



Educator Awareness of and Adherence to ISO Standards for Multipatient Use Diagnostic Contact Lens Disinfection

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BACKGROUND

Specialty contact lenses, such as corneal gas permeable, scleral, hybrid, and specialty soft lenses, are often fit diagnostically in didactic, clinical, or laboratory settings in optometry. Proper cleaning and disinfection of these lenses is essential to minimize the risk of potentially sight-threatening infections.¹ The 2020 technical report "Guideline for Handling of Multipatient Contact Lenses in the Clinical Setting" was a joint publication by the American Academy of Optometry Section on Cornea, Contact Lenses, and Refractive Technologies and The American Optometric Association Contact Lens and Cornea Section.² The report was based on recommendations from the 2018 International Organization for Standardization (ISO) 19979:2018(E) publication. An infographic (Figure 1) summarizing the steps of multipatient contact lens handling was published in the technical report.

PURPOSE

The purpose of this study was to assess the current practice patterns for the cleaning and disinfection of multipatient use contact lenses at the North American schools and colleges of optometry and compare these practices to the published guidelines.

METHODS

A survey link was distributed via email to contact lens, cornea, and dry eye educators at the institutions listed with the Association of Schools and Colleges of Optometry. Snowball sampling was permitted. The survey completion window was from January 23 – February 26, 2022. Descriptive statistics were used to analyze the data.

Key definitions provided to survey participants:

- clean = digital rubbing to aid in mechanical removal of surface debris
- rinse = solution used to rinse the surface of the lens
- disinfect = bacteriostatic/bactericidal chemical process to destroy, inactivate, or significantly reduce the concentration of pathogenic agents.

TABLE 1
Respondents who handle multipatient diagnostic lenses on a regular basis

Lens Type	% of Participants
Specialty Soft	15.92
Gas Permeable	32.65
Hybrid	19.59
Scleral	31.84

FIGURE 1
Technical report infographic

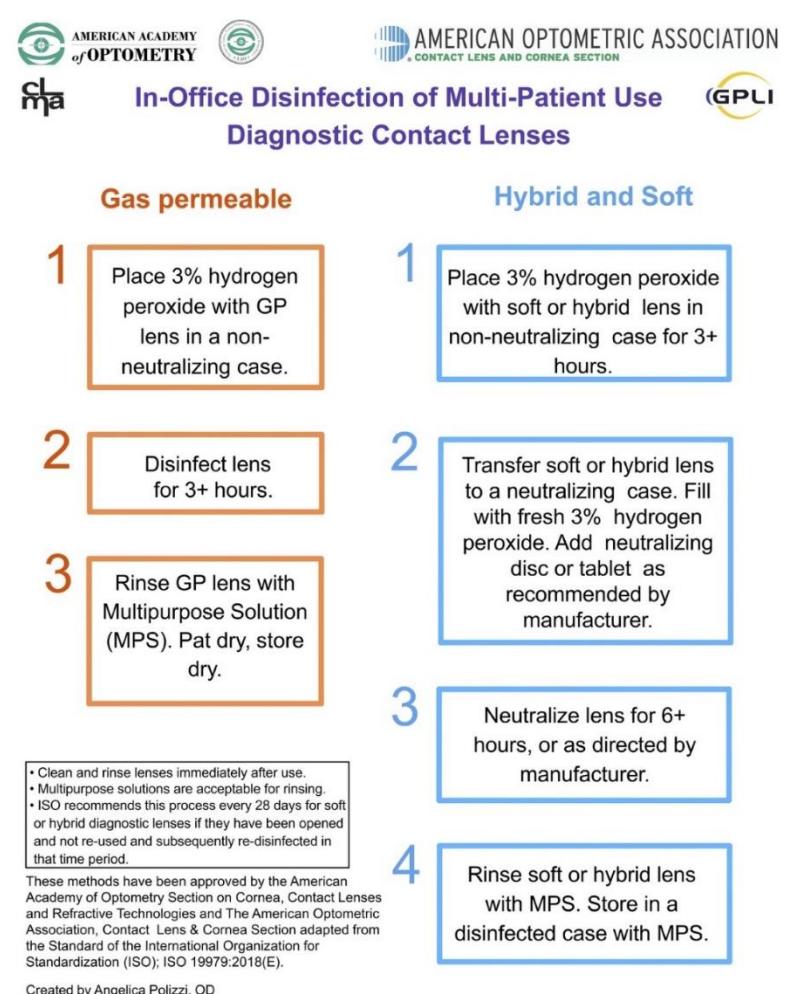


FIGURE 2
Reported glove use during handling

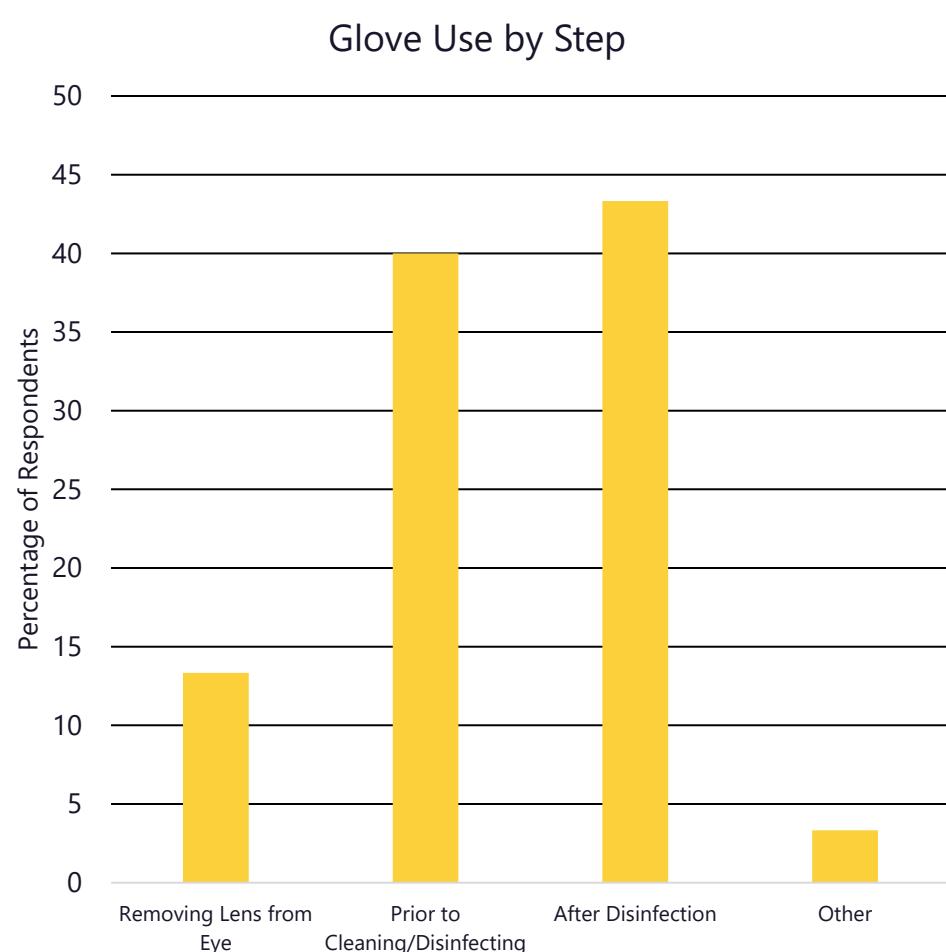


FIGURE 3
Preferred cleaning product by lens type

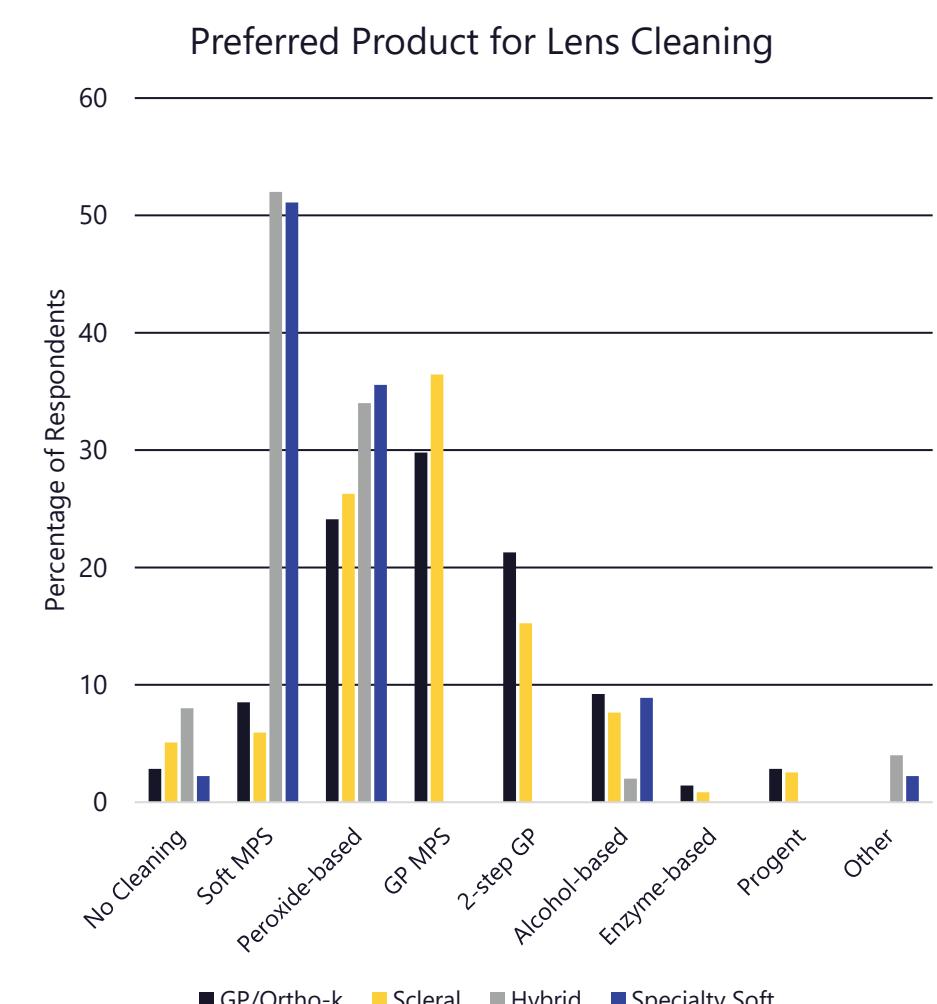
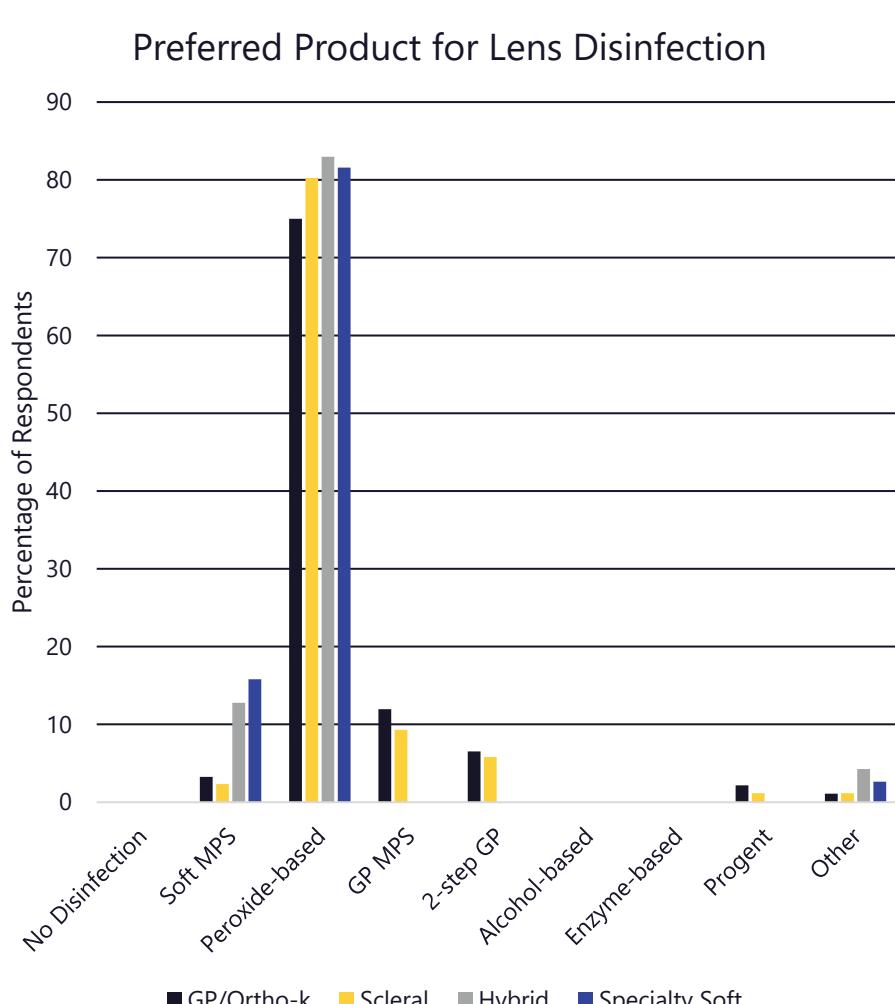


FIGURE 4
Preferred disinfection product by lens type



RESULTS

- 91 educators initiated the survey
- Every North American school and college of optometry represented
- Most frequently reported role was clinical faculty in a contact lens service (21.5% of participants)
- Gas permeable and scleral lenses were the most commonly handled specialty lenses, with 32.6% and 31.8% of respondents reporting regular encounters, respectively
- Most participants reported performing a cleaning step before disinfection (97% GP, 95% scleral, 92% hybrid, 98% specialty soft), but not necessarily by following ISO standard recommendations
- Peroxide-based solutions most frequently used to disinfect all lens types
- No participants reported using tap water to rinse soft or hybrid lenses, but 4.1% and 2.6% reported using tap water to rinse GP and scleral lenses, respectively
- Of this sample of educators, 14.5% reported being unaware of the ISO standards for in-office disinfection of multipatient use diagnostic contact lenses

CONCLUSION

In this sample of contact lens educators, some inconsistencies exist in implementing best practices for cleaning and disinfecting multipatient use diagnostic contact lenses. The infographic from the technical report does not present specific instructions regarding the initial cleaning and rinsing steps recommended in the ISO standard. Based on the results of this study, the infographic may benefit from clarifying this step and adding it to the current numbered steps. Additionally, some educators are still unaware of the updated standards for appropriate in-office contact lens handling, suggesting that these guidelines may not be consistently taught to optometry students.

REFERENCES

1. Carnt N, Samarawickrama C, White A, et al. The diagnosis and management of contact lens-related microbial keratitis. *Clin Exp Optom* 2017;100(5):482-493.
2. Sintt C, Bennett E, Szczotka-Flynn L, et al; American Academy of Optometry (AAO) Section on Cornea, Contact Lenses & Refractive Technologies, and The American Optometric Association (AOA) Contact Lens and Cornea Section. Technical Report: Guidelines for Handling of Multipatient Contact Lenses in the Clinical Setting. *Optom Vis Sci*. 2020 Aug;97(8):544-548.

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