



CONSIDERATIONS FOR CUSTOM LENS REPLACEMENT



An advanced IOL may be the answer for certain patients seeking independence from glasses or contact lenses.

BY CONNOR M. SMITH, MD

When a patient walks into our practice, our primary concern is delivering the most meaningful and tailored service possible. This commitment takes a variety of forms, as we have a diverse range of patients and pathologies that influence the way we approach and provide care.

Pathology is often defined as deviation from an assumed normal state.¹

Patients who seek independence from spectacle or contact lens wear may not have “pathology” in the true sense, if we consider myopia, hyperopia, astigmatism, and presbyopia to fall within the range of “normal” anatomy—although, most eye care professionals would have difficulty classifying someone with a -10.00 or +5.00 spectacle prescription as “normal.” This refractive error, coupled with contact lens

intolerance, dry eye, discomfort from heavy eye wear, and even cosmetic concerns with thick lenses, can significantly disrupt a person’s quality of life.

NAVIGATING COMPLEX QUESTIONS TO OPTIMIZE PATIENT OUTCOMES

The initial assessment of a patient for refractive surgery involves addressing two pivotal questions:

1. Which procedures are technically viable for this patient?
2. Do the potential benefits of the procedure outweigh its associated risks?

Answering these inquiries demands rigorous discussion, comprehensive physical examinations, and sophisticated diagnostic testing. Keratorefractive surgery, rooted in evaluating corneal thickness, shape, and health, provides exceptional vision correction to those eligible. However, for individuals with high myopia or corneal pathologies, implantable collamer lenses (ICLs) present an attractive alternative. Nevertheless, certain conditions rule out ICL candidacy, including shallow anterior chambers, anatomically narrow angles, glaucoma, and notably, hyperopia and presbyopia.

Enter the concept of custom lens replacement (CLR), also known as refractive lens exchange (RLE), an extraordinary option tailored to this demographic. CLR has been transformed by advanced presbyopia-correcting IOLs (PC-IOLs) and improved biometry and formulas that enhance refractive precision.

ASSESSING CANDIDACY

When we meet patients who are potential candidates for CLR, we start with their chief complaint. Do they have difficulty achieving optimal vision with their glasses or contact lenses? Are they experiencing any discomfort with their contact lenses or from the weight of their eyeglasses? Are they merely tired of wearing reading glasses?

The motivation of the patient presenting for a CLR evaluation is important, as it will contribute to their resiliency and neuroadaptation after surgery. It's also beneficial to know whether the patient has explored different eyeglass or contact lens options. Newer technologies provide a more comfortable fit that wouldn't have been possible 15 years ago.

Another facet of patient evaluation involves discerning whether they experience glare or halos while driving at night, a common phenomenon in those with larger pupils post-refractive surgery. Patient personality also plays a role; assessing a patient's disposition along the type A/type B spectrum helps tailor discussions (eg, type A patients tend to be more meticulous regarding vision quality and postoperative complaints, including dysphotopsias, contrast sensitivity, etc).

IOL OPTIONS

Somewhat frequently, we have patients come to us who are presbyopic and wearing monovision contact lenses, and desire the same correction with their IOLs. This is an easier conversation, as the closest

approximation to this is placing a toric monofocal lens in each eye to match their monovision refraction (usually -2.00 in the nondominant eye). More frequently, however, these patients have only early presbyopia and are wearing single-vision distance correction, bifocal spectacles, or multifocal contacts. Monovision in these patients would not be well tolerated, unless they had performed a prior monovision trial and liked it. For these patients, we usually use one of the two options below.

A Trifocal IOL

The Clareon PanOptix Intraocular Lens (Alcon) is a trifocal lens that uses Enlighten technology to optimize vision at intermediate and near, while still maintaining exceptional vision for distance and correcting a high degree of astigmatism. From the initial FDA study and multiple retrospective studies since, the average uncorrected distance VA (UDVA), uncorrected intermediate VA, and uncorrected near VA have been approximately 20/25, J2, and J1, respectively.^{2,3} This holds true in our practice, with a high number of patients (> 90%) hitting their refractive target and achieving this visual outcome.

An Adjustable Lens

The Light Adjustable Lens (LAL; RxSight) can be adjusted noninvasively following surgery to achieve an optimal refractive outcome. The LAL provides monofocal-like visual quality with a small amount of extended depth of focus (EDOF). With proper postoperative management and adjustment, 92% of patients achieve 20/25 or better UDVA.⁴ In addition, the asphericity of the lens and its ability to induce negative spherical aberration with adjustments can often provide an EDOF effect of around 0.75 D.

PATIENT-CENTRIC APPROACHES

Both the PanOptix IOL and the LAL have their place in your CLR discussions with patients.

For patients with normal-sized pupils and more laid-back personalities, the PanOptix is the IOL of choice. We discuss with them the potential for glare, halos, and starbursts, and even the fact that contrast sensitivity with this lens is different than that with their natural lens. I always emphasize to patients that this IOL is *not* as good as a 20-year-old's crystalline lens and that focusing their vision at different distances takes

AT A GLANCE

- ▶ Custom lens replacement (CLR), also known as refractive lens exchange, is tailored to accommodate patients who are not candidates for other types of refractive surgery, including those with high myopia, corneal pathologies, shallow anterior chambers, anatomically narrow angles, glaucoma, and notably, hyperopia and presbyopia.
- ▶ The motivation of a patient presenting for a CLR evaluation is important, as it will contribute to their resiliency and neuroadaptation after surgery.
- ▶ The most important step in this process involves thorough preoperative assessment and counseling the patient on expectations.

AN OPTOMETRIC PERSPECTIVE

By Rebecca Miller, OD

We have a lifelong role in a patient's ever-changing refractive and ocular health journey. For some patients, that path leads to surgery, which can transform their lives. The first step of any surgical experience is to ascertain which procedure is safest and best for a patient's unique eyes. A careful refraction, slit-lamp exam, and detailed computer imaging of the eye can help the clinician determine whether surgery is a safe consideration. We now have more surgical options than ever and can help the vast majority of patients seeking surgical solutions. Once the patient is established to be a good candidate, our role transitions to supporting patients as they seek a talented and experienced surgeon to achieve the desired outcome.

I am honored to work alongside Connor M. Smith, MD, and to participate in our patients' surgical successes. We continue to celebrate their refractive outcomes with LASIK, photorefractive keratectomy, implantable collamer lenses, and custom lens replacement, and a patient's newfound joy in their vision. We take care to discuss the reality that surgery is not perfect and that our eyes continue to age with our bodies. Many of our patients will eventually likely benefit from additional vision correction with glasses or contact lenses, and our refractive and ocular health journey continues!

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some getting used to. I also introduce them very early on to the concept of *neuroadaptation*. Initially, halos may be present in up to 50% of patients (although only 20% of patients are bothered by them), so I tell patients they will likely experience halos as a natural part of this ultra-high technology lens.² However, they can certainly improve over time. Neuroadaptation to the most common dysphotopsias

typically takes place over the first 1 to 6 months after surgery. Gauging who will neuro-adapt quickly and who may never neuro-adapt is an art and an ongoing challenge for all of us, as we don't have the luxury to take each patient out to lunch and get to know their personality and expectations in exquisite detail.

Patients exhibiting more meticulous tendencies or those with

larger pupils tend to be less likely to tolerate dysphotopsias; therefore, the LAL is likely the more appropriate option. For these patients, aiming for the best possible vision entails weekly adjustments starting 4 weeks post-surgery, with most individuals requiring two to three adjustments and two additional lock-in procedures to finalize outcomes.

Although true monovision is possible, the EDOF effect prompts an alternative "blended monovision" with a -1.00 target for the patient's nondominant eye, which improves binocularity and range of focus per eye, an approach that usually resonates better than true monovision.

THE ACE UP YOUR SLEEVE

CLR is an excellent alternative for patients who don't qualify for keratorefractive or phakic lens implant surgery, provided they are properly motivated to achieve spectacle independence.

The most important step in this process involves thorough pre-operative assessment and patient counseling on expectations. As long as proper expectations are in place, patients can achieve a visual quality of life they have never known before and a high degree of spectacle independence. ■

1. Pathology. Merriam-Webster. Accessed August 9, 2023. www.merriam-webster.com/dictionary/pathology

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3. Sohee J, Moon K, Kwon H. Long-term clinical outcomes after trifocal intraocular lens implantation: a retrospective observational study. *J Refract Surg*. 2023;39(4):236-241

4. Folden DV, Wong JR. Visual outcomes of an enhanced UV protected light adjustable lens using a novel co-managed, open-access methodology. *Clin Ophthalmol*. 2022;16:2413-2420.

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