Managing Post-Operative Issues

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Specialty Eye Institute
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Managing Common Issues

- Can be challenging issue OD/MD/Patient
- Few basic in-office skills and equipment
- Know when to refer back to the surgeon
  - Most of these problems, when managed early and efficiently, have excellent outcomes.

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Elevated Intraocular P

- IOP of greater than 25 mmHg I would treat.
  - Threshold is less(20) with mild POAG and (15) with mod-severe POAG
- Day of incidence is telling
  - POD#0-1 is retained Viscoelastic(Tx with topical gpfa) Timolol, brimonidine or combigan.
    - If IOP is >35 I personally add acetazolamide 500mg BID x 48 hours
    - See back in 3-5 days for IOP check. >90% will be resolved, then okay to d/c drops.
  - POD#7-21 then start to think Steroid response.
    - Decrease steroid by half or switch to loteprednol or fml.
    - Likely need to add topical drops and continue use past duration that steroid was used
    - Inform surgeon if prior to second eye being done

3

Cornea Edema

- Loss of endothelial cell function
  - Low ECC or high US energy
- Tx Inc in Steroids Q4H to Q2H
- More severe/central Add Muro 128 5% (ointment vs. drop) q2-4H until vision clears.
- If not resolving in 1-2 weeks refer back to surgeon for evaluation.

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Wound

- Check for +Seidel test
- Apply bandage contact lens, shield and increase ABx usage.
- See in 24 hours to recheck.
- If not improved refer back.
- If Iris prolapse to wound refer immediately (open globe)
- If AC shallow anytime (Refer to surgeon)

5

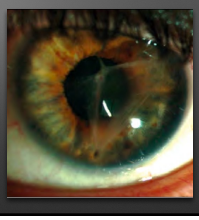
Retained Lens Fragment

- Important to identify if cortex or nucleus fragment.
  - Cortex is typically white like onion peel
  - Nucleus is off yellow to brown
  - Darker the fragment the more inflammatory the piece will be.
  - Ideally all fragments should be removed within 7 days of initial finding.
    - Make the argument to leave small pieces of cortex
    - Increase steroids to q4H or q2H depending on AC rxn.

6

TASS

- Aggressive Inflammatory Rxn in first 24hours from surgery. Fibrous AC hxn
- Inflammation like this on POD#2-4 is NOT TASS
  - Its Endophthalmitis until proven otherwise!
- Always has some corneal edema!
  - Usually limbus to limbus(Endo cell)
- Usually minimal to no pain
- High dose steroids and refer



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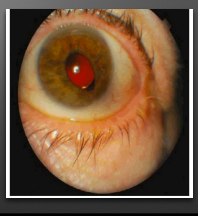
Vitreous Strands in AC

- Sign of weak zonules
- Maybe okay unless tracks to wound(leaking wound)
- Higher incidence of CME/RD
- May need YAG laser to remove traction or wound revision with suture/glue.
- Refer to surgeon if noted.
- Shield if in early PO period.



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Lens Malrotation

- Expect lens to be within 5-10° of targeted axis.
- Must dilate patients(POW#1-2)
- If patient happy with VA and off axis, then leave alone.
- Watch unhappy misaligned patients for 2-4 weeks post op.
- Ideal to rotate in 3-12 weeks PO.

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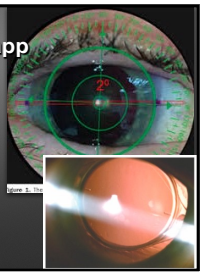
ToriCAM app

- Place in Slit Lamp or Just Align with slit beam.



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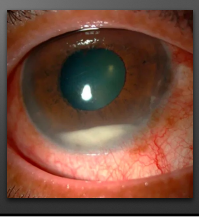
Endophthalmitis

- Most likely to occur POD#2-5.
- Associated with
  - Wound Leak
  - Blepharitis
- Redness, pain and dec VA.
- Increased floaters
- Emergency referral to surgeon!



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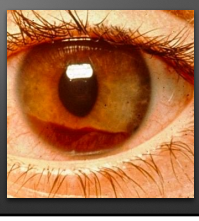
Hyphema

- Maybe seen with MIGS
- Microhyphema
  - Mild RBC/Cell in AC
- Hyphema
  - Layered Blood in angle(measure)
- Tx HOB elevation, no bending/lifting, control IOP spikes, poss cyclo if persisting



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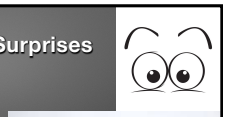
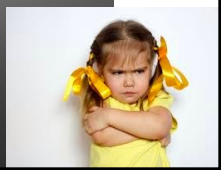
Refractive Surprises



- Hyperopic outcome
  - •MRx/Lens Exchange/PRK
- Myopic outcome
  - •MRx/PRK/Lens Exchange
- Astigmatic Surprise
  - •MRx/Relaxing Incisions/Toric Malposition
- Communication is key (refer those willing)



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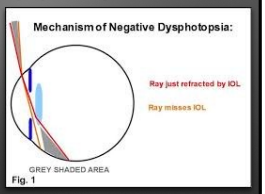
Negative Dysphotopsia

- Dark shadow in temporal vision
  - Banana or crescent
  - Horse blinders
- Usually resolves in 97% of patients
- If not improved by 1 month, refer
- Only treatment is surgery
  - Reverse optic capture(95%)
  - Possible lens exchange



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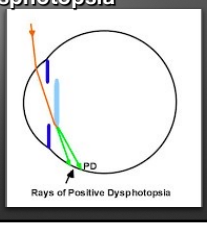
Postitive Dysphotopsia

- Lights or streaks of light in vision at particular angles
- Light striking the optic edge causing refraction of light on peripheral retina
- Treat by lens exchange with a lower refractive index.
  - Exchange acrylic IOL(n=1.55) for silicone IOL(n=1.46)



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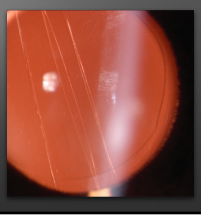
Capsule or Lens?

- Capsular Striae/Folds!
- Check IOP/wound leaks first!
- Complains of +dysphotopsias? Where?
- If PCO -> Maddox Rod effect -> +Dys almost 90 degrees to the folds.(Patient sees almost horizontal lines here)
- If +Dys in different location, this is an index of refraction issue and not the folds! Lens exchange NOT YAG!!



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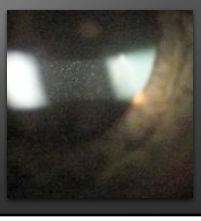
Rebound Iritis

- Pain, photophobia, redness, blurred vision. 3-7 days after last steroid use.~1 month PO.
- Please check the angle to look for retained fragments!
- Treat with aggressive steroids and slow taper over couple of weeks.
- Trace cell without symptoms does not require treatment.



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Posterior Capsule Opacification

- Can occur as early as 4 weeks PO.
- Maybe immediate after surgery(Severe plaques/Trauma)
- Noted decrease in vision by patient if early.
- YAG as early as 4 weeks
- Lens exchange more complicated if YAG is done.

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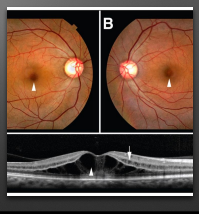
Cystoid Macular Edema

- Presents 4-12 weeks post-op
- More common with NIDDM or maculopathy(Mac hole/VMT)
- Tx with Topical Steroids QID and NSAID x 4-8 weeks with very slow taper.
- Durezol/Ilevro where I can
- Let patients know long recovery process
- Refer those not improving on OCT in 4 weeks (MacCube not 5 line)



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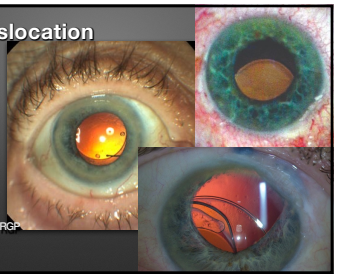
Lens Dislocation

- Mild Dislocation
  - Min Symptoms
- Mod Dislocation
  - Dyplopia (refer)
  - May need surgery
- Severe/Subluxation
  - Poor VA -> Surgery or RGP



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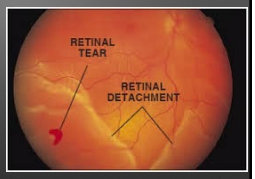
Retinal Tear/Detachement

- Flashes and Floaters patient
- Can occur days to years after surgery. (Most <6 months)
- Higher risks(<60yo, AL>26mm, no hx of PVD, RD in fellow eye).
- Emergency referral to Retina for management



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Conclusion

- You are vital part of the surgical process
- Have a systematic exam to the eye for every post op visit
- Have a chronological thought process of events to look for
- Information you share with patients is vital to our success in their treatment

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"Eyedrops, we don't need no stinkin' eyedrops"
My experience with 20,000 no-drop cataract surgeries

RONALD BROWN, M.D.
SPECIALTY EYE INSTITUTE

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"I have no financial interests in this material"

RONALD N., BROWN, M.D.

2

Clinical Breakthroughs in my Career

- Foldable IOLs
  - Eliminated sutures "No-Stitch"
- Topical anesthesia
  - "No-Patch", "No-Needle"
- Multifocal/Toric IOLs
  - Less need for glasses
- Intraocular medications
  - "No-Drop" cataract surgery

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Clinical Breakthroughs in my Career

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Thanks Ken Parschauer!

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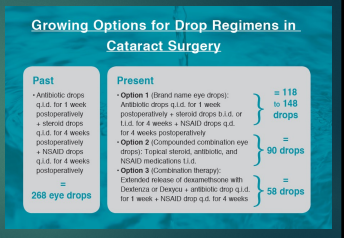
Multiple Medication Options

- Traditional drops
  - Antibiotic, steroid, NSAID
- Subconjunctival injection
  - Kenalog, gentamicin
- Collagen shields
- Slow release steroid insert
  - Durysta
- Compounded AC injection

5

Compliance with Drops is Terrible!

- Cataract patients often elderly, complicated dosing regimens difficult
- Administering drops is a crapshoot, cheek just as likely to be medicated as eye
- Many patients fear and dread putting in eyedrops



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SEI Drop Regimen by Surgeon

Drop or Injection	Surgery Type	Pre-Op Drops	Pre-Op Instructions	Post-Op Drops	Post-Op Instructions
Drops	PPV			Zymar Forte & Ocuflox	1 drop 4 times a day in operative eye.
Triesence Injection	Cataract	N/A	N/A	N/A	N/A
Drops	LASIK			1. Prednisolone Acetate / Gatifloxacin combo qtt 2. Artificial Tears prn	1. Use 1 qtt in surgical eye(s) QID x 1 week 2. Use artificial tears PRN
Drops	PRK			1. Prednisolone Acetate / Gatifloxacin / Bromfenac combo qtt 2. Artificial Tears prn	1. Use 1 qtt in surgical eye(s) QID until bottle gone 2. Use artificial tears PRN
Drops	Cataract			1. Ocuflox/Ocuflox 2. Prednforte.	1. 1 drop 4x per day for 7 days 2. 1 drop 4x per day for 7 days, then 1 drop 3x per day for 7 days, then 1 drop 2x per day for 7 days, then 1 drop 1x per day for 7 days
Drops	Glaucoma			1. Ocuflox/Ocuflox 2. Prednforte.	1. 1 drop 4x per day for 7 days 2. 1 drop 4x per day for 7 days, then TBD depending on post-op appointments.
Drop	Cataract	N/A	N/A	1. Prolensa 2. Zymar Forte 3. Ofloxacine	1. 1 drop once a day for 30 days 2. 1 drop four times a day for 14 days, then 1 drop 2 times a day for 14 days (28 days total) 3. 1 drop four times a day for 7 days
Drop	Cataract	Ocuflox/Prolensa	1 drop the night before and morning of surgery	1. Prolensa 2. Zymar Forte 3. Ofloxacine	1. 1 drop once a day for 30 days 2. 1 drop four times a day for 30 days 3. 1 drop four times a day for 7 days
Drops	PTK and PRK	None	None	1.Ocuflox 2. Zymar Forte 3 Flevix/Prolensa 4.Preservative Free Systane.	1. One drop in the operative eye four times a day for 7 days 2. One drop four times a day for 14 Days, then decrease to 1 drop 5 times a day for 7 days, then 1 drop 2 times a day for 7 days, then 1 drop a day for another 7 days, then stop 3. One drop daily for 3 days then stop 4. One drop every 2 hours while awake

Drop Regimen

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Compliance Study 2013

- Videotaped review of patients instilling eyedrops
- 54% poor technique
- 12% missed the eye
- 15% touched the tip to conjunctiva or cornea
- 27% touched the tip to lid or lashes
- Increasing age correlated to poorer technique

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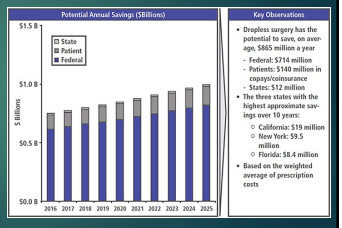
Drug Companies Laughing All the Way to the Bank!

- Costco prices for typical regimen:
- Durezol $201.46
- Vigamox $206.66
- Prolensa $334.32
- Total: $742.44
- Compounded injection $23.00



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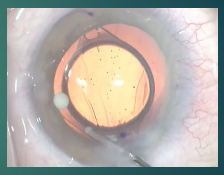
Dexycu: Game Changer or More of the Same?

- FDA approved dexamethasone injection to treat postop inflammation after cataract surgery
- Injected as bolus under iris at end of cataract surgery
- Reduces/eliminates need for topical steroids



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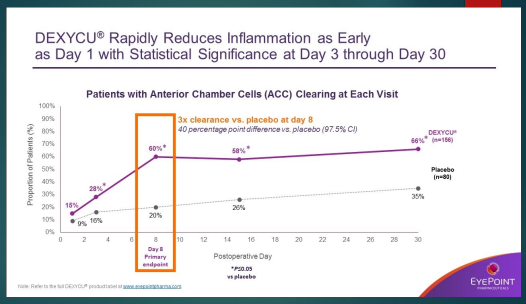
DEXYCU® Rapidly Reduces Inflammation as Early as Day 1 with Statistical Significance at Day 3 through Day 30



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So how do they compare?

Dexycu	Compounded
$595 per patient	$23 per patient
FDA approved	Off label
?Safer since commercial	Risk of compounding error
No antibiotic	Moxifloxacin
20% breakthrough	Probably <5% breakthrough
Non-titratable	Titratable

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FDA Approved Always Safer?


5 deaths tied to pills
Fear killer put cyanide in Tylenol

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So why don't I use it…

- List price $595 per vial
- Medicare covers as J code, private insurance needs pre-auth
- At one month 20% still need rescue drops
- No antibiotic, so still need topical antibiotic drop coverage
- Patients love my no-drop regimen
- Another example of exorbitant cost with minimal benefit

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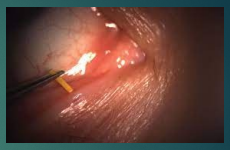
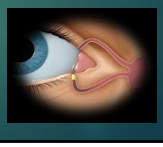
Dextenza

- Dexamethasone 0.4mg insert
- Slow release over 30 days
- Can be removed through irrigation if needed
- Costs only $536.83!
- Like Dexycu another very expensive alternative to compounded medication





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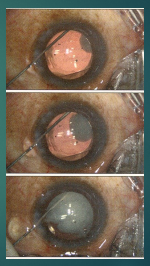
Current No-Drop Regimen

- Mixture of Triamcinolone, Dexamethasone, and Moxifloxacin injected into AC at end of surgery
- Titrated
  - More for younger, darkly pigmented, or rebound inflammation 1st eye.
  - Less for glaucoma patients, older and less pigmented, or IOP spike 1st eye



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Risk of Infection Lower With Intraocular Antibiotics

- Discovered early in European trials, intraocular cefuroxime rapidly adopted
- Slower acceptance in U.S. despite multiple clinical evidence supporting use
- Concern over medical liability, off-label FDA use, and potential compounding errors usual reasons cited by U.S. surgeons reluctant to switch

Study Groups	Rates of Endophthalmitis
No cefuroxime, no levo	13/3,438
Intracameral cefuroxime only	3/3,408
Perioperative levofloxacin only	10/3,424
Intracameral cef and periop levo	2/3,428
Combined Totals	
Intracameral cefuroxime	5/6,836 (0.07%)
No intracameral cefuroxime	23/6,862 (0.33%)

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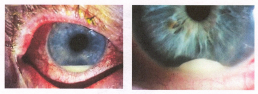
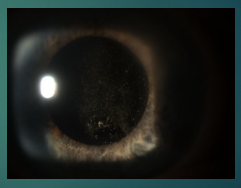
Day One Appearance White crystal deposits in AC

Endophthalmitis vs. triamcinolone



Endophthalmitis with hypopyon on the left and triamcinolone precipitate on the right.

Photo courtesy Review of Ophthalmology 3-15-2005



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No-drop IOP Spikes

- Day one is mechanical clogging of meshwork
- IOP <25, do nothing
- IOP >25 but <35, drop of Combigan
- IOP >35, drop of Combigan, sample of Timolol for 1 week
- IOP >50, burp incision

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Patients Most Likely to Have a Steroid-induced IOP Increase

- Primary open-angle glaucoma patients
- Low-tension glaucoma patients
- Glaucoma suspects
- Kids four to six years old
- First degree relatives of patients with POAG
- Patients with myopia
- Type I diabetics
- Previous steroid responders
- Anyone suffering from traumatic glaucoma
- Patients with Fuchs' or keratoconus who have had penetrating keratoplasty

Note: Among healthy patients, about one in three will have a significant steroid-related pressure increase.[1] Patients with pseudoexfoliation glaucoma or narrow-angle glaucoma are generally not at increased risk of being a steroid responder.

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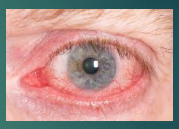
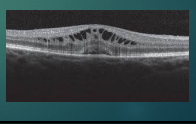
Breakthrough Inflammation

- Rebound inflammation starts 2 to 4 weeks postop
- Redness, photophobia, corneal edema, cell/flare
- Rarely CME with decreased vision, thickening on OCT
- Treated with topical steroids, usually Pred Forte 1% QID or Durezol BID for 2-3 weeks
- Add NSAID like Prolensa QD if CME





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Downsides to No-Drop

- Not FDA approved, so off-label
- Requires great trust in your compounding pharmacy
- Can't adjust medications in post-op period
- Blurred vision first few hours
- IOP responders can have high pressure for several weeks, requiring glaucoma drops until steroids metabolized

Buderer's Compounding Pharmacy

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TASS
Toxic Anterior Segment syndrome

- Idiopathic sterile inflammatory reaction
- Presents day one
- Corneal edema, hypopyon, vitritis
- Mimics endophthalmitis
- Responds to frequent topical steroids within 2-3 days
- Likely triggered by triamcinolone or contaminant/preservative

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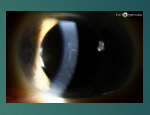
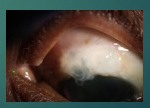
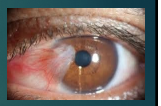
When do I use drops?

- Need topical coverage, so if cataract combined with trabeculectomy, pterygium, or superficial keratectomy
- Known steroid responder
- Occasional paranoid patient
- Last second added on patient, like an RD that needs surgery urgently







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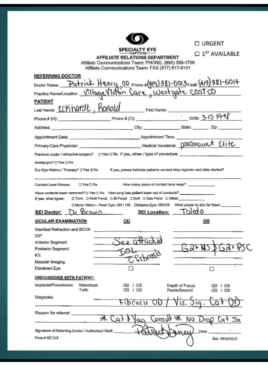

SPECIALTY EYE INSTITUTE
AFFILIATE RELATIONS DEPARTMENT
Affiliate Communications Team: PHONE: (866) 399-1790
Affiliate Communications Team: FAX (517) 817-0141

☐ URGENT
☐ 1ST AVAILABLE

REFERRING DOCTOR
Doctor Name: Patrick Henry, OD Phone #: (419) 381-5013 Fax#: (419) 381-6014
Practice Name/Location: Village Vision Care, Westgate COSTCO

PATIENT
Last Name: Eckhardt, Ronald First Name: ____
Phone # (H): ____ Phone # (C): ____ DOB: 3-15-1948
Address: ____ City: ____ State: ____ Zip: ____
Appointment Date: ____ Appointment Time: ____
Primary Care Physician: ____ Medical Insurance: paramount Elite
Previous ocular / refractive surgery? ☐ Yes ☐ No If yes, when / type of procedure: ____
Amblyopic? ☐ Yes ☐ No
Dry Eye History / Therapy? ☐ Yes ☐ No If yes, please indicate patients current drop regimen and date started?
Contact Lens Wearer: ☐ Yes ☐ No How many years of contact lens wear? ____
Have contacts been removed? ☐ Yes ☐ No How long has patient been out of contacts? ____
If yes, what types: ☐ Toric ☐ Multi Focal ☐ Bi-Focal ☐ Soft ☐ Gas Perm ☐ Other ____
☐ Mono Vision – Near Eye: OD / OS Distance Eye: OD/OS What power to aim for Near: ____
SEI Doctor: Dr Brown **SEI Location:** Toledo

OCULAR EXAMINATION	**OD**	**OS**
Manifest Refraction and BCVA		
IOP		
Anterior Segment	See attached	
Posterior Segment	IOL	G2+ NS & G2+ PSC
K's	c fibrosis	
Macular Imaging		
Dominant Eye	☐	☐

DISCUSSIONS WITH PATIENT:
Implants/Procedures: Monofocal OD / OS Depth of Focus OD / OS
Toric OD / OS FemtoSecond OD / OS
Diagnosis: Fibrosis OD / Vis. Sig. Cat OD
Reason for referral: * Cat & Yag Consult * No Drop Cat Sx
Signature of Referring Doctor / Authorized Staff: Patrick Henry Date: ____
Form # SEI 018 Rev. 09/26/2019

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Upsides to No-Drop

- 100% compliance
- Lower risk of infection
- Far less patient cost
- Happier patients, many shocked they don't need drops!
- Easier for office staff, less time explaining drop regimen, phone calls for refills, generic substitutions, etc.
- Thanks!!

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