

Talking to Patients About Specific Refractive Goals

Talking to patients about refractive targets can be hard. Panelists share their tips and discuss their decision-making tree for IOL selection.

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CASE PRESENTATION

A 57-year-old computer programmer presents for a cataract surgery consultation and notes his strong desire for spectacle independence. He explains that several of his friends recently had cataract surgery. One had the AcrySof IQ PanOptix IOL (Alcon) implanted and others had the Tecnis Eyhance (Johnson & Johnson Vision) and AcrySof IQ Vivity (Alcon) IOLs implanted. The patient has done quite a bit of research online. The IOL options are confusing to him, and he wants to pick the best one for his visual needs.

QUESTIONS FOR THE PANEL

1. With the current available IOL options, what is your decision-making tree for choosing the right IOL for a patient seeking spectacle independence?
2. Assuming the patient passes all the typical preoperative screening tests (eg, macular OCT, corneal topography, endothelial cell count), how would you frame the conversation with the patient regarding his specific refractive goals and what the IOL can achieve?

JOSÉ F. ALFONSO, MD, PHD



Choosing the appropriate IOL should always require taking the patient's age, refraction, axial length, crystalline lens status, visual prognosis, and expectations into account. Based on the age of the patient in this case, the crystalline lens in each eye is likely dysfunctional. If he is currently emmetropic or has low myopia or hyperopia, then he is a good candidate for a trifocal IOL based on his presentation and stated expectations.

If all preoperative screening tests confirm his candidacy for the technology, then I would recommend the Clareon PanOptix IOL (Alcon) and explain my reasoning. The lens distributes light energy as follows: 25% each for near and

intermediate and 50% for distance. This distribution is suitable for computer work because it favors intermediate vision at 60 cm. The Clareon material is indicated for people who are under 65 years of age, and the platform contributes to lens stability.

An important caveat is that the Clareon PanOptix IOL is sensitive to residual refractive error. I would warn the patient that he may require a refractive enhancement during the postoperative period, but I would also note that IOL calculations are typically straightforward for individuals whose axial length is within normal limits. He would fit into this category.

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The wonderful thing about being a refractive cataract surgeon is the new and evolving technology we can offer patients to help them see better. The downsides are that patients have high expectations regarding their vision after cataract surgery and navigating the pros and cons of the available IOLs can be daunting.

The surgeon's mindset can set the stage for success. I frame the conversation as follows: Each patient is receiving customized surgery. People's ocular anatomy, goals, use of spectacles, and personalities differ. Choosing the best IOL is a collaboration between the patient and me.

MY APPROACH TO IOL SELECTION

My approach to selecting an IOL is based on the answers to four questions. Additional factors are the results of a thorough clinical examination, topography, and macular OCT.

► **Question No. 1: What is the patient's current refraction?** Do they currently have monovision? Are they myopic, and do they like reading without glasses? Is there a history of refractive surgery? Do they hate having readers all over the house and yearn for the days when they didn't need glasses?

If patients currently have and enjoy monovision, they may want to continue with it. I rarely, however,

recommend surgical monovision to anyone who has no experience with this strategy. Some people with low myopia love to read without glasses, and I typically aim for a myopic refraction after cataract surgery for these individuals. Those with high myopia may be frustrated at how close to their face they must hold materials to read them and want to reduce their dependence on spectacles. These patients may be good candidates for a trifocal IOL.

► **Question No. 2: What are the patient's postoperative visual goals?** Listening to the patient is important when it comes to IOL selection. Some say outright that they don't mind wearing glasses. For others, spectacles are part of their identity. Still others state a desire to reduce or eliminate their dependence on glasses. The last thing I want is for patients to feel like they were forced to choose something because their voice wasn't heard. This is particularly important when a premium IOL or service is chosen.

I strive to set reasonable expectations. I often tell patients, "I can't make you see like you did when you were 20 years old, but I can make your vision much better than it is now." They must understand that every IOL option has pros and cons. Monofocal IOLs have a low dysphotopsia profile, but they cannot free patients from spectacles. Trifocal IOLs can reduce or eliminate patients' need for glasses, but the lenses split incoming light, which can reduce contrast sensitivity. Patients' comfort level with the give-and-take of each technology differs.

► **Question No. 3: What can the patient afford?** I describe the available IOL options to every patient, and I explain why a technology is or is not recommended. I might say, for example, "I don't recommend a trifocal IOL because you have drusen. Other IOLs would be better for you."

Then the patient must decide which options are financially available to them.

► **Question No. 4: What is my recommendation?** I listen to patients' desires, but my recommendations are also based on the clinical examination and biometry. It is my responsibility to recommend what is best for the individual. The goal is not just to help them see better now but also to help them see better for years to come.

EXPLAINING THE OPTIONS

The patient is a computer programmer, so intermediate vision is a priority for his work. He is also relatively young and may desire less dependence on glasses and contact lenses.

Tecnis Eyhance. This monofocal IOL provides excellent distance vision. The technology provides some intermediate vision, but it does not meet the criteria for an extended depth of focus (EDOF) IOL. I would therefore advise the patient to expect to need glasses for intermediate vision after surgery. A refractive target of -1.00 D, however, could be considered to deliver intermediate vision while preserving some distance vision, and the risk of dysphotopsias or reduced contrast sensitivity would be minimal.

WATCH IT NOW



AcrySof IQ PanOptix. I would inform the patient that this trifocal IOL is designed to provide distance, intermediate, and near vision. I would counsel him on the expected reduction in contrast sensitivity and the risk of postoperative dysphotopsias.

AcrySof IQ Vivity. I would inform the patient that this nondiffractive EDOF IOL is an

excellent option if he desires less dependence on glasses but is concerned about the potential side effects of a trifocal IOL. I would tell him that most of my patients who have received this EDOF IOL have achieved excellent distance and intermediate vision and functional reading vision (J2-J3). I would note that the IOL splits incoming light but that the side effect profile is

similar to that of a monofocal IOL. The Vivity is my preferred IOL for patients who do not meet the criteria for a trifocal IOL, including those with early glaucoma; a history of refractive surgery or dry eye disease; and demanding personalities. (Scan the QR code on the previous page to watch a laser cataract surgery procedure in which the Vivity IOL was implanted.)

It is important to tailor the preoperative visit to the patient's unique needs. Some patients require more education than others, some want the surgeon to recommend an IOL based on the patient's desired level of postoperative spectacle independence, and some ask for a specific IOL.

For a computer programmer whose preoperative testing is unremarkable and who desires complete spectacle independence, the most functional range of vision is likely at intermediate and near. Depending on his work setup, however, he may look at monitors at a distance as well. A thorough conversation about his visual requirements for work and everyday life is essential to understanding his needs.

Both intermediate and near vision can be achieved with an EDOF IOL, a new-generation monofocal IOL, and a monovision setup. In our experience, a trifocal IOL can provide the strongest intermediate and near vision with minimal loss of quality of vision at distance.

The patient has done extensive research on IOL options and gathered information on the personal experiences of friends who received various IOLs. As refractive surgeons, we deliver outcomes, not technology. In the current situation, however, it is worth discussing the differences between various types of IOLs and explaining why the patient is best suited for a trifocal IOL, provided he accepts the side effect profile of diffractive optics. We would emphasize that there is no perfect lens and every IOL requires trade-offs. With an expanded range of vision often comes decreased contrast sensitivity and increased dysphotopsias. It is important to determine which trade-offs the patient is most willing to accept.

Both the Clareon PanOptix and Tecnis Synergy (Johnson & Johnson Vision) offer great distance, intermediate, and near vision. There are differences between these multifocal IOLs, however, in terms of material composition, point spread function, and dysphotopsia profile. Despite these differences, both IOLs should be able to help the patient achieve his goals. The surgeon should recommend whichever option they personally have found to deliver effective results and patient satisfaction.



ARJAN HURA, MD, AND
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Presbyopia correction is a difficult field in part because of the many IOL options available. The case presented is a prime example. If all preoperative measurements are within a normal range, then the main considerations for choosing the most suitable optical design are the patient's expectations, home and work environments, and hobbies.

ASSESSING PATIENT NEEDS

At my practice, we administer an in-house questionnaire to determine patient needs. Key information derived from their responses includes the following:

- The distances at which they work and if those distances vary;
- Their experience with dysphotopsia (most cataract patients already have a significant level of dysphotopsia due to the opacified lens); and
- Their level of acceptance of typical dysphotopsia patterns due to the IOL design.

The first point of information is usually easy to obtain. We confirm patients' responses at a Salzburg Reading Desk (SRD Vision) where they can demonstrate their position during work. If they frequently use a tablet or smartphone, we ask them to show us the distances at which

they prefer to hold the devices and measure those distances.

We address the second point by allowing patients to adjust their dysphotopsia level with a typical halo and glare simulator. Afterward, we show the results of other patients with different optical designs that match the current patient's needs.

IOL SELECTION

Trifocal IOLs. If all preoperative measurements are within a normal range and the patient demonstrates reasonable expectations regarding diffractive IOL technologies and their side effects, I recommend a trifocal IOL. If most of a patient's tasks occur at approximately 60 cm, I recommend the AcrySof PanOptix IOL. If their working distance is 70 to 80 cm, I recommend the AT LISA tri (Carl Zeiss Meditec) or Micro-F (PhysIOL). If the patient's lifestyle involves tasks at a variety of distances, such as working on a desktop computer at the office and a laptop computer at home, and if they frequently use a tablet and smartphone, I recommend a mix-and-match approach with an AT LISA tri in the dominant eye and an AT LARA (Carl Zeiss Meditec) in the nondominant eye. If a patient in this situation prefers to receive the same optical design in both eyes, I recommend the Tecnis Synergy.

If the patient is slightly concerned about dysphotopsias but strongly desires a trifocal IOL, my preferred approach is to implant a Lentis

Comfort LS-313 MF15 (Teleon Surgical) in the bag with a Sulcoflex Trifocal supplementary IOL (Rayner) in the sulcus as one procedure. If the patient is dissatisfied after surgery, the diffractive trifocal IOL can be removed, and the patient should retain good intermediate vision.

EDOF IOLs. For patients who are not accepting of dysphotopsias, a full range of vision can be achieved only with slight monovision. I am currently evaluating results for this strategy using several models of rotationally asymmetric EDOF IOLs with add powers ranging from 1.50 to 2.00 D. The IOLs include the Lentis Comfort LS-313 MF15, Acunex Vario, and Lentis Mplus LS-313 MF20 (all from Teleon Surgical). In terms of dysphotopsias, the performance of these IOL designs appears to be similar to that of both spherical and aspheric monofocal IOLs.¹ If patients state a willingness to wear glasses for near visual tasks after surgery, the refractive target is binocular emmetropia. If their eyes have a large angle kappa, the rotationally asymmetric EDOF IOLs are implanted upside down. For a full range of vision, I find that a blended vision approach with 1.00 to 1.50 D of residual ametropia tends to work well.

The optical asymmetry of the aforementioned EDOF IOLs allows me to position the near segment using Purkinje images. I have found that even patients with small pupils have been able to benefit from both the far and near segments.

An AcrySof IQ Vivify IOL can be implanted in the same way I have described to achieve similar results with a residual ametropia of 0.50 to 1.00 D. The near function with this type of IOL comes from the central optic. Purkinje images therefore cannot be used for centration. I feel more comfortable using rotationally asymmetric EDOF designs in eyes with higher angle kappa because the near segment can be implanted upside down.

CONCLUSION

Patient counseling and IOL selection have become a major task, and the current discussion omits the category of newer-generation monofocal IOLs. My advice boils down to the following four tips:

- ▶ **No. 1.** Evaluate which optical design is best suited to the patient's ocular anatomy.
- ▶ **No. 2.** Take the patient's functional requirements—both stated and unstated—into account. Look for hidden requirements because patients often do not talk about everything they do.
- ▶ **No. 3.** Determine which IOL design and target refraction are most likely to meet the patient's expectations.
- ▶ **No. 4.** Take the time to listen to and educate patients.

1. Tarib I, Kasier I, Herbers C, et al. Benefits of a rotationally asymmetric enhanced depth of focus, bifocal segment intraocular lens in an older cataract population ranging from 74 to 82 year. *EC Ophthalmology*. 2018;9(5):248-256.

By all objective measures, the patient qualifies for every available IOL technology. My job is to determine which matches his visual goals and will provide crisp, clear vision.

KEEP IT SIMPLE

I try not to overcomplicate things when talking to patients. This requires providing enough information to educate them and set realistic expectations without overburdening, confusing, or worrying them.

The patient feels anxious and overwhelmed by the number of options. He is probably worried that he will make the wrong decision. I would begin by framing the conversation as a celebration: There is no wrong decision, and he is one of the lucky individuals who are candidates for any lens they desire. I would then steer the conversation away from the different lens technologies to focus on

how he wants to see after the procedure. I would tell him that there are three different visual zones—distance, intermediate (computer distance), and near (reading). I would explain that cataract surgery can correct one, two, or all three zones.

GET A READING BEFORE PROCEEDING

▶ **Option No. 1.** I would discuss multifocal IOLs first and explain that they can provide good functional vision at all three visual zones. If the patient desires the most spectacle independence possible, this is the best option for him. I would emphasize, however, that no technology is perfect and that he may experience halos and glare when driving at night. I would state that these phenomena usually decrease over time as neural adaptation occurs but that it is an issue for him to consider. I would also tell him that no current IOL technology eliminates the need for glasses in



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every situation and to expect to wear glasses to read small print.

► MASTERING THE PREOPERATIVE CONSULTATION

If the patient has low myopia or a refraction ranging from plano to 1.50 D preoperatively, I would explain that he already has the best possible near or distance vision, respectively. This sets the stage for me to explain that he will likely have to sacrifice a little bit of near or distance vision to obtain a functional full range of vision.

After discussing multifocal IOLs as an option, I would pause to assess if the patient wants a multifocal IOL or if he would like to hear about other possibilities. In the latter situation—typically a sign of concern about halos and glare—I proceed to describe the second option.

► **Option No. 2.** I would reiterate that no lens technology is perfect and then state that another category of lenses is called EDOF IOLs. This is where the Clareon Vivify (Alcon) shines. I would tell the patient that the IOL can provide him with good distance and intermediate vision and he should not experience the glare and halos postoperatively but that he will need glasses to see at near.

► **Option No. 3.** Next, I would tell the patient that he could see well at either distance or near with a monofocal IOL and wear spectacles to see at the other two visual zones. If he has low myopia or a refraction ranging from plano to 1.50 D preoperatively and wants to retain his good near or distance vision, I would recommend a monofocal IOL and target whichever visual zone he desires.

CONCLUSION

When talking to patients, it is important to set appropriate pre- and postoperative expectations clearly and concisely so that they leave the office feeling informed and empowered instead of lost and confused. ■

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