

## What factors affect contact lens discomfort? Optometry and Vision Science presents research update

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Do you have dry eyes or other symptoms related to wearing contact lenses? If so you're not alone—up to 50 percent of contact lens wearers experience dryness or discomfort at least occasionally. New research aimed at understanding and managing this common and complex problem is presented in the special August issue of *Optometry and Vision Science*, official journal of the American Academy of Optometry.

The 25 papers in the special issue bring together the most current research on contact lens discomfort—likely the single biggest problem facing everyone involved with <u>contact lenses</u>, according to Feature Issue Guest Editor Jason J. Nichols, OD, MPH, PhD, of University of Alabama Birmingham and colleagues. They write, "This body of work is a source of optimism that we can reduce or even eliminate the problem of contact lens discomfort."

## New Clinical and Scientific Research on Contact Lens Discomfort

The product of two years of work by international experts, the special issue presents new developments toward understanding a problem that affects millions of contact lens users worldwide. Topics include:

• A new "contact lens user experience" questionnaire, which may aid in developing new contact lenses and helping patients to



overcome barriers to successful contact lens wear

- Neural hypersensitivity as a contributor to contact lens discomfort
- Ocular allergy, inflammation, and biomarkers for contact lens discomfort
- Associations between discomfort and contact lens design and care products

A central problem is a lack of understanding of the causes and contributors to contact lens discomfort. It's challenging to find objective measures that reflect the subjective symptoms reported by contact lens wearers. A study led by María Jesús González-García, PhD, of IOBA-University of Valladolid, Spain, evaluated two ocular surface factors that might contribute to contact lens discomfort: corneal sensitivity and the presence of inflammation-promoting molecules in the tear film.

The results showed no difference in either factor between patients with versus without contact lens discomfort. Yet in both groups, patients' symptom ratings were significantly related to corneal pressure sensitivity and to one specific inflammatory mediator (epidermal growth factor).

The lack of between-group differences might mean that hydrogel contact lens wear has "no meaningful effect" on corneal sensitivity or inflammatory mediators. However, the researchers note that the patients were tested after 24 hours without contact lenses—it may be that if either of these factors contributes to discomfort, the ocular surface recovers shortly after contact lenses are removed.

Contact lens discomfort has a major impact on patients, vision care professionals, and the contact lens industry—worth \$3 billion per year in the United States alone. Symptoms such as foreign body sensation, burning, itching, or dryness are the main cause of discontinuing contact lens wear.



"Contact lens comfort remains a challenge for eye care practitioners and their patients," comments Michael Twa, OD, PhD, Editor-in-Chief of *Optometry and Vision Science*. "Much progress has been made and, overall, patients now enjoy considerably greater comfort than just a decade or so ago. We hope the papers in our special issue will highlight the latest research on <u>contact lens</u> comfort discoveries and advances."

More information: journals.lww.com/optvissci/pages/default.aspx

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