

Lasik Eye Surgery

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Abstract – The purpose of this study is to research and learn more about Lasik Eye Surgery; how it works, what it does, its benefits/limitations – and briefly present this information to the Biomedical Engineering Seminar II class.

Introduction

Living in generation largely focused around media and visual-based technology can be tough on one's eyes. Eye problems in America (as well as many other countries) are higher than they ever have been. Lasik (Laser Assisted In-Situ Keratomileusis) Eye Surgery is one of the most popular forms of refractive eye surgery, which alters the cornea in order to bend (refract) light rays to focus more precisely on the retina for more acute and clear vision. This form of vision correction surgery can be used to correct myopia (nearsightedness), hyperopia (farsightedness), and astigmatism and can reduce or eliminate the need for eyeglasses or corrective lenses.

Early History

Columbian ophthalmologist Jose Barraquer developed microkeratome & keratomileusis techniques in the 1950's. His work was followed by Russian scientist Svyatoslav Fyodorov, who developed Radial Keratotomy in the 1970's. The 1970's also brought the invention of the Excimer laser, the cornerstone laser of Lasik eye surgery. Then in 1987, Dr. Stephen Trokel performed the 1st laser surgery on the cornea of the eye, and by 1996, the U.S. government had approved lasik eye surgery to be commercially available for the public

Applications

Lasik Eye Surgery is currently the leading form of corrective eye surgery, but other popular vision correction surgeries that are available include; PRK, LASEK, and Phakic IOL surgery.

Limitations

Limitations of the surgery include; being overcorrected (removing too much tissue) or undercorrected (removing too little tissue); seeing

glares, halos, or double vision; dry eyes; results may not be permanent; glasses/contacts may still be needed; and results are not reversible.

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