

In the Blink of an Eye

Glaucoma blinds before most owners even notice a problem, but gene therapy offers hope.

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Allison Orr spent hundreds of dollars, trekked countless miles from her Auburn, Ala., home to specialists in Birmingham and Atlanta to save her dog's vision. She followed every information lead she could find printed or online, and tried everything from prescribed medication to acupuncture to a special diet. She still blames herself for his blindness.

As an English teacher at Auburn University, Orr is accustomed to conducting research. But when a veterinarian prescribed steroids to treat a flea allergy in Patches, her Cocker Spaniel-Poodle mix, Orr never studied the risks of prolonged steroid use. "I kick myself all the time because the minute he was prescribed anything, I should have gone every place I could to read about it," she said.

After years on the steroid, Patches developed diabetes. Diabetes is a risk factor for glaucoma, but Orr did not spot the glaucoma until it was too late. Patches was blind. "Nothing feels worse than knowing that this could have possibly been avoided," she said.

The vision loss is not her fault, of course. Once a veterinarian diagnosed the disease, Orr practiced responsible pet ownership and then some. It's a cruel paradox of canine glaucoma that elicits such emotions by the time owners notice the problem, it is almost always too late to save vision.

Striking one in every 200 dogs in the United States, glaucoma is a leading cause of canine blindness. But periodic testing may detect it sooner. And thanks to recent research findings, fast intervention may delay loss of sight. Ongoing research may even result in a cure in the long-term future, said veterinary ophthalmologist Kirk N. Gelatt, VMD, who earned the American Kennel Club's Career Achievement Award in Canine Research in 1998 for more than three decades of research largely focusing on canine glaucoma. Genetic tests Gelatt and others are developing will help breeders eliminate heritable glaucoma. Gene therapy, the replacement of a faulty section of DNA with a healthy section, could treat dogs already affected. Finally, future drugs may help eyes regenerate tissue currently considered irreparable.

Glaucoma is elevated pressure within the eyeball. A nourishing fluid called the aqueous humor normally maintains appropriate pressure, giving the eye its shape and firmness. The fluid, produced behind the iris by filtering blood, flows through the pupil and then reenters the bloodstream. But a buildup of fluid, generally thought to be because it isn't flowing out of the eye properly, puts too much pressure on the eyeball. This damages eye tissue, causing pain, headaches and complete or partial blindness. The condition usually starts in one eye and later affects the other eye.