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RESPONSE TO LETTER

"Common Ophthalmic Preservatives in Soft Contact Lens Care Products: Benefits, Complications, and a Comparison to Non-Preserved Solutions" [Response to Letter]

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Dear editor

We thank Drs. Erdinest, London, and Levinger for their interest in our article discussing common ophthalmic preservatives in soft contact lens care products.[1] We agree with the authors regarding the physiological effects of polyquaternium-1, polyhexamethylene biguanide (PHMB), and/or borate on the ocular surface. While we did comment on the cytotoxicity of polyquaternium-1 affecting epithelial tight junctions,[2] we did not specify this as oxidative stress or acknowledge the role of tumor necrosis factor alpha (TNF-α) secretion, and we appreciate the added detail. Similarly, we acknowledged the role of PHMB alone and PHMB plus boric acid in causing significant corneal staining.[3–7] As a literature review, the goal of our manuscript was to capture the current state of the field, and unfortunately, we were unable to include every available reference given the extensive scope of the article. Nevertheless, their comments do augment our report.

We also agree that it would be pertinent to consider the effects of MPS preservatives in relationship to corneal lenses, scleral lenses, and hybrid contact lenses. However, the purpose of our manuscript, as indicated by the title, was to highlight soft contact lens care products. Thus, while this topic was outside of the scope of our manuscript, we agree that a future review that focuses on specialty contact lens care products would benefit the community.

Disclosure

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References

1. Bradley CS, Sicks LA, Pucker AD. Common ophthalmic preservatives in soft contact lens care products: benefits, complications, and a comparison to non-preserved solutions. *Clin Optom*. 2021;13:271. doi:10.2147/OPTO.S235679
2. Wright A, Mowrey-McKee M. Comparative cytotoxicity potential of soft contact lens care products. *Cutan Ocul Toxicol*. 2005;24(1):53–64. doi:10.1081/CUS-200046191
3. Jones L, MacDougall N, Sorbara LG. Asymptomatic corneal staining associated with the use of balafilcon silicone-hydrogel contact lenses disinfected with a polyaminopropyl biguanide-preserved care regimen. *Optom Vis Sci*. 2002;79(12):753–761. doi:10.1097/00006324-200212000-00007
4. Andrasko G, Ryen K. Corneal staining and comfort observed with traditional and silicone hydrogel lenses and multipurpose solution combinations. *Optometry*. 2008;79(8):444–454. doi:10.1016/j.optm.2008.04.097
5. Young G, Keir N, Hunt C, Woods CA. Clinical evaluation of long-term users of two contact lens care preservative systems. *Eye Contact Lens*. 2009;35(2):50–58. doi:10.1097/ICL.0b013e31819630d3
6. Lipener C; Contact Lens Advisory in Scientific Studies (CLASS) group. A randomized clinical comparison of OPTI-FREE EXPRESS and ReNu MultiPLUS multipurpose lens care solutions. *Adv Ther*. 2009;26(4):435–446. doi:10.1007/s12325-009-0023-8
7. Choy CKM, Cho P, Boost MV. Cytotoxicity and effects on metabolism of contact lens care solutions on human corneal epithelium cells. *Clin Exp Optom*. 2012;95(2):198–206. doi:10.1111/j.1444-0938.2011.00687.x

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