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[Static and dynamic contrast sensitivity of myopic eyes before and after laser in situ keratomileusis]

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OBJECTIVE: To evaluate the static and dynamic contrast sensitivity changes in myopic patients before and after laser in situ keratomileusis (LASIK).

METHODS: Seventy-three eyes in 37 patients with myopia (with or without astigmatism) who received LASIK were tested for static and dynamic contrast sensitivities using the METRO VISION MON ELEC I system at 0.7, 1.4, 2.7, 5.5, 11, and 22 cpd and cps prior to LASIK, and at one-, three-, and six-month intervals after LASIK.

RESULTS: All eyes gained naked visual acuity of more than 0.5 after LASIK. The contrast sensitivity was depressed at all frequencies 1 month after LASIK, as compared to one week prior to LASIK. The depression at 2.7, 5.5, 11 ($P < 0.01$) and 22 cpd ($P < 0.05$) was statistically significant for static contrast sensitivity, and also at 5.5 ($P < 0.01$) and 11 cps ($P < 0.05$) for dynamic contrast sensitivity. Myopic eyes between 6.25 D and 14.0 D, and astigmatic eyes 2 DC and more, suffered more static and dynamic contrast sensitivity depression than the myopic eyes between 1.25 D and 6.00 D and astigmatic eyes less than 2 DC. Contrast sensitivities were improved and exceeded preoperative levels 3 months after LASIK, and improved even more 6 months after LASIK. All sequences were statistically significant for static contrast sensitivity ($P < 0.01$), while only 2.7, 5.5, and 11 cps were statistically significant for dynamic contrast sensitivity ($P < 0.01$). The astigmatic eyes 2 DC and more showed less improvement, even below the preoperative level at 1.4 cps of dynamic contrast sensitivity.

CONCLUSIONS: While temporary depression of contrast sensitivity for myopic eyes after LASIK was seen, contrast sensitivity soon returned to exceed preoperative levels at 3 months after LASIK, while improving even more 6 months after LASIK.