

# CATARACTS

## BASICS

### OVERVIEW

- Opacity in the lens; the lens is the normally clear structure directly behind the iris (the colored part of the eye) that focuses light as it moves toward the back part of the eye (retina); if opacity is complete, it prevents passage of light to the back part of the eye (retina), leading to blindness in the affected eye
- “Cataract”—may refer to a lens that is entirely opaque or to a localized opacity within the lens; does not imply cause

### GENETICS

- Most cataracts are inherited
- Most common mode of inheritance—simple autosomal recessive
- Some breeds—dominantly inherited

### SIGNALMENT/DESCRIPTION of ANIMAL

#### *Species*

- Dogs and cats

#### *Breed Predislection*

- Many dog breeds are affected by hereditary cataracts
- Cataracts that typically progress to blindness are found in miniature poodles; American cocker spaniels; miniature schnauzers
- Other commonly affected dog breeds—golden retrievers; Boston terriers; Siberian huskies
- Cats—Persians; Birman; Himalayans

#### *Mean Age and Range*

- Depend on cause
- Hereditary (dogs)—may be congenital (present at birth); may develop later in life (known as “acquired cataracts”) anytime from several months to many years of age, depending on the breed
- Hereditary (cats)—all reported to date have been congenital (present at birth)

### SIGNS/OBSERVED CHANGES in the ANIMAL

- Opacity of the lens
- Related to the degree of vision impairment
- Occupy less than 30% of the lens or affect only one eye—often go unnoticed
- Occupy more than 60% of the lens—usually noticed and reported to the veterinarian
- Cataract caused by diabetes mellitus (sugar diabetes)—may see signs of diabetes, such as increased urination (known as “polyuria”), increased thirst (known as “polydipsia”), and weight loss
- Cloudiness in the eye (specifically the lens) noticed before vision impairment—usually related to sclerosis, rather than cataract formation; “sclerosis” is a normal aging change in the lens due to changes in the lens fibers, it apparently has little to no effect on vision
- Associated deterioration of the back of the eye (retina; condition known as “progressive retinal degeneration”) in dogs—difficulty seeing in dimly lighted conditions (known as “nyctalopia” or “night blindness”)
- May be associated with inflammation of the front part of the eye, including the iris (known as “anterior uveitis”)—typically see cloudiness of aqueous humor (the “aqueous humor” is the transparent liquid that fills the front part of the eyeball) due to increased protein content and suspended cellular debris (condition known as “aqueous flare”); scar tissue between the iris and the lens of the eye (known as “synechia”); and decreased pressure within the eye (known as “low intraocular pressure”)

### CAUSES

- Heredity
- Diabetes mellitus (sugar diabetes)
- Spontaneous—age-related
- Advanced deterioration of the back of the eye (retinal degeneration)—response to toxic dialdehydes (type of chemical, used in disinfectants and leather tanning products)
- Inflammation of the front part of the eye, including the iris (anterior uveitis)—secondary to formation of scar tissue between the iris and the lens of the eye (synechia) or altered aqueous humor (the transparent liquid that fills the front part of the eyeball) composition
- Toxic substances—dinitrophenol; naphthalene
- Nutrition—milk-replacer diet
- Low levels of calcium in the blood (known as “hypocalcemia”)
- Radiation
- Electric shock

## RISK FACTORS

- Genetics
- Multiple congenital (present at birth) eye defects
- Any disease capable of causing inflammation of the front of the eye, including the iris (anterior uveitis)
- Advanced deterioration of the back of the eye (retinal degeneration)
- Generalized (systemic) metabolic diseases—diabetes; diseases capable of causing low levels of calcium in the blood (hypocalcemia)

## TREATMENT

### HEALTH CARE

- Dogs undergoing cataract surgery—inpatient or outpatient
- Hospitalization—rarely required for more than 48 hours

### SURGERY

- Phacoemulsification is a surgical procedure in which ultrasonic vibrations are used to fragment and liquefy the lens, in order to remove the lens material; procedure of choice
- Prognosis for successful surgery—generally greater than 90%; depends on the stage of the cataract and other possible abnormalities in the eye
- Intraocular lenses—may be implanted safely at the time of surgery, so patient will not suffer extreme farsightedness

## MEDICATIONS

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive.

- Prednisolone acetate (1%) to prevent and control lens-induced inflammation of the front part of the eye, including the iris (anterior uveitis)
- [OcluVet™ Eye Drops](#) recently have been marketed with claims that topical application (that is, applied to the eye) reduces lens opacification in dogs; preliminary reports from veterinary eye doctors (ophthalmologists) do not support the claim of effectiveness—further studies need to be performed

## FOLLOW-UP CARE

### PATIENT MONITORING

- All patients—monitor carefully for progression of cataracts
- Hereditary—cataracts may progress very quickly in young dogs

### PREVENTIONS AND AVOIDANCE

- Do not breed patients with known or suspected inherited conditions

### POSSIBLE COMPLICATIONS

- Complete cataracts—potential to cause lens-induced inflammation of the front part of the eye, including the iris (anterior uveitis); secondary glaucoma (in which the pressure within the eye [intraocular pressure] is increased secondary to inflammation in the front part of the eye); and the separation of the back part of the eye (retina) from the underlying, vascular part of the eyeball (known as the “choroid;” condition known as “retinal detachment”)

### EXPECTED COURSE AND PROGNOSIS

- Rate of progression—depends on location of cataract within the lens and the patient’s age
- Diabetes mellitus—induced cataract—usually very rapid progression
- Surgical intervention—for hereditary or diabetes-caused cataracts, prognosis for good vision excellent; for other types of cataracts, depends on cause

## KEY POINTS

- Surgery normally can be done on any hereditary cataract that is causing or is anticipated to cause vision loss
- Prognosis for surgery is better if it is done early in the course of cataract development, before the cataract changes to the point where the lens is smaller and may actually “clear” to some degree (known as “hypermaturation” of the cataract), lens-induced inflammation of the front part of the eye, including the iris (anterior uveitis), and/or separation of the back part of the eye (retina) from the underlying, vascular part of the eyeball (retinal detachment) occur
- It is not advisable to delay surgery until the patient is blind in both eyes
- Surgery may or may not be indicated for nonhereditary cataracts; discuss surgery with your pet’s veterinarian

- With the high success rate of phacoemulsification (surgical procedure in which ultrasonic vibrations are used to fragment and liquefy the lens, in order to remove the lens material), it is no longer appropriate to observe cataracts for possible resorption, even in young dogs

