



Precise Vision
LASIK

Rediscover quality of life –
thanks to vision correction with technology from Carl Zeiss

Patient Information





**“It was
really v**



Vision defects: Light that goes astray

For clear vision the eyes, cornea and lens must be perfectly coordinated.

An eye with poor vision is like a camera that takes blurred pictures because the focal distance is not set properly.

Nearsightedness (myopia)

The depth of the eye is too long or the refractive power of the cornea is too strong. The image on the retina is blurred because the point at which the light rays focus is in front of the retina.

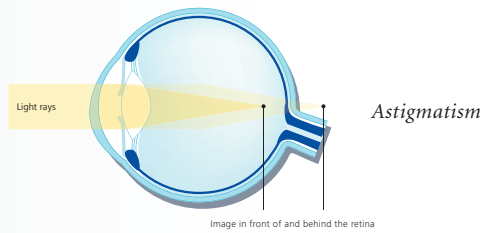
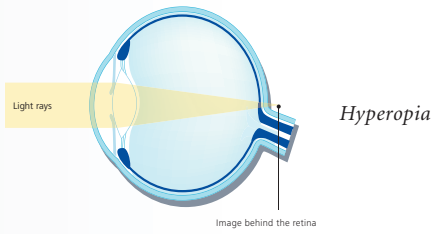
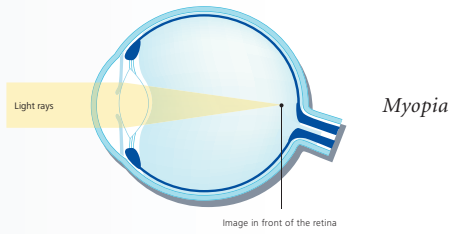
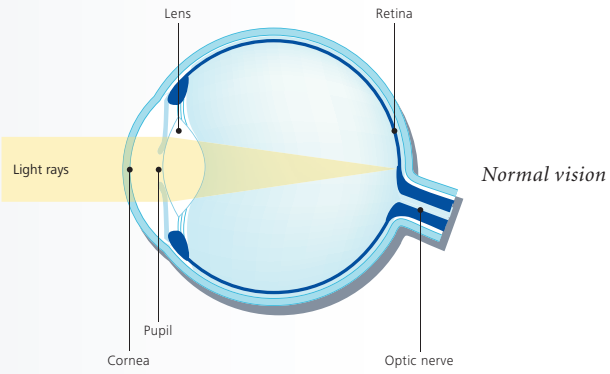
Farsightedness (hyperopia)

The depth of the eye is too short or the refractive power of the cornea is too weak. The image on the retina is blurred because the point at which the light rays focus is behind the retina.

Astigmatism

The cornea is unevenly curved and the light rays do not focus to a single point on the retina and are distorted.

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Visual corrections with technology from Carl Zeiss

Rediscover yourself – Millions of people enjoy the new freedom offered by a life without glasses or contact lenses:

No restrictions in sports and the ability to see clearly as soon as you open your eyes in the morning. Have you ever thought about laser surgery to eliminate your dependence on glasses?

Find out more about laser-based vision correction with the latest medical technology systems from Carl Zeiss.

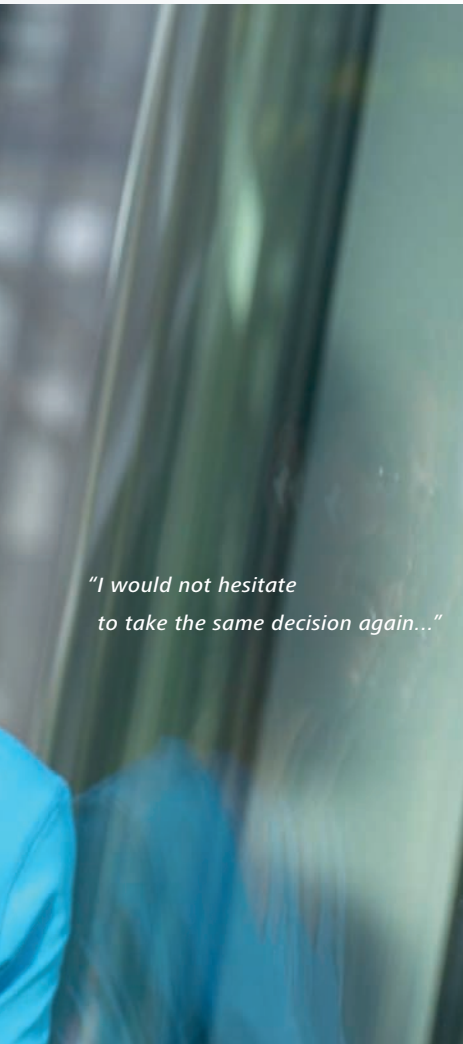
For decades we have been developing high-quality refractive surgery solutions which enable visual corrections with the highest degree of precision, quality and safety.



A life without glasses - state-of-the-art technology makes it possible

Refractive surgery uses laser technology to reshape the cornea of the eye to correct near- and far-sightedness and astigmatism. The laser specialist removes a layer of non-pain receptive corneal tissue – computer controlled according to precisely calculated diagnostic data. State-of-the-art medical technology makes a dream come true: clear vision, at any time of the day, whatever you are proposing to do. You wake up in the morning and everything is in focus, the moment you open your eyes.





*"I would not hesitate
to take the same decision again..."*

Excimer laser – precision instruments for clear vision

The correction takes place on the inside of the cornea. First of all, a thin flap is cut from the surface of the cornea and folded back like the cover of a book. Within seconds an excimer laser removes corneal tissue without the slightest pain to alter the refraction to compensate for a vision defect.

What Precise Vision LASIK with Carl Zeiss technology can mean to you

The Carl Zeiss MEL 80 excimer laser enables extremely safe and precise correction. Highly-developed optics focus the laser beam in a very small spot size and an optimal Gaussian shape. This makes the finest corrections possible and leaves surrounding tissue unharmed. Intelligent technology tracks the smallest eye movements of your eye during treatment and guides the laser beam so that it continues to work at exactly the planned position.



LASIK:
*A precision laser
removes corneal tissue
to correct a vision defect*

The refractive surgery procedure: To a life without glasses, in three steps

LASIK, LASEK and PRK are widespread laser methods of correcting vision. The method recommended by your eye specialist will depend, among other things, on the thickness of your cornea and size of your pupils. State-of-the-art precision technology is common to all procedures: the computer-controlled ZEISS MEL 80 laser reshapes the cornea with micrometre accuracy, so that the new light refraction in the eye makes glasses or contact lenses redundant.

Individual planning for gentle treatment

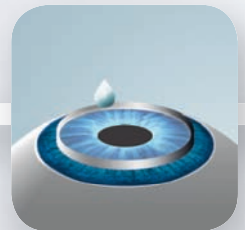
Advanced medical technology helps determine the structure of your eyes. The specialist obtains a precise digital "impression" of your eyes, enabling him to recognize even the most subtle anomalies in the visual process and plan an individual laser treatment that is optimized for you.



LASIK



**PRK,
LASEK**



Step 1: The flap is created

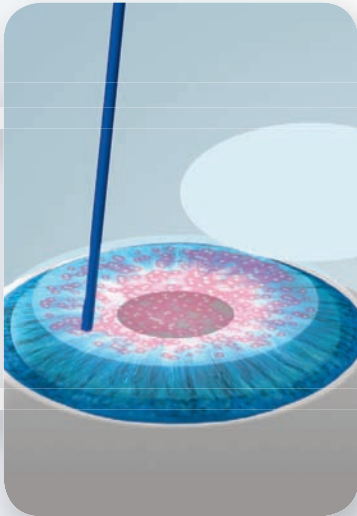
Your eye is anaesthetized with eye drops. An approx. 0.16 mm thin layer (flap) of the upper cornea is then created. This step is performed either by a computer-controlled precision knife (microkeratome) or a laser incision with a femtosecond laser. The flap is folded back like the page of a book.

Step 1: Preparation of the corneal tissue

A diluted alcohol solution is applied that allows the removal (PRK) or folding back (LASEK) of the corneal epithelial layer.

Step 2: The vision defect is corrected with the excimer laser

The MEL 80 excimer laser sculpts the corneal tissue within a matter of a few seconds to an exact curvature calculated to correct the visual error. The light refraction is corrected to compensate for the existing vision defect.



Step 3: The flap forms the body's own sticking plaster

Finally, the flap is folded back to its original position as a protective layer.



Step 3: Replacement of the surface layer

The corneal epithelial layer is replaced or a protective "bandage" lens fitted.



Day 1: Your life without glasses

You will already see the difference on the first day after your treatment – Enjoy the new visual feeling!

Faster and more accurate than any other: The Carl Zeiss MEL 80 excimer laser

The MEL 80 of Carl Zeiss is one of the most up-to-date and efficient excimer lasers. It is equipped, among other things, with an extremely fast, active eyetracker. Should you involuntarily move your eyes during the treatment, the eyetracker will ensure that the laser beam continues to work at the exactly calculated point or if the movement is excessive, safely stop the treatment to be continued when position is regained.



All benefits of this precision laser at a glance:

- Thanks to the extremely fast action of the laser, the exposed corneal surface, called the stroma, is exposed for least possible time. This minimizes undesired tissue dehydration and enhances regeneration and recovery.
- The MEL 80 excimer laser is linked to a wide range of diagnostic instruments enabling the treatment to be individually customized for each patient.
- A thermally optimized laser beam pattern minimizes corneal heating which aids recovery.
- The small spot size of the laser beam of 0.7 mm, and its shape, permits the finest corneal corrections of unsurpassed quality – accurate, smooth and gentle treatment.
- An extremely fast, active eyetracker eliminates the risk of misplaced treatment.

Make an accurate profile of your eyes: The Carl Zeiss CRS Master

In advance of laser surgery at least three factors are crucial for optimum vision correction: exact measurement of the vision defect, a precise topography of your cornea and intelligent formulae for calculating the individual laser pattern with which the laser is controlled. The Carl Zeiss CRS Master™ Treatment Planning System offers precise diagnostic answers to these questions.

All benefits of this individual treatment at a glance:

- The slightest variations in the corneal surface can be precisely measured and successfully corrected.
- With individual planning each eye receives a tailor-made ablation that is beyond the capability of spectacle or contact lens corrections.
- Any pupil movement is instantaneously detected and dynamically compensated during laser correction by the ultra-fast MEL 80 eyetracker.



Precise Vision LASIK

Common questions and answers

No doubt you have many questions in advance of laser surgery. Here you will find answers to the most important questions. This information cannot and is not intended to substitute for a detailed consultation with your eye specialist. After a thorough examination he or she will tell you whether laser correction is the right solution for you. Of course, your specialist will also inform you about possible risks and side effects.

How do I find out whether I am suitable for a laser-based vision correction?

First of all your eyes must be carefully examined. Besides refraction and corneal thickness, many other readings also play a role in evaluation. You will receive individual counselling from your eye specialist.

What long-term experience is available?

The first PRK was performed in 1987, the first LASIK in 1990. Since the mid-1990s the two methods have been scientifically recognized procedures. Since these early days, considerable progress has been made in diagnosis and

laser technology. Carl Zeiss Meditec was the first company to market a Gaussian spot scanning laser in 1997, and the first commercially available integrated topography guided treatments (1998) and wavefront guided treatments in the year 2000.

What types of vision defect can be treated with LASIK, LASEK or PRK?

Most types of vision defects which can be corrected with glasses or contact lenses can also be treated by laser. However, the permitted degree of laser correction varies from one country to another. The eye specialist can explain the relevant current regulations.

Can presbyopia (age-related far-sightedness) be treated by laser-based vision correction?

Presbyopia is a diminished ability of the natural lens to focus on near objects with age. The ability of the lens to be restored cannot be achieved by laser surgery. However, innovative and effective corneal sculpting programs can overcome this difficulty for many presbyopia sufferers, and suitable laser-based vision correction should be discussed with your laser eye specialist. The Carl Zeiss program for the MEL 80 is called Laser Blended Vision.

Which procedure is the right one for me?

That depends on a number of diagnostic, health and age factors, e.g. degree of required correction or measured thickness of the cornea. You should discuss this matter with your eye specialist.

What is the time interval between surgery on each eye?

Depending on the indication and type of treatment, the two eyes may be treated on the same or different days.



“The most important thing for me was confidence in the physician and technology...”

What follow-up treatment may be necessary?

After surgery you will receive drops and/or other medication, together with a post operation care instruction leaflet. The first check normally takes place the day after surgery. Further checks should follow at intervals of several weeks until you have regained stable and improved vision.

What does “custom ablation” mean and what benefits does this procedure offer?

Beyond basic vision correction that can be corrected by spectacles or contact lens, eyes can exhibit aberrations that continue to impair vision. Custom ablation refers to laser surgery that compensates for these aberrations which may be on the corneal surface detected by topography, or below, detected by wavefront analysis, a technique derived from research into deep space.

How long does laser treatment take? What happens if I move my eyes during surgery?

Preparation time is approx. 20 minutes. The laser treatment itself frequently takes less than 20 seconds. During this time an eyetracker monitors your eye movements over 1000 times a second and adjusts the laser beam accordingly.

Is laser surgery an in- or outpatient treatment?

Normally the laser treatment can be performed on an outpatient basis.

Patients are advised to bring a partner or friend and, if arriving by car, one who is able to drive them home.

When will I be able to drive again?

Visual acuity will normally be restored very quickly after Precision Vision LASIK. At the first follow-up treatment your specialist will tell you whether you can drive a car.

How long will it take for my eyesight to be restored after laser surgery?

Full visual recovery after Precise Vision LASIK takes approximately two to three weeks, after PRK or LASEK approximately three months.

Consider your alternatives carefully and take your time. Only the best is good enough for your eyes – Precision Vision LASIK.

Highly recommended by your Precise Vision LASIK specialist



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Carl Zeiss
Precise Vision
Technology

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