

CANBERRA EYE LASER

PRE-OPERATIVE LASER SURGERY INFORMATION

Contact 1800 10 20 20

OUR FACILITY

The Canberra Eye Laser Centre 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 Lasik and PRK
- * First Femtosecond Blade free Lasik
- * First to offer Flex/Smile treatments in Australia
- * Committed to offering best choices for patients.



ABOUT THE PROCEDURE



The first step

If you are interested in discovering if any of these procedures would be suitable for you, the first step is to book an obligation free consultation. The cost of refractive surgery will be discussed at your initial assessment.

Cost includes 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.

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 Excimer laser application lasts only minutes. The procedure is painless under local anaesthetic eye drops and no injections are necessary. 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

- You must not drive yourself home immediately after the procedure
- Do not rub your eyes
- 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
- Regular post-op drops are required
- Follow up visits are arranged for one day and approximately ten days post-operatively

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

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.

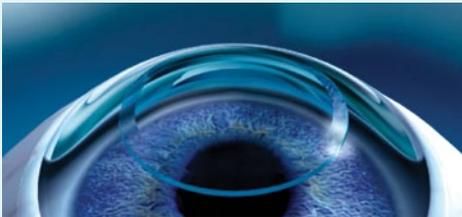
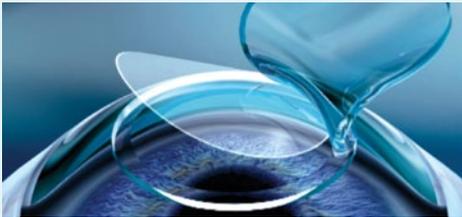
The Canberra Eye Laser Centre is one of only a few centres in Australia to offer Femtosecond Blade Free LASIK.

LASIK (Laser In situ Keratomelusis)

The LASIK procedure is an effective treatment for short sightedness, long sightedness and astigmatism. A computer guided femtosecond laser beam (using Carl Zeiss Meditec Visumax©) applies a series of tiny pulses of laser light to create a layer of microscopic bubbles just beneath the surface of the cornea. No cutting blade is required. This creates a precise thin flap which can be gently lifted.

The underlying bed of cornea is treated with the 'cool' excimer laser beam, reshaping it to specific requirements. At completion of the laser treatment the flap of cornea is replaced into its original position. The flap seals within minutes.

The healing process is fast with minimal discomfort post-operatively. Vision recovery and stabilisation for most people is rapid.



FLEx
(Femtosecond Lenticule Extraction)

The FLEx procedure (unique to Carl Zeiss Meditec) uses the femtosecond laser to create a tiny lenticule inside the intact cornea, which can then be gently removed. No further reshaping laser is required. This treatment is suitable for short sightedness and astigmatism.



SMILE
(Small Incision Lenticule Extraction)

Smile is a further development of the FLEx technique where the flap is only partly opened to extract the lenticule, without having to lift the flap. It is keyhole surgery for LASIK (or no flap LASIK) and leaves the cornea stronger as the incision is much shorter.

This is only possible because of the accuracy of the Zeiss VisuMax technology.

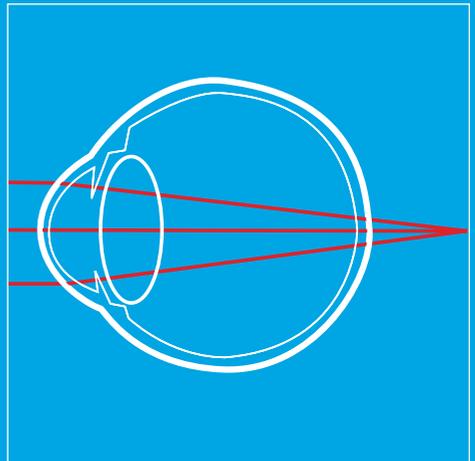
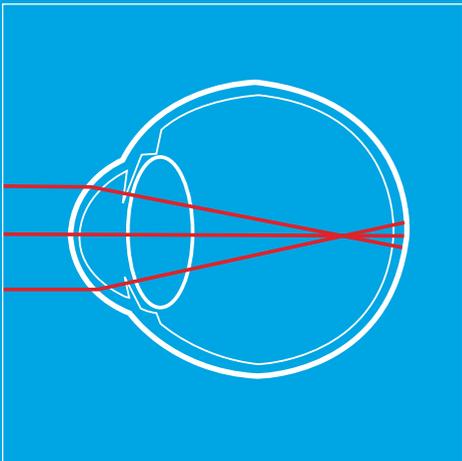
TREATABLE REFRACTIVE ERRORS

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.

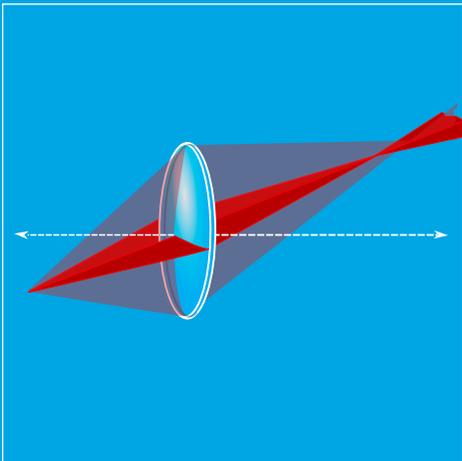
Hypermetropia (Long sightedness)

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.



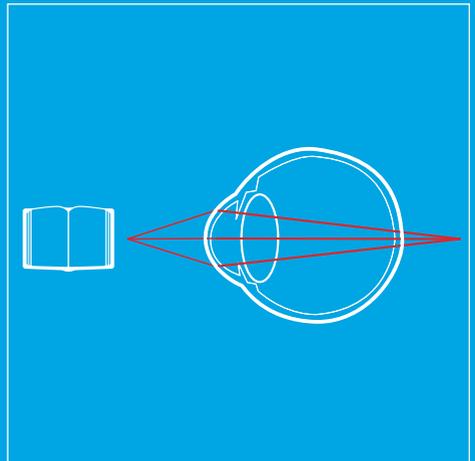
Astigmatism

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.



OTHER REFRACTIVE OPTIONS

PRK (Photorefractive Keratectomy)

The PRK procedure is very effective for treating small amounts of short sightedness, and astigmatism. It is useful for people with slightly thin corneas.

The protective surface layer of the cornea is gently removed then the laser is applied to reshape the corneal surface to the desired requirements.

Although the procedure is painless, it is quite normal to feel some mild to moderate discomfort for one or two days following the procedure.

The effects of PRK are not instantaneous as there is an ongoing healing process with the cornea. Because vision recovery is gradual it is usually recommended that at least two weeks be left between treatment of each eye.

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 Excimer 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.



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 excimer 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 LASIK. 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 treatment. 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.

Undercorrection and Overcorrection

Human healing following Excimer 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 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.

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.

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 the Excimer Laser refractive surgery. With PRK treatment, this is caused by irregular corneal healing causing prolonged haze and distortion. With LASIK, flap complications may reduce BCVA, either temporarily or permanently.

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

The LASIK procedure has attractive benefits including less discomfort, less haze and quicker visual recovery. However significant complications can arise from its inherently greater technical complexity.

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.

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 Excimer 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 Excimer Laser treatment. These include substantial keratoconus, any active inflammatory eye disease, severe dry eye conditions, a history of corneal herpes simplex, cataracts, 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).

Remote and long term risks

Although we have 20 years experience of laser eye surgery, as surgical procedures, both LASIK and PRK involve risks to eyesight in the treated eye 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.



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