

Ophthalmology

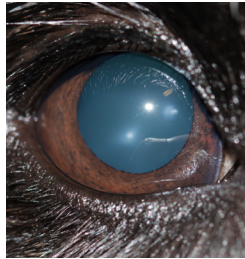
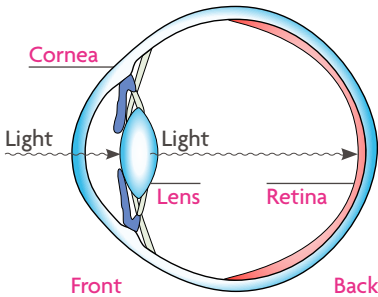
Cataracts Explained



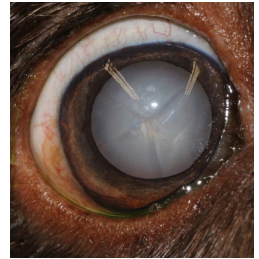
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What are cataracts?

A cataract is an opacity (or cloudiness) of the lens. The lens is normally a transparent, spherical structure in the eye that focuses light onto the retina. A cataract therefore blocks the light from getting to the retina. In the early stages this can result in blurring of vision, but as the cataract progresses this can result in complete blindness.



Eye without cataract



Eye with cataract

Why did my dog develop cataracts?

There are many causes of cataracts. Some dogs are born with them and others develop as a result of an inherited problem or diabetes. Cataracts are also common in elderly dogs.

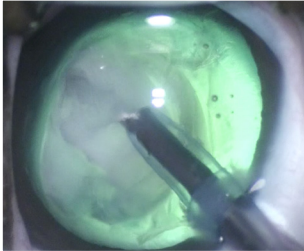
Diabetic cataracts

Unfortunately, nearly all diabetic dogs will develop cataracts and go blind. Diabetic dogs have high blood sugar levels which leads to high sugar levels inside the lens. This excess sugar in the lens draws water into it which causes the lens to swell and for cataract to develop. Diabetic cataracts can develop rapidly and cause a lot of inflammation within the eye requiring urgent surgery. It is very important that dogs with diabetic cataracts are referred early to improve the chance of successful surgery.

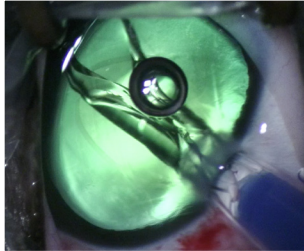
What is the treatment for cataracts?

Currently there is no commercially available medical treatment that can reverse, slow or prevent cataracts from forming. The only effective treatment for cataracts is surgical removal of the lens to restore vision. The surgical technique is known as phacoemulsification. This is performed using magnification with an operating microscope. In dogs the operation must be performed under

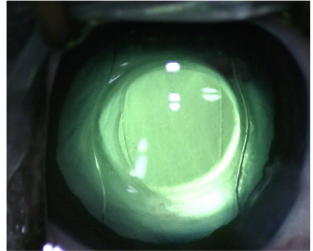
general anaesthesia (unlike humans!). One or two small incisions are made at the edge of the cornea, through which microsurgical instruments are introduced. The cataract is broken up using ultrasonic energy and then removed from the eye. In most dogs, an artificial (plastic) lens is then implanted to restore vision. The incisions are finally closed with very fine (and dissolvable) sutures (stitches). The surgery usually takes around 30-45 minutes from start to finish for one eye, or 60-90 minutes for both eyes.



Phacoemulsification being performed



Placement of the artificial intraocular lens



Eye immediately after cataract surgery

What does the assessment prior to surgery involve?

Prior to surgery all dogs must be examined on an individual basis by a veterinary ophthalmologist to decide whether the eyes and the dog are suitable for cataract surgery. This involves assessing the dog to make sure he/she can safely undergo general anaesthesia and will allow frequent examination and application of eye drops. A full **ophthalmic examination** will be performed which involves examination of the whole eye to determine the overall ocular health and to determine the likelihood of any possible surgical complications.

If a clear view of the back of the eye is not possible because the cataract is too dense, or if we have concerns about the function of the retina, then other diagnostic tests may be required prior to surgery. These include ocular ultrasonography and electroretinography:

- **Ocular ultrasonography** is used to help identify complicating factors prior to surgery such as retinal detachment, lens capsular rupture and opacities within the vitreous or behind the lens that may impact the success rate of surgery. It can also help us determine the most appropriate size of any artificial lens that will be implanted.
- **Electroretinography** will sometimes be performed if we are concerned that the retina is not working properly. It is a special diagnostic test that measures the electrical activity of the retina. It is usually performed under sedation.

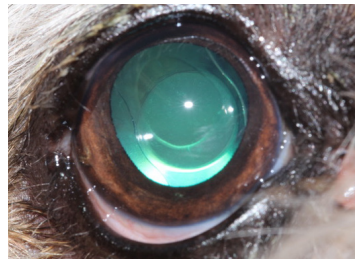
If, after thorough assessment, your dog is considered to be a suitable candidate for surgery, then we can plan a date for the operation in the near future. He will usually be admitted to hospital the day before the planned cataract surgery. This way our anaesthesia team can formulate the anaesthetic plan, any further investigations required can be performed, pre-operative medications can be given, and he can have time to settle in. He will usually need to stay in after the surgery for monitoring of his intraocular pressure for one or two nights after surgery.

What is the aftercare?

Your dog must be kept as quiet as possible after the surgery (no rough play or excessive activity). He will be sent home with a head collar which he will need to wear to prevent him from damaging his eyes after the surgery. A harness should be used to prevent pressure on the neck caused by a collar/lead which can increase the pressure and cause problems in the eyes.

Initially, the aftercare is intensive. This is because all dogs will develop some degree of inflammation (known as uveitis) inside their eyes after the surgery and it is important that this is controlled. Usually he will be sent home with several types of eye drops and some oral medications. Most dogs require 10 eye drops per day for the first week. These medications will then be gradually reduced over the following months. Some dogs may need eye drops for life after the surgery.

Your dog will require regular and life-long check-ups by an ophthalmologist. As a general rule we would usually see him within a week of surgery – and then several more times over the first three months after surgery. Long-term, we advise a check-up every six months; this is to ensure the best outcome for your dog's eyes and vision in the long-term.



Dog after cataract surgery

What are the risks and complications?

The success rate for cataract surgery is around 90% overall in dogs, although in some breeds such as the Labrador Retriever this may be lower (70%).

As with any surgery, there are a wide range of potential risks and complications – while serious complications are rare, it is important that the risks are understood before surgery. Certain pre-existing medical conditions, such as diabetes mellitus, can make the anaesthesia and post-operative care more challenging. Therefore, we will work together with your local vet and other specialists in our hospital to optimise and customise your dog's care.

The three main complications seen after cataract surgery are uveitis, glaucoma and retinal detachment. Less severe complications may include corneal ulceration, corneal oedema, infection and breakage of the sutures or leaking of the surgical incision (requiring re-stitching of the wound).

Some degree of **inflammation (uveitis)** is always present in the immediate post-operative period. Most of the intense medication required around the time of surgery are used to treat uveitis. If uveitis is left untreated, it can directly damage vision and cause other complications such as glaucoma and retinal detachment. We will give medications both before and after the surgery to control this inflammation. We will adjust the treatment regime dependent on how much inflammation is present.

Increased pressure inside the eye can occur in the first couple of days following surgery, this can usually be controlled with eye drops but may require close monitoring. Occasionally (less than 10% of cases), a more severe permanent increase in pressure may develop that affects vision (**glaucoma**). This can occur at any time after surgery. Glaucoma can be treated with medication and sometimes surgery. Some breeds of dog are more prone to developing glaucoma than others. Unfortunately, glaucoma is a very serious complication and often leads to the development of a painful blind eye which requires removal.

Retinal detachment is an uncommon complication (around 1-2% of cases) that certain breeds are more at risk of developing. If the retina detaches following surgery, it leads to loss of vision. Retinal detachment increases the risk of glaucoma.

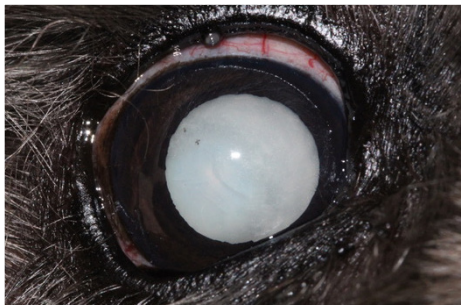
*Whilst we try to anticipate and avoid complications, they are not always predictable. Serious complications can result in permanent blindness and/or pain. If an eye becomes blind and painful, unfortunately it will usually need to be removed (surgery to remove an eye is known as an enucleation). Hence, we usually only advise cataract surgery if significant visual deficits are present.

Can the cataract form again after the surgery?

Not as such. The lens capsule, which is left behind after the surgery, does develop some opacity (known as PCO – posterior capsule opacity) in the months and years following surgery but does not usually affect vision significantly. There is also a very slow re-growth of lens fibres (sometimes called 'after cataract') – the artificial intraocular lens is specially designed to keep these lens fibres away from the centre of the lens, therefore ensuring clear vision. Again, this lens fibre re-growth rarely affects vision significantly.

Conclusion

Overall the success rate of cataract surgery is high, and the vast majority of patients will do very well after surgery, with their improved vision leading to an improvement in their quality of life. The surgery and post-operative care can be a big undertaking and the potential complications should be carefully considered. Cataract surgery is regularly performed at Dick White Referrals and if you decide to go ahead with the surgery, we will be here to support you on this journey to give your pet the chance of better vision.



Eye before surgery



Eye after cataract surgery

