Multifocal contact lenses may reduce vision for night driving

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A new study suggests that older adults who wear multifocal contact lenses to correct problems with near vision, a very common condition that increases with age, may have greater difficulty driving at night than their counterparts who wear glasses. Age-related problems with near vision, medically termed presbyopia, usually occurs after the age of 40 and results in the inability to focus on objects up close.

According to an article published in *Investigative Ophthalmology & Visual Science* ("The Effect of Presbyopic Vision Corrections on Nighttime Driving Performance"), wearing multifocal contact lenses resulted in significantly slower driving speeds at night than wearing progressive addition glasses. While slower driving would seem to reduce the likelihood of hitting nighttime road hazards, the authors reported a reduced ability to recognize road hazards among multifocal contact lens wearers.

The study also showed that multifocal contact lens wearers were able to see road signs, but at a much shorter distance than those wearing glasses, potentially decreasing the reaction time required for a driver to make necessary navigational decisions.

"For those patients who drive long distances and hours at night, practitioners should carefully consider the best form of correction of presbyopia for these patients," said author Byoung Sun Chu, PhD, formerly of the School of Optometry, Queensland University of Technology, Brisbane, Australia. "One alternative is to prescribe the

multifocal contact lenses for daytime use and a different correction for driving at night."

The research team conducted an experiment with 11 older adults between ages 45-64 years whose only experience with wearing lenses to correct problems with near vision was reading glasses. The study participants drove on a closed circuit driving track at night and performance was measured for five areas: road sign recognition, road hazard recognition and avoidance, lane keeping, near target recognition and distance to recognize standard street signs.

Chu points out that the relatively small sample size is likely to have led to an underestimation of some of the differences in driving performance between conditions, given that a number of the differences in driving performance almost reached statistical significance.

In addition to conducting studies with a larger sample size to confirm the findings, the author suggests future studies be performed to determine whether the outcomes found in this study for older adults with no experience wearing lenses to correct problems with near vision (other than reading glasses) will persist after adaptation to wearing the corrective lenses for a longer period of time.

"It is important that the results of this study are also used as a stimulus for improving the optical qualities of multifocal contact lenses to improve night time driving," added Chu.

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