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 instability - some of the zonules have degraded, however the lens is still generally held in place
2. Lens subluxation - there is a higher number of detached zonules, leading to partial "slippage" of the lens
3. 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 increases in pressure inside the eye which is painful and can be blinding, often requiring emergency treatment.


In this eye, the zonules on the top have degraded leading to lens instability. In this case it has progressed to lens subluxation.


Here the lens has completely detached and fallen into the back of the eye, also known as posterior lens luxation.


This is most concerning situation, where the lens has detached and fallen into the front of the eye, known as anterior lens luxation.

## What happens if lens luxation is left untreated?

If the lens is stuck in the front of the eye, it will almost always cause pain and loss of sight - which with time becomes irreversible. Removal of the eye is then required to alleviate the pain. Lenses that are floating within the back of the eye tend to cause less acute damage but may also be harmful to the retina at the back of the eye with time.


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 iris - they lens usually sits behind the pupil!

As the lens touches the cornea, the eye has become cloudy.

## Why does my dog have lens luxation?

After the diagnosis of lens luxation is made, your ophthalmologist will usually decide which one of two categories your dog belongs to:

- Dogs with inherited (primary) lens luxation: these patients are born with a genetic defect that results in a breakdown of the lens zonules. The condition is most common in the terrier breeds but can also happen in other breeds. DNA testing for the condition is available in many of the breeds (see www.laboklin.co.uk). In dogs with primary lens luxation, both eyes are affected by the disease, which means that, if your dog is diagnosed with primary lens luxation in one eye, the second eye likely also become affected at some point in the future.
- Dogs suffering from secondary lens luxation: in these patients, something else has occurred within the eye that has caused the slipping of the lens. The most common reasons for secondary lens luxation are chronic inflammation within the eye, high pressures with stretching of the eyeball, age related weakness, and tumours. Secondary lens luxation may occur in one eye only as the underlying disease may only be present on that side.

How is lens luxation treated and what are the chances of success?
There are many different treatment options for lens luxation:

- Lens couching to push the lens to the back of the eye
- Drops to constrict the pupil and trap the lens in the back of the eye
- Removal of the lens
- 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. For more information on these specific procedures please consult our "Lens Luxation Surgery Factsheet"

