Johnson & Johnson VISION

History of Refractive Surgery

Refractive surgery corrects common vision problems by reshaping the cornea, the eye's outermost layer, to bend light rays to focus on the retina, reducing an individual's dependence on eye glasses or contact lenses.[1]

LASIK, or laser-assisted in situ keratomileusis, is the most commonly performed refractive surgery to treat myopia, hyperopia and astigmatism.[1]

The first refractive surgeries were said to be the removal of cataracts – the clouding of the lens in the eye – in ancient Greece.[2]

1850s The first lensectomy is performed to remove the lens of the eye to correct myopia.[2]

Late 19th Century The first surgery to correct astigmatism takes place.[2]

1978 Radial Keratotomy is introduced by Svyatoslov Fyodorov in the U.S. The procedure involves making a number of incisions in the cornea to change its shape and correct refractive errors, such as myopia, hyperopia and astigmatism.[2,3]

1970s - 1980s Samuel Blum, Rangaswamy Srinivasan and James J. Wynne invent the excimer laser at the IBM Thomas J. Watson Research Center in Yorktown, New York. Dr. Stephen Trokel uses this for the first laser surgery in the U.S. This advanced laser technology removed precise amounts of tissue from the eye's surface, providing a higher degree of safety and precision than other techniques.[3]

1987 The first excimer laser system is introduced.[3]

1991 The first laser-assisted in situ keratomileusis (LASIK) is performed by Dr. Stephen Slade and Dr. Stephen Brint in the U.S. During LASIK, the surgeon creates a thin corneal flap, and the excimer laser is used to remove abnormal tissue, effectively reshaping the eye to refocus light on the retina. Then, the flap is replaced over the treated area.[3]

1996 Clinical trials for LASIK begin and are approved by the Food & Drug Administration (FDA).[3]

2001 Abott Medical Optics receives FDA approval for the first femtosecond laser, the IntraLase® FS Laser.[3] The laser is used to create a circular, hinged flap in the cornea, which allows the surgeon access to the tissue affecting the eye's shape.[1]

2002 The STAR S4 IR® Laser is introduced. The X generation is used in LASIK procedures today.[4]

2003 The FDA approves the use of wavefront technology,[3] which creates a 3-D map of the eye to measure imperfections, and then guides the laser in customizing a patient's procedure.[5]

2008 Abbott Medical Optics introduces the first iFS® Advanced Femtosecond Laser. The X generation is used in LASIK procedures today.[4]

2017 Johnson & Johnson acquires Abbott Medical Optics and gains global leadership in ophthalmic surgery, including the #1 position in LASIK refractive surgery.[6]

[1]The LASIK Procedure: A Complete Guide. All About Vision. http://www.allaboutvision.com/visionsurgery/lasik.htm [2]Refractive Surgery – History. CEMM Library. https://refractiveeyesurgery.cemmlibrary.org/Refractive-Surgery/History
[3]History of Refractive Surgery. Eye Doctor Network. http://www.eyedoctornetwork.org/history-of-refractive-surgery.htm [4]Refractive Surgery History. Johnson & Johnson Vision. [5]Surgical Vision Business Overview.
[6]2016 Market Scope - 2016 Refractive Surgery Report: A Global Market Analysis for 2015 to 2021.

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