Your options for cataract treatment

Enjoy clear vision at all distances with multifocal IOLs

Bring your vision into focus

Good vision is a major contributor to the quality of life. Seeing is independence, the freedom to do what you enjoy, and a life that is full of contrast and color. It is when our sight is impaired that we realize just how important good vision is in our everyday lifes.

Cataracts are a common cause of the gradual deterioration of vision, and are a normal part of aging. Some of the symptoms you may experience are:

- Objects are not clear and colors appear dull,
- Driving at night is difficult, and
- Increased sensitivity to light.

In addition to cataract you may also be one of the over 2.5 billion people who need glasses or contact lenses. Unfortunately, this can disrupt many activities and it is just when you need your glasses that you can’t find them at all!

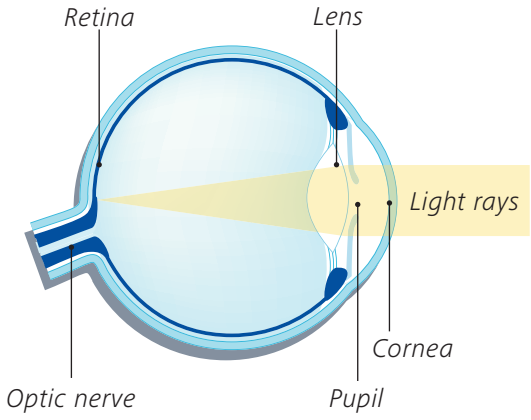
This booklet will help answer some of your questions about cataracts and explain how surgery will improve your vision. It is reassuring to know that cataract surgery is one of the most common procedures in the world, with highly successful outcomes.

How the eye works

The eye is truly a wonder of nature. Each one is unique; its size and shape contribute to how well we see.

The clear cornea at the front of the eye, and the lens inside, work together to focus light rays onto the layer of tissue at the back of the eye, called the retina. The focused image is sent as a message to the brain via the optic nerve.

In a young eye the lens changes shape to bring objects at different distances into focus.



Normal vision: light rays focus on the retina

Common vision problems

If the length of our eye and the curvature of the cornea are not in the right proportions, this can affect the quality of our vision.

People with **myopia** or 'near sighted' vision have the ability to focus on objects up close, but can not focus on objects in the distance.

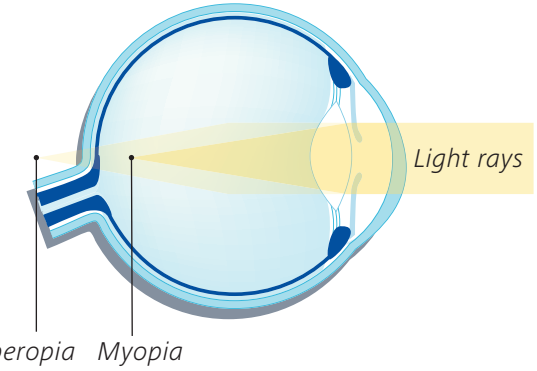
For **hyperopia** or 'far sighted' vision, people may be able to see distance objects, but have difficulty to read or see objects that are up close.

In both cases, to counter the refractive error in the eye, glasses or contact lenses are prescribed to improve vision.

Another refractive error is **astigmatism.** Astigmatism is a common eye condition that causes vision to be blurry or distorted due to an irregular (slightly oval) shape of the cornea. This irregularity prevents the eye from properly focusing light on the retina. Depending on the severity, astigmatism can blur your vision at all distances.

Far sighted vision simulation

Near sighted vision simulation



These vision conditions are referred to as refractive errors because they affect how the eyes bend or "refract" light.

Understanding how vision changes with age

After the age of 40, our vision begins to deteriorate. Presbyopia and cataracts are common causes of this gradual deterioration of vision. They are a normal part of aging and can be corrected with cataract surgery.

What is presbyopia?

After the age of 40 the lens becomes less flexible causing a reduced capability to adjust and focus. This makes seeing objects that are close up increasingly difficult.

What is cataract?

Cataract occurs when the crystalline lens becomes clouded due to a change in the structure of protein in the lens. With age, the lens becomes thicker and less transparent, preventing light from passing through and leading to a loss of vision.

The condition is progressive, so over time vision quality diminishes, becoming dull and blurry – similar to looking through a dirty window.

Cataract should be treated when the deterioration in your vision starts to impact your everyday life.

Signs of presbyopia

- The need for reading glasses or bifocals
- Difficulty with near tasks like sewing and other hobbies
- Holding objects further away to see them

Normal vision *Vision with cataract*

Signs of Cataract

- Gradual deterioration in the quality of your vision
- Hazy or cloudy vision
- Faded color perception
- Increased sensitivity to bright light
- Frequent changes in eyeglass prescription

How is cataract treated?

To date, no medical treatment is available to delay or prevent the development of cataract. Surgical extraction of the natural lens, and replacement with an artificial intraocular lens (IOL), is the only technique certain to improve your vision and your quality of life.

Cataract surgery is one of the most common, safest and most effective types of surgery in the world. The cataract affected lens is removed by a process called phacoemulsification, using an ultrasound probe that breaks down and removes the cloudy lens. An acrylic intraocular lens is implanted in its place. The entire procedure is performed through a tiny incision at the edge of the cornea. The incision is usually self-sealing, without the need for sutures, allowing for faster recovery.

The procedure takes approximately 15 to 30 minutes, and is pain-free with the use of a local or topical anesthesia.

What are intraocular lenses?

For such a small medical device, the intraocular lens is an amazing technology. Modern IOLs focus light on the retina, simulating the refractive properties of the natural lens, so that you can enjoy better vision after surgery.

Size of a ZEISS IOL compared to a one euro cent coin

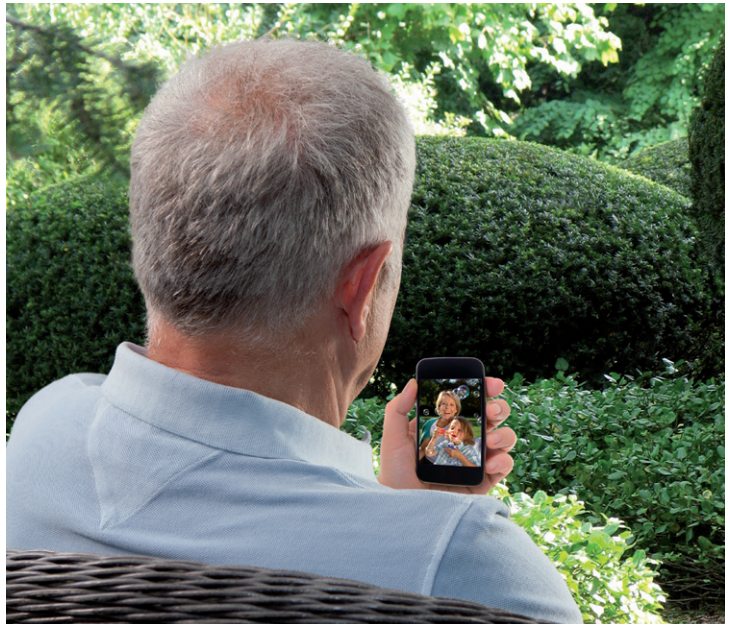
Commonly made from an acrylic material, the lens optic is about 6mm wide and the thickness varies depending on the lens power. The IOL is made from a soft, foldable material that can be implanted through a micro incision, approximately 2.0mm in size.

The most common type of intraocular lens has a monofocal optic that provides a single corrective power calculated to provide good distance vision. It is normal that with monofocal IOLs, for some tasks such as reading and close work, you may still need glasses.

What are multifocal intraocular lenses?

Multifocal IOLs are more technologically advanced to provide more than one focal point. The base lens power is calculated to provide good distance vision and additional focal points provide vision at closer distances, such as for reading, writing or other close work.

Multifocal toric IOLs are designed for patients with astigmatism, to provide special toric correction for distance vision, as well as additional focal points for seeing objects that are up close.



Adjusting to multifocal IOLs

Multifocal IOLs project multiple images on the retina, which your brain uses for viewing objects at different distances. It is normal that it may take a few months for your brain to adapt and quality of vision to reach full performance.

Light phenomena

Immediately after surgery, you may experience some visual disturbances common with multifocal IOLs. This may be more evident under poor light conditions, such as driving at night. These rings of light, commonly called ‘halos’, may appear around street lights or car headlights. As the brain adapts, these will diminish after a few months.

ZEISS multifocal IOLs

Prior to your cataract surgery, you and your doctor will discuss which IOL is best for your vision needs. Your doctor may recommend a ZEISS multifocal IOL.

ZEISS is a trusted brand in optics, and is well known for manufacturing a wide range of high quality lenses.

The **AT LISA® multifocal and multifocal toric IOLs** are designed to provide good distance vision and near vision for comfortable reading. When you choose a multifocal over a monofocal IOL, you open up the possibility to live your life free from glasses.

ZEISS AT LISA IOLs

- Provide multiple focus points
- Good image quality at a range of distances
- Correct existing refractive errors, including regular astigmatism

Freedom from glasses

Clinical studies show that the AT LISA family of multifocal IOLs provides more than 90% of patients freedom from wearing glasses.*

**Data upon request*

AT LISA tri – latest generation of ZEISS multifocal IOLs

The **AT LISA tri,** provides excellent functional vision, not only near and far, but also at **intermediate** distances such as when using a computer, preparing food or having a conversation.

Enjoy good vision in all light conditions, even when driving at night or reading a menu in a dimly lit restaurant. This **trifocal IOL** from Carl Zeiss is the result of years of experience in the development of optical technology. It is designed to match your high expectations, giving you the best chance to live an active life without glasses.

As with all multifocal IOLs, after implantation of the AT LISA tri you will need some time to adjust to the new visual images. Results* have shown that in addition to excellent visual acuity, patient results after surgery with AT LISA tri show fast adaptation to this new optic design with lower levels of light side effects.

When you choose AT LISA tri, you are choosing the opportunity to live your life free from glasses.

*Data upon request

Near vision

Intermediate vision

Distance vision

Questions for your doctor:

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As with all medical techniques and procedures, cataract surgery is not without the possibility of complications. These complications are rare and your physician will explain the individual risks to you.

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