

# SAY ANYTHING

## WHAT STRATEGIES DO YOU USE TO GET YOUR REFRACTIVE SURGERY PATIENTS TO 20/10?



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“ You might have read on the web about some people having 20/10 UCVA. Most patients, even on their best days, are not going to achieve that. This is the theoretical maximum visual acuity they can achieve, assuming that the patient has a perfectly healthy retina with normal photoreceptor spacing, a clear vitreous and lens, a pristine cornea, and an ideal ocular surface. Although a young adult presenting for laser refractive surgery could have the potential for 20/10 UCVA after their cornea is reshaped, you will seldom see an older patient requiring cataract surgery who will achieve visual acuity better than 20/20.

I don't have a specific strategy for achieving 20/10. I have a strategy for achieving the best vision possible for each patient. This strategy includes a comprehensive assessment of the patient's whole eye, including OCT imaging of the retina and the cornea, corneal topography, tomography, and biomechanical assessments, and a good old comprehensive slit-lamp evaluation, checking for many things, including lens opacity and the health of the ocular surface and the tear film. We know how closely tear film instability correlates with fluctuations in visual quality. If there is an issue, we treat the causes of this beforehand using techniques such as intense pulsed light therapy and lid margin cleansing.

I then deploy my 20 years of experience in refractive surgery to plan the optimal surgery for the patient. For laser vision correction, I use an excimer laser with a high-speed eye tracker, the Amaris platform (Schwind eye-tech-solutions), which renders a smooth cornea. The tracker ensures that laser energy is delivered where it needs to go, and the smoother the cornea, the lower the potential for pain, inflammation, and haze formation, as our latest research has shown.<sup>1</sup> A strict postoperative topical medication routine helps to ensure optimal outcomes. Of all the vision correction options, excimer lasers still deliver the best visual outcomes.

However, what “best vision possible” means is subjective, and 20/10 vision is tied to visual acuity assessments with the 158-year-old, highly flawed Snellen chart, which measures a patient's ability to read a high-contrast chart under brightly lit conditions in the clinic. This scenario might be great, but patients live in the real world. Modern excimer lasers allow the surgeon to correct myopia and astigmatism and to choose which higher-order aberrations to address. But this is where experience comes into play. In some cases, leaving a slight amount of astigmatism might be favorable. There are no nomograms to help you here; this is all about chair time, understanding the patient, and professional judgment.”

1. Torres-Netto E, Kling S, Hammer A, et al. Stromal bed smoothness after excimer laser surface ablation as a key element for the expression of inflammatory genes. Poster presented at: 37th Congress of the European Society of Cataract & Refractive Surgeons; September 14-18, 2019; Paris, France.



**EDWARD MANCHE, MD**

■ Director of Cornea and Refractive Surgery, Stanford Laser Eye Center, Stanford, California

“ Several factors contribute to excellent visual acuity after refractive surgery. It is important to screen and select appropriate candidates preoperatively. The ocular surface should be in pristine condition to obtain high-quality, reproducible measurements.

I always perform custom keratorefractive surgery using both wavefront- and topography-guided ablations. It is crucial to have accurate measurements preoperatively to achieve the most accurate refractive outcomes. My preferred method of either PRK or LASIK is wavefront-guided surgery using the high-resolution iDesign aberrometer (Johnson & Johnson Vision). The beauty of the high-resolution aberrometer is that the refractive error is determined objectively, unlike the subjective phoropter-based refractive error measurement used in conventional or wavefront-optimized surgery. I also use topography-guided ablations in a smaller subgroup of patients. The topographic measurements are automated, but you still need to use the subjective manifest refraction.

In my hands, I achieve the best UCVA outcomes using these two technologies. Both have the potential of providing 20/10 outcomes for patients undergoing LASIK and PRK.”



**ASIM R. PIRACHA, MD**

■ Medical Director, John-Kenyon Eye Center, Louisville, Kentucky

“ We obsess over exact refractions and flawless workups to achieve more perfect outcomes since our treatments are based on this data. We measure the angle kappa and treat the visual axis or line of sight rather than the pupil center with laser vision correction; this is especially important in hyperopic treatments. We also measure the angle alpha and avoid premium IOLs if the chord  $\mu$  is high to improve uncorrected near vision and to reduce the risk of night vision disturbances. If patients have reduced BCVA, we identify the cause and choose surgical solutions to improve their postoperative BCVA and UCVA. For instance, if a patient has dysfunctional lenses, we choose refractive lens exchange to correct their refractive error; if they have irregular astigmatism or significant corneal higher-order aberrations, we choose topographic laser vision correction to achieve better outcomes.

It’s important to offer more than just LASIK, too. The ability to offer the best procedure for each patient can help optimize outcomes by staying within the sweet spot for each procedure offered. We offer PRK, LASIK, SMILE, refractive lens exchange, and phakic IOLs so that we can choose the best procedure for each patient. To achieve the best outcomes consistently, we standardize the surgical technique and use the best equipment available. We also track all our data and continuously optimize our nomograms.

Of course, patient selection is key, as is the management of any preexisting pathology such as ocular surface disease that may reduce potential vision. We do not always achieve 20/10 vision, but our workup examination, surgical procedure and technique, and postoperative management are performed with this ultimate goal.” ■