

GUIDING CHOICES

Help patients understand extended-depth-of-focus, multifocal, and accommodating lenses.

BY D. REX HAMILTON, MD, MS



As cataract surgeons in 2017, we are blessed to have a variety of premium IOLs available. With this blessing comes a responsibility to adequately explain the pros and cons of these technologies to our patients prior to surgery.

CHOOSE YOUR APPROACH

The first step is to choose how to approach the educational process. Will you make a strong recommendation based on your clinical assessment, or will you present each of the IOLs with its pros and cons and allow the patient a more active role in determining which one to use? My style is to make a recommendation based on a comprehensive clinical history, patient-reported desires for visual function and needs, the slit-lamp examination (including dilated fundus), corneal topography, and often (but not always) macular optical coherence tomography imaging. I prefer this approach to asking the patient to make an “educated” choice that is often biased by the experience of a loved one, friend, or neighbor or an angry blog post on the Internet.

I present multiple options to the patient and explain the reasons behind my recommendation of a specific IOL. For example, if a patient has an epiretinal membrane causing obvious distortion on Amsler grid testing, I will show him or her the macular optical coherence tomography findings. I will then explain that monovision is probably not the best option, despite his or her sister-in-law’s never having to wear glasses after monovision cataract surgery. Similarly, if a patient has a history of radial keratotomy surgery, I will explain that the optics associated with a multifocal IOL are not “compatible” with the optics associated with his or her cornea. I will state that a monovision approach is a better choice, even if his or her neighbor threw away his or her glasses after receiving multifocal IOLs last year.

CONTRAST THE OPTIONS

There are similarities and differences in the conversations I have with patients when discussing extended-depth-of-focus (EDOF) versus multifocal lenses. Regarding EDOF IOLs (Tecnis Symphony and Tecnis Symphony Toric; Abbott), I describe a continuous range of high-quality vision from a distance to just inside arm’s length. Menus, price tags, cell phones, computers, and tablets will be visible without

glasses. Smaller-print items such as nutritional labels and drug package inserts may require some low-powered readers from the drugstore. The wonderful new aspect of EDOF is the phenomenal computer-range vision for folks whose jobs and careers revolve around monitors, tablets, and laptops.

I contrast these outcomes with the multifocal experience, which also includes an excellent useful range of vision. Multifocal IOL patients may be able to see items by holding them closer than with an EDOF IOL, I explain, but they will likely need to make more adjustments in working distance and lighting when viewing computer screens, laptops, and tablets, a feature that may frustrate those whose occupational and leisure environments do not allow for such changes.

PREPARE THE PATIENT

It is important to explain the pros and cons of each IOL without alarming the patient. I often hear surgeons over-emphasize the negative aspects of certain IOL technologies to their patients, in effect scaring them off from an option that might have been ideal for their lifestyle needs. This conservative approach probably minimizes chair time during a surgeon’s early experience with new technologies, but ultimately, it may limit the volume of patients for whom the surgeon can provide the most desired outcome.

With EDOF IOLs, there is no question that near vision will be farther out than patients have been used to. This will strike them as odd and bothersome at first, particularly if they have been myopic. It is therefore important to point out to myopic patients that, immediately after receiving an EDOF or multifocal IOL in the first eye, they will still feel like they are reading out of the unoperated eye. I provide this information prior to surgery on the first eye so that patients are not surprised on postoperative day 1. I explain that, just because they are reading out of the unoperated eye, it does not mean that the operated eye cannot see up close. The brain defaults to normality. Once surgery on the second eye is complete, there will be a new norm that includes a new night vision experience and, especially with an EDOF IOL, a new near viewing distance that is farther away from the body.

For myopic patients concerned about this change in unaided near vision, I point out that, with the monofocal option, they will lose the unaided near vision they have had their

entire life and gain unaided distance vision they never had. With the EDOF/multifocal option, they will largely maintain the unaided near vision to which they are accustomed while gaining unaided distance vision that they have never had.

Night vision symptoms are present with both EDOF and multifocal lenses. It is just as important to discuss night vision with EDOF IOL patients as it is with multifocal IOL patients. In the AMO Multicenter Clinical Trial of Symfony Intraocular Lens, the incidence of moderate to severe night vision symptoms with the Tecnis Symfony IOL was lower than that seen in the multifocal IOL clinical studies, but the types of night vision symptoms differed. EDOF IOL patients talk more about starburst effects than halos, although they can see both. Neural adaptation is real and occurs with both EDOF and multifocal IOLs, and it should be discussed upfront. I like to point out that, much as the new working distance with EDOF IOL becomes the new norm, so does the presence of nighttime starbursts. The brain will adapt and stop noticing them in time.

TREAT ASTIGMATISM

Another wonderful aspect of EDOF IOLs is their ability to treat astigmatism of up to 2.00 D at the corneal plane with the toric version. In my opinion, manual corneal relaxing incisions are less predictable than toric IOLs for treating astigmatism above about 1.25 D. Prior to the introduction of the toric EDOF IOLs, surgeons in the United States had to rely on corneal relaxing incisions to treat astigmatism at the time of cataract surgery with multifocal IOLs. With toric EDOF IOLs now available, I feel confident that I can significantly reduce spectacle dependence in a new segment of patients, namely those with significant astigmatism.

In my experience, patients have almost always heard of astigmatism and are very happy to be offered an intraocular solution. A great way to explain how a toric IOL treats astigmatism is to pull up the patient's topography on the electronic medical record. I then take the gummy toric IOL model provided by Abbott, place it over the topography, and slowly align it with the bowtie astigmatism.

DISCUSS ACCOMMODATING LENSES

When explaining accommodating lenses, I find it important to limit patients' expectations for spectacle independence. Because the lens moves to some degree inside the eye, its resting point is less predictable than the standard one-piece lens design used for today's multifocal and EDOF IOLs. I make sure patients understand monovision concepts and that, due to the variability in refractive outcomes of the currently available accommodating lens (Crystalens AO; Bausch + Lomb), the need for a LASIK or PRK "fine-tuning" procedure is higher than it would be with a multifocal or EDOF IOL. In addition, even if unaided distance vision is excellent, near vision without glasses may be inadequate.

Computer-range vision is typically excellent with the accommodating lens, and this implant offers a reasonable solution for patients with previous corneal refractive surgery who desire some reduction in spectacle dependence.

USE EDUCATIONAL TOOLS

Whichever option I recommend to a patient, I use several tools to help illustrate the postoperative experience so as to remove mystery and reduce fear.

IOL Models

All of the IOL manufacturers can provide jumbo-sized models of the IOLs they manufacture. I carry these around in my coat pocket and pull them out as I explain surgery, improving the efficiency of the discussion. For example, I can fold a model in front of the patient as I say, "The lens is foldable, allowing me to insert it into the eye through a very small incision that does not require a suture." To help explain the EDOF IOL, I can point out the rings while saying, "You see the rings on this extended-depth-of-focus lens. We are changing the optics your brain is used to in an instant. Your brain needs to adapt to the new optics. During the first few months, you will notice some combination of glare, halos, and starbursts around lights at night. These won't be debilitating like what you experience now with your cataracts, but they will seem unusual. After a time, you will notice these aspects less often. You are wearing a watch, necklace, bracelet, earrings, but you don't notice them. Your brain is used to them and ignores them. In much the same way, your brain will adapt to the new norm of these amazing optics and ignore the glare and halos."

Video Simulations

There are various video simulation packages provided by IOL manufacturers and other third parties (eg, Rendia, Patient Education Concepts) that are excellent for educating patients. My office has put together "Cataract Overview" and "Premium Choice" sequences of videos. After my optometrist has seen a new cataract patient, she will activate the "Cataract Overview" sequence, which walks the patient through the visual effects of cataract development, the cataract surgical process, laser options, IOL choices, and the postoperative visual experience. This not only provides vital educational information to the patient, but it also seems to shorten the time waiting for the surgeon to enter the exam lane. Once I have examined the patient and made my recommendation, I will activate the "Premium Choice" option, if appropriate, while the patient waits for my counselor to arrive and review the next steps in the process (eg, scheduling, finances, etc.). We incorporate some videos with my voice-over, together with stock videos from the third party, to add a personal touch to the educational experience.

(Continued on page 37)

(Continued from page 34)

Physical 3-D Eye Model

It is old school, but I still like the 3-D eye model when talking directly to patients. It is something they can touch, rotate, and take apart. I find a 3-D eye model to be engaging for patients, and it serves as a foundation for the aforementioned discussions. It allows me to face the patient, make eye contact, and not turn away from him or her to fiddle around with the mouse and keyboard that would be required if I were using the video simulation to educate him or her.

In summary, today's refractive cataract surgeon is blessed with outstanding IOL technology that affords an unprecedented opportunity to provide spectacle independence to patients. Along with this opportunity comes the responsibility to adequately prepare them for the process. Addressing

concerns using visual aids, using simple language, and setting appropriate expectations will result in happy patients, more word-of-mouth referrals, and a prosperous refractive cataract surgical practice. ■

D. Rex Hamilton, MD, MS

- health sciences clinical professor of ophthalmology, Stein Eye Institute, University of California, Los Angeles
- medical director of the UCLA Laser Refractive Center
- hamilton@jsei.ucla.edu; www.uclaser.com; www.lasik.ucla.edu; [Facebook.com/uclaeye](https://www.facebook.com/uclaeye); Twitter: @uclaeye
- financial disclosure: consultant to Abbott; has received honoraria and travel support for educational lectures from Carl Zeiss Meditec