

## The Annual ACES/SEE Caribbean Eye Meeting presents hot topics for anterior segment surgeons and healthcare professionals.

Next year's meeting will be held from January 31<sup>st</sup> to February 3<sup>rd</sup>, 2025, at the JW Marriott Los Cabos Beach Resort & Spa in San José del Cabo, México. Join Program Chairs William Wiley, MD, and Robert Weinstock, MD, along with other well-known leaders in ophthalmology to discuss important topics in eye care and earn CME/COE credits while connecting, recharging, and elevating your practice in unparalleled tropical splendor. The following summary of a presentation from the recent 2024 meeting provides a taste of the programming at Caribbean Eye. Use the QR code to access the videotaped recording of this and other key talks from the meeting.

### PRK ENHANCEMENTS AFTER MYOPIC ABLATIONS

Using OCT epithelial thickness maps to guide transepithelial PRK enhancements in eyes with prior myopic excimer laser procedures.

By James C. Loden, MD

Over the course of my career, I've learned a few insights on the best way to perform PRK enhancements on eyes that have undergone previous myopic treatments with an excimer laser. As a starting point, we must define what constitutes a healthy epithelium: a thickness of 50-52  $\mu\text{m}$  and 6 to 8 cell layers, it regenerates approximately every 7 days, and each cell has about 0.25 D of refractive impact.

### CLINICAL EXPERIMENTS

To determine the treatment strategy that works best in our practice, my staff and I conducted an experiment to see if we could use the epithelium as a mask by ablating 50  $\mu\text{m}$  of epithelial tissue with laser scrape/PTK with the Star S4 excimer laser (VISX). But, instead of scraping the residual epithelium, we performed a transepithelial

PRK without removing any of the remaining epithelial bed. In theory, our goal was to use the epithelial tissue as a masking agent to prevent the overcorrections often encountered with full epithelial removal. Our results were not encouraging.

The first patient we treated with this technique had a normal-thickness epithelium for a post-LASIK eye, in the range of 53  $\mu\text{m}$  maximum thickness.

### CONCLUSION

Enhancements of postoperative myopic LASIK and PRK eyes with a transepithelial treatment on a VISX Star S4 laser were ineffective on all four patients on whom we attempted them. Yet, none of them lost BCVA.

I have experienced major issues with PRK enhancements; sometimes they work, sometimes they don't. There can be extreme

variability in epithelial thickness that can lead to 1.00-D misses from the intended refractive target. For late-stage enhancements, I prefer cutting a small (8-mm) flap. I have not had issues with this approach. If I performed the prior surgery on the patient, I know I originally made a 110- $\mu\text{m}$  flap. I'll make a 120- $\mu\text{m}$  side cut only, and then I don't have to worry about the epithelium.

On a final note, epithelial maps may help us anticipate variability in epithelial thickness, but they don't improve outcomes. ■

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- Financial disclosure: None



MYOPIC LASIK WITH NORMAL EPITHELIAL THICKNESS	PRIOR MYOPIC LASIK WITH EPITHELIAL HYPERPLASIA
OD MR: -050 -075 x 175 20/15 Treatment: 50 $\mu\text{m}$ PTK, -30 -075 x 175 Postop: UVA 20/50 -075 -150 x 080 20/20 Total Failure (Figure 1)	Preop: -1.50 -050 x 158 20/15 Treatment: 50 PTK Transepi PRK -1.50 -050 x 158 Postop: -1.75 -075 x 145 20/15 - 1 No effect (Figure 2)

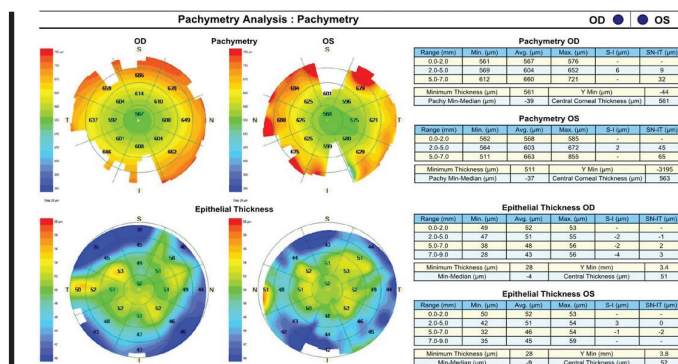


Figure 1. The PRK enhancement in an eye that had undergone previous myopic LASIK was unsuccessful.

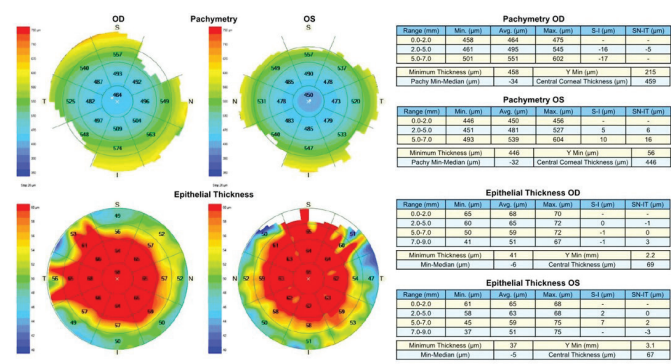


Figure 2. In an eye with epithelial hyperplasia following myopic LASIK, the PRK treatment had no effect.

