

## Lasik Surgery

**LASIK** (Laser-In-Situ Keratomileusis) is currently the most common type of laser vision correction procedure. It is an extremely effective outpatient procedure that is suitable for low, moderate, and higher prescriptions. It can be used to correct severe prescriptions, and is currently one of the most commonly performed healthcare procedures in North America.

Although no medical procedure is perfect, the excimer laser allows for an unparalleled degree of precision and predictability. Each pulse of the laser can remove 39-millionths of an inch of tissue in 12-billionths of a second. This enables an experienced surgeon to achieve remarkable accuracy while maintaining excellent control throughout the procedure.

However, the LASIK procedure requires a great deal of technical skill and training to perform properly, so choosing the proper surgeon is critical. The TLC network of surgeons has performed more than twice as many laser vision correction procedures than any other doctor network. Our Medical Directors performed the first LASIK procedures in the U.S. and Canada, and have shared their knowledge and experience with our entire network of doctors. So, regardless of what TLC center you choose, you will receive thorough care and have access to experienced, highly trained doctors.

### Steps to the Procedure:

Prior to the procedure, an extremely detailed map of your eyes' surface is created by a computer and then used by your TLC surgeon to calibrate the excimer laser to your exact prescription. Before going into the laser room, your TLC technician will put a few anesthetic drops in to numb the eye and prevent pain.

Once the laser has been properly calibrated, your surgeon will place an eyelid holder in your eye to keep it open throughout the procedure. Your surgeon then uses a microkeratome (an automated microsurgical instrument similar in design to a carpenter's plane) to create a corneal flap, that has a thickness of approximately 1/4 of the cornea's depth. A cool laser beam of light from the excimer laser is then used to precisely and gently reshape the cornea.

When your surgeon is finished, the flap is carefully put back into place and the eyelid holder is removed. Over the next few days, the flap will heal and bond more securely.

The entire procedure only takes about five minutes to complete and the laser is on each eye for less than one minute for an average prescription.

After your procedure is completed, you will relax in the recovery room for about fifteen to twenty minutes, allowing the center staff to ensure that everything is in order before you leave. During this time, additional drops will be placed in your eyes to keep them lubricated. You may also be given protective eye shields to place over your eyes to prevent you from rubbing your eyes while sleeping during the first night, and sunglasses to reduce the discomfort the sunlight may cause. During this early postoperative period it is important to not squeeze or rub the eyes. Antibiotic and anti-inflammatory drops are used to prevent infection and decrease inflammation.

After leaving the center, many patients will feel the need to rest for a few hours. Later that evening, most patients feel very well and are extremely pleased with their results already. Many patients go back to work the next day, while others wait a few days.

You will need to go for a post-operative check up following your procedure to ensure that your eyes are healing as expected. There are a few restrictions for a week or so following your procedure, but as long as you follow your doctors instructions, you should be free to resume all of your normal activities thereafter.

### The Excimer Laser

#### What is the Excimer Laser?

The excimer laser is an ultraviolet laser, which utilizes Argon and Fluorine gas to create a non-thermal, or cool beam, of laser light, which can break molecular bonds in a process commonly referred to as "photoablation". A simple way to imagine how the laser works is to think of it as placing the curvature from your glasses or contact lenses onto the front surface of your eye, allowing you to see without corrective eyewear.

The most important aspect of the excimer laser is its remarkable precision. It is able to remove 0.25 microns of tissue in a single pulse; that is, 1/200th of a human hair, 1/40th of a human cell, or 39 millionths of an inch in 12 billionths of a second!

### Laser Systems & Software

The laser delivery system and laser software program determines basic predictability of the procedure and quality of the pattern lasered d.

For low to moderate myopia, most results between programs and lasers are comparable; for severe degrees of myopia correction, there are important differences. That is, 20/20 vision after the LASIK procedure with one program may not be the same as 20/20 with another program, even with the same laser. Differences may lie in the size of the lasered area (which determines risk of night glare and quality of night vision), the amount of tissue removed (which may affect risk of long-term corneal stability) or the quality of vision (which may be affected by central islands). Furthermore, overcorrected or farsighted patients may still read 20/20 but their need for reading glasses is increased.

TLC's National Medical Director, Dr Jeffery Machat has developed software and techniques used by many surgeons worldwide. His software profile adjustments have been incorporated into the algorithms of the Chiron Technolas 116, Visx Star and Summit Apex laser units. After thousands of PRK procedures at TLC for mild to extreme myopia correction, we determined that there were substantial benefits to LASIK for higher myopia correction and began offering LASIK in July 1994.

Article by, TLC Laser Eye Centers, Inc.