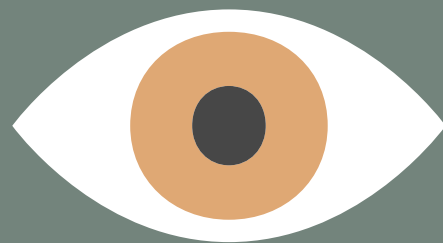


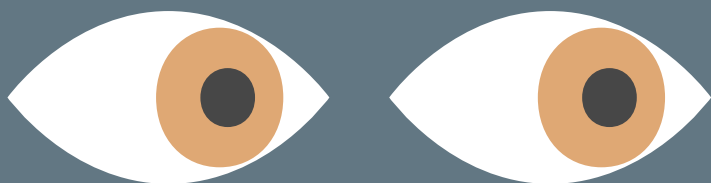
**OPHTHALMIC
OUTLOOK
GROUP
SURVEY**



**INSIGHTS
& TRENDS**

PHAKIC IOLS

by J. Morgan Micheletti, MD, FACS



Phakic IOLs

Phakic intraocular lenses (IOLs) are used to correct refractive errors (ie, myopia and myopic astigmatism) while preserving the natural lens. Phakic IOLs have traditionally served as an alternative for patients who were not candidates for LASIK or other cornea-based procedures. Today, however, the indications for phakic IOLs are growing. Ophthalmologists play a crucial role in identifying suitable candidates based on factors like age, corneal thickness, and long-term vision goals, balancing the procedure's benefits, including excellent visual outcomes and preservation of corneal tissue¹⁻³ against considerations like cost and the risks inherent to intraocular surgery.

This data review from the 2024 Ophthalmic Outlook Group (OOG) Survey provides insights into the clinical practice patterns and opinions of US ophthalmologists as they relate to phakic IOLs.

Phakic IOL Use and Trends

The OOG Survey gathered insights into respondents' use of phakic IOLs, revealing compelling trends. Despite a low average volume of 23 procedures per year, 85% of respondents are either currently implanting or plan to implant phakic IOLs (**Figure 1**), pointing to encouraging widespread interest in adoption of the procedure. The relatively small number of high-volume phakic IOL surgeons in the U.S. limits the number of respondents reporting large procedural volumes.

In addition to the widespread adoption, 61% of respondents anticipate increasing their use of phakic lenses over the next 5 years. Factors likely contributing to the projected growth include increased awareness of the procedure, expanded phakic IOLs options, improved safety profiles, and greater patient knowledge. On that last point, it's my belief that when patients actively inquire about phakic IOLs it encourages more surgeons to embrace the procedure.

1. Packer M. Evaluation of the EVO/EVO+ Sphere and Toric Visian ICL: Six month results from the United States Food and Drug Administration clinical trial. *Clinical Ophthalmology*. 2022;16:1541-1553.

2. Packer M. The Implantable Collamer Lens with a central port: review of the literature. *Clin Ophthalmol*. 2018;12:2427-2438.

3. Packer M. The EVO ICL for moderate myopia: results from the US FDA clinical trial. *Clin Ophthalmol*. 2022;16:3981-3991.

Phakic IOL Candidacy

On average, respondents estimate that 19% of their patients are candidates for phakic IOLs. There is a strong preference for the procedure when treating high myopia. Recent evidence supports favorable outcomes even in cases of lower myopia.³ In my practice, I treat patients with -6.00 D and even as low as -4.00 D of myopia with phakic IOLs.

When evaluating candidates for phakic IOLs, factors like age, patient expectations, and long-term vision goals play a significant role. For example, I am more cautious about recommending corneal procedures like LASIK in a 44-year-old with -5.00 to -6.00 D of myopia than in a 20-year-old, who is further from the age for refractive lens exchange.

Additionally, phakic IOLs are an excellent choice for eyes with a thin cornea and for patients who prefer to avoid the risks associated with a LASIK flap as well as those seeking a removable option. The decision to proceed with phakic IOL implantation often hinges on patient preference, as visual outcomes between lens- and laser-based options are generally comparable in well-selected candidates.

“Ultimately, the decision of whether to implant a phakic IOL depends on patient preference; the quality of vision between lens and laser options is comparable.”

– J. Morgan Micheletti, MD, FACS

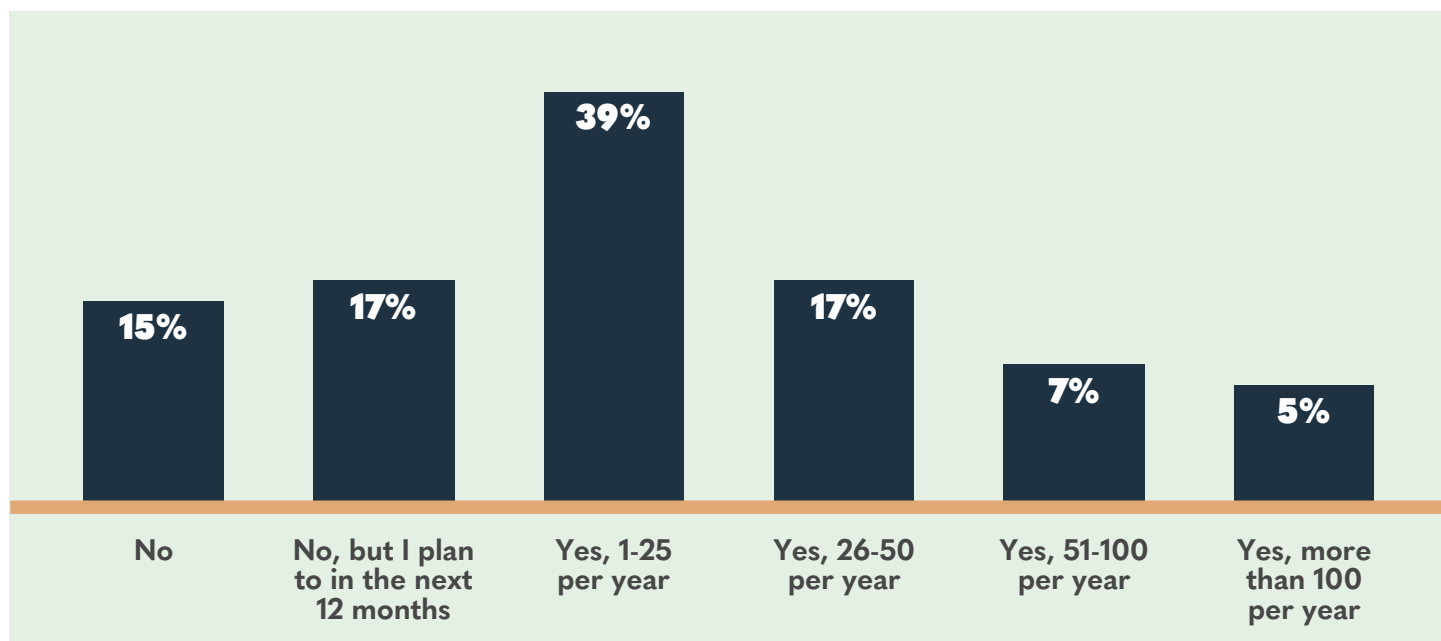


FIGURE 1. Do you currently implant phakic IOLs?

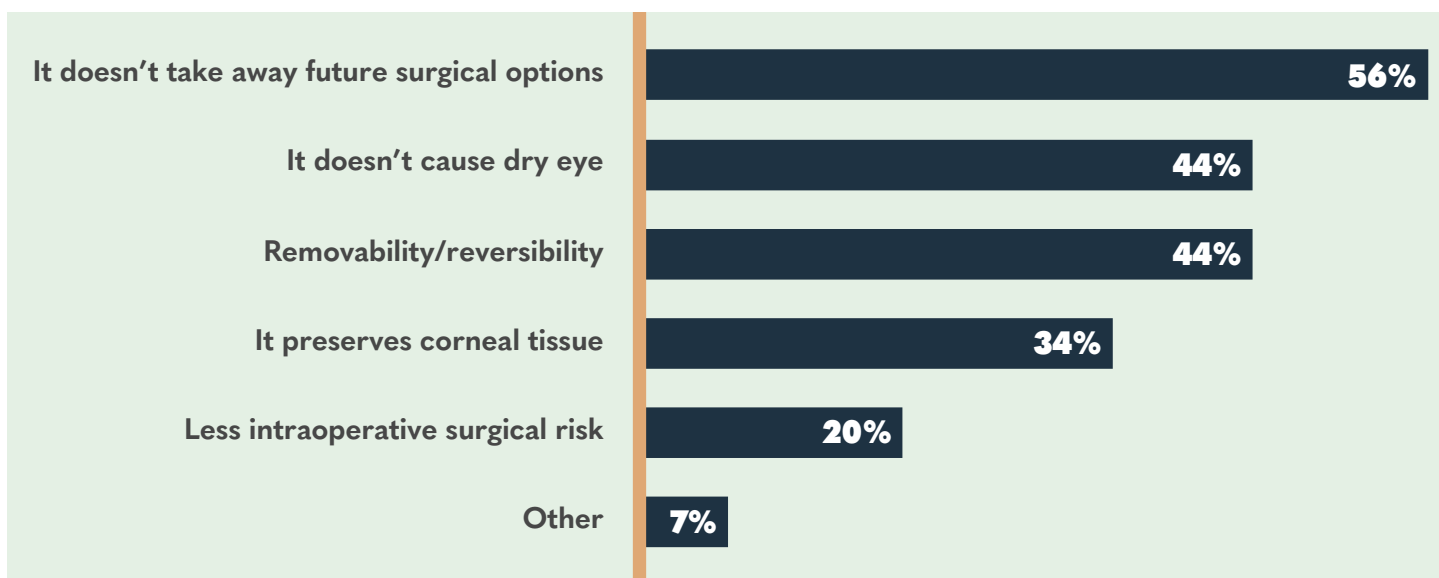


FIGURE 2. What do you believe to be the primary two advantages of phakic IOLs compared to other refractive procedures? (select the two that apply)

Advantages and Disadvantages of Phakic IOLs

The primary advantages of phakic IOLs compared to other refractive procedures identified by respondents include preserving the eye for future surgery and the lack of impact on dry eye disease (**Figure 2**). It is important to recognize the interconnected nature of several key attributes of phakic IOLs. The commonly cited advantages—namely that phakic IOLs preserve future surgical options and offer removability—are closely tied to the tissue-sparing approach of the procedure. Specifically, by preserving corneal integrity, phakic IOLs help maintain the full spectrum of future refractive or lens-based procedures. In this way, tissue preservation is not only a standalone benefit but also the foundation upon which reversibility and long-term surgical flexibility are built.

Beyond its clinical advantages, phakic IOL implantation is probably one of my favorite procedures to perform because it's straightforward, rewarding, and delivers immediate results. Within just 3 minutes, patients' experience a remarkable improvement in vision that often sparks amazement and gratitude.

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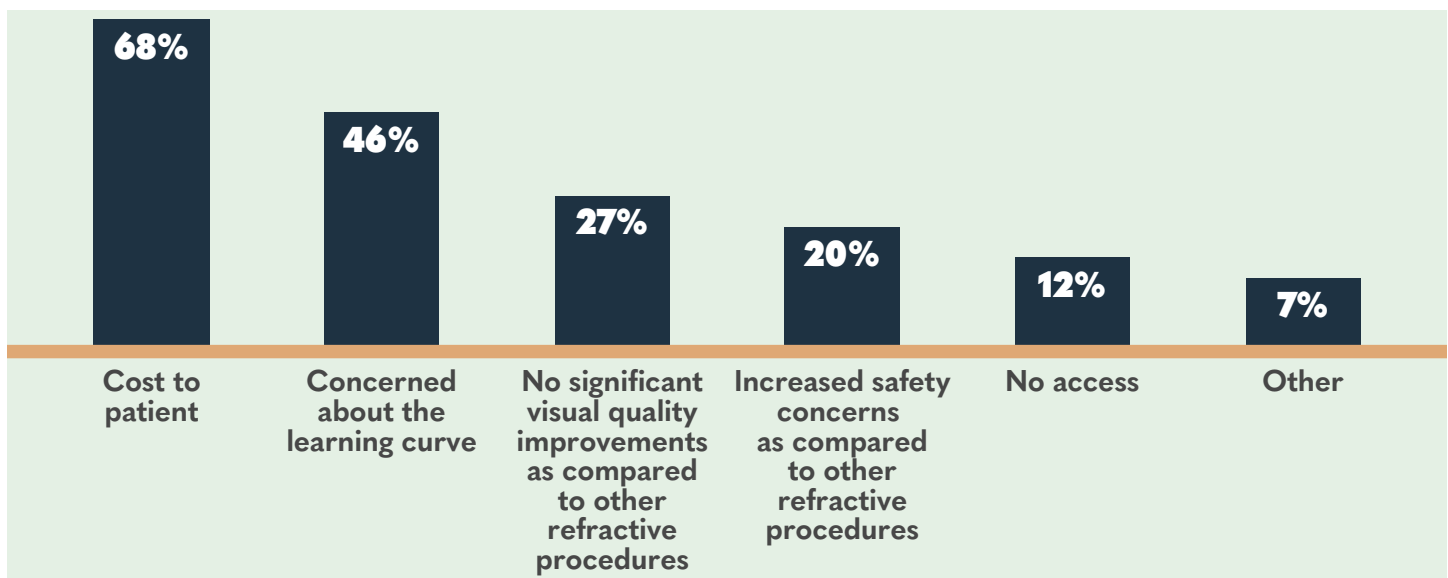


FIGURE 3. What are the primary two reasons you are not implanting more phakic IOLs? (select the two that apply)

The key barriers respondents perceive in performing or increasing their phakic IOL volume include the cost to the patient and the learning curve (**Figure 3**). Although the cost of a phakic IOL procedure is greater than LASIK, the average cost of contacts over a lifetime is \$18,000.⁴

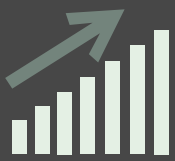
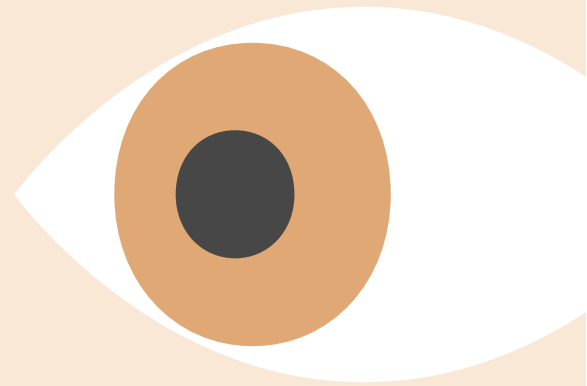
In terms of learning curve, one commonly cited challenge is accurate phakic IOL sizing. This parameter affects the vaulting—the distance between the posterior surface of the implanted lens and the anterior surface of the crystalline lens of the implant. The standard method for sizing is white-to-white (WTW) diameter, and following a precise yet straightforward preoperative evaluation process including WTW and anterior chamber depth (ACD) measurements may help eliminate outliers and enhance surgeon confidence in sizing and, as a result, the procedure.

In addition to things like webinars and conversations with experts to improve knowledge and confidence, there are other tools available to help surgeons overcome hurdles and fully embrace phakic IOL implantation. A study analyzing biometry values from 408 eyes consecutively scanned with nine different biometers showed that adjustment factors for WTW and ACD measurements may be used to compensate for differences between devices and adapt phakic IOL sizing recommendations.⁵ Using these data as input, the relationship between measurements from different devices was characterized to enable alignment of results across devices. This work enabled the creation of ICLCalc.com, which integrates the study results to provide sizing adjustments and estimates vaulting—a key step in addressing early learning curve concerns.

4. Cost of contacts over a lifetime vs. EVO ICL. STAAR Surgical. Accessed April 22, 2025. <https://us.discovericl.com/blog/cost-of-contacts-over-a-lifetime-vs-vision-icl>

5. Micheletti JM, Hall B. Assessment of measurement variability across automated biometry devices. *J Cataract Refract Surg.* 2025;51(2):156-160.

DID YOU KNOW



61%

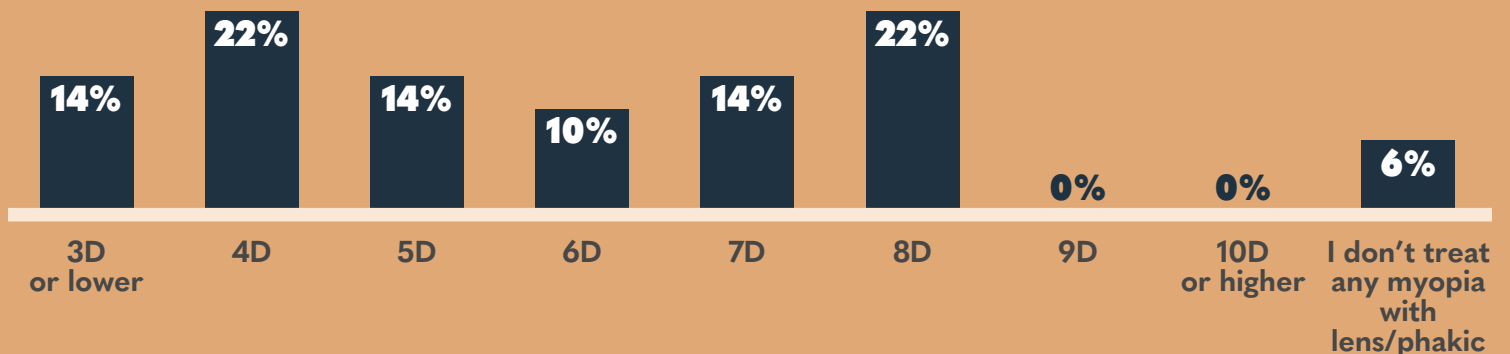
of respondents expect to increase their phakic IOL volume over the next 5 years



85%

of respondents implant or plan to implant phakic IOLs

What is the lowest level of myopia you treat with a lens-based procedure such as a phakic IOL?



OPHTHALMIC OUTLOOK GROUP SURVEY

The Ophthalmic Outlook Group (OOG) Survey was launched in February 2024. The survey included 141 questions developed and reviewed with the OTDG leadership board. The survey questions explored doctors' understanding and current practice patterns across a number of areas of ophthalmic care, including cataract surgery, presbyopia, astigmatism, corneal disease, ocular surface disease, eyelid margin disease, glaucoma, corneal- and lens-based refractive surgery, and retina.

Nearly 200 optometrists responded to the survey which was closed in mid-April 2024. You can access interpretive reports on additional OOG topics as they are released by visiting oog.tfgeducation.com or scanning the QR code.



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Meet the Author

*J. Morgan Micheletti,
MD, FACS*



J. Morgan Micheletti, MD, FACS is a board-certified ophthalmologist, partner, director of research, and fellowship director at Berkeley Eye Center. He has performed over 10,000 surgeries, specializing in cataract, vision-correction, microinvasive glaucoma, and complex anterior segment procedures. Dr. Micheletti co-authored the landmark Interventional Glaucoma Consensus Protocol, establishing a proactive, procedure-first framework for glaucoma management. He serves as Director of Clinical Strategy for Synopic and sits on the board of the Society of Excellence in Eyecare (SEE).

A leading surgical innovator, Dr. Micheletti holds six patent-pending devices, including a sustainable surgical blade, electronic lens implant, and glaucoma implant. He pioneered two anterior segment techniques for IOL exchange and fixation, and developed an AI-driven ICL sizing nomogram that has improved lens selection precision worldwide. He has led over 15 clinical trials, including FDA studies and investigator-initiated research, with hundreds of peer-reviewed publications and invited lectures to his name.

Dr. Micheletti is also spearheading space-based ophthalmic research, launching surgical biomaterials to the International Space Station aboard a Falcon 9 rocket through a NASA collaboration. His accolades include the Outstanding Young Texas Ex Award, IIRSI Gold Medal, Castle Connolly Top Doctor, and recognition as one of America's Best Cataract Surgeons.

He hosts The History of Eyecare podcast and serves on the editorial boards of Ophthalmology 360 and Cataract & Refractive Surgery Today. Across platforms, Dr. Micheletti remains committed to advancing ophthalmic surgery, technology, and education—on Earth and beyond.