

## **LASIK Alternatives – What if I am not a Candidate for LASIK?**

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There are a variety of vision correction alternatives for patients who are not ideal candidates for LASIK. These alternatives include PRK, EPI-LASIK and LASEK, which are similar to LASIK except that no corneal flap is created. Other options include clear lens exchange (CLE) which is essentially cataract surgery solely for refractive purposes. In CLE the natural lens that is removed is not cloudy (as it is in cataract surgery) but has a refractive error that is corrected when a new lens is implanted. Other LASIK alternatives include the Visian and Verisyse implants, both of which are like implantable contact lenses. Premium lens implants such as the Multifocal, multifocal-toric, toric, accommodative IOLs can also be used during CLE to give patients a wider range of vision, or in the case of the Toric lens, to reduce astigmatism.

### **PRK and Epi-LASIK**

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PRK and EPI-LASIK, collectively known as surface ablation procedures, are vision correction options for patients who are not ideal candidates for LASIK because of a pre-existing dry eye condition or thin corneas. In LASIK, a flap is created in the cornea which decreases sensation and may worsen dry eye symptoms. PRK or EPI-LASIK may be better treatment options for those with moderately dry eyes because fewer corneal nerves are affected when compared to LASIK. In addition, the flap created in LASIK may weaken the cornea's stability in patients with thin corneas and may eventually lead to the cornea changing shape with a return of nearsightedness and irregular astigmatism. The range of correction with PRK and EPI-LASIK is similar to standard LASIK. However, since less corneal tissue is disrupted with PRK and EPI-LASIK, thinner corneas can be treated. LASEK is another option for patients with corneas that are too thin or too steep for LASIK.

### **The Procedure**

#### **PRK and Epi-LASIK**

PRK has the longest track record in the field of laser vision correction with more than 20 years of results worldwide. It differs from LASIK in that no flap is created. Instead, the thin surface layer (epithelium) of the cornea is removed in sections prior to applying the laser pulses. EPI-LASIK is a variation of PRK whereby the epithelium is removed as a continuous sheet, using a mechanical instrument called an epi-keratome. Again, no flap is created.

In either PRK or EPI-LASIK, after the epithelial layer is removed and the laser correction of the eye occurs, a specialized bandage contact lens is placed on the eye to promote comfort and healing. After two to three days a new layer of epithelium is regenerated by the eye and the bandage is removed. Custom laser treatments are also available with PRK or EPI-LASIK, and research indicates that when doing custom laser treatments in certain selected patients, PRK and EPI-LASIK may actually provide superior results to LASIK.

## **LASEK**

LASEK is an eye surgery that combines the benefits of PRK and LASIK. In LASEK a shallow layer of the cornea is lifted by an ultra thin blade. Alcohol is then used to further loosen this layer and, after this layer is loosened and lifted, a laser is used to reshape the remaining surface of the cornea. Because the layer of the cornea that is lifted during the LASEK procedure is much thinner than a traditional LASIK flap, this procedure is used mostly for patients with corneas that are too thin or too steep for LASIK.

For any of these procedures, the total surgical time is about 5-7 minutes per eye. After a brief rest, patients leave the Laser Center wearing sunglasses. Because vision is initially blurry, we prefer that the patient bring a companion for the procedure. There is discomfort after the procedure, usually tearing, light sensitivity and a sensation that there is something in the eye. Pain relieving eye drops and over the counter pain relievers alleviate most of the discomfort.

A significant advantage of PRK, EPI-LASIK and LASEK over LASIK is the reduction of risks associated with a corneal flap. However, a significant disadvantage of this technology is the slower recovery and longer period of eye discomfort. With LASIK, typical visual recovery is about 90% in a one day, and most people experience little or no pain. With EPI-LASIK and PRK, typical visual recovery takes about a week and eye discomfort can last several days as well. In any vision correction procedure, vision typically continues to improve for many weeks after the procedure.

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### **Side Effects**

More than 99% of patients obtain vision within two lines of 20/20 and can perform exceedingly well in most activities. The side effects associated with PRK and EPI-LASIK are usually temporary, but some can be chronic. The most common side effects are dry eye, nighttime glare, and the need for a fine-tuning or enhancement of the procedure.

The goal of refractive surgery, whether it be LASIK, PRK or EPI-LASIK, is to eliminate or reduce dependency on glasses or contact lenses, but the results are not guaranteed.

### **Visian ICLs**

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#### **What is the Visian ICL?**

The Visian ICL is a phakic intraocular lens (IOL) used during refractive surgery for correcting myopia and hyperopia, with or without astigmatism. Unlike the IOLs that are used during cataract surgery, the Visian ICL does not replace the eye's natural lens. Instead it is placed behind the iris, in front of the natural lens. Because the phakic IOL does not replace the lens, but supplements the lens, it is like a prescription contact lens. In fact it is sometimes referred to as an implantable contact lens. The best candidates for the Visian Lens are between 20 and 50 years old, with moderate to high levels of myopia, and healthy eyes.

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## What Makes the Visian ICL different?

The Visian ICL is often informally called an implantable contact lens, however, ICL actually stands for Implantable Collamer Lens which identifies the unique material that the lens is made of.

Unlike other phakic IOLs, the Visian ICL is made from Collamer, a unique organic lens material designed specifically for the Visian lens. This proprietary lens material has greater biocompatibility

than acrylic and silicone lenses. The Visian ICL is also foldable, requiring a smaller incision during the surgical procedure than the other available lenses. This smaller incision is seen as less invasive, does not require sutures, and is astigmatically neutral. Another advantage to the Visian ICL is that while it is meant to stay in the eye indefinitely, if a patient's vision changes, the Visian ICL can be removed or exchanged by a trained ophthalmic surgeon.



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## Who is a Candidate?

If you are between 21 and 45 and nearsighted, you are an excellent candidate for the Visian ICL. It is preferable that you have had no previous ophthalmic surgery or history of ophthalmic disease such as glaucoma, iritis, or diabetic retinopathy. Other symptoms that may make you a good candidate include if a patient has:

- High myopia: patient having greater than 10 diaptor of myopia
- Thin Corneas: the Visian ICL does not have any effect on the cornea and may be appropriate if you have thin corneas.
- Dry Eyes: Visian ICL does not cause or contribute to dry eyes. If you have dry eyes, ask your doctor if the Visian ICL may be the best vision correction option for you.

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## Clinical Results

### Verisyse

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The Verisyse implant is another phakic implant which is placed in a patient's eye in front of the iris. As with the Visian ICL, the natural lens of the eye remains. Thus the Verisyse lens gives the the patient's eye another focusing lens that provides high quality, high definition focus like a normal eye. The best candidates are healthy individuals age 20-50 with stable prescriptions who have moderate to high levels of myopia.

As with all surgeries, there is also the remote possibility that patient will experience infection. Swelling of the cornea and cataract formation are also potential complications for the Verisyse implant.