



TRUSTED LASIK SURGEONS™

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LASIK AND OTHER VISION CORRECTING PROCEDURES

Vision correcting surgery procedures generally fit into two main categories: (a) external procedures using a laser or other device on the cornea (b) internal lens implants which involve inserting a lens into the eye. The most common external corneal procedures are LASIK and PRK laser procedures and Conductive Keratoplasty

The surgeons listed at Trusted LASIK Surgeons offer complete vision correcting procedures. All provide IntraLase “all laser” or “bladeless LASIK” and Wavefront-Based LASIK and PRK, as well as lens implant procedures such as Phakic Implants and Refractive Lensectomy (RLE). Many of the LASIK surgeons listed in the Trusted LASIK Surgeons directory also offer the other refractive procedures like CK (Conductive Keratoplasty)

LASIK (Laser In Situ Keratomileusis)

Refractive Surgery Treatment for:

- ***Nearsightedness***
- ***Farsightedness***
- ***Astigmatism***
- ***Presbyopia (Monovision)***

LASIK is the most common refractive surgical procedure worldwide and nearly one million procedures are performed annually in the United State. LASIK surgery consists of the creation of a corneal flap with either an IntraLase (femtosecond laser) or a surgical blade (in medical terms, a “mechanical microkeratome”). The flap is the gently folded back and the excimer laser resurfaces the cornea to a new shape. LASIK has been approved by the FDA to correct nearsightedness (Myopia), farsightedness (Hyperopia), astigmatism (either combined with nearsightedness or farsightedness), and Presbyopia (where LASIK is performed on one eye to create monovision).



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“All Laser LASIK” (Bladeless)

All Laser or Bladeless LASIK is performed by using the IntraLase Pulsion™ FS Laser system and is the only all-laser alternative to the mechanical microkeratome (surgical blade). During an All Laser LASIK, the IntraLase laser creates a corneal flap of a precise thickness and diameter with a lower suction level than a standard microkeratome without using a blade. Bladeless LASIK offers laser eye surgeons optimal precision and total control, which makes creating a flap safer than standard microkeratomes using higher suction and blades. All Laser LASIK enables patients to choose laser vision correction surgery with more confidence.

PRK (PhotoRefractive Keratectomy)

Refractive Surgery Treatment for:

- ***Nearsightedness (Myopia)***
- ***Farsightedness (Hyperopia)***
- ***Astigmatism***
- ***Presbyopia (Monovision)***

PRK (PhotoRefractive Keratectomy) involves reshaping the curvature of the cornea with an excimer laser to correct nearsightedness or farsightedness with or without astigmatism. PRK was the first procedure approved by the FDA in 1996. It is performed by removing the surface layer of the cornea (epithelium is the “skin” of the eye) and applying the laser directly to the layers beneath the surface. It is essentially LASIK without the creation of a LASIK flap. PRK generally produces results similar to LASIK but the patient usually experiences more discomfort and has a slower recovery of vision than in LASIK as it takes several days for the epithelium to grow back. PRK has been approved by the FDA to correct nearsightedness (Myopia), farsightedness (Hyperopia), astigmatism (either combined with nearsightedness or farsightedness). Monovision is also an option with PRK, for either nearsighted, farsighted or astigmatic eyes as well as with Presbyopia, although Monovision PRK represents an Off Label Use of the lasers since it is not FDA-approved.



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Wavefront-guided (Custom) LASIK and PRK

The Wavefront-Guided procedure is used for LASIK and PRK. All the Wavefront guided procedures were approved by the FDA for LASIK. They can be utilized with PRK but this represents an “off label” use of the laser.

Procedure is used with LASIK and PRK in treatment of:

- ***Nearsightedness***
- ***Farsightedness***
- ***Astigmatism***
- ***Presbyopia (Monovision)***

One of the most exciting advances in the field of refractive surgery involves the application of Wavefront testing to the human eye. The basis of Wavefront testing is from the field of adaptive optics, used for years by astronomers to build better lens systems for improving the optics of telescopes.

The human eye has two broad categories of aberrations, lower order and higher order. Lower order aberrations represent the patient’s prescription for glasses. There are many higher order aberrations but the two most important ones for potential LASIK patients are spherical aberration and Coma. When these two aberrations are increased above preoperative levels, patients may notice more problems with the quality of their night vision and be more aware of halos, starbursts, flare, and glare.

Conventional laser eye surgery (LASIK and PRK) for years was excellent at reducing or eliminating the lower order aberrations and most patients obtained satisfactory uncorrected vision, usually near 20/20. However, conventional laser eye surgery procedures like LASIK and PRK have often increased the degree of higher order aberrations, which accounted for the possible increased likelihood of night vision problems.



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Wavefront-based laser eye surgery measures the amount of both lower and higher order aberrations. This information is then used by the excimer laser system for both LASIK and PRK in an attempt to either reduce or at least minimize the increase of higher order aberrations. All of the FDA approved laser systems for LASIK and PRK now offer this type of treatment, so that each patient's optical system is measured more accurately than ever before, producing in effect a unique "finger print" of their pre-operative visual problems. This truly customized treatment plan is then implemented in the laser eye surgery (LASIK, PRK) for each patient.

This Wavefront fingerprint enables the laser eye surgeon to program the laser in order to get the best results for the laser eye surgery that is best for you. By using Wavefront testing, there is a possibility that your existing higher order aberrations may not increase at all, and some patients report that they can see even better than they did with glasses or contact lenses. This is called a gain in best spectacle corrected visual acuity. The FDA studies of Wavefront based treatments in LASIK, PRK and other laser eye procedures have improved the chance of obtaining **20/20 vision** or better and have decreased the chances of significant night vision problems.

LENS IMPLANTS

RLE (Refractive Lensectomy) or CLE (Clear Lensectomy)

Refractive Surgery Treatment for:

- *Farsightedness (Hyperopia)*- Moderate to high levels
- *Nearsightedness (Myopia)*- Can possibly be used for people with a high degree of nearsightedness (Myopia) where LASIK or Phakic implants are not suitable procedures.
- *Astigmatism*

RLE (Refractive Lensectomy) or CLE (Clear Lensectomy) is a refractive surgery procedure where the eye surgeon removes the internal lens of the eye, as in a cataract operation and inserts a lens implant of a stronger power inside the eye. The refractive surgeons will calculate the power of the replacement lens implant through special measurements of the length and curvature of the eye, which are then entered into a special computer formula.



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Phakic Implants

Refractive Surgery Treatment for:

- **Extreme Nearsightedness (Myopia)**
- **Astigmatism (*FDA approval expected in the near future*)**

Phakic Implants are intraocular lens implants (inside the eye rather than on the surface of the eye like contact lenses) surgically placed inside the eye in front of the eye's natural lens by a refractive eye surgeon. Phakic Implants are used to correct higher amounts of nearsightedness (Myopia). Because this is a refractive surgery procedure performed inside the eye rather than on the surface of the eye as in laser vision surgery, the risks are slightly higher. Phakic Implants are utilized for higher amounts of nearsightedness (Myopia) usually above -8.00 D to -17.00 D in an eye, which is not correctable by laser eye surgery. Phakic Implants can also be used in cases with lower amounts of myopia if laser eye surgery is contraindicated because the cornea is too thin or abnormally shaped. At present, these implants do not correct astigmatism but FDA approval is expected in the near future. Two Phakic implants are approved by the FDA. The Visian from STAAR surgical and the Verisyse from Advanced Medical Optics (AMO). More details about these implants are available on the company web sites. For STAAR, please visit [Visian](#) and for Verisyse please visit, [Verisyse](#).

Toric Implants.

Refractive Surgery Treatment for:

- **Astigmatism for Nearsighted (Myopic) Eyes**

Toric Implants have the astigmatism correction incorporated in the power of the implant and they are available for some eyes undergoing Refractive Lensectomy (RLE or CLE). This refractive medical procedure should be available in late 2008 for Phakic Implants for Nearsightedness (Myopia).



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Cataract Implants

Refractive Surgery Treatment for:

- **Cataracts**

Cataract surgery is performed under local anesthesia on an out patient basis. The surgery is accomplished in 15 to 30 minutes, utilizing a very small incision, usually without sutures. The cataract is broken up (emulsified) with an ultrasonic vibrating needle and the liquefied cataract is aspirated through this same needle. The cataractous lens is then replaced with a lens implant designed to replace the natural lens. This new lens can usually reduce or eliminate the previous need for glasses in near sighted or farsighted patients so they may no longer require glasses for distance. Lens implants can also create a monovision situation similar to the monovision form LASIK or PRK. More recently, the FDA has approved 3 “presbyopia” correcting implants which can allow the eye to see clearly for both far and near. These lenses include the multi-focal lenses: the Restor by from Alcon and the Rezoom by Advanced Medical Optics (AMO). The Crytalens from Eyeonics is designed to change focus by flexing in the eye. You can learn more about these lenses by visiting the company web sites. For the Restor lens, please see www.acrysofrestor.com. For the Rezoom lens, please see www.rezoomiol.com. For more information about the Crystalens, please see www.crystalens.com.



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OTHER REFRACTIVE SURGERY PROCEDURES

CK (Conductive Keratoplasty)

Refractive Surgery Treatment for:

- ***Mild Farsightedness (Hyperopia)***
- ***Presbyopia*** (in normal sighted eyes and in patients who are now normal sighted following laser surgery years earlier but who are now Presbyopic).

Nearvision CK (Conductive Keratoplasty) is capable of correcting low amounts of farsightedness (Hyperopia) or Presbyopia. The procedure is very safe and easy to perform. CK consists of applying a special probe with a very fine, short tip. The tip is typically applied to 8 spots on the peripheral cornea, delivering a less than one second burst of radio frequency energy to the eye which steepens the central corneal curvature. Conductive Keratoplasty is the only FDA-approved procedure for the correction of presbyopia. .

NearVision CK (Conductive Keratoplasty) can change how the eye focuses light by reshaping the cornea to improve near vision. It uses a controlled release of radiofrequency (RF) energy to shrink corneal tissue, which steepens the cornea. This steepening creates a safe and predictable modification to the topographical (surface) curvature of the cornea for the temporary reduction of Presbyopic and mild hyperopic symptoms. CK(R) is usually performed on only one eye and is designed to reduce the dependence on reading glasses. As the patient ages, the effect of the CK can become less and the procedure may need to be repeated to maintain best reading vision.

Limbal Relaxing Incisions or Arcuate Incisions

Incisions in the cornea are accomplished with a special diamond scalpel where the blade depth is set by a micrometer as determined by the corneal thickness. These incisions are placed in the steep or more curved portion of the cornea in order to reduce the curvature and in that way reduce the astigmatism. Limbal relaxing incisions are placed just inside the white portion of the eye (sclera). Arcuate incisions are placed in the more central clear portion of the cornea.

Refractive Surgery Treatment for:

- **Astigmatism**