

An Evaluation of the Effect a Manual Eyelid Cleaning Device has on Donor Cornea Epithelium after Direct Application

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J. Olkowski has financial interest in NuSight Medical.

Key words: Dry eye disease, blepharitis, Meibomian gland disease



The NuLids System

An effective doctor directed, at home, treatment for Evaporative Dry Eye

ABSTRACT

Purpose: A prospective study to evaluate the safety and efficacy of a novel mechanical eyelid device (NuLids® by NuSight Medical, LLC, Rancho Santa Fe, CA) used at home for the treatment of dry eye disease (DED), blepharitis and meibomian gland disease (MGD).

Methods: Three eye bank donor corneas were used. First, light pressure was applied with the NuLids device on the corneal surface. This was to simulate a gentle and brief treatment of the corneal surface with the NuLids Soft Tip during normal use. Fluorescein dye and a cobalt blue light were used to illuminate the surface and to evaluate the changes to the corneal epithelium. Then, very firm pressure was applied for a duration of five seconds with the device directly on the corneal

surface to simulate intentional placement on the cornea. Again, a fluorescein dye and a cobalt blue light were used to evaluate the changes to the corneal epithelium.

Results: In all cases, the initial evaluation with light touch applied to the cornea, showed no evidence of the corneal staining on the surface. In all cases where firm pressure was applied on the cornea, only a few rare punctate epithelial defects were noted. No complete epithelial defects were found.

Conclusion: The use of the NuLids device in close proximity to the corneal surface appears safe and unlikely to cause harm to the corneal and/or surrounding structures when used by the patient during daily unsupervised commercial use. Even inadvertent contact with the cornea would be unlikely to result in any significant corneal damage.