

## Glaucoma

Glaucoma is an increase in the pressure within the eye.

The eye contains fluid which is produced by the cells behind the iris (the coloured part of the eye). The fluid moves through the pupil into the front chamber of the eye and then leaves the eye via tiny drainage channels. This fluid is not related to tears on the outside of the eye.



If the drainage channels are abnormally formed (primary glaucoma) or if they become damaged or blocked (secondary glaucoma) fluid builds up inside the eye. Sustained high pressure within the eye can damage the retina (the sensitive tissue at the back of the eye) and the optic nerve which are needed for sight.

### What causes glaucoma?

Primary glaucoma can be inherited and is caused by abnormally formed drainage channels in the eye (goniodysgenesis). Often only one eye is initially affected but there is a very high chance that the other eye will develop glaucoma too. Affected breeds include:

- Basset Hound
- Welsh & English Springer Spaniel
- American & English Cocker Spaniel
- Flat-Coated & Golden Retriever
- Siberian Husky
- Great Dane
- Dandy Dinmont

Glaucoma also occurs secondarily to other diseases which block the drainage of fluid out of the eye. In these cases the underlying condition must be treated as well as the secondary glaucoma.

### What are the signs of glaucoma?

Glaucoma can develop very rapidly (within hours) and should be treated as an emergency. Signs associated with acute glaucoma:

- Vision loss
- Red, painful eye
- Bluish tinge to the cornea (front surface of the eye)
- Lethargy & depression

Eventually, if uncontrolled, the glaucomatous eye becomes enlarged, irreversibly blind, and very painful (intense, unrelenting pain similar to a migraine).



### How is glaucoma diagnosed?

A special instrument called a tonometer is used to check the pressure within the eye. Local anaesthetic drops are applied to the eye before the probe is gently applied to the front of the eye. Most animals tolerate this procedure well.

The ophthalmologist may also use a special contact lens to see the drainage channels, particularly in those breeds which are susceptible to primary glaucoma. This technique is useful to identify if the 'normal' eye is also at risk of developing glaucoma.

### Can glaucoma be treated?

Glaucoma cannot be cured, but it can often be managed. The aim of treatment is to save vision, if possible, and to reduce pain. Drops can be given to reduce the amount of fluid produced in the eye and to increase the outflow of fluid. Most patients will eventually become unresponsive to drops and will need to consider a surgical option.

For some pets the kindest option is to consider removal of the blind, painful eye to prevent further suffering. Other pets may benefit from laser therapy or the surgical placement of a drainage tube, but these techniques are highly specialised and are not necessarily suitable for all patients.

### Are there preventative measures available for the 'at risk' eye?

There is no known effective treatment to prevent the second eye becoming affected in primary glaucoma. It may be possible to delay the onset of glaucoma using drops. The second eye will require careful monitoring to check the pressure.

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