



Crescent Veterinary Clinic,  
Dooradoyle Road,  
Limerick.

**Tel:** +353 (0)61 301841

**Fax:** +353 (0)61 307688

**Email:** [info@eyevet.ie](mailto:info@eyevet.ie)

**Web:** [www.eyevet.ie](http://www.eyevet.ie)

## **LENS LUXATION**

### **What is lens luxation?**

Lens luxation is defined as displacement of the lens from its normal position inside the eye. The lens may be sub-luxated, in which case it is partially displaced but still has some attachments. Anterior lens luxation means that the lens has fallen forwards and is sitting in the anterior chamber (the front chamber of the eye) or fallen backwards into the posterior chamber (the main or back chamber of the eye).

Lens luxation is an emergency, and advice from a veterinary ophthalmology should be sought immediately.

### **What problems does luxation of the lens cause?**

Lens luxation can cause several problems. The lens is in the optimal position for refracting light rays which it receives onto the retina on the back of the eye, so that a sharp image can be seen. If it is in the wrong position, it no longer provides a sharp image.

When the lens is in an abnormal position, it can cause a physical blockage of the normal flow of fluid within the eye. This can cause the pressure within the eye to rise, and when it stays raised this can cause glaucoma ([LINK](#)). Glaucoma is a very serious eye condition, as it is very painful and can quickly damage the eye so that it will be permanently blind.

### **What causes lens luxation?**

Primary lens luxation occurs when there is a weakness in the zonules which suspend the lens, holding it in position. There can be an inherited condition in certain breeds although it can happen in any breed. It most often occurs in terrier breeds (notably the Jack Russell Terrier, Fox Terrier, Tibetan Terrier), and also in the Border Collie and the Shar Pei. The condition happens while the animal is relatively young, usually two to six years of age.

Secondary lens luxation occurs as a result of another eye disease. Glaucoma can cause stretching of the eyeball, where the eye physically gets larger. This can stretch the zonules which are suspending the lens until they break and allow the lens to fall out of position.

Severe blunt trauma to the eye can cause rupture of the zonules, causing lens luxation.

Uveitis is the term used for inflammation inside the eye, and when this is severe, lens luxation can result.

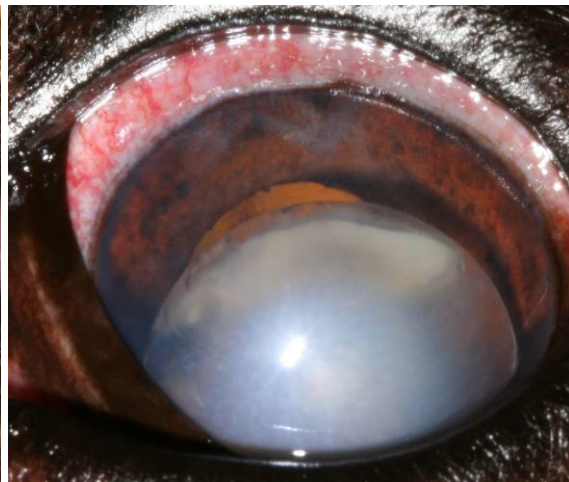
## What are the signs of lens luxation?

Some of the signs of lens luxation are visible to the naked eye, but it usually diagnosed by a vet who can see more subtle signs within the eye using magnification.

1. Ocular pain – the eye is usually held shut and there may be a watery discharge
2. Red eye – the area of the eye which is normally white may be red
3. Aphakic crescent – on shining a light into the eye, a brighter arc of reflected light may be visible in the area devoid of lens where the lens has slipped out of position
4. Corneal oedema – a white patch may develop on the cornea when the lens falls forwards and rests against it, disturbing the nutrition of the cornea
5. Iridodonesis and phacodonesis – your vet may appreciate that the iris and lens are wobbling. This is because the normal situation where the iris is resting against the lens has been disturbed, allowing them to move
6. Vitreous escape – the vitreous is normally in the back of the eye. If the lens has fully or partially (sub-) luxated, the vitreous is allowed to escape in front of the pupil where it looks like wisps of cotton wool



Vitreous prolapse – a very early sign



Anterior lens luxation

## How is lens luxation treated?

Lens luxation is an **emergency**, and needs to be assessed straight away. The treatment chosen will depend on whether the lens is completely detached or partially detached, on whether it has fallen forwards (anterior lens luxation) or backwards (posterior lens luxation), on whether vision is present or not, and on the cause of the luxation (primary luxation in the terrier or secondary luxation in long-standing glaucoma).

Many cases require emergency surgical removal of the lens. There are two main techniques for this procedure. Intracapsular lens extraction involves removing the lens intact in its capsule through a large incision made in the periphery of the eye. The lens has a lot of vitreous (the jelly-like substance at the back of the eye) attached to it and this is removed using 'vitrectomy'. In cases where the lens is more stable, it may be removed using phacoemulsification as is used for cataract surgery, in which the eye is



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entered through a small incision in the eye and lens capsule and the contents of the lens are removed followed by the capsule.

Aftercare will be required from you, which is the same as that for cataract surgery.

### **What about the other eye?**

It is of utmost importance that the other eye is carefully assessed. The vet will check for the subtle clues of early lens luxation. If they are present, your veterinary ophthalmologist may elect to remove the lens in the same surgical procedure, or use drops to try to keep the lens in place as long as possible.