

## LASIK Risk Score: An Easy Method to Predict Postoperative Outcome

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**PURPOSE:** To present a simple model for assessing the risk score of laser in situ keratomileusis (LASIK).

**METHODS:** The LASIK surgery risk score is a number attributed to every LASIK procedure and depends on the presence of individual variables that might add difficulty and increase the risk of the surgical procedure.

**RESULTS:** The score can vary from 1 to 14 with values between 1 and 4 considered low risk for complications, values between 5 and 9 moderate risk, and values above 10 high risk.

**CONCLUSIONS:** This scale gives a gross estimate of the surgical risk of the LASIK procedure and adds valuable information to the preoperative assessment. [*J Refract Surg.* 2005;21:399-400.]

Laser in situ keratomileusis (LASIK) has become an increasingly performed procedure throughout the world. Predicting surgical outcome, as with any other type of surgery, often is a difficult task especially when multiple preoperative risk factors coexist. Nonetheless, patients' satisfaction is intimately related to the expectations they build during their preoperative visit. Patients usually expect their surgeon to provide them with a number or a percentage of success for their surgery, which may not always be available. This is especially true when numerous variables may affect the surgical result such as in LASIK. Various scores have been devised in the different subspecialties of medicine to estimate the risk of surgical procedures and predict the postoperative outcome.<sup>1-4</sup> A simple model for assessing the risk score of LASIK surgery is presented.

The LASIK surgery risk score is a number attributed to every LASIK procedure and depends on the presence of individual variables that might add difficulty and increase the risk of the surgical procedure. Such variables include higher amounts of refraction, presence of hyperopia or astigmatism, increasing age, flatter preoperative corneal curvature, whether the procedure is an enhancement, history of complications in

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TABLE

### LASIK Risk Score

Risk Factor	Measure	Score
Myopia (D)	<3	1
	3 to 5	2
	>5	3
Hyperopia (D)	<3	2
	≥3	3
Astigmatism (D)	<1	0
	1 to 2	1
	>2	2
Age (y)	<40	0
	40 to 50	1
	>50	2
Minimal preoperative K <43 D		1
Enhancement		1
History of complications in fellow eye		1
Scotopic pupil size >6 mm		1
Presence of anterior basement membrane dystrophy		1
Presence of dry eyes		1
Optical zone ≤6 mm		1
Total		

*K = corneal curvature (K reading) in diopters*

the fellow eye, large pupil size, presence of anterior basement membrane dystrophy, dry eyes, and smaller optical zone<sup>5-8</sup> (Table). The score can vary from 1 to 14 with values between 1 and 4 considered low risk for complications, values between 5 and 9 moderate risk, and values above 10 high risk.

The advantage of the LASIK risk score is that it gives the ophthalmologist and patient an objective preoperative assessment of the risk of the procedure. In addition, it directs the surgeon's attention to details in the ocular examination that might be easily overlooked such as the presence of dry eyes and anterior basement membrane dystrophy. Scores from different procedures can also be compared, and the scale can be modified to include additional risk factors, or the numbers attributed to each risk can be modified according to the surgeon's experience.

This scale gives a gross estimate of the surgical risk of the LASIK procedure and adds valuable information to the preoperative assessment. Future prospective studies using multivariate regression analyses can be performed to validate this scale and offer patients a more accurate measure of the risk of LASIK surgery.

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Herpes Simplex Virus Keratitis After Laser in situ Keratomileusis

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ABSTRACT

**PURPOSE:** To report two cases of herpes simplex virus (HSV) keratitis after laser in situ keratomileusis (LASIK).

**METHODS:** Interventional small case series. Two patients underwent uneventful LASIK. History of herpes labialis in one patient and herpetic eye disease >10 years prior to intervention in the other patient was reported. Both patients developed stromal herpetic keratitis 6 weeks and 2 years after the procedure, respectively.

**RESULTS:** Treatment consisting of topical steroid drops and topical and systemic antiviral therapy was administered. Recurrences of the herpetic keratitis were seen after tapering of the topical steroids; four and three recurrences were observed, respectively. Final visual acuity was >6/9 in both cases.

**CONCLUSIONS:** Herpetic keratitis after LASIK is an uncommon, possibly under-reported, entity. Even patients without his-

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tory of herpetic eye disease can present with this complication. Oral antiviral prophylaxis may be appropriate when performing LASIK on patients with a history of ocular or systemic HSV infection. [*J Refract Surg*. 2005;21:400-402.]

Controversy exists regarding the potential triggers of recurrent ocular herpes simplex virus (HSV) disease,<sup>1</sup> including upper respiratory tract infection, fever, seasonal conditions, and psychological stress. Eye trauma, including refractive procedures, has also been proposed for this potential triggering effect. In animal models, reactivation of latent HSV has been described following excimer laser photokeratectomy<sup>2,3</sup> and laser in situ keratomileusis (LASIK).<sup>4</sup> In humans, only three cases of reactivated HSV following LASIK have been reported previously.<sup>5-7</sup>

We present two cases of HSV keratitis following LASIK in two patients with previous herpes labialis and herpetic eye disease, respectively.

CASE REPORTS

CASE 1

A 32-year-old woman underwent bilateral LASIK for myopia. Preoperative refraction was  $-4.25 -1.75 \times 13^\circ$  in the right eye and  $-4.25 -1.50 \times 8^\circ$  in the left eye. Uncorrected visual acuity (UCVA) was 6/120 in both eyes. Best spectacle-corrected visual acuity was 6/6 in both eyes. Ocular history was positive for herpes labialis. Slit-lamp examination of anterior and posterior segments was normal. Cornea was completely clear bilaterally.

Laser in situ keratomileusis was performed with the Nidek EC-5000 excimer laser (Nidek Technologies, Gamagori, Japan) after a nasally hinged 160- $\mu$ m flap was made by the Nidek 2000-MK microkeratome with an 8.5-mm suction ring. The laser procedure was not performed in the left eye because buttonhole formation in the center of the flap.

One day postoperatively, UCVA was 6/15 in the right eye, and the flap was clear. Dexamethasone and chloramphenicol drops four times a day were started. Six weeks after the procedure and while on dexamethasone drops twice daily, the patient reported reduced vision in her right eye. Uncorrected visual acuity was 6/24. Slit-lamp examination revealed edema of the inferior cornea and keratic precipitates on the endothelium (Fig). Significant irregular astigmatism was observed on corneal computerized keratopography. Steroid drops were prescribed eight times a day. Because slow improvement was observed, primary HSV disciform keratitis was not suspected and antiviral therapy was not started. One month later, epithelial dendrites appeared, and acyclovir ointment five times