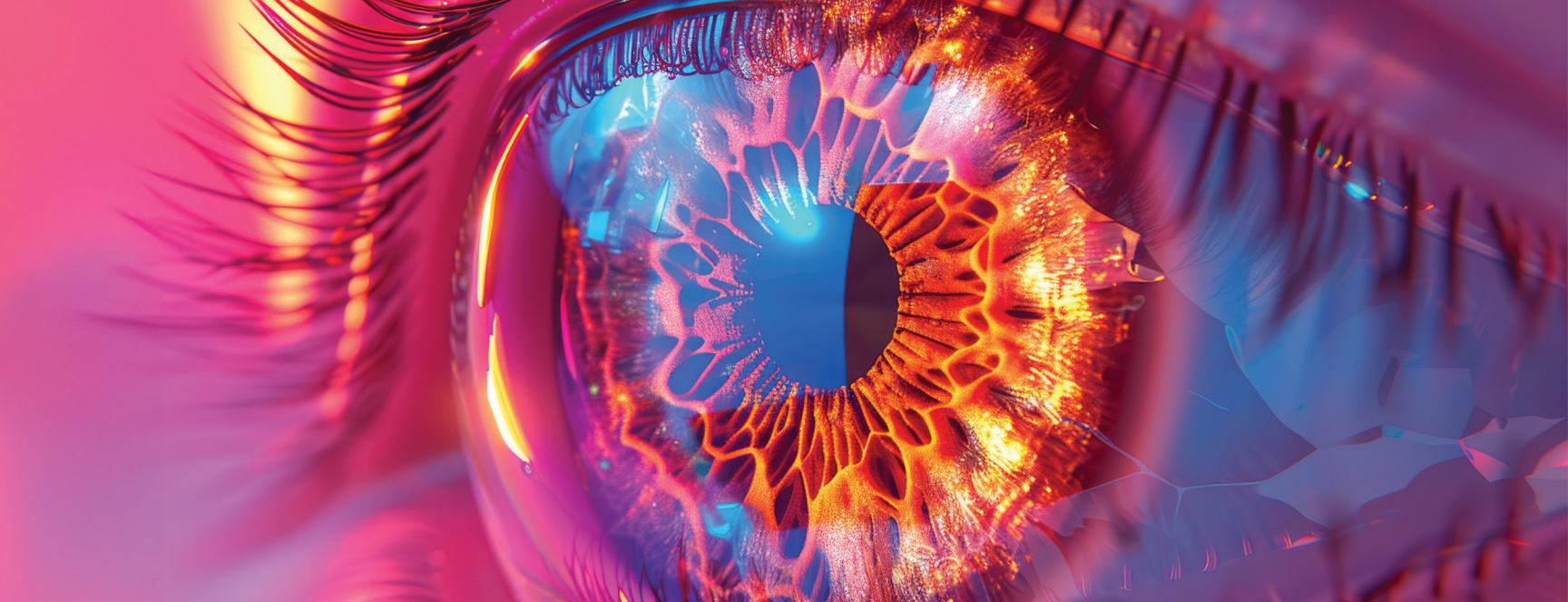




INDICATIONS FOR MEDICALLY NECESSARY CONTACT LENSES



Pre-qualifiers include high refractive error, corneal disease, dry eye disease, corneal infection, and congenital abnormality.

BY ALYSSA PANAGOS, OD, FFAO

As optometrists, one of many niches in our profession is medically necessary contact lenses. Despite the extensive chair time and hard work that goes into fitting these lenses, the outcome makes it all worthwhile. Often, you retain a patient for life. In this article, I offer five reasons to reach for medically necessary contact lenses when treating patients. I also share real scenarios in which I fit patients with medically necessary contact lenses to show you first-hand their utility in everyday practice.

REASON NO. 1: HIGH REFRACTIVE ERROR

As convenient as standard soft contact lenses are, there are limitations when working with high

sphere and cylinder powers. The higher the power, the thicker the lens, depriving the cornea of oxygen and causing patient discomfort. Visual outcomes can be limited, as patients may still complain about shadowy vision, blur, halos, and diplopia.

Case Example

A 25-year-old female presented with the complaint of poor comfort and dryness with her rigid gas permeable (RGP) lenses. Her BCVA was 20/30 OU. Her manifest refraction was -13.00 -3.50 x 020, 20/25 OD and -11.75 -3.50 x 155, 20/25 OS. Her topography was 43.2/45.2 OD and 40.2/41.4 OS, and her white-to-white parameter was 12.0 OD and 11.9 OS.

Because of the patient's poor comfort with RGPs and long wear

time as a nurse, neither conventional soft contact lenses nor hybrids were ideal due to the risk of worsening dryness with a soft skirt. Thus, I selected a mini scleral lens design to improve comfort with the addition of saline. The patient's vision is now 20/20 OU.

REASON NO. 2: CORNEAL DISEASE

Corneal ectasia is characterized by progressive corneal steepening and thinning.¹ Keratoconus and pellucid marginal degeneration are often the culprits of this finding. With advancing research and technology, our treatment selection of specialty contact lenses is vast.

Mild to moderate corneal ectasia can be treated with conventional soft contact lenses, RGPs, hybrids, and

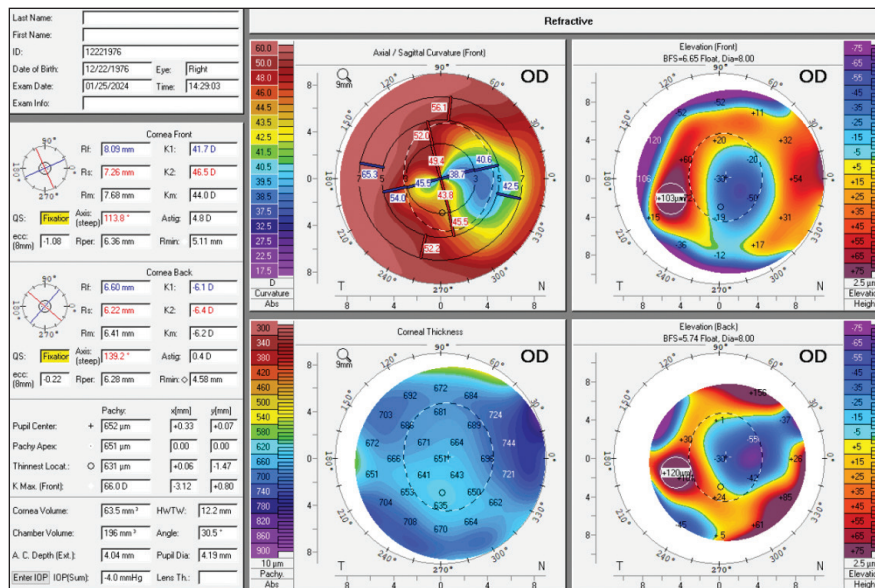


Figure 1. Irregular astigmatism due to corneal transplantation, demonstrated by K1 and K2, the axial curvature map, and the front elevation map.

scleral lenses. Moderate to advanced corneal ectasia has a more limited selection, especially if a patient has failed with RGPs. Hybrid and scleral lenses tend to be better options; hard lenses have the advantage of masking corneal irregularities, providing a regular anterior refractive surface.² Regardless of the location and severity of the irregularity, scleral lenses offer a wide variety of options for tough fits, including multifocal optics and impression designs.

When fitting an eye with corneal disease, first select the lens

diameter based off the horizontal visible iris diameter or white-to-white parameter on topography. Pay attention to the location and severity of the irregularity or cone. Round nipple cones can be fitted with small-diameter GP lenses due to their central location.³ Oval cones need a larger intralimb GP, hybrid, or scleral design.³ It is necessary to use a larger design for more advanced cases, as the optic zone will not land over the visual axis due to decentration, which results in concurrent inferior edge

lift, ultimately causing poor comfort and vision. A larger vault over the irregularity offers better optic zone centration and comfort.

Next, select the base curve, starting with the flat K measurement and using the guide that came with your contact lens fitting set for guidance. Lastly, evaluate your fit.

Post-Surgical Corneal Ectasia

Post-surgical ectasia results in a cornea that is flat in the center with a steeper midperiphery. This condition occurs at higher rates in eyes undergoing LASIK than radial keratotomy (45-times higher).¹ Some common complaints from patients post-surgery include halos and glare, which can result from irregular astigmatism. In addition, night driving may become bothersome to post-LASIK patients due to the scotopic pupil size catching the edge of the LASIK flap. Oblate-design GP or hybrid lenses are often the best option in this scenario.

A Note on Corneal Transplants

Corneal transplant recommendations and surgeries have been declining with the revolution of specialty lenses. The American Academy of Ophthalmology's Cornea Ectasia Preferred Practice Pattern¹ states that specialty lenses should be trialed for visual rehabilitation prior to keratoplasty and may delay and even eliminate the need for corneal transplantation. The health and area of the corneal transplant will determine whether the graft is viable for contact lens wear. Most transplant eyes require GP lenses for the best vision correction.

If a post-transplant eye has an endothelial cell count of 800 cells/mm² or less, there is a high risk of corneal edema and graft failure. This eye would not be ideal for a scleral lens or a thick conventional soft contact lens, which can increase the risk of hypoxia. A GP or hybrid lens would work better in this case. It

AT A GLANCE

- ▶ As optometrists, one of many niches in our field is medically necessary contact lenses.
- ▶ Reasons to fit these lenses include high refractive error, corneal disease, dry eye disease, corneal infection, and congenital abnormality.
- ▶ Lens selection and management depends on a patient's specific condition and needs.

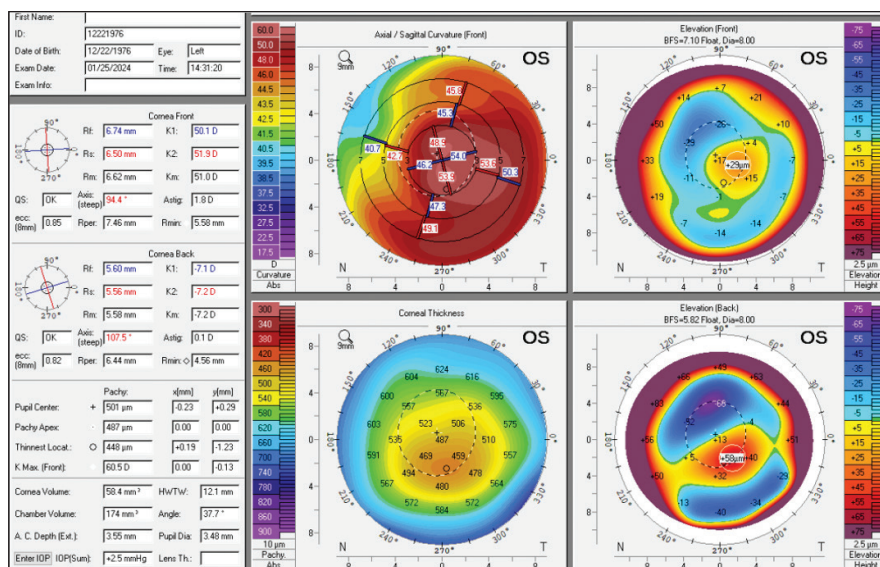


Figure 2. The back elevation map shows the significance of the patient's keratoconus, with a steep Kmax and thin patchy apex.

is important to frequently follow up with patients who have had corneal transplants to ensure the graft does not fail or reject.

Case Example

A 45-year-old White male presented for a contact lens evaluation. He had a penetrating keratoplasty OD (Figure 1) and keratoconus OS (Figure 2). He presented wearing an RGP lens OS and also wore prescription glasses to correct the vision OD and residual astigmatism OS.

With his lenses and glasses, the patient's entering vision was 20/30 OD and 20/25 OS. Manifest refraction was +2.25 -4.75 x 006, 20/25 OD and -2.25 -1.00 x 115, 20/50 OS. The patient was fit with scleral lenses in each eye, which allowed him to achieve 20/20 vision OU.

REASON NO. 3: DRY EYE DISEASE

Dry eyes and standard soft contact lenses go together like peanut butter and jelly, but if a patient is intolerant to standard soft contact lenses, then specialty lenses are typically a great fallback option. Scleral lenses create a reservoir of fluid between the

cornea and the lens, reducing dry eye symptoms with better optical clarity. RGP lenses provide greater tear exchange with reduction of dry eye symptoms. Hybrid lenses combine the best of soft contact lenses and RGPs. The good news is that these patients often have normal corneal astigmatism, if any at all, and are not a challenge to fit.

REASON NO. 4: CORNEAL INFECTION

Herpes simplex keratitis and herpes zoster ophthalmicus can induce corneal stromal scarring due to their inflammatory nature. Stromal scarring causes the corneal tissue to opacify and become irregular. Depending on its location, stromal scarring can cause the stroma to become flatter. Often, an oblate lens design works best in these cases. Patients usually complain of glare, light sensitivity, and distorted vision if the scar is located centrally. Soft standard and soft conventional contact lenses are not ideal choices for corneal scarring, as they do not conform to the cornea as well as a hard lens. If the size of the scar is central and small, an RGP or hybrid lens may work, but a scleral lens is an ideal choice for large irregular scarring—especially if there is any suspicion of neurotrophic keratitis. The main symptom of neurotrophic keratitis is decreased corneal sensation.

The impaired messaging system between the trigeminal nerve and the cornea causes a decrease in reflex tearing and corneal healing, leading to dry eye symptoms. Scleral lenses

DRY EYES AND STANDARD SOFT CONTACT LENSES GO TOGETHER LIKE PEANUT BUTTER AND JELLY, BUT IF A PATIENT IS INTOLERANT TO STANDARD SOFT CONTACT LENSES, THEN SPECIALTY LENSES ARE TYPICALLY A GREAT FALLBACK OPTION.

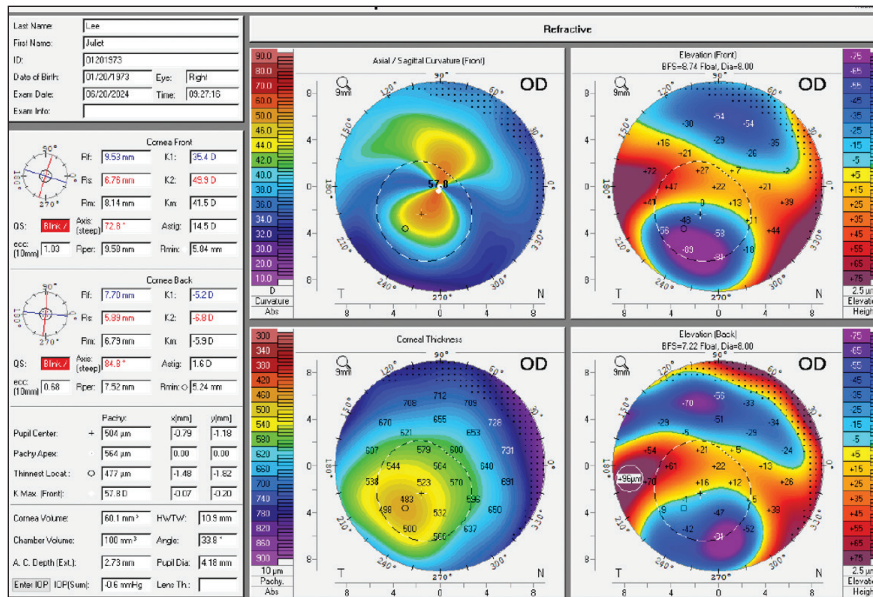


Figure 3. Irregular astigmatism demonstrated by a very flat K1 and steep K2. The patient's front elevation map shows significant flattening of the cornea overlying the scar.

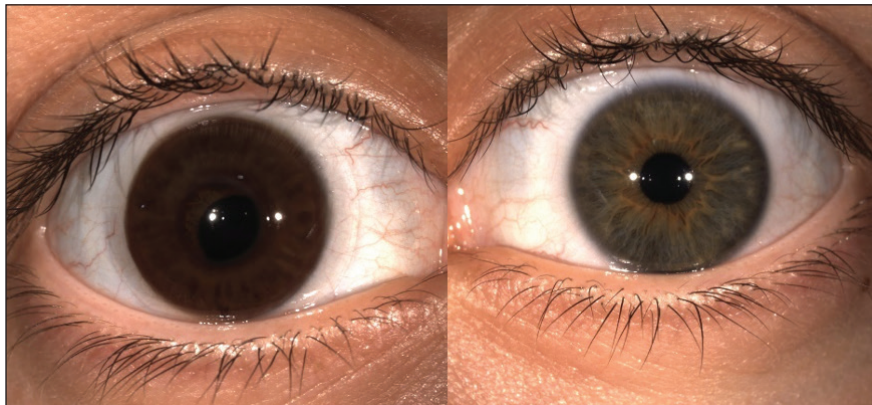


Figure 4. Side-by-side comparison highlights the difference between a prosthetic contact lens with an open pupil OD (left) and the patient's natural heterochromia iris color OS (right).

offer a solution, providing protection from outside exposure and consistent lubrication to the ocular surface. It is also vital to reduce the risk of corneal hypoxia, which may lead to new corneal neovascularization around the scar tissue.

Case Example

A 42-year-old Asian female presented for a scleral lens fit OD due to corneal scarring from herpes simplex keratitis (Figure 3). Her manifest refraction was +2.50 -0.75 x

145, 20/40 OD and -0.50 -0.50 x 015, 20/20 OS. Because she had a small palpebral aperture, I fit her with a semi-scleral lens. Due to the oblate nature of her cornea, an oblate design was chosen. Her vision was 20/20 OD with the scleral lens.

REASON NO. 5: CONGENITAL ABNORMALITY

Iris coloboma is an incomplete closure of the embryonic fissure during development. The large opening in the iris allows excessive

light to enter the pupil, causing uncomfortable, reduced vision. Prosthetic soft custom contact lenses are a great treatment option. A black backing with an open pupil reduces excess light entering the eye and allows vision correction. A caveat with colored prosthetic contact lenses is that the color of the prosthetic may not exactly match the patient's natural eye color, which can be hard to duplicate.

Case Example

A 16-year-old White male presented for a comprehensive eye examination. He had iris, optic nerve, and retina coloboma OD. He also had iris heterochromia. He reported photophobia and decreased vision in his right eye.

The patient's manifest refraction was -4.00 -1.75 x 020, 20/40 OD and +0.25 -0.25 x 080, 20/20 OS. He was fit with a black back, open pupil custom soft conventional prosthetic lens with a prescription of -4.00 -1.25 x 020, 20/30 OD (Figure 4). The patient reported good comfort and vision with the lens and a significant reduction in glare and halos during the day and at night.

TAKEAWAYS

Specialty contact lenses are a great way to expand your practice modality. By fitting these lenses, you will be able to provide the best possible vision for your patients and improve their quality of life. This often earns you a patient for life. ■

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