Lasers Surgery of the Eye

The word "laser" is an acronym for Light Amplification by Stimulated Emission of Radiation. A laser is a concentrated beam of light, created when an electrical current passes through a special material. Used in eye surgery since the 1970's, the laser is popular for its unparalleled degree of precision and predictability. Lasers are being used for an increasing variety of eye diseases.

A laser's specific wavelength allows energy to be absorbed in selected tissues and not damage surrounding tissues. The laser beam is so precise it can cut notches in a strand of human hair without breaking it.

Thermal lasers convert light to heat. This type of laser seals blood vessels and destroys abnormal tissues. Photoablative lasers cut or sculpt tissue and are used to remove tissue, changing the shape and surface of the eye.

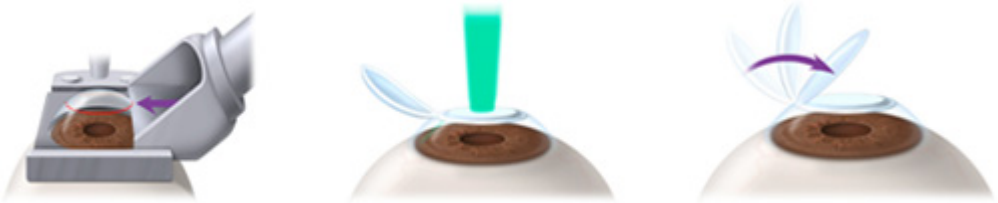
Lasers can preserve vision, sometimes for many years, for diabetics with diabetic retinopathy. In treating diabetic retinopathy, the laser light seals leaking blood vessels in the retina, the light-sensitive layer of cells lining the back of the eye. Lasers also treat more unusual retinal disorders, including blood vessel problems and tumors.

Also used to treat glaucoma, lasers can create a new passage through the iris to relieve eye pressure or open the eye's blocked drainage canals.

Although lasers do not remove cataracts, they may one day. Right now, they open the posterior capsule, which often becomes cloudy after cataract surgery, restoring vision in a matter of hours.

More recently, the excimer laser has received a great deal of attention as a tool for permanently correcting refractive errors such as nearsightedness, farsightedness and astigmatism. Refractive laser surgery can decrease or eliminate the need for glasses and contact lenses by reshaping the cornea.

Lasik



Until recently, if you were one of the millions of people with a refractive error, eyeglasses and contact lenses were the only options for correcting vision. But with the arrival of refractive surgery, some people with myopia (nearsightedness), hyperopia (farsightedness), or astigmatism (a cornea with unequal curves), may have their vision improved through surgery.

Laser assisted in situ keratomileusis, or LASIK, is a refractive procedure that uses an automated blade and a laser to permanently reshape the corne
LASIK is usually performed as an outpatient procedure using topical anesthesia with drops. The procedure itself generally takes about fifteen minutes. The surgeon creates a flap in the cornea with a microkeratome. The flap is lifted to the side and the cool beam of the excimer laser is used to remove a layer of corneal tissue. The flap is folded back to its normal position and sealed without sutures. The removal of corneal tissue permanently reshapes the cornea.

A shield protects the flap for the first day and night. Vision should be clear by the next day. Healing after surgery is often less painful than with other methods of refractive surgery since the laser removes tissue from the inside of the cornea and not the surface. If needed, eyedrops can be taken for pain and usually are only needed up to one week.

Some people experience poor night vision after LASIK. The surgery may result in undercorrection or overcorrection, which can often be improved with a second surgery. More rare and serious complications include a dislocated flap, epithelial in-growth and inflammation underneath the flap. Most complications can be managed without any loss of vision. Permanent vision loss is very rare.

The ideal candidate for LASIK has a stable refractive error within the correctable range, is free of eye disease, is at least eighteen years old and is willing to accept the potential risks, complications and side effects of LASIK. a. The reshaped cornea helps focus light directly onto the retina to produce clearer vision.

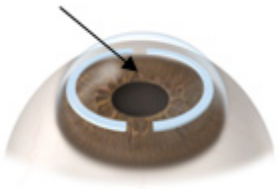
CONTACT US

Refractive Laser & Aesthetic Surgery Centre

Level 7 , Centrepoint South,
The Boulevard, Mid Valley City,
Lingkaran Syed Putra,
59200 Kuala Lumpur, Malaysia.

Direct Line	:	+6 03 2284 3090 / +6 03 2284 6090
Hunting Line	:	+6 03 2284 8989
Fax	:	+6 03 2283 1090
Email	:	lasikinfo@isecmalaysia.com

Intracorneal Rings (ICR's)



Intracorneal rings are plastic inserts placed in the cornea. The rings flatten the central cornea to correct low levels of nearsightedness (myopia). Unlike other refractive surgery procedures, intracorneal rings can be removed. When the inserts are removed the cornea returns to its preoperative shape and one is again nearsighted.

The procedure is generally performed on an outpatient basis using drops for an anesthetic. It is a quick procedure and can take less than half an hour.

Research is being done on intracorneal rings to correct farsightedness and astigmatism.

Complications with intracorneal rings are rare, but include undercorrection, overcorrection, induced astigmatism, infection, glare, haloes and extrusion of the insert. Minimal scarring may also occur in the area of the rings.

Photorefractive Keratomy (PRK)

Until recently, if you were one of the millions of people with a refractive error-light rays not focusing precisely on the retina-eyeglasses and contact lenses were the only options for correcting vision. But with the arrival of refractive surgery, some people may have their vision corrected through surgery. Photorefractive keratectomy (PRK) is one of several refractive surgery procedures used by ophthalmologists to permanently change the shape of the cornea to improve the way it focuses light on the retina.

PRK is an outpatient procedure, done under topical anesthetic eyedrops. It takes about fifteen minutes. The epithelium, the outer cell layer of the cornea, is removed with a blade, alcohol or a laser. An excimer laser, which produces ultraviolet light and emits high-energy pulses, is used to remove a thin layer of corneal tissue. Your ophthalmologist enters your vision correction information in a computer and the laser beam vaporizes the surface of the cornea up to that precise depth. By breaking the bonds that hold the tissue molecules together, your cornea is reshaped, correcting the refractive error. Because no incisions are made, the procedure does not weaken the structure of the cornea.

Immediately following surgery the eye is patched or a bandage contact lens is placed on the eye. After PRK vision is blurry for 3 days to one week. It may take a month or longer to achieve one's best vision. Patients may be on eyedrops for up to three months.

Possible complications of PRK surgery include undercorrection, overcorrection, poor night vision and corneal scarring. Permanent vision loss is very rare. In recent studies monitored by the FDA, 95% of eyes were corrected to 20/40, the legal limit for driving without corrective lenses in most states.

To be a candidate for the procedure you must have a stable and appropriate refractive error, be free of eye disease, be at least eighteen years old and be willing to accept the potential risks, complications and side effects of PRK.

Phototherapeutic Keratomy (PTK)

PTK is an excimer laser surgical procedure that removes roughness or cloudiness from the cornea. The cornea is the smooth clear window of the eye in front of the colored iris that helps bend light rays so they focus directly on the retina, the light-sensing layer of cells at the back of the eye. If the corneal surface is rough or cloudy, the rays of light do not focus properly on the retina and images are blurry.

Until recently, the rough cornea was scraped smooth with a surgical blade, while the cloudy cornea required a partial or full corneal transplant. More recently, phototherapeutic keratectomy, or PTK, is an option.

The excimer laser allows some abnormal corneas to be treated with a cool beam of light that evaporates tissue. The principal advantage of laser surgery over conventional surgery is the laser is able to create a smoother corneal surface than a blade and smaller amounts of tissue can be removed.

Potential complications after PTK include poor wound healing, excessive corneal flattening resulting in farsightedness, and irregular astigmatism or poor vision that cannot be corrected completely with glasses.