

## SREE BALAJI MEDICAL COLLEGE & HOSPITAL

### DEPARTMENT OF OPHTHALMOLOGY

#### Effects of corneal epithelial remodeling on corneal asphericity after FS-LASIK and Trans-PRK:

##### A prospective study

**Purpose:** To observe the changes in corneal epithelial thickness after FS-LASIK and Trans-PRK surgery and to investigate the impact of corneal epithelial remodeling on Q-value and HOA. **Methods:** In this prospective cohort study, 50 patients (100 eyes) underwent FS-LASIK and 45 patients Trans-PRK. Anterior segment OCT was used to measure the corneal epithelial thickness in different corneal DOI:

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zones (central zone: 0–2 mm; paracentral zone: 2–5 mm; and mid-peripheral zone: 5–6 mm) preoperatively and postoperatively at 1 week, 1 month, 3 months, and 6 months. The correlation between  $\Delta$ CET in the superior, nasal, inferior, and temporal region at 6 months postoperatively and  $\Delta$ Q and  $\Delta$ HOA was analyzed. **Results:** At 6 months postoperatively, the epithelial thickness increased in the central, paracentral, and mid-peripheral zones in FS-LASIK and Trans-PRK. Central epithelial thickness and different regions of the paracentral zone and mid-peripheral exhibited significant thickening ( $P < 0.001$ ). In the para-central zone and mid-peripheral zone, the  $\Delta$ CET in different regions after LASIK and Trans-PRK was positively correlated with  $\Delta$ Q ( $P < 0.05$ ) and  $\Delta$ HOA ( $P < 0.05$ ). **Conclusion:** After FS-LASIK and Trans-PRK, significant epithelial thickening was observed. Epithelial changes in different regions lead to different Q-values in different regions and have different effects on HOA. This has a certain guiding significance for the design of refractive surgery.

