

MULTI-LAYERED PROTECTION WITH NANO-DROPLET PRESERVATIVE-FREE ARTIFICIAL TEARS



BY CYNTHIA MATOSSIAN, MD, FACS

Dry eye prevalence in the United States was estimated to be 14.5% (35 million people).^{1,2} The 2019 pandemic brought unprecedented change, with increased screen/reading time and decreased work efficiency among dry eye patients according to a survey.³

Identifying and subtyping (aqueous-deficient, evaporative, or mixed) these patients can begin with simple diagnostic tests, such as tear breakup time and meibomian gland expression. A shortened tear breakup time can be suggestive of dry eye, and poor meibum quality or quantity can be indicative of meibomian gland dysfunction (MGD). Treatment approaches will vary depending on dry eye subtype and severity, but artificial tears are a staple in dry eye management. Because many therapies take time to work, patients often prefer to supplement with artificial tears. It can be challenging, however, for patients and doctors to know which drops to choose among the wide array of options currently available in the market.

Because early artificial tears were basic benzalkonium-preserved saline drops that spread poorly and had short retention times, I prefer modern-day artificial tears, especially those that are preservative-free and include technologies that improve retention time of the lubricants on the ocular surface and are easier for patients to use.

Lipid-enhanced artificial tears, such as Systane COMPLETE (Alcon, Figure 1), are a new generation of artificial tears that have worked well with my patients. For example, Systane COMPLETE lubricates the ocular surface with propylene glycol (PG), which is retained on the ocular surface by two protective barriers: a tear lipid layer fortified with phospholipids (DMPG) and a polymer meshwork (HPGuar). While this two-layered protection is ideal for evaporative dry eye patients, who have a compromised protective tear film lipid layer, it is effective with all types of dry eye patients.⁴ It can provide immediate and all-day relief.⁵ In a clinical study of 99 participants, it was also shown to improve symptoms and clinical signs (e.g., tear lipid layer quality), especially in subjects with a poor baseline lipid layer, between 3 and 6 months of treatment (Figure 2).⁶ In the same study, more than 20% of patients who used Systane COMPLETE no longer met the DEWS II criteria for dry eye disease after 6 months.⁶

These results suggest an enduring effect of Systane COMPLETE in dry eye patients, especially evaporative dry eye patients. It is available in a preservative-free formulation in a multidose bottle, so patients now have the option of a preservative-free lipid-enhanced artificial tear without

having to discard leftover drops as with the single-use preservative-free vials. Making a strong recommendation to our patients for drops

like these can help save them time searching for a solution on the store shelves and ensure that the product they use has evidence to support their chances of successfully managing their dry eye symptoms. ■



Figure 1. Systane COMPLETE Preservative-Free in a multidose bottle.

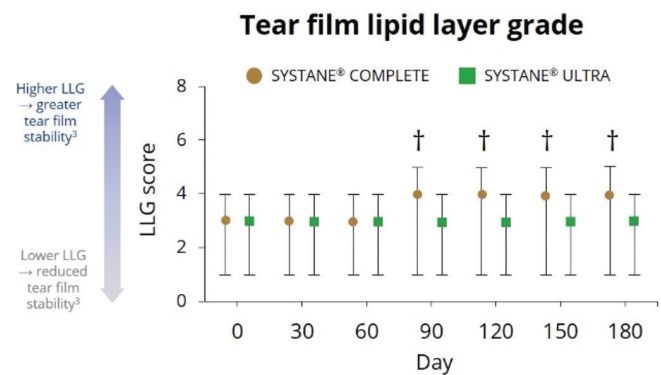


Figure 2. Tear film lipid layer grade change with time. LLG=lipid layer grade (Craig et al, The Ocular Surface 2021)

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