



Photorefractive Keratectomy

What is Photorefractive Keratectomy?

Photorefractive Keratectomy, or **PRK**, is a type of laser eye surgery for people who suffer from nearsightedness (myopia), farsightedness (hyperopia) or astigmatism. It is similar to LASIK in that it involves using the Excimer laser to reshape the cornea to minimize or eliminate your dependence on eyeglasses or contact lenses. It is different in that unlike LASIK, the eye surgeon doesn't need to use a microkeratome to make a flap, but instead is able to apply the laser directly to the surface of the cornea to achieve the desired vision correction effect. PRK is better suited for people with thin corneas or certain other corneal abnormalities where using a microkeratome might not be the best choice. Also it may be preferred for those in the United States military where PRK is the approved procedure for those in active combat and certain other positions. PRK has been approved by the FDA for myopia since 1995 and for hyperopia since 1998 and enjoys an excellent safety profile. Since it does not use a microkeratome, there is no risk of flap complications.

In PRK to correct myopia, the steep cornea is made flatter by removing tissue from the center of the cornea. To correct hyperopia, the flat cornea is made steeper by removing tissue from the outer edges of the cornea. To correct astigmatism, the cornea is transformed into a more spherical shape.

The PRK Process

Photorefractive Keratectomy involves, much like LASIK, the reshaping of the cornea. Unlike LASIK which involves removing the inner tissue of the cornea, PRK applies laser energy to change the surface of the cornea. Before surgery you will need to have a careful review of your health and eye history. During your initial evaluation, you will have a refraction to measure your actual prescription. This will generally be performed with dilating eye drops; in order to get the best measurements. The shape of the surface of your eyes will be mapped using an instrument called a corneal topographer, also known as an Orbscan. Finally the thickness of your cornea will be measured using an instrument called a pachymeter.

On your day of surgery, the surgeon will clean the area around your eyes with a hygienic but gentle cleansing pad. A series of antibiotic drops will be placed into your eyes in order to get them ready for your treatment and remove any germs in your eye, which will help to prevent any possibility of infection. Other drops will be placed in your eyes to lightly numb the cornea so that you are comfortable during your treatment.

After you recline on the bed under the laser, an eyelid holder called a speculum, is gently placed between your eyelids to remind you not to blink. Next the epithelium, a thin, protective layer that

covers the cornea, is removed. Since you have had numbing drops placed in your eyes, this will not be uncomfortable, but will feel like a slight pressure around your eyes. The surgeon will instruct you to look at a small light during your procedure. Don't worry if you cannot stay perfectly steady- just do your best. Today's laser technology uses a tracking system which will actually follow your eye movements if you can hold pretty still during your procedure.

To correct nearsightedness, farsightedness or astigmatism, your surgeon will use an Excimer laser. The Excimer laser is programmed based on calculations made from the measurements taken during your consultation. The laser delivers the exact correction needed and sends tiny spots of light beams to certain predetermined positions on your cornea in order to change the shape to what is required for you to see well. The surgeon has full control of the laser, and monitors the position of the laser on the cornea and the tracking system monitoring the position of your eye in order to make sure the beam is in the correct place. The application of the laser usually takes 1-2 minutes per eye depending on the amount and complexity of the correction that you need.

A soft bandage contact lens may be placed over the eyes to help the epithelium heal. Additional [eye drops](#) may be placed in your eyes as the procedure is finished just to give you some added comfort and protection and to help your eyes heal quickly. Sleeping goggles will be supplied to prevent you from rubbing your eyes. Pay careful attention to the detailed instructions your doctor gives you regarding additional drops to use at home and when to return for your follow up visits, which are generally scheduled at 1-day, 3-days, 1-week, 1-month, 3-months and 1-year.

You will need someone to drive you home on the day of surgery. We encourage you to go home on the day of surgery and take a long nap. When you awaken you will notice several things: First, you will notice a dramatic improvement in your vision. It will improve each day as your eyes continue to heal. You should expect to feel some mild "grittiness" like a little sand or dust has gotten into your eyes for a day or so. This is normal. As your eyes heal it is normal and expected to be a little sensitive to light and perhaps see some glare or even haloes around lights at night. This too will diminish as your eyes heal. Acular eye drops will be supplied on surgery day to help alleviate this scratchy feeling.

PRK Advantages

- Better for thin corneas
- Good for low to high levels of myopia, hyperopia and/or astigmatism
- Good for people in military service
- No flap complications

PRK Disadvantages

- Longer healing time
- Longer time for results

Photorefractive Keratectomy is a less used procedure due to LASIK. However, it is still the procedure used when LASIK is not the best choice due to eye irregularities. As with all laser surgery, there is always a risk and side effects such as ongoing light sensitivity and halos. It is important to talk with your doctor about the risks in your specific case.