

Lens Luxation Surgery

What is lens luxation?

The lens is a clear structure that normally sits inside the eye, behind the iris, and its function is to focus light on the retina. It is held in place by anchors called “zonules”.

When these zonules break down, the lens can slip out of position. There are varying degrees of lens instability with progressively higher consequences:

- 1. Lens subluxation** – some of the zonules have degraded, leading to partial “slippage” of the lens. In these eyes with a subluxation, there may also be an increase in pressure in the eye.
- 2. Lens luxation** – the lens becomes completely detached, and can slip either to the back of the eye, or the front chamber of the eye. If it falls to the back of the eye, it generally has minimal consequences for the eye. However, if it slips into the front chamber of the eye, known as anterior lens luxation, this can cause sudden and dramatic increases in pressure inside the eye which is painful and can be blinding, often requiring emergency treatment.

How is lens luxation treated and what are the chances of success?

There are many different treatment options for lens luxation:

- **Medical management:** drops to constrict the pupil and trap the lens in the back of the eye
- **Lens couching:** manually push the lens to the back of the eye, followed by drops as above
- **Removal of the lens:** this can be done by a procedure called “ICLE” or “phacoemulsification”
- **Removal of the eye**

Each patient will require a very specific type, or combination of, treatment(s), depending on their specific presentation. One of our ophthalmologists will be able to go over which option is suited for your pet, and the likelihood of success.



Lens luxation in a Jack Russell Terrier. Note how the lens sits in the front of the eye like a ‘clear marble’. The arrows show the edge of the lens in front of the.



The same eye as above after removal of the lens. The red rim at the top is the incision into the cornea, which is healing.

Which procedure would my pet need and what's the success rate?

For lenses that are unstable (subluxated) but still in the correct place:

a) Medical management. It may also be possible to keep these patients comfortable with the use of eye drops to keep the pupil constricted. These drops **MUST BE APPLIED TWICE DAILY WITHOUT FAIL** as the luxated lens can otherwise come forward and become stuck if the pupil is dilated. The success rate of medical management of lens instability are unclear but some surgeons believe that they approach those of surgery – without the cost of a surgical procedure.

b) Removal of the lens via an “ICLE”. The success rate (eye still visual at two years) for this procedure is approximately 50%. Possible complications of this operation include bleeding into the eye, retinal detachment or the development of high pressure (glaucoma).

c) Removal of the lens via phacoemulsification (please see “Cataract Surgery Factsheet” for details on this surgery). This surgery has a higher success rate (eye still visual at three years) of approximately 75%.

For lenses that have luxated and are settled in the back of the eye:

a) Medical management. It may be possible to keep these patients comfortable, with varying degrees of vision, with the use of eye drops to keep the pupil constricted. These drops **MUST BE APPLIED TWICE DAILY WITHOUT FAIL** as the luxated lens can otherwise come forward and become stuck if the pupil is dilated.

b) Removal of the lens via an “ICLE”, as above with similar success rates.

For lenses, that have fully detached (luxated) and are stuck in the front of the eye:

a) Removal of the lens via an “ICLE”, as above with similar success rates.

b) Lens couching. An alternative to surgery is to attempt to push the lens into the back of the eye under sedation. If the lens can be pushed back, then it is essential that the patient receives LIFE-LONG drops, twice daily. The drops ‘trap’ the lens in the back of the eye. We believe this treatment is possible in 80% of patients, and has a success (eye still visual at one year) rate of approximately 50%.

c) Removal of the eye. If the lens cannot be pushed back and if surgery is not an option, then removal of the eye (enucleation) is the treatment of choice to provide pain relief.

Regardless of whether your dog's lens luxation is managed medically or surgically there is a real chance that your dog will eventually develop pressure problems in the affected eye (glaucoma). Often, this can be successfully managed for several years with medical or even surgical treatment. Regular check-ups and life-long medication will be required in all patients diagnosed with lens luxation to optimise the treatment outcome, keep vision as long as possible and ensure that your dog is not in pain.

The decision on which treatment approach is most suitable for your dog, and your life-style, will be discussed with your ophthalmologist. It is not always a clear black-and-white decision and we will use our expertise and experience to help you make the right decision for yourself and your dog.

