

Acta Ophthalmol Scand. 2004 Aug;82(4):454-60

Pupil size and night vision disturbances after LASIK for myopia.

Helgesen A, Hjortdal J, Ehlers N.

Department of Ophthalmology, Arhus University Hospital, Arhus, Denmark.

Abstract. Purpose: To examine whether standardized, preoperative evaluation of pupil sizes can predict the risk of night vision visual disturbances after bilateral laser in situ keratomileusis (LASIK) for myopia. Methods: A prospective study was carried out involving 46 patients who underwent bilateral LASIK for myopia. Pupil sizes were measured before surgery using an infrared pupillometer under standardized settings. Pre- and postoperative refraction and best spectacle-corrected visual acuity (BSCVA) were registered. At the 3-month follow-up visit, the patients completed a questionnaire regarding night vision pre- and postoperatively. Results: The mean bilateral, spherical equivalent refraction (SE) was - 8.76 D (range 6.32 to - 12.0 D) preoperatively, and - 1.69 D (range 0 to - 4.38 D) postoperatively. The mean bilateral BSCVA was not changed by the operations. We found a significant correlation between large scotopic pupil sizes and the impression of worsened night vision ($p < 0.01$). A significant correlation between gender (males) and subjectively reduced night vision postoperatively was also found ($p < 0.05$). Conclusion: Large pupil size measured preoperatively is correlated with an increased frequency of subjectively experienced post-LASIK visual disturbances during scotopic conditions. We recommend preoperative evaluation of pupil size in all patients prior to LASIK surgery.