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KOL KNOCKOUT™ **CATARACT EDITION:** **8 Cases of Optimal IOL Matchmaking**



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Content Source

This continuing medical education (CME) activity captures content from a series of three live-virtual symposia.

Activity Description

This supplement summarizes content from a series of three unique, live-virtual symposia hosted by Blake K. Williamson, MD, MPH, MS. The game show-style quiz competition with real-time audience voting featured cataract-focused case studies and discussions regarding aligning patient preferences and ocular characteristics for optimal IOL matchmaking.

Target Audience

This certified CME activity is designed for cataract and refractive surgeons.

Learning Objectives

Upon completion of this activity, the participant should be able to:

- **Explain** the importance of understanding patient goals, preferences, and lifestyle before cataract surgery
- **Discuss** available IOL delivery systems and their potential effect on the efficiency and safety of cataract surgery
- **Identify** the advantages and disadvantages of current and emerging advanced technology IOLs and **summarize** the latest data on potential outcomes achieved with different IOL types
- **Develop** personalized treatment plans and match the most appropriate IOL to each patient, based on their unique preferences, personality, and ocular characteristics

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PRETEST QUESTIONS

Please complete prior to accessing the material and submit with Posttest/Activity Evaluation/Satisfaction Measures for credit.

1. Please rate your confidence in your ability to develop personalized treatment plans for patients undergoing cataract surgery (based on a scale of 1 to 5, with 1 being not at all confident and 5 being extremely confident).

- a. 1
- b. 2
- c. 3
- d. 4
- e. 5

2. A patient with a complex history involving radial keratotomy OU presents to your clinic for cataract evaluation. Her astigmatism measurements are extremely varied across multiple platforms, with no consistent amount of astigmatism measured. You choose to implant a Light-Adjustable Lens (LAL) in this patient. Which of the following is TRUE about this IOL selection?

- a. The patient will likely have immediate great vision without correction
- b. The patient will need realistic expectations regarding vision outcomes, and it may take some time to achieve great vision without correction
- c. The patient is not a good candidate for LAL
- d. Adjustments to achieve great vision without correction can be made immediately after surgery to achieve the desired refractive outcome in this patient

3. A 59-year-old man presents to your office desiring cataract surgery. He is an engineer who is interested in a full range of vision without reading glasses. He has a history of congenital cataracts. All of the following IOL choices would be reasonable options for this patient to achieve his wishes EXCEPT:

- a. Trifocal lens in both eyes
- b. EDOF lens in both eyes
- c. LAL in both eyes
- d. Monofocal lens targeting distance vision in both eyes

4. An emmetropic patient has new onset presbyopia and requires spectacle independence. He presents to you for a surgical option. All of the following represent reasonable options EXCEPT?

- a. Consider monovision with one eye for distance and one eye for near
- b. Consider a multifocal IOL after discussion of risks and benefits
- c. Consider nonsurgical options like multifocal contact lens or presbyopia eye drops
- d. Cataract surgery with a monofocal IOL with a refractive target of -0.25

5. A 70-year-old patient with a history of radial keratotomy presents to your office for cataract evaluation. He is contact lens intolerant and strongly desires spectacle independence. All of the following approaches to managing this patient are reasonable EXCEPT?

- a. Discuss with patient that spectacle independence is unlikely after cataract surgery
- b. Discuss with patient that spectacle independence is a guaranteed outcome after cataract surgery
- c. Discuss with patient that spectacle independence could be achieved if patient is open to wearing contact lenses
- d. Consider a retina evaluation to determine any peripheral retinal pathology prior to cataract surgery

6. A 34-year-old patient who is highly myopic with astigmatism and a history of retinal detachment presents to your office for cataract evaluation. Given her risk of repeat retinal detachment, you decide to implant a lens that is not a silicone lens. All of the following choices are possibilities EXCEPT?

- a. LAL
- b. Eyhance toric lens
- c. PanOptix trifocal lens
- d. Vivity toric lens



KOL KNOCKOUT™ CATARACT EDITION: 8 Cases of Optimal IOL Matchmaking

Modern-day cataract patients have higher expectations than ever before, requiring a greater range of vision than previous generations.¹ Some patients with 20/20 or 20/40 VA after cataract surgery will still be dissatisfied, either due to the quality of their vision or their expectations not being met.²⁻⁴

Meeting patient expectations requires a holistic approach. Clinicians must not only understand the patients' unique ocular characteristics, but also their personality, visual goals, lifestyle, profession, and hobbies to recommend an intraocular lens (IOL) that will best meet their needs.^{1,4} No single IOL will check every box, therefore clinicians need to understand their differences regarding optics and refractive impact.

For example, multifocal IOLs diverge light to several areas of focus and are classified as refractive or diffractive optics. Drawbacks include reduced contrast sensitivity and glare and halos.⁵ Trifocals diverge light into three points of focus (near, intermediate, and distance), but they can also cause some glare and halo. Extended depth of focus (EDOF) IOLs split light into a continuous focus area and may be less likely to cause glare and halos and decreased contrast sensitivity than traditional multifocals.⁶

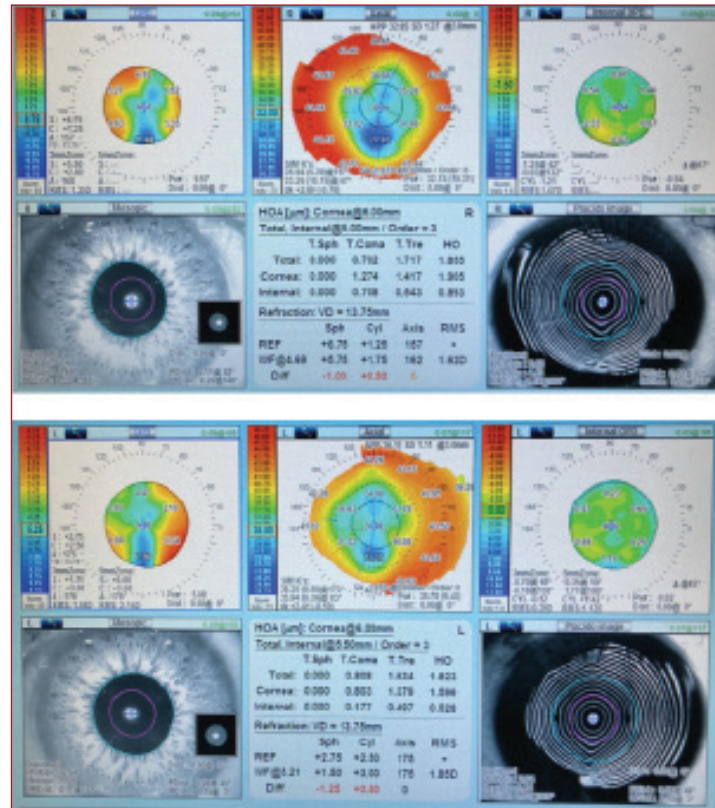
Captured from a series of three live-virtual “knockout rounds,” the following case discussions illustrate the importance of understanding patient needs and special circumstances to help clinicians optimize outcomes and patient satisfaction rates.

—Blake K. Williamson, MD, MPH, MS, Program Chair

ROUND 1 | CASE 1: ENGINEER WITH CATARACTS WHO IS CONTACT LENS INTOLERANT

Dr. Williamson: Our first case is a 70-year-old engineer with cataracts. He is intolerant to contact lenses and hates his thick glasses. He's been told by other clinicians that nothing can be done to provide him spectacle freedom. His exam is normal other than a 16-cut radial keratotomy (RK) OD and an 8-cut RK OS with T cuts in both eyes. His manifest refraction (MRx) is +7.75 +1.50 x156 (20/30-) OD and +3.50 +2.75 x173 (20/30+) OS. He's not correctable to 20/20. He has quite a bit of hyperopia and quite a large amount of cylinder (cyl). Figure 1 shows his OPD on an IOLMaster700. He has more than 2D of corneal cell in both eyes, which is typical of an RK patient.

This doesn't match very well with the IOLMaster700. The Ks are showing almost 4.00 D OD and 4.20 D OS. It's almost double on the IOLMaster. We obtain Pentacam imaging (Figure 2), and that provides us more information about the 2.70 D of cyl OD and 3.50 D OS. This is all typical in a post-16 or post-8 cut incision RK patient.



OD right		IOL calculation		OS left	
RBV		Eye status:		RBV	
LS: Phakic	VS: Vitreous body	LS: Phakic	VS: Vitreous body	LS: Phakic	VS: Vitreous body
Ref: ---	VA: ---	Ref: ---	VA: ---	Ref: ---	VA: ---
LVC: RK	LVC mode: Myopic	LVC: RK	LVC mode: Myopic	LVC: RK	LVC mode: Myopic
target ref: +0.00 D	SA: +0.10 D @ 180°	target ref: +0.00 D	SA: +0.00 D @ 0°	target ref: +0.00 D	SA: +0.00 D @ 0°
Biometric values					
AL: 25.35 mm	SD: 9 µm	AL: 25.51 mm	SD: 8 µm	AL: 25.51 mm	SD: 8 µm
AGD: 3.53 mm	SO: 6 µm	AGD: 3.59 mm	SO: 9 µm	AGD: 3.59 mm	SO: 9 µm
LT: 4.65 mm	SO: 12 µm	LT: 4.55 mm	SO: 13 µm	LT: 4.55 mm	SO: 13 µm
MTW: 12.7 mm		MTW: 12.6 mm		MTW: 12.6 mm	
SE: 32.97 D (1) SE: 0.03 D	K1: 31.13 D @ 75°	SE: 35.75 D (1) SE: 0.02 D	K1: 33.77 D @ 85°	SE: 35.75 D (1) SE: 0.02 D	K1: 33.77 D @ 85°
AK: +3.91 D @ 165°	K2: 35.04 D @ 185°	AK: +4.23 D @ 173°	K2: 37.99 D @ 173°	AK: +4.23 D @ 173°	K2: 37.99 D @ 173°
TSE: 33.27 D (1) SO: 0.05 D	TK1: 31.39 D @ 77°	TSE: 35.84 D (1) SO: 0.03 D	TK1: 33.90 D @ 84°	TSE: 35.84 D (1) SO: 0.03 D	TK1: 33.90 D @ 84°
ATK: +4.02 D @ 167°	TK2: 35.40 D @ 167°	ATK: +4.35 D @ 174°	TK2: 38.25 D @ 174°	ATK: +4.35 D @ 174°	TK2: 38.25 D @ 174°

Figure 1. A 70-year-old engineer's OPD on the IOLMaster700.

Q | Dr. Williamson: Without providing your lens choice, what is your approach?

Bennett Walton, MD, MBA: I'm going to borrow a common phrase, "Expectations are just resentments in the making." How can we find a way to make a patient with RK happy, balancing diurnal vibration, refractive accuracy, and the visual potential

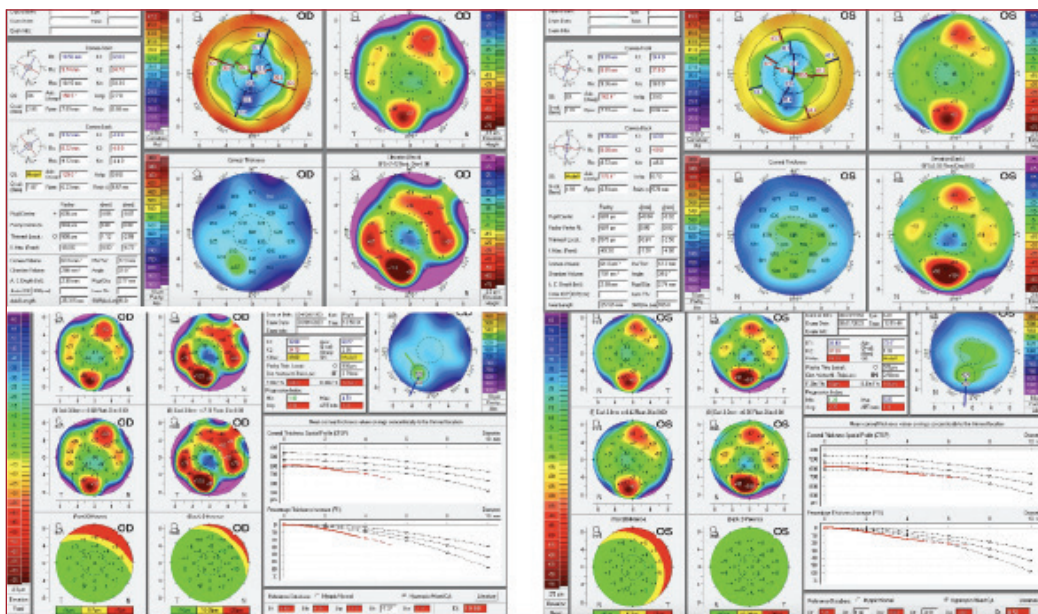


Figure 2. A 70-year-old engineer's Pentacam imaging.

with this cornea? The diurnal variation piece will be challenging to address. Those are the three things I approach systemically with these patients.

Zaina Al-Mohtaseb, MD: I'd never tell a patient they can be spectacle independent. These are tough corneas. His topography is irregular. He can't wear contacts, so we could potentially use a scleral lens and provide him with monovision. But these are the patients we miss the most in terms of refractive target and the patients you may need to exchange. For me, I would reshape the discussion. It's not about spectacle independence, it's about optimizing his best potential vision with what he'll accept.

Q | Dr. Williamson: What do you say if they push back and insist on spectacle independence?

Dr. Al-Mohtaseb: I'd show them a picture of the topography. I'd show them a normal Placido ring topography image versus their Placido ring. I'd explain that I can't make their circles normal without a corneal transplant or scleral lenses. I think that's a good way to start the conversation. Although it is possible for patients with RK to be spectacle independent, I don't want to make that promise and set that expectation.

Michael Greenwood, MD: I'd start with trying to understand their goals, which allows me to fine-tune their options. One option is a gas permeable overrefraction, which will show them how crisp they can get as of now after we remove the cataract. Then you compare that to what you can achieve with a manifest refraction or with their current glasses and say, "This is where you are after we take your cataract out. That's because your cornea is playing a big role in this." That helps them understand the difference. Their best option may be the scleral lens. But by first understanding what

they want, I can then go to my toolbox of options and move forward from there.

Dr. Al-Mohtaseb: I like the iTrace for this case. When we're discussing RK, it's important to differentiate between 4- and 16-cut RK. A 4-cut RK can be a postrefractive patient, which is a whole different discussion in terms of potential outcomes. The iTrace is nice because you have internal aberrations and corneal aberrations. You can actually show them a simple E, which is blurry to them, and say, "Even though you have a cataract and the E is blurry there, look at how your cornea looks." I'm all about showing the pictures to the patient.

Q | Dr. Williamson: What is your plan for this patient? What type of IOL will you implant and what's your target? Will you use a femtosecond laser or manual?

Dr. Walton: I'd like to better understand his contact lens intolerance. Was it the sensation of the lenses or the vision that bothered him? With the Light-Adjustable Lens (LAL), we have the benefit of not necessarily correcting astigmatism at the time of surgery; we can fine-tune the sphere within several diopters. That gives us the benefit of showing them what we can achieve with glasses postoperatively.

In terms of targeting, in general, these have drifted hyperopic. We tend to target for distance. It's generally easier to perform a central treatment to a LAL to pull it nearer rather than a mid-peripheral to push it further. The IC-8 Aphera would be a great option. In terms of femto, I've heard different opinions regarding femto and RK and how pretty it is or isn't. I don't feel strongly either way. If there are few high-quality incisions and the cataract is dense, I feel comfortable using it. Otherwise, why introduce difficulty with a capsulotomy in an otherwise routine case? To summarize, I'd select the LAL and target both eyes for distance to begin with and then titrate from there.

Dr. Al-Mohtaseb: I've tried the LAL, and it can be difficult to get a good refraction because it can change from morning to night. I would use the IC-8 lens here. I would not use a toric lens to correct the astigmatism. What's nice about the IC-8 is it filters some of the peripheral rays. Although the FDA trial says up to 1.50 D of astigmatism,⁷ we're seeing with these RK patients that you can achieve good vision even in higher magnitudes of astigmatism. Patients do better if they have less than 5.00 D of astigmatism. I would implant bilateral IC-8 lenses and aim for a -0.75 for both eyes.

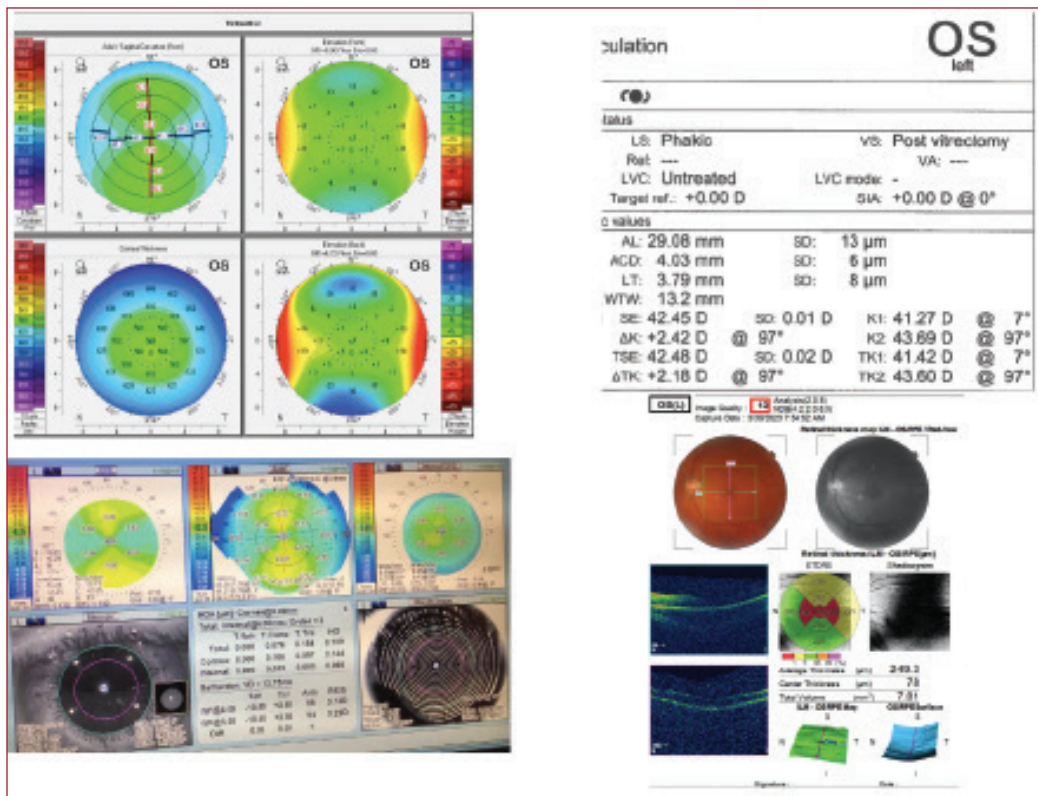


Figure 3. The scans of the left eye of a 34-year-old martial artist show some regular cyl with the rule.

Now she’s back in my office with a potentially traumatic cataract OS seeking spectacle freedom. Her exam is otherwise normal. The ICL is intact OD with a clear phakic lens. She’s 20/20 OD and 20/40 OS.

Now she’s coming back with a potentially traumatic cataract in that left eye, and she wants continued spectacle freedom. The exam is otherwise normal. The ICL in the other eye is fine. The scans on her left eye (Figure 3) show some regular cyl with the rule. I don’t have a great view of the retina because of the cataract, but it looks mostly flat.

Q | Dr. Williamson: Dr. Al-Mohtaseb, how would you approach this patient?

Dr. Al-Mohtaseb: For me, the challenge with post-ICL patients are two-fold. One is how highly myopic they are, which can limit some of your IOL options. Second, you’re taking a patient who is not

Dr. Greenwood: I think this patient will do well with both options that Dr. Al-Mohtaseb and Dr. Walton described. I would use the LAL in the left eye with an IC-8 in the right eye and target that -0.75. If he’s loving his vision, I’d do the same thing in the other eye and target distance.

Dr. Williamson: So you’d mix and match?

Dr. Greenwood: Correct. For completeness, I’m performing manual. I may make the capsulorhexis just a touch on the bigger side in case I need to do an exchange.

Dr. Williamson: For this case, I used the IC-8 OD and the LAL OS. The MRx 4 months after was plano 20/20 J2 OU. The patient was extremely happy.

ROUND 1 | CASE 2: MARTIAL ARTIST WITH PRIOR ICL AND NEW TRAUMATIC CATARACT AND RETINAL DETACHMENT

Dr. Williamson: Our second case is a 34-year-old martial artist in whom I implanted a toric implantable collamer lens (ICL) on in 2021. She was extremely myopic. I told her she could not keep fighting, but she did not listen to my counseling and kept fighting anyway. She developed a bullous macula on a retinal detachment (RD) with a superior tear OS in 2022.

presbyopic and you’re creating absolute presbyopia for them when you perform cataract surgery. That’s the hardest thing. These are young patients who had no issue with reading and suddenly you’re going to make them an absolute presbyope. It’s difficult to use a monofocal on these patients. This patient, specifically, may have an RD. How good is her retina? The LAL may perform really well in this case. The other option, if everything is pristine, is any trifocal, if the patient is comfortable with the dysphotopsia profile.

For this patient, the key is that the issue is only in one eye. So our options include anything from the Eyhance, to the LAL, to a multifocal because she’ll still be able to read in the right eye. In a patient with a history of RD, I would lean more toward a monofocal because the other eye is doing well.

Dr. Greenwood: This person is young, and they still have quite a bit of visual function. They’re going to want a functional range of vision. In a young person with a cataract, going to absolute presbyopia is devastating. These eyes are usually healthy. I think they have a full range of whatever they want for lenses, depending on their goals. If they want spectacle independence, you can go with trifocals, multifocals, EDOF, or even the LAL with minimo. I don’t typically use femto on these patients, but you certainly can if that’s your preferred technique. The key is getting comfortable with removing the ICL.

Dr. Walton: I don't want to blame the RD on an ICL in a literal case of daily trauma as a fighter. The comparison to that perfect fellow eye is difficult, and that's the single biggest thing in the discussion. I would tell this patient that if they choose 100 points worth of vision, we can place them all at distance. That approach could be successful with an acrylic trifocal, but it's going to be strange for them at night. I would not use femto here because I don't want the gas bubbles to get trapped under the ICL. I don't have a problem with femto generally, but I feel more controlled not using it in these cases.

LAL is a wonderful approach in a young patient who has already detached once and may have more trauma. I don't love silicone in an already detached eye, but it may be the best option. All things considered, I'd recommend an acrylic lens that has more range than most but is going to be friendly at night and not fight with the clear eye. I'd probably lean toward an Eyhance or a Vivity.

Dr. Al-Mohtaseb: With a history of RD, I would select the Eyhance toric to correct the astigmatism. It's monofocal, and the patient will be able to read in the other eye.

Dr. Greenwood: I would start with a toric trifocal. I want them to have as much range of vision and have it as similar to the other eye as we can.

Dr. Walton: I agree that range of vision is a huge point for this patient. This is probably a traumatic cataract, and the patient may have more trauma in the future. I want something a little more sensitive against decentration, which is why I'm leaning toward the EDOF category with the Vivity Toric. The Vivity and the Eyhance have similar profiles, but the Eyhance is not an EDOF lens like the Vivity. Both lenses are great, but I have found more range with the Vivity. The Symphony is a great EDOF lens as well, but because I want to match the quality of vision between the eyes at night, I'd choose the Vivity in this case.

Q | Dr. Williamson: Would you offset that Vivity?

Dr. Walton: In a 34-year-old, probably not. I'd probably choose distance. I still want to get as much range as I can get. I'd probably target first minus in that patient's eye, and that's assuming we have the lens available with axial length Ks.

Q | Dr. Williamson: Dr. Greenwood, you're aiming plano?

Dr. Greenwood: That is correct.

Dr. Williamson: For this patient, I performed a manual ICL removal. I don't like using femto in these cases for some of the reasons mentioned. I then implanted an enVista toric IOL with a plano distance target. She ended up -0.25 sphere with a 20/25 plus distance refraction. She's J1 because her other eye is giving her a really good accommodative amplitude. The reason I went with this approach is because I don't love the idea of making someone an absolute presbyope.

The patient is fighting again. Sometimes people are going to live their life, and you almost need to plan for what they're going to do despite what you tell them to do. Sometimes that comes into the IOL consideration, at least it did for me in this case.

ROUND 1 | CASE 3: THE PLANO PRESBYOPE

Dr. Williamson: Our next case is interesting. A 52-year-old man presents complaining about his reading glasses. He is an avid golfer and says he sees well at a distance. He has never worn glasses or contacts and wants a surgical solution to see up close. He has no other complaints. The slit lamp exam shows trace nuclear sclerosis (NS) but, otherwise, a healthy eye. He's a J8, and he's squinting. It's laborious for him to get all the way through J8 on the near card.

Figure 4 shows his topographies. He has a small amount of cyl on that right side and about 1 and 0.7 on the left. He has a little posterior yellow on that back difference map, but nothing on the final devalue. His OPD3 topography again shows a little more cyl on the right. It looks like it is matching up around that 80-ish degree meridian.

Q | Dr. Williamson: Dr. Greenwood, what's your philosophy on operating on the unicorn, the plano presbyope who is in your office saying no one will operate on them, and you're the last person they're seeing. How do you talk to that patient about expectations? How do you proceed?

Dr. Greenwood: I spend a lot of time talking to these patients. If surgery is their best option and what they want, then that's what we do. With our current technologies, these patients have a lot of options. We have pharmaceuticals to help them with near vision. We also have contact lens monovision and LASIK monovision. Then we have surgery where we replace their natural lens with an artificial lens to provide them a range of vision. I walk through the pros and cons with these patients. If they determine their best option is refractive lens exchange, then I break down their options and make a recommendation.

I drive home the point that I can't get their vision to what it was 10 years ago because they were born with perfect eyes. I also stress that there will be some trade-offs. I can help them see well at distance and well up close. Intermediate vision will be good, but they will have to make some adjustments and be flexible. Then I start teasing out what they are most tolerant of and their priorities. Maybe they want range of vision and are tolerant of some dysphotopsias. Or maybe they want the least amount of dysphotopsias, knowing there will be some no matter what we choose, and are willing to give up a small amount of vision at some distance, be it near or intermediate.

Q | Dr. Williamson: Dr. Walton, how do you counsel these patients?

Dr. Walton: These patients have often seen lots of clinicians and may have demanding personalities because they see well, but they still have a problem. Presbyopia is a real issue. Often patients will present to us, the clinician, very differently interpersonally than they might to our staff.

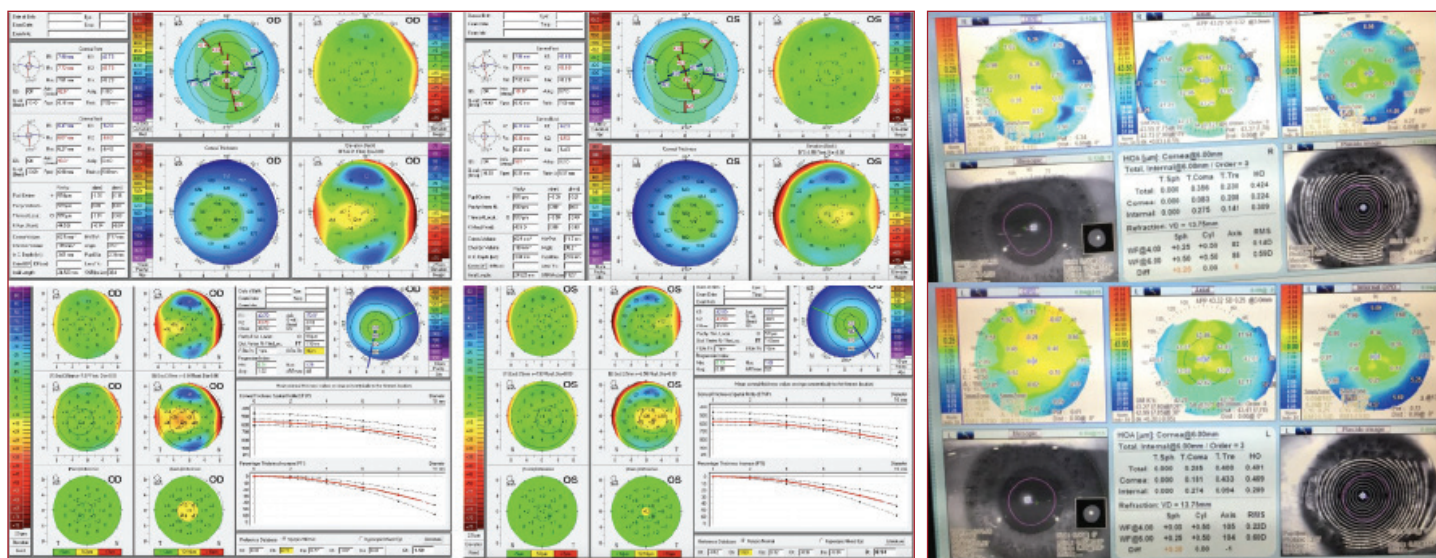


Figure 3. The scans of the left eye of a 34-year-old martial artist show some regular cyl with the rule.

This patient will mostly likely have high expectations, which is an important detail. In general, the options are blending each eye to somewhere different for monovision, mini-mono, etc. Do we want to split light within each eye individually or some combination thereof? These are the things we need to talk through.

Dr. Al-Mohtaseb: I agree that the plano presbyope is one of our toughest patients and the hardest to make happy. I'm pretty conservative and usually start by suggesting multifocal contacts. In this patient, I wouldn't. Monovision LASIK is another good option in certain patients, but I wouldn't jump to that in someone who hasn't used that before. Then you move on to presbyopia eye drops, which will get better and better over the next couple of years. In my opinion, you don't have to operate the first time you meet this patient. You can first try contacts or eye drops.

I agree that in the end, if they still want a surgical solution, then I'm comfortable proceeding. They are choosing surgery to obtain reading vision, which we can achieve with a trifocal. But it's important to discuss dysphotopsia with them and the potential that their distance vision won't be the same as it is currently. If the patient wants to be less dependent on glasses, another option is blended vision with the LAL. With that, you don't give up excellent distance vision, but you're not achieving the same reading as you do with a multifocal. It depends on their priorities. Are they comfortable with sometimes wearing reading glasses, or do they never want to wear a pair of glasses? Will they have an issue with dysphotopsia?

Dr. Greenwood: For this patient, I'd have a final conversation on what is most important to them. Is it distance or reading? Based on the discussion, it sounds like it's range of vision, and he wants reading even though he golfs and wants to see at a distance. For those reasons, I would select a bilateral trifocal,

plus or minus toric, if the calculations indicated it. He's right on that border. If he has a small amount of leftover residual, he might enjoy it. But if he doesn't, then we'll perform a LASIK touch up.

Dr. Walton: My initial recommendation is the bilateral plan for a PanOptix in the nondominant eye first. A benefit of surgery that you can bring to this patient is it will prevent them from developing cataracts. Cataracts are not something that are nonchalant to most patients. We can fix it now, and they won't go through the gradual visual decline over years leading up to cataract surgery. I also tend to quote the numbers and patient satisfaction data. With the PanOptix, the majority of patients with cataracts said they would do it again in 6 months.⁸ Those patients had cataracts, so their *wow* factor will be more dramatic than in this patient because he was starting with 100% distance vision. And he'll have more glare, halo, and starbursts, especially at night. If the patient recoils at that information then it's easy. We'll talk about the LAL in the nondominant eye, which could provide more range of vision and be more stable than LASIK.

Dr. Al-Mohtaseb: I try not to push away to all the nonsurgical options. If I'm pushed, I'd ask the patient to choose between the bilateral LAL or bilateral trifocal. What are their priorities? Do they want reading vision and are they comfortable with dysphotopsia? Or do they want to keep their crisp distance vision but want more range? It's difficult for me to pick because it depends on their preferences. Because I have to choose one for this exercise, I'd select the LAL for this patient. I'd start by targeting -0.5 in the nondominant eye and plano in the dominate eye. Then you continue to give them more reading. You want to go at least -0.5 on your first treatment to get a higher EDOF in the nondominant eye.

Dr. Williamson: To recap our answers, Dr. Al-Mohtaseb selected LAL. Dr. Greenwood selected bilateral, same-day PanOptix. Dr. Walton also selected bilateral PanOptix, but not on the same day.

Dr. Walton: Correct, I said bilateral different day because there's no cataract and there's no refractive error.

Dr. Williamson: I did not select surgery for this patient. We tried monovision contact lens trials, and he hated it. I also talked to him about EDOF trifocal combo and explained the challenges with dysphotopsia. The patient selected presbyopia-correcting eye drops, which he's now using twice a day. He's having success with it. It doesn't replace his readers, but he is using them less often.

ROUND 2 | CASE 1: CONTACT LENS-INTOLERANT PATIENT WITH CATARACTS AND INCONSISTENT MEASUREMENTS

Dr. Williamson: Our next case is a 63-year-old woman with 2+ nuclear sclerotic cataract (NSC) in both eyes. She complains of poor vision. She has a 4-cut RK OD and 8-cut RK OS performed 25 years ago. She has known ectasia, which has been observed for a while. She can no longer tolerate contacts and doesn't mind glasses, but wants to reduce her dependence. The right eye is dominant. The glasses she's currently wearing are plano +2.75 OD, and +0.75 +1.50 OS. She has some cyl, but sees fairly well. Her autorefraction is all over the place, -2.75 +8.00 x005 OD and +0.25 +5.25 x180 OS. Her current MRx shows she has more hyperopia and more astigmatism in both eyes (+1.75 +3.75 x018 20/25-2 OD and +1.25 +2.25 x150 20/25 OS), but we can correct her and improve her vision. She can't drive at night and is requesting cataract surgery.

Her retinal exam is normal. Figure 5 shows her tomography. She obviously has ectasia and there's some posterior elevation. The Pentacam AXL and IOLMaster shows 8 cyl on the right eye and 6 cyl on the left on the Pentacam; the left eye won't read on the IOLMaster. This patient has a diseased cornea. If you look at these readings, you're wondering what is the true astigmatism, where's the true magnitude, and what's the axis? On the right eye, the Pentacam says 8.00 at 5, the OPD says 5.00 at 6, the auto says 8.00 at 5, and the MRx is 3.75 at 18. The current refraction and IOLMaster are all over the place. The left eye is as well. In general, it looks like the Pentacam is reading higher, and it looks like the OPD is reading lower, somewhat in line with the current MRx.

Q | **Dr. Williamson: What is your plan to correct the astigmatism? What tools are you considering?**

R. Luke Rebenitsch, MD: I'd recommend bilateral LAL. The right eye is dominant, and you typically want to hit that distance target to provide them the greatest clarity possible. In patients with ectasia, I'll sometimes perform a PRK to debulk before I consider the LAL. In this patient, I don't want to touch the cornea more than I have to, so I wouldn't consider PRK. For somebody with a CDVA of 20/25, I'm looking for an IOL that's going to get them as close as possible to 20/20, although it would be a challenge in this case.

This is where the LAL shines. You could consider the IC-8, and it is considered off-label in the dominate eye. However, there have been case reports of the IC-8 being placed bilaterally, or in the dominant eye with success.⁷ But for someone with the CDVA of 20/25, I'm going with the LAL bilaterally. The silicone optic has a high quality of vision, better than most acrylics. I would tell this patient that it's going to be a process, and we're probably going to end up hyperopic for the first month or two given that cornea. We'll probably not get all of the cyl, but we can still achieve fairly acceptable vision. I would expect her distance vision to end up around 20/25 or 20/30 and a J3 near.

Sumitra Khandelwal, MD: I like to put the brakes on these patients with the LAL. There are a few things that I must warn them about. First, they must be patient. It can take 6 months for us to finalize and lock in their vision. Second, I watch for diurnal variation. I want a couple of measurements throughout the day to understand what exactly is going on with their cornea, because if they have a lot of diurnal fluctuation in their refraction from morning to afternoon to evening, it is a moving target. Their ocular surface will also sometimes make the refraction fluctuate.

They need to be comfortable with the caveats and have realistic expectations. If everything lines up, then I agree that LAL is great. But I take a lot of time and make sure they go home and think about it. Many patients come back unsure if the LAL is right for them. In those cases, I will back off and suggest a monofocal OU. They'll have some reliance on glasses, but less than before.

Dr. Walton: How much cyl do we want to correct? Often, it's less than many of these devices suggest, which could put it in or near the LAL range. I also want to know why she's contact lens intolerant, because not everyone is intolerant for the same reason. I have worked with some phenomenal scleral fitters.

I would also use an LAL for this patient because it's a monofocal as it goes in. Because the LAL is still adjustable, you can choose to only adjust the spherical component, or you can adjust the spherocylindrical component. The way you achieve that is you show them in a trial frame how it would look if we tried to maximize their glasses and contacts' independence. Yes, this takes a lot more time, but to have that extra flexibility inside the eye, worst-case scenario, you're at a monofocal anyway. Best case scenario, you have a bifurcated plan that lets you go in a way that makes the patient happy.

I do think the patient will end up choosing to be very close to distance in each eye, or maybe just a tiny bit myopic in one or even both eyes because of that extended range to get the range as best as possible.

Q | **Dr. Williamson: To recap, you're going to mostly target distance, mostly LAL, and have a long conversation telling them that scleral lenses after LAL are their best bet even though they don't want to be in contacts?**

Dr. Walton: I'm saving that option. I'm telling them, "This lets us see what it's like without the cataract, and then we decide if

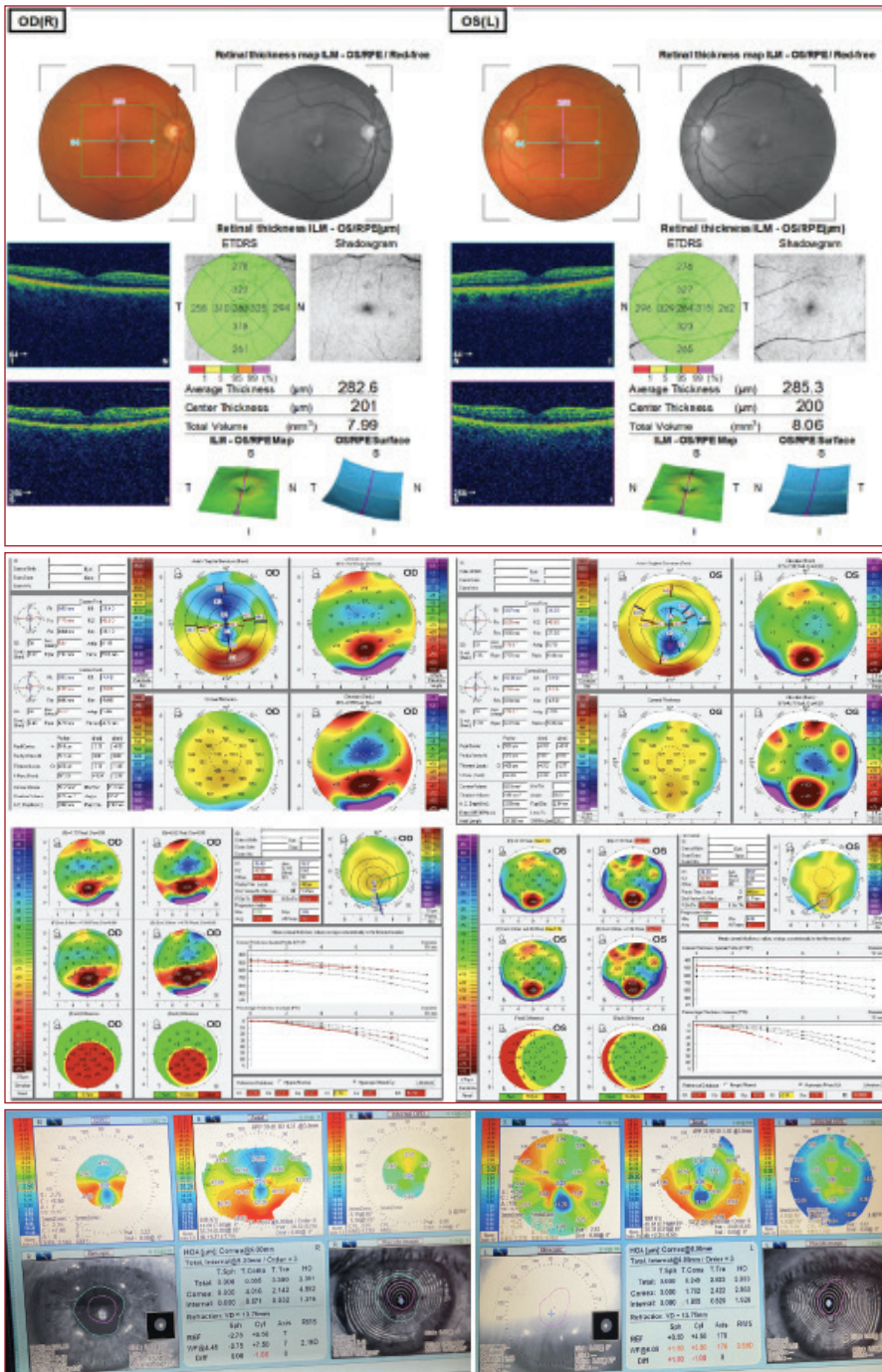


Figure 5. Tomography of a 63-year-old woman.

we’re going to correct the astigmatism in the eye, because the adjustability, it’s already there.”

Dr. Williamson: My pitch to them was monofocals. I placed bilateral maxed-out torics. They are doing well so far, -0.50, +1.50 OD and -2.75, +1.00 OS. We’re considering some type of LAL piggyback on the left because we can’t perform LASIK on top of that. But they have a long way to go. We’re going to let them go at least 3 or 4

months before we do anything else, but we may just end up in glasses.

ROUND 2 | CASE 2: A TAX ATTORNEY WITH CONGENITAL CATARACTS

Dr. Williamson: Our next case is a 59-year-old man who, in his words, has had cataracts his whole life. He comes in seeking surgery. He is a tax attorney and is interested in a full range of vision without reading glasses. His MRx does not show a whole lot of refractive error with -0.25 +0.50 x058 20/40 OD and +0.25 +0.75 x159 20/40 OS. His slit lamp exams shows something that looks like a congenital cataract in the center, which is starting to affect his vision.

Q | Dr. Williamson: What is your philosophy on congenital cataract patients who want spectacle freedom? Are there certain lenses you will or won’t offer? How do you take care of these patients?

Dr. Khandelwal: There is a wide range of patients with congenital cataracts. Some have a cataract in one eye that has created amblyopia, and there are expectations we’ll need to set. This patient is 20/40 OU with a similar refraction in both eyes and no history of patching or other concerning issues, so I think he has fairly good visual potential in both eyes.

The challenge for me is that I don’t know the best vision for them. With that, we need to know what is realistic for them in their lifestyle and what they are willing to give up for a specific lens. In addition, it helps to know what they do for a living, I like to understand what focal points they spend the most time with from the morning to the evening. Are they distance, intermediate, or near focused? Then if they were to pick two of the three focal points, what would those be?

The reality is some of our lenses have multiple focal points.⁹ Certain trifocal lenses provide more near vision, while others provide more distance.¹⁰ Some EDOF lenses provide great distance and intermediate.¹¹ There’s definitely

been more experience with certain trifocal lenses providing more near, certain lenses providing more distance. Some of the EDOF lenses provide great distance and intermediate. That is why we need to dive into their visual goals.

Dr. Walton: To me, it’s a question of the delta. Where have they come from with their vision and where are they now? If there’s been a change, and it’s worse, that means something,

especially in a person who is observant. In general, I'm careful about counseling these patients, and I've been pleasantly surprised by how much vision they get afterward. Of course, they're not all the same. Where the cataract is within the lens, in terms of being anterior or posterior and near the nodal point, can make a big difference. My choice of femto versus manual depends on what type of cataract it is and how much of the fibrotic capsule may be there. Is it a posterior polar?

If his fellow eye is still clear, the plan will change because we have an eye that accommodates some on the other side. At 59 years old, he's not accommodating a ton, but it's enough where we're probably not going to jump into cataract surgery at his prescription. This patient isn't clear in that left eye, because he's 20/40 but, in general, I like to match optical profiles. If someone is going to stay clear in the other eye, I want a clear lens in terms of day and night in the first eye.

Dr. Rebenitsch: When I think of people with congenital cataracts, I first ask, "What is going to make them the happiest?" They may not even know that right away. This patient is already best corrected to 20/40. In my mind, anyone who is 20/50 or better has useful vision. If someone wants spectacle freedom, we discuss all the lens options, but I usually steer them toward lenses that will provide them better distance without the potential of waxy vision. Everyone wants near vision, but when you think of people who are truly frustrated, they typically want more distance than near. Patients get angry when they can't see, can't drive, and can't manage their life due to their poor vision.

Even in patients with mild amblyopia, and I've been very surprised at the quality of subjective vision they can achieve. Regarding femto versus manual, there was a time where I performed 1,500 consecutive femto cases, but I don't use it much anymore. I'd be careful with femto in this case and use only for the capsulotomy.

Dr. Williamson: Figure 6 shows his biometry, and you can see a touch of astigmatism. There's not much there on the topography or the IOLMaster, and he has normal axial length.

Q | Dr. Williamson: Dr. Khandelwal, what is your plan for this patient?

Dr. Khandelwal: If he's interested in spectacle independence at all ranges, it may come with some decreased contrast and some glare at nighttime. If he's comfortable with that, then I would offer a trifocal or quadrifocal lens. I always like to remind patients that we may be splitting some light and they may have glare issues. With this patient, it's about how you sell things. I'd need to understand how much near vision they use. If I could provide him with great distance and intermediate vision with a little glare, would that be enough? An EDOF is a good option as well. But for someone like this, I don't use monovision if they've never tried it before. If they start talking about that, I would offer the LAL to trial it after cataract removal.

Q | Dr. Williamson: Would you offer a Vivity or PanOptix if they select a trifocal?

Dr. Khandelwal: I tend to implant Symphony more. I'd select bilateral Symphony targeting distance in both eyes, knowing he'll have to wear something for near vision.

Dr. Walton: I'd take LAL off the list, because unless you believe that biometry K reading, it's really not a toric lens astigmatism-correction case. He's starting at 20/40 or worse. This is not a super mild cataract, so I think that gives me room to go for a trifocal. I would use the PanOptix in this patient, and I would start with the worse-seeing eye.

Dr. Rebenitsch: Of all the trifocals, I think the PanOptix is the best way to go. In this case, he is a tax attorney with a personality that's likely similar to engineers. I think the EDOF is the best way to go. In our practice, all our packages include LASIK. If we miss the target by a small amount, if we want to do mini-monovision, I can touch it up with LASIK. I don't enjoy performing lens exchanges, so I'd rather go with an EDOF and underpromise a bit, expect him to end up around J3, and let him know that his computer vision will be perfectly clear.

Q | Dr. Williamson: So you're targeting distance then EDOF. Which EDOF lens specifically?

Dr. Rebenitsch: I've been impressed with the Symphony OptiBlue. The filter has helped with halo and glare. I've used the Vivity as well, but when I'm going for visual quality, the Symphony OptiBlue is the way to go.

Dr. Williamson: For me, when I saw this patient, I thought quality of vision was of the utmost importance. I also thought there could be some level of amblyopia. I wasn't excited about using a trifocal, and decided to implant a Synergy-Symphony combination, with the Synergy in the nondominant eye and the Symphony OptiBlue in the dominate eye. Technically, Synergy is a trifocal mix with EDOF but, for me, I found that with the Symphony OptiBlue, I've been able to treat patients like this routinely, and they perform very well. You could use a Vivity in a patient like this and may be able to get away with a PanOptix as well. His final MRx was 20/15 plano and J1 OU.

ROUND 2 | CASE 3: A CONTRACTOR AND PILOT WHO NEEDS READERS AND WANTS SPECTACLE INDEPENDENCE

Dr. Williamson: Our next case is a 52-year-old man who is complaining of needing reading glasses. He is a contractor for work but also a pilot. He's never worn glasses or contacts, and he's seeing poorly at distance. He wants to continue to be free of glasses and contacts, and he is seeking a surgical solution to see a full range of vision. His slit lamp exam (Figure 7) reveals mild California cataracts, 1+ NSC and 1+ posterior subcapsular cataract (PSC) with vortex keratopathy. The referring OD also noted corneal staining.

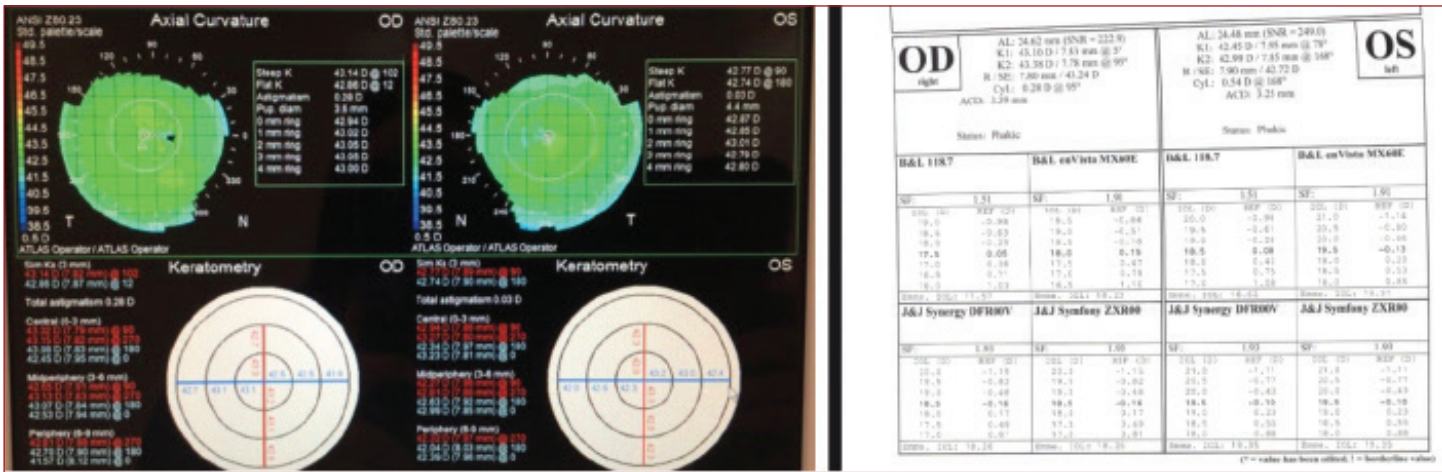


Figure 6. Biometry of a 59-year-old man.

His MRx is +0.50 +0.75 x008 20/30- glares 20/50 OD and +0.25 -0.50 x173 20/30- glares 20/50 OS.

Q | Dr. Williamson: He's 52 and has never worn contacts or glasses. How does that influence your discussion with him about expectations compared with a 70-year-old cataract patient who has been in bifocals? Does the vortex keratopathy change anything for you?

Dr. Walton: The vortex doesn't change too much for me. If his expectation is to see everything perfectly, that's a red flag. You have to make them aware of all the nuances. Counseling this patient is very different than a 70-year-old patient with cataracts.

Dr. Rebenitsch: The median age for lens replacement in our practice is 52. This person has a cataract, so this is someone I would have no problem operating on. Dr. Walton is right. Refractive lens exchange is a different procedure than cataract surgery because of where the patient's coming from. This patient has already lost enough vision where I think they will clearly benefit. It will require longer counseling, and focusing more on the dysphotopsias—the halo, glare, and quality of vision—than you would with someone with a dense cataract. I'd also want to know their current near vision. They would need to be at least J3 before we consider multifocals, unless they're already myopic. The vortex isn't a nonissue, but it wouldn't bother me too much.

Dr. Khandelwal: I agree. The conversation with this patient needs to be very different than someone with a dense cataract because this patient is younger. The vortex keratopathy doesn't bother me so much. The challenge is any time you have light filtering, you're going to have contrast issues. His cornea is obviously not normal. It limits some of the choices and requires an honest discussion. This patient has never been told that he has deposits on his cornea, so I think showing him that will help. Then you can select a lens based on his interests and desires, knowing that he now knows what his cornea looks like.

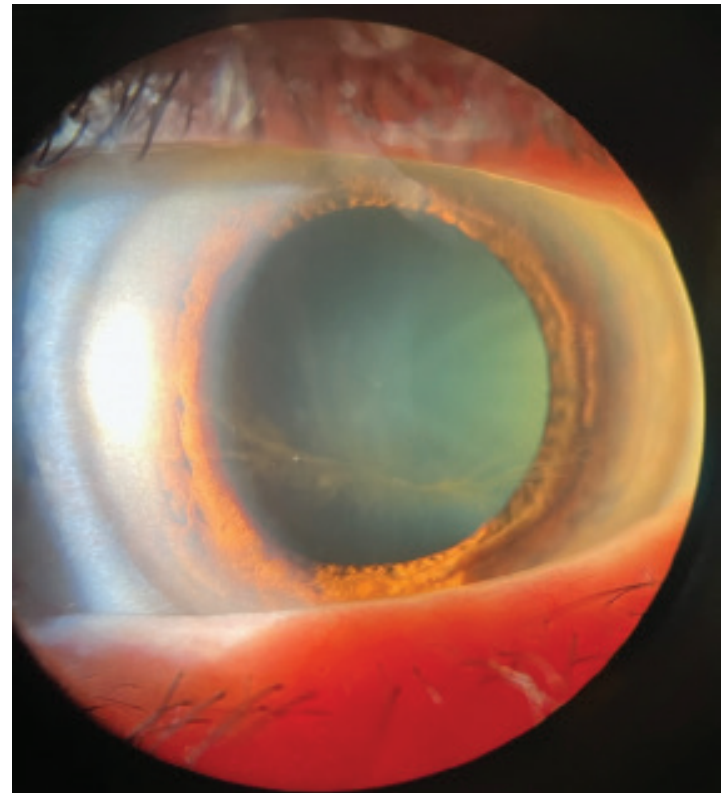


Figure 7. A 52-year-old man's slit lamp exam reveals mild California cataracts, 1+ NSC and 1+ PSC with vortex keratopathy.

Q | Dr. Williamson: We did some testing, and his tomography was normal (Figure 8). He has a small amount of cyl and good corneal thickness. What is your plan?

Dr. Walton: To me, this is very straightforward. I would use the LAL in each eye, initially targeting distance. LAL has more range than most monofocals. When he knows what it's like to be presbyopic, if he wants to pull it in a little closer in one of his eyes, he has that option. The LAL will provide him with the best

clarity and you're not splitting light. It will probably be better than most of the EDOFs in terms of distance quality.

Q | Dr. Williamson: So you would target the monovision in the nondominant eye because he doesn't want to wear readers?

Dr. Walton: I would start him at distance in the dominant, and I'd start him further out than I think he will want in the nondominant, which is probably for him somewhere either distance or minus a half. If he's not worn monovision, I don't want to start him there. I'd rather start him distance and pull him in, and let him make that decision. That's a journey we have often with people.

Dr. Williamson: So start him at distance, but maybe see how much near he does achieve and pull them in as he becomes more and more accustomed to it.

Dr. Walton: That is correct.

Dr. Rebenitsch: Pilots are some of the most challenging people to treat. They need to be 20/20, and they need to be able to see well enough at near. Thankfully, most of the instrumentation is at arm's length. EDOF typically checks those boxes. I've performed some mild blended mini-monovision in pilots, and it never works out how they want. They want the full range, and they want quality. The LAL is perfectly reasonable for someone who wants good quality vision. I would consider the LAL in one eye and an EDOF in the other, but I'd probably suggest a bilateral EDOF—the Symphony OptiBlue. If he doesn't fly often at night, I may consider a Symphony-Synergy combination.

Dr. Khandelwal: I like the LAL for this patient. You can trial afterward with a contact lens. He can wear contacts and see what it's like being at work and flying. If he does well with contacts, I'll do a bit of mini-mono.

Dr. Williamson: For me, what jumps out about this patient is he had good vision his whole life. That sets different expectations—it's like a custom lens replacement. It's always challenging when you start to think about any type of trifocal or EDOF. A pilot knows what good distance vision is, and it's challenging to meet their expectations when they're driving and complaining of "double vision" looking at license plates and having contrast issues. I went with FLACS with dual arcs for astigmatism. I selected the Rayner EMV lens. I targeted -0.75 in the nondominant eye and plano in the dominate eye. We did a contact lens trial preoperatively to prove that. He did very well. His final MRx was 20/20, J2-.

ROUND 3 | CASE 1: ATTORNEY WITH PRIOR LASIK COMPLAINING OF BLURRY VISION

Dr. Williamson: Our next case is a 55-year-old woman. She's an attorney and had LASIK 15 years ago. She presents complaining of blurry vision. Her nondominant eye was undercorrected with LASIK when she was 40, and she's been wearing monovision contacts for about 2 years. She really wants to be free of her contact lenses. Her slit lamp exam shows 2+ NSC OU. I can see her LASIK flaps, but it's a normal exam. Her MRx shows +0.75 sphere, 20/30 OD. She's hyperopic with some cyl on the left (+1.25 +1.50 x005 20/25-) and correctable to 20/30. On her OPD (Figure 9), she's a little cyl, but it's all normal.

Q | Dr. Williamson: How do you treat patients who have had success with monovision? Do you continue with monovision or would you consider EDOF technologies?

Kendall E. Donaldson, MD, MS: I try to reproduce monovision in patients who have enjoyed it after LASIK. More recently, I've used LAL in these patients, but in the past I've had great success with monovision with standard lenses as well. This patient has options, but I don't like to use EDOF or trifocal technology in patients with a history of LASIK 15 years ago. Those were some of the older lasers with larger spot size, and they tend to have

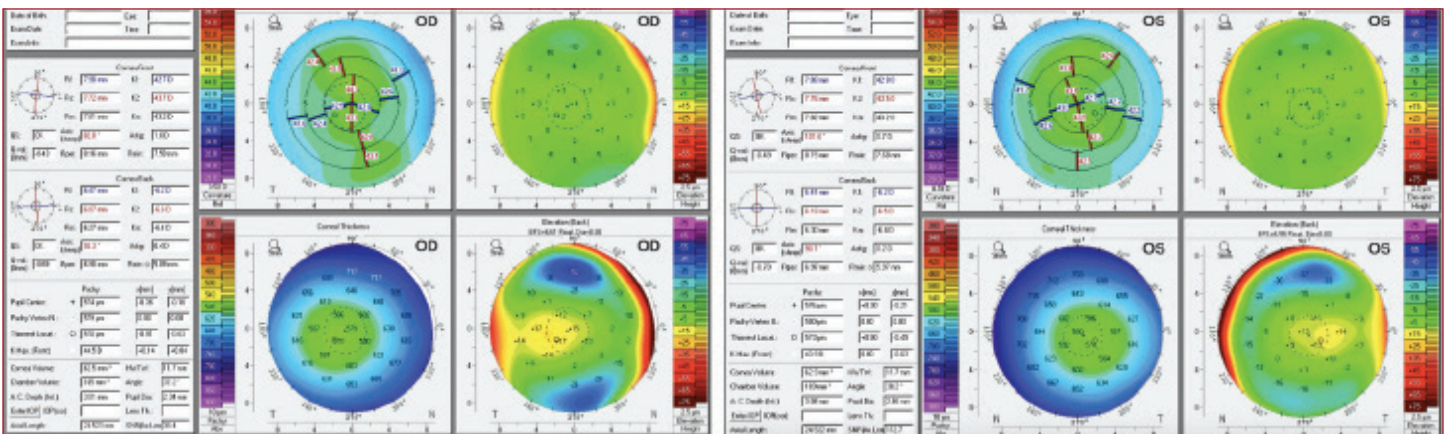


Figure 8. Tomography of a 52-year-old man.

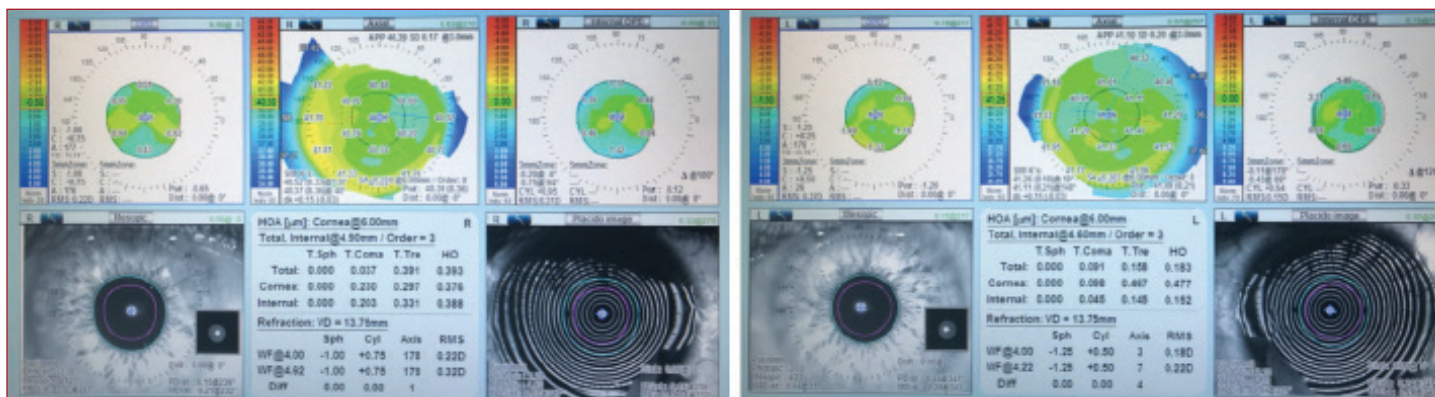


Figure 9. OPD of a 55-year-old woman.

more higher order aberrations (HOAs). I think she enjoyed her monovision and liked the contact lenses after she had the LASIK as well with the monovision. She's used to that, so it's reasonable to maintain it. That said, I'd probably recommend the LAL.

Dr. Khandelwal: Success with monovision in a patient who is still phakic is very different than pseudophakic monovision. This patient is 55 years old and a little hyperopic. I'm going to assume that she's not using that much of her accommodation. Is she wearing a contact lens in both eyes? A 65-year-old who has been successful with monovision is a little different than a 55-year-old. I would want to counsel her about the fact that we may not do true monovision. It may be mini-monovision.

I agree that the LAL is a good option. If I counseled this patient and she said she wanted a guarantee that she wouldn't need adjustments for 5 or 10 years, then I may suggest EDOF. Her topography looks reasonable for it. It's all about expectations.

Vance Thompson, MD: I always explain to these patients who enjoyed monovision in their 40s and 50s that monofocal implant monovision provides them the reading range of a 75-year-old person. Although monovision can work at age 75, the amount of separation between the two eyes to provide the same level of reading range can be unsettling. Patients at age 75 don't do as well with monovision as someone in their 40s and 50s. This is why I'll lean toward the LAL; it is also adding spherical aberration to assist reading range so you do not have to blur distance in the best reading eye nearly as much as you do with a monofocal implant. The LAL is a different form of monovision. It has monofocal and EDOF qualities. That is why we call it Blended Vision or Precision Monovision. It is simply more enjoyable and functional with a much quicker adaptation period and a much higher rate of patient satisfaction when compared to traditional monofocal implant monovision.

Dr. Donaldson: I agree we need to assess her ocular surface, as a woman this age may have dry eye. I would implant the LAL and spend some time setting reasonable expectations and making sure that she wanted to partner with me to go through this

process to really customize her vision. If she's willing to do that, then we can get the best final result with the LAL. But that lens requires additional postoperative visits.

I would target a little minus for the nondominant eye and then dial up accordingly to whatever she would tolerate during the trial frames in the postoperative process.

Dr. Khandelwal: I agree. That's the nice thing about the LAL, once you set expectations. But I've had patients who use the LAL and then don't want to come back to see me for their LAL treatments. They need to be patient and partner with me through the entire process. For this patient, I'd first try to understand her goals. A monofocal plus, perhaps the Eyhance, could be a safe option for her. An EDOF is an option if her cornea is perfect and she understands the contrast issues.

Dr. Thompson: There are some special considerations in someone who has had LASIK. I would lean toward the LAL myself. If she wanted to be balanced, I'd consider other EDOF lenses. But I am often pleasantly surprised by how well my post-LASIK patients are reading when I put both LAL eyes at a distance. These patients often have elevated HOAs in their cornea that can enhance depth of focus along with the EDOF that the LAL provides. But if they had low corneal HOAs and also corneas that I know I can enhance if they have residual refractive error post-implant surgery, then I will consider what I call "cornea adjustable" EDOF implants like the Symphony OptiBlue or Vivity.

Dr. Williamson: For me, the LAL can be a heavy lift. It's important to understand the journey and to select a patient who will commit to it. You need to be thoughtful about patient selection. I implanted the IC-8 in the nondominant eye with the LAL in the dominant eye. I targeted -50 in the IC-8 Aphera eye and plano in the LAL eye. The final MRx was 20/20 J3 in both eyes at the 3-month postoperative period. But the patient struggled with that IC-8 eye because of the dimming and because she kept comparing her vision from each eye. We're considering a lens exchange for the LAL in the nondominant eye.

ROUND 3 | CASE 2: HOBBY PILOT NOT NEUROADAPTING AFTER SURGERY

Dr. Williamson: Our last case is a 55-year-old man who has a type A personality and has been successful in commercial real estate. He comes in seeking help with his near vision. He had LASIK 20 years ago and now hates using reading glasses. He is a pilot, and he wants to be free of glasses. His eye exam is normal, with trace NSC. His MRx is +0.25 +0.25 x175 20/20 OD and plano +0.75 x008 20/20 OS. His tomography on the Pentacam shows what you would expect from a myopic ablation (Figure 10). He has a small amount of cyl in both eyes, but not too much. Everything looks normal.

Q | **Dr. Williamson: What would be your first choice in a patient like this?**

Dr. Thompson: The pilot part adds another dimension. I know he has a type A personality, and we all think of potential distance frustrations, but I also think we need to consider potential near frustrations if we do not totally understand each other as a doctor and a patient. I would present all his options because his topography looks so good, and his LASIK correction a long time ago was so low. The LAL may be a good option for this patient.

I would quantify his HOAs and consider an EDOF as well. I've had good luck with both EDOF and trifocals in post-LASIK patients. I first want to see how multifocal his cornea is before I decide how much multifocality I want to add in his implant. If he has low corneal multifocality and wants great near, I would consider a trifocal. If he has mildly elevated corneal multifocality, I would consider LAL (optically-adjustable EDOF) or a cornea-adjustable EDOF lens. If he has high corneal HOAs, I would implant an LAL.

Dr. Khandelwal: He's frustrated reading, and I'd like to find out more about his definition of reading. Is it the reading he does on weekends? Is he having trouble seeing the dashboard when he flies? Does he need to wear contacts when he flies or is it more than intermediate vision? The nice thing about the LAL is you can adjust things afterward. The LAL will get him distance vision and then we can work around what will benefit him for near vision. What and when he wants to read will be the difference between me selecting mini-monovision with a monofocal-plus versus achieving distance with a monofocal-plus or an EDOF. I think that's based on his aberrations. I wouldn't select an EDOF if he had a lot of HOA, but he looked good on the topography.

Dr. Donaldson: I think this is a disaster in the making. He's a younger patient with a clear lens, and he will have very high expectations. He expects 20/10 vision at all times throughout life. You're going to spend hours with this person setting expectations. You don't have to perform surgery; you could choose counseling and make sure he's a partner in this process. He has a high maintenance, type A personality, so he needs to help make the decision and share that responsibility with you. Once he realizes that, I would not select an EDOF or trifocal because he will lose contrast. He will not be happy with that.

If I had to perform surgery and he agreed to partner with me in this process, I would tell him the LAL is the way to go. The LAL will provide him the best possible distance vision. He'll get some intermediate vision, but he will need reading glasses for small print.

Dr. Thompson: When you look at the topography, it's hard to tell that he ever had LASIK. It wasn't a very high correction, so I'm predicting his HOAs aren't going to be that high. We need to quantify the multifocality (HOA status) in the cornea before we make the decision of how much multifocality we are comfortable adding to his optical system.

Dr. Williamson: You said no EDOF or trifocal for this patient. What did I do? I did the exact opposite. I chose the Symphony OptiBlue in the dominant left eye and Synergy in the nondominant eye. This patient stressed that he did not want to wear reading glasses. One month postoperatively, he's 20/25- J1+. However, he cannot tolerate his distance blur. He has night halos, which we discussed preoperatively, but he didn't realize they would bother him so much. We gave it another month, and he was still very unhappy with his distance vision. He does have 1+ posterior capsular opacification (PCO) OU. He's not neuroadapting and is calling the lens his worst decision ever. It can take 3 or 4 months for someone to neuroadapt, but if the patient is saying it's the worst thing ever, you need to fix it as soon as you can.

Q | **Dr. Williamson: What are your next steps?**

Dr. Khandelwal: I would suggest a contact lens trial because he's myopic. With both the Symphony and the Synergy, we really need to get that distance. If he likes his distance vision with contacts, that's great. If he still complains of halos, I would be inclined to exchange the dominant eye for a monofocal. I've performed a lot of exchanges for similar patients with the Eyhance in the dominant eye. They've done really well. It's not what they went in for, but they came out with good distance vision.

Dr. Williamson: So you would recommend a contact lens trial, and if he loves his vision, proceed with a LASIK touch up. If he doesn't love his vision, you'd exchange the dominant lens.

Dr. Thompson: 1+ PCO concerns me before an enhancement. If I did a contact lens trial and they were happy, I probably would be performing the YAG, making sure my manifest refraction is crisper so I truly understand the current refractive endpoint. It becomes complicated because, oftentimes, the contact lens trial doesn't go well because of that 1+ PCO.

You're at a crossroads. Do we perform a YAG and make the exchange tougher? I've seen very good results with an EDOF like Symphony OptiBlue or Vivity in post-LASIK cases. I don't know if I would implant a hybrid multifocal-EDOF like the Synergy in this situation. But if you do that refraction and they're crisp, that's wonderful. But if it's not crisp, we have a problem and a big decision: to YAG or not YAG. His personality and thoughts of where

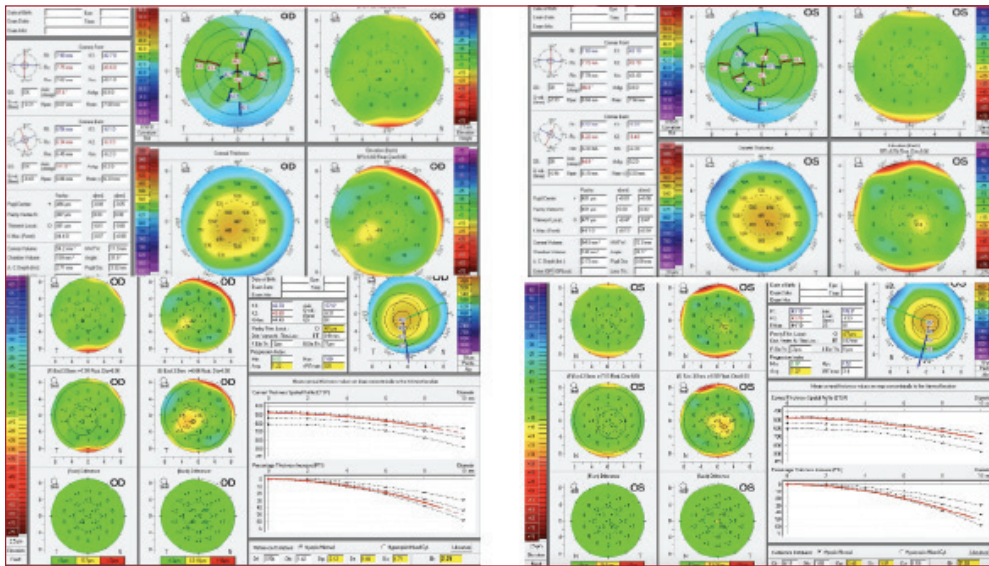


Figure 10. Tomography of a 55-year-old man.

he is at right now factor into this decision, which you should make with his fully educated knowledge.

Dr. Williamson: I agree completely, and that's what I did. The patient was happy with his vision in the left eye both near and far, but the right eye was a problem. I performed the contact lens trial just like you all recommended in the right eye. The patient didn't notice an improvement in visual quality or halos, so now I'm thinking of performing an IOL exchange.

Q | Dr. Williamson: What are you going to exchange it for?
Dr. Donaldson: I would not choose a different multifocal in this situation; that would keep me up at night for months. I'm going with the LAL or the Eyhance. A monofocal-plus could be a good option, but I'd prefer to use the LAL.

Dr. Khandelwal: Everyone's threshold for what type of lens they implant post-LASIK is different. If you're comfortable with an IOL exchange, which everyone should be, you can feel more comfortable using an EDOF in these patients. That's not to say that you should implant them in every single patient, but it's just a realization that there are going to be patients who you never predicted would have a challenge. An IOL exchange can be fairly straightforward, especially early on in the first few months.

But to answer your question, I'd select the Eyhance. An Eyhance-Synergy combination is a good option as long as the

patient understands the difference between the eyes. The distance vision is very good.

Dr. Thompson: One of the reasons I'm careful about contact lens trials is sometimes a half diopter of astigmatism matters. That's why sometimes I'll provide temporary spectacles for the night. But if he's already happy with the Symphony OptiBlue in one eye, I'd implant it in the other.

Dr. Williamson: I selected monofocal-plus, like some of you suggested. I chose the RayOne EMV, an EDOF lens and targeted plano for his non-dominant eye because he was happy with both distance and near in his dominant. Despite this, he ended up -1

sphere. At postoperative month 1 from lens exchange, he was still unhappy with his distance vision and his PCO was getting worse.

Dr. Khandelwal: We're all going to rent a time machine and go back and implant an LAL on this patient.

Dr. Williamson: I performed another contact lens trial, but at -1.00. He loved it. I then performed a YAG and am waiting to perform a PRK touchup in his nondominant eye. That's where the case currently stands. Thank you to our panel for joining the discussion and debating these cases. ■

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KOL KNOCKOUT™ CATARACT EDITION: 8 Cases of Optimal IOL Matchmaking

Release Date: February 2024

Expiration Date: March 2025

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DEMOGRAPHIC INFORMATION

Profession	Years in Practice	Patients Seen Per Week (with the disease targeted in this educational activity)	Region
<input type="checkbox"/> MD/DO	<input type="checkbox"/> >20	<input type="checkbox"/> 0	<input type="checkbox"/> Midwest
<input type="checkbox"/> OD	<input type="checkbox"/> 11-20	<input type="checkbox"/> 1-15	<input type="checkbox"/> Northeast
<input type="checkbox"/> NP	<input type="checkbox"/> 6-10	<input type="checkbox"/> 16-30	<input type="checkbox"/> Northwest
<input type="checkbox"/> Nurse/APN	<input type="checkbox"/> 1-5	<input type="checkbox"/> 31-50	<input type="checkbox"/> Southeast
<input type="checkbox"/> PA	<input type="checkbox"/> <1	<input type="checkbox"/> >50	<input type="checkbox"/> Southwest
<input type="checkbox"/> Other			

LEARNING OBJECTIVES

Did the program meet the following educational objectives?	Agree	Neutral	Disagree
Explain the importance of understanding patient goals, preferences, and lifestyle before cataract surgery	_____	_____	_____
Discuss available IOL delivery systems and their potential effect on the efficiency and safety of cataract surgery	_____	_____	_____
Identify the advantages and disadvantages of current and emerging advanced technology IOLs and summarize the latest data on potential outcomes achieved with different IOL types	_____	_____	_____
Develop personalized treatment plans and match the most appropriate IOL to each patient, based on their unique preferences, personality, and ocular characteristics	_____	_____	_____

POSTTEST QUESTIONS

Please complete at the conclusion of the program.

1. Based on this activity, please rate your confidence in your ability to develop personalized treatment plans for patients undergoing cataract surgery (based on a scale of 1 to 5, with 1 being not at all confident and 5 being extremely confident).

- a. 1
- b. 2
- c. 3
- d. 4
- e. 5

2. A patient with a complex history involving radial keratotomy OU presents to your clinic for cataract evaluation. Her astigmatism measurements are extremely varied across multiple platforms, with no consistent amount of astigmatism measured. You choose to implant a Light-Adjustable Lens (LAL) in this patient. Which of the following is TRUE about this IOL selection?

- a. The patient will likely have immediate great vision without correction
- b. The patient will need realistic expectations regarding vision outcomes, and it may take some time to achieve great vision without correction
- c. The patient is not a good candidate for LAL
- d. Adjustments to achieve great vision without correction can be made immediately after surgery to achieve the desired refractive outcome in this patient

3. A 59-year-old man presents to your office desiring cataract surgery. He is an engineer who is interested in a full range of vision without reading glasses. He has a history of congenital cataracts. All of the following IOL choices would be reasonable options for this patient to achieve his wishes EXCEPT:

- a. Trifocal lens in both eyes
- b. EDOF lens in both eyes
- c. LAL in both eyes
- d. Monofocal lens targeting distance vision in both eyes

4. An emmetropic patient has new onset presbyopia and requires spectacle independence. He presents to you for a surgical option. All of the following represent reasonable options EXCEPT?

- a. Consider monovision with one eye for distance and one eye for near
- b. Consider a multifocal IOL after discussion of risks and benefits
- c. Consider nonsurgical options like multifocal contact lens or presbyopia eye drops
- d. Cataract surgery with a monofocal IOL with a refractive target of -0.25

5. A 70-year-old patient with a history of radial keratotomy presents to your office for cataract evaluation. He is contact lens intolerant and strongly desires spectacle independence. All of the following approaches to managing this patient are reasonable EXCEPT?

- a. Discuss with patient that spectacle independence is unlikely after cataract surgery
- b. Discuss with patient that spectacle independence is a guaranteed outcome after cataract surgery
- c. Discuss with patient that spectacle independence could be achieved if patient is open to wearing contact lenses
- d. Consider a retina evaluation to determine any peripheral retinal pathology prior to cataract surgery

6. A 34-year-old patient who is highly myopic with astigmatism and a history of retinal detachment presents to your office for cataract evaluation. Given her risk of repeat retinal detachment, you decide to implant a lens that is not a silicone lens. All of the following choices are possibilities EXCEPT?

- a. LAL
- b. Eyhance toric lens
- c. PanOptix trifocal lens
- d. Vivity toric lens

ACTIVITY EVALUATION

Your responses to the questions below will help us evaluate this activity. They will provide us with evidence that improvements were made in patient care as a result of this activity.

Rate your knowledge/skill level prior to participating in this course: 5 = High, 1 = Low _____

Rate your knowledge/skill level after participating in this course: 5 = High, 1 = Low _____

This activity improved my competence in managing patients with this disease/condition/symptom. ____ Yes ____ No

Probability of changing practice behavior based on this activity: ____ High ____ Low ____ No change needed

If you plan to change your practice behavior, what type of changes do you plan to implement? (check all that apply)

Change in pharmaceutical therapy ____ Change in nonpharmaceutical therapy ____

Change in diagnostic testing ____ Choice of treatment/management approach ____

Change in current practice for referral ____ Change in differential diagnosis ____

My practice has been reinforced ____ I do not plan to implement any new changes in practice ____

Please identify any barriers to change (check all that apply):

____ Cost ____ Lack of consensus or professional guidelines

____ Lack of administrative support ____ Lack of experience

____ Lack of time to assess/counsel patients ____ Lack of opportunity (patients)

____ Reimbursement/insurance issues ____ Lack of resources (equipment)

____ Patient compliance issues ____ No barriers

____ Other. Please specify: _____

The design of the program was effective for the content conveyed ____ Yes ____ No

The content supported the identified learning objectives ____ Yes ____ No

The content was free of commercial bias ____ Yes ____ No

The content was relative to your practice ____ Yes ____ No

The faculty was effective ____ Yes ____ No

You were satisfied overall with the activity ____ Yes ____ No

You would recommend this program to your colleagues ____ Yes ____ No

Please check the Core Competencies (as defined by the Accreditation Council for Graduate Medical Education) that were enhanced through your participation in this activity:

____ Patient Care

____ Practice-Based Learning and Improvement

____ Professionalism

____ Medical Knowledge

____ Interpersonal and Communication Skills

____ System-Based Practice

Additional comments:

This information will help evaluate this activity; may we contact you by email in 3 months to inquire if you have made changes to your practice based on this activity? If so, please provide your email address below.
