

## **LASER VISION CORRECTION**

Laser correction of certain visual problems is the most technologically advanced method available today for reducing your dependence on glasses and contact lenses. The outpatient procedure can correct shortsightedness, longsightedness and astigmatism by gently reshaping the front surface of your eye with a cool ultraviolet beam of laser light.

Laser technology provides an unparalleled degree of precision and predictability. This makes it an excellent vision correction option for many people. The laser procedure is highly effective. Most typical patients achieve normal vision following one or more procedures.

Laser vision correction can also dramatically improve your quality of life. From the simple pleasure of being able to see the alarm clock in the morning to playing sports and pursuing career related opportunities, many patients are able to enjoy life with improved self-confidence and renewed enthusiasm.

This information is designed to inform you of the key elements of excimer laser treatment, what you can reasonably expect from laser vision correction, the benefits and the risks. Once you know more you will be able to decide whether the excimer laser procedure is the answer for you.

### **THE EXCIMER LASER**

The excimer laser is an ultraviolet laser which uses Argon and Fluorine gas to create a non-thermal, or cool beam, of laser light which can break molecular bonds in a process commonly referred to as "photoablation". In this way the front surface of the eye or cornea can be gently reshaped and thus correct shortsightedness, longsightedness and astigmatism.

The most important aspect of the excimer laser is that it is remarkably precise. It is able to remove 0.25 microns of tissue in a single pulse; that is 1/200th of a human hair or 39 millionths of an inch in 12 billionths of a second!

There are two procedures which use this unparalleled precision by applying computer controlled pulses of laser light to reshape the eye for visual correction and these are PRK and LASIK

PRK, or photorefractive keratectomy, is a refractive surgery technique, which reshapes the surface of the cornea, while LASIK, or laser in situ keratomileusis, reshapes the inner layers of the cornea. Both procedures work incredibly well to correct mild to moderate degrees of shortsightedness, longsightedness and astigmatism.

The difference between LASIK and PRK becomes apparent when comparing the speed, comfort of visual recovery results and risks involved in treating very shortsighted patients. It must be understood that the final visual results are a combination of the laser procedure itself and the patient's own healing pattern. It is this advantage of healing combined with the precision of the excimer laser and the ability to treat a wider range of prescriptions that has made LASIK the overwhelming procedure of choice in many excimer laser centres performing large numbers of procedures.

## **LASIK**

With LASIK vision correction the surgeon uses a microkeratome (an automated microsurgical instrument similar in design to a carpenter's plane) to create a corneal flap. The cool laser beam then gently reshapes the cornea and the flap is closed.

The procedure itself takes only a few minutes to complete and involves minimal discomfort. LASIK requires more technical skill and training than other procedures but is an extremely effective outpatient procedure, which utilises only local anaesthetic in the form of eye drops.

## **POTENTIAL RISKS**

It is important to note that the chance of having a serious vision threatening complication is much less than 1%.

## **UNDER / OVER CORRECTION**

Under correction is more common than over correction as your doctor will tend to be conservative in his approach. Slight under correction will not seriously affect your visual result but more significant under correction may require an enhancement procedure.

## **INFECTION**

Infection is extremely rare. You will receive antibiotic and steroid drops after the procedure to help prevent an infection and these will be continued for a week post-operatively. Most minor infections are treated and quickly eliminated.

## **POST TREATMENT HAZE**

Healing haze is the term for the collagen protein that develops on the surface of the eye following the procedure. If this develops, it usually clears gradually over many months following the procedure.

## **REGRESSION**

Regression refers to the possibility of the eye to bounce back somewhat towards your original prescription following laser correction. If your vision regresses you may require an enhancement procedure. It is always safer to perform an enhancement procedure to correct regression than to significantly overcorrect your prescription. In most cases the regression is minimal and is accounted for when planning your procedure.

## **NIGHT GLARE**

Night glare is possible immediately following your procedure and will typically last for 3 to 4 months before resolving completely.

## **POST TREATMENT DISCOMFORT**

You will not have any pain or discomfort during the laser procedure itself. Most patients experience some irritation, sensitivity to light and watering or swelling of their eyes for a few days following the procedure.

## **LASIK FLAP COMPLICATIONS**

While only about 1% of patients have complications with their LASIK procedure even fewer experience a serious flap related complication. This may result in loss of best corrected vision.

## **LOSS OF BEST CORRECTED VISION**

A small number of patients experience a slight loss of visual sharpness following laser vision correction compared to when they were wearing glasses before the procedure. If this occurs, you will lose the ability to read the bottom one to three lines of the eye chart.

## **BENEFITS OF LASIK**

- Brief recovery time
- Low enhancement rate
- Very low infection rate
- Relatively low risk of scarring
- Minimal discomfort
- High degree of predictability
- Preservation of the cornea
- Excellent ocular integrity post-treatment
- Widest range of correctable prescriptions

## **FREQUENTLY ASKED QUESTIONS**

### **Will I need glasses after my treatment?**

The vast majority of patients have excellent functional vision for day-to-day needs and requirements without the need to use corrective eyewear; however treatment does not guarantee freedom from glasses and contact lenses in all cases.

It must be remembered that patients who are approaching the age when reading glasses are prescribed (somewhere in the mid forties) will still need to use reading glasses to achieve clear vision to read or carry out work at a close range.

Some shortsighted patients choose to leave one eye under-corrected to help reduce their dependence on glasses for near vision (monovision).

Approximately 95% of patients who have low to moderate refractive errors (both short and longsightedness) will be free from glasses on a day-to-day basis, producing good functional and practical vision. These patients however often choose to have a weak pair of spectacles to help have their vision fine tuned, when driving at night or watching subtitles at the movies. Patients with higher degrees of refractive errors cannot expect to obtain these same results, for example between 80-85% of highly shortsighted people can expect to be able to hold a drivers licence in NSW without spectacles. They are more likely to be dependent on some form of eyewear to fine tune their vision.

As the degree of refractive error becomes higher then the need for corrective eyewear is more likely. This group of patients is also more likely to need an enhancement to obtain the optimal results. There is no additional fee for enhancements within 12 months.

There are two procedures which use this unparalleled precision by applying computer controlled pulses of laser light to reshape the eye for visual correction. These are PRK and LASIK.

PRK, or photorefractive keratectomy, is a refractive surgery technique which reshapes the surface of the cornea, while LASIK, or laser in situ keratomileusis, reshapes the inner layers of the cornea. Both procedures work incredibly well to correct mild to moderate degrees of nearsightedness, farsightedness and astigmatism.

The difference between LASIK and PRK becomes apparent when comparing the speed, comfort of visual recovery results and risks involved in treating very nearsighted patients. It must be understood that the final visual results are a combination of the laser procedure itself and the patient's own healing pattern. LASIK is the overwhelming procedure of choice for most patients.

### **What is monovision?**

This is a technique where one eye is deliberately left under-corrected in cases of shortsightedness or deliberately over-corrected in cases of longsightedness to provide clear near vision. Monovision can eliminate or reduce the need for reading glasses, but many patients find it difficult to adapt to this situation unless they have had some experience with deliberately altered corrections in their eyewear prior to undergoing treatment.

### **Will my vision change after my treatment?**

Once the results have stabilised the vision you have tends to be maintained, although there might be slight variations with time due to normal physiological variations in the refractive power of the eyes. LASIK usually stabilises earlier than PRK with patients usually stable at three months with either procedure.

Higher powers can expect a small amount of regression to occur over time, but this is normally planned for in your treatment. Should there be any significant variation an enhancement can be carried out.

### **Is Excimer laser treatment painful?**

In the past PRK was quite painful but not now with the use of a modern bandage soft contact lens. Severe pain has virtually been eliminated. There is minor discomfort, which is usually relieved with mild analgesics such as Panadol. All patients are given anti-inflammatory drops, which inhibit the pain cycle until the contact lens is removed when the eye is healed (by the third day after treatment).

### **How much time will I need off work?**

All patients are seen the following day. The majority of patients can return to work within 24 to 48 hours. Both LASIK patients and low powered PRK patients using a bandage contact lens usually have good functional vision within 24 hours. The vision may fluctuate over the first few weeks after surgery but most patients are comfortable returning to work the day after they are seen for their first post operative visit.

### **When is it safe for me to drive?**

The operated eye is blurred immediately after treatment. It is advisable to have someone with you to accompany you home. You will not be able to drive yourself home. Remember however, each patient's symptoms after treatment vary and you should only drive when you feel confident.

### **Where is the treatment carried out?**

At Perfect Vision  
Level 2, 187 Macquarie Street  
Sydney NSW

**DR MICHAEL STEINER**  
**MB,BS,DO(Syd) FRANZCO, FRCOphth, FAMA**

Dr Steiner has over 30 years experience in eye surgery with a particular interest in cataract, glaucoma and laser refractive surgery.

He is in private practice in Auburn and Northwood.

After graduating in Medicine from Sydney University in 1970 and becoming a Fellow of the Royal Australian College of Ophthalmologists he was appointed to the position of Honorary Secretary of the College in 1976.

He was appointed an Honorary Ophthalmic Surgeon to Bankstown & Lewisham Hospitals and pioneered intraocular lens implantation for cataract in both of these institutions where he served from 1975-1984.

Following this he was for many years the Chairman of the surgical staff at the Metropolitan Eye Hospital.

He has been performing laser vision correction since it was first introduced to Australia in 1991 and is a Foundation Member of the Australasian Society of Cataract and Refractive Surgery .

Dr Steiner is a Fellow of the Royal College of Ophthalmologists of the U.K. and a member of the Oxford Ophthalmological Congress. He has been involved in the organisation of many scientific congresses for the Royal Australian and New Zealand College of Ophthalmologists and has been the Chairman of annual Scientific Congresses at both the State and National level.

He was a member of the executive committee of the International Congress of Ophthalmology held in Sydney in 2002.

In 2002-3 he was Chairman AMA Co-ordinating Committee of Ophthalmologists.

He has held many positions in the Royal Australian & New Zealand College of Ophthalmologists including:

- Chairman of the N.S.W. Branch,
- Chairman of the Therapeutics Committee,
- Chairman of the College Anomalies Committee, and
- Chair of the Ethics Committee.

He was a Councillor for many years and served as President of the College in 1999/2000.

He has been a Committee member Sydney Eye Hospital Alumni from 2004-08.

Other appointments included:

- Honorary Editorial Consultant to MIMS for many years
- Chairman of the Finance & Organisation Committee of AMA NSW 2004-2006
- Honorary Treasurer of AMA NSW from 2004-2008
- Audit Committee of AMA NSW from 2006-2008 Chairman
- Vice President of AMA NSW 2008-2010
- Chair Ethics Committee AMA NSW 2008-2010
- Member MSAC Supporting Committee 1050
- Member of the Financial Informed Consent Taskforce
- Associate Member of the Medical Devices Evaluation Committee of the TGA

In 2007 he served on two appeals tribunals for the Code of Conduct Committee of Medicines Australia

- Awarded the Australian Centenary Medal in 2003
- Elected a Fellow of the AMA in 2006

Present Appointments include:

- Honorary Editorial Consultant Australian Prescriber
- Expert adviser to Health Care Complaints Commission
- **President** AMA NSW
- Board Member AMA NSW since 2006
- Member Advisory Board AMA NSW Charitable Foundation.
- Member of the Council of AMA NSW and Hospital Practice Committee
- VMO - NSW Eye Centre at Sydney Private Hospital;
- Co-chairman Ophthalmic Medical Advisory Committee Sydney Private Hospital
- VMO - Macquarie St. Excimer Laser Centre
- Member of the NSW Medico-Legal Liason Committee
- Director RANZCO Benevolent Fund PtyLtd;
- Judge RANZCO Media Awards
- Chairman RANZCO Industry Liason & Sponsorship Committee
- Committee member Australian Society of Ophthalmologists
- Member of the RANZCO Medicare Advisory Committee
- Chairman NSW Chapter RANZCO Eye Foundation;
- Federal councillor AMA
- Member AMA Therapeutics Committee;
- Member AMA Finance Committee and AMA Audit Committee
- Member AMA Ethics & Medicolegal committee
- Director AMA Commercial PtyLtd;

He is accredited by Workcover NSW as an Assessor of Permanent Impairment and by the Motor Accidents Authority as an Independent Medical Examiner.

He has been appointed an Approved Medical Specialist by the NSW Workers Compensation Commission.