CANBERRA
EYE LASER

PRE-OPERATIVE
LASER SURGERY INFORMATION

Contact 1800 10 20 20

OUR FACILITY

Canberra Eye Laser has always been at the forefront of refractive technology employing the most up to date equipment and procedures in the safest environment possible. Therefore a choice of procedures is available for treating a variety of refractive errors. The choice of procedures should be carefully considered and discussed with your doctor before refractive eye surgery.

- First to offer key hole Smile treatments in Australia
- First Femtosecond Blade free Lasik
- First to offer Lasik and PRK
- Committed to offering best choices for patients.

Carl Zeiss

VisuMax

ABOUT THE PROCEDURE

The first step

Welcome. To discover if refractive surgery is suitable for you the first step is to book an obligation free assessment.

If you proceed to surgery, then our costs include all preliminary consultations, the refractive procedure and post-operative care for 12 months, including any further treatments required within this time. A payment plan can be arranged. The cost of your procedure will be discussed at your initial assessment.

Before your refractive procedure

Careful measurements of your eyes are crucial to the success of the procedure. **Soft contact lenses must be left out for one week and hard contact lenses for three weeks prior to both measurements and surgery.**

How the procedure is done

Dress comfortably and bring a companion on the day of surgery. The treatment visit takes about two hours, but the laser application lasts only seconds. The procedure is painless under local anaesthetic eye drops. You will be asked to lie on a bed looking up into the laser's 'centering light'. A small lid speculum holds the eyelids against blinking and the laser is designed so that both the laser and the surgeon keep the eye centred during the laser treatment.

Post-operative care requirements will be explained and a detailed instruction sheet will be provided. A follow-up appointment will be made, usually for the next day, and you will be provided with eye drops and information to take home.

After the procedure

- Regular post-op drops are required.
- Follow up visits are arranged for one day and approximately ten days post operatively.
- Do not rub your eyes.

- You must not drive yourself home immediately after the procedure.
- It is reasonable to return to work within days of the procedure.
- You can return to driving within days as vision settles. A letter regarding changes to driving licence requirements for vision can be provided by your surgeon.

Change and improvement continue for weeks to months following surgery. Generally stability of vision is achieved by three months.

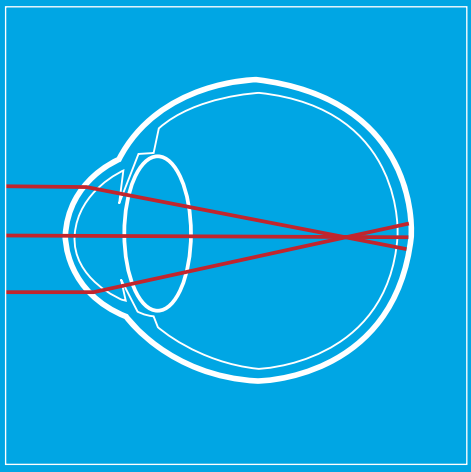
TREATABLE REFRACTIVE ERRORS

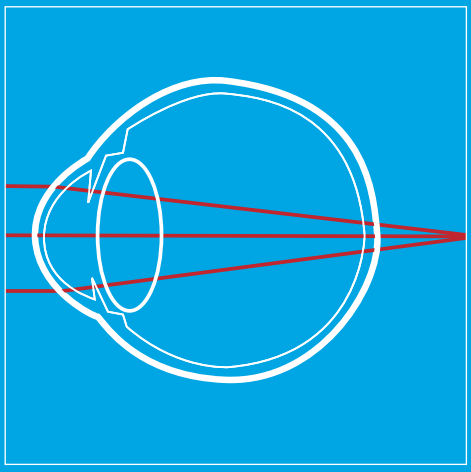
Myopia (Short sightedness)

Myopia is a refractive error in which close objects are seen clearly but distant objects appear blurred. The eye is longer than usual or the cornea is too curved for the length of the eye. This causes light rays to focus in front of the retina. To correct myopia, the central curvature of the cornea must be decreased, i.e. the cornea must be made flatter.

Hypermetropia (Long sightedness)

Hypermetropia is a refractive error in which far objects are mildly blurred and close objects even more blurred. In long sightedness the eye is shorter than normal or the cornea is flatter than normal. This means that light rays are not focused before they reach the retina. To correct hypermetropia the central cornea must be made more curved.



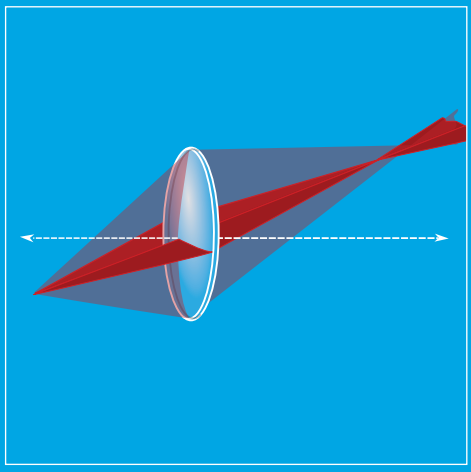


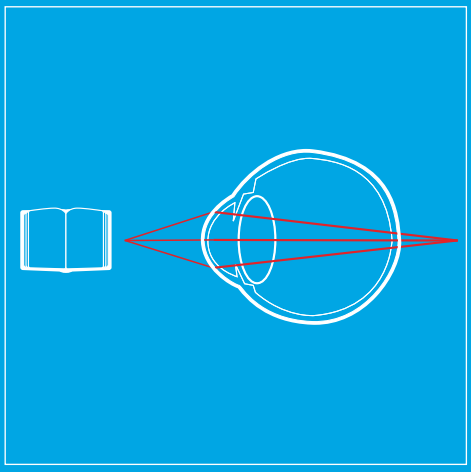
Astigmatism

Astigmatism is a refractive error in which the eye is unable to focus images clearly. In astigmatism the cornea has different curvatures, and is steeper in one direction than in the other, similar to the shape of a rugby ball. To correct astigmatism the cornea must be made more symmetrical. Astigmatism can often be present along with short or long-sightedness.

Presbyopia

Presbyopia refers to the natural ageing of the focusing mechanism of the eyes, which causes difficulty with reading or seeing near objects. Typically this condition becomes noticeable between 45–55 years of age. It arises because the natural flexibility of the internal lens of the eye diminishes as people age and so those who previously had efficient near vision find it increasingly difficult to focus on near objects.



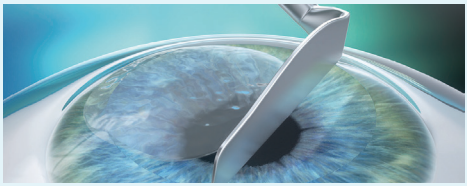


LASER CORRECTION

Laser correction improves the natural focus of the eye by altering the shape of the cornea. Treatments are conducted using local anaesthetic eye drops to numb the eye to enable a painless corrective procedure. There are no injections required.

Canberra Eye Laser a leader in offering Femtosecond SMILE.

Understanding PRK, LASIK and SMILE



PRK
(Surface ablation surgery)

1st Generation Laser Vision Correction

Treatment steps

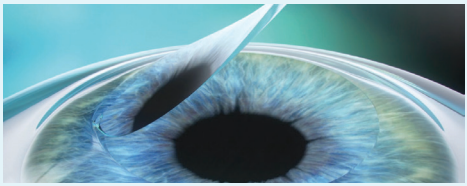
- The outer layer of the cornea (epithelium) is dissolved with alcohol or a brush.
- The layer is removed or moved to the side.
- The vision is corrected through tissue ablation with an excimer laser.
- A protective contact lens is placed over the eye.

Characteristics

- More suitable for patients with thin corneas.
- Least expensive Laser Vision Correction procedure.

The Three Generations of Laser Vision Correction

Refractive surgery is a widely performed treatment approach for correcting various vision impairments. The field has seen many advancements within a relatively brief span of only 30 years, as reflected by the three generations of Laser Vision Correction available today: PRK, LASIK and SMILE.



LASIK
(Flap surgery)

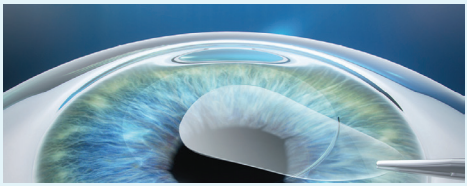
2nd Generation Laser Vision Correction

Treatment steps

- A flap, a hinged piece of tissue, is created with a controlled blade (LASIK) or highly precise femtosecond laser (Femto-LASIK).
- The flap is carefully folded back to treat the corneal tissue.
- The vision is corrected through tissue ablation with an excimer laser.
- The flap is returned to its original position.

Characteristics

- Treatment standard for over 20 years.
- Normally quick visual recovery.
- Performed by many clinics and doctors.



SMILE
(Minimally invasive, flapless surgery)

3rd Generation Laser Vision Correction

Treatment steps

- A small piece of corneal tissue (lenticule) and a small incision are created inside the cornea.
- The lenticule is removed through the small incision.
- By removing the lenticule, the vision correction is achieved.

Characteristics

- Advanced Laser Vision Correction.
- Minimally invasive and gentle with only a small incision.
- Supports a comfortable and stress-free patient experience.

OTHER REFRACTIVE OPTIONS

Presbyopia

Presbyopia refers to the reduction in the range of focus from far to near that occurs in normal eyes after the mid-forties. The cornea is not involved so Refractive Laser therapy does not correct presbyopia. The loss of uncorrected reading vision caused by presbyopia can be partially overcome by choosing to leave one eye slightly short-sighted for reading while its fellow eye is fully corrected for distance. This is called 'Mono-vision', where only one eye is optimised for each focus distance. A contact lens trial is usually recommended prior to proceeding with mono-vision to make certain you are suitable.

Cataract surgery as refractive surgery

Many do not realise that short-sighted and long-sighted people can have their refractive error corrected at the same time as removal of the cataract. By carefully choosing the correct implant lens to replace the cataract, your refractive error can be corrected without the need for laser eye surgery. In fact the upper age limit for laser refractive eye surgery is the age at which cataract develop.

Clear lensectomy

This is the same surgery used when a cataract is not present, but the lens is exchanged with a carefully calculated implant lens. This extends the range of refractive errors than can be treated, particularly for long-sightedness above +5. However this carries the risk of intra-ocular surgery.

	1st Generation	2nd Generation	3rd Generation
Method	**PRK** photorefractive keratectomy	**LASIK** laser-assisted in-situ keratomileusis	**SMILE** small incision lenticule extraction
	Surface ablation surgery	Flap surgery	Minimally invasive, flapless surgery
Description	Thin outer corneal layer (epithelium) is removed with an alcohol solution or a special brush, and underlying tissue is reshaped with an excimer laser.	**Traditional LASIK:** a flap, a hinged piece of corneal tissue, is created in the outer corneal layer with a controlled blade, folded back, and the underlying tissue is sculpted with a laser (tissue ablation). **Advanced Femto-LASIK:** a femtosecond laser is used to create a precise and predictable flap.	A thin piece of tissue (lenticule) is created inside the cornea and removed through a small incision.
Benefits	• Greater suitability, treatment option also for patients with thin corneas. • Requires no flap – no risk of flap-related complications (e.g. flap detachment, flap displacement), lower rate of infection compared to LASIK. • Cost-effective, least expensive of all laser eye surgery procedures.	• Normally quick visual recovery, typically, visual healing and recovery is faster than with PRK. • Extensive experience, has been the treatment standard for over 20 years. • Widely available, many clinics offer LASIK or Femto-LASIK.	• Minimally invasive due to only a small incision. • Gentle and convenient technique. • Flapless – no flap-related complications; low incidence of dry eyes, low risk of infection. • Generally greater suitability – possible option for patients with contact lens intolerance and a dry eye tendency.
Limitations	• Extended visual recovery period, often accompanied by some discomfort. • Potential side effect is haze (milky or blurry vision). • Sounds and odors during surgery.	• Potential flap complications like infection, flap dislocation or detachment. • Sounds and odors during surgery. • Potential side effects like dry eyes or foreign body sensation.	• Not yet available for hyperopic (farsighted) patients. • Availability, not yet as widely performed as LASIK. • Side effects are very rare, but cannot be completely ruled out.

RISKS AND CONCERNS

Although the vast majority of eye laser refractive treatments do very well, no surgical procedure can be risk free. Many variables exist in the individual case including the patient's eye, the mechanics of the surgery, and the patient's healing response. The main risks and considerations about laser refractive treatment which you should understand are listed here.

This list cannot be all inclusive. If other concerns arise, please discuss these with your surgeon prior to the surgery.

Discomfort

The treated eye may be uncomfortable, but rarely painful, for one or two days following PRK and 4–6 hours following SMILE. Drops, ointment and bandage contact lenses are used to minimise these symptoms, which may include light sensitivity.

Blurred vision

Initially, blurring occurs from disruption to the corneal surface and excess tearing. Later less troublesome blurring is due to gradual stabilisation of the new corneal shape. This is most obvious in reading vision and lasts longer in PRK cases.

Rarely new blurring may develop after LASIK treatment due to inflammation of the cornea at the surgical interface (DLK). This requires urgent treatment, and may include the need for more frequent drops, a relift of the flap, further laser treatment or even a loss of best corrected vision.

Corneal haze and halo effects

Those with naturally large pupils and larger vision corrections will experience more noticeable halo effects. Generally, halo is evident after treatment and progressively diminishes

in intensity over weeks. Haze occurs more often with PRK than LASIK or SMILE treatments. Ultimately it has little effect on vision overall but may be evident in dim light where haloes around single lights might be seen. In a few cases, haze can persist and may be associated with regression of the visual result. Rarely it may be permanent.

Dry eyes

Modern laser techniques have greatly reduced the incidence of dry eye problems due to the more gentle interaction of the laser machine and the eye's surface.

Dry eye symptoms may become worse for up to 6 weeks following the laser eye surgery. As the surface remodels the symptoms normally regress. Those with severe dry eye conditions should not undertake elective laser eye surgery.

Undercorrection and Overcorrection

Human healing following Refractive Laser may produce up to a 10% variation on target. If a significant under or over correction occurs, an additional enhancement procedure may be done. This possibility increases with the higher the level of refractive error treated. A particular desired result cannot be guaranteed in a surgical procedure that depends on individualised treatment and a patient's own healing response.

Enhancement procedures

To achieve a desired result, it is sometimes necessary to perform additional 'touch up' or enhancement laser procedures. This is necessary more often for combined treatments involving astigmatism and for larger refractive errors. An enhancement is a means of optimising vision. It is usually done 3 months after the original laser surgery when the measurements have stabilised.

Regression

Sometimes the corrective effect of a treatment may partially, or rarely, completely reverse even months after the procedure. The reasons for this are many and not well understood. Regression is more frequently seen in the correction of higher refractive errors.

Loss of Best Corrected Visual Acuity – BCVA

It is rare but possible to lose lines of vision (as measured on the vision testing charts) as a result of laser refractive surgery. If this occurs, it is generally from irregular corneal healing causing prolonged haze and distortion. Temporary haze is a feature of higher power treatments with PRK. Haze and distortion associated with LASIK and SMILE may arise from flap complications and inflammation producing corneal scarring.

Infection

The Excimer Laser treatment beam is self sterilising because of the high energy it delivers to the target tissue. Nevertheless infection can develop and may permanently reduce vision. It is important that post operative antibiotic drops be used as requested.

LASIK flap complications

Although rare, significant complications can arise from LASIK's inherently greater technical complexity when compared to surface treatments.

Wrinkling of the flap, from compressive movements of the eyelids, can develop in the early post-operative period. This can produce variable visual distortion and loss of BCVA.

Debris and epithelial cells may be found beneath the flap. If progressive spread is noted, re-lifting and cleaning may be necessary.

Rare late flap complications include corneal and flap melting as well as traumatic flap displacement.

In most cases, flap complications are treatable but the potential for irreversible damage to the transparency of the cornea, with reduction in vision, must be appreciated.

Contraindications and exclusions

If you expect or require perfect vision, you should not undertake Refractive Laser surgery.

You should be over 20 years of age and have had a stable refractive error for at least 12, and preferably 18 months.

Some other eye and general conditions preclude Laser treatment. These include substantial keratoconus, any active inflammatory eye disease, severe dry eye conditions, a history of corneal herpes simplex, cataracts, symptomatic rheumatoid arthritis or collagen vascular diseases (eg. 'Lupus'), pregnancy and the presence of a cardiac pacemaker.

Amblyopia or a 'lazy eye' is a reason for caution in choosing refractive surgery. Unless the lazy eye can read comfortably with best correction, the refractive surgery on the better eye has to be considered as surgery on 'your only eye'. The significance of the normal risks of the surgery is increased.

Presence of cataract

When cataract is present, laser eye surgery for the cornea is not recommended. The normal treatment of cataract includes replacing the cataractous internal lens of the eye with an intra-ocular implant lens (IOL). Often, the choice of that IOL can provide the refractive change to your vision that you may have been seeking with laser refractive surgery.

Remote and long term risks

Although we have 20+ years' experience of laser eye surgery, surgical procedures such as SMILE, LASIK and PRK involve risks to eyesight in the treated eyes including reduction and possible loss of vision. Rare unforeseen consequences or side effects may arise in the future that are not known at this time.

Quote for Laser Refractive Surgery

One Eye $ Both Eyes $

Prices current as at date of Free Consultation

Notes

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