. I achieved good results, with 87% of my patients never wearing eyeglasses postoperatively. I have enjoyed the evolution of the lens to the aspheric optic, which I think gives patients even better results. We learn a great deal as we gain experience with these technologies. I now know to either avoid patients with significant or high degrees of astigmatism or to use a toric lens for these patients.

I also have had significant experience with the ReZoom multifocal refractive IOL (Advanced Medical Optics, Inc.) and the Crystalens.

**Dr. Swale:** I implanted the Array in quite a few patients and was disappointed that a significant number

of them lost some BCVA. A small percentage also had severe night vision symptoms with the Array lens. So I abandoned the Array and did not use any presbyopia-correcting lenses until the Crystalens became available. I felt an accommodating lens was a great idea and used the Crystalens 4.5 and Five-O. However, after some experience with this lens, I felt the unpredictability of the refractive outcome was unacceptable. Patients achieved limited accommodation with this lens and were dissatisfied with their inability to read unaided. I transitioned to the AcrySof ReSTOR Aspheric several months ago and have noticed a much higher level of patient satisfaction.

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**“I now know to either avoid patients with significant astigmatism or to use a toric lens for these patients.”**

—Robert P. Lehmann, MD

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**Dr. Woodhams:** I was an investigator for a phakic IOL about 10 years ago, and I was impressed when patients said the quality of their vision with the IOL was better than that with their LASIK eye. I used the Array lens for patients who were outside the proper LASIK parameters.

I have used the Crystalens for quite a while. I think the technology is evolving. As this panel has pointed out, however, even the newest version of the Crystalens does not give a reproducibly predictable amount of accommodation. Some patients see very well with it, but others do not have very good close-range vision, despite an otherwise perfect emmetropic outcome, which is frustrating.

### PANEL'S PREFERENCES

**Dr. Masket:** Throughout our careers, we have looked for what we consider the Holy Grail: an IOL that mimics the juvenile lens, is fully accommodative, fills the capsular bag, prevents any type of posterior or peripheral capsular opacification or fibrosis, is adjustable, offers protection from undesired light damage, and so on. When we consider all of the ideal characteristics, we recognize that current lens technology is still lacking. In the US today, we have three presbyopia-correcting products.

The two multifocal lenses are quite different from one another. The AcrySof ReSTOR is an apodized diffractive IOL available in spherical and aspheric designs. The ReZoom is a zonal progressive or refractive IOL. All of us have been genuinely interested in the third option, the Crystalens accommodative lens.

I am curious to learn about the panel's experience with these devices.

## DELIVERING CLINICAL SUCCESS AND PATIENT SATISFACTION WITH PRESBYOPIA-CORRECTING IOLs

**Dr. Elkins:** My uncle, an avid golfer, had the original AcrySof ReSTOR lenses implanted bilaterally. He is emmetropic and has 20/20 distance vision and J1+ near vision. He is extremely happy with these lenses.

I implanted two patients with the ReZoom IOL and then explanted both of them because of glare, halos, and the patients' inability to drive at night. Consequently, I stopped using the ReZoom lens. I have implanted 20 to 30 Crystalens IOLs. Some patients were ecstatic, and some were quite upset with their outcomes. Not being able to predict outcomes consistently with the Crystalens has been quite discouraging.

**Dr. Masket:** In theory, the Crystalens is supposed to move forward to change its effective optical power. To be a truly accommodating lens, it has to move anteriorly, or it has to change its shape, or both functions have to occur to increase its optical power.

Kevin L. Waltz, MD, of Indianapolis, Indiana, has theorized that the Crystalens flexes or bends in what is called *accommodative arching*.<sup>1</sup> If that were the case, then in theory, the thinner, lower-powered lenses would be more likely to achieve greater accommodation. The effect would be almost paradoxical, in that the myope would show the greatest accommodation, and the hyperope would show the least. Has anyone had any experience along these lines?

**Dr. Woodhams:** I participated in an industry-sponsored study that Eyeonics, Inc., and Dr. Waltz conducted, which measured higher-order aberration with accommodation in the Crystalens. Some kind of accommodative arching is occurring, which I think may explain the results, probably more than any anterior/posterior movement of the IOL itself.

I have been using the Artemis II (Ultralink/ArcScan, Morrison, CO) and the VuMax (Sonomed, Inc., Lake Success, NY) to investigate the presbyopic effects of the newer IOLs. I have an interesting video of a Crystalens that shows the periphery moving posteriorly. The center of the lens actually moves a little bit anteriorly.

I also have been using the OQAS (Optical Quality Analysis System; Visiometrics, Terrassa, Spain) to measure accommodation using a double-pass modulation transfer function (MTF) method. It shows little association between accommodation through the central 2 mm of the Crystalens and how well a patient can read.

Assuming we are measuring accommodation reliably with this test, it appears that something other than pure accommodation in the Helmholtz sense is occurring. Some patients read better and some patients read worse than the amount of accommodation measured.

**Dr. Masket:** As I understand, in unpublished, masked investigations, I believe the Crystalens 4.5 generated a mean 0.40 D more accommodation than a monofocal control. However, this was reflected in an average of J8 acuity with distance BCVA in the monofocal control to J4 in the accommodative lens. So there is a degree of increased near function with the Crystalens.

I tend to see patients referred with problems and complaints. I have treated individuals who do not seem to experience the accommodative change with the Crystalens. What concerns me, as Dr. Elkins mentioned, is this lens's unpredictable outcomes. When we are asking patients to pay a premium for a product, we would like the outcome to be more predictable. On the other side of the coin, we have to recognize that multifocal lenses divide light energy, and therefore, not every patient is a good candidate for this modality.

### SURGICAL TECHNIQUE TO AVOID INDUCED ASTIGMATISM

**Dr. Masket:** Let's discuss how we manage patients with respect to incision size, induced astigmatism, and so on.

I adopted 2.2-mm microcoaxial phacoemulsification as soon as it became available, and it has become my mainstay for cataract surgery. I implant the single-piece AcrySof ReSTOR Aspheric through the 2.2-mm incision. As a result, I induce very little astigmatism.

I have a paper in press that indicates a 2.2-mm incision induces only about 0.10 D of flattening in its meridian versus 0.33 D with a 3.0-mm incision (the size required for Crystalens).<sup>2</sup> What have you found in terms of induced astigmatism?

**Dr. Lehmann:** I, too, have been using the 2.2-mm incision for both the AcrySof ReSTOR Aspheric and the AcrySof IQ (Alcon Laboratories, Inc.) monofocal aspheric lenses. I agree that there is a significant reduction in surgically induced cylinder with the 2.2-mm incision, as supported by Dr. Masket's data.

**Dr. Elkins:** I am using the same system, the INTREPID system (Alcon Laboratories, Inc.) with a 2.2-mm incision. I find it is difficult to measure any induced astigmatism with that system.

### MANAGING PREOPERATIVE CYLINDER

**Dr. Masket:** I think all of us have come to recognize that image quality with a multifocal lens degrades significantly with cylinder of more than 0.50 D. In my practice, our tolerance is for a maximum of 0.50 D of cylinder.

I can reliably eliminate up to 2.00 D of preexisting corneal astigmatism with limbal relaxing incisions (LRIs),

either at the time of surgery or later in the office. If a patient has more than 2.00 D, I make it very clear to him that he likely will require some laser vision correction postoperatively. In some patients, I have made a presurgical LASIK-type flap so that I can lift it when I think the results are stable—sometimes as soon as 6 weeks after surgery—and perform the laser vision correction.

My preferred method is to perform concurrent LRIs or peripheral corneal relaxing incisions. With this technique, I can correct more against-the-rule than with-the-rule astigmatism, and I achieve a better correction in older patients than in younger patients.

At about 6 weeks, if necessary, I will augment the LRIs in the office with a second set, central to the original pair. If significant spherical error exists, in lieu of doing more relaxing incisions, I will perform laser vision correction. I have had excellent results with this technique.

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**“I implant the single-piece  
AcrySof ReSTOR Aspheric  
through the 2.2-mm incision.  
As a result, I induce very  
little astigmatism.”**

—Samuel Masket, MD

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**Dr. Swale:** If a patient’s astigmatism is less than 1.50 D and his spherical equivalent is near plano, I use LRIs. If the cylinder is more than 1.50 D or the spherical equivalent needs to be adjusted to plano, I perform laser vision correction.

**Dr. Woodhams:** My technique is evolving. I rarely perform LRIs. I can correct up to 1.25 D fairly reliably with wound size and placement, but I have not been satisfied that I can predictably reduce astigmatism with LRIs, at least by refractive surgery standards as represented by LASIK outcomes.

I am experimenting now. For one group of patients, I have performed a laser corneal treatment 3 months after IOL implantation. For a second group, I have created a flap with the Intralase FS femtosecond laser (Advanced Medical Optics, Inc.) either preoperatively or on the same day as the lens implantation, followed 1 week later by LASIK.

I am comparing these outcomes to a those of a third group, in whom I am performing PRK to treat the astigmatism prior to going to the OR, typically about 4 days before the lens implantation. I have not yet completed this study, but I have observed clinically that the happiest patients are those who have their astigmatism corrected

preoperatively. I suppose this allows them to enjoy the benefits of the presbyopia-correcting IOL immediately.

**Dr. Lehmann:** I am comfortable using LRIs with about 1.00 D to 1.25 D of cylinder. Beyond that, given a patient who wants a premium lens, I will explain that to obtain the best results, either PRK or LASIK after the surgery likely will be necessary. In general, I do not make a flap ahead of time because I am using a 2.2-mm incision, and I am comfortable using a blade-free femtosecond laser within 3 weeks of the cataract procedure.

**Dr. Masket:** Dr. Lehmann, if your patient has 2.50 D of preexisting corneal astigmatism but is otherwise an ideal candidate and highly motivated for the AcrySof ReSTOR Aspheric IOL, would you reject him, or would you plan at some point to do laser vision correction? If so, would you do it prior to surgery?

**Dr. Lehmann:** I would perform laser vision correction after the lens implantation surgery. In general, I will talk that patient out of a multifocal lens and use an AcrySof Toric lens (Alcon Laboratories, Inc.). I am using a lot of these toric lenses, and patient satisfaction has been excellent.

**Dr. Masket:** Why not give that highly motivated patient the opportunity for multifocality when he would just need a hybrid procedure? For this patient, I might make a flap ahead of time, because I know for certain he will require laser vision correction, at least for the cylinder, postoperatively.

**Dr. Lehmann:** I would not dispute that, and I think you could get some very happy patients. Given that scenario, however, my patient has to be extremely motivated to receive the multifocal. Paul Ernest, MD, of Detroit, first turned me around in terms of using the toric IOL in patients with greater corneal toricity, as opposed to planning a two-stage procedure.

**Dr. Masket:** Dr. Elkins, you have a lot of experience with laser vision correction. What is your opinion?

**Dr. Elkins:** I like to make the flap first, implant the lens, then wait a couple of weeks. At that time, I will lift the flap and treat any residual refractive error. The issue I have with implanting the lens and correcting the astigmatism in one procedure is that lens calculations are not perfect. If you are  $\pm 0.50$  D, you will want to lift the flap again to fix it.

I still perform LRIs on patients with low amounts of astigmatism, but not for cylinder above 1.00 D. Not only

## DELIVERING CLINICAL SUCCESS AND PATIENT SATISFACTION WITH PRESBYOPIA-CORRECTING IOLs

is predictability poor on the table and immediately postoperatively, but I have seen a fair amount of drift up to 1 year later.

I am a huge fan of toric IOLs. I think patients who receive them are some of the happiest patients.

### WAVEFRONT ANALYSIS REVELATION

**Dr. Masket:** I will be presenting some interesting data in Chicago this year. You have all heard of the concept of *waxy* or *vaseline* vision resulting from the original AcrySof ReSTOR lens, which some believe is a product of the diffractive optic. Paolo Vinciguerra, MD, from Milan, has suggested that unless a lens is centered perfectly, one induces higher-order aberrations. He used wavefront analysis to test this theory (personal communication, 2007).

I had a few patients who seemingly had less than desirable vision following implantation of multifocal lenses, so I decided to try the same approach. I found a small group of patients in whom the optical error as measured by VISX Wavescan (Advanced Medical Optics, Inc.) was far greater than we had determined by clinical refraction methods in the office. When I placed these patients behind this degree of correction, their vision improved dramatically. I then performed laser vision correction and, in fact, converted some marginally satisfied patients to ecstatic patients.

The message here is that the original AcrySof ReSTOR IOL is very sensitive to ametropia. We have understood that concept well for cylinder, but it turns out that mixed astigmatism is the enemy of quality vision. In performing a wavefront analysis of some patients who were not seeing as well as expected, I thought I would find higher-order aberrations. In fact the lower-order aberrations were the problem. Correcting these patients by laser made a dramatic difference.

When we talk about criteria for patient selection, we talk a lot about cylinder. I think correcting as close to emmetropia as possible is key.

### IMPROVING MTF

**Dr. Woodhams:** I have been measuring in vivo MTF, using a double-pass method with the OQAS system. As you know, MTF is the measurement of the loss of contrast sensitivity across a range of frequencies from the object to the focused image on the other side of the lens. An ideal MTF would be more or less a straight line curving down and to the right to the cut-off frequency

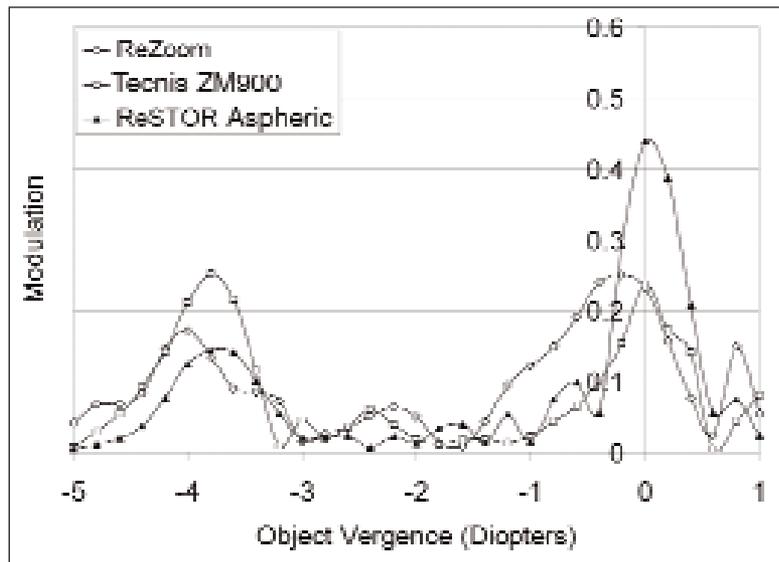


Figure 1. This graphic plots the various through-focus MTFs for a 6-mm pupil.

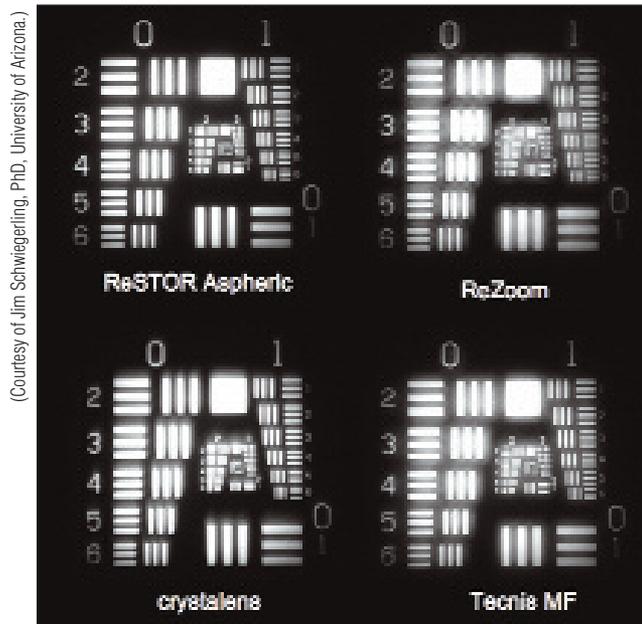
along the X-axis. The more the curve “droops” and the lower the cut-off frequency (the intercept at the X-axis), the worse the performance of the lens in terms of its “quality.” (See Figure 1 for a graphic representation of MTFs of three multifocal IOLs through a 6-mm pupil.)

All IOLs tend to look like a drooping clothesline, meaning they do not have an ideal MTF. The Crystalens, to its credit, has an excellent MTF, similar to a crystalline lens. However, the original AcrySof ReSTOR and the ReZoom lenses have rather poor MTF curves. With the AcrySof ReSTOR Aspheric lens, I see a dramatically better MTF than I see with other multifocal IOLs, approaching what you would see in a well-made single-optic lens.

**Dr. Masket:** James Schwiegerling, PhD, at the University of Arizona, has performed some MTF studies, comparing the behavior of some of the presbyopia-correcting lenses at different pupil sizes.<sup>3</sup> The quality of vision generated by the AcrySof ReSTOR Aspheric is truly remarkable. It compares very favorably with the Crystalens Five-O with a 5-mm pupil. With a 6-mm pupil, because of the 5-mm diameter of the Crystalens optic, the quality of vision with the AcrySof ReSTOR Aspheric exceeds that achieved with the Crystalens in this optical bench testing.

**Dr. Swale:** I was reluctant to try multifocal lenses after my experiences with the Array IOL, but those images (see Figures 2, 3, and 4) convinced me to try the AcrySof ReSTOR Aspheric. My patients have been very pleased with the outcomes. The visual quality is surprisingly good with this lens.

(Courtesy of Jim Schwiegerling, PhD, University of Arizona)



(Courtesy of Jim Schwiegerling, PhD, University of Arizona.)

**Figure 2.** These images were taken in a wet cell with a model eye cornea (Distance Air Force Bar Target with a 6.0-mm aperture). Compare the sharpness of the bars and numbers. Notice that all products except ReSTOR Aspheric have more ghosting.

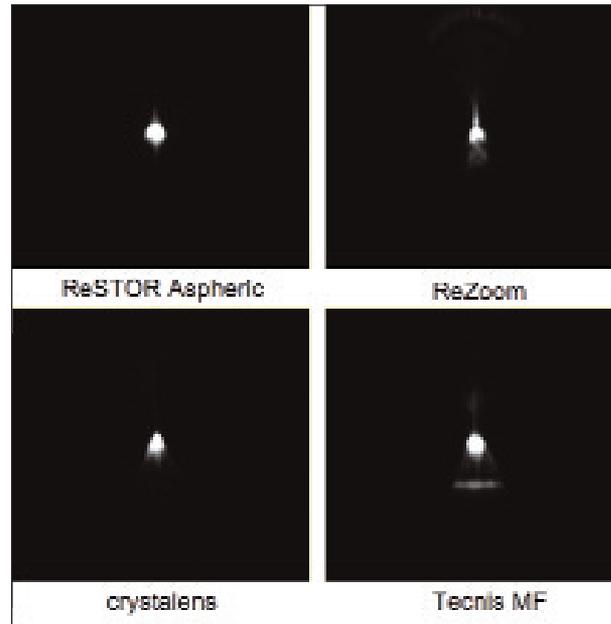
**Dr. Lehmann:** Comparing the Crystalens and the AcrySof ReSTOR Aspheric, you see that the latter gives a crisper image (Figure 2). When you look at the images through a model eye with a 6-mm aperture, it is a sharp, crisp spot (Figures 3 and 4). That exemplifies the results we are seeing with the AcrySof ReSTOR Aspheric and, in my opinion, explains the high level of patient satisfaction.

**MIXING IOLs VERSUS BINOCULAR IMPLANTATION**

**Dr. Masket:** Are any of you mixing and matching presbyopia-correcting IOLs?

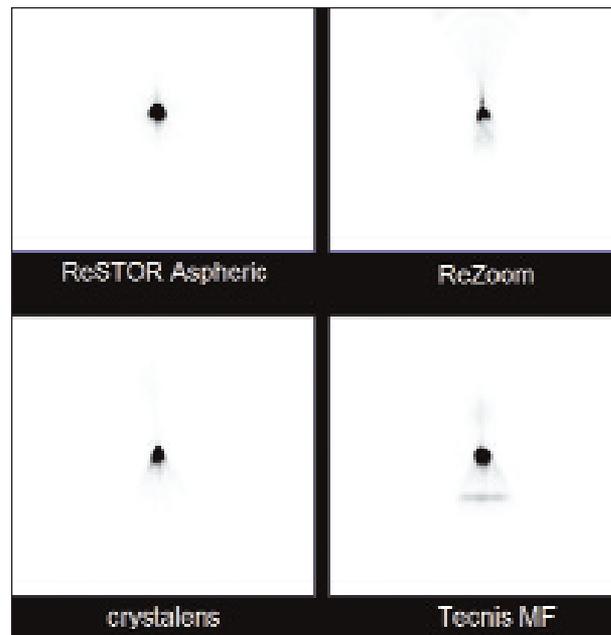
**Dr. Woodhams:** I have presented some comparisons at major ophthalmology meetings.<sup>4</sup> I have used the Crystalens with the AcrySof ReSTOR, the Crystalens with the ReZoom, and the ReZoom with the AcrySof ReSTOR. I think the biggest weakness of the AcrySof ReSTOR multifocal is the intermediate vision. One positive attribute of the ReZoom lens is that it has a good intermediate range, although at the expense of significant nighttime glare. The apodization that the Alcon engineers have provided to the AcrySof ReSTOR Aspheric lens has radically reduced the issue of night glare. I am moving away from mixing IOLs.

**Dr. Masket:** Does the depth of field increase over time with either monocular or binocular implantation of the AcrySof ReSTOR?



(Courtesy of Jim Schwiegerling, PhD, University of Arizona.)

**Figure 3.** These pinhole images through a 6.0-mm aperture simulate an oncoming headlight in the distance. The ReSTOR Aspheric and the Crystalens demonstrate similar performance.



(Courtesy of Jim Schwiegerling, PhD, University of Arizona.)

**Figure 4.** This negative image highlights the visual disturbances a patient may experience.

**Dr. Lehmann:** In most patients, depth of field, rings, and nighttime symptoms seem to improve with time. I think some neuroadaptation truly takes place, and the brain suppresses unwanted images. I have implanted thousands of AcrySof ReSTOR lenses and have never yet had to explant one because of unwanted imagery.

## DELIVERING CLINICAL SUCCESS AND PATIENT SATISFACTION WITH PRESBYOPIA-CORRECTING IOLs

**Dr. Masket:** About 2 years ago, Carlos Souza, MD, and colleagues in São Paulo, Brazil, published a study that compared a group of eyes implanted with the original AcrySof ReSTOR IOL, and a group of eyes that had received a monofocal control.<sup>5</sup> The researchers found that the monofocal patients' vision stayed the same after 6 months, but the multifocal subjects' vision improved after 3 to 4 months, statistically significantly for distance and near. The only explanation was neuroadaptation. Dr. Lehmann, do you have any experience with mixing and matching IOLs?

**Dr. Lehmann:** I was strongly opposed to mixing and matching. Subsequently, I have done it to a very limited degree, initially with the Crystalens and the AcrySof ReSTOR and now, occasionally, with the ReZoom and the AcrySof ReSTOR.

I have fairly extensive experience with the Crystalens Five-O, and that still might be my lens of choice for a patient with significant corneal guttata. That is one scenario in which I want to avoid a multifocal lens that splits the light. Otherwise, my go-to lens is the AcrySof ReSTOR Aspheric.

**"The sweet spot with the original AcrySof ReSTOR is fairly tight and close. With the aspheric, I find somewhat better intermediate vision than expected."**

—Brad S. Elkins, MD

**Dr. Elkins:** I did some mixing and matching initially with the Crystalens and the AcrySof ReSTOR, but I have stopped this practice.

I would like to comment about intermediate vision with the AcrySof ReSTOR Aspheric. As you have all commented, the sweet spot with the original AcrySof ReSTOR is fairly tight and close. With the aspheric version, I find somewhat better intermediate vision than expected. Patients definitely have a little more range. I am not sure how to explain that, but I notice it clinically.

**Dr. Masket:** I think we all share the clinical experience that Dr. Elkins notes. Science does not necessarily jive with clinical experience.

Douglas C. Koch, MD, at Baylor University in Houston, has conducted some very nice studies (as yet unpublished) looking at asphericity versus sphericity in terms of depth of focus. One would expect to achieve better quality of vision with asphericity, but theoretically, at least in

his study, it does not provide greater depth of focus. Yet, all of us have seen this effect clinically. I do not know that we have the laboratory answer to the clinical findings.

I want to share my own bias in terms of mixing and matching IOLs. One factor we have not discussed is cortical summation by the brain. I think cortical summation really brings about that "wow" factor for patients. If we give patients the opportunity to experience the best vision that any IOL product can deliver by implanting it into both eyes, the likelihood is that they will have the optimal quality of vision. I think we risk generating the side effects of two different products and inhibiting cortical summation when we mix them. Although I agree that a diffractive multifocal IOL tends to deliver better distance and near vision than intermediate vision, I think giving patients the same type lens in each eye offers them the highest quality vision they can achieve.

All of us need to recognize—and I share this with my patients all the time—that there is no ideal product. Patients want to see from their noses to infinity without any dead spots and with perfect quality, but we just do not have that capability yet. Every option is a compromise. However, given the IOL products available today, I think the AcrySof ReSTOR Aspheric gives appropriate candidates the greatest likelihood for good quality vision and spectacle independence.

### PATIENT SELECTION CRITERIA

**Dr. Masket:** Let's talk about who we exclude, who we include, and how we deal with dry eyes and all of the other issues that make patients good or poor candidates for specific IOLs. Often surgeons do not consider guttata, as Dr. Lehmann mentioned, although it can induce significant nighttime glare and reduce quality of vision. Who would you not consider a candidate for the AcrySof ReSTOR Aspheric lens? Let's talk first about patients' physical characteristics, not necessarily their psychological profile.

**Dr. Lehmann:** I exclude anyone with significant anterior basement membrane dystrophy, Fuch's dystrophy, superficial punctate keratitis, or anyone whose anticipated BCVA is less than 20/25. If I believe a patient can achieve good functional vision, 20/25 or better, and is motivated to reduce his dependence on spectacles for near and distance, then he is generally a suitable candidate for the AcrySof ReSTOR Aspheric IOL.

**Dr. Elkins:** I agree, especially regarding the condition of the cornea. Certainly, I will not implant any patient with macular pucker, subtle drusen, or even mildly amblyopic eyes, in addition to preexisting astigmatism. Those would be my major exclusions. I prefer pristine, perfect eyes.

**Dr. Lehmann:** I will consider a multifocal lens if the eye has a few drusen with overall good macular function, but I agree that patients with established age-related macular degeneration are not likely to benefit fully from these implants.

**Dr. Masket:** You mentioned basement membrane dystrophy. I think a lot of our colleagues overlook that, and it is among the reasons I perform topography on every patient who is having cataract surgery. Very often, I may not be impressed on clinical examination, but when I look at a very blurred or smeared topographic image, I get the sense that there is some basement membrane dystrophy. In fact, I have scraped the corneal epithelium of patients postoperatively and made a marked improvement in their vision. I have also done this preoperatively if they are highly motivated for the multifocal lens.

**Dr. Swale:** I look for patients who have good potential visual acuity but also those who are motivated to be spectacle free. Being new to the AcrySof ReSTOR Aspheric lens, I have avoided using it in patients who often drive at night or those who perform a lot of intermediate tasks. However, my concerns may have been overblown because of my experience with the Array lens. If we do decide to implant this lens, I tell the patient that he may need spectacles for intermediate tasks, such as computer work. I have been impressed, however, that the intermediate vision is predictably good in patients receiving the AcrySof ReSTOR Aspheric IOL.

**Dr. Masket:** I would like to discuss some other physical characteristics. I have had to explant the original AcrySof ReSTOR lens from two patients who were referred to me with poor vision after surgery. They had significant glaucomatous optic nerve defects. Unfortunately, some colleagues have overlooked the importance of that condition. Anything that will reduce the patient's contrast sensitivity function, which includes optic neuropathy, maculopathy, or corneal problems, is a contraindication. The clinical examination is obviously very important.

Eric D. Donnenfeld, MD, of New York, has lectured consistently and considerably on the importance of treating the tear film of patients who are candidates for premium or presbyopia-correcting IOLs. I agree that it is a very important consideration.

**Dr. Lehmann:** I treat these people as though they are 30- or 40-year old patients coming in for LASIK. Because all lens-based surgery is refractive surgery, you must treat patients for any associated conditions, such as dry eye, blepharitis, and so on. Obtaining accurate and repro-

ducible keratometry, measurements with the IOLMaster (Carl Zeiss Meditec, Inc., Dublin, CA) and immersion A scans, and performing precise surgery is a must.

**Dr. Masket:** That is a very important point. When we do our job well and help patients achieve emmetropia without other optical or physical problems, they will see well. That is the bottom line.

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**“I speak with every patient on whom I operate, so I can steer someone toward what I consider the best option.”**

—J. Trevor Woodhams, MD

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#### REALISTIC EXPECTATIONS

**Dr. Masket:** We have discussed physical characteristics and some lifestyle issues. We have not spoken much about psychological profiles. Is that important?

**Dr. Swale:** Yes. I try to avoid the obsessive perfectionist types. In general, they are difficult to please. They will be more visually demanding, more critical of their vision, and less tolerant of any compromise.

**Dr. Masket:** Steven J. Dell, MD, of Austin, has developed a profile analysis. Do you use something similar to understand a patient's expectations for surgery, their desires, and how compulsive they are? Is that useful?

**Dr. Lehmann:** Yes, I use a profile. I also have a one-on-one discussion of realistic expectations and potential risks/benefits with every patient.

**Dr. Woodhams:** I do not use a profile. Generally, I can size up a patient by having a conversation with him. I speak with every patient on whom I operate, so I can steer someone toward what I consider the best option.

**Dr. Elkins:** I perform a lot of LASIK, so I am accustomed to talking to people about reasonable expectations. Patients have to understand that we are not giving them the “fountain of youth.” We are not trying to eliminate eyeglasses, just reduce their dependency on them.

**Dr. Lehmann:** I agree completely. The surgeon has to be involved at some point. You must undersell and overdeliver. I tell any doctor who is just starting to implant presbyopia-correcting IOLs that I think the AcrySof ReSTOR Aspheric will be their easiest fit.

## DELIVERING CLINICAL SUCCESS AND PATIENT SATISFACTION WITH PRESBYOPIA-CORRECTING IOLs

### PATIENT EDUCATION AND CHAIR TIME

**Dr. Masket:** I know from my own experience that premium IOLs, including the toric lens, have increased my chair time with all of my cataract patients. Do you share that experience?

**Dr. Swale:** Yes, but I have found that moving from the Crystalens to the AcrySof ReSTOR Aspheric has decreased my chair time. I spent quite a bit of time explaining to Crystalens patients why they did not get the outcome they expected. When using the AcrySof ReSTOR Aspheric, I spend a lot less chair time postoperatively, because of the high degree of patient satisfaction. Preoperatively, however, the premium lenses do require additional time.

**Dr. Lehmann:** Chair time spent before surgery is well spent. It is much more productive than chair time spent after surgery. I also found that about half of my Crystalens patients needed quite a bit of explanation about why they were perhaps a little nearsighted in one eye and did not have the distance vision they expected, and yet, could not read as well as they expected.

**Dr. Woodhams:** I agree that a minute spent preoperatively is worth 5 minutes postoperatively. My staff and I conduct all the necessary education preoperatively, which makes the postoperative care less burdensome. Patients cannot be expected to understand such subtleties of vision as contrast and depth of field.

**Dr. Lehmann:** I agree that we may spend more chair time for toric and other premium lenses, but it is well worth it when those patients are pleased after surgery.

**Dr. Masket:** I think we all agree. The time we invest in a patient prior to surgery provides rewards after surgery. I like my patients to sense that their surgery is a shared venture, and I will do my part to make sure they get the best possible outcome. When we do that, it is rewarding to everyone.

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**“When using the AcrySof ReSTOR Aspheric, I spend a lot less chair time postoperatively because of the high degree of patient satisfaction.”**

—Jerome A. Swale, MD

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### EVOLUTION CONTINUES

**Dr. Masket:** Our panelists have brought a broad range of clinical experiences to this discussion. We have shared our impressions of the present presbyopia-correcting IOLs and recounted the evolution of each surgeon's preferences in practice today, moving through accommodative to aspheric multifocal IOLs.

We are privileged to be practicing in an era of rapid technological advances, and our patients are benefiting every day. Thank you all for your valuable insights. ■

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