## Laser Eye Surgery Jonathan Kurowski February 16<sup>th</sup>, 2004 Biomedical Engineering Seminar ELE 282

Impaired vision is one of the most common physical ailments suffered around the world. The eye is a very complicated organ, in that it requires an exact arrangement of components to function properly, and if any one of these components are misshapen, then the light that falls on the eye will not be focused correctly. Glasses, bifocals, and contact lenses are among the main solutions to this problem, although, more and more people are beginning to a procedure that attempt should permanently rid them of this problem, laser eye surgery.

Some of the most common problems occurring in the eye are myopia, hyperopia, and astigmatism, all similarly dealing with irregularities in the cornea. Myopia is better known as near sightedness, or seeing near objects better than distant ones. Hyperopia is farsightedness, or seeing distant objects better than near objects. While astigmatism is distortion of the image relayed to the retina.



Laser eye surgery actually reshapes the cornea so that the focal point of the eye is changed so that it focuses perfectly on the retina. There are several types of laser eye surgery including, Radial Keratotomy (RK),

Automated Lamellar Keratoplasty (ALK), Photorefractive kertotomy (PRK), and the newest, most popular type, Laser-assisted in situ keratomileusis (LASIK).

LASIK uses a microkeratome to create a flap of the outer corneal tissue that can be folded out of the way and then replaced once the procedure is finished. Once the flap is folded out of the way, LASIK uses an Excimer laser to reshape the underlying corneal tissue. The flap is then replaced over the reshaped area and conforms to the new The average length of the shape. procedure is about 15 minutes per eye, and the healing period being only a few days. The great thing is there is very little or no pain involved with both the surgery and during the healing period.

Although, there are some potential problems involved with the LASIK surgery such as under correction, overcorrection, and wrinkling. Though, under most circumstances, each are corrected though a second procedure, but sometimes not suggested because many recipients of laser eye surgery never normal achieve vision, but can significantly reduce their corrective lens prescription. In addition to these, there is also the chance of some side effects to occur once going through this procedure. These include blurred vision, halos around lights, increased light sensitivity, and even double vision. There may even be a chance of damage or scarring to the cornea, resulting in partial or complete loss of vision.

Those who have gone through the LASIK surgery say that they would recommend it to anyone, and from any point of view seems to be a huge success. But of course there are always those risks that are involved that the patient must be aware of.