

LASIK・PRK: Patient Information

LASIK is a type of refractive surgery that reshapes the cornea of the eye in order to improve vision. LASIK is the acronym for Laser in situ Keratomileusis, and it is used to correct myopia, hyperopia, and astigmatism. It is an outpatient procedure performed by ophthalmologists.

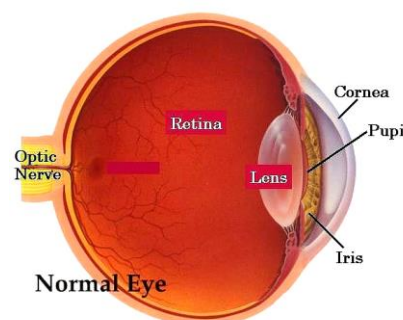
LASIK is performed by cutting a flap in the outer portion of the eye and exposing the underlying cornea to a laser beam. The cornea is then reshaped and the flap is replaced. The procedure is generally completed in about 15 minutes.

As with any surgery, there are risks associated with LASIK. For instance, there is the possibility of under- and overtreatment, necessitating additional treatments, glasses, or contact lenses after surgery. In addition, there is also the risk of developing dry eyes and that of experiencing glare or halos in dim light. Therefore, it is important that you understand the pros and cons of the procedure.

How do the Eyes Work?

As light enters the eye, it first passes through the cornea—the clear “window” of the eye. Because the cornea is curved, the light rays are refracted. The light then passes through the pupil to the lens. The iris—the colored portion of the eye—regulates the amount of light that enters the eye. This is achieved by the action of muscles that cause the pupil to contract if there is too much light or to dilate if there is too little light. When the light hits the curved surface of the lens, it is refracted or bent even more so that it focuses properly on the retina. The retina then converts the light into electrical energy that passes through the optic nerve to the brain. This sequence may be summarized as follows:

- **Cornea** is the clear surface of the eye. Light rays are refracted as they pass through the cornea to the pupil.
- **Iris** is the colored portion of the eye. It regulates the amount of light that passes through the pupil.
- **Pupil** is the opening at the center of the iris. Light passes through the pupil to the lens.
- **Lens** refracts light in order to focus it properly on the retina.
- **Retina** converts light energy into electrical energy, which is passed to the optic nerve.
- **Optic nerve** serves as a pathway to the brain stem, which transfers the electrical energy to the occipital lobe.



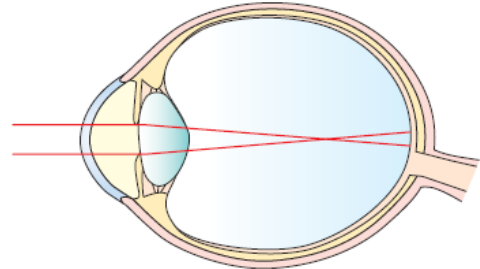
This entire process works perfectly in people with 20/20 vision. Imperfect vision occurs when the shape of the eye is irregular or when the light rays do not focus directly on the retina; these imperfections are collectively known as refractive errors.

Refractive Errors

The three most common refractive errors that can be surgically corrected by LASIK are nearsightedness, farsightedness, and astigmatism.

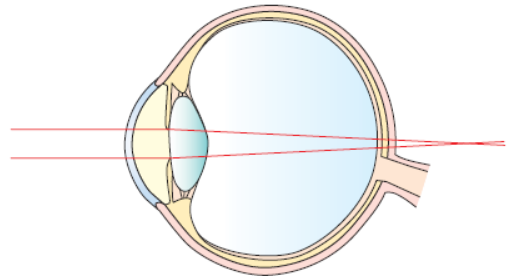
Nearsightedness (Myopia)

The eyeball is too long for the lens and the cornea to focus light on the retina. Hence, light rays from distant objects are focused in front of the retina. This blurs distance vision.



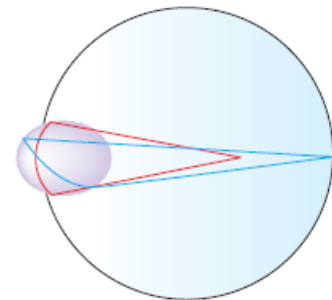
Farsightedness (Hyperopia)

The eyeball is too short for the lens and the cornea to focus light on the retina. Light rays from close objects are thus focused behind the retina. This blurs near vision.



Astigmatism

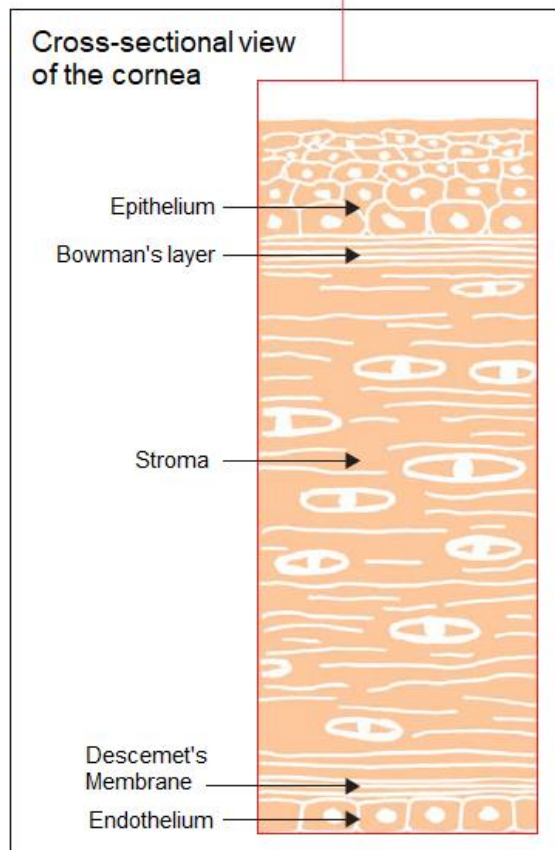
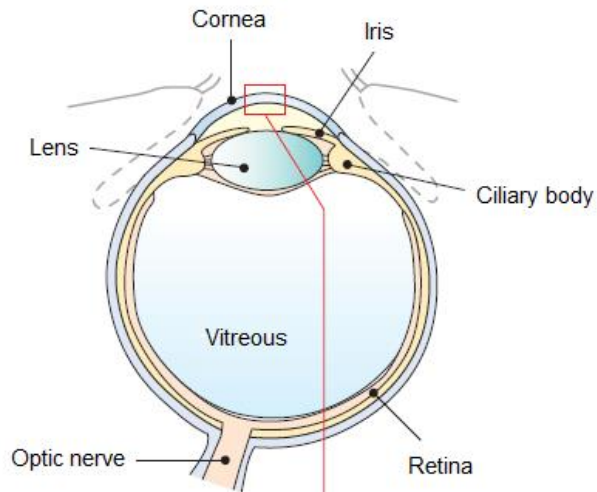
The most common of all eye disorders, astigmatism occurs when the eyeball is shaped more like a football than a basketball. This odd shape causes the light to focus on two points on the retina rather than one. Astigmatism is often accompanied by either nearsightedness or farsightedness. In such cases, LASIK treats both refractive errors simultaneously.



LASIK, PRK, and other refractive procedures correct nearsightedness, farsightedness, and astigmatism by reshaping the cornea so that the focal point of the light rays entering the eye is on the retina.

Cornea

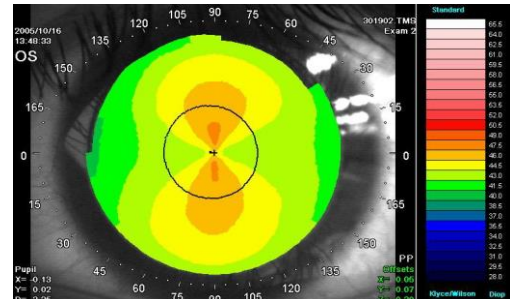
The corneal tissue is arranged in five basic layers, each with an important function. The thickness of the cornea is approximately 0.53 mm.



Examination: Preparing for LASIK Surgery

Prior to LASIK surgery, you will have to go through a series of eye tests. Your doctor will perform complete eye examinations and obtain a detailed eye history. The examinations should include the following:

- Discussion of medical history, lifestyle, and expectations from the surgery
- Corneal topography and eye aberration
- Refractive error
- Visual acuity
- Intraocular pressure
- Pupil and corneal thickness
- Tear function analysis
- Dilated eye examination to check for ocular irregularities



Corneal Topography Map

Indication: Am I a LASIK Candidate?

During these examinations, the doctor will determine whether you are a good candidate for LASIK. There are a few general requirements for being a LASIK candidate:

- You should be at least 18 years old.
- Your spectacle corrected visual acuity should be more than 20/20.
- You must not suffer from optical conditions, such as cataract or retinal diseases.
- You must not suffer from general diseases, such as uncontrolled diabetes or autoimmune disorders.
- You should not be pregnant.
- Some jobs prohibit certain refractive procedures. Be sure to check with your employer or professional society before undergoing LASIK surgery.
- You must understand the risks involved in LASIK surgery and have realistic expectations regarding the outcome.

If you have been taking any medication for a long period, please consult your doctor because it may affect the safety and effectiveness of LASIK.

LASIK Surgery

Excimer Laser

LASIK is accomplished by using an excimer laser. Each pulse of the excimer laser removes a microscopically thin section of tissue (usually less than 1 μm) from the cornea. Multiple pulses of the excimer laser are applied to the cornea in a computer-controlled manner in order to remove a precise amount of stromal tissue in a fixed pattern. The corneal surface is flattened, and uncorrected distance vision is improved.

Femtosecond Laser

In LASIK, a thin flap of surface corneal tissue is created using a device known as a femtosecond laser. However, in some cases when the femtosecond laser does not work, we resort to microkeratome or PRK surgery.

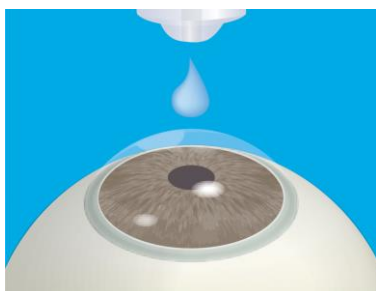


Quest™ M2

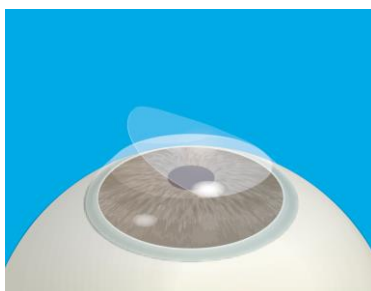


AMO IntraLase FS Laser

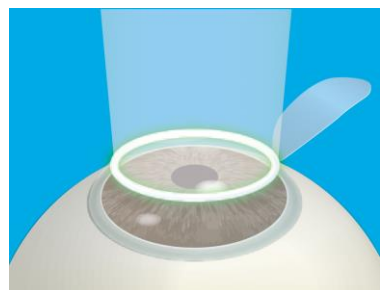
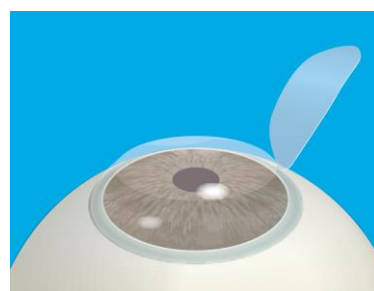
LASIK Surgery: The Procedure



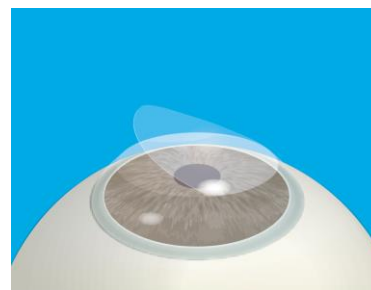
At the beginning of the procedure, the eye is anesthetized with topical eye drops.



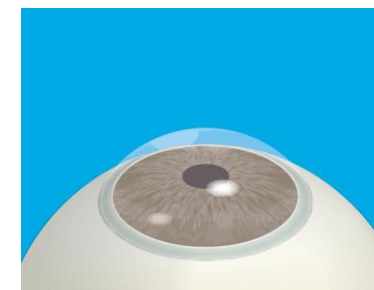
The surgeon then uses a device called a femtosecond laser to create a corneal flap on the outer layer of the eye.



After the flap has been created, an excimer laser is used to reshape the cornea.



The corneal flap is replaced.



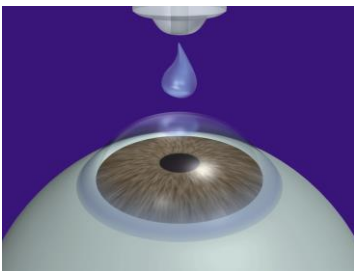
The eye will heal by itself, and no stitches are needed.

The actual surgery is usually completed in about 15 minutes, but preoperative preparation may extend the duration of the surgery to 1 hour. Both eyes can be operated on at the same time.

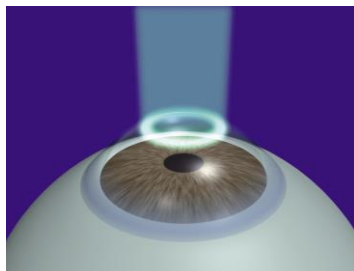
PRK Surgery

PRK is performed by removing the surface corneal cell layer, called the epithelium, by employing an excimer laser. The laser then gently reshapes the underlying corneal surface. The procedure is generally completed in less than 10 minutes. After the process is over, these corneal epithelial cells regenerate in about one week.

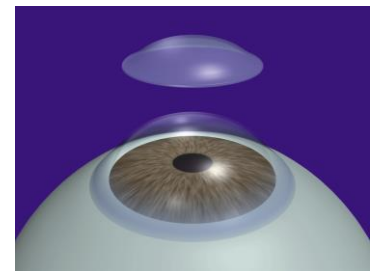
PRK Surgery



At the beginning of the procedure, the eye is anaesthetized with topical eye drops.



First, the epithelial cells are removed by an excimer laser. The laser then gently reshapes the underlying corneal surface.



The eye is fitted with a bandage contact lens to increase comfort during healing.

Custom LASIK, Custom PRK

Custom LASIK is order-made LASIK that provides laser ablation tailored to the shape and degree of distortion unique to each eye. LASIK procedures slightly increase distortions; in custom LASIK procedures, however, this increase in distortion is less, thus providing better vision.

There are two types of custom LASIK: topography-guided LASIK and wavefront-guided LASIK. They differ according to whether the aforementioned distortions are restricted to the cornea or the entire eye. In topography-guided LASIK procedures, laser ablation is tailored to distortions of the corneal topography. If the distortions are largely restricted to the cornea, topography-guided LASIK will be performed. In wavefront-guided LASIK procedures, on the other hand, laser ablation is tailored to overall distortions of the eye determined using an aberrometer. Laser ablation patterns are custom tailored to each individual eye to offer clearer vision.

Most patients who are eligible for LASIK will achieve better vision with custom LASIK treatment.

Topography-guided LASIK procedures are particularly suitable for the following candidates:

- those who have large asymmetry in corneal shape; and
- those who have significant corneal distortion.

Wavefront-guided LASIK procedures are particularly suitable for the following candidates:

- those who have significant distortion of the eye; and
- those who have a large pupil diameter after dark adaptation.
- Custom PRK is also possible in the same idea of order made with custom LASIK.

Advantages

Custom LASIK procedures have the following advantages:

- Achieve a higher quality of vision;
- Improve low-contrast vision or night vision after surgery;
- Can correct irregular corneas resulting from a previous surgery or injury;
- Decrease the chances of complications, such as experiencing glare and halos in dim light, and loss of best-corrected vision.

Disadvantages

In custom LASIK procedures, more cornea may be removed, and the amount of the additional corneal tissue removed depends on the degree of corneal or optic distortions.

Risks

Risks associated with LASIK and PRK

As with any surgical procedure, there are certain risks associated with LASIK. The following is a list of possible risks.

- **Foreign body sensation or pain:** Most patients experience slight discomfort or pain, particularly during the first 24 hours after LASIK surgery. Occasionally, use of painkillers may be necessary. PRK may cause some discomfort and pain, especially for a couple of days after the surgery. In some cases, the use of painkillers may be necessary.
- **Blurred vision:** Vision may be somewhat blurred during the early postoperative period.
- **Subconjunctival bleeding:** Bleeding sometimes occurs from the subconjunctiva (white part of the eye) when the femtosecond laser is fixed on the eye to create the flap. In this case, about 2 weeks are required for the blood to be completely absorbed. However, this will not affect your visual acuity.

- **Night vision problems, such as halos, glare, starbursts, and light sensitivity:** Patients commonly experience mild glare and/or haloes at night following LASIK. In most patients, these symptoms are mild and dissipate over time. However, in rare cases, they may be severe and prolonged enough to require the use of eye drops that constrict the size of the pupil.
- **Dry eye:** Dry eye commonly occurs after surgery. Dry eye not only causes discomfort, but can also reduce the quality of vision due to intermittent blurring and other visual complications. Eye drops are usually administered to counter this problem during the first few weeks after surgery.
- **Presbyopia:** Presbyopia is a natural ageing process of the lens inside the eye. By reducing myopia, you may require near vision correction if you are in the presbyopic age range.
- **Undercorrection and regression:** While the introduction of the excimer laser has improved the accuracy of refractive surgery for the correction of refractive errors, individual biology of wound healing as well as other factors vary from patient to patient; therefore, Surgery is not a 100% accurate procedure. Moreover, it is not possible to accurately predict how your eyes will respond to the treatment. Undercorrection is the most commonly noted inaccuracy and is generally very mild. If undercorrection is significant, you may need to wear glasses or contact lenses or eventually have additional refractive surgery to achieve your best vision. Additionally, it has been observed that some patients have mild regression of correction following surgery. However, in most cases, the correction is relatively stable after surgery.
- **Overcorrection:** Following surgery for low-to-moderate degrees of myopia, overcorrection occurs much less frequently than undercorrection. As with undercorrection, it is not possible to accurately predict how your eyes will respond to the treatment. A mild degree of overcorrection may be perfectly well tolerated. More severe overcorrection may necessitate the wearing of glasses or contact lenses or may require further refractive surgery.
- **Loss of best-corrected visual acuity:** A few patients lose lines of vision on the vision chart. This loss cannot be corrected with glasses or contact lenses. It may be due to irregular astigmatism, which occurs if the cornea heals in a wavy fashion.
- **Infection:** Infection is a potential complication that accompanies all surgical procedures. Following LASIK, the risk of infection is less than 0.02%. In order to minimize the risk of postoperative infection, it is critical to precisely follow the prescribed postoperative medication regimen.
- **Retinal diseases:** It is unknown whether refractive surgery affects the retina. However, the frequency of retinal diseases, such as objects floating in the field of vision, retinal detachment, and retinal tears, may be slightly more in myopic eyes.
- **Keratectasia:** Excessive corneal thinning (keratectasia) may result in weakness and abnormal shape of the cornea. Although uncommon, it is a serious complication with a severe impact on the patient's vision.
- **Elevated eye pressure:** The use of steroid eye drops may result in elevated pressure inside the eye.

Risks Associated with LASIK

- **Incomplete flap:** It is possible that the incision for creating the corneal flap could result in a flap that is too small or too thin. In such cases, it is likely that the laser component of the procedure will have to be postponed until the cornea heals sufficiently before attempting to create the flap again.
- **Epithelial defect:** Rarely, defects may be created on the flap surface while using the femtosecond laser. In most cases, the epithelial defect is corrected by the use of a soft contact lens or eye drops. However, several days or weeks may be required for complete healing of the wound and improvement in visual acuity.
- **DLK (Diffuse lamellar keratitis):** Mild inflammation at the interface between the flap and underlying corneal tissue may occur after LASIK. In most cases, DLK generally disappears following the use of steroid eye drops. However, in rare cases, DLK can be significant and require additional treatment.
- **Displacement or wrinkling of the flap:** Partial or complete corneal flap displacement can occur during the early postoperative period, but it may also occur later due to trauma. Partial displacement of the flap may result in striae or wrinkles, which reduce the visual acuity, both qualitatively and quantitatively. Most striae are treatable, but some may be resistant to treatment. Complete displacement of the flap is often painful and requires urgent replacement.
- **Corneal epithelial ingrowth:** Similar to all lamellar refractive surgeries, LASIK involves the creation of an interface between two layers of corneal tissue. In all lamellar procedures, it has been observed that surface epithelial cells can grow into this interface. Although it is not uncommon, epithelial ingrowth into an interface is mild and not progressive. In most cases, it will not affect vision. In rare cases, these cells may continue to grow within the interface and can threaten vision and/or cause irregularities. Under these conditions, the epithelial cells may need to be mechanically removed.

Risks Associated with PRK

- **Delay in reepithelialization:** In most patients, the corneal epithelium envelops the corneal surface in 4 to 5 days. In rare cases, this process may be delayed.
- **Haze (corneal cloudiness):** In the postoperative period following PRK, inflammation of the surface layers of the cornea may develop in some cases. This is observed as a white hazing of the cornea, which may resolve spontaneously or may require treatment with topical anti-inflammatory medications.

Precautions

Instructions for Patients Wearing Contact Lenses

Contact lenses alter the shape of the cornea. Therefore, people who wear contact lenses need to stop wearing them for a period of time before the surgery, depending on the type of contact lenses used.

- Hard or gas permeable lenses (HCL) should not be used for 4 weeks prior to the final examination. HCL should not be worn after the final examination.
- Soft contact lenses (SCL, Toric SCL) should not be used for 3 days prior to the final examination. SCL may be used after the final examination, but should not be worn 1 day before surgery.

Following the above instructions will ensure accurate measurement of refractive errors in patients.

On the Day of the Surgery

- Please do not put on any makeup (except skin toner/emulsion).
- Please do not wear any sweater or garment made from mohair or a similar yarn.
- Please avoid any outfit that exposes your shoulders or bring a jacket with you (the operating room is chilly).
- Please do not operate a vehicle.
- Please do not drink alcohol.
- Please do not put on any perfume, hair gel or strongly scented cream when you come to the clinic for the surgery.
- Please remove earrings before the surgery.
- If you have long hair, please tie it to the side before the surgery.
- Please bring the informed consent document with your signature. If you are less than 20 years old, the signature of your parent is necessary on the informed consent document.
- Please inform the doctor regarding any drug allergies that you have experienced.

Precautions after the Surgery

Significant improvement in vision will be noticeable approximately 1 day after LASIK surgery. Although complications can occur with any surgery, there is usually little to no postoperative discomfort, and some patients are able to return to daily activities the next day. Please follow the instructions mentioned below in order to prevent postoperative infection.

On the Day of the Surgery

- Please do not touch your eyes or eyelids.
- Please do not take a bath, shampoo your hair, or wash your face. Instead, please wipe your face gently with a wet towel. You may take a shower, but please avoid wetting your face. After examination by the physician on the day after the operation, if there are no complications, you may take a bath, shampoo your hair, and wash your face.
- Please be sure to come to the clinic on the day following the surgery.
- Please use eye drops according to the instructions provided.

During the First Week after Surgery

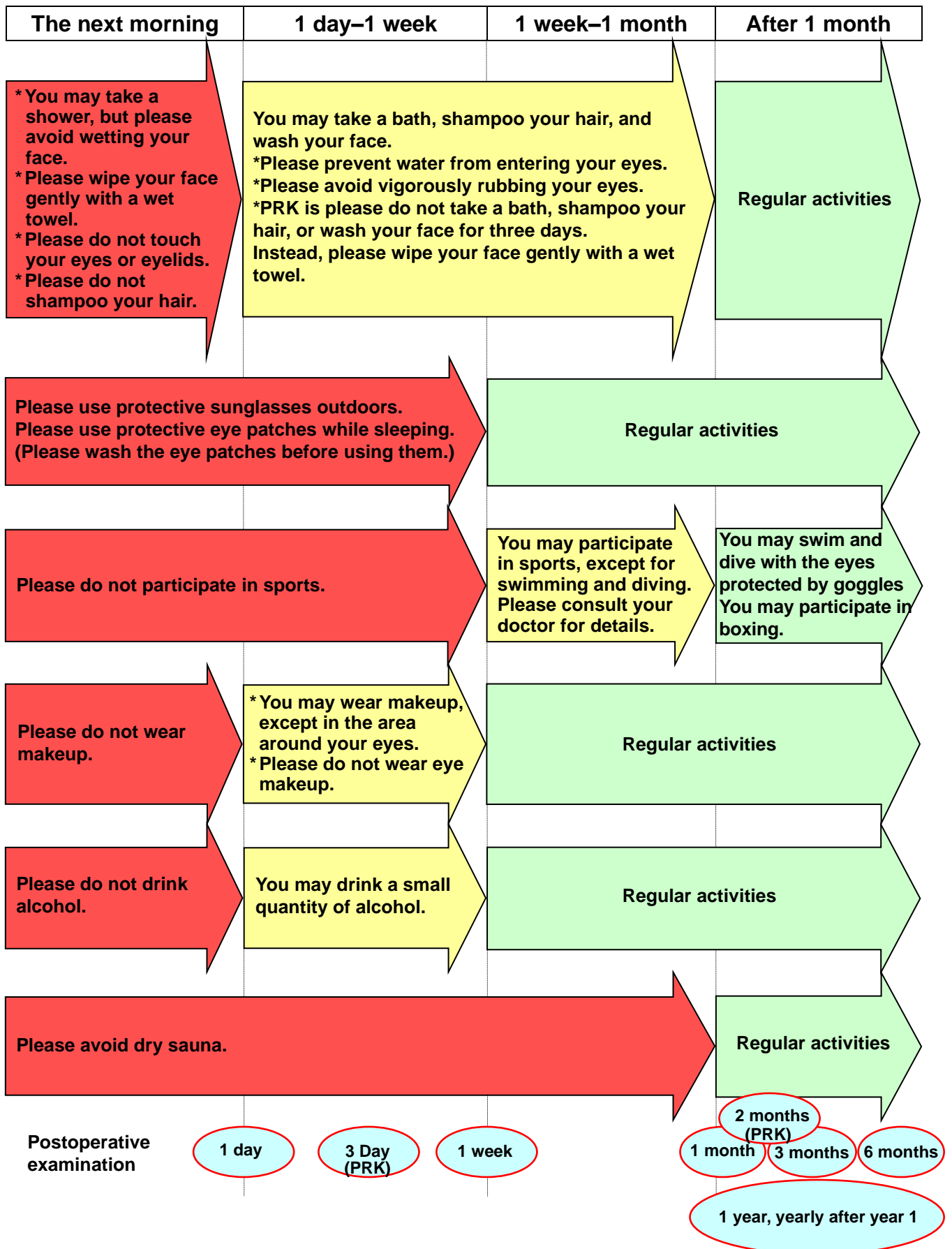
- Please use protective sunglasses outdoors and protective eye patches while sleeping.
- Please do not participate in sports.
- Please do not wear eye makeup.

During the First Month after the Surgery

- Please prevent water or sweat from entering your eyes and avoid vigorous rubbing of your eyes.

Follow-up examinations will be conducted at 1 day, (PRK:3 day), 1 week, 1 month, (PRK:2 months), 3 months, 6 months, and every year after surgery. Please contact the clinic in case you experience unusual symptoms or if your vision suddenly worsens.

Instructions for the Postoperative Period



Frequently Asked Questions about LASIK

What is the history of LASIK?

Q1: What is LASIK and how is it performed?

Q2: What does LASIK stand for?

Q3: How long has LASIK been performed?

Will LASIK be suitable for me?

Q1: Who can benefit from LASIK?

Q2: Who is not eligible for LASIK?

Q3: If I am not eligible for LASIK, are there other options available to me?

Q4: I am happy with my contact lenses. Should I undergo LASIK?

What can I expect my vision to be like after LASIK?

Q1: What results can I expect from LASIK?

Q2: Will my vision after LASIK be as sharp as with glasses or contact lenses?

Q3: How many days after surgery will I be able to see properly and have my best vision?

Q4: Will I require glasses or bifocals once my eyes have healed?

Q5: What will be the status of my vision at night or in low light after LASIK?

Q6: Will my eyes be dry after LASIK?

Q7: Are the results achieved from LASIK permanent?

Q8: If I undergo LASIK and my vision changes later in life, can LASIK be performed again?

Does the procedure hurt?

Q1: Is LASIK a painful procedure?

Q2: What type of anesthetic is used for LASIK?

Q3: How safe is LASIK?

Will undergoing LASIK inconvenience me?

Q1: Can LASIK be performed on both eyes at the same time?

Q2: If I choose to undergo LASIK in one eye at a time, what will be the status of my vision between the first and second surgeries?

Q3: How long will I have to be away from work after undergoing LASIK?

Q4: Can I participate in sports after LASIK surgery?

Q5: Can I drive immediately after undergoing LASIK?

Q6: Will my eyes look different after LASIK?

What is the history of LASIK?

Q1: What is LASIK and how is it performed?

A: LASIK is a surgical procedure that is capable of correcting a wide range of refractive errors, such as nearsightedness (myopia), farsightedness (hyperopia), and astigmatism.

Q2: What does LASIK stand for?

A: LASIK is an acronym for laser in situ keratomileusis, sometimes referred to as laser-assisted in situ keratomileusis. The name refers to the use of a laser to reshape the cornea without invading the adjacent cell layers. "In situ" is a Greek phrase, and it means "in the natural or normal place." Medically, "in situ" means confined to the site of origin without invasion of neighboring tissues. "Kerato" and "mileusis" are Greek words for "cornea" and "to shape," respectively.

Q3: How long has LASIK been performed?

A: LASIK has been performed worldwide for approximately 10 years. It was first performed in clinical trials in the USA in 1995. It is important to note that the major components of the procedure have a long history. For instance, ophthalmologists have been reshaping the cornea for over 50 years, creating a protective layer of tissue for over 35 years, and using the excimer laser since the 1980s.

Will LASIK be suitable for me?**Q1: Who can benefit from LASIK?**

A: LASIK can be beneficial for a large number of people with myopia, hyperopia, and astigmatism. Candidates should have a strong desire to be less dependent on corrective lenses, have realistic expectations, and understand the risks associated with the surgery.

Q2: Who is not eligible for LASIK?

A: Doctors need to evaluate a number of factors prior to determining the eligibility of a candidate for LASIK. Some doctors consider certain preexisting conditions as contraindications to the procedure and will not perform the surgery on people with these conditions. Sometimes, certain factors preclude a patient from being an ideal candidate for LASIK surgery. In many cases, a surgeon may still be able to perform the procedure safely, provided the patient and physician have adequately discussed the risks and benefits and set realistic expectations regarding the results.

Q3: If I am not eligible for LASIK, are there other options available to me?

A: LASIK is one type of refractive surgery available to patients. Although you may not be eligible for LASIK, you may be eligible for a different procedure. You should discuss your options with your doctor.

Q4: I am happy with my contact lenses. Should I undergo LASIK?

A: If you are comfortable wearing contact lenses and not inconvenienced by being dependent on them, you should carefully evaluate the risks and benefits of LASIK before undergoing treatment.

What can I expect my vision to be like after LASIK?**Q1: What results can I expect from LASIK?**

A: LASIK improves the uncorrected vision—vision without wearing corrective lenses—in most patients who have undergone the procedure. Over 90% of the patients with low-to-moderate myopia will achieve 20/40 vision. More than half of all patients can expect to achieve a vision of 20/20 or better. However, there are no guarantees that you will have perfect vision, and patients with high myopia (more than -7 diopters) and high hyperopia (more than +4 diopters) should have a different set of expectations. Those with realistic expectations regarding their vision after LASIK are mostly satisfied with the results of the laser correction.

Q2: Will my vision after LASIK be as clear as with corrective glasses or contact lenses?

A: Patients should understand that a 20/20 vision after LASIK might be different from a 20/20 vision with corrective lenses. Some people report that the images they see postoperatively are not as “sharp” as those seen through glasses.

Q3: How many days after surgery will I be able to see properly and have my best vision?

A: Fast visual recovery characterizes this operation. Most patients achieve good vision on the day of the surgery and notice that their eyes feel fairly normal within a day. However, vision may continue to improve, and the best vision may be achieved after approximately 2–3 months. Adjustments to the surgery—enhancements—can be made, if required. Patients who undergo hyperopic LASIK often need to wait longer to be able to see clearly. Typically, patients are unable to see extremely clear images for 1–2 weeks, and best vision is achieved several months postoperatively.

Q4: Will I require glasses or bifocals once my eyes have healed?

A: Most patients who undergo LASIK do not require glasses for their daily activities. However, patients above 40 years of age may require reading glasses. This is due to the normal aging of the eye, which is known as presbyopia. This condition occurs irrespective of whether or not the patient has undergone LASIK. Some patients may require glasses with minimal correction for some activities. Patients who currently wear bifocals will still require reading glasses after the surgery, unless they opt for a treatment plan called monovision, wherein one eye is corrected for distance and the other for near vision.

Q5: What will be the status of my vision at night or in low light after LASIK?

A: Most patients do not notice a change; however, some patients may experience glare, halos, or starburst around objects under dim or low-light conditions. For the vast majority of patients, these symptoms are temporary. However, others will continue to experience them for several months or longer. Although these symptoms do not necessarily interfere with visual acuity as measured by an eye chart, they can interfere with some activities.

Q6: Will my eyes be dry after LASIK?

A: Some patients who seek LASIK have an underlying dry eye syndrome that has not been diagnosed. There appears to be a correlation between preoperative dry eye syndrome and the development of more pronounced dry eye symptoms postoperatively. Therefore, many doctors test for dry eyes prior to determining eligibility for LASIK.

Q7: Are the results achieved from LASIK permanent?

A: LASIK is a surgical procedure that permanently removes corneal tissue to reshape the eye in order to improve refraction. The physical results are permanent. However, you should be aware that the eyes can change with time, and LASIK does not affect a number of visual conditions that are associated with age. For example, LASIK does not prevent presbyopia or affect this condition once it has developed.

Q8: If I undergo LASIK and my vision changes later in life, can LASIK be performed again?

A: Depending on the cause, retreatment may be a viable solution to vision changes later in life; however, other treatment options exist. You would need to consult your ophthalmologist to determine the cause of the change in vision and the treatment option that is best suited for you.

Does the procedure hurt?

Q1: Is LASIK a painful procedure?

A: Topical anesthetics (eye drops) are administered to numb the eye; therefore, patients do not experience any pain during the procedure. When the surgeon applies the vacuum ring, the patient experiences pressure just before his or her vision fades for a few seconds. The femtosecond laser—the instrument used by the surgeon to create the flap—and the laser do not cause any pain or discomfort. For several hours after the procedure, many patients describe a mild burning sensation, which is similar to that experienced when eyes are opened while swimming in chlorinated water. Therefore, taking a nap for the first 2 to 3 hours after LASIK is encouraged. After the first few hours, this uncomfortable feeling usually subsides.

Q2: What type of anesthetic is used for LASIK?

A: Topical anesthetic (eye drops) are used in this procedure to numb the eye. Patients may be administered a small amount of oral sedative to help them relax.

Q3: How safe is the LASIK procedure?

A: According to several large studies, there is approximately a 2% intraoperative and 3%–5% postoperative complication rate. Most of these complications do not result in loss of 2 or more lines of best-corrected visual acuity or interfere with long-term vision. The rate of severe complications is much less than 1%. It is important for patients to understand that as in other surgeries, there is a small risk of complications associated with LASIK.

Will undergoing LASIK inconvenience me?**Q1: Can LASIK be performed on both eyes at the same time?**

A: You can undergo bilateral, simultaneous LASIK (both eyes operated on at the same time). In fact, this is a common practice. However, in some circumstances, surgeons or patients will determine that it is best to employ a waiting period between the operations on the two eyes in order to evaluate the results. Hyperopic LASIK patients do not experience the extremely fast visual recovery that is observed in myopic patients; therefore, some surgeons prefer to operate on one eye at a time in these patients. Patients should discuss their options with their ophthalmologist.

Q2: If I choose to undergo LASIK in one eye at a time, what will be the status of my vision between the first and second surgeries?

A: There are a number of options to help patients deal with their vision between procedures. Some patients who have not undergone bilateral surgery will begin wearing a contact lens in the eye that has not undergone surgery. This practice provides an opportunity to use both eyes simultaneously. However, the contact lens will have to be removed at least 3 days prior to the second surgery. Other patients use the operated eye immediately without the use of a contact lens in the unoperated eye. This option may be effective in nearsighted patients with a moderate refractive error (less than 6 diopters). A patient with a refractive error greater than 6 diopters and who does not wear a contact lens may be unable to use both eyes together due to the large difference in the refractive error between the eyes. Removing one lens from a pair of glasses is usually not useful. Further, doing so could result in double vision and eyestrain.

Q3: How long will I have to be away from work after undergoing LASIK?

A: This depends on your occupation. Patients may experience difficulty in performing certain jobs that require intense clarity of vision (for example, dentistry and surgery) for 1 or 2 days. Most patients can resume work the next day, with the assumption that their vision is adequate for their job. However, some people may feel fatigued for a day or so following surgery.

Q4: Can I participate in sports after LASIK surgery?

A: You can resume almost all normal activities immediately after the surgery. However, for at least 1 month, you will have to avoid strenuous activities that can cause perspiration to run into your eyes. You should wear protective glasses while participating in contact sports regardless of whether you have undergone LASIK or not. However, if you do not routinely wear such glasses, your surgeon may recommend them for at least 1 month after LASIK. You will have to avoid activities such as contact sports and swimming for several weeks. It is important that you talk to your doctor specifically regarding the limitations on activities after LASIK.

Q5: Can I drive immediately after undergoing LASIK?

A: Patients may experience some discomfort and/or blurred vision for a few hours after the surgery. In addition, most patients receive a sedative prior to the surgery. Therefore, you cannot drive home after undergoing this procedure; you should plan not to drive for at least 24 hours after surgery.

Q6: Will my eyes look different after LASIK?

A: No. Your eyes will look exactly the same.

Frequently Asked Questions about PRK

What is PRK?

- Q1: How is PRK surgery performed?
- Q2: What is the difference between LASIK and PRK?
- Q3: Which is better, PRK or LASIK?

Will PRK be suitable for me?

- Q1: Who can benefit from PRK?
- Q2: Who is not eligible for PRK?
- Q3: If I am not eligible for PRK, are there other options available to me?
- Q4: I am happy with my contact lenses. Should I undergo PRK?

What can I expect my vision to be like after PRK?

- Q1: What results can I expect from PRK?
- Q2: Will my vision after PRK be as sharp as with glasses or contact lenses?
- Q3: How many days after surgery will I be able to see clearly?
- Q4: Will I require glasses or bifocals once my eyes have healed?
- Q5: What will be the status of my vision at night or in low light after PRK?
- Q6: Will my eyes be dry after PRK?
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- Q8: If I have PRK and my vision changes later in life, can PRK be performed again?

Does the procedure hurt?

- Q1: Is PRK a painful procedure?
- Q2: What type of anesthetic is used for PRK?

Will undergoing PRK inconvenience me?

- Q1: Can PRK be performed on both eyes at the same time?
- Q2: In case I choose to undergo PRK in one eye at a time, what will be the status of my vision between the first and second surgeries?
- Q3: How long will I have to be away from work after undergoing PRK?
- Q4: Can I participate in sports after PRK?
- Q5: Can I drive immediately after undergoing PRK?

What is PRK?

Q1: How is PRK surgery performed?

A: The eye is anesthetized with eye drops. The outermost layer of the cornea is then removed with a laser. The amount of cornea removed depends on the amount of correction required. Following the procedure, a special contact lens may be worn for 3–5 days.

Q2: What is the difference between LASIK and PRK?

A: In LASIK, first a corneal flap is created using a femtosecond laser. Then the exposed corneal surface is reshaped using an excimer laser. Finally, the corneal flap is replaced. In PRK, on the other hand, the surface layer of the cornea (called epithelium) is removed using an excimer laser (no corneal flap is created). The underlying cornea is then reshaped. The epithelial cells gradually regenerate. Both procedures can be used to correct nearsightedness, farsightedness, and astigmatism.

Q3: Which is better, PRK or LASIK?

A: This question can best be answered by an ophthalmologist. Generally speaking, for low corrections, both LASIK and PRK can yield excellent results. LASIK offers the advantages of quicker healing, less pain, less regression of effect (more stable results) and lower incidence of corneal scarring. Additionally, retreatments are generally easier to perform with LASIK. Currently, most patients prefer LASIK. PRK may be the preferred technique in certain special situations, such as patients with thin corneas.

Will PRK be suitable for me?

Q1: Who can benefit from PRK?

A: PRK may benefit a large number of people with myopia, hyperopia, and astigmatism. Candidates should have a strong desire to be less dependent on corrective lenses, have realistic expectations and understand the risks associated with the surgery.

Q2: Who is not eligible for PRK?

A: Doctors need to evaluate a number of factors prior to determining the eligibility of a candidate for PRK. Some doctors consider certain preexisting conditions as contraindications to the procedure and do not perform the surgery on people with these conditions. Sometimes, certain factors preclude a patient from being an ideal candidate for PRK surgery. In many cases, a surgeon may be able to perform the procedure safely, provided the patient and physician have adequately discussed the risks and benefits and set realistic expectations regarding the results.

Q3: If I am not eligible for PRK, are there other options available to me?

A: PRK is one type of refractive surgery available to patients. Although you may not be eligible for PRK, you may be eligible for a different procedure such as Phakic IOL (Intraocular Lens). You should discuss these options with your doctor.

Q4: I am happy with my contact lenses. Should I undergo PRK?

A: If you are comfortable wearing contact lenses and not inconvenienced by being dependent on them, you should carefully evaluate the risks and benefits of PRK.

What can I expect my vision to be like after PRK?

Q1: What results can I expect from PRK?

A: PRK improves the uncorrected vision—vision without wearing corrective lenses—in most patients who have undergone the procedure. Over 90% of the patients with low-to-moderate myopia will achieve 20/40 vision. More than half of all patients can expect to achieve a vision of 20/20 or better. However, there is no guarantee that you will have perfect vision, and patients with high myopia (more than -7 diopters) and high hyperopia (more than $+4$ diopters) should have a different set of expectations. Those with realistic expectations regarding their vision after PRK are mostly satisfied with the results of the laser correction.

Q2: Will my vision after PRK be as sharp as that with corrective glasses or contact lenses?

A: Patients should understand that a 20/20 vision after PRK might be different from a 20/20 vision with corrective lenses. Some people report that the images they see postoperatively are not as “sharp” as those seen through glasses.

Q3: How many days after surgery will I be able to see clearly?

A: Most patients achieve good vision 1 week after the surgery. However, vision may continue to improve, and the best vision may be achieved after approximately 2–3 months. Adjustments to the surgery—enhancements—can be made, if required.

Q4: Will I require glasses or bifocals once my eyes have healed?

A: Most patients who undergo PRK do not require glasses for their daily activities. However, patients above 40 years of age may require reading glasses. This is due to the normal ageing of the eye, which is known as presbyopia. This condition occurs irrespective of whether the patient has undergone PRK or not. Some patients may require glasses with minimal correction for some activities. Patients who currently wear bifocals will still require reading glasses after the surgery, unless they opt for a treatment plan called monovision, wherein one eye is corrected for distance and the other for near vision.

Q5: What will be the status of my vision at night or in low light after PRK?

A: Most patients do not notice a change; however, some patients may experience glare, halos or starburst around objects under dim or low-light conditions. For the vast majority, these symptoms are temporary. However, others will continue to experience them for several months or longer. Although these symptoms do not necessarily interfere with visual acuity as measured by an eye chart, they can interfere with some activities.

Q6: Will my eyes be dry after PRK?

A: Some patients who seek PRK have an underlying dry eye syndrome that has not been diagnosed. There appears to be a correlation between preoperative dry eye syndrome and the development of more pronounced dry eye symptoms postoperatively. Therefore, many doctors test for dry eyes prior to determining the eligibility for PRK.

Q7: Are the results achieved from PRK permanent?

A: PRK is a surgical procedure that permanently removes corneal tissue to reshape the eye in order to improve refraction. The physical results are permanent. However, you should be aware that the eyes can change with time, and PRK does not affect a number of visual conditions that are associated with age. For example, PRK does not prevent presbyopia or affect this condition once it has developed.

Q8: If I have PRK and my vision changes later in life, can PRK be performed again?

A: Depending on the cause, retreatment may be a viable solution to vision changes later in life; however, other treatment options exist. You would need to consult your ophthalmologist to determine the cause of the change in vision and the treatment option that is best suited for you.

Does the procedure hurt?

Q1: Is PRK a painful procedure?

A: Topical anesthetics (eye drops) are administered to numb the eye; therefore, patients do not experience any pain during the procedure. After the surgery, there may be some mild to moderate pain for 1 to 3 days, which may be relieved by oral medications and topical eye drops.

Q2: What type of anesthetic is used for PRK?

A: Topical anesthetics (eye drops) are used in this procedure to numb the eye. Patients may be administered a small amount of oral sedative to help them relax.

Will undergoing PRK inconvenience me?

Q1: Can PRK be performed on both eyes at the same time?

A: Usually, PRK is done separately for each eye.

Q2: In case I choose to undergo PRK in one eye at a time, what will be the status of my vision between the first and second surgeries?

A: There are a number of options to help patients deal with their vision in between procedures. Some patients who have not undergone bilateral surgery will begin wearing a contact lens in the eye that has not undergone the surgery. This practice provides an opportunity to use both eyes simultaneously. However, the contact lens will have to be removed at least 3 days prior to the second surgery. Others use the operated eye without a contact lens in the unoperated eye. This option may be effective in nearsighted patients with a moderate refractive error (less than 6 diopters). A patient with a refractive error greater than 6 diopters and who does not wear a contact lens may be unable to use both eyes together due to the large difference in refractive error between the eyes. Removing one lens from a pair of glasses is usually not useful. Further, doing so could result in double vision and eyestrain.

Q3: How long will I have to be away from work after undergoing PRK?

A: After the PRK procedure, it is not advisable return to work the next day. The visual results of PRK surgery are not instantaneous; it may take several days for the vision to become clear enough for you to be able to drive properly.

Q4: Can I participate in sports after PRK?

A: You will have to avoid activities such as contact sports and swimming for several weeks. It is particularly important for you to discuss with your doctor any limitations with regard to participating in activities after PRK.

Q5: Can I drive immediately after undergoing PRK?

A: Patients may experience some discomfort and/or blurred vision for a few days after the surgery. In addition, most patients receive a sedative prior to the surgery. Therefore, you cannot drive home after undergoing this procedure; you should plan not to drive until your vision improves.