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Study compares LASIK and LASEK eye surgery

A study comparing the safety, effectiveness and reliability of LASIK and LASEK has found no clinically significant differences between the two types of laser eye surgery.

The study, led by a University of Illinois at Chicago researcher, is published in the December 2006 issue of the American Journal of Ophthalmology.

"Although there have been many studies of the safety and efficacy of both types of laser surgery, there has not been a large study directly comparing the outcomes of the two procedures," said Dr. Dimitri Azar, field chair of ophthalmologic research and professor and head of ophthalmology and visual sciences at UIC.

In the retrospective, case-matched study, eyes that had undergone laser eye surgery were matched for a number of measures, including visual acuity and astigmatism; 122 LASIK-treated eyes were matched for all measures with 122 LASEK-treated eyes from a review of the charts of 2,257 eye surgeries performed by Azar. All patients' outcomes included a follow-up of at least six months.

"We found that although there were some differences in the visual and refractive results that favor the LASEK procedure, the differences were not clinically significant," said Azar. "These results are in line with previous smaller studies that we reviewed comparing the procedures."

LASIK, which stands for laser in situ keratomileusis, was introduced in the mid-nineties and has largely replaced the older photorefractive keratectomy procedure, better known as PRK. Unlike PRK, where the surface layer of the cornea is scraped away to allow the reshaping of the underlying cornea, with LASIK a flap is made in the top cornea layer to permit access to the underlying cornea. LASIK avoids most of the problems of corneal haze, postoperative pain and slow rehabilitation seen in PRK, but complications are sometimes associated with the flap.

In LASEK (laser epithelial keratomileusis), the surface cornea layer is treated with alcohol and then peeled back to permit reshaping of the underlying layer. It avoids all flap-related complications associated with LASIK, and has less postoperative pain and faster recovery than PRK.

"Both procedures seem safe, effective and predictable for the treatment of low to moderate myopia (near-sightedness)," Azar said.

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Contributing to the study were Drs. Faisal Tobaigy, Ramon Ghanem, and Rony Sayegh; and Joelle Hallek, all of Harvard Medical School. The study was supported by the New England Corneal Transplant Research Fund, Massachusetts Lions Eye Research Award, Boston.

UIC ranks among the nation's top 50 universities in federal research funding and is Chicago's largest university with 25,000 students, 12,000 faculty and staff, 15 colleges and the state's major public medical center. A hallmark of the campus is the Great Cities Commitment, through which UIC faculty, students and staff engage with community, corporate, foundation and government partners in hundreds of programs to improve the quality of life in metropolitan areas around the world.

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