CATARACT

What is a Cataract?

The lens is a unique living ocular tissue consisting of cells that reproduce constantly throughout life. The lens is usually clear or transparent. It is referred to as "the crystalline lens" in medical textbooks. The normal lens focuses light on the light-sensitive nervous tissue (*retina*) located in the back of the eye. The word cataract literally means "to break down." Doctors refer to a cataract as any opacity of the lens that causes light to scatter. Cataractous changes of the lens may appear as small insignificant pigmented, gray, or white "dots", microscopic "blisters", a "cracked glass" appearance, a diffuse haze, a "pearly" sheen, white streaks, or a completely white, opaque lens. Cataracts usually begin as small dots or microscopic blisters (*vacuoles*) and progresses to involve larger areas of the lens. The rate of progression is difficult to predict and may be very slow or quite rapid. At times, it seems that cataracts progress overnight. Cataracts may develop in only one or in both eyes. If a large portion of the lens becomes white, it prevents light and images from reaching the retina, resulting in blurred vision. When a light is shined into the eye of a patient with a complete cataract, the patient only sees a white light, and no images can be detected.

What Should I do if I Suspect my Pet has a Cataract?

The first thing to do if you suspect that your pet may have a cataract of any size is to have your pet's eyes examined. The lens is an important link of the total visual system, yet the health of the entire eye should be evaluated before the lens develops into a complete cataract. Early evaluation of the eye with a cataractous lens sometimes permits examination of the retina. If the cataract is complete (*mature*), the retina cannot be directly examined and an ultrasound examination or electroretinogram (ERG) may be necessary. At the time of the initial examination, the cataract may sometimes be identified as to cause, area of involvement, and stage of progression. Not all cataracts lead to blindness, and "incomplete" cataracts may not impair vision significantly. If your pet has a cataract and has shown some visual loss, evaluation will include the consideration of, benefit of, and risks of cataract surgery.

How do I know if my Pet has a Visual Problem?

Our pets are creatures of habit and love to please us. If vision loss develops slowly over a long period of time, your pet may adjust to your home and yard. Pets in familiar surroundings may readily move about despite blindness because they have memorized their environment and learned the location of all obstacles. Signs such as bumping into objects, failing to retrieve favorite toys, and fear of being left alone may be signs of vision loss. These are especially significant if they occur within the pet's familiar home or own yard.

What Causes Cataracts?

Cataracts may result from injuries to the eye (*trauma*), inflammation within the eye (*uveitis*), internal diseases that disturb the metabolism of the eye (*diabetes mellitus*), certain foods, chemicals (*toxins*), and drugs. Although it may be difficult to name the specific cause of a cataract, cataracts that develop in eyes free of signs of ocular disease are assumed to be inherited. Inheritance is the major cause of cataracts in dogs and cats.

What are the Types of Cataracts?

The type of cataract may not be important for deciding whether surgery may be performed. Cataracts may be classified by age of onset, physical appearance of the cataract, or state of development of the cataract.

What is the Treatment for Cataracts?

There is no medical treatment known to slow the progression of, prevent the formation of, or reverse the changes of cataracts. Surgery to remove the cataractous lens is the only known treatment in animals and man. Successful surgery can provide a return of vision.

Should my Pet have Cataract Surgery?

Cataract surgery is generally restricted to those patients who are developing a cataract in both eyes. If one eye has a blinding cataract and the other eye has a rapidly developing cataract (or if rapidly developing cataracts are present in both eyes), surgery is recommended so the patient will not lose vision completely. It is also important to consider whether the patient is a good candidate for anesthesia. With continued improvements in veterinary medicine and anesthesia, age alone does not limit the possibility of surgery. With the use of modern anesthetic agents,

successful surgery is performed on dogs and cats 17-18 years of age and older. The over-all health of the patient needs to be assessed before surgery. This may include chest radiographs, electrocardiograms, ultrasound of the eye, blood analysis, or other procedures. Cataracts may be removed from one or both eyes during the same surgery. Finally, you are the one who hears all the information and decides if surgery will be performed to restore vision for your pet. In other words, cataract surgery is ELECTIVE.

CATARACT SURGERY

Is my Pet a Good Candidate for Cataract Surgery?

Cataract surgery involves a period of intense treatment and care both before and after surgery followed by an extended period of low level therapy. If you are unable to treat your pet, surgery is not recommended. Alternatively, if your pet will not or cannot be treated as required, he/she is not a good surgical candidate. Animals who "bite the hand that feeds them" do not do well after cataract surgery!

What Will my Pet be able to See After Surgery?

Patients benefit from cataract surgery because it will allow them to be able to move about without the fear of bumping into objects. As in people, the loss of the lens causes a loss of "up-close" visual acuity or sharpness. Without a lens, a pet may not have completely normal vision after surgery, but they do regain useful vision. The up-close image they see will be slightly larger and only partially focused so that the images will be much less distinct. Distant vision (over 6 to 8 feet) is usually normal. Since our pets do not drive, read, or require acute vision for intricate tasks, their need for sharp vision is not as necessary as it is for humans. Some veterinary patients appear visually handicapped without a lens; however, most show no apparent vision difficulties. Due to the vision difficulties without lenses, we recommend replacement lenses (*artificial lenses*) be placed during surgery for the routine cataract surgery. These lenses are made to the same exacting specifications that are used in human ophthalmology. The replacement lenses allow improved vision over a patient with no lenses. If there is any complication at the time of surgery, or if the lens capsule is ruptured or unstable, then it may not be possible to implant an artificial lens.

What are the Complications of Cataract Surgery?

The success rate in cataract surgery has improved markedly in recent years with the advent of newer medications and microsurgical techniques. The success rate is 90-95%. This does not mean that if the surgery is not successful your pet will have 5-10% vision. It means that 90-95 pets out of 100 will have vision or 5-10 pets will remain blind in spite of the surgery. Although the success rate has risen dramatically, there are still several complications that need to be anticipated to prevent them. Intraocular bleeding, elevation of intraocular pressures (glaucoma), extreme post-operative inflammatory response, adhesions, and self-trauma are possible complications. The chief complication is inflammation (***uveitis***).

What does Cataract Surgery Involve?

The preparation for cataract surgery begins several days prior to the actual event. You will be required to apply drops to one or both eyes MULTIPLE times daily for several days prior to surgery. These drops contain an antibiotic to reduce bacterial contamination and a steroid to reduce inflammation. An antibiotic will be given by mouth twice daily beginning TWO days before surgery. Cataract surgery is performed on an outpatient basis. The morning of surgery, the pressure of the eyes of your pet will be assessed and the area of fluid drainage will be examined to decide the type of post-operative medication that will be needed. Blood tests (if needed) and a physical examination will be performed, and then an intravenous catheter will be placed to facilitate the administration of drugs. Drops are placed in the eyes at specific intervals before surgery. An electroretinogram (ERG) is performed to ensure that the retina is working normally and a reasonable chance for vision exists following surgery. If the ERG indicates that retinal function is significantly impaired (and vision is not likely), then surgery is not performed and the patient is sent home. If the ERG shows that vision is possible, the patient is prepared for surgery and moved to the surgical center. General anesthetic is induced using the most modern inhaled agents. During the surgical procedure, your pet's respiratory, cardiac, and blood pressure parameters are measured and constantly monitored by the anesthetic technician. Surgery is performed using an operating microscope and sophisticated microsurgical instruments. The actual surgical procedure may last 30-40 minutes and general anesthesia is normally for 60-120 minutes per eye. During recovery, your pet will be closely monitored and will be discharged from the hospital 2-6 hours after surgery. An Elizabethan collar is placed on your pet so they will not injure their own eyes during the first 7 to 14 days following surgery. Postoperative medications are used to reduce inflammation and to prevent infection. Eye medications are

applied every 4 to 6 hours for the first 24 hours. Antibiotics and other medications will be given by mouth twice daily. The first postoperative examination is scheduled for the day following surgery. During that examination, the pressure within the eye will be examined, the cornea will be evaluated for ulceration, and the eye is checked for inflammation. A tear test will be performed and determination of possibility of infection will be made. Medications will be continued 4 to 6 times daily for at least the first two weeks. Further examination will be scheduled as needed to follow the progress of healing. If everything is uncomplicated, then re-examinations are performed at weeks one, three, six, ten and 16 following surgery. If a complication arises, the rechecks will be at a closer interval. Medication must be given at regular intervals! After the first two weeks, the chances of infection minimize, and the antibiotics are discontinued. Inflammation is the main problem which must be controlled. Topical anti-inflammatory agents (both steroidal and non-steroidal) are given as frequently and as long as needed to control inflammation. It is possible that treatment will be necessary for 6 to 12 months or longer. These treatments are usually once or twice daily and may be as infrequent as every other day. Some patients are completely off medication in 6 months. Each patient will be evaluated and treated on an individual basis. If you have other questions, please do not hesitate to discuss it with Dr. Schmidt or Alex at **Veterinary Ophthalmology Services** at (805) 473-3332.