

## Multifocal Intraocular Lenses—Patient Selection and Managing Expectations

a report by

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Patient satisfaction with uncorrected vision following a refractive intraocular lens (IOL) reflects success in four separate areas. There must be: uncomplicated surgery; avoidance or reduction of astigmatism; selection of the optimal IOL power; and reasonable expectations on the part of the patient. The first three prerequisites have long been the goal of every cataract surgeon. It is in this fourth area of patient selection where the availability of presbyopia-correcting IOLs has required us to develop and refine our skills.

Choosing to implant a presbyopia-correcting IOL certainly increases the demands placed on the cataract surgeon. The patient has agreed to pay extra for and accept the possible optical disadvantages of this lens because of the expectation of reduced spectacle dependence. Contrast these expectations with those of a patient whose procedure is entirely covered by insurance and who anticipates wearing bifocals following bilateral cataract surgery. If we miss the spherical target by +1 diopter (D), the correction simply ends up in the eyeglasses. This is also true for 1–2D of surgically induced astigmatism or 1–2D of unintended anisometropia. The patient will likely be unaware of 0.5–1mm of optic decentration and, barring late complications, the patient will probably be just as happy with an anterior capsule (AC) IOL in the event of posterior capsule rupture.

Unfortunately, all of these scenarios compromise the uncorrected visual function of the bilateral multifocal IOL patient, particularly if the two eyes are compared. The expectation of good vision without glasses reduces our margin for error and increases the potential for patients to become

dissatisfied. The results of the various clinical studies on these lenses, however, indicate that skilled IOL surgeons are indeed able to meet this challenge.

With respect to our outcomes, we can readily measure objective parameters such as uncorrected Snellen and Jaeger acuity and spherical or cylindrical refractive error. Nevertheless, we must remember that patient satisfaction and the perceived benefits and drawbacks of these lenses are largely subjective. For example, two bilateral multifocal IOL patients with identical refractive and anatomical results may differ greatly in the frequency with which they use reading glasses. This is influenced by the individual's lifestyle and vocation, expectations, comparative pre-operative function, and the motivation or determination to function without glasses.

We know from keratorefractive surgery that there is great variability in the extent to which patients value good uncorrected vision. For some individuals, the motivation to see without glasses was so strong that even the tremendous glare and fluctuating vision characteristic of a 16-incision radial keratotomy (RK) was an acceptable trade-off. Individuals with such strong motivation are also more likely to accept and adapt to the optical aberrations of a multifocal IOL. These are the patients who, after hearing about the potential for night-time aberrations with a multifocal lens, start trying to convince me why they should not have any problems, explaining, for example, that they already experience halos or that they do not do much night driving.

While we certainly leave the final decision up to the patient, refractive error, pseudoaccommodation, contrast sensitivity, and optical aberrations are confusing topics for most patients to comprehend. Appropriately, they depend on our experience and understanding of the available options for guidance. Realizing that the majority of my cataract patients will end up receiving a monofocal IOL, I do not want the process of refractive IOL technology to send subliminal messages that monofocal IOLs are inferior. In explaining the advantages of presbyopia-correcting IOLs, I emphasize the concept of convenience. This properly defines what is at stake—namely, that these IOLs are not 'better' for the eye or of 'better' quality. Nor is this a life-or-death decision to agonize over. Finally, emphasizing the concept of 'convenience' will help patients receiving a presbyopia-correcting IOL to better accept that having to wear glasses post-operatively may be disappointing, but is not a disability. With the heightened financial and emotional investment in the refractive outcome, it is the potential intensity of patient dissatisfaction that truly frightens us. Clearly, not every refractive IOL patient will achieve a superb functional result. If that patient, however, is still able to understand the advantages of his or her presbyopia-correcting



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IOL compared with a standard monofocal lens, he or she may be disappointed, but will usually not regret the decision. Pre-operatively, therefore, a 'good candidate' is a patient who understands this concept and has reasonable expectations that we are confident can be met.

Besides what patients tell us during our discussion, are there other clues that predict their likelihood for satisfaction with a presbyopia-correcting IOL? To get a sense of their motivation to avoid glasses, I usually ask prospective candidates how often they wear their bifocals during the average day. As we know, there are a number of people with significant refractive error who do not wear their glasses that often. These individuals are apparently willing to tolerate the extra blur rather than be inconvenienced by wearing spectacles. On the other hand, a nearly emmetropic patient who wears bifocals all day long because his or her vision is too blurred without the -0.50+0.50x90 correction they provide may be equally intolerant of multifocal IOL ghost images.

We also know from our general ophthalmology practices that individual patients vary greatly in their ability to adapt to distracting imperfections in their vision. Whether it be a floater, an oily contact lens, monovision, or the distortions of progressive add bifocals, patients who are highly intolerant of such flaws might be at higher risk of dissatisfaction with the unwanted images from a multifocal IOL. The degree of cataract and visual complaint is also telling in this regard. A patient with advanced brunescens lenses, 20/80 acuity, and yet relatively understated complaints is telling you that he or she is not a very 'picky' person. This is in contrast to the 20/25 patient with minor lens opacities who, despite being reassured three months ago, is already back again feeling utterly disabled by his or her deteriorating vision. Obviously, this person may be equally intolerant of the glare and halos from a multifocal IOL.

Pupil size is important with respect to both night vision and near acuity. A patient with small pupils will enjoy greater depth of field and will experience less optical aberration at night. A patient with large pupils will more likely experience halos with the ReZoom or Crystalens, and it is important to inquire about that patient's night-time lifestyle. Finally, expect patients to compare their post-operative uncorrected visual function with their pre-operative state. For example, uncorrected J5 vision will seem miraculous to someone who was +3.00 pre-operatively, but will be disappointing to someone who was formerly -3.00. Likewise, it is hard to imagine a patient starting with a 20/400 posterior subcapsular cataract (PSC) not being ecstatic with or without glasses post-operatively.

We cataract surgeons are accustomed to routinely exceeding the expectations of our patients, who are typically surprised and unexpectedly pleased with the lack of pain both during and after surgery, the speed of the surgery and their visual recovery, the unanticipated clarity and enhanced color vision, the improvement in refractive error (in highly ametropic individuals), and so on. Contrast this with the frustrating prospect that flawless surgery may still disappoint a refractive IOL patient with unrealistic expectations. Because expectations are such a critical determinant of patient satisfaction, all refractive surgeons have no doubt mastered the art of understating the anticipated results. Who should we be particularly cautious about? Be careful with patients who are depressed, those who are obsessive compulsive, and those who are manipulative or have a so-called borderline personality. Some of these patients will be unhappy no matter what the outcome, and if they perceive that you

promoted a more expensive option, they may unfairly blame all of their woes on this decision that you 'pressured' them into making. Patients with a strong sense of 'entitlement' may also be hard to please. Examples would be patients who are unco-operative with your staff, or who tend to feel that every problem or inconvenience is someone else's fault. These may be hints that they hold you responsible for providing a perfect refractive result.

What makes some engineers so difficult? Their livelihood depends upon precision and they are conditioned to detect and uncover imperfection and subtle 'bugs' that, if undiscovered, might undermine performance. Some engineers are so accustomed to solving problems with precise technical solutions that they have difficulty accepting that we do not have a perfect answer for refractive error and presbyopia. The process of adaptation will be stalled if an obsessive individual cannot accept any imperfection, distraction, or inconvenience, and in fact dwells on these issues. This is not to say that these patients should not be given the same options as everyone else. Rather, we should emphasize the risk of dissatisfaction due to any number of likely scenarios when we counsel that particular patient. For example, it may help to point out diplomatically that a patient seems to be a very 'precise' individual who may be more bothered by certain optical characteristics of a multifocal IOL, which often go unnoticed by the general patient population.

It is important to select patients who will be among the easiest to satisfy, particularly when getting started with multifocal and refractive IOLs. I liken this to taking high percentage shots in basketball. Easy-going patients with advanced cataracts and significant pre-operative refractive errors will have the most to gain and will be the easiest to please. Performing cataract surgery with presbyopia-correcting IOLs in these patients is like shooting lay-ups. On the other hand, obsessive or perfectionist patients with minor lens opacities will be more difficult to impress. This is particularly true if they have low myopia, or are already achieving monovision with contact lenses, and satisfying these patients is the basketball equivalent of an off-balanced three-point shot. In my basketball analogy, the inexperienced surgeon is better off sticking to short shots from the lane, rather than attempting low percentage long-range bombs. As more and more success begets confidence, one can start to think about moving further away from the basket.

Overall, electing to implant a premium refractive IOL is analogous to other non-medical decisions that we make with our patients every day—e.g. decisions to pursue refractive surgery, cosmetic surgery, monovision contact lenses, progressive bifocals, etc. Each of these options has pros and cons that are time-consuming to discuss, but which prevent them from being the universal best solution for everyone. However, just as it would be inappropriate to push these options on every patient, it would be wrong to conceal or routinely discourage these options because of potential drawbacks or because some patients are dissatisfied. In each of these instances, there is a subset of informed patients who are delighted to have had these options and are grateful to the physician who explained and provided them. For this reason, I believe we all owe it to our cataract patients to acquire the skills needed to offer presbyopia-correcting IOLs, and to spend the necessary time discussing and considering these options with them. ■

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