Photorefractive Keratectomy

Photorefractive keratectomy (PRK) is the original laser vision correction and the forerunner to LASIK. Because PRK only treats the outermost surface of the eye, it offers unique advantages to those who may not qualify for LASIK.

INTRODUCTION

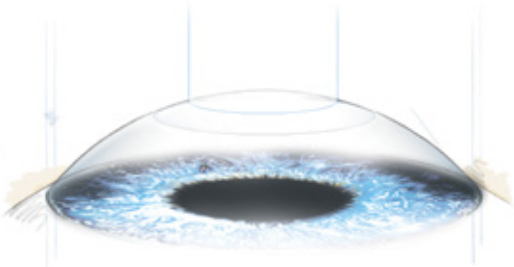
PRK was invented first, but LASIK became more popular because patients experience less discomfort and obtain good vision more quickly. Although vision improvement is gradual over a few weeks or months, PRK is often the preferred treatment for patients not suited for LASIK—specifically those with thin corneas.

HISTORY

The excimer laser's potential was discovered by Dr. Srinivasan, a photochemist at IBM who was researching laser systems for cutting plastics and other organic materials. In the early 1980's, he saw the possibility for the excimer laser to interact with biological tissue. But it was Dr. Steven Trokel, an ophthalmologist working with Srinivasan, who introduced the idea of using the excimer laser to reshape the cornea. In 1988, the first patient to have excimer laser vision correction was treated with PRK in Germany.

RANGE OF CORRECTION

PRK can be used to treat the same range of focusing problems as LASIK—from -16 diopters of nearsightedness to +3 diopters of farsightedness, and up to -6 diopters of astigmatism. The primary limiting factor is the thickness of the cornea, since only so much can be safely removed.



Once the protective layer of cells is brushed aside, the laser reshapes underlying tissue.

SUCCESS RATES

The success of PRK in reducing the need for glasses or contact lenses is excellent. FDA research shows that 95% of people achieve 20/40 vision or better and approximately two-thirds obtain 20/20 vision.

In our experience, vision achieved with PRK is ultimately very similar to outcomes we obtain with LASIK. To learn more about your approximate chances of achieving 20/20 vision, please refer to our LASIK Success Rates document. Copies are available from your optometric physician and our Refractive Surgery Counselors—or you can visit our website.

Unfortunately, no surgical procedure can be guaranteed. Instead of hoping to forever eliminate your need for corrective lenses, a more realistic goal is to reduce your dependence on glasses and contact lenses.

HOW SURGERY WORKS

PRK is performed with the same highly sophisticated excimer laser our surgeons use for LASIK. Using a cool beam of ultraviolet light, this procedure reshapes the cornea by precisely removing microscopic amounts of tissue.

However, unlike LASIK where a thin flap is created and folded back to expose underlying tissue, the surgeon gently brushes aside a protective layer of surface cells covering the tissue to be treated. Anesthetic drops are placed on the eye so there is very little if any discomfort during the procedure.

Once the protective layer of cells is brushed aside, the laser is guided to reshape the underlying tissue in a procedure that usually takes less than a minute. A protective contact lens is placed over the treated area, which allows the surface cells to regenerate and heal during the next 3 to 7 days. In addition to helping the healing process, the contact lens reduces most of the discomfort associated with recovery.

Although PRK is quick and looks relatively simple, your surgeon's skill is critical—especially in the event that something unexpected occurs. The surgeon's ability to react correctly can forever affect your visual outcome.

AFTER SURGERY

The protective contact lens will be removed several days after surgery. Your vision will likely be blurry with significant fluctuation throughout the first week. Most people see rapid improvement and less fluctuation during the second week with further improvement over the first month. However, vision may take 3 to 6 months to stabilize.

Eye drops are used frequently during the first week to help the eye heal, prevent infection and decrease any inflammation resulting from the surgery. Steroid eye drops are sometimes required on a decreasing schedule for several months after surgery.

QUESTIONS

Learn more by visiting our website or read our booklet on LASIK—as PRK is a similar procedure. If you have questions about PRK, talk with your optometric physician or call our refractive surgery counselors.

Pacific Cataract and Laser Institute
Refractive Surgery Counselors

800-884-7254
www.pcli.com

CANDIDATES

Good candidates for PRK must meet the following criteria:

- At least 18 years of age
- Stable refraction
- Healthy eyes with no disease or abnormality
- Nearsighted or farsighted within the appropriate range
- Not a good candidate for LASIK
- Willing to accept the risk of possible complications and prolonged recovery

ADVANTAGES

- Treatment is possible on corneas too thin for LASIK
- No risk of corneal flap complications that come with LASIK
- If further correction is needed, enhancement treatment can usually be performed

DISADVANTAGES

- Pain can be significant for several days
- Full visual recovery can take 3 to 6 months
- Unless both eyes are treated at the same time, eye coordination can be difficult
- Steroid eye drops may be required for 4 to 6 months

RISKS

Potential risks include:

- Infection
- Undercorrection or overcorrection
- Delayed healing of the epithelium (layer of protective surface cells)
- Inability to tolerate contact lenses

POSSIBLE SIDE EFFECTS

Possible side effects during the healing process include:

- Halo effect
- Corneal haziness
- Light sensitivity
- Fluctuating vision
- Initial overcorrection (temporary farsightedness)

Scan to watch our PRK video, or visit the laser vision correction section of our video library at pcli.com