

Excimer Laser Eye Surgery

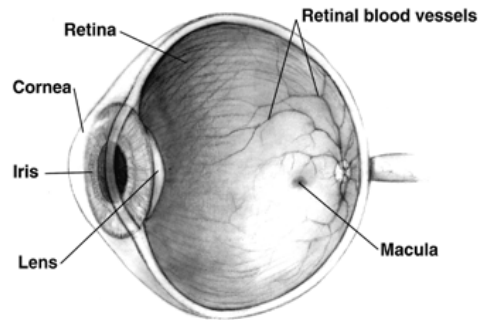
This booklet contains general information that is not specific to you. If you have any questions after reading this, ask your own physician or health care worker. They know you and can best answer your questions.

For more information, please contact: **Excimer Laser Clinic** at 613-737-8899 ext.71548

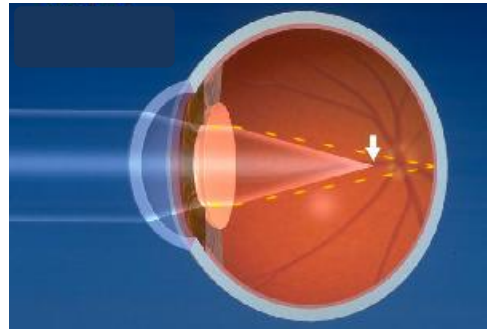
Common questions asked about Excimer laser eye surgery

Q. What is laser eye (or excimer laser) surgery?

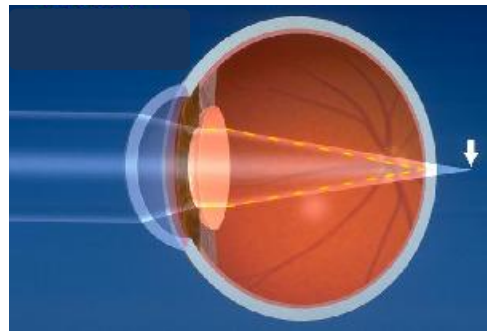
A. Laser eye (excimer laser) surgery is a treatment to correct nearsightedness, farsightedness or astigmatism. The surgery may reduce or eliminate the need for contact lenses or glasses. In a normal eye, the front of the eye (cornea), the lens of the eye and the shape of the eye focus light to form an image on the back inside surface of the eye (retina).



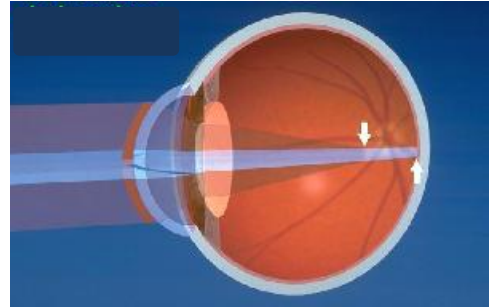
Nearsightedness (myopia) occurs when light falls in front of the retina instead of on the retina. This causes the image of *distant* objects to appear blurred.



Farsightedness (hyperopia) occurs when light falls beyond the retina. This causes images of *near* objects to appear blurred.



Astigmatism occurs when the eye shape is not round but shaped like a football. This irregular shape causes images to appear blurred. Astigmatism can be present with either farsightedness or nearsightedness.

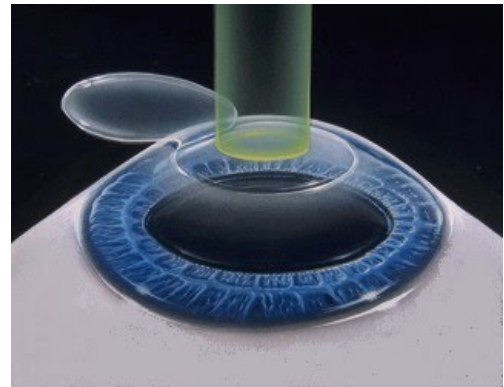


Q. How does excimer laser surgery correct vision?

A. Short pulses of invisible ultraviolet light remove a small amount of tissue from the cornea to correct the curvature. The amount removed is typically less than the thickness of a human hair. By correcting the curvature of the cornea, images are better focused on the retina and the images are clearer.

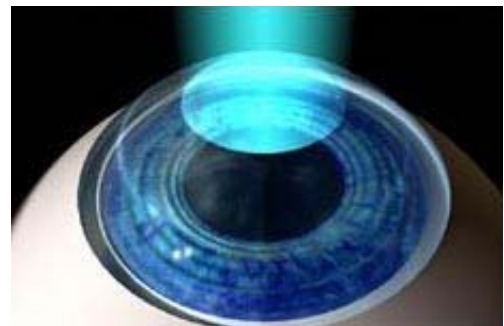
Q. What is iLASIK?

A. iLASIK (laser-assisted in situ keratomileusis) is a refractive procedure in which the femtosecond laser is used to create a thin flap from the surface of the cornea. The corneal flap is 100-140 microns thick. The corneal flap is then lifted, and the excimer laser is used to re-shape the remaining cornea to produce the desired correction. The flap is then re-positioned on the corneal surface over the treated area.



Q. What is PRK?

A. PRK (photorefractive keratectomy) is a surface refractive procedure in which the epithelium (surface layer of the cornea) is removed using: 1. with the aid of 20% alcohol; 2. the Excimer laser ; or 3. a rotary brush. The excimer laser is then used to re-shape the cornea to produce the desired correction. At the completion a contact lens or an eye patch is applied.



Q. What are the advantages of having the iLASIK procedure performed instead of PRK?

A. The reported advantages are reduced post-operative discomfort in the first 1 to 5 days, a faster return of vision, less use of steroid drops and less chance of corneal haze.

Q. What are the disadvantages of having the iLASIK procedure performed instead of PRK?

A. The disadvantages of the iLASIK procedure are the complications related to the presence of the corneal flap – flap dislocation, corneal ectasia, striae, epithelial

ingrowth and infection. The safety of using the *i*LASIK procedure for patients with a high degree of myopia has not been established.

Q. What is a Wavefront measurement?

A. A wavefront measurement is a tool to determine the optical defects in the eye. The method records these aberrations or defects and calculates a customized treatment (CustomVue) for the excimer laser. This method can be used with PRK or *i*LASIK. A CustomVue treatment differs from conventional laser eye surgery, in that, it takes into account not only your eyeglass prescription, but also all of the other optical defects in the eye.

Q. Who can have laser eye surgery?

A. People 21 years of age and older with healthy eyes and stable vision are possible candidates for this procedure. A visit to an eye doctor (ophthalmologist) will help determine if laser correction for nearsightedness, farsightedness or astigmatism is right for you.

Q. How safe is it?

A. Millions of patients in Canada, the United States, Europe and Asia have had this treatment performed on them successfully for nearsightedness, farsightedness and astigmatism. Here at the University of Ottawa Eye Institute, our 1 year post-operative results indicate that 99% of our patients achieve results of 20/50 or better (sufficient vision to obtain a driver's license without restriction in Ontario), over 80% of patients achieve results of 20/20 or better and over 90% achieved 20/25 or better. These results are for patients with a wide range of prescriptions from -12D to +4.5D and varying degrees of astigmatism ranging from 0.25 to 4.5D.

There may be a need to repeat the surgery if the eye regresses due to excessive healing or becomes nearsighted or farsighted again with aging. The amount of prescription retreated is usually much less than the original prescription. The higher the correction and the larger the amount of astigmatism the more likely a retreatment may be necessary. Patients may experience glare, haloes and blurring of vision in the post-operative period. These usually disappear over the first 3 months but may persist. Often they occur prior to surgery when wearing contact lenses. A small number of patients may experience symptoms of dry eyes after surgery which can persist for a number of months. Medications can be prescribed to help decrease these symptoms. Many patients experiencing dry eyes had symptoms prior to surgery leading to discontinuation of their contact lenses. Other potential complications will be reviewed during the information sessions.

Q. What happens before laser eye surgery?

A. A consultation visit at the Eye Institute is the first step. During this visit new patients will undergo preliminary testing to determine whether or not they are a candidate for laser eye surgery. Also, a discussion will take place in which the different surgical methods will be explained. Patients will have the opportunity to ask questions at this time.

If the patient wishes to proceed with laser eye surgery and has passed the initial testing phase they may then arrange a second, pre-operative, visit to take place with the ophthalmologist. Preoperative tests are done during this visit and the surgical method (PRK or *i*LASIK) is established. Patients must not wear their

soft/toric contact lenses for a minimum of one week or one month for rigid lenses prior to this visit to allow the cornea to return to its normal shape. We often perform surgery a week after this visit. The physicians will schedule surgery to accommodate the patient's schedule whenever possible.

Q. What tests are done during the preoperative visit?

A. A thorough eye examination is done to decide whether the patient's eyes are healthy and suitable for laser vision correction. Patients read an eye chart which helps show how well they see with and without glasses. Eye drops will be used to anesthetize the eyes and to dilate the pupils for this examination. Tests are done which determine the shape of the cornea, the thickness of the cornea, the optical defects in the eye and the pressure inside the eyes. These tests are painless. *We recommend patients arrange a ride home and bring sunglasses to wear after this visit. The anesthetic drops wear off in 30 minutes and the dilating drops take approximately 3-4 hours or longer in some cases to wear off.*

Q. How long does laser eye surgery take?

A. The surgery itself takes only a few minutes but plan on being at the Eye Institute for about 2 to 2.5 hours. On the day of surgery, we may repeat a short eye examination to verify final results. Medication is given to help the patient relax. These drugs may make the patient feel groggy. The eye is frozen with eye drops before the surgery. **We do not allow the patient to drive following surgery.** The patient **must** bring someone with them to take them home. Following the *i*LASIK procedure, the patient will be asked to remain an additional 15-30 minutes after the surgery to confirm the proper positioning of the corneal flap.

Q. Do patients wear an eye patch following surgery?

A. Not usually. The physician inserts a contact lens with no prescription, called a bandage contact lens, in the eye following the surgery in patients with PRK and occasionally after *i*LASIK. Vision will be blurry during the first few days. This is normal. Patients who cannot tolerate wearing a contact lens will have the eye patched instead. A protective eye shield is provided to the patient that must be worn while sleeping. The patient may prefer to wear the shield throughout the day too. After 1 week or after the contact lens is removed (whichever is longer) the patient may stop wearing the eye shield.

Q. Can both eyes be treated on the same day?

A. Yes, both eyes are treated on the same day. Patients do have the option of having the eyes treated on alternate days if they choose to. Usually the second eye is treated 1-7 days after the first. If a patient requires a retreatment, the eyes are treated at least 1 month apart in most cases.

Q. What is the follow-up appointment schedule after laser eye surgery?

A. For PRK, the physician sees the patient the next morning and then every 1-2 days following laser eye surgery until the surface layer of the cornea is fully healed. The cornea will heal in between 4 to 7 days, but in some individuals it may take a little longer. For iLASIK the physician sees the patient the next day and possibly the next one to two days. Following this we see patients in the follow-up clinic at 1 week, and 1, 2, 3, 6 and 12 months after the surgery date.

**** Please be advised that these clinics happen on specific days and times during the week. Your appointments will be scheduled within these clinics.*

Q. I wear bifocals for driving and reading. After the surgery, will I still need to wear my glasses for reading?

A. There are different options available for patients over the age of 40. Many patients prefer to have both eyes corrected for the best possible distance vision and wear reading glasses when necessary. Others may wish to correct only one eye for seeing objects close-up and correct the other eye for distance vision. This is called monovision and *is not an option for every patient*. A trial of contact lenses with one eye corrected for reading and the other eye corrected for distance will help the patient to decide if this will work for them.

Q. What is the cost of the surgery?

A. The cost is \$2000.00 for each eye. This amount covers the surgery and the follow-up visits at the Eye Institute for one year. We do not charge for the consultation visit or the preoperative evaluation. If a retreatment is required, there is no charge if this is done within the first two years. Most patients requiring a retreatment will need it in the first 1-2 years. After the two-year period a small administration fee is charged to the patient. This fee increases again at 5 years and 10 years post-surgery. In addition, the patient will be responsible for filling a prescription for 1 or 2 types of eye drops and pain medication. These medications are generally covered by regular health insurance. All other drops will be provided to the patient the day of surgery.

Q. Will OHIP or extended health insurance plans cover the cost of this procedure?

A. Laser eye surgery for correcting nearsightedness, farsightedness or astigmatism is considered cosmetic surgery and, therefore, not covered by OHIP. Extended health insurance plans may provide partial coverage. It is considered a deductible medical expense for income tax. OHIP will pay for phototherapeutic keratectomy surgery (PTK) as it is performed for therapeutic or medical reasons. PTK surgery is done to remove scar tissue on the cornea or to correct abnormalities of the cornea.

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