

# DECISION-MAKING IN THE TREATMENT OF PRESBYOPIA



Listen to the patient to learn which route to take.

BY VANCE THOMPSON, MD, FACS

**P**resbyopia is a highly frustrating condition for many people, especially when optical correction does not fit well into their lifestyle. When I see patients in consultation who are researching their options for surgical correction of presbyopia, I want them to understand the two main functions that their lens provides, which are clarity and reading range. Over the years, I explain, they typically lose the focusing range first, which is presbyopia, and then second the clarity, which is cataract.

Understanding the two functions that individuals lose in the journey of the aging lens helps patients to understand their own eyes and their treatment options. It also helps them to understand that anything short of a lens replacement is a temporary treatment that will wear off, so to speak, with time.

Even though refractive surgical options that don't involve replacing

the lens will eventually lose their effectiveness, these procedures can serve to bridge the gap between now and the day that lens replacement is needed. I find that many presbyopic patients are not ready to have their lens replaced but still want to do something to treat their presbyopia.

## KEY DECIDING FACTORS

How do we reach a decision, then, between a corneal (lens-sparing) and a lenticular (lens replacement) solution to presbyopia? There are two main keys.

► **Key No. 1: Listen to the patient.** By eliciting the patient's desires, needs, and lifestyle issues, we can help guide him or her toward the best choice.

► **Key No. 2: Ask about nighttime vision.** Deciding which journey to recommend—corneal or lens surgery—starts with the patient's

answer to one main question: "How is your nighttime image quality?" If they are happy with their nighttime vision and my diagnostic testing and examination are consistent with their history, I will offer patients a corneal approach such as monovision laser vision correction or a corneal inlay. If their nighttime image quality is reduced and my diagnostic testing and examination are consistent with early lens scatter, I will recommend that their two main options are doing nothing or considering lens replacement.

## CORNEAL SOLUTIONS

My most common corneal method of presbyopia treatment is monovision corneal laser vision correction with PRK, LASIK, or SMILE. Monovision works well, referring doctors understand it well, and many patients tolerate it well. If patients have some nighttime blur postoperatively, a pair of glasses will

clear things up beautifully. Additionally, monovision can be reversed if the patient does not adapt well. The near-vision eye can have a laser enhancement to plano to balance it with the other eye, and the patient can wear reading glasses (or someday soon use drops; more on this in a moment) for near vision until eventually it is time for lens replacement.

Corneal inlays are another option for patients who have a clear lens and want a corneal correction of their lenticular problem. With synthetic inlays, corneal haze has occurred in some patients, although early clinical experience suggests that deeper placement may help to minimize this phenomenon.<sup>1</sup>

If I were to implant a synthetic corneal inlay, I would follow one short-term and one long-term rule. If the patient is not happy early, I would remove it to minimize haze or prevent a biocompatibility issue that could cause permanent blur upon removal. In my experience, patients who are happy early in the course with an inlay are also happy in the long run. In the longer term, my rule is that, when patients with inlays develop cataracts, they already have their extended depth of focus in the cornea. Therefore, I don't remove the inlay but rather pair it with a monofocal implant. I have had success with this approach.

I am excited about the human collagen allogenic corneal inlays for presbyopia that are now under study. Early results are promising,<sup>2</sup> and we all know that adding cornea to cornea eliminates the biocompatibility issues seen with synthetic materials. I look forward to learning more about the performance of human collagen inlays in both the short and long term.

### LENTICULAR SOLUTIONS

For patients who have reduced nighttime image quality or who desire a permanent correction of their presbyopia, performing lens replacement with a modern multifocal IOL or a precision monovision

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approach with a Light Adjustable Lens (RxSight) are my preferred techniques.

Modern multifocals are making a lot of patients happy—patients who want balanced distance, intermediate, and near vision and are willing to adjust to nighttime glare and halos that get better with time. For patients who are not good candidates for multifocal implants or are wary of the nighttime glare and halo issues, a precision monovision approach with the Light Adjustable Lens works beautifully.

### DROPS COMING SOON?

Now that we have worked through the decision-making process for surgical correction of presbyopia, I feel compelled to remind everyone that, in the near future, we should have a topical drop that improves near vision in presbyopes. Several companies are developing miotic drops that improve near vision through pupil constriction, thus increasing depth of focus.

The development of pharmacologic drops for presbyopia correction is exciting, and I plan on trying it on everyone who desires treatment of presbyopia before proceeding to surgery. I am also excited by the possibility of using presbyopia drops as an adjunct to presbyopia surgery when patients desire an additional effect in certain situations.

There are other drops further up the development pipeline that show promise to delay or reverse presbyopia, but more research is needed. (*Editor's note: For more information on pharmacologic agents for presbyopia correction, see the article by Sheri Rowen, MD, FACS, on page 66.*) I look forward to the day when the pharmacologic treatment of presbyopia will be a first-line option in our practice.

### CONCLUSION

There are many high-quality surgical options to help presbyopes in today's world. To decide whether the patient is a better candidate for a corneal or a lenticular approach, listen to your patient. Combining the information you gather with up-to-date diagnostics will help you fit the best technology to each patient's hopes and desires. ■

1. Charters L. Pearls for building the corneal inlay patient base in your practice. *Ophthalmology Times*. March 18, 2019.

2. Cummings AB. Allograft lenticules for the treatment of presbyopia. *CRST* [https://crstoday.com/wp-content/uploads/sites/4/2019/06/0619CRST\\_F\\_Cummings.pdf](https://crstoday.com/wp-content/uploads/sites/4/2019/06/0619CRST_F_Cummings.pdf). Accessed February 24, 2020.

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