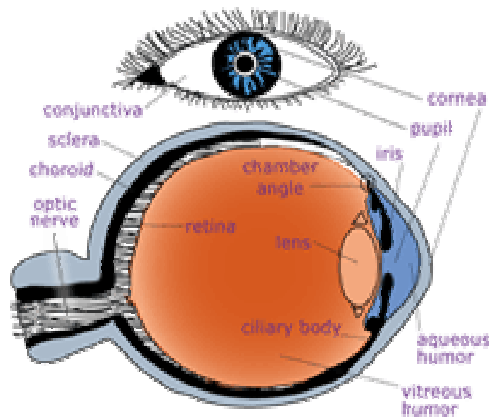


**Laser Eye Surgery**  
**Biomedical Engineering Seminar I, April 1, 2002**  
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Impaired vision is a problem shared by many people. However, there is always something new in the market to help those without 20/20 vision. First, there were glasses, then bifocals, hard and soft contact lenses and most recently, laser eye surgery. The latter is the most promising, with permanent results, and also the most risky, with possible severe complications.

Visual problems include myopia, hyperopia and astigmatism. Myopia, a.k.a. nearsightedness, is the ability to see near objects better than distant objects. Hyperopia, a.k.a. farsightedness, is the ability to see distant objects better than near objects. While astigmatism is the distortion of the image on the retina. All of these are caused by irregularities in the cornea of the eye.



There are many options in laser eye surgery. The two that we will discuss is PRK (Photorefractive Keratectomy) and LASIK (laser in situ keratomileusis).

PRK is one of the oldest forms of laser eye surgery. This procedure involves the scraping of the first layer of cells and then utilizes a laser to reshape the cornea. The entire process is quick and takes only about 5 minutes per eye. However, a full recovery takes as long as two months.

LASIK is a newer form of laser eye surgery, with the first trial being in 1995. This procedure involves the creation of a corneal flap and an excimer laser is used to reshape the cornea. The process takes about 15-30 minutes for both eyes. The recovery period is less than that of PRK, only taking a few days.

For both procedures, anti-inflammatory drops are prescribed and a follow-up visit is required. There are many restrictions for the next weeks, including safety glasses when playing sports and no rubbing of the eyes. There is also a risk included with both surgeries, with LASIK having the most possibilities.

The corneal flap created during the LASIK procedure can cause many complications. This includes corneal displacement and perforation. Also, there is epithelial in-growth, haze and night glare. None of the laser eye procedures are guaranteed and chance of regression is possible.

Laser eye surgery is a great option for those wanting to be less dependent on their glasses and/or contact lens. However, like in other surgeries, the patient also has to be willing to take the risks involved.