

# Flap on versus flap off wave front-guided LASEK for the Correction of low to moderate myopia. 6.0 months prospective study

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Seyed Javad Hashemian, MD, Mohammad Ebrahim Jafari, MD.

**PURPOSE:** To evaluate the effect of maintaining of epithelial flap on ocular discomfort, visual and refractive outcomes of Wave front- Guided LASEK for the Correction of low to moderate myopia.

**SETTING:** Ophthalmology department of Fajr Hospital and Negah Eye Center .Tehran, IRAN.

**METHODS:** A prospective intra individual double blind randomized study comprised 98 eyes of 49 patients with manifest refraction spherical component lower than -6.00 diopters (D) and cylinder components lower than -1.00 diopters were assigned to 2 groups: 49 eyes were treated with WF-G LASEK (Zyoptix) and 49 fellow eyes with Flap off WF-G LASEK. First and third days ocular discomfort, Epithelial healing times, Corneal haze, uncorrected visual acuity (UCVA) best spectacle corrected visual acuity (BSCVA), remaining refractive error, RMS and High order aberration changes and Complications were evaluated at 1 week, 2 and 6 months post operation.

**RESULTS:** The mean spherical equivalent (SE) was -3.23 diopters (D)  $\pm$  1.40(SD) in Flap off LASEK group and -3.33 (D)  $\pm$  1.44 (SD) in LASEK group preoperatively, -0.11  $\pm$ 0.21 D at 2 months, -0.05  $\pm$ 0.20 D at 6 months in Flap off LASEK, -0.00  $\pm$ 0.29 D and 0.04  $\pm$ 0.21D respectively in LASEK group. At 2, and 6 months, the UCVA was 20/20 in 82.8%, 89.7% in Flap off LASEK, 93.1% and 96.6% in LASEK group.100% of eyes in both groups were within  $\pm$ 0.5 D of emmetropia. No eye lost lines of BSCVA, corneal haze in 3.4% eyes in both groups was seen.

Safety, Efficacy, Predictability and cylinder changes were same in both groups. Severe ocular discomfort on the first day in flap off LASEK group was 32.6%. and in LASEK group 24.4%. On the third day severe discomfort was 8.2%. and 0.0%, respectively. Complete epithelial healing on 3th day post operation was seen in 98% of eyes in flap off LASEK and 91.8% of LASEK eyes. Total RMS changes were same in both groups but HOA and Coma were increased more in flap off LASEK eyes. ( $p=0.06$ ).

**CONCLUSION:** Both Flap off WF-G LASEK (ASA) and WF-G LASEK were safe and effectively treated eyes with low to moderate myopia. WF-G LASEK provided superior results in visual outcomes.