

Comment on “longitudinal evaluation of corneal stability and tear film changes in first-time soft-contact lens wearers”

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Dear Editor,

We read with great interest the longitudinal study by Arslan et al., which investigated ocular surface changes and corneal structural stability associated with daily silicone hydrogel soft-contact lens use in first-time wearers over a 1-yr period⁽¹⁾. The use of epithelial thickness mapping, Scheimpflug-derived indices, and noninvasive tear breakup time represents a commendable multidimensional approach to assessing corneal stability. This integrative design enhances clinical relevance by reflecting real-world follow-up intervals commonly applied in contact lens prescription practices.

Nevertheless, the statistical framework of the study raises interpretive ambiguities related to the handling of within-subject correlations. Although the authors appropriately employed generalized estimating equations to account for inter-eye non-independence, they did not report the working correlation structure, coefficient estimates, or robustness checks, such as model sensitivity to eye dominance or baseline corneal curvature asymmetry. The omission of such eye-specific influences may underestimate subtle interocular variability, which is particularly relevant in prerefractive surgery evaluations or in the early detection of contact lens intolerance⁽²⁾.

Although the subgroup analysis by lens material did not reach statistical significance, a more granular exploration of lens modulus and oxygen transmissibility thresholds may be informative. The aggregation of lens types with Dk/t values spanning nearly twofold ($86\text{--}175 \times 10^{-9} \text{ cm}^2/\text{s}$) may obscure localized effects, particularly on peripheral epithelial thickness or tear film dynamics in patients with subclinical dry eye⁽³⁾. From a clinical lens-fitting perspective, understanding whether lower-modulus or lower-Dk/t lenses induce subtle changes in epithelial integrity or surface stability could help refine first-line material selection, especially in individuals with borderline ocular surface disease.

Another consideration related to the assessment of higher-order aberrations. Although the authors reported no significant changes in trefoil, coma, or spherical aberrations, the timing of measurements—after an 8–12 h lens-free interval—may have masked transient lens-induced effects. Higher-order aberrations, particularly spherical aberrations, are known to fluctuate with tear film instability or lens decentration during active lens wear⁽⁴⁾. Assessments conducted during lens wear or at shorter post-removal intervals may reveal clinically meaningful changes that influence subjective visual quality in early contact lens users.

We commend the authors for their rigorous methodology, particularly the integration of epithelial mapping and tear film analysis in a relatively underexamined population of first-time contact lens wearers. Future studies extending follow-up beyond 1 yr, incorporating patient-reported visual function outcomes, and evaluating newer-generation low-modulus lenses may further elucidate the adaptive limits of corneal and ocular surface physiology during sustained contact lens use.

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The datasets generated and/or analyzed during the current study are already available.

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REFERENCES

1. Arslan N, Kakil ŞB, Aydoğdu B, Telek HH. Longitudinal evaluation of corneal stability and tear film changes in first-time soft-contact lens wearers. *Arq Bras Oftalmol.* 2025;88(6):e20250118.
2. Cui H, Zhang Z. Interocular symmetry and asymmetry in ocular health and disease. *Front Med (Lausanne).* 2025;12:1626329.
3. Coco G, Messmer EM, Starr CE, Pereira-Gomes JA, Lazreg S, Budimlija N, et al. A practical approach for optimizing ocular surface status before cataract surgery to improve visual outcomes and reduce the risk of postoperative dry eye. *Ophthalmol Ther.* 2025;14(11):2697–733.
4. Xue M, Lin Z, Wu H, Xu Q, Wen L, Luo Z, et al. Two-dimensional peripheral refraction and higher-order wavefront aberrations induced by orthokeratology lenses decentration. *Transl Vis Sci Technol.* 2023;12(10):8.