



# Animal Eye Clinic

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## **LENS LUXATION**

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

Within the eye, there is a focusing device called the lens. The lens is a flattened crystalline ball that is located behind the iris, in the pupil. The lens helps to focus light onto the retina which is necessary for an animal to have vision. Behind the lens is a gelatinous material known as the vitreous. The lens is contained within a capsule which is normally held in place by small fibres called zonules. The zonules are attached to the lens and to the ciliary body to keep the lens in position.

If these zonules break, the lens can become loose (sub-luxated) or completely detached (luxated). If the lens is luxated into the vitreous, it is known as a posterior luxation. If the lens falls forward into the anterior chamber, it is known as an anterior luxation.

### **What are the causes of a lens luxation?**

There are a number of possible causes of zonular rupture resulting in lens luxation or sub-luxation. These include:

- An inherited predisposition to zonule rupture. Commonly seen in terrier breeds such as: Jack Russell, Sealyham, Fox, and Tibetan; also in Border collies and Whippets.
- Congenital or developmental abnormalities which result in the rupture of zonules and subsequent lens luxation. Usually seen in young dogs.
- Idiopathic causes which have no known aetiology. This is commonly the case in cats with lens luxations.
- Zonule rupture may also occur secondary to trauma, intraocular inflammation (uveitis), or due to chronic glaucoma and subsequent enlargement of the globe.

### **What will I see if my pet has a lens luxation?**

Lens luxation is considered an ocular emergency. Common acute signs of a lens luxation include:

- Red eye,
- Cloudy or blue cornea,
- Pain, as evidenced by squinting, tearing, light sensitivity,
- Behavioural changes including loss of appetite.

Anterior luxation of the lens can lead to glaucoma because the luxated lens blocks the drainage of the aqueous humour from the eye. A posterior luxation may also cause glaucoma because the vitreous can flow forward, blocking the drainage angle. The luxated lens may also cause damage to the corneal endothelial cells, resulting in corneal edema. In health, these cells keep the cornea clear.

Timely intervention will limit the risks of secondary complications.

### **Can a lens luxation be repaired?**

Surgical intervention is required in the case of a complete lens luxation. Once a prognosis for vision has been determined for the affected eye, the type of surgery will be discussed. In cases where the luxation is longstanding, glaucoma is present, or there is a lot of hemorrhage within the eye, the prognosis for

vision is poor. In these cases, enucleation or evisceration with prosthetic implantation may be the best option for the overall health of the patient. If a luxation is caught early, in the acute phase, and there are no complications present, the prognosis for vision is good. In these cases a lensectomy may be performed, whereby an incision is made at the limbus and the lens is extracted using phacoemulsification. Postoperative medical treatment and frequent rechecks will be required. In cases where the lens is sub-luxated, it may be possible to monitor the patient closely while managing the complications medically. If a complete luxation develops, surgical intervention will be required. Complications of a lensectomy include: post-operative infection, intraocular inflammation, hemorrhage, suture dehiscence, and glaucoma. Recurrence of glaucoma is more common in dogs with a previous history of glaucoma, and those who have a predisposition to developing glaucoma.