



Lens Luxation in Dogs

What is lens luxation?

Lens luxation is defined as displacement of the lens from its normal secure position inside the eye. The lens may be **sub-luxated**, in which case it is partially displaced but still has some fine attachments. Lens luxation means that the lens has fallen forwards (**anterior lens luxation**) and is sitting in the anterior chamber (the front chamber of the eye) or fallen backwards (**posterior lens luxation**) into the posterior chamber (the main or back chamber of the eye). Lens luxation is an emergency, and advice from a veterinary ophthalmologist should be sought immediately.



What problems does luxation of the lens cause?

Lens luxation causes 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**. 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.





How is lens luxation treated?

Lens luxation is an **emergency**, and needs to be assessed straight away. The treatment chosen will depend on several factors including:

- whether the lens is completely detached or partially detached
- whether it has fallen forwards (anterior lens luxation) or backwards (posterior lens luxation)
- whether vision is present or not
- on the cause of the luxation (primary luxation in the terrier or secondary luxation in long-standing glaucoma).

Treatment involves surgical re-positioning or removal of the lens, medical management if the lens is already posterior, or removal of the eye if there is secondary glaucoma and pain.

- **Lens couching** surgically under general anaesthetic – pushing the lens into the back of the eye
- Lens removal by **intracapsular lens extraction (ICLE)** which involves removing the lens intact in its capsule through a large incision made in the periphery of the cornea
- Lens removal by **phacoemulsification** as is used for cataract surgery, in which the lens is removed through a keyhole incision in the periphery of the cornea
- **Medical management** using eye drops to constrict the pupil and keep the lens in the back of the eye
- **Enucleation** means surgical removal of the eye, and this is recommended for blind eyes with painful glaucoma.

What about the other eye?

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

