

The LASIK Eye Surgery Overview

Contributed by Webmaster

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LASIK, an acronym for Laser-assisted In Situ Keratomileusis, is a form of refractive laser eye surgery procedure performed by ophthalmologists intended for correcting vision. The procedure is usually a preferred alternative to photorefractive keratectomy, PRK, as it requires less time for full recovery, and the patient experiences less pain overall.

The LASIK technique was made possible by Dr Jose Barraquer (Colombia), who around 1960 developed the first microkeratome, used to cut thin flaps in the cornea and alter its shape, in a procedure called keratomileusis. This procedure was developed and pioneered by the world leading Barraquer Clinic, based in Bogota, Colombia.

LASIK surgery was developed in 1990 by Dr. Lucio Buratto (Italy) and Dr. Ioannis Pallikaris (Greece) as a melding of two prior techniques, keratomileusis and photorefractive keratectomy. It quickly became popular because of its greater precision and lower frequency of complications in comparison with these former two techniques.

In 1991, LASIK was performed for the first time in the United States by Drs. Stephen Brint and Stephen Slade. The same year, Drs. Thomas and Tobias Neuhann successfully treated the first German LASIK patients with an automated microkeratome.

Patients wearing soft contact lenses typically are instructed to stop wearing them approximately 7 to 10 days before surgery. One industry body recommends that patients wearing hard contact lenses should stop wearing them for a minimum of six weeks plus another six weeks for every three years the hard contacts had been worn.

Before the surgery, the surfaces of the patient's corneas are examined with a computer-controlled scanning device to determine their exact shape. Using low-power lasers, it creates a topographic map of the cornea.

This process also detects astigmatism and other irregularities in the shape of the cornea. Using this information, the surgeon calculates the amount and locations of corneal tissue to be removed during the operation. The patient typically is prescribed an antibiotic to start taking beforehand, to minimize the risk of infection after the procedure.

The operation is performed with the patient awake and mobile; however, the patient typically is given a mild sedative (such as Valium or diazepam) and anesthetic eye drops.

Lasik is performed in two steps. The initial step is to create a flap of corneal tissue. This process is achieved with a mechanical microkeratome using a metal blade, or a femtosecond laser microkeratome that creates a series of tiny closely arranged bubbles within the cornea. A hinge is left at one end of this flap. The flap is folded back, revealing the stroma, the middle section of the cornea. The process of lifting and folding back the flap can be uncomfortable.

The second step of the procedure is to use an excimer laser (193 nm) to remodel the corneal stroma. The laser vaporizes tissue in a finely controlled manner without damaging adjacent stroma by releasing the molecular bonds that hold the cells together. No burning with heat or actual cutting is required to ablate the tissue. The layers of tissue removed are tens of micrometers thick.

During the second step, the patient's vision will become very blurry once the flap is lifted. He or she will be able to see only white light surrounding the orange light of the laser. This can be disorienting.

Currently manufactured excimer lasers use a computer system that tracks the patient's eye position up to 4,000 times per second, redirecting laser pulses for precise placement. After the laser has reshaped the cornea, the Lasik flap is repositioned over the treatment area by the surgeon. The flap remains in position by natural adhesion until healing is completed.

Performing the laser ablation in the deeper corneal stroma typically provides for more rapid visual recovery and less pain.

The author Joy King manages a free online medical advice website which is published by Vivienne Balonwu. This site offers you free advice on a wide range of medical diseases to help you understand you own doctors explanations when you visit for consultations on medical disorders.