The Importance of Corneal Health to Surgical Success

Surgical implications of corneal health

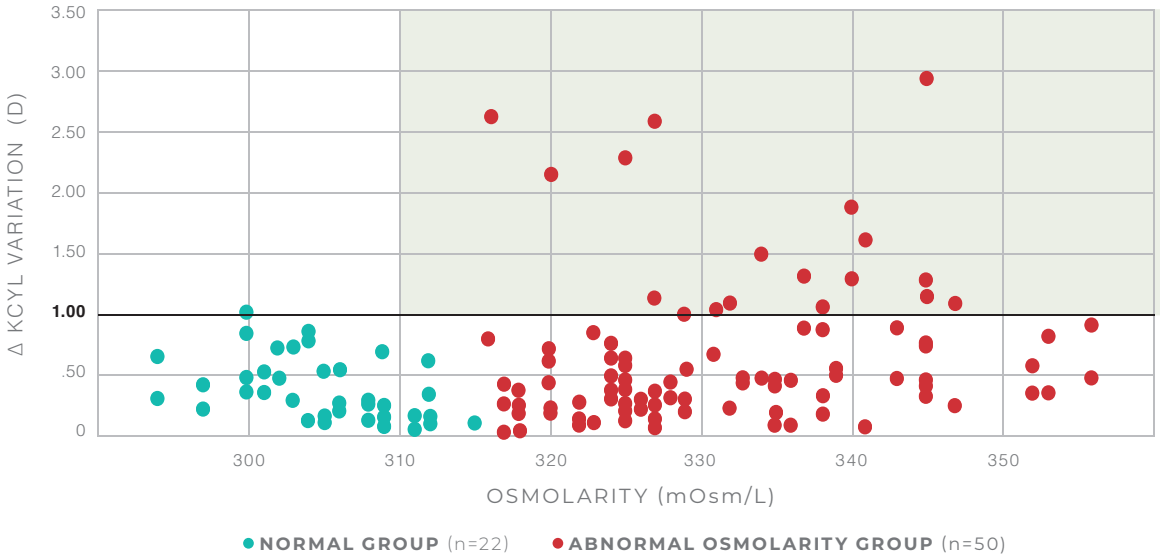
Corneal health can significantly impact your surgical outcomes.[1] Toxic hyperosmolarity damages corneal cells and drives refractive instability.[2-4]

- Hyperosmolar tear film instability may impact presurgical keratometry[4]
- Refractive surprises may result from inaccurate IOL power calculations[4]
- Measure osmolarity in the preoperative period to help achieve best outcomes[1]

"The impact of DED and OSD on topography, biometry, keratometry, and higher-order aberrations is one of the major causes of disappointing postoperative outcomes."[5]

Osmolarity testing prepares you for surgery

Reliable keratometry is required for accurate IOL power calculations. Hyperosmolarity diminishes the repeatability of preoperative K values and IOL power calculations, thus compromising surgical success.[4]



>1D variability in preoperative keratometry in nearly **1 out of 6** patients with hyperosmolarity

ACRONYMS: D, diopter; DED, dry eye disease; IOL, intraocular lens; Kcyl, keratometry cylinder; mOsm/L, milliosmoles per liter; OSD, ocular surface disease.

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Preoperative osmolarity testing helps identify at-risk patients

The slit lamp may not show the whole picture; osmolarity testing can identify patients with a higher likelihood of refractive surprises from inaccurate keratometry.[4,5]

Proportion of cataract surgery patients at risk for ocular surface disease[6]

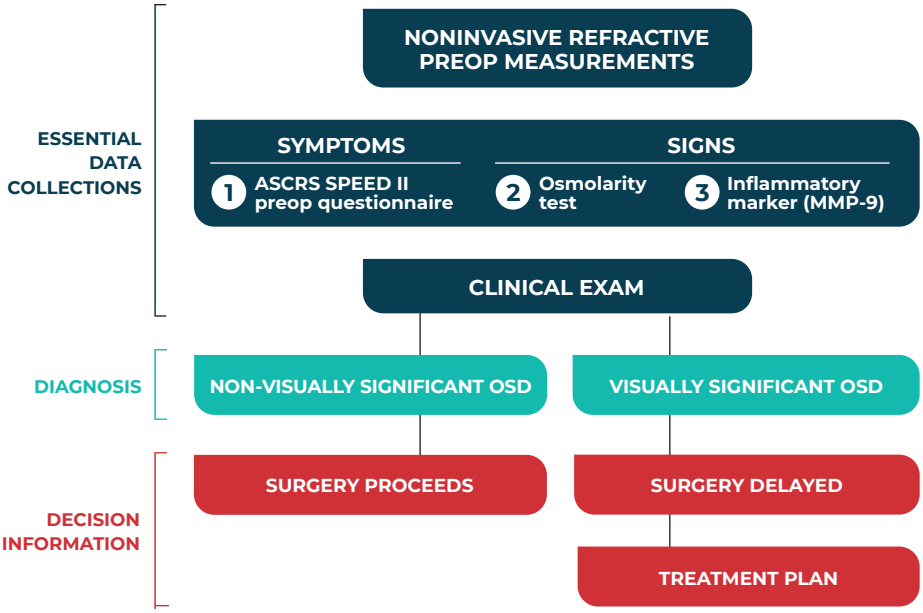
Proportion of cataract surgery patients with abnormal osmolarity[6]

Do you know which of your cataract surgery patients have hyperosmolarity?

Osmolarity testing is essential for preoperative planning

Osmolarity testing is essential for identification and management of visually significant ocular surface disease.[5*]

ASCRS preoperative OSD algorithm



Adapted from the ASCRS Algorithm[5]

*The ASCRS Preoperative OSD Algorithm recommends incorporating OSD diagnostic testing into a preoperative cataract surgery plan; ASCRS does not endorse the use of specific products.[5]

REFERENCES: 1. Schechter B and Mah F, *Ophthalmology and Therapy*. 2022. 11(3):1001-1015. **2.** Hirata H, et al. *Invest Ophthalmol Vis Sci*. 2015. 56(13):8125-40. **3.** Huet E, et al. *Am J Pathol*. 2011. 179(3):1278-86. **4.** Epitropoulos AT, et al. *J Cataract Refract Surg*. 2015. 41(8):1672-7. **5.** Starr CE, et al. *J Cataract Refract Surg*. 2019. 45(5):669-684. **6.** Gupta PK, et al. *J Cataract Refract Surg*. 2018;44(9):1090-6.

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