Show Me the Evidence

Little strikes more fear in my heart than a group of 40- to 70-year-old women in my waiting room preparing for my consultation. They frequently have dry eye disease (DED), have visited multiple eye care professionals, and feel angry that no one has helped them. They are the desperate housewives of Long Island.

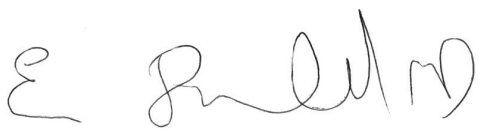
Vision starts with the tear film. We ophthalmologists, however, are often willing to spend hundreds of thousands of dollars on technology to achieve a relatively small improvement in the results of cataract or LASIK surgery compared to what we can achieve by better managing the ocular surface.

I recently asked some leading experts how they diagnose DED. Each shared a different algorithm of Schirmer testing (with or without anesthesia), tear breakup time, lissamine conjunctival staining, fluorescein corneal staining, and examination of the tear meniscus. All relied on time-consuming tests and techniques that have not changed significantly during the past 30 years. Seldom do comprehensive ophthalmologists—who may lack the time, interest, or expertise—employ these algorithms.

Evidence-based testing is the cornerstone of treatment for almost every other medical specialty. It reduces the time to diagnosis, decreases the length of the visit, and improves the quality of treatment. We ophthalmologists need to follow suit, and in fact, the shift toward objective testing has begun. The most widely used and perhaps most sensitive point-of-service test to diagnose DED today is tear osmolarity, an established research tool that is now available in our clinics (TearLab Osmolarity System; TearLab Corporation).[1] Under our direction, staff can use tear osmolarity to diagnose and quantify DED.

A newly available test in the United States (InflammaDry; Rapid Pathogen Screening Inc.) detects elevated levels of the inflammatory biomarker matrix metalloproteinase 9 (MMP-9) in tears. Elevated levels of MMP-9 are a more sensitive marker for DED than clinical signs.[2,3] Patients with increased MMP-9 will likely benefit from targeted treatment with antiinflammatory therapy such as cyclosporine; when the inflammation has been reduced will influence the appropriate timing of interventions such as punctal plugs. Additionally, for the first time, we can look at the lipid layer of the tear film using interferometry (LipiView Ocular Surface Interferometer; TearScience, Inc.).

Now that we can evaluate the lipid layer of the tear film and ocular surface inflammation, I predict that we will be more capable of devising the targeted treatment of both aqueous-deficient and evaporative DED—a welcome development for the millions of desperate men and women looking for help. ■



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Chief Medical Editor

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