

Got dry eyes? Measuring eyelid sensitivity may reflect the causes

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A simple test of eyelid sensitivity may help vision professionals in evaluating one of the most common eye-related symptoms: dry eyes. A new study linking increased eyelid sensitivity to decreased function of the eyelid margins is presented in the article – "Lid Margins: Sensitivity, Staining, Meibomian Gland Dysfunction, and Symptoms", appearing in the October issue of *Optometry and Vision Science*, official journal of the American Academy of Optometry.

Isabelle Jabert, OD, MPH, PhD, FAAO, and colleagues of The University of New South Wales, Sydney, used a test called esthesiometry to measure the sensitivity of the eyelid margins—the very edge of the upper and lower eyelids. The test, easily performed in the optometrist's office, provides an accurate measure of the lid margin's sensitivity to touch. The [pilot study](#) included 27 healthy adults, average age 31 years.

The researchers then looked at how eyelid sensitivity was related to the function of some specialized structures of the eyelid margin. A special dye was also used to stain the innermost layer of the eyelid margin to assess the function of the meibomian glands, which secrete a specialized oil-like substance into the tear fluid.

The results showed some surprising differences between the upper and lower eyelids—including greater sensitivity of the lower-lid margin, compared to the upper lids.

And it was this increased lower lid sensitivity that was found to be

related to hyperosmolarity of the tear film—that is, more concentrated tears. The finding suggests the potential for a new approach to clinically assessing tear osmolarity via lower lid sensitivity measures. Whereas past studies have shown a relationship between corneal sensitivity and osmolarity, none have addressed the possible lid sensitivity relationship. The ease with which the non-transparent lids can be accessed to measure sensitivity provides a potential clinical advantage over measuring sensitivity to touch on the cornea.

By comparison, the relationship between tear osmolarity and staining appears much more ambiguous.

The authors' results emphasize clear differences in staining and sensitivity between the upper and lower lids; for example the upper lids appear to be less sensitive and they stain less. Such findings may turn out to be important for interpretation of future studies of the dry eye condition.

Increased osmolarity and decreased meibomian gland function have both been linked to symptoms related to dry eye: one of the most common ocular complaints, especially in older people.

Recent research has led to increased understanding of the delicate structure and function of the lid margin, and their contribution to common eye-related symptoms. "There is renewed interest in the role of the eyelids in dry eye and meibomian gland dysfunction," comments Anthony Adams, OD, PhD, Editor-in-Chief of *Optometry and [Vision Science](#)*.

The new results suggest that esthesiometry could provide optometrists with a simple test of lid margin [sensitivity](#), providing evidence of tear osmolarity. "This suggests a promising new tool for evaluating ocular health and effectiveness of treatment in dry eye disease and meibomian

gland dysfunction," Dr Adams adds. The findings may provide "an expanded set of tools" for identifying problems leading to [dry eye](#), and possibly for evaluating the effectiveness of new treatments.

More information: To read the article "Lid Margins: Sensitivity, Staining, Meibomian Gland Dysfunction, and Symptoms", please visit journals.lww.com/optvissci/Ful...ng_Meibomian.5.aspx

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