

PATIENT-REPORTED OUTCOME MEASURES

Rethinking success in cataract surgery.



BY ALLON BARSAM, MD, MA, FRCOPHTH

Patient-reported outcome measures (PROMs) are reshaping the way success in advanced technology IOL surgery is gauged. Rather than rely solely on traditional metrics such as 20/20 visual acuity or freedom from glasses, PROMs capture the visual phenomena that truly shape patient satisfaction. In a large, prospective, multicenter observational analysis that my colleagues and I conducted, the absence of dysphotopsias—glare, halos, and starbursts—emerged as the strongest predictor of patients’ long-term satisfaction, even more so than spectacle independence.¹

These findings suggest that ophthalmologists should rethink advanced technology lens outcomes and double down on two pillars of success: precision optics and patient education. Despite meticulous screening, patients who receive extended depth of focus and trifocal IOLs may still experience postoperative dysphotopsias. That makes preoperative conversations—and the questions posed to patients—absolutely critical. For example, simply exchanging the question “Do you drive at night?” for “Do you drive when it’s dark?” zeroes in on low-light challenges and

helps ensure that they understand the real-world trade-offs of advanced IOL designs. By anchoring preoperative counseling in patients’ actual routines and lighting environments—and by prioritizing lens profiles that carry a lower risk of dysphotopsias—physicians can better align patients’ expectations with likely outcomes and guide them to the IOL that fits their lifestyle.

DYSPHOTOPSIAS AS THE DOMINANT DRIVER OF SATISFACTION

Study Design and Scope

Our large-scale observational analysis of patient-reported outcomes following cataract surgery was conducted across 119 hospitals in 26 countries. Data were collected over a 5-year period—from May 2019 to February 2024—using RayPro (Rayner), a cloud-based PROMs platform that enables the real-time capture of longitudinal feedback directly from patients.

Enrollment took place at the time of surgery and was typically initiated by a member of the surgical team. Patients subsequently received automated email questionnaires at six fixed intervals: 1 week, 1 month, 3 months, 1 year, 2 years, and 3 years postoperatively. For

this study, we focused on responses collected at 1 week, 3 months, and 12 months to provide a representative picture of both early and sustained patient experiences.

In total, we analyzed outcomes from more than 2,000 eyes.

Quantifying the Impact of Glare and Halos

When we compared patient-reported glare and halo scores to overall satisfaction, the numbers were striking. Three months after surgery, daytime glare correlated with satisfaction at -0.52 and nighttime halos at -0.43. By 1 year, those relationships had deepened to -0.61 for glare and -0.54 for halos. These correlation coefficients range from -1 to +1, where 0 indicates no association and -1 represents a perfect negative relationship, meaning that, as dysphotopsia scores increased, patient satisfaction consistently decreased.

In plain terms, patients reporting even mild dysphotopsias were significantly less satisfied. Many of them indicated that they would rather tolerate some continued spectacle use than persistent glare and halos.

Spectacle Independence Versus Visual Quality

The link between spectacle independence and patient satisfaction

proved surprisingly weak. The patients who understood and accepted the prospect of occasional glasses wear—whether for night driving, reading fine print, or subtle monovision adjustments—rarely registered dissatisfaction if they ended up needing readers or driving glasses.

Appropriately setting patients' expectations around glasses dependence seemingly maintained their satisfaction, whereas no amount of preoperative counseling inoculated them against the frustration of dysphotopsias.

TRANSLATING PROMS INSIGHTS INTO PRACTICE

Of all IOL categories, trifocal lenses are the most strongly associated with postoperative dysphotopsias. That does not mean that these lenses should never be implanted. Rather, the association is one that providers must take to heart when counseling patients.

If a patient prioritizes crisp, glare-free vision above all else, I steer that patient toward a lens platform that carries a lower risk of dysphotopsias. My goal is for patients to be happy and comfortable after surgery, and a nuanced understanding helps me achieve that.

My lens selection algorithm is as follows:

- Patients with low halo tolerance either receive monofocal implants or increased range of focus lenses with a mini-monovision target (-0.25 D to -0.50 D) to minimize unwanted visual phenomena;
- Moderately tolerant patients receive increased range of focus lenses with a mini-monovision target (-0.50 D to -1.25 D), which strike a balance between functional range and dysphotopsias; and
- Highly tolerant patients who prioritize spectacle independence are offered a spiral optic

design with full range of vision (RayOne Galaxy, Rayner).

DYSPHOTOPSIA DESENSITIZATION

I think many surgeons have grown desensitized to dysphotopsias. They assume that informed patients will tolerate these phenomena. Our observational analysis demonstrated that informed tolerance is not synonymous with satisfaction. If the goal is true patient happiness, lens selection strategies must be reevaluated, and glare and halos should not be accepted as unavoidable side effects. ■

1. Botta J, Barsam A, Dmitriew A, Zaldivar R, Wiley WF, Windsor S. Factors influencing outcome satisfaction after cataract surgery: patient-reported insights from the RayPro database. *BMC Ophthalmol.* 2024;24:528.

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