

# LASIK

## **What is the procedure that uses a laser?**

When people talk about using a laser for refractive surgery, they are referring most often to the excimer laser. This laser vaporizes corneal tissue precisely. There are two main ways of using the laser to correct refractive error. One re-shapes the cornea by using the excimer laser to remove tissue from the front of the cornea (PRK and EPI-LASIK). The second raises a very thin flap of the front of the cornea and uses the excimer laser to re-shape tissue within the cornea (LASIK).

## **What is Epi-LASIK? (“bladeless LASIK”)**

Epi-LASIK is the newest surface laser procedure which utilizes new mechanical equipment which precisely separates the soft epithelial layer of the cornea from the thicker tougher deeper layer with a relatively dull mechanical separator. There is no blade incision into the cornea itself, and the surface layer that is removed re-grows within a few days. With epi-LASIK, or “bladeless LASIK” as it is often called, we avoid any complications due to flap problems and eliminate the possibility of diffuse lamellar keratitis, a type of inflammation which is seen occasionally after LASIK. Recovery takes a few days longer in the immediate postoperative period, and attainment of the very final visual acuity may be more delayed. Transient corneal haze has been reported, but this is rare with modern epi-LASIK techniques.

## **What laser will be used for my LASIK procedure and what is it’s FDA status?**

We use the highest level of technology for your LASIK procedure. Our surgeons perform LASIK on the Alcon [LADARVision system](#). The LADARVision system is FDA approved for the treatment of nearsightedness, farsightedness and astigmatism both for standard and wavefront treatments to minimize higher order aberrations.

## **Tell me more about this LADARVision system.**

The Autonomous LADARVision excimer laser combines the newest “flying spot” laser technology with the most advanced radar-like eye-tracking system to eliminate concern about eye movement during the procedure. With the LADAR tracker, each laser pulse is carefully and accurately placed to obtain a superior optical result. The LADAR system can also greatly reduce the risk of nighttime halos and glare due to its adjustable treatment zone and its wavefront correcting capabilities. By accommodating a larger pupil size and correcting higher order aberrations, this laser system permits more patients to have the LASIK procedure than ever before. The LADARvision flying spot technology is ideal for wavefront controlled Custom Cornea procedures to reduce higher order optical aberrations for even sharper vision. For more information on [LADARvision](#), visit the website of manufacturer: [www.Alcon.com](http://www.Alcon.com) and look up Custom Cornea LASIK and LADARVision.

## **What are the risks of LASIK or Epi-LASIK surgery?**

Laser vision correction is a real operation and every surgical procedure brings with it the risk of some problem. The primary annoyance with LASIK is seeing halos around lights at night. This is more prominent in people who have large pupils and less pronounced in people with relatively small pupils. We measure everyone’s pupil with an infrared “night vision” measuring device so that we can know the maximum size of the pupil in the dark. This allows us to warn patients with unusually large pupils that they may be subject to glare at night. However, with our new LADARvision

technology, this risk can be even further reduced for most patients. This is due to the laser's capability to compensate for a larger pupil size and to reduce spherical aberration by Custom Cornea treatment.

There is a relatively rare situation known as diffuse lamellar keratitis characterized by a sterile inflammation of the interface between the corneal flap and the deeper part of the cornea. This problem is rare and usually responds very well to a short course of steroid drops or, if necessary, to lifting of the flap and irrigation under it.

### **Do you do both eyes at one time?**

We usually perform LASIK on both eyes together however, in some cases, we may operate the two eyes at separate times. This also depends on the patient's preference. We always perform refractive lensectomy at separate times, usually one or two weeks apart. Astigmatic keratotomy is often performed on both eyes at the same time.

### **How long will it take?**

The LASIK procedure takes about 15 minutes per eye. There is some equipment setup and patient preoperative time, but once everything is set up, it doesn't take very long at all. (With refractive lensectomy or ICL implantation, the procedure itself takes about 20 minutes per eye.)

### **Am I awake during the LASIK procedure?**

You are awake but relaxed during the procedure. Your eyes will be numbed with eye drops so you should not feel any pain at all. Most patients report minimal discomfort, and report only a slight feeling of pressure during one portion of the procedure. Mild sedation will make you feel relaxed.

### **Will I have any pain?**

There is essentially no pain reported by most of our LASIK and Epi-LASIK patients. Some stretching of the eyelid is felt as the eyelid holder is put into position, and a transient feeling of pressure, usually less than one minute, is felt while a suction ring is placed. Most people have just slight operative discomfort and no postoperative pain at all. We usually give a small amount of oral Valium before the procedure to relax you.

### **How long is the recovery time and what should I expect during that time?**

We usually operate at the end of the week. Recovery from the LASIK surgery is very rapid and is one of the reasons it is a preferred procedure. Immediately following the procedure, most patients show marked improvement, and within 24-48 hours, have returned to normal activities. Most of our patients choose to return to work the Monday following their procedure, if not sooner.

For epi-LASIK surgery, the recovery period is usually about three to four days. During that time a "bandage" contact lens is worn. Many patients return to work after three days, but some may wish to stay out another day or two.

During the first few weeks, you may notice some fluctuations in your vision, which is normal and is part of the healing process. Night glare and halos may persist for the first few weeks but usually cease by the end of the two to three month healing process.

### **Will I have good vision immediately? How long will it take until my vision reaches its final status?**

Most people have vision adequate for functioning well by the day after surgery. Vision is usually improved further by the next day. However, rarely some blurring

may take as long as three months to clear fully. It is common to have a certain amount of temporary overcorrection which then drifts in the proper myopic direction within a few days to weeks. One can expect a larger amount of overcorrection with a larger refractive error or with a wavefront-corrected procedure. We usually tell patients that 80% of the healing occurs within the first 48 hours, but the remaining 20% of the visual clarity takes about 2-3 weeks to fall into place. Patients can usually get along well in the interim, sometimes with the help of temporary glasses.

### **What is the likelihood that my vision will be good from this procedure?**

Just about all patients have their uncorrected vision vastly improved. The majority of patients obtain uncorrected vision after surgery that is similar to their best-corrected visual acuity prior to surgery. Some patients, especially those who have wavefront corrected procedures, obtain better vision than their preoperative bestcorrected vision. However, a small percentile (about 1%) will have best corrected acuity less sharp than their acuity before surgery. In almost all cases, such a loss of best corrected acuity consists of one line (20/25 for example), which is an amount that most patients would not even notice. The majority of patients obtain good (20/40 or better) distance vision without correction; most obtain 20/20.

### **Will I have 20/20 vision after the procedure?**

Having a successful experience with your refractive surgery begins with realistic expectations of what it can do. The purpose of the surgery is to enable you to perform many activities without glasses, not just to give you 20/20 vision. While the vast majority of patients achieve excellent unaided vision, not everyone gains complete freedom from glasses. The goal of refractive surgery is to obtain useful, uncorrected vision close to or better than the best corrected vision you have now using your glasses or contacts.

### **Will I be able to see without glasses after the laser vision correction procedure?**

The majority of refractive surgery patients are able to perform most activities without glasses, but some may still need help for especially demanding vision situations (such as driving at night or reading stock quotes). Also, you may still need reading glasses as you grow older, depending on the type of procedure performed. Your surgeon will give you more information on what results you can realistically expect.

### **What if I only wear reading glasses?**

The need for reading glasses is one that affects most people over the age of 40. With age, the eye's lens becomes stiff and can no longer accommodate easily. This causes the condition "Presbyopia", which means a difficulty in focusing on nearby objects. Presbyopia can be treated by making one eye a bit myopic to allow near vision (with LASIK, Epi-LASIK, CK or ICL surgery). The only way to actually cure presbyopia is with the Crystalens implant which actually allows each eye to focus for near. Corneal surgery such as LASIK or Epi-LASIK surgery cannot treat the cause of presbyopia. However, there is a way to reduce your dependency on reading glasses with monovision.

### **What is monovision and why would I want it?**

Monovision means correcting one eye better for distance and the other eye better for near. The distance eye will be slightly blurred at near in patients over 40, and the near eye will be somewhat blurred at distance, depending on the amount of monovision given.

We see with our brains not our eyes; therefore, the brain will pay attention to the sharper image. If one eye is focused better for far and the other for near, then the far eye's image will be noticed more for distance vision and the near eye's image for near vision. We find that most patients with monovision are very happy with it and that it increases their degree of freedom from spectacle or contact lens correction. Occasionally, a patient does not like monovision, and we can usually enhance the near eye to make it also into a distance eye without difficulty. Monovision can rather easily be simulated with a contact lens trial from your eye doctor. If you are uncertain if monovision would be comfortable for you, a contact lens trial is recommended.

### **Is LASIK considered permanent or does it need to be repeated?**

As you age, your eye may undergo some change, especially change in the lens of the eye. LASIK has undergone numerous clinical trials and has been done for years in Canada and Europe. Patients that have had this procedure several years ago are still enjoying remarkable vision. Some patients do not achieve full correction with the initial treatment and may have a need for an enhancement. An enhancement is a secondary procedure where additional laser must be added to achieve the full correction that was intended. This is more common in patients who are very nearsighted or farsighted or have a high astigmatism.

As the eye ages, especially after the age of 50, changes in the lens of the eye may cause refractive changes. For patients who are showing ongoing changes in the density of the natural lens of the eye with age, we would consider refractive lens surgery rather than LASIK or epi-LASIK which is performed on the cornea and does not affect the lens of the eye. Once refractive lens surgery has been performed, then the eye's refraction will not change with time, and of course, cataract can never develop.

### **What is an enhancement and when might it be performed?**

An "enhancement" is an additional refractive surgery that is performed to "fine tune" the original procedure. This is performed when there is either an over or under reaction by the eye to the laser treatment. Enhancement is never performed until at least 3 months have passed or refractive stability has occurred.

### **Can I speak to patients who have had this procedure?**

We have many patients who are very happy with their refractive surgery and who are happy to speak to potential patients who have concerns. We can usually match you up with someone who has a similar refractive error to yours. Please ask our doctors or refractive surgery coordinators to arrange this for you.