

Excimer Laser for Hyperopia: Are There Limitations?

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What age or treatment limits do you adhere to for hyperopic LASIK?

Y. RALPH CHU, MD

In general, I only treat less than 3.00 D of hyperopia. I look carefully for latent hyperopia in younger, prepresbyopic patients. For older presbyopic patients, I evaluate lenticular changes that may limit the optimal refractive outcome. I discuss keratometry, corneal size, pachymetry, dry eye, and the potential for a loss of contrast and residual refractive error with all patients considering hyperopic LASIK.

STEPHEN COLEMAN, MD

Using age and refractive error alone to determine whether or not a patient is suitable for hyperopic LASIK misses far too many opportunities and potentially happy patients. Equally important factors for consideration include preoperative keratometry readings (ideally flatter as opposed to steeper), corneal diameter (large enough to easily accommodate a 9.5-mm flap and full ablation zone), the quality of the wavefront image (because all high hyperopes ideally should have a customized profile), and the relative degree of angle kappa (as determined by analyzing the black-and-white videokeratoscopic images when topography is taken). I routinely treat up to 4.50 D when these and other criteria are met. I find that carefully chosen patients do extremely well. Several key points must be emphasized preoperatively for patients to have reasonable expectations for the procedure. They need to be aware that hyperopic LASIK is associated with a high enhancement rate, an increased chance that they will need a light prescription in the future for crisp vision, and a likelihood that they will be slightly myopic immediately postoperatively.

PARAG A. MAJMUDAR, MD

I limit the use of excimer laser treatment for hyperopia to low hyperopes (less than 2.00 D) who are older than 45 years of age. Certainly, advances in wavefront-driven ablations and precise eye tracking have helped improve results compared with "the old days." However, I have observed that higher dioptric corrections, such as 4.00 to 6.00 D, are often fraught with potential complications related to optical quality. I avoid patients who have not yet lost significant accommodation. The difference between their manifest and cycloplegic refractions is often great and leads to the dilemma of which "number" should be treated. I have been happy with my results since adopting these parameters. Of course, I am now treating an increasing number of hyperopic/presbyopic patients with refractive lens exchange due to improvements in IOL technology. Therefore, hyperopic LASIK procedures make up a small percentage of my cases.

ROBERT K. MALONEY, MD

I write the desired correction in minus cylinder and then evaluate the sphere component of the refraction. I do not like to exceed 4.00 D of hyperopic correction in patients younger than 40 years of age. Similarly, I prefer not to perform more than 3.00 D of hyperopic correction in patients older than 50 years of age. I recommend refractive lens exchange to patients who require correction above these limits or who have signs of cataract.

STEPHEN A. UPDEGRAFF, MD

I do not support hyperopic corneal treatments, such as LASIK or PRK, of over 1.00 to 1.50 D. This is because of the inherently small optical zone created and the peripheral cornea's ability to heal after the correction. I believe that a significant number of patients who are dissatisfied with their refractive corneal surgery due to poor quality of vision and regression are in the over 1.50 D-hyperope category.

TODAY'S TOPICS

The trend of dissatisfaction in this segment of patients has led to the public's misperception that LASIK is not stable or has a shelf life. This has created public confusion regarding the difference between hyperopic LASIK and the more stable, predictable myopic LASIK. I wonder what percentage of complaints to the FDA are with regard to hyperopic LASIK.

When assessing the hyperopic patient, it is critical to perform a cycloplegic refraction on patients 45 years old and younger to accurately counsel the latent hyperope. Many of these patients are best served by contact lenses or spectacles until it makes sense to implant an IOL. For those over 45, the possibility of a stable result while improving their range of vision with a "high tech" IOL is becoming increasingly appealing. For some patients without cataracts, waiting for improvements in IOL technology may be warranted. The high hyperope (over +3.00 D) older than 45 who has worn monovision successfully can be an excellent candidate for aspheric IOLs targeted for the same monovision. Attempting surgical correction on this patient with LASIK alone should be avoided. ■

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