Lasik - Laser Assisted In-Situ Keratomileusis

Information on Lasik or "Laser Assisted In-Situ Keratomileusis"
Performed since the early 1970's, refractive surgery procedures improve vision due to nearsightedness (myopia), farsightedness (hyperopia) and astigmatism. With the development of the excimer laser for refractive surgery (photo refractive keratectomy), a new era in eye care is unfolding. It has been found that the excimer laser procedure combined with the creation of a corneal flap (lamellar keratectomy) is an excellent technique for reshaping the surface of the cornea to correct nearsightedness, farsightedness and astigmatism. The combination of both procedures is called Laser Assisted In-Situ Keratomileusis (LASIK) and offers the accuracy of the excimer laser with the benefits of automated lamellar keratectomy's recovery. The excimer laser, first developed by VISX, creates light in a manner similar to a light bulb. In an excimer laser, an electric current is passed through a tube containing Argon and Fluoride gases creating a reaction that produces ultraviolet light. The direction, focus and release of the light are precisely controlled by the surgeon and a computer.
As the ultraviolet light is produced, it passes through a system of lenses which focus the light energy to become more concentrated and the beam gains strength. Laser light reaches its maximum strength at the focal point, the point where all the rays converge. The strength of the beam rapidly diminishes after passing the focal point, and can no longer affect other tissues in the eye.

A special instrument called a microkeratome is applied to the cornea creating a thin flap of corneal tissue.
The flap remains attached to the eye at one end. The excimer laser is then used to reshape the cornea.
Instead of using heat to alter tissues like other lasers, the excimer laser beam breaks the molecular bonds that hold tissue together with only minimal effect on surrounding tissues. These properties allow the excimer laser to be used in the LASIK procedure to reshape tissue immediately beneath the surface of the corneal flap. A computer controls the laser and the reshaping of the cornea.
The flap is then placed back into position without stitches.

LASIK is performed on an outpatient basis, at two surgical centers. The surgery uses topical anesthetic eye drops to numb the eye. LASIK is painless and usually takes less than ten minutes per eye to perform. Plastic eye shields are placed over the eyes for temporary protection and to keep patients from rubbing their eyes when sleeping. Postoperatively, medication drops are used to prevent infection and promote healing. After LASIK, patients usually return to their normal life-style quickly with very few restrictions during the short healing period.
After LASIK surgery, the vast majority of patients, about 98%, are able to pass a drivers license vision test without glasses or contacts. Many patients report an immediate improvement within the first day. For others, vision may be blurry and fluctuate for several days or weeks. Since each patient's situation is unique, not everyone should expect to achieve full visual correction. People with high levels of myopia or astigmatism may require an additional procedure to achieve the desired results.
To be eligible for LASIK surgery, the eye must be in good health and vision must be stable. Some patients are better candidates than others and consultation with an ophthalmologist prior to surgery is important to determine estimated benefits and possible complications.