Morning vs nighttime replacement affects adverse events with extended-wear contact lenses

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For people using 30-day extended-wear/continuous-wear (EW/CW) contact lenses, replacing lenses at night doesn't lower the risk of complications compared to changing lenses monthly, suggests a study – "The Effect of Daily Lens Replacement During Overnight Wear on Ocular Adverse Events", appearing in the December issue of *Optometry and Vision Science*, official journal of the American Academy of Optometry.

In contrast, replacing lenses every morning reduces the overall rate of "ocular adverse events," reports the study by Jerome Ozkan, BOptom of Brien Holden Vision Institute, Sydney, and colleagues. The researchers write, "Contact lens wearers on an EW/CW schedule should be advised to minimize lens handling prior to sleep to reduce the risk of complications."

Morning or Night versus Monthly Lens Replacement

The "proof of concept" study evaluated the effects of morning versus night replacement and lens handling in 215 patients using silicone hydrogel EW/CW contact lenses. Extended/continuous wear lenses are designed to be worn continuously for up to a month, including overnight. But in the study, patients put in fresh EW/CW lenses every day—either at night before going to sleep or in the morning after waking.

At regular clinic visits, adverse events were compared for patients who replaced their lenses in the morning or at night. Adverse event rates were compared to those in a similar, previously studied group of patients who wore EW/CW lenses continuously for a month.

The results showed a lower overall adverse event rate for patients who replaced their lenses each morning: about four percent, compared to nearly nine percent with one month of continuous wear. Morning lens replacement was specifically associated with a lower rate of mechanical adverse events, such as scratches and abrasions of the cornea: less than one percent, compared to a little over five percent with monthly replacement.

In contrast, the adverse event rate for patients who replaced their lenses nightly was about eight percent—not significantly different from the rate for monthly lens replacement. Inflammatory adverse events (such as redness and irritation of the eye) were somewhat less common with morning lens replacement, although the difference was not significant.

Lens Handling Linked to Contamination

Microbiology studies in a subgroup of patients found that lenses were frequently colonized with Staph bacteria after handling. In the one-month study, there were no major complications, including the rare but serious infection microbial keratitis.

Extended wear/continuous wear contact lenses are a convenient alternative to daily-wear lenses, avoiding the need for daily lens removal, cleaning, and replacement. Although EW/CW lenses are generally safe, the risk of complications is higher than with daily-wear lenses. Extended wear may provide more time for bacteria to colonize the lens and cause infections.

"The benefit of a fresh lens at night might be partially negated by contamination of the contact lens due to lens handling prior to overnight eye closure," comments Anthony Adams, OD, PhD, Editor-in-Chief of *Optometry and* Vision Science. "At night, with closed eyes, there is less oxygen

getting to the cornea and reduced 'lid wiper' cleaning effect on the lenses."

The new study suggests that replacing lenses in the morning reduces complications related to EW/CW lens wear. "Unfortunately, replacing lenses at night does not appear to have any beneficial effect, perhaps due to the side effects of handling lenses just prior to overnight eye closure," Dr Ozkan and coauthors write. They suggest that, when users do replace EW/CW lenses, they should do so in the morning—and in any case, should avoid handling lenses before they go to sleep at night.

More information: To read the article "The Effect of Daily Lens Replacement During Overnight Wear on Ocular Adverse Events", please visit journals.lww.com/optvissci/Ful … cement_During.4.aspx

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