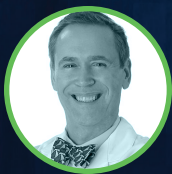


BUILDING A PRACTICAL DRY EYE DIAGNOSTIC WORKFLOW

How to choose efficient, clinically useful diagnostic tests for dry eye disease without disrupting workflow or sacrificing practice economics.



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In 1998, during the first major LASIK boom, we ophthalmologists began to suspect that dry eye disease (DED) was causing patients ocular discomfort and decreased visual quality after surgery. When we went to make the diagnosis, we did pretty much what we had been doing for decades: a Schirmer test without anesthesia.

Thirty years later, DED is its own area of care, and we can divide ourselves into two groups: those of us who are active in the diagnosis and treatment of DED and those of us who are forced to be (ie, the stereotype of a high-volume cataract surgeon). To be fair, the effect of successful DED treatment on surgical patients is so compelling that proactive ocular surface care is now common even at practices that do not focus on DED.

With the possible exception of retina specialists, all of us should be equipped to diagnose DED and draw a first-pass distinction between the aqueous-deficient and evaporative forms. Not only should these basics not interfere with protocol efficiencies at a cataract or refractive surgery practice, but they should be either cost-neutral or supportive of the practice's financial health.

Acquiring this first-pass capability does not require purchasing every device on the market. Rather, it entails establishing a workflow that is consistent, upstream, and easy for your staff to execute.

SCREENING SHOULD HAPPEN UPSTREAM

An effort should be made to identify DED as far upstream from you as possible, ideally before the patient enters the exam room or even before they arrive at your office. Although not particularly high-tech, dry eye questionnaires are a highly effective and inexpensive way to identify patients who may need intervention. The Ocular Surface Disease Index, Standard Patient Evaluation of Eye Dryness, and Symptom Assessment in Dry Eye are validated surveys that can be completed in the waiting room and quickly reviewed by a technician.

A more in-depth inquiry into a patient's symptoms can be performed online, either at home or in the office, using CSI Dry Eye Software (CSI Dry Eye Innovations). This subscription service uses a form of machine learning to evaluate an individual patient's data and continually refine its diagnostic algorithms. Before the examination begins, the software can make a preliminary determination about both the likelihood of DED and the probable subtype. As additional data are obtained during the visit, the program can suggest possible treatment pathways.

“THE GOAL IS CONSISTENCY WITHOUT SACRIFICING EFFICIENCY.”

TEAR OSMOLARITY STILL MATTERS

The utility of tear osmolarity (TO) is frequently underappreciated. This test can help uncover subtle or hidden DED and distinguish between aqueous-deficient and evaporative disease. TO can also help explain why some patients whose postoperative UCVA is 20/20 OU are unhappy. Elevated TO can increase light scatter and degrade visual quality in ways that matter to patients, even when their Snellen acuity is fine.

The only US FDA-cleared instrument for assessing TO is the TruKera ScoutPro (Bausch + Lomb). Testing takes about 8 seconds per eye. There is an up front cost to purchase each ScoutPro unit, and each single-use chip costs \$8 to \$10, depending on volume. TO, however, is almost universally covered by insurance, with typical Medicare reimbursement of about \$22 per eye.

WHEN TO ADD MEIBOGRAPHY AND AUTOMATED ANALYZERS

If diagnosing and treating DED will be a core part of your practice’s mission, add meibography—a

photographic evaluation of meibomian gland structure and health—to your offerings. Meibography is the pathway to in-office treatments with devices such as the LipiFlow Thermal Pulsation System (Johnson & Johnson Vision) and TearCare System (Sight Sciences) as well as intense pulsed light treatment, low-level light therapy, and intense regulated pulsed light treatment.

Meibography separates the reluctant from the enthusiastic DED practitioner. The only reason to go beyond a slit-lamp examination, a preexamination DED survey, and TO to fluorescein staining and tear breakup time is if your goal is to develop a comprehensive DED practice. LipiView (Johnson & Johnson Vision), LipiScan (Johnson & Johnson Vision), Meibox (Box Medical Solutions), and iLux (Alcon) are among the instruments used for gland imaging.

ALL-IN-ONE SCREENING DEVICES

Rounding out the options for DED diagnostic instruments is the all-in-one screening device. Typically

used at the front end of a dry eye evaluation, these instruments perform tests that cannot be done at the slit lamp, such as interferometry for tear lipid assessment, and they automate others, including tear breakup time and tear meniscus measurement. This one-stop approach can increase the consistency of data by reducing operator variability while also relieving the need for you to perform every step at the slit lamp.

Examples of all-in-one screening devices include the Bruder Ocular Surface Analyzer (M&S Technologies and Bruder Healthcare), Omnicad (Lumibird Medical), Myah (Topcon Healthcare), and Keratograph 5M (Oculus Optikgeräte). Depending on the system, the results may or may not be directly transferable into the electronic medical record.

WHAT FITS IN MY WORKFLOW?

I practice at a moderately high-volume cataract and refractive practice that is also a regional DED referral center. Every potential DED patient and every surgical candidate complete a Standard Patient Evaluation of Eye Dryness and undergo TO testing before seeing a physician. A comprehensive DED evaluation also includes meibography with the LipiView.

Other tests, such as topography and epithelial mapping, are ordered on a case-by-case basis and are performed with devices available in a typical ophthalmology office (eg, OCT unit, biometer). The goal is consistency without sacrificing efficiency. And yes, we still perform Schirmer testing but with anesthesia. ■