Laser Assisted Sub Epithelial Keratectomy (LASEK) And How It Can Help You See Clearly Again!

Contributed by Webmaster

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Laser Assisted Sub Epithelial Keratectomy (or LASEK) is a surgical laser procedure which is carried out to correct refractive error in the cornea. It is specifically designed to correct astigmatism, hyperopia (farsightedness) and myopia (nearsightedness). LASEK is a technique which combines Laser Assisted in Situ Keratomileusis (LASIK) and Photo Refractive Keratectomy (PRK), in the hope of decreasing the occurrence of flap-related complications associated with LASIK. It is particularly helpful for patients whose cornea is too thin for LASIK.

The cornea consists of layers of translucent tissue that protects the eye from light. There are five layers, from superficial to deep they are: corneal epithelium, the Bowman layer, the stroma, Descemet membrane and the endothelium.

Defects in the corneal epithelium can cause severe pain, but are quick to heal in healthy eyes. The Bowman layer, however, is not replaced after injury, and this tough layer may become standard scar tissue. The stoma makes up 90% of corneal thickness and gives the cornea its strength and shape. The Descemet membrane, like the Bowman layer, is not replaced after injury, and may turn into scar
tissue. The deepest layer is endothelial cells which maintain the corneal fluid balance. These cells rarely undergo mitosis and decrease in number over time.

LASEK surgery retains a flap of the corneal epithelium, which reduces the risk of infection, less occurrences of corneal haze, a reduced recovery time and less postoperative discomfort.

The History of LASEK and LASIK

Corneal refractive surgery in different forms, such as keratectomy, keratotomy and thermokeratoplasty, were described by Lans, who published the results of an experiment treating astigmatism in rabbits. But refractive surgery as we know it today, was not realised until 1966, when Pureskin demonstrated that refractive changes could be made by removing central tissue underneath a corneal flap. Barraquer went on to show that the corneal disc could be removed, frozen and reshaped. This technique utilised complicated equipment and freezing damaged the tissue.

Burratto, Ruiz and Krumeich all attempted different types of refractive surgery using lasers to reshape the corneal tissue, but it was Pallikaris, in 1989, who developed refractive surgical techniques similar to the ones performed today.

In 1993 Slade developed a microkeratome, which is a precision surgical instrument with an oscillating blade designed for reshaping the corneal flap. Slade was one of the first surgeons to perform LASIK surgery.

But since its introduction, LASIK has been linked to various complications, particularly when performed on eyes with thin corneas, wide pupils, irregular astigmatism, dry eye and glaucoma. LASEK was developed to diminish the chance of complications which tend to occur due to LASIK and to inflict less discomfort than PRK.

Optegra Eye Care is a LASEK treatment provider, also covering all eye conditions. The flagship clinic is located in Guildford, Surrey, and the Optegra experience is patient-focused, combining experienced consultants with state of the art equipment.