eye vet

FOCUS ON CATARACTS

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What is a cataract?

The lens inside the eye acts to focus light on to the thin layer of cells at the back of the eye (the retina) which sends information to the brain allowing vision. A cataract is a cloudy change or opacity of the lens, which prevents light from reaching the retina. Cataracts can develop in one or both eyes and, in severe cases, can lead to blindness. This can occur very quickly over a few days, or slowly over a number of years. A cataract can take on a variety of appearances, ranging from cracked ice, a diffuse haze, a pearl like sheen, or white streaks. The cataract might start as small dots that progress to include larger areas of the lens.

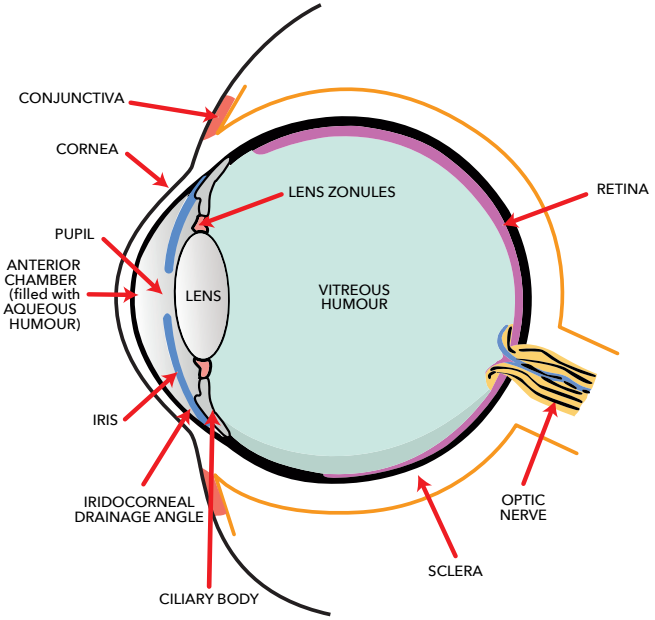
What causes cataracts?

There are many different causes of cataracts. Cataracts can result from:

- Injuries to the eye
- Inflammation with in the eye
- Diseases of the body such as diabetes mellitus

Although it might be difficult to identify the specific cause, cataracts that develop in eyes that do not show signs of other ocular diseases are assumed to be inherited.

In dogs, cataracts are commonly inherited, but in cats, inherited cataracts are far less common.

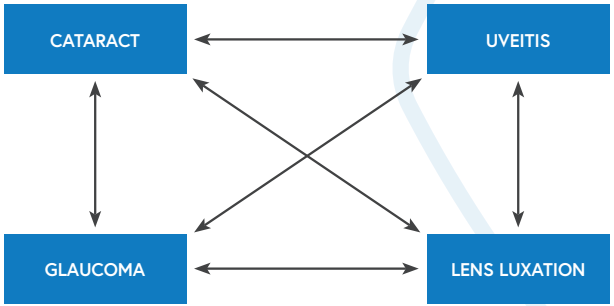


Anatomy of the eye

Why do cataracts need to be treated?

Cataract surgery is an elective procedure. All cataracts cause inflammation inside the eye, which we call uveitis. If untreated, this inflammation damages the eye. This results in further problems such as high pressure inside the eye (glaucoma) or retinal detachment, where the light sensitive layer peels off the back of the eye. Untreated cataracts can therefore cause complete and irreversible blindness. All cataracts benefit from early intervention: either medical therapy to control the inflammation or surgery to remove the cataracts.

In diabetic patients, the cataracts develop due to excess glucose in the body which alters the normal metabolic pathway causing excessive water flow in to the lens. This causes rapid swelling of the lens, which can then rupture inside the eye, ultimately causing blindness. It is for this reason that it is very important to treat diabetic cataracts sooner rather than later.



How are cataracts treated?

There is no available medical treatment to slow the progression, prevent the formation or reverse the changes caused by a cataract. Surgical removal is the only known treatment for cataracts in animals and humans. Removal of the cataract allows light to pass through the eye to the light sensitive retina again.

In the past, it was believed that cataracts should be left until the eye is totally blind before surgery was performed. The longer a cataract is present in an eye, the higher the level of inflammatory damage to the eye. We now know that earlier intervention results in more successful outcomes, as we avoid the lens induced inflammation which causes progressive damage over time.

Cataract assessment

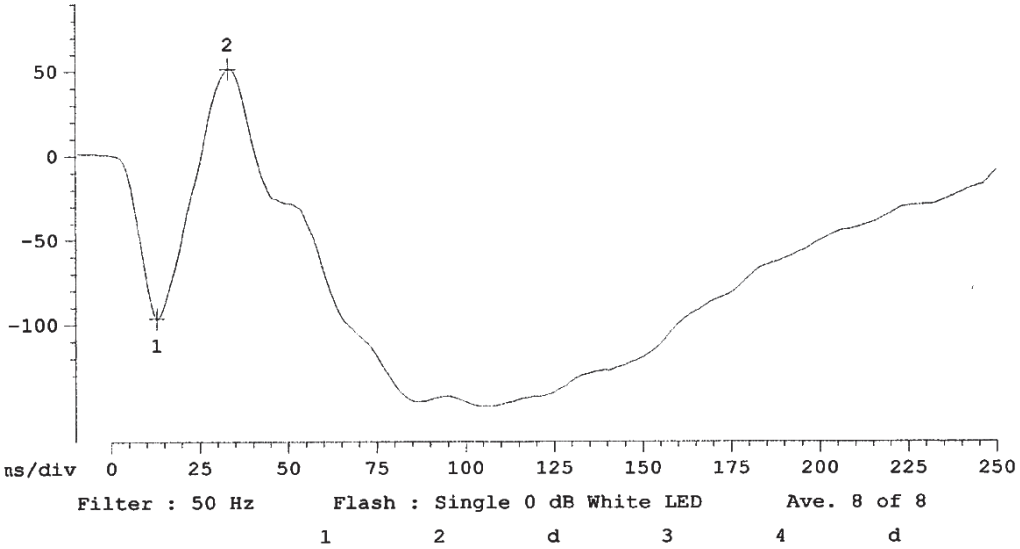
All patients undergoing cataract surgery will have a 'cataract assessment' prior to the actual surgical removal of the cataracts.

The assessment consists of electroretinography (ERG) and an ocular ultrasound, as well as blood/urine analysis. Diabetic patients need to have their diabetes under control. All patients will need clean oral health, so dental surgery may be needed before cataract surgery can be performed.

Your pet will need to be admitted and sedated to perform the cataract assessment.

Electroretinography (ERG)

Some animals have a condition where the retina slowly degenerates. This can result in cataract formation, but removal of these particular cataracts may not improve vision as the retina will still be abnormal. Performing the ERG will allow us to assess whether surgery will be beneficial or not by assessing the function of the retina.

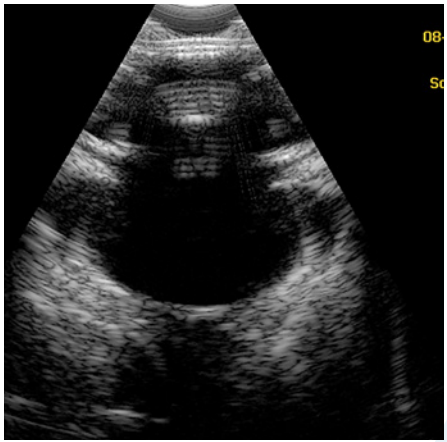


Normal electroretinography of a dog

Ultrasound

Depending on the stage of the cataract, we may still be able to examine the back of the eye. But as the cataract progresses we are unable to see if the retina is detached or abnormal.

The ultrasound scan allows us to visualise the lens and retina, and to make measurements and assessments.



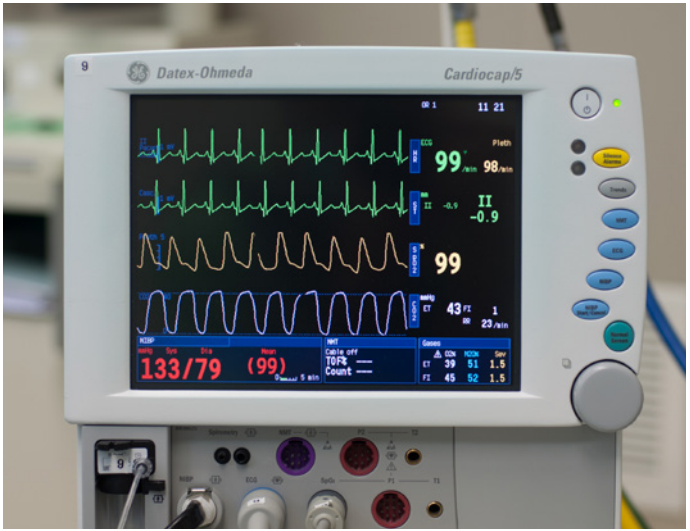
Normal Eye

Large, central, dense cataract formation'

Retinal Detachment

Anaesthesia

Cataract surgery is an elective surgery. Patients are often older, and usually have other problems such as diabetes mellitus or heart disease that can cause complications with anaesthesia. Patients therefore need to have their general health fully assessed before surgery.



At Eye Vet, our surgical team comprises of a veterinary ophthalmologist, a veterinary anaesthetist and fully trained, registered veterinary ophthalmic nurses. Our anaesthetists will perform a physical examination and blood work at the time of the cataract assessment. They may recommend further investigation or treatment prior to the surgery, which can usually be done at your own veterinary clinic. These recommendations are for the benefit of your pet and will aid in their assessment and suitability for cataract surgery. A successful long term outcome also depends on adequate control of other health conditions such as skin or ear disease, urinary infections or dental problems.

Patients need to have a neuromuscular block performed to enable the eye to be held in the correct position during surgery. This involves putting your pet on a ventilator throughout the procedure to ensure their breathing is supported. This is monitored intensively by the anaesthetist and nurses, using a variety of specialised equipment. The cost of all this specialist supervision is included in your surgical estimate.

Our large team of highly skilled veterinary nurses assist the surgeons and anaesthetists. They all work together to ensure that patients are fully supported through the pre-operative, operative and post-operative periods. Because of this, cataract surgery is an intricate balance of all areas of expertise involving the whole team.

What does cataract surgery involve?

After the cataract assessment has been performed, your pet will be booked in on a suitable surgical date for cataract removal. The time frame for this surgical appointment depends on the urgency of the case, the theatre space available and the surgeon's theatre list.

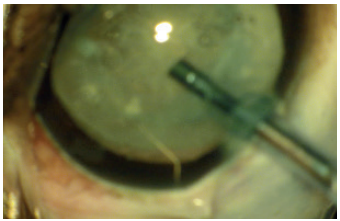
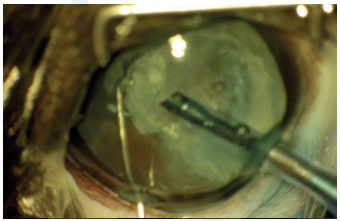
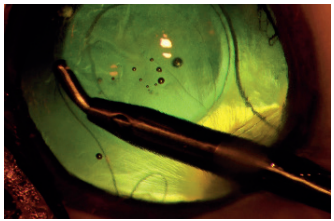
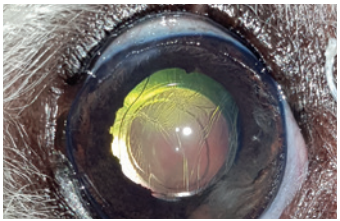
On the day of the operation, patients are admitted by the nursing team and then examined by the anaesthetist. Various topical eye medications will be applied in the pre-operative period. Appropriate premedications will be given to sedate your pet ready for anaesthesia. An anaesthetic agent will be administered to induce general anaesthesia. The anaesthetists and nursing team will continually monitor the patient for the entire anaesthetic and recovery period, using extensive monitoring equipment to detect abnormalities in heart rate, breathing rate, blood pressure, temperature, and respiratory gases.

Cataract surgery is called phacoemulsification and it is performed under an operating microscope. A small incision is made in the cornea through which we can place instruments inside the eye. A small circular hole in the capsule surrounding the cataract is made and a state of the art machine used to break up the cataract using ultrasonic waves, before vacuuming the resulting debris from the eye.

After the cataract is removed, an artificial lens specifically designed for animal eyes is placed inside the empty lens capsule. The entire procedure takes approximately 30-45 minutes per eye, and the general anaesthetic typically lasts about 90-120 minutes.

During recovery, we continue to closely monitor your pet for ocular changes such as intraocular pressure spikes. Patients can go home once the intraocular pressure is controlled. Because of this, patients are usually discharged from the hospital several hours after the surgery. The nursing team will ring you to arrange a discharge time.

Postoperatively, you need to continue to administer the eye drops and oral medications, which we gradually taper to a low-level maintenance regime. The use of these medications is critical to the success of the surgery by helping to prevent infection and to control postoperative inflammation. Most patients will be discharged with 4-6 different drops each to be administered up to 6 times daily.

What happens after surgery?

It is important that you follow the aftercare instructions provided to you via the ophthalmologist and nurses in order to give your pet the best chance of success following surgery. Patients are discharged with a buster collar (Elizabethan collar), which must be kept on at all times for 2-3 weeks. Do not remove the buster collar until told to by the ophthalmologist. A harness must be used instead of a collar, as any pressure on the neck can result in increased pressure inside the eye. Patients need strict rest for the first 4 weeks. This means no running or off-lead walks, no jumping on/off furniture, no stairs and no playing with toys. Short lead walks 2-3 times daily is allowed.

Tablets to control infection and inflammation need to be administered daily, and topical eye drops need to be frequently applied in the first few weeks. This intensive aftercare gradually reduces over time should the ophthalmologist be happy with your pet's progress.

Post-operative checks are usually within 24-48 hours, 7 days, 14 days, 28 days and then every few months, gradually declining to every 6-12 months in the long term.

Signs of discomfort include squinting, increased tearing, redness of the white of the eye, closing the eye, or cloudiness of the front part of the eye. These need to be reported immediately.

How successful is cataract surgery?

Without surgery, the eye will remain blind and may go on to develop painful problems like uveitis and glaucoma, which will prevent successful surgery. Cataract surgery has a success rate of 85-90%, restoring vision to our patients and improving their quality of life. This depends not just on a successful surgery, but also on a strict adherence to the medication and aftercare regime you will have to follow.

What your pet will be able to see after surgery?

The surgical removal of a vision-impairing cataract can result in a dramatic improvement of functional vision. Some patients need more time to adjust than others do. The implantation of an intraocular lens will greatly improve the rapidity and accuracy with which your pet will see.

In some cases, we opt not to place an intraocular lens. In these patients, the visual image seen by the retina will be slightly larger and less distinct than normal. Far-sighted vision will improve significantly while near-sighted vision might be less accurate.

What complications can occur?

Up to 15% of patients can have complications. These can arise during surgery or the recovery period, or even years later. If you decide to go ahead with cataract surgery you need to be vigilant for the rest of your pet's life. Complications can be minor and treatable, but at the most serious can result in blindness or loss of the eye.

Potential complications include:

- Wound breakdown
- Infection of the surgical site or intraocular infection
- Corneal ulceration
- Corneal scars
- Inflammation inside the eye (uveitis) - while all patients develop inflammation after surgery, this is usually controlled with the postoperative medication. Animals get more inflammation than humans following cataract surgery and so require long term medication to control it. Sometimes the inflammation is excessive and causes further problems inside the eye.
- Increased pressure inside the eye (glaucoma) - some patients suffer elevations in pressure following surgery but this is usually controlled with medication. In some patients the increase is sustained and difficult to treat. This can result in permanent damage to the eye and blindness.
- Retinal detachment
- Bleeding inside the eye (hyphaema)
- Displaced artificial lens

Some of these conditions are painful and can lead to blindness. Close monitoring is needed to identify and intervene when problems start to occur.

For these reasons, you and your pet will be having regular visits to Eye Vet following the cataract surgery. Initially, your appointments may be as regular as 1-2 times a week, but we aim to reduce your visits to every few months if postoperative healing is going well. We may need to see you more frequently should your pet experience any complications.

Can the cataract come back after surgery?

Because we remove the lens contents during surgery, the cataract does not come back. We need to leave the empty capsule to place the artificial lens. In some cases, progressive scarring of the capsule that surrounded the lens may result in a recurrence of visual disturbances. This is called 'after cataract'. This is very uncommon, but if it does occur, we can attempt to remove the scar tissue with a non-invasive laser procedure.

FAQs

Will the cataract surgery be performed on the same day as the cataract assessment?
No. It is necessary to pre-treat the patient to reduce intra-ocular inflammation prior to surgery. Normally, your pet will be booked in for the surgery on a subsequent date following the assessment. Only emergency surgeries are performed on the same day.

How long does the surgery take?
Depending on the severity of the cataracts, surgery usually takes 90-120 minutes to perform. Following the surgery your pet will need to recover from the anaesthetic and have close monitoring of the eyes, so discharge times will be several hours after surgery ends.

Will my pet have to stay in overnight?
Patients will go home on the same day as surgery but will be rechecked within 24 hours.

What do I do if my pet is diabetic?
You will be given detailed instructions from the nursing team regarding what to do if your pet is diabetic. It is essential that these instructions are followed, even if they are different to your normal feeding/insulin routine. If you have any questions regarding your instructions please contact the surgery.

Can I go back to my normal vet for post-operative checks?
The ophthalmologists at Eye Vet are trained to look for subtle changes in the eyes using specialised equipment that tends not to be available in general practice. Failure to attend follow-up appointments may result in these changes being missed which may be detrimental to your pet and their vision.

How important are the post-operative drops?
Post-operative drops are essential for a successful outcome following cataract surgery. If you are unable to apply drops to your pet it is unlikely that we will proceed with cataract surgery. There will be an intensive post-operative period of eye drops which must be adhered to. We aim to reduce this as the eyes improve.

What if I am worried about my pet following surgery?
During opening hours you can call the surgery for advice. If the surgery is closed you will be given an emergency contact number to ring to speak to an ophthalmologist.

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