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## Moderate to dense cataract

Everything you need to know about operations, treatments and preventive measures

**Your vision constantly diminishes, and gradually a thick cloud appears before your eyes until you can only see through a thick fog: While cataract is a serious eye disease if left untreated, it can now be safely cured with a routine operation, thus restoring your sight. BETTER VISION explains: What surgical methods and treatments are available for cataract and what are the best ways of preventing it?**

So far, it has not been possible to cure cataract with medication. Surgery, however, is a viable treatment option: the cloudy lens is replaced by an artificial one (known as an intraocular lens) made of acrylic or silicone. Even if it sounds like a major operation, it's actually one of the safest ones out there and is regularly performed to treat cataract. In fact, it's the most common operation performed today. The patient and doctor discuss when the surgery will take place. The major factor here is how much the cloudy lens is affecting the patient's life. The first signs of cataract are visual defects that look like a fog, and an increased sensitivity to light. As the disease progresses, typical symptoms are fading colours and contrasts, trouble seeing at dusk or in poor light, greater glare and a reduced ability to adapt to light and darkness. With cataract, clouding usually occurs slowly and over a number of years, which is why patients normally only go to a doctor once it's too late. If cataracts are genetic, surgery is recommended without delay to restore patients' vision as quickly as possible and reduce the risk of permanent damage. Age-related cataract also requires surgery without delay. If left untreated, cataract may result in blindness. Read on to find out more about cataract surgeries and prevention.

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## Cataract: What does surgery involve?



Cataract surgery is normally performed as an outpatient procedure. First, a local anaesthetic is administered in the affected area, either with eye drops or an injection. A general anaesthetic is rare, and is given to children or in special cases such as when patients have a bad cough. Once the anaesthetic has taken effect, the doctor will begin by removing the cloudy lens of the eye that is most affected and “anchoring” the new, artificial lens in the eye. Surgery on the second eye will be performed at a later date – and only once the first eye has healed and is working properly. For the eye doctor to select a suitable artificial lens, they have to measure the affected eye precisely. That’s the only way to ensure that the operation can be performed without complications and the patient can then see as well as possible with the new lens. To achieve an optimum result, over 75 percent of all cataract surgeries are performed using medical equipment from ZEISS. Cataract treatment comprises many different steps and several kinds of devices – from diagnosis through to follow-up care. ZEISS offers the right products and solutions throughout the process to assist doctors as they treat cataract.

## What surgeries are available?

Read on to find out all about standard surgical practices for treating cataract.

> [Please click here if you'd like to find out more about the structure and functions of the eyes.](#)

There are currently two surgical procedures available for treating this disease: **extracapsular cataract extraction** (ECCE) and **intracapsular cataract extraction**. The most common of the two is extracapsular surgery. This is where the “natural mount” of the lens, or lens capsule, remains intact. The lens is removed, but its “back wall” is untouched. The benefit of this method is that the new artificial lens can be more firmly anchored in the eye. There are three possible ways of performing extracapsular cataract extraction: phacoemulsification, cataract surgery with a femtosecond laser and manual ECCE.

## **Intracapsular cataract extraction**

Intracapsular cataract extraction has now become obsolete. It was performed until the 1960s, when it was replaced by extracapsular cataract extraction. Intracapsular cataract extraction involves the cloudy lens – and its capsule – being completely removed from the eye. This technique is normally quite risky and is only performed in exceptional cases, such as when other methods are not possible for medical reasons.

## **Phacoemulsification**

Phacoemulsification is the most common way of treating cataract. Following anaesthesia, a small incision (two to three millimetres) is made and an ultrasound probe is inserted into the eye. The probe uses ultrasound waves to disintegrate the cloudy lens, and the pieces are removed through suction. The surgeon then carefully fits the customized, foldable artificial lens into the eye through the tiny incision. There is no need for stitches: the incision is so small that it will heal on its own.

## **Cataract surgery with a femtosecond laser**

Cataract surgery using a femtosecond laser is hailed as the most precise and most gentle procedure available today. The incision, the disintegration and the removal of the lens are all performed using a computer-assisted laser, the femtosecond laser. Its name comes from the light pulses it emits, the length of which lies in the femtosecond range. Femtoseconds are incredibly short – one femtosecond is 0.000000000000001 the length of a regular second. The laser only comes into contact with the tissue for a fraction of a second, which ensures as gentle an operation as possible. Cataract surgery performed using a femtosecond laser is unsuitable for patients whose lens is very hard due to an advanced stage of the disease.

## **Manual ECCE**

As the name reveals, manual extracapsular cataract extraction is done by hand, i.e. without using a laser or ultrasound. The surgeon makes an incision which is then sutured. This suture causes the cornea to contract and curve. The healing process with manual ECCE takes longer and holds a greater risk of inflammation. This kind of surgery is therefore only performed in exceptional cases, e.g. in patients with advanced cataract in order to protect the cornea, or if the lens is so hard that it cannot be liquefied and removed in one piece.

## **After surgery: What should I bear in mind?**

After cataract surgery, the patient will normally be sent home straightaway. If the surgery is performed as an in-patient procedure, they will normally be kept in for observation for two to three days. As with most eye treatments, good medical follow-up care is absolutely essential. After the surgery, the patient will need to wear an ointment dressing for at least 24 hours to protect and care for the eye. Antibiotic and anti-inflammatory eye drops will also be prescribed for up to four weeks. The eye doctor will monitor the healing process at regular intervals. Patients must observe the following after cataract surgery:

- ✓ Do not rub or apply pressure to the eye
- ✓ Take any prescribed medication as advised
- ✓ Attend all follow-up appointments
- ✓ Avoid playing sports and engaging in other physical activities, especially in the first few days after the operation
- ✓ Do not allow water, shampoo or soap to come into contact with the eye
- ✓ Do not go to the sauna or go swimming

While there are no guarantees, if the cataract patient doesn't suffer from any other eye problems, it's likely this surgery will completely restore their vision. In other words, patients will no longer need to wear glasses or contacts to see clearly. Their vision will be clear as soon as they remove the bandages the next day. By the same token, if the patient suffers from other eye diseases or visual defects, these must be corrected after the surgery with the right visual aid.

## **How can cataract be prevented?**

Please note that not all causes of cataract have been discovered. Depending on the cause, there are a number of ways to prevent cataract. Age-related cataract is a natural part of the aging process;

this type of cataract cannot be prevented – the same goes for inherited cataract. A measles infection in the womb can also cause cataract in the unborn baby. Getting vaccinated against measles can thus prevent your unborn child from developing cataract. The best course of action is to check your vaccinations before you fall pregnant, or as soon as you know you're pregnant, and get any vaccinations you need.

There aren't any other effective ways of preventing cataract other than avoiding certain factors that increase the risk of developing cataract. These include:

- ✓ **Smoking and alcohol:** As smoking has been proven to be linked to cataract, kicking the habit – or not smoking in the first place – can help prevent cataract. The same applies to excessive alcohol consumption.
- ✓ **Diabetes:** Diabetes is another risk factor. Key measures for preventing diabetes are a balanced diet, and getting enough sleep and regular exercise. If the disease has already been diagnosed, it must be treated without delay.
- ✓ **Eye injuries:** Injuries to the eye also increase the risk of developing cataract. This risk can be reduced by wearing goggles whenever you perform dangerous tasks (e.g. drilling or polishing).
- ✓ **UV radiation:** To avoid damage from UV rays, you should always wear glasses with UV protection, especially when on holiday, at the tanning studio or in the mountains. A pair of sunglasses or ski goggles goes a long way towards protecting your eyes and effectively reduces the risk of developing cataract. Please note that UV light and UV rays are also a risk on cloudy days. So make sure you always protect your eyes and your skin from UV rays, even on grey days.

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