

# Patient age, corneal thickness need to be considered in laser eye surgery

The patient selection process is important to ensure positive outcomes.

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Surgeons must take several patient factors into account when determining the appropriate laser eye surgery and ensuring the best outcomes.

LASIK is the preferred procedure for most patients at his practice, **Peter S. Hersh, MD, FACS**, told *Ocular Surgery News*, but factors such as a patient's risk for ectasia, thin corneas, irregular topography and epithelial changes may make PRK the more appropriate procedure.

"In general, I prefer LASIK over PRK. It's easier for patients, easier for re-treatment, and we also find in our practice that it is slightly more refractively predictable because there is less wound healing and epithelial remodeling component. With that as the baseline, I'd say we do about 75% LASIK and 25% PRK," Hersh said. "One of the reasons I would do PRK: We're very interested in keratoconus in my practice, and we obviously don't want to put patients at risk of ectasia. Patients I'll select for PRK typically have thinner corneas, which with LASIK would not leave a residual stromal bed (RSB) of more than 300  $\mu\text{m}$ . I use 300  $\mu\text{m}$  RSB, in general, as my cutoff, as well as a percentage of tissue altered of 40% of corneal thickness."

## Indications

Any irregularity on topography that does not point to an ectasia risk, which would rule out surgery, or a concern about keratoconus or ectasia because of a slight topography irregularity may be a reason for performing PRK instead of LASIK, Hersh said.

Patients who have minor corneal scars or a foreign body scar may be better suited for PRK, he said, as these irregularities may lead to vertical gas breakthrough during femtosecond flap creation. In addition, patients with epithelial basement membrane dystrophy are better treated with PRK in order to circumvent epithelial sloughing after LASIK and also to treat the dystrophic material itself.

"All of that having been said, the results of LASIK are exceptional, and we'll treat patients from +4 D upwards to -8 D or -10 D, given that all the corneal variables are appropriate. Obviously, if they have thinner corneas or higher corrections, we may not want to do the treatments and we'll move to something like a phakic IOL. But with current technologies, we have excellent results with LASIK along those parameters as well as up to 6 D of astigmatism, which we have treated successfully in post-corneal transplant patients," he said.

Age can also be a factor in patient selection, as those with signs of early cataracts may be more appropriate to move into lens treatment rather than a corneal surgery. In addition, high corrections in association with very flat baseline corneal curvature may lead a surgeon to avoid corneal surgery, Hersh said.

### **Hyperopic patients**

Hyperopic patients typically have excellent results after LASIK, Hersh said.

“We probably treat higher hyperope patients than a lot of other people do. I find in a presbyopic population with hyperopia, the inherent aberration profile one gets with a hyperopic treatment actually corrects for a lot of their near vision. They’re enjoying better near vision than a native cornea would in the same patient with presbyopia,” he said.

Instead of a presbyopic LASIK approach for myopic patients, Hersh said he will typically do “some mini-monovision, usually with about 0.75 D overcorrection of the hyperopes and about 0.75 D to 1 D undercorrection in the myopes.”

“In most cases, I don’t think you actually need a lot more than that to give them a functional near-point vision. We’ve moved away from a presbyLASIK approach. We used to do a fair amount of that, where we’d model a hyperprolate pattern onto the cornea. I’m finding the mini-monovision approaches work so well that we’re rarely doing a presbyLASIK approach,” he said.

“In older patients, if there is concern about epithelial healing and ocular surface integrity, I still prefer LASIK over PRK. LASIK can preserve the epithelium and offers less risk for epitheliopathy and aberrant healing after the procedure,” Hersh said. “In our experience, the incidence of LASIK-associated dry eye has decreased markedly with the use of thin femtosecond laser flaps.”

“I find myself actually moving away from PRK and more toward LASIK in those cases,” he said. – by *Robert Linnehan*

### **Reference:**

- At Issue: Lens exchange vs. corneal refractive surgery. <https://www.healio.com/ophthalmology/refractive-surgery/news/print/ocular-surgery-news/%7Baf1bd797-0892-42a5-9901-250a8cd48214%7D/at-issue-lens-exchange-vs-corneal-refractive-surgery>. Published June 15, 2004.

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