

Cataract & Refractive Surgery **TODAY**

Changing the Game of Premium IOLs

Introducing a new presbyopia-
correcting IOL with mass appeal.



A Multifocal IOL With Mass Appeal: The TECNIS Multifocal IOL

How this fully diffractive, aspheric multifocal IOL surprised investigators in its FDA clinical trials.

The advent of new presbyopia-correcting IOLs has promoted cataract surgery from a life-enhancing event to a life-changing event. These lenses improve patients' visual function and free them from the need for glasses for most activities. Thus, presbyopia-correcting IOLs enhance recipients' quality of life and give them a degree of confidence that I never expected. I consider the implantation of these lenses an extraordinarily exciting part of my surgical practice.

This roundtable discussion focuses on the TECNIS Multifocal IOL (Advanced Medical Optics, Inc., Santa Ana, CA), which recently received FDA approval in the United States but has been available in Europe for several years. The participants in this discussion include three international experts in cataract and refractive surgery, who will share their experience with this lens, as well as three US physicians who have participated in the TECNIS Multifocal IOL's FDA clinical trials.

—Eric D. Donnenfeld, MD

PARTICIPANTS



ERIC D. DONNENFELD, MD,
MODERATOR



FRANK GOES, MD



LEONARDO AKAISHI, MD



JULIAN D. STEVENS, MRCP,
FRCS, FRCOPHTH



FRANK A. BUCCI, JR, MD



KEVIN WALTZ, OD, MD

PRESBYOPIA-CORRECTING IOLs IN PRACTICE

Dr. Donnenfeld: Let's start by discussing our experience with presbyopia-correcting IOLs. How have these lenses affected our practices, and how do we succeed with them?

Dr. Bucci: Presbyopia-correcting IOLs offer patients added value over traditional, monofocal designs in that they can eliminate the need for glasses for many activities, including reading and computer work. With declining cataract reimbursements, presbyopia-correcting lenses give patients better outcomes and thereby help physicians build their practices.

Dr. Akaishi: The presbyopia-correcting IOLs have changed my practice. I only use multifocal IOLs to treat presbyopia, because I feel they are the best choice to free patients from spectacles. I use these lenses in approximately 40% of my phaco surgeries. I implanted more than 4,000 multifocal IOLs in the last year, more than 2,500 of which were the TECNIS Multifocal (Advanced Medical Optics, Inc., Santa Ana, CA) (Figure 1). Eighty-six percent of my bilaterally implanted TECNIS Multifocal IOL patients are totally free of glasses.

Dr. Donnenfeld: That is impressive. I know that the economic downturn the United States is experiencing is also affecting other countries. Many ophthalmologists are noticing a decrease in their LASIK volumes. Has the volume of presbyopia-correcting IOLs in your practices been affected?

Dr. Stevens: Not yet. In Europe, insurance covers the cost of the cataract procedure, but not the cost of a premium lens implant. The current economic conditions do not appear to have affected patients' willingness to pay for presbyopia-correcting IOLs, however. Most patients see the value.

Dr. Goes: Patients in Belgium have to pay out of pocket for presbyopia-correcting IOLs, but this market has not dropped off as sharply as the LASIK market as a result of the current economic conditions. Multifocal lens patients are older and may not be as worried about the financial crisis affecting them. Many are willing to pay extra if they feel they are getting something valuable for it.

Dr. Donnenfeld: That is a very good point. Every patient who comes into my practice for cataract surgery

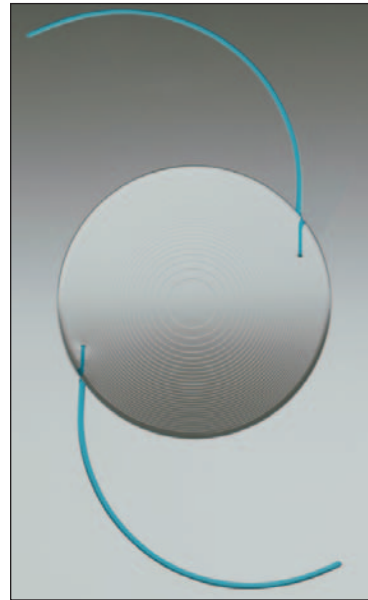


Figure 1. The TECNIS Multifocal IOL.

want them before we mentioned their availability. Since then, we have learned that we should offer them to all patients. Some practitioners have taken the opposite approach and now present multifocal IOLs as their standard implants, with the goal of achieving spectacle independence. They will consider a monofocal lens only if the patient has a contraindication. This approach forces the patient to say that he does not want the premium option.

Dr. Donnenfeld: Many practitioners fail to make a recommendation of the lens they think is best for the patient. Patients come to us for our expertise. They do not come to our offices to pick up brochures on different lenses so they can choose the lens that is right for them. They want us to listen to them, examine them, and then make a recommendation. I believe we are obliged to recommend the best lens for each cataract patient, whether multifocal or otherwise.

Dr. Waltz: I saw a similar situation occur with LASIK. For many years, practitioners offered their patients the choice of conventional versus customized LASIK, thinking that they should let the patients choose if they wanted the upgrade. When my colleagues and I surveyed patients postoperatively about how we could improve their experience in our practice, they said, in effect, "Don't give me choices. Tell me what I need, tell me what the price is, and let's get on with it." So, we changed our approach to say, "This is what you need, and this is the price."

is told about the presbyopia-correcting IOL options. I also have learned, as Dr. Goes just stated, that we cannot judge a patient's ability to pay for a procedure. It would be presumptuous of us to do that. All of our patients should be given the same opportunity.

Dr. Bucci: When multifocal IOLs debuted, we surgeons tried to figure out who might

THE TECNIS MULTIFOCAL IOL

Dr. Donnenfeld: Let's talk about the newest premium lens approved by the FDA, the TECNIS Multifocal IOL. Please describe this lens.

Dr. Stevens: The TECNIS Multifocal IOL is an aspheric, fully diffractive multifocal with +4.00 D near add power. This add power provides powerful reading vision as well as impressive reading speed (Figure 2),¹ which is unusual for multifocal IOLs, especially if they have a lower near add power. Additionally, the TECNIS Multifocal IOL delivers a very high degree of contrast to my patients. In the right recipients, aspheric lenses provide the best optical quality (Figure 3). Thus, adding a fully diffractive multifocal component to the original TECNIS aspheric lens has produced an implant with a high degree of contrast.

Dr. Waltz: The lens' excellent near vision is primarily due to the diffractive optics that cover the posterior surface of the entire optic. Thus, even eyes with large pupils can achieve good reading speed and near acuity.

Dr. Goes: In my experience, the TECNIS Multifocal IOL's diffractive optics, which cover the entire lens, optimize reading performance in dim light, even with large pupils. It is superior to the mesopic reading ability of other multifocal lenses, particularly the AcrySof IQ ReSTOR 4.0 D and 3.0 D IOLs (Alcon Laboratories, Inc., Fort Worth, TX), in which the reading focus does not cover the entire optic.

READING SPEED COMPARISON: THE TECNIS MULTIFOCAL IOL AND THE ReSTOR IOL

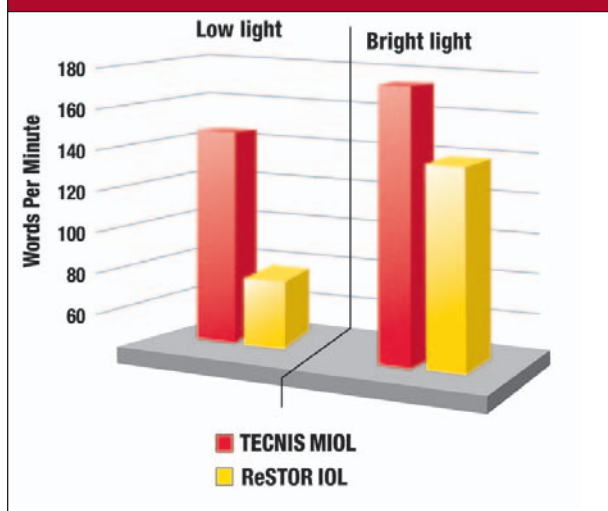


Figure 2. The TECNIS Multifocal IOL enables faster reading speed in low and bright light than the AcrySof ReSTOR IOL (Data from Hütz et al¹).

THE TECNIS IOL's ASPHERIC TECHNOLOGY

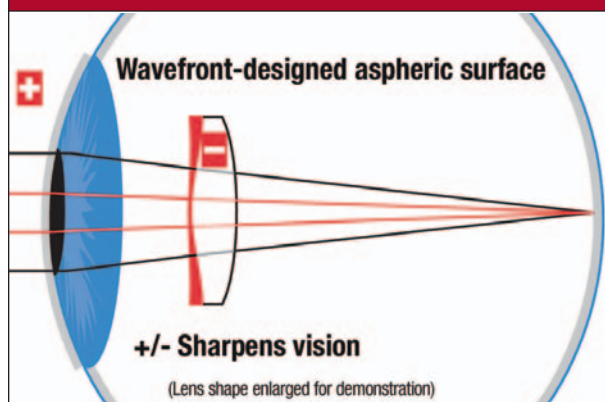


Figure 3. This illustration shows how the TECNIS Multifocal IOL, which incorporates the TECNIS aspheric technology, distributes light.

Dr. Bucci: The TECNIS Multifocal IOL uses 50% of the light for near vision and 50% of the light for distance vision at all pupil sizes and in all lighting conditions. Therefore, patients have simultaneous reading vision independent of the amount of light present (Figure 4). This lens is also designed to produce very good intermediate vision. Its design goal is a full spectrum of vision at all pupillary sizes and all levels of illumination.

Dr. Akaishi: I have a lot of experience with the TECNIS Multifocal silicone IOL, and I have begun implanting the hydrophobic acrylic version of the lens in the last 4 months. I conducted a study of 10 patients who have the acrylic TECNIS Multifocal IOL in one eye and the silicone TECNIS Multifocal lens in the other. These individuals' contrast sensitivity seems much better with the acrylic implant, by approximately 30%, and their visual acuity is also better.

Dr. Waltz: Based on subjective questionnaire data related to intermediate vision, the TECNIS Multifocal IOL's intermediate vision was surprisingly good, much better than I predicted. The TECNIS Multifocal IOL's distance and near acuities were so good that they seemed to give a residual boost to the intermediate range in many patients.

Dr. Donnenfeld: Who is the ideal patient for the TECNIS Multifocal lens?

Dr. Akaishi: The ideal patient is anyone who wants excellent, predictable near vision. In my opinion, the TECNIS Multifocal IOL offers the best near vision independent of pupillary size in all lighting conditions.

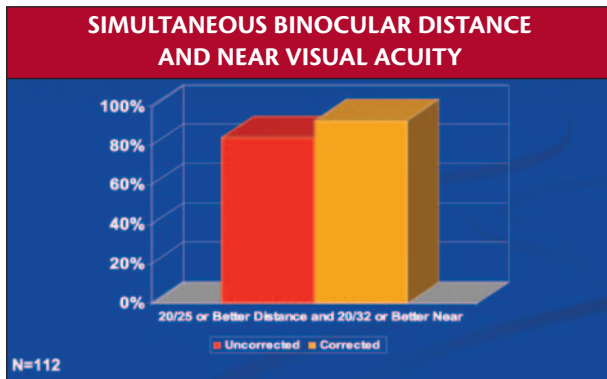


Figure 4. In the TECNIS Multifocal IOL's FDA clinical trial, at 1 year, 93% of the subjects simultaneously achieved 20/25 or better distance and 20/32 or better near visual acuity with distance correction in place.

Dr. Bucci: Like any IOL, the TECNIS Multifocal IOL has its ideal patient as well as a spectrum of people it will benefit. For example, its high-quality intermediate optics suit people who cannot tolerate that visual range in other multifocal lenses. Its predictable mesopic acuity is suitable for patients with large pupils. Thus, this lens increases the number of candidates for a multifocal IOL. As we mentioned, the AcrySof IQ ReSTOR 4.0 and 3.0 D IOLs restrict reading in dim light. These patients will appreciate the vision that the TECNIS Multifocal IOL provides.

Dr. Stevens: The fully diffractive TECNIS Multifocal IOL offers considerable near vision regardless of pupillary size. Another key benefit of this lens is that its +4.00 D near add power divorces the distance focal point from the near focal point by a wide degree. This wide separation keeps the distance vision considerably defocused while the pupil is small, which minimizes ghosting around text.

FDA CLINICAL TRIALS

Dr. Donnenfeld: I would like Dr. Bucci and Dr. Waltz to give us an overview of the findings from the TECNIS Multifocal IOL's FDA clinical trials.

Dr. Bucci: The 4- to 6-month results of the TECNIS Multifocal IOL's FDA trial were outstanding (data on file with Advanced Medical Optics, Inc.). Eighty-five percent of bilaterally implanted patients had 20/20 or better distance BCVA, and the mean was 20/18. Eighty percent achieved simultaneous 20/25 or better at distance and 20/32 or better at near without correction. It was impressive to see that very high percentages of patients functioned comfortably without glasses at all ranges of vision, including intermediate

distances. It is very important to note that over one-third (37%) of my study patients had 0.75 to 1.00 D of residual corneal astigmatism, which we were prohibited from treating during the study. Once these individuals' residual corneal astigmatism is corrected, as would be the case outside an FDA study, the percentage of patients functioning without glasses will likely increase to the very high 90s for all ranges of vision. However, 88% of patients reported never wearing glasses while in the study (Figure 5).

Dr. Waltz: Another remarkable finding from my TECNIS Multifocal IOLs FDA study patients was that when we queried the patients directly about adverse symptoms with the TECNIS aspheric Multifocal lens, such as halos and glare, they reported almost none. If symptoms were reported, few were classified as bothersome.

Dr. Bucci: Patients were asked if they could function comfortably without glasses with the vision provided by the TECNIS Multifocal IOL at distance, intermediate, and near. Not surprisingly, 96% of the study subjects reported that they could function comfortably at distance without glasses. What did surprise us, however, was that 94% reported being able to function comfortably at intermediate distance without glasses. That number is significantly better than what has been reported for the other diffractive multifocal lens options.

Dr. Waltz: Patients' vision with multifocal IOLs is affected by residual corneal cylinder with a decrease in uncorrected distance and near vision in eyes with astigmatism. This knowledge indicates a paradigm shift for IOL implants. For many years, cataract surgeons did not think

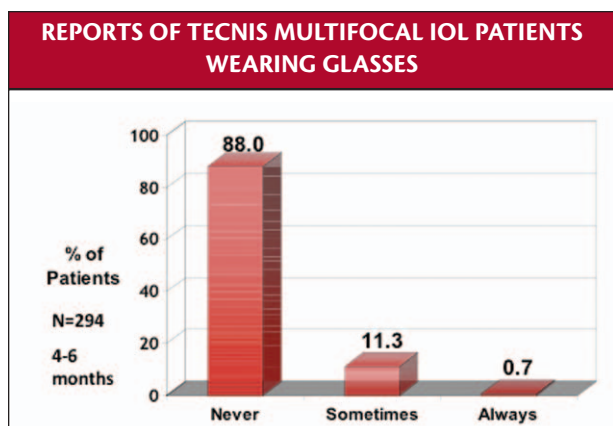


Figure 5. Nearly nine out of 10 patients in the TECNIS FDA clinical trial reported never wearing glasses after implantation.

about astigmatism. With presbyopia-correcting IOLs, however, leaving patients with 1.00 D of astigmatism will give them worse vision than if they were emmetropic. We refractive cataract surgeons have to recalibrate our surgery. Most surgeons working with these lenses strongly prefer to leave no more than 0.50 D of residual astigmatism. One of the great things about presbyopia-correcting IOLs is that physicians who adopt these lenses develop new skills and become better surgeons. They use these new skills on all their patients—whether presbyopia-correcting or traditional IOL recipients—and everyone benefits.

Dr. Bucci: The TECNIS Multifocal IOL induces less glare overall than some of the previous multifocal lenses. Importantly, however, we must remember and stress to our patients the difference between poor quality of vision and experiencing light phenomenon. Someone whose vision is 20/30 with 1.00 D of astigmatism 2 months after receiving a multifocal IOL will have stronger complaints than someone who had their astigmatism corrected to less than 0.50 D. Also, performing a YAG laser capsulotomy

somewhat earlier than usual can have a big impact on patients' satisfaction.

MAXIMIZING OUTCOMES

Dr. Donnenfeld: When implanting the TECNIS Multifocal lens for the first time, what biometric calculations should surgeons aim for to optimize their surgical outcomes? What is your goal with these patients?

Dr. Goes: It depends on how accurate surgeons' calculations are and how familiar they are with the formulas. The target refraction should be between plano and +0.25 D for the first time, but never for myopia.

Dr. Stevens: Biometry is referenced to spectacle refraction, most commonly at 6 m. For driving, it is important that patients with multifocal lenses are focused at infinity. We can do this two ways: either add 0.25 D, or else personalize the lens constant. At night, we all become myopic by about 0.30 D, because scattered light is at the blue end of the spectrum.

EXPERIENCE WITH THE TECNIS MULTIFOCAL IOL

BY KERRY K. ASSIL, MD

I have been working with presbyopia-correcting IOLs for many years, and I currently implant approximately 400 of these lenses per year. My personal experience with the TECNIS Multifocal IOL is based upon its performance in its US FDA clinical trials. Across the board, these patients were extremely satisfied with the performance of their TECNIS multifocal eye. No patient indicated that this lens performed insufficiently at either near or distance. All these subjects felt they were getting sufficient near performance from the TECNIS Multifocal IOL. Of course, FDA trials are conducted in a highly disparate fashion compared to our normal clinical practice, and further side-by-side comparisons are needed to establish the true efficacy of this lens. Nevertheless, it is encouraging to know that in Europe, where the TECNIS Multifocal IOL has been available for some time, it seems to be the lens of choice among surgeons. Now that this lens has achieved US FDA approval, I expect it will significantly and positively impact the practices of physicians who provide premium IOLs.

The TECNIS Multifocal IOL has two main features that differentiate it from other multifocal options and will likely make the lens the most popular choice for

patients. First, this lens routinely gives excellent near, intermediate, and distance acuities irrespective of pupil size and lighting conditions. Thanks to its fully diffractive optical zone, the TECNIS Multifocal IOL provides better dim-light reading capability than do other multifocal IOLs; these patients are not frustrated by an inability to read in restaurants and other similar settings. Secondly, the TECNIS Multifocal IOL offers superb night vision thanks to its highly aspheric design.

Based upon my clinical experience (including clinical trials), I have found that, as long as presbyopia-correcting IOL patients' vision is crisp at both near and distance without a filmy or waxy quality, most of them will opt for unconditional freedom from glasses over the concern of temporary nighttime halos. Interestingly, the majority of my patients in the TECNIS Multifocal IOL trial did not mention visual symptoms unless prompted by my staff or myself. Typically, they were more eager to talk about how well they saw rather than discuss side effects (including halos). ■

Kerry K. Assil, MD, is Medical Director of the Assil Eye Institute in Santa Monica and in Beverly Hills, California. He is a paid consultant for Advanced Medical Optics, Inc. Dr. Assil may be reached at (310) 651-2300; kassil@assileye.com.

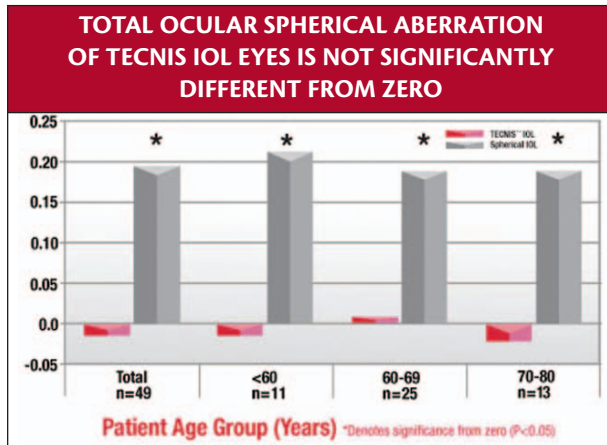


Figure 6. This graph shows the mean spherical aberration measurements at 90 ± 15 days postoperatively (TECNIS IOL package insert).

Targeting +0.25 to +0.50 D will ensure good night driving vision.

MATERIAL AND DESIGN

Dr. Donnenfeld: Let's discuss the design and material of multifocal IOLs. How does the group feel about hydrophilic acrylic compared with hydrophobic acrylic?

Dr. Stevens: Many surgeons prefer hydrophobic to hydrophilic acrylic for several reasons. One consideration is the optical properties of the material, such as how much chromatic dispersion is present. One advantage of hydrophobic acrylic is that these lenses can be manufactured to have a very sharp edge. The edges of hydrophilic acrylic IOLs are rounder and much less effective at preventing epithelial cells from migrating underneath the lens.

Dr. Waltz: I have had problems with calcifications forming in hydrophilic acrylic IOLs, and I have also seen significant glistenings in AcrySof acrylic lenses. Clinically, we view glistenings with back scattered light that we shine into the eye. Forward scatter is what the patient actually sees, and it is several times worse than the back scatter. Research is ongoing in this area, because glistenings inside some of the acrylic lenses are a real issue and have been shown to progress over time.²

ABERRATIONS WITH ASPHERIC LENSES

Dr. Donnenfeld: I would like to discuss spherical and chromatic aberrations. One of the advantages of the TECNIS family of lenses, including the TECNIS Multifocal IOL, is that they are designed to fully correct corneal spherical aberration to 0 μm. How does this

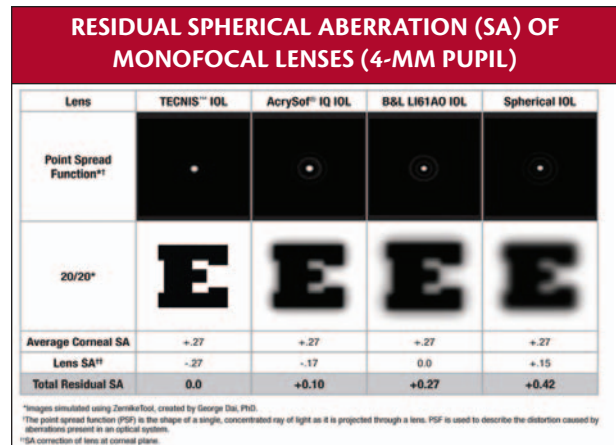


Figure 7. The point spread function (PSF) is the shape of a single, concentrated ray of light as it is projected through a lens. PSF is used to describe the distortion caused by aberrations present in an optical system (Benchmark study, data on file, Advanced Medical Optics, Inc.).

high degree of spherical aberration affect patients' quality of vision, including glare and halo?

Dr. Stevens: Studies have shown that the TECNIS lenses, including the TECNIS Multifocal IOL, reduce spherical aberration to essentially zero (Figure 6). People with corneal spherical aberration derive significant benefits from aspheric IOLs that correct corneal spherical aberration. So, aspheric lenses are here to stay. The foundation upon which the TECNIS Multifocal IOL was developed allows a high degree of contrast with a multifocal IOL.

Dr. Donnenfeld: Substantial evidence now favors fully reducing spherical aberration. The TECNIS aspheric monofocal IOL was the first implant to apply this theory (Figure 7). This lens proved its viability when patients implanted bilaterally demonstrated a better quality of vision and improved their distance identification in driving simulations.³ Now, I think it is imperative for multifocal lenses to have an aspheric optic that can reduce corneal spherical aberration to essentially zero, because of the better quality of vision, including reduced glare and halos, that this technology provides.

How does chromatic aberration affect quality of vision, and how does the TECNIS aspheric lens address it?

Dr. Stevens: Chromatic aberration is physiologically normal. We have blue wavelengths of light focused in front of the retina, yellow-green wavelengths at the posterior components of the cone, and photoreceptors and red light behind the retina. Patients with pseudophakic eyes,

TABLE 1. QUALITY OF VISION CLINICAL COMPARISONS

	TECNIS Multifocal IOL	ReSTOR Aspheric One-piece IOL¹ (6 months)	Crystalens IOL² (1 year)
Patient satisfaction	94.6%*	3.4 [§]	Not reported
% Patients never wearing glasses	88.0%†	75.7%	25.8%
Halos and glare (moderate to severe)	Halos 10.4%[‡] Glare 12.9%[‡]	Halos 30.4% Glare 27.5%	Halos 18.5% Glare 19.2%
Simultaneous 20/25 or better distance AND 20/32 or better near with distance correction	94.2%[‡]	89.8%	Simultaneous visual acuity not reported

*Reported at 1 year, would choose the TECNIS Multifocal IOL again
†Reported at 4-6 months
‡Reported at 1 year, based on the subjects' responses when asked, "Are you having any difficulties with your eyes or vision?"
§Satisfaction scale 0-4: 0 = not at all satisfied, 4 = completely satisfied
1. AcrySof ReSTOR apodized diffractive IOL [package insert]. Fort Worth, TX: Alcon Inc.
2. Crystalens SE Accommodating Posterior Chamber Intraocular Lens [package insert]. Aliso Viejo, Calif: Eyeonics Inc; 2006.

however, where there is significant chromatic aberration, can perceive color fringes. They get decreased contrast from the chromatic aberrations, which are enhanced more than physiologically normal. So, we want the lens material to have the correct dispersity to minimize this neurogenic chromatic aberration.

The general principle is that correcting spherical aberration will improve a person's overall quality of vision. It enhances patients' neuroadaptation so that they may adjust to light phenomenon at night. With a small amount of positive spherical aberration, patients seem to neuroadapt quicker and have a higher quality of vision (Table 1).

THE OCULAR SURFACE

Dr. Donnenfeld: Let's talk about the ocular surface. I agree that we reap enormous dividends by attending to the ocular surface pre- and postoperatively. The limiting factor today on IOL calculations is no longer biometry, but keratometry. If we can improve the health of patients' ocular surfaces and thereby generate more reliable keratomeries, we will improve the accuracy of our IOL selection. Even before I perform my IOL calculations, I want to be certain that the corneal surface is as smooth as possible.

Dr. Waltz: We grossly underestimate the impact of dry eye. Cataract surgery exacerbates even mild dry eye, and then patients feel like the surgery caused the condition. At least in the United States, we are not yet doing enough to treat dry eye preoperatively. I found that treating it aggressively

made such a difference in my outcomes that I now take the position that all cataract patients have dry eye until proven otherwise. The current generation of topographers can identify subclinical dry eye, and then we can determine whether a person needs to be treated before we take their preoperative measurements. My current-generation topographer allows me to better identify dry eye preoperatively and thereby control another variable in my outcomes. I have been surprised at how often I identify dry eye. Anybody over 40 years old has some component of this syndrome. I routinely delay patients' surgery for 1 month so I can treat them with dry eye therapy. Optimizing the ocular surface in turn produces excellent preoperative measurements. The changes I've seen have been amazing.

Dr. Donnenfeld: The same principle applies to refractive surgery, too. Without a healthy tear film, wavefront treatments cannot be as good as they should be. My staff and I examine the tear film carefully. I prescribe cyclosporine A on a fairly routine basis for patients receiving multifocal IOLs. I have also been impressed with a new tear product called Blink Tears Lubricating Eye Drops (Advanced Medical Optics, Inc.). These drops have a viscoelastic-like property that allows them to coat and smooth the ocular surface. In fact, my colleagues and I presented a paper at the recent 2008 American Academy of Ophthalmology annual meeting that showed Blink Tears' ability to improve wavefronts after LASIK.⁴ Dr. Bucci, you have done some research on this product as well.

Dr. Bucci: My colleagues and I conducted a 2-month, double-blind, controlled crossover study involving 40 patients to compare Blink Tears and Systane Tears (Alcon Laboratories, Inc.). We evaluated objective signs, like tear break-up time and lisamine green corneal staining, as well as subjective patient responses about visual quality, comfort, and blurring upon instillation. Blink Tears was statistically significantly superior to Systane for numerous outcomes, including TBUT ($P=.001$), corneal staining ($P=.014$), comfort ($P=.004$; Figure 8), blur upon instillation ($P=.001$) and improved visual quality ($P=.001$). Systane did not outperform Blink Tears for any variable tested.

Dr. Stevens: There is no question that the osmolarity of the tear film makes a difference in surgical outcomes. In addition to having poor tear production, elderly cataract patients may have ectropion or entropion with an abnormal tear film. There may also be pingueculum or pterygium that breaks up the tear film. Also, the use of preserved drops after surgery has been associated with dry eye, and povidone iodine affects goblet cell function. Thus, dry eye can be just as profound after cataract surgery as after laser refractive surgery. Preservative-free drops make a big difference for the dry eye patient subjectively.

In Europe, we have Blink Tears available in various concentrations.

Dr. Donnenfeld: My colleagues and I have done a number of studies on postoperative dry eye, and we have reached the same conclusions as Dr. Stevens. First, in the cataract population, the incidence of dry eye is 25% before

(Courtesy of Eric Donnenfeld, MD.)

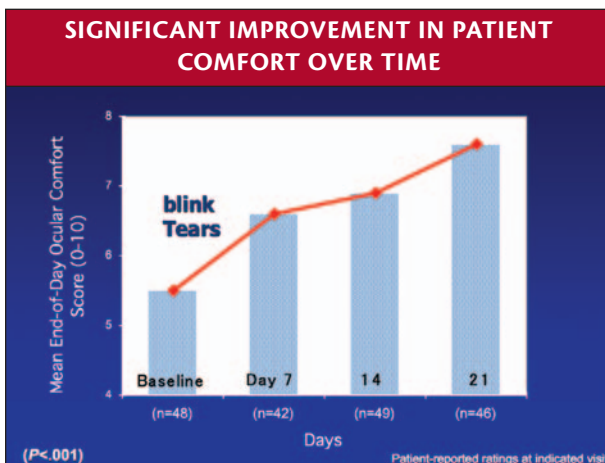


Figure 8. Results with Blink Tears show a statistically significant improvement in patient comfort between day 7 and day 21.

PROPHYLAXIS

Dr. Donnenfeld: How do you ensure that the patient will not develop subclinical cystoid macular edema (CME) after cataract surgery?

Dr. Bucci: I go by the principle that NSAIDs are no longer an option. I dose NSAIDs for 3 days preoperatively and for an extended time postoperatively to reduce the potential for subclinical CME.

Dr. Donnenfeld: How long do you continue NSAID therapy after multifocal IOL implantation for routine, uneventful cataract surgery?

Dr. Bucci: A minimum of 1 month, but sometimes longer. I always use a steroid and an NSAID in combination, both pre- and postoperatively.

surgery. If we do nothing to improve the condition of the cornea and then further assault it with povidone iodine, antibiotics, NSAIDs, the incision, and finally a limbal relaxing incision, there is no question that it will suffer significant denervation and increased dryness. Therefore, I think the use of immunomodulation and nonpreserved artificial tears that have a viscoadaptive property, like Blink Tears, are a major step in improving cataract patients' quality of vision.

Dr. Donnenfeld: We all agree that implanting a multifocal IOL monocularly is not prudent. In fact, some surgeons are interested in placing multifocal lenses in people who have significant macular pathology, age-related macular degeneration for example, and I would not recommend that unless that patient's vision was 20/100 or worse.

CLOSING COMMENTS

Dr. Donnenfeld: Would the panel like to make any closing comments about refractive IOLs in your practices?

Dr. Bucci: I believe the TECNIS Multifocal IOL is going to usher in a new era in the United States for correcting presbyopia. We are finally going to have a presbyopia-correcting IOL that enables reading across all lighting conditions, for all pupil sizes, and has adequate intermediate vision. I think this lens is going to become the foundation for correcting presbyopia. It will move the market forward as doctors become confident with implanting it. If we had had this lens 3 to 5 years ago, today's landscape for correcting presbyopia would be completely different. Previous presbyopia-correcting IOLs have had significant weaknesses. We are building a solid foundation for implanting these

MIXING AND MATCHING THE TECNIS AND ReZoom IOLs

By Farrell C. Tyson II, MD

Having the largest volume of bilateral implantations of the TECNIS Multifocal IOL in the United States, I feel that the lens' range of vision is so good that surgeons will not need to mix and match this lens very much. However, there will of course be some patients who want particularly strong focus at a specific range, and they can also benefit from the TECNIS Multifocal IOL's mixing ability. For example, I have quite a few patients who actively shoot clay targets. They are not trying to cerebrally summate; they want exceptional distance vision in their shooting eye. I give these individuals the ReZoom IOL (Advanced Medical Optics, Inc., Santa Ana, CA) in their shooting eye and the TECNIS Multifocal IOL in their other eye.

Overall, however, surgeons will find that the TECNIS Multifocal IOL functions quite well when implanted

bilaterally. When I reviewed my 4- to 6-month data of 38 bilaterally implanted patients from the US FDA clinical trial, I was surprised to find that 24% of them achieved 20/16 or better at distance, and 23% had J1+ or better reading vision. These numbers are impressive, because the study's parameters prohibited me from performing any postoperative enhancements. Furthermore, although the study's parameters required me to measure the subjects' reading vision at 33 cm, most of them were happiest reading at 37 cm, which is a more relaxed distance than the AcrySof IQ ReSTOR aspheric multifocal IOL (Alcon Laboratories, Inc., Fort Worth, TX) provides.

Farrell C. Tyson II, MD, practices at Cape Coral Eye Center in Cape Coral, Florida. He is a speaker for Advanced Medical Optics, Inc., but acknowledged no financial interest in the products or companies mentioned herein. Dr. Tyson may be reached at: (239) 542-2020; tysonfc@hotmail.com.

patients with the TECNIS Multifocal IOL bilaterally or in one eye as support for a mix-and-match situation.

Dr. Goes: A majority of TECNIS Multifocal IOL patients are very happy. We must remember, however, that more preoperative chair time means less postoperative chair time. It is important to give our patients an honest but uncomplicated description of what they may expect from these lenses.

Dr. Donnenfeld: Multifocal IOLs have challenged us surgeons to improve our surgical skills in both cataract and refractive surgery. These lenses have given us the opportunity to offer an unprecedented benefit to a majority of patients: years of spectacle freedom. This gift directly impacts patients' lives and improves their quality of life. I would like to thank you panelists for your contributions to cataract surgery and for sharing your insights with us today. ■

Eric D. Donnenfeld, MD (Moderator), is a clinical professor of ophthalmology at New York University, a partner in Ophthalmic Consultants of Long Island, and a trustee of Dartmouth Medical School. He is a paid consultant to Advanced Medical Optics, Inc., Allergan, Inc., Alcon Laboratories, Inc., Bausch & Lomb, and TLC Laser Centers. Dr. Donnenfeld may be reached at (516) 766-2519; eddoph@aol.com.

Leonardo Akaishi, MD, is a cataract specialist and the

Director of the Hospital Oftalmológico de Brasília in Brazil. He acknowledged no financial interest in any company or product mentioned herein. Dr. Akaishi may be reached at +61 3442 4000; leonardoakaishi@hobr.com.br.

Frank A. Bucci, Jr, MD, is Medical Director of Bucci Laser Vision Institute in Wilkes Barre, Pennsylvania. He acknowledged no financial interest in any company or product mentioned herein. Dr. Bucci may be reached at (570) 825-5949; buccivision@aol.com.

Frank J. Goes, MD, is the Medical Director of the Goes Eye Centre, Antwerp, Belgium. He receives travel support from Advanced Medical Optics, Inc., and Carl Zeiss Meditec AG. Dr. Goes may be reached at: +32 3 2193925; frank@goes.be.

Julian D. Stevens, MRCP, FRCS, FRCOphth, is Consultant Ophthalmic Surgeon at Moorfields Eye Hospital, in London. He is a consultant to Advanced Medical Optics, Inc., and Revision Optics, Inc. Dr. Stevens may be reached at JulianStevens@compuserve.com.

Kevin L. Waltz, OD, MD, is in private practice with Eye Surgeons of Indiana in Indianapolis. He receives periodic payment for intellectual property from Bausch & Lomb. Dr. Waltz may be reached at (317) 845-9488; klwaltz@aol.com.

1. Hütz WW, Eckhardt HB, Röhrig B, Grolmus R. Reading ability with 3 multifocal intraocular lens models. *J Cataract Refract Surg.* 2006;32:2015-2921.
2. Waite A, Faulkner N, Olson RJ. Glistenings in the single-piece, hydrophobic, acrylic intraocular lenses. *Am J Ophthalmol.* 2007;144(1):143-144.
3. Packer M, et al. Functional vision, wavefront sensing, and cataract surgery. *Int Ophthalmol Clin.* 2003;43(2):79-91.
4. McDonald, Donnenfeld ED, Klyce SD, et al. Efficacy of Blink Tears and Systane Artificial Tears on quality of vision. Paper presented at: The AAO Annual Meeting; November 8, 2008; Atlanta, GA.

Cataract & Refractive Surgery

TODAY