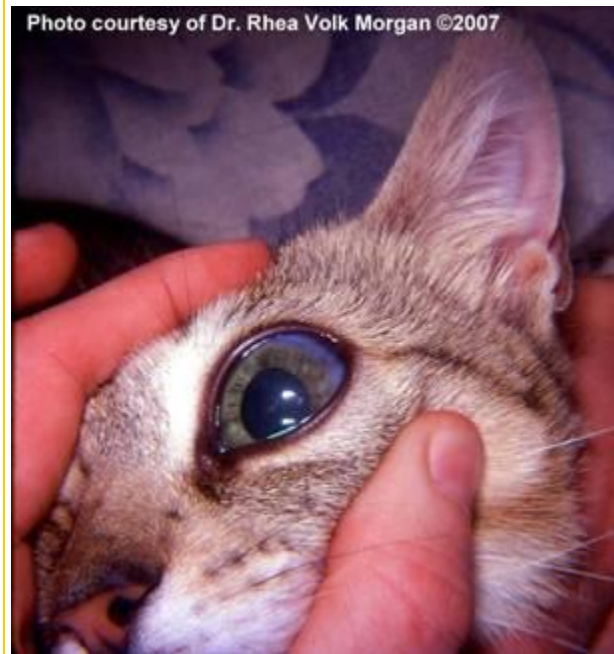


## **Glaucoma**

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Glaucoma is an eye disease where by the pressure within the eye becomes elevated. It can cause significant pain and lead to blindness. Dogs and cats with primary glaucoma are believed to have an anatomic or biochemical problem that affects how fluid drains from the eye, so the onset can be spontaneous. Secondary glaucoma results from another disease process within the eye. Glaucoma usually requires lifelong treatment unless the underlying cause can be reversed or treated successfully.

Inside the eye, a clear fluid called aqueous humor circulates in the front chamber between the cornea and the pupil. The aqueous humor leaves the eye through a small sieve-like structure between the base of the cornea and front of the iris. Normal pressure is a dynamic function of the balance between aqueous production and drainage. When the drainage sieve does not work properly or becomes clogged, or when the flow of aqueous through the pupil becomes obstructed, intraocular pressure can increase to an unsafe level. This is particularly true if aqueous production continues at a normal level. Glaucoma is never caused by over production of aqueous humor. It is always a drainage problem.



***This cat has primary glaucoma.***

Glaucoma occurs far more frequently in dogs (0.675%) than in cats (0.197%). Primary, hereditary, breed-related glaucoma is most commonly seen in purebred dogs. Cats usually have secondary glaucoma that is associated with chronic inflammation of the iris (uveitis) or with intraocular tumors. Primary glaucoma in cats is very rare but Siamese and Burmese cats may be predisposed. Over forty different breeds of dogs are predisposed to glaucoma, with common ones being the cocker spaniel, beagle, basset, Akita, chow chow, Samoyed, Bouvier de Flandres, Shih Tzu and Chinese Shar Pei.

Glaucoma can be a very painful disease for pets - more so than for people - as the intraocular pressure can become rapidly elevated to levels much higher than typically occur in people. In people, the pain feels like a constant bad headache. Normal intraocular pressure in people is 12-22 mmHg. The normal pressure for dogs and cats is 10-25 mmHg. With glaucoma in cats and dogs, the pressure may go up to 30 mmHg and higher. Values above 50 mmHg rapidly cause blindness, are painful and may cause the eye to stretch and enlarge.

An affected eye may look normal to a pet owner when the glaucoma is mild. Early signs can include a bloodshot eye, cloudy cornea, dilated pupil, and squinting/holding the eye closed. Over time, the eye size can increase and it may bulge.

Unfortunately in cases of severe glaucoma, the eye is often permanently blind by the time of diagnosis. Pets can act normal with vision in just one eye, which is one reason glaucoma is often diagnosed late in the disease's course.

### **Diagnosis and Treatment**

Glaucoma can be detected by measurement of eye pressure using an instrument called a tonometer. Tonometry can be done by your veterinarian during the eye exam. Pressures are measured in both eyes and then compared.

If glaucoma is found, then numerous medications are available to lower the pressure. All glaucoma medications used in dogs and cats are medications that have been manufactured for human glaucoma. The treatment of glaucoma requires faithful, consistent application of the medications. These are not medications that can be skipped or forgotten without risk of the eye pressure rapidly deteriorating.

Some cases of primary glaucoma are also treated with surgery. A major emphasis in secondary glaucoma is to determine the underlying cause and to treat it, as well as the elevated pressure. If primary glaucoma is diagnosed in one eye, it is common for the other eye to be started on preventative medication because both eyes are prone to the disease.

Removal of the eye (enucleation) is sometimes recommended. Examples include a blind eye in which the glaucoma does not respond to medications; any eye containing a tumor; when the eye is blind and the owner cannot afford glaucoma medications; and when infection is the cause of the glaucoma and it does not respond well to appropriate therapy.

## **Prognosis**

In most cases, glaucoma is not curable and once vision is lost it will not return. With primary glaucoma, vision is often lost over time, even with appropriate treatment. For secondary glaucoma, prognosis depends on the underlying disease and its response to treatment.

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