

The Role of Monovision

This strategy remains an excellent option for many patients.

BY J. TREVOR WOODHAMS, MD

As cataract-IOL surgery becomes less about opacity and more about the optical improvement of unaided focus, patients' expectations for their postoperative visual performance rise ever higher. That LASIK is by far the most popular and widely known vision-correcting procedure sets the bar high. Despite the growing popularity of presbyopia-correcting IOLs, the optical performance of current designs lags far behind that of a young healthy eye's crystalline lens. For these reasons, selecting the best IOL for a given individual remains an art, and planned monovision is still an excellent option for many patients.

THE QUESTIONS I ASK

Because most of the patients I see who desire a refractive lens exchange are in their 50s and early 60s, I appreciate how important precision and safety are to achieving excellent uncorrected visual performance. Instead of targeting only distance acuity, surgeons now realize the value of reliable visual performance at all working distances: far, near, and (much more appreciated of late) intermediate ranges.

Although acuity is always important to measure, I increasingly find that subjective questions about performance are often the best indicators of success. I therefore pose the following questions to my patients:

- Can you read street signs down the road, even at night? My goal here is to learn more about patients' distance vision and experience with glare.
- Can you read text messages on your cell phone?

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Patients' answers provide information on their near visual acuity.

- Are you able to read and type at your computer or laptop without constantly having to adjust your distance to the screen? Their replies tell me about their intermediate visual acuity.

WHY PLANNED MONOVISION?

None of the presbyopia-correcting IOLs currently available in the United States can adequately provide comfortable visual performance at all three ranges of vision. Multifocal IOLs offer excellent near magnification and acceptable distance visual performance. No US model of the Tecnis Multifocal IOL (Abbott Medical Optics) or AcrySof Restor lens (Alcon), however, can provide crisp visual performance through the much-needed depth of field at about 30 inches, the distance to the dashboard for drivers of most vehicles or to the screen of a desktop computer. The halos that these patients see around distant oncoming lights typically diminish in time to the point of insignificance. For some individuals, however, halos are debilitating

and necessitate an exchange of the multifocal lens for a monofocal IOL. Finally, all multifocal IOLs compromise contrast sensitivity compared with monofocal IOLs, which makes them inappropriate for certain individuals (eg, those with advancing glaucoma or retinal disease).

In my experience, the Crystalens and Trulign Toric IOLs (both from Bausch + Lomb) typically offer better intermediate vision and distance vision with fewer optical side effects than multifocal IOLs. These accommodating lenses often fail to provide the degree of true near magnification, however, to satisfy many of my patients. This is particularly the case for those who were myopic preoperatively and had a satisfying default near focal point.

CANDIDATES

Planned monovision remains a highly successful strategy for achieving uncorrected distance, intermediate, and near visual acuity, especially for presbyopic myopes who have previous adaptive experience with contact lens monovision prior to the onset of cataracts. If I know patients have such a history, during counseling, I am generally inclined to reproduce what they already know and find successful: monovision in which their dominant eye is set to plano and their fellow eye to an appropriate myopic target. The latter is typically -1.50 D, although more or less myopic magnification may be called for based on the patient's occupational or avocational need. Because the optical performance of IOL-based monovision usually provides a greater depth of field than does an otherwise equivalent contact lens, the disparity in distance acuity is not as pronounced.

Although many physicians have reported successfully creating monovision in hyperopic presbyopes with IOL surgery, my personal interviews of such patients have revealed that the practical results (vs those recorded on paper) are much more problematic. I have found that these patients can seldom suppress an awareness of the distant blur in their reading eye, despite having 20/20 or better distance acuity in their dominant eye (along with satisfactory near acuity). This is no doubt a cortical rather than an optical phenomenon and is easily explained by the fact that a latent hyperope is accustomed to excellent binocular distance vision, which has now been compromised. Consequently, I have largely abandoned the strategy in hyperopic presbyopes. In contrast, the lifelong myope—even one who has long and comfortably used extended-wear contact lenses—is quite accustomed to the blur at distance and considers having a monocular

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20/20 result to be a great improvement. To my mind, these observations make hyperopic presbyopes the best candidates for multifocal IOLs.

CONCLUSION

Planned monovision is a highly desirable and successful strategy for select presbyopic patients undergoing cataract surgery and refractive lens exchange. ■

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