

## Review Explores Periorbital Electrical Stimulation for Improving Blinking Function and Dry Eye Symptoms

A new scientific review suggests that transcutaneous electrical stimulation (TCES), and more specifically Dynamic Muscle Stimulation technology (DMSt), may reduce signs and symptoms of dry eye disease (DED) and enhance blinking function.<sup>1</sup> Published in [Contact Lens and Anterior Eye](#), the peer-reviewed article highlights inefficient blinking and eyelid laxity as important yet often overlooked drivers of DED and explores how targeted stimulation may support blink quality, tear film stability, and meibomian gland function.

The review, authored by Kendall E. Donaldson, MD, of the Bascom Palmer Eye Institute, draws on evidence from clinical studies and mechanistic data across ophthalmology and other medical fields. It concludes that periocular stimulation methods, such as DMSt, may help fill a clinical gap by targeting eyelid mechanics and blinking function, positioning them as promising additions to the therapeutic toolkit for dry eye management.

“One of the important takeaways from this review is that dry eye disease is not just a tear film or inflammatory disorder. In some patients, it is also a blink mechanics disorder,” said Dr. Donaldson. “DMSt is especially interesting because it bridges ocular surface management and periocular rehabilitation—offering a nonsurgical way to improve lid tone, reduce laxity, and enhance blink quality in patients whose disease is at least partly mechanical in origin.”

The review suggests DMSt may be particularly well suited for the periocular area because, unlike static electrical stimulation, its moving electrodes allow eyelid muscles and nerves to recover between stimulations, which may reduce fatigue and make treatment more effective. Also highlighted are findings from a clinical study led by James Chelnis, MD, FACS, an ophthalmic plastic and reconstructive surgeon at Manhattan Face & Eye, which examined dynamic muscle stimulation in patients with dry eye and eyelid laxity. It found that, on average, lower lid laxity was reduced by over 50%, with patients reporting improved eyelid appearance and blink quality, in addition to reductions in several signs and symptoms associated with DED.<sup>2</sup>

"As with any emerging approach, creating clinician awareness, integrating the treatment into workflow, and building confidence in the evidence base will be important next steps," said Dr. Donaldson. "Many providers do not formally evaluate blink quality or lid laxity during a routine exam, so part of the work ahead is helping eye care professionals recognize which patients are most likely to benefit."

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*Dr. Donaldson serves as a consultant for Lumenis Be. Ltd.*

1. Donaldson KE, Manor Y. The potential benefits of periorbital transcutaneous electrical stimulation for the management of dry eye disease. *Contact Lens Anterior Eye*. 2026;49(3):102637. [https://www.contactlensjournal.com/article/S1367-0484\(26\)00033-0/fulltext](https://www.contactlensjournal.com/article/S1367-0484(26)00033-0/fulltext)
2. Chelnis, James G., and Alexandra Chelnis. "Dynamic Muscle Stimulation of the Periorbital Area for Improvement of Blinking in Dry Eye Patients." *Clinical Ophthalmology*, vol. 2025, no. 19, Mar. 26, 2025, pp. 1057–1071. <https://doi.org/10.2147/OPHTH.S513989>

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