

There's No "I" in Cataract Surgery: A Team Approach

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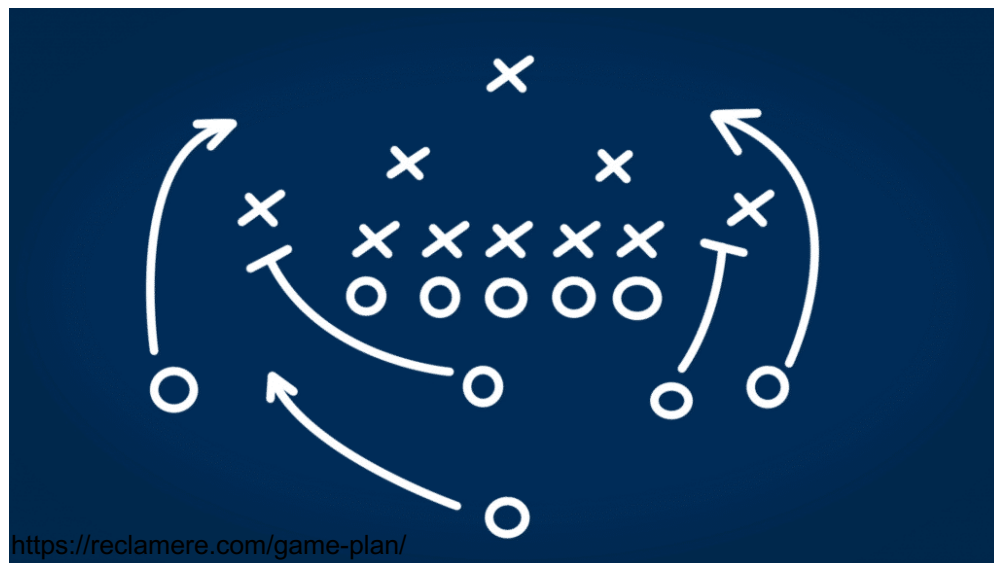
My cat isn't paying me enough attention
so I improvised



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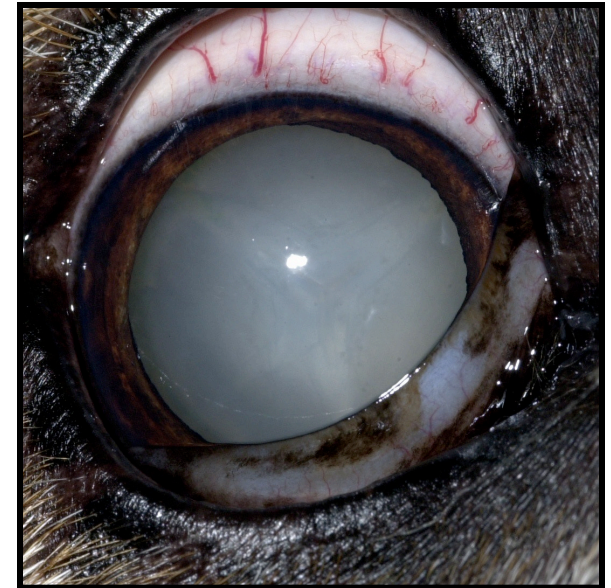
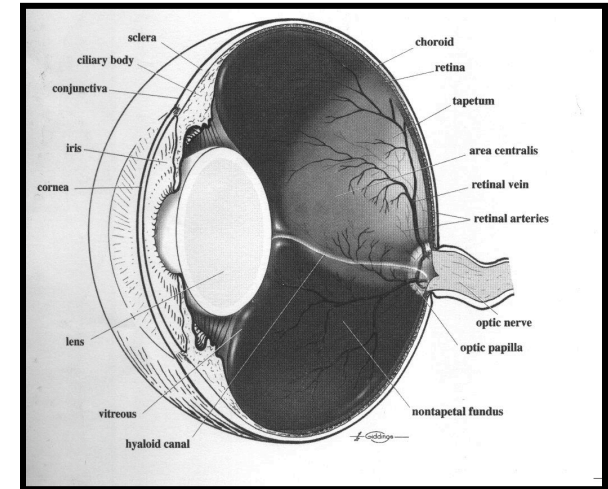
Plan of Attack

- Cataract basics:
 - Definition
 - Categorizing
- Cataract Surgery
 - Pre-testing
 - Process
 - Post-op
 - Prognosis
 - Complications
- Management of non-surgical cataract



What is a Cataract?

- Opacification of the lens
 - Soluble to insoluble protein change



Cataract Categorization

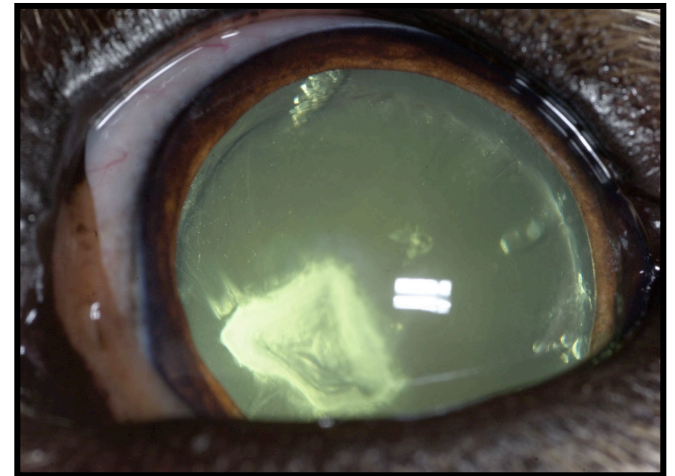
Implications for progression and prognosis!

- Etiology
- Age of onset
- Location in the lens
- Stage/Maturity



Cataract Etiologies

- Inherited/Congenital
- Senility/UV light
- Secondary to retinal disease (PRA)
- Trauma (inflammatory/lens laceration)
- Chronic uveitis (cats, horses, Golden Retrievers)
- Radiation therapy
- Toxic, nutritional (zoo/exotics)
- Metabolic

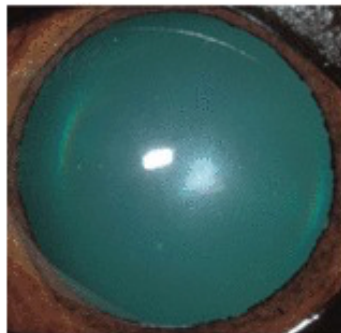


Cataract Etiology

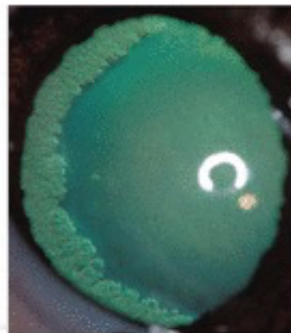
- Diabetes Mellitus
 - Rapid progression
 - Phacolytic Uveitis –
 - Can occur at any stage
 - Lens capsule rupture
 - Retinal Detachment



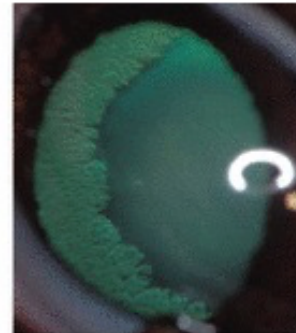
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initial



1 month



3 months



6 months

Age of Onset

- Congenital: Present at birth
- Juvenile: Few months to 6 years
 - Very Common
 - Rapid progression
 - May be unilateral
- Senile: >6 years



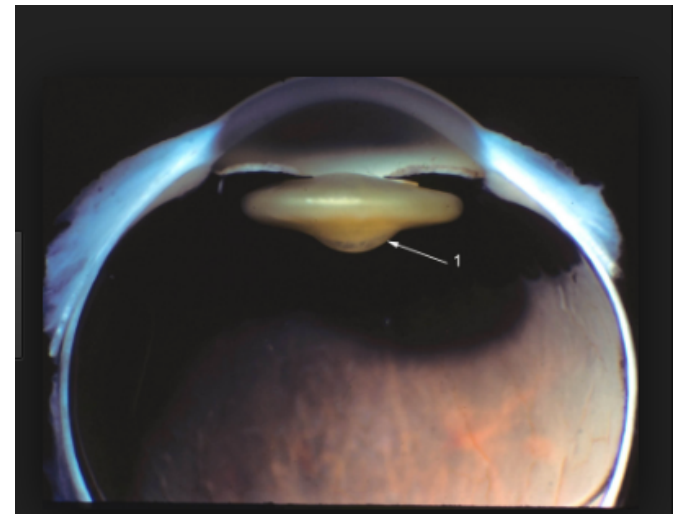
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<https://waggingtailspetresort.com/wp-content/uploads/2016/11/old-dog-resized-300x200.jpg>

Congenital/Juvenile

- Husky
 - Schnauzer
 - Golden/Lab Retriever
 - Boston Terrier
 - Poodle
-
- Start posterior –
 - Variable progression
 - Weeks to months



Senile

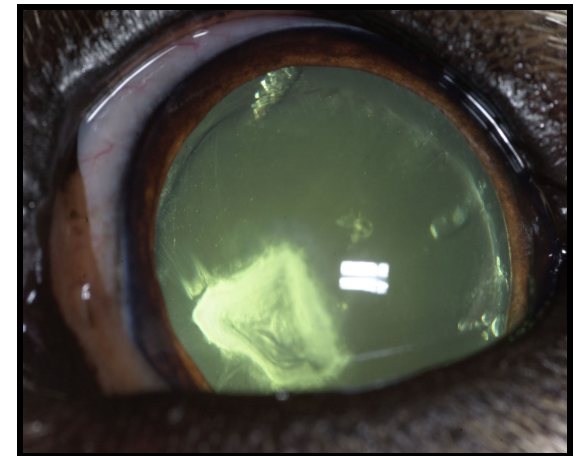
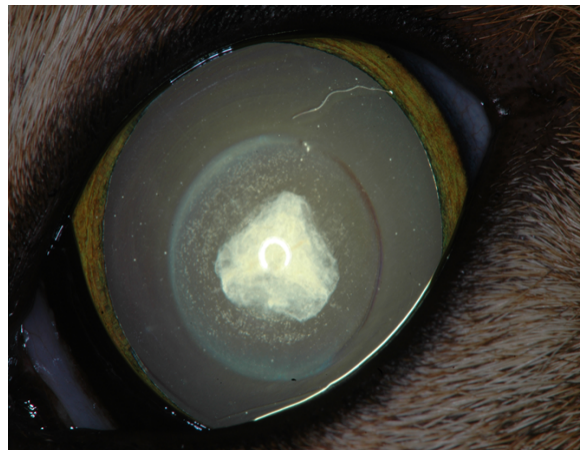
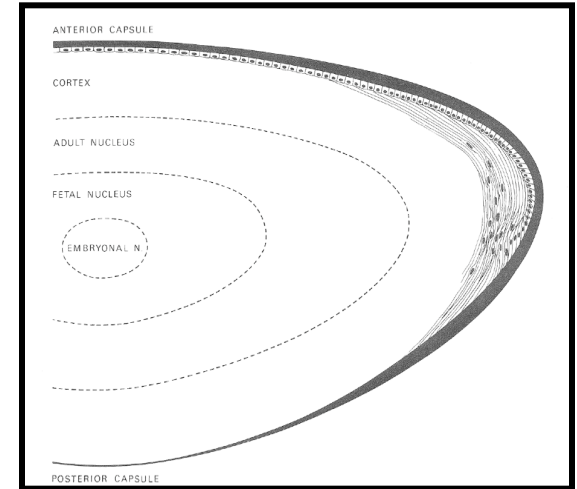
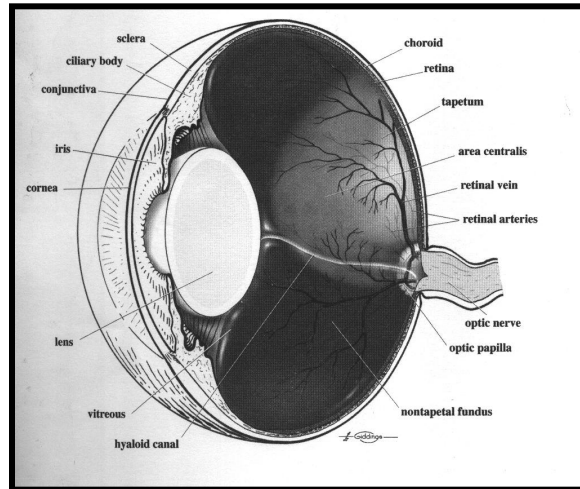
- Poodle
- Yorkie

Important to determine if behavioral changes are ocular or dementia/senility



Location: Anatomy of the Lens

- Capsule
- Cortex
- Nucleus
- Anterior
- Posterior
- Equatorial
- Axial/Polar



Cataract Stages

Incipient - <10%



Cataract Stages

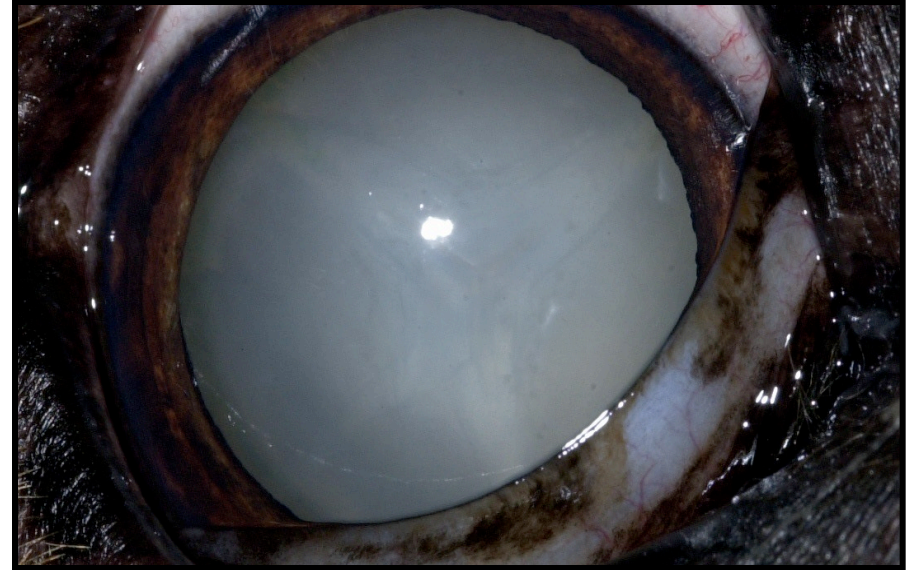
Early Immature/Incomplete 15-50%
Can still visualize retina



Good time to refer for the “cataract talk”

Cataract Stages

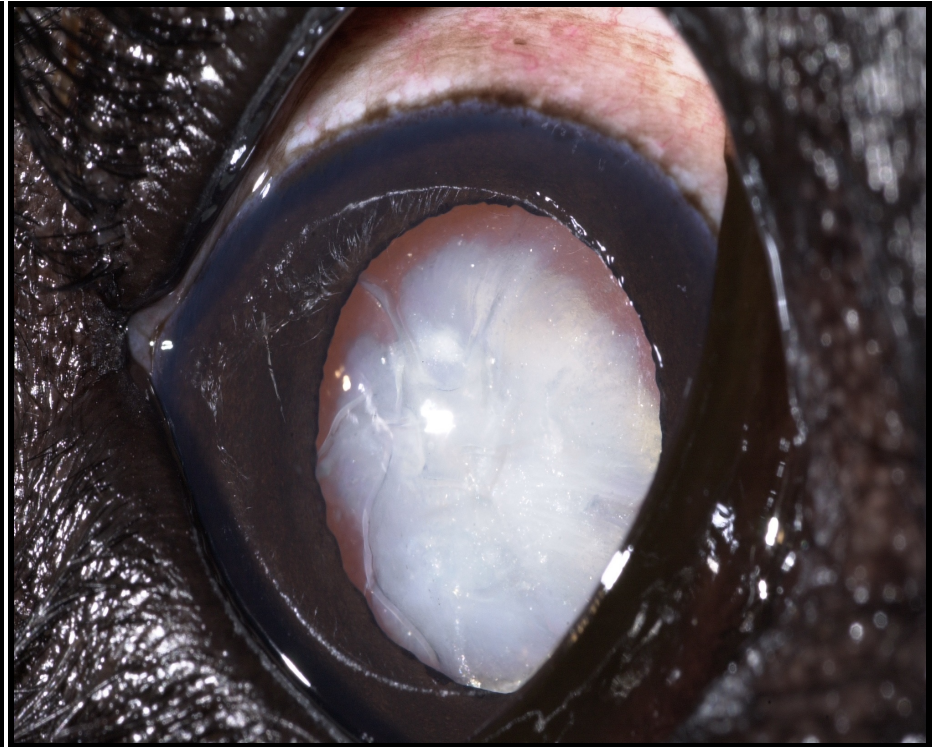
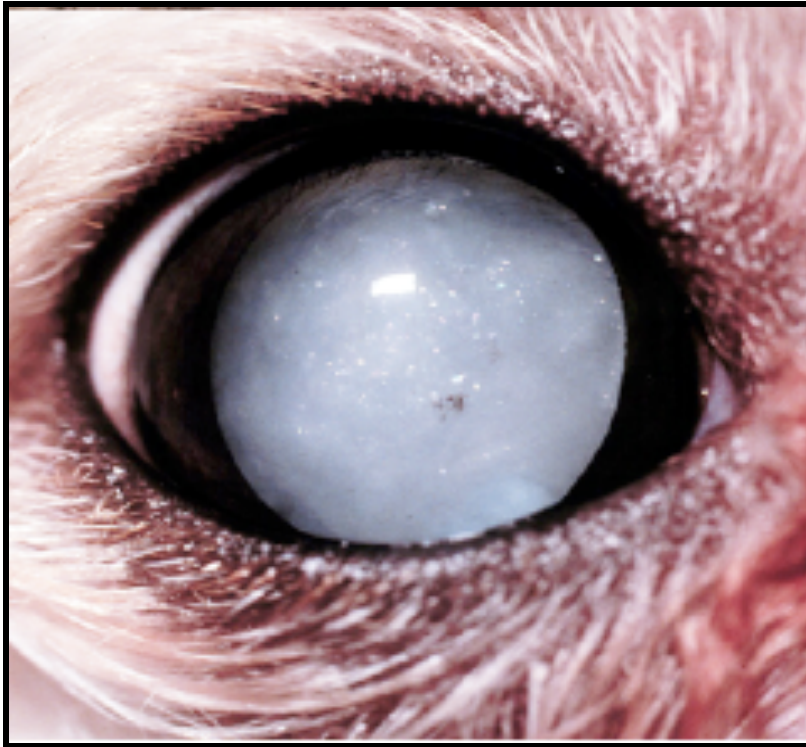
**Mature/Complete – 100% lens involved
Cannot visualize the retina**



Still 90% longterm prognosis for vision with surgery

Cataract Stages

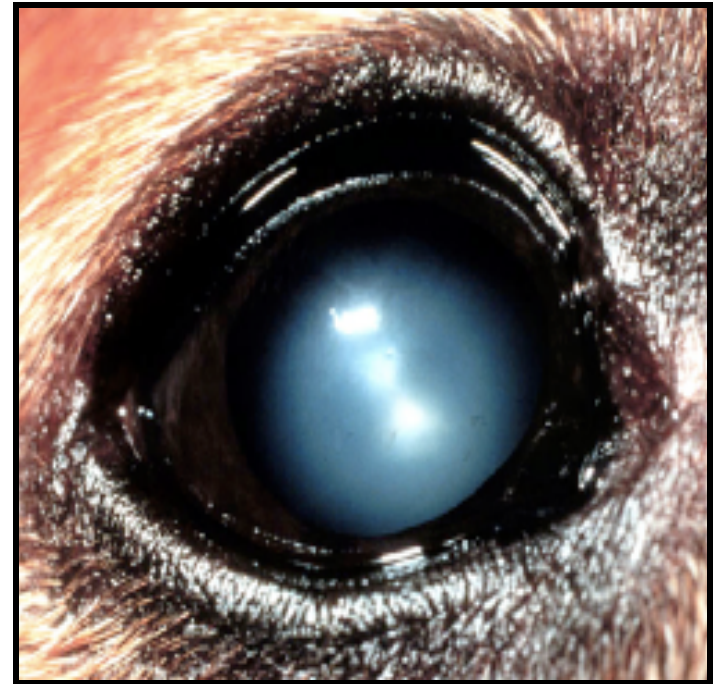
Hyper mature/Resorbing (grape to raisin analogy)



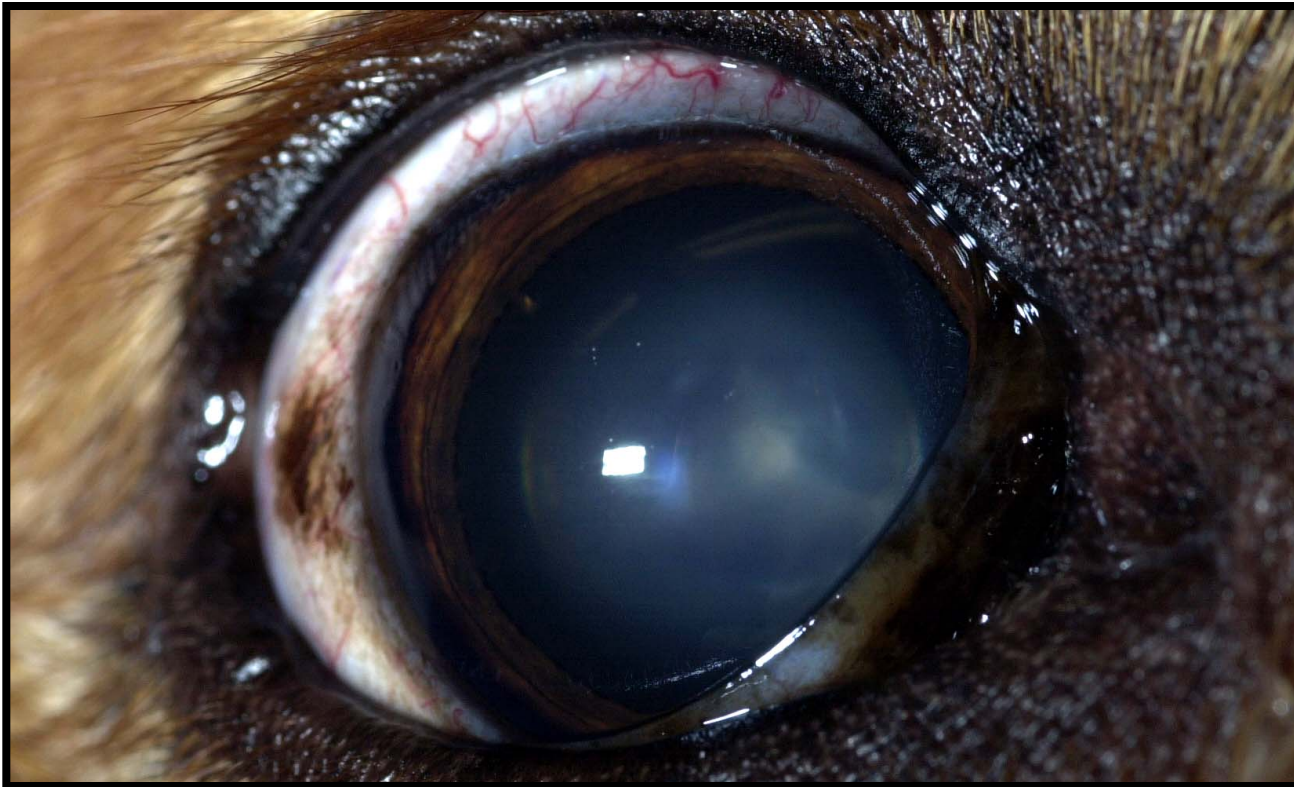
Longterm prognosis for vision declines to 80% or lower

Lenticular (Nuclear) Sclerosis

- Normal aging change
 - Lens continually produces fibers within a fixed space (capsule)
- Starts to develop at age 6
- Causes light scatter/glare
- Can still visualize retina (may be blurry or have a glare)
- RETROILLUMINATION



Nuclear Sclerosis



Cataract Surgery

- Surgery is the **ONLY** way to remove a cataract
- Phacoemulsification has 99+% chance for cataract removal without intraocular intraoperative complications*
- Small incision cataract surgery w/foldable lens implants
- Normal vision returned



*with an experienced surgeon

Cataract Surgery

- Outpatient surgery at MedVet Lexington
- General Anesthesia
- High success for lifelong vision if not hypermature
 - Immature-mature: 90%
 - Hypermature: 70-80%
 - Uveitis, Synechia 70-80%
 - Boston Terrier – 70-75%

FAQ's

- Is it laser surgery?
 - No – phacoemulsification
 - Same equipment as MD's
- Can cataracts come back?
 - No
 - Posterior capsular opacification= fibrosis of the capsule, not true cataract
- Can I go back to my family vet for follow ups?
 - Limitation on knowing what is “normal” postop
 - Equipment limitations – slit lamp exam necessary

Cataract Surgery Pre-Testing

Important*

- **Cataract surgery is ELECTIVE!**
 - Improves patient quality of life \neq life saving
- Requires general anesthesia
 - 1-2hrs depending on hardness of cataract
- Requires oral anti-inflammatory meds for ≥ 2 weeks postop
- Inflammation elsewhere in the body makes controlling post op uveitis difficult
 - Allergies, poorly controlled metabolic conditions, dental disease, UTIs etc

Cataract Surgery PreTesting

Overall good health

- CBC/Chem profile (full or chem 25) w/n 30d of surgery
- Urinalysis
- If considered geriatric (>10yr in small breed and >8 in large breed)
 - Discuss option of additional diagnostic testing:
 - abdominal ultrasound
 - thoracic radiographs

Cataract Surgery PreTesting- Diabetics

- Must be on insulin!!!
 - Control does not need to be perfect
 - Clinical signs controlled at home
- Glucose curve or fructosamine within 60d of surgery
- No ketones in urine
- Negative Urine Culture
 - Bacteria in urine-> endophthalmitis post surgery
- Blood pressure required (Doppler preferred)
 - 50% of diabetic dogs are hypertensive
 - Affects ocular health, anesthesia
 - If hypertensive-> medication started and blood pressure controlled prior to proceeding with surgery

Cataract Surgery PreTesting

- If a heart murmur is detected:
 - Discuss option for cardiology consult
 - Anesthetic concerns, perioperative outcome
- 3 View Thoracic radiographs recommended at minimum



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Cataract Surgery PreTesting

- Ocular ultrasound:
 - Rule out: retinal detachment, lens capsule rupture,
 - Evaluate: size/shape of lens
- Electroretinogram:
 - Rule out: inherited retinal diseases (PRA)
 - Evaluate retinal function
- Tests are not painful, generally do not require sedation
- Performed 1 to 2 weeks prior to surgery

Ocular Ultrasound

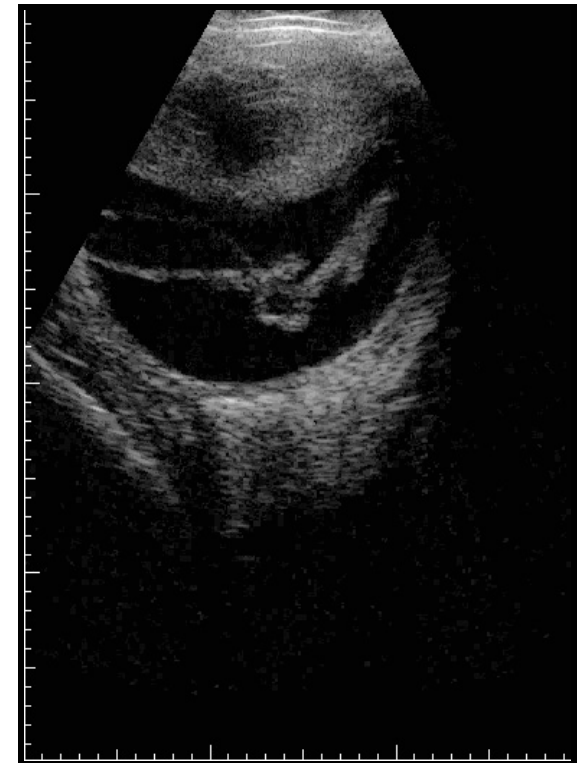
Normal



Cataract

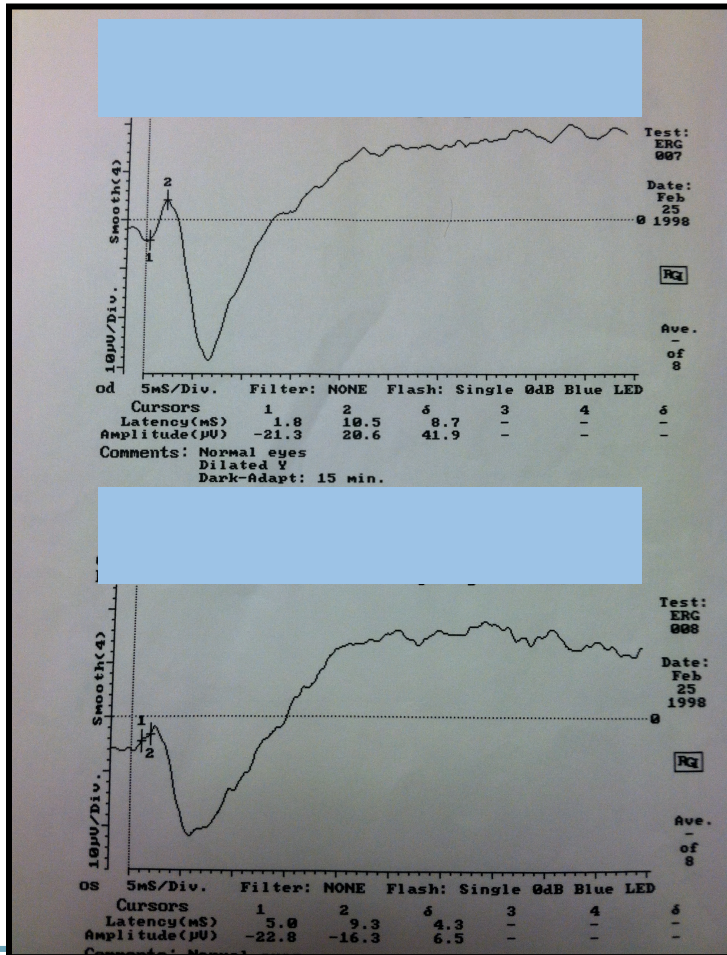


Retinal Detachment

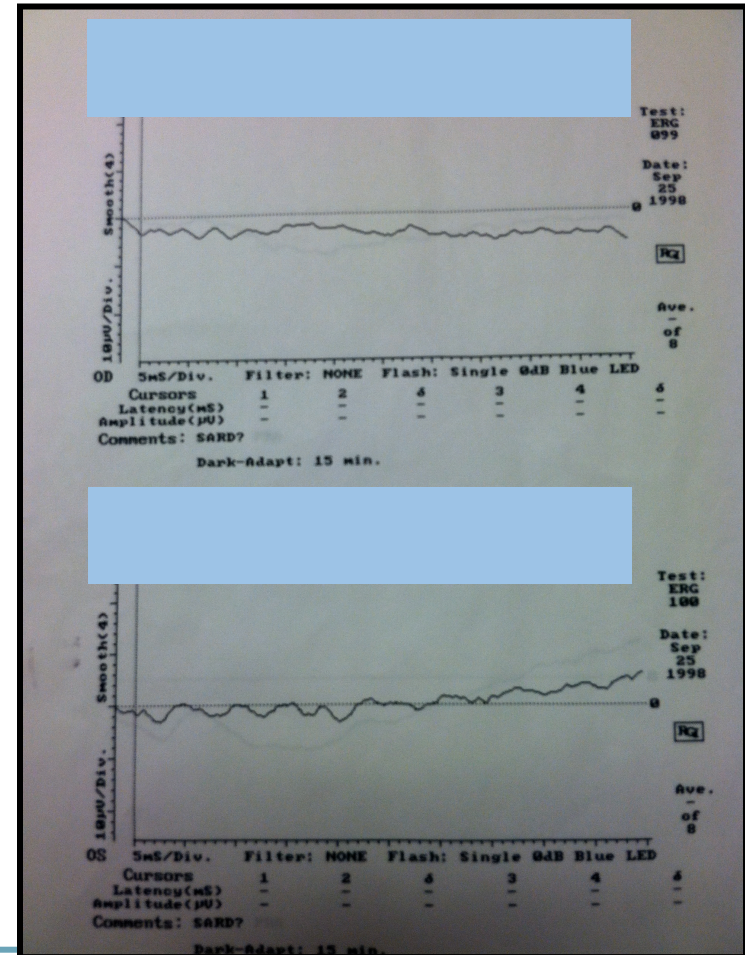


Electroretinogram (ERG)

Normal

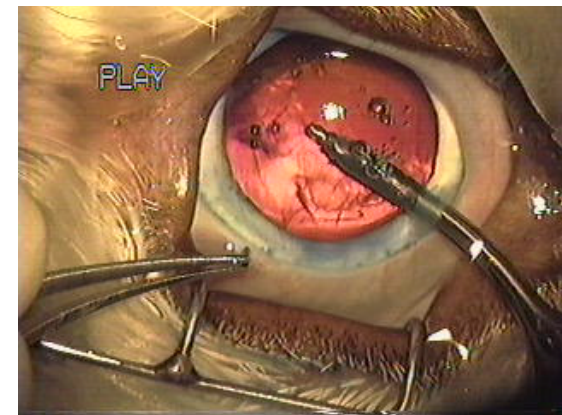
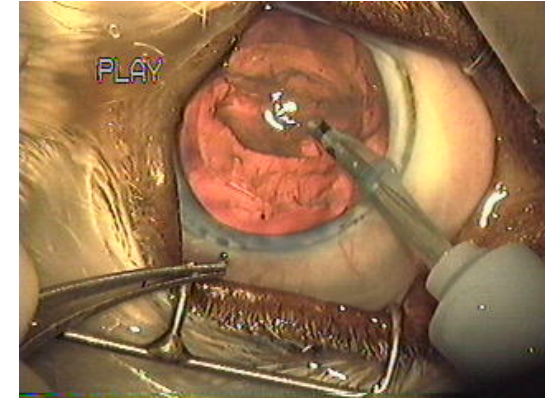


Retinal degeneration

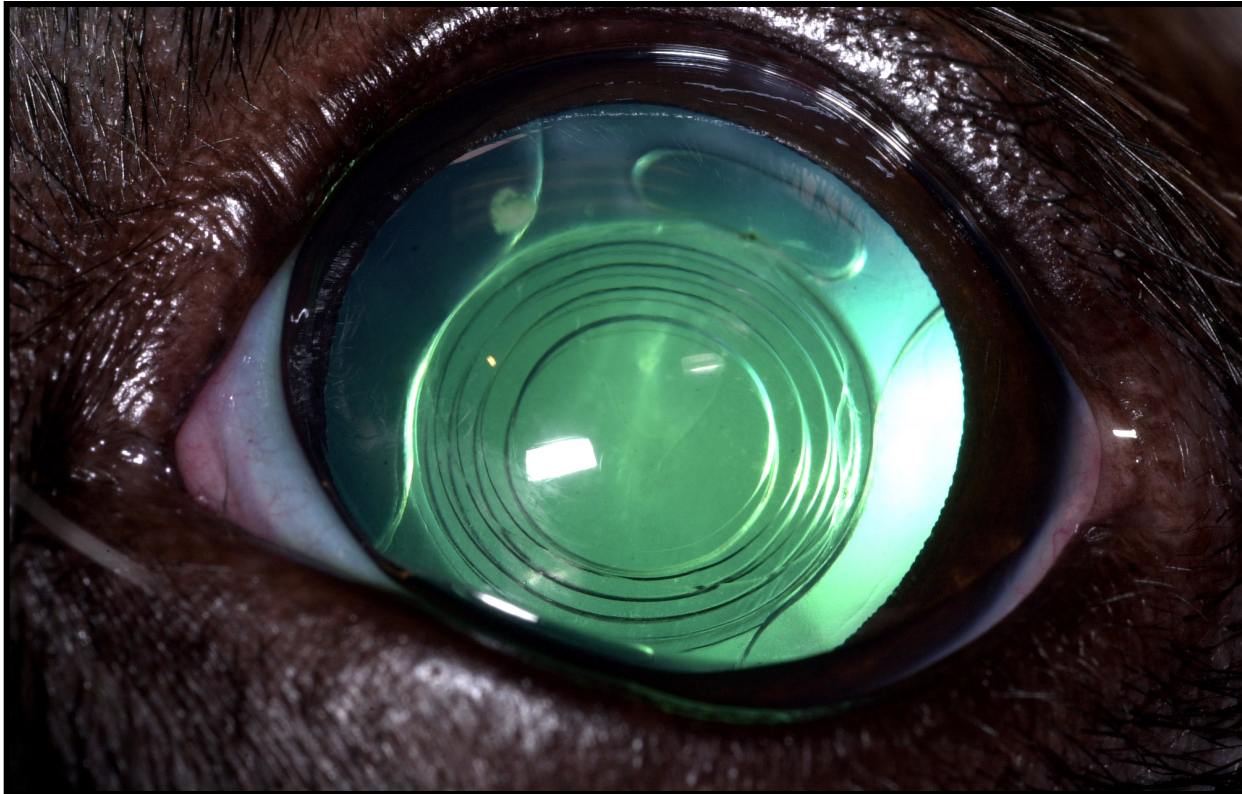


Cataract Surgery (steps)

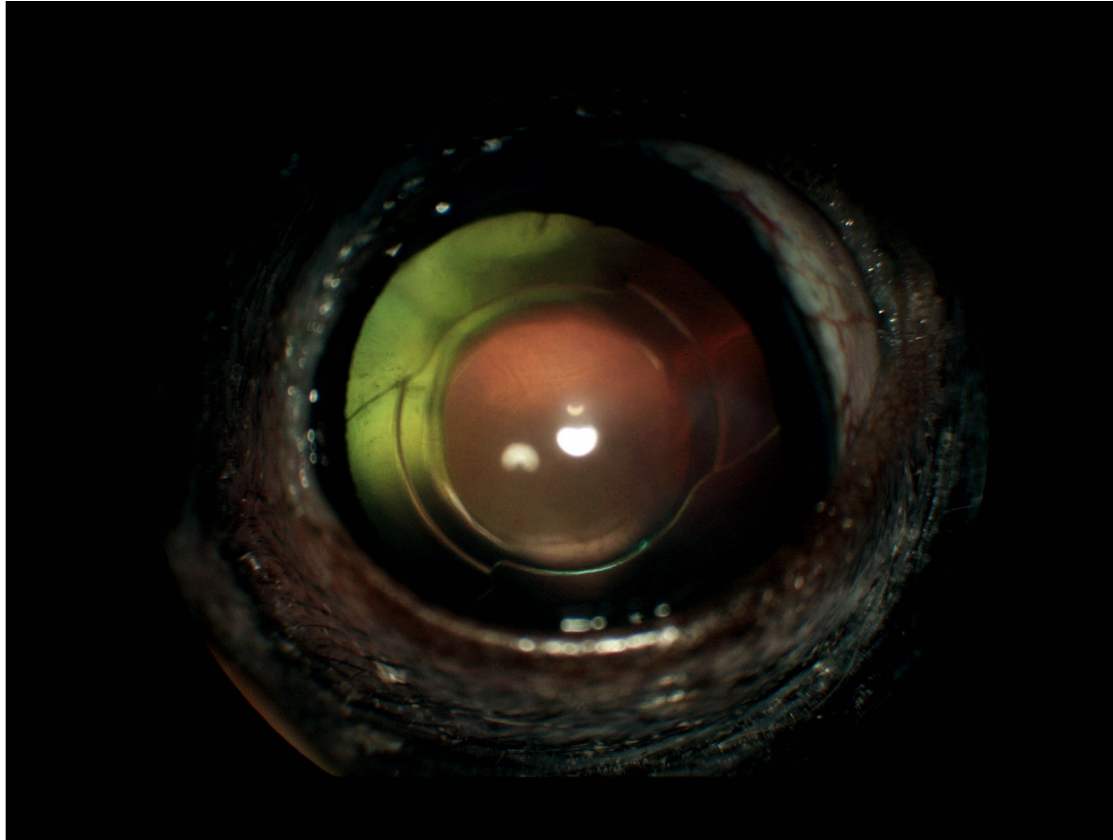
- Capsulorhexis
 - Removing a portion of anterior lens capsule
- Phacoemulsification
- Irrigation and Aspiration
 - Removal of cortex
- Injection of foldable acrylic intraocular lens



Acrylic Foldable Lens Implant (IOL)



Acrylic Foldable Lens Implant (IOL)



Post Operative Care

- First 2 weeks
 - Ofloxacin and Pred Acetate 1% OR NPDex 4-6x per day
 - Carprofen BID or anti-inflammatory Prednisone
 - Oral antibiotic
 - E-collar
- After 2 week recheck
 - Slowly decrease topical anti-inflammatory
 - Goal: diclofenac SID by 4 to 6 months post surgery
 - Lifelong rechecks q6mo
 - Lifelong monitoring: secondary glaucoma and retinal detachment

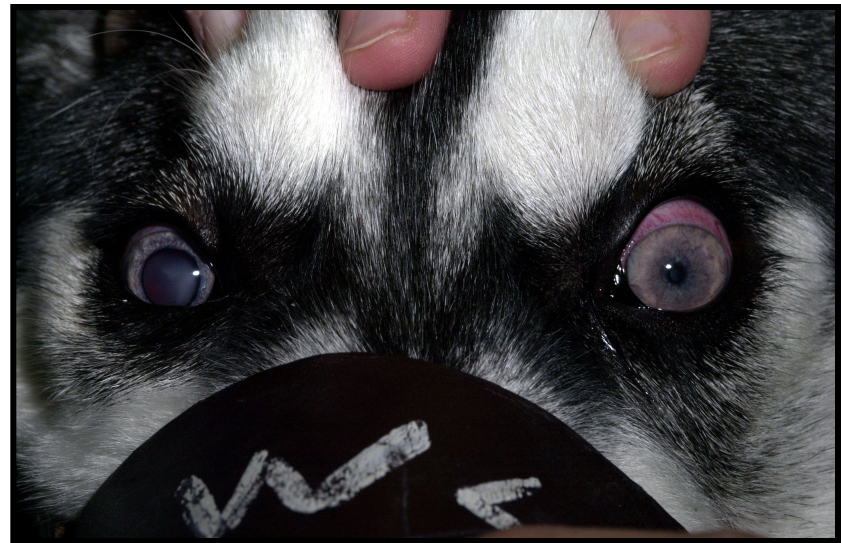
Visual Outcome

- Vision= immediate after surgery
- Lifelong risks (10-30%):
 - retinal detachment
 - secondary glaucoma
- Cataract surgery does not stop normal aging changes:
 - decreased near vision
 - decreased depth perception
 - decreased night vision

Cataract Treatment: Non-surgical

Still need to monitor for complications secondary to cataract

- Lens induced uveitis
- Secondary glaucoma
- Retinal detachment
- Lens luxation



Complications: Lens Induced Uveitis

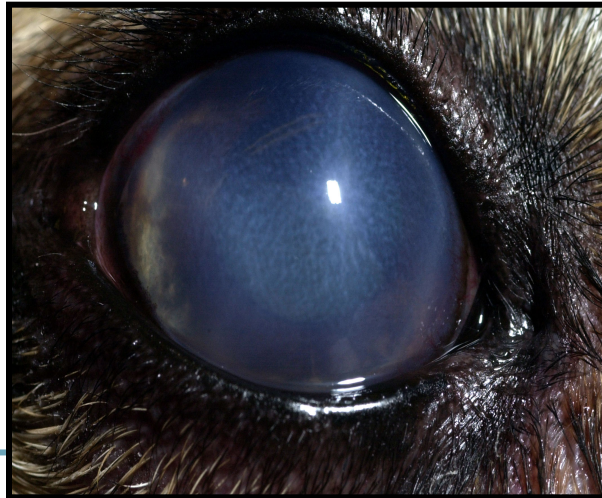
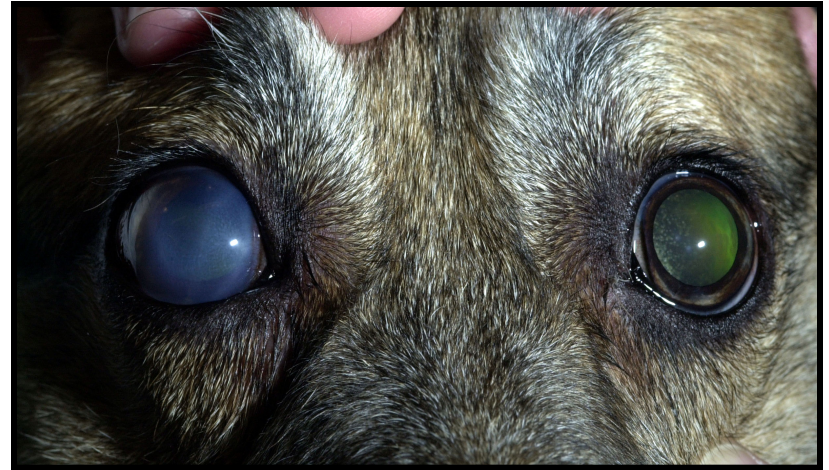
- Lens proteins leak through lens capsule into the eye
- Clinical signs:
 - Hyperemia
 - Aqueous flare
 - Miosis
 - Keratic Precipitates
 - Posterior Synechia
- Risk factor for glaucoma
- Treatment:
 - Topical diclofenac or flurbiprofen SID-BID, occasionally steroid if severe



Complications: Secondary Glaucoma

Caused by:

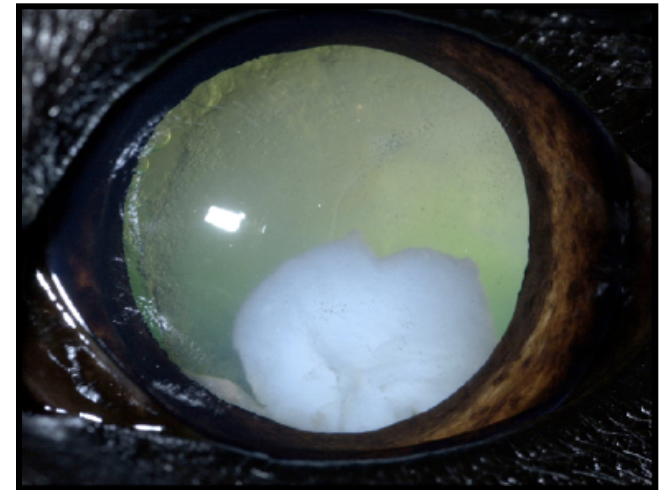
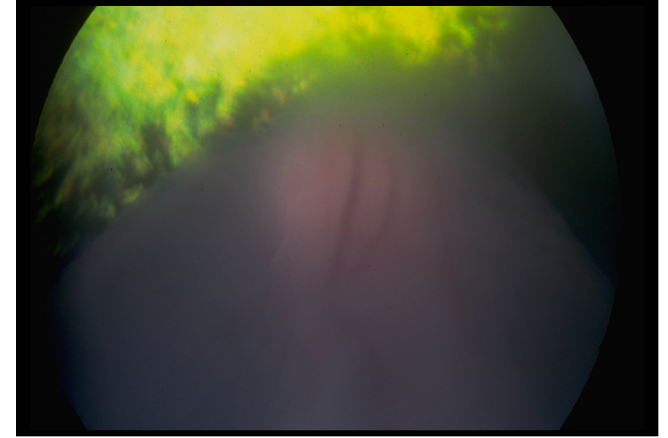
- Chronic changes from lens induced uveitis
- Changes in lens size and position
- Retinal detachment is a risk factor



Complications: Retinal Detachment

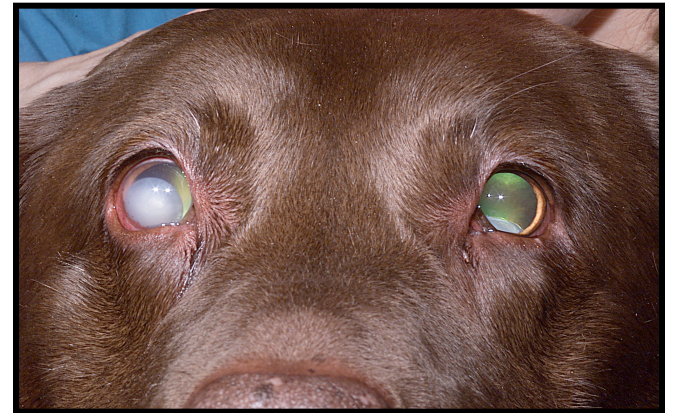
Caused by:

- Lens induced uveitis
- Changes in lens size/weight and position
- Increased risk with hypermature cataract
- Retinal detachment increases risk of secondary glaucoma



Complications: Lens Luxation

- Caused by weakened zonules
- Breed predisposition
- Lens induced uveitis
- Changes in lens size/weight contribute to risk
- Risk factor for glaucoma
 - Anterior- acute pressure spike
 - Posterior- 50% chance within 6mo



Non-Surgical Medical Management for Cataract

- Topical anti-inflammatory eye drop: usually once daily treatment long-term
 - NSAIDS: Diclofenac 0.1% or Flurbiprofen 0.03%
 - Steroid: Prednisolone acetate 1%; NPDex
- Recheck every 4-6 months
- Monitor for secondary glaucoma:
 - IOP should be in the teens
 - Start to worry when >20mmHg

Summary

- Cataract surgery is ELECTIVE
 - Requires general anesthesia
 - Patient systemic health directly related to outcome/prognosis
 - Preoperative bloodwork and diagnostics crucial to success of surgery
- Cataract surgery is a commitment!
- Long term success depends on team effort from primary care veterinarian, ophthalmologist, and client!
 - Clear expectations
- Cataract surgery is incredibly rewarding and can greatly improve quality of life for patients

Questions?

Contact information

- Personal Phone:
 - *NEW* Google number: 920-944-8187
 - Text or Call
- Email:
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