



Clinical Practice and Co-Management Guide



Last Revised: June 2023

Mission Statement

"Excellence in Vision. DLV Vision will be unsurpassed in our strive for excellence and provide an inspiring inner and outer vision for our patients, referring providers, employees, and our world."

Company Values

Passion

We love passion and love for our patients, assisting in the growth of our referring doctors, and the advancement of our internal team.

Caring

We care deeply about our patients, referring doctors, and our world!

Egalitarian

We BELIEVE in the equality of all-no task is below anyone on the team.

Integrity

We will have integrity in every aspect of our business dealings.

Fun

We will have fun everyday-after all- life is short! Enjoy the moment!

Our Team

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*please do not share provider email addresses with patients

Locations

Westlake Village



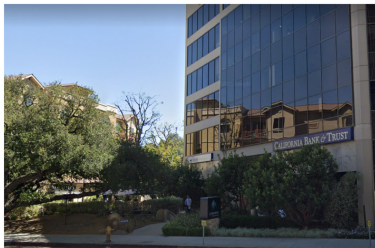
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Camarillo



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Encino



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Newbury Park



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Simi Valley



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WHY CO-MANAGE WITH DOUGHERTY LASER VISION

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CATARACT

DLV Vision Surgeons

- ✓ ECONOMY PACKAGE (Mid Range Budget)
- ✓ PREMIUM PACKAGE WITH TORIC
- ✓ SOFTEC HD-ACCOMMODATING IOL
- ✓ PANOPTIX or VIVITY EXTENDED DEPTH OF FOCUS
- ✓ PANOPTIX TORIC OR VIVITY TORIC
- ✓ DROPLESS-CATARACT SURGERY ISTENT-
- ✓ MICROINVASIVE GLAUCOMA SURGERY
- ✓ Z8 LASER ASSISTED (Less Energy & Mobile) CATARACT/REFRACTIVE SURGERY
- ✓ LASIK OVER CATARACT SURGERY
- ✓ TO CORRECT REFRACTIVE RESIDUAL ERROR
- ✓ IN OFFICE CATARACT SURGERY
- ✓ PVERIFY-PATIENT FEE ESTIMATOR BEFORE CATARACT SURGERY
- ✓ PATIENT PRIVATE DRIVER
- ✓ BILATERAL CATARACT SURGERY
- ✓ CUSTOM TAILORED CATARACT PACKAGE TO PATIENT

OTHER SURGEONS

- NO ECONOMY PACKAGE (Mid Range Budget)
- SOME PREMIUM PACKAGE WITH TORIC
- SOME SOFTEC HD-ACCOMMODATING IOL
- SOME SYMFONY EXTENDED DEPTH OF FOCUS
- SOME SYMFONY TORIC (FIRST Presbyopic-Toric Correcting)
- SOME DROPLESS-CATARACT SURGERY
- SOME ISTENT-MICROINVASIVE GLAUCOMA SURGERY
- NO Z8 LASER ASSISTED (Less Energy & Mobile) CATARACT/REFRACTIVE SURGERY
- ✓ LASIK OVER CATARACT SURGERY
- TO CORRECT REFRACTIVE RESIDUAL ERROR
- NO IN OFFICE CATARACT SURGERY
- NO PVERIFY-PATIENT FEE ESTIMATOR BEFORE CATARACT SURGERY
- SOME PATIENT PRIVATE DRIVER
- NO BILATERAL CATARACT SURGERY
- SOME CUSTOM TAILORED CATARACT PACKAGE TO PATIENT

REFRACTIVE SURGERY

DLV Vision Surgeons

- ✓ DEVELOPED CATZ NEW TOPOGRAPHY GUIDED LASIK
- ✓ CUSTOM LASIK
- ✓ Z8 LASER ASSISTED (Less Energy Per Pulse)
- ✓ ICL-TOP IMPLANTER IN COUNTRY
- ✓ CROSSLINKING
- ✓ CROSSLINKING/INTACS
- ✓ LIFETIME COMMITMENT
- ✓ 40,000 REFRACTIVE PROCEDURES
- ✓ FDA STUDY SITE RAINDROP
- ✓ SMILE (Small Incision Lenticule Extraction)

OTHER SURGEONS

- NO DEVELOPED CATZ NEW TOPOGRAPHY GUIDED LASIK
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- NO Z8 LASER ASSISTED (Less Energy Per Pulse)
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- SOME SMILE (Small Incision Lenticule Extraction)

ADDITIONAL SERVICES OFFERED

DLV Vision Surgeons

- ✓ REFERS NEW PATIENTS BACK FOR CO-MANAGEMENT
- ✓ MARKETING PLAN- (Customized Marketing Plan For Your Office)
- ✓ MARKETING TOOLS- (Video Shoot, PR, Custom Brochures)
- ✓ BUSINESS SUMMARIES- INCLUDE YEAR TO DATE ANALYSIS
- ✓ WEB BLASTS-CUSTOM
- ✓ STAFF TRAINING-IN OFFICE CUSTOM
- ✓ SURGERY SCHEDULER TRAINING
- ✓ OPTICAL-WE DON'T COMPETE WITH YOUR BUSINESS
- ✓ ANNUAL CE EVENTS

OTHER SURGEONS

- SOME REFERS NEW PATIENTS BACK FOR CO-MANAGEMENT
- NOMARKETING PLAN- (Customized Marketing Plan For Your Office)
- NOMARKETING TOOLS- (Video Shoot, PR, Custom Brochures)
- NOBUSINESS SUMMARIES- INCLUDE YEAR TO DATE ANALYSIS
- MOSTWEB BLASTS-CUSTOM
- SOMESTAFF TRAINING-IN OFFICE CUSTOM
- NOSURGERY SCHEDULER TRAINING
- SOMEOPTICAL-WE DON'T COMPETE WITH YOUR BUSINESS
- SOMEANNUAL CE EVENTS

LASIK

Frequently Asked Questions

Pre-Op

1

What is the prescription range for LASIK?

- LASIK correction can safely treat from +4.00 to –8.00 diopters of spherical correction and up to –6.00 diopters of astigmatic correction.



2

How thick does the cornea need to be?

- The corneal thickness necessary for a LASIK procedure is dependent on a patient's prescription and the estimated residual stromal bed tissue. Quick calculations can be done to better understand if your patient is a good LASIK candidate. To calculate, subtract the flap thickness (110-100 um) and epilated corneal tissue (17 um per diopter) from the measured corneal thickness. After the calculation, if the residual stromal bed is equal to or greater than 300um it is safe to perform LASIK.
 - For example, a corneal thickness over 550 um can accommodate up to a –8.00 diopter prescription. However, the patient needs to be educated on the risk of corneal ectasia. ICL should also be presented as an option in this case. See calculations below.
- o Original corneal thickness = 550 um
- o Flap thickness = 110 um
- o Epilated corneal tissue = $17 \times 8.00 = 136$ um
- o Residual corneal tissue after LASIK = 304 um



3

Prior Lasik patients – can they have surgery again?

- Potentially, each case must be individually evaluated. The flap created for LASIK vision correction can be re-lifted up to 2 years after the original surgery date. If a regression occurs over this time, a relift and enhancement is possible. If the patient is more than 2 years out from their surgery date, PRK may be a better option.



4

What type of dilating drop should be used for the Lasik pre-op?

- Tropicamide can be used for the LASIK pre-op wet refraction. Please remember to wait a minimum of 20 minutes to ensure the dilating drops are in full effect.



5

How long should a patient be out of contact lenses?

- Patients should be out of their contact lenses prior to surgery. For soft contact lenses, patient should be out of their contacts 2-3 days prior to surgery. For toric or overnight soft contact lenses, patient should be out of their contacts 5-7 days prior to surgery. For patients who wear rigid gas permeable or scleral lenses, patient should be out of their contact lenses 2 weeks prior to surgery.



LASIK

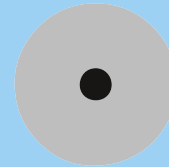
Frequently Asked Questions

Post-Op

1

DLK – How to diagnose?

- Diffuse lamellar keratitis typically presents 1 to 2 days after LASIK. While DLK is a rare, noninfectious inflammatory reaction, early intervention can lead to a better prognosis. DLK is characterized by white, grainy cells underneath the LASIK flap. Patients may also complain of pain, light sensitivity, blurry vision and foreign body sensation.
- If you are unsure of a DLK diagnosis, please refer the patient back to DLV for a secondary evaluation.



2

When to refer a patient back?

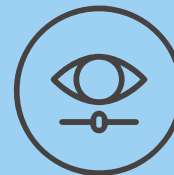
- If you ever feel uncomfortable managing a post-operative LASIK patient, you are always welcome to refer back to DLV. You can also reach out directly to any of our doctors by text, phone or email.
- Referrals back to DLV can include, but are not limited to: an unexplained decrease in VA (unable to refract to 20/20), diagnosis of DLK, uncontrolled dryness (failed artificial tears/plugs), epi ingrowths on the visual axis, epi ingrowths off the visual axis >1.5mm, macrostriae, etc.



3

At what point should I refer back if there is a residual prescription?

- If a patient has a residual prescription, they should be referred back to DLV 1) when the residual prescription is stable and 2) after 3 months from surgery date. Depending on the severity of over/under correction, a patient may request temporary glasses or contact lenses.



CATARACT

Frequently Asked Questions

Pre-Op

1

What should I do to improve ocular surface disease prior to surgery?

- Management of the ocular surface is critical for good post-operative results.
- Artificial tears can be started prior to cataract surgery to prime the front surface. Lid scrubs and warm compresses may also be advisable depending on clinical findings.



2

What drops to use when optimizing ocular surface?

- Artificial tear drops include: Refresh, Systane, Blink, Thera tears.



3

When should MIGS be discussed if a patient is on glaucoma medications?

- A general conversation should occur during your exam, and prior to the cataract evaluation with DLV. MIGS are targeted for mild to moderate glaucoma patients. A surgical consultation with our glaucoma specialist, Dr. Vosoghi or Dr. Chen, may be advised in order to determine if treatment via MIGS applies to your patient.



4

When should retinal clearance be considered?

- Individuals at higher risk of retinal detachments or tears should be referred to a retinal specialist for cataract surgery clearance. These patients include: high myopia (> -6.00 diopters), history of retinal tears, history of detachments, history of vitrectomy, extensive lattice, retinoschisis, high axial length, or diabetic retinopathy.



5

Use of multifocal vs monofocal contact lenses.

- Depending on your patient's visual goals, they may be referred back to your office in order to trial monovision or multifocal lenses. If your patient is already wearing monovision or multifocal contact lenses, please include the contact lens prescription in your referral.



CATARACT

Frequently Asked Questions

Post-Op

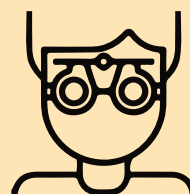
1

What should I look out for when my patient has an IOP spike?

- All patients, at the one-day appointment, should have their IOP measured to ensure no wound leaks are present and that the IOP is within a normal range. The pressure is expected to be slightly higher than average directly after surgery. A good scan of the anterior chamber should also be completed to rule out retained lens fragments.

- General IOP Guidelines:

- o Patients with a pressure below 27 can be monitored without glaucoma drop intervention.
- o A pressure spike between 28-34mmHg should have a glaucoma drop prescribed to ensure patient comfort. Consider lowering IOP in office if above 30mmHg.
- o A pressure spike 35mmHg or greater should be referred directly back to DLV for paracentesis.



2

What prescription should I use and how frequently?

- Glaucoma drop preference is doctor dependent. The following drops may be prescribed: *alphagan p*, *azopt*, *timolol*, *combigan*, or *simbrinza*. However, before prescribing a glaucoma medication, contraindications should be reviewed with the patient. Most typically, patients will use the glaucoma drop for 1 week before discontinuing.

- Recommended dosing frequency:

- o Alpha-2-agonist: TID o Beta blocker: BID o CAI: TID

- Contraindications to review with patients:

- o Alphagan – previous allergic reaction/sensitivity
- o Beta blockers – heart or lung issues (asthma/COPD), low heart rate
- o CAI – sulfa allergies



3

Should I change post-op management if my patient has a lot of corneal edema?

- Depending on the visual acuity and corneal edema at the one-day post op appointment, it may be appropriate to adjust the drop scheduled. For instance, if a patient has a visual acuity of 20/200 or 20/100 with 2-3+ corneal fold, it would be appropriate to increase the steroid to q2hrs. The vision is expected to improve over the next week.



4

Enhancements and when to refer the patient back?

- Referrals for enhancements should be sent after 90 days. The patient should be followed appropriately to ensure stability of prescription.

Depending on the patient's prescription, ocular state, and topography the appropriate enhancement will be determined.



5

When to send back for a YAG capsulotomy?

- The earliest a YAG capsulotomy can be performed is 90 days after cataract surgery. Please make sure the patient is out of their global period before referring for a YAG eval. If YAG is performed early, it can potentially cause cystoid macular edema.

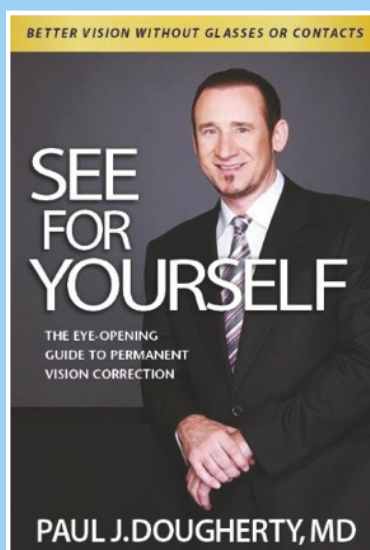
THANK YOU FOR WORKING TOGETHER WITH US IN THE CARE OF OUR MUTUAL PATIENTS

The purpose of our co-management guidebook is to provide you with all of the necessary information to ensure that together we provide the best care possible for our patients. Inside you will find information for pre and post-operative care for all procedures, information on procedures and services we offer, as well as tips and pointers for managing surgery patients.

NOTE FROM THE SURGEONS

Today is an exciting time in vision correction surgery. Tremendous advances have been made in refractive and cataract surgery. With more options available than ever before a greater number of people can reduce their dependence on glasses and expect better vision after cataract surgery. With that being said, it is important to give proper advice on which treatment option is best for our patient's specific needs. Our goal is to provide patients with the best possible experience while having the safest and most effective surgical outcome their eyes are capable of achieving. We treat every pair of eyes like they are our own. My staff and I work as hard as possible to provide patients with the best quality of care possible.

With the ability to customize treatments using both lens and laser-based options, patients are achieving the quality vision that many surgeons, who do not use LASIK and lens surgery together, are not able to accomplish. For us, the most exciting aspect of cataract surgery is improving the quality of life of our patients! We look forward to working with each of you individually. Thank you!



DLV VISION IS PROUD TO OFFER:

- LASIK/ PRK
- Implantable Contact Lens (ICL)
- Cataract Surgery / Refractive Lens Exchange (RLE)
- Cross-Linking (CXL)
- Intacs
- SLT / LPI
- Incisional Glaucoma Surgery
- Glaucoma Tips / Treatment
- Retina Treatment
- Dry Eye Treatment

"Excellence in Vision-DLV *Vision* will be unsurpassed in our strive for excellence and provide an inspiring inner and outer vision for our patients, referring providers, employees, and our world."

DLV Vision and ADV Vision have no written or unwritten policy with referring Optometrists covering the co-managing of their patients. DLV and ADV realize that there is no one formula and each patient has unique needs. If the patient chooses to be co-managed, both Optometrist and Ophthalmologist must agree that it is clinically appropriate to do so.

CO-MANAGEMENT OF CATARACT PATIENTS

Policy and Procedure Manual

INTRODUCTION

This manual outlines the process that DLV Vision follows for the co-management of cataract/IOL surgery as well as other vision correction surgeries. Together with our co-managing doctors, we will provide the highest quality of care for our shared patients, consistent with patient needs and desires. DLV is pleased to offer primary eye care providers an opportunity to participate. These guidelines are intended to comply with applicable state and federal statutes and regulations regarding co-management of patient care.

- 1.** The selection of an operating surgeon for patient referral should be based on providing the best potential outcome for the patient. Financial relationships between providers will not be a factor.
- 2.** The patient's right to choose the provider of post-operative care will be respected, consistent with the best medical interest of the patient.
- 3.** Co-managing doctors will be licensed ODs or MDs.
- 4.** The transfer of a patient for post-operative care will always be clinically appropriate and depend on the particular facts and circumstances of the surgical event.
- 5.** Following surgery, transfer of care from the operating surgeon to the co-managing provider will occur when clinically appropriate at a mutually agreed upon time or circumstance, and such time will be clearly documented via correspondence and included in the patient's medical record.
- 6.** DLV and the co-managing provider will communicate during the post-operative period to assure the best possible outcome for the patient.
- 7.** Compensation for care will be commensurate with the services provided. Cases involving care for Medicare beneficiaries will reflect the proper use of modifiers and other Medicare billing instructions.

Step-by-step instructions and co-management forms are provided in the following sections of this manual.

STEP-BY-STEP PROCESS FOR CATARACT CO-MANAGEMENT

Patient is seen by his/her Primary Eye Care Provider (PECP or OD) and charged the usual and customary fee for a complete examination. The doctor identifies the patient need for cataract surgery and completes the Pre-Op Examination and Consultation Request Form.

1. The referring optometrist educates the patient regarding the process of cataract surgery.
2. The referring optometrist explains the need for post-operative care and the patient's choice to return to the Optometrist or to stay with the surgeon's practice.
3. The patient may be scheduled for an appointment at DLV by the referring optometrist's office, DLV calling the patient after receiving the request form, or the patient calling DLV at their convenience.
4. The patient is examined at DLV and a determination of medical necessity for cataract surgery is made. The patient is educated on which procedure best suits the patient's needs.
5. The patient is scheduled for surgery if necessary. DLV will provide educational materials on the procedure; give the patient instructions related to post-op care, and information regarding fees. The patient will complete and sign an Informed Consent and any other necessary forms. DLV will confirm the patient's decision relating to post-op care. i.e. If the patient desires to have post-surgical care co-managed, the patient will sign the Co-Management Consent Form.
6. DLV will complete a letter reviewing the patient's visit and then fax the completed form to the co-managing eye care provider advising the plan for treatment and any other remarkable findings.
7. When deemed medically appropriate, typically at 24 hours after surgery, DLV completes the Transfer of Care Form and Surgery Report which includes surgery information and findings as well as post-operative visits if appropriate.
8. In the interest of excellent patient care, we ask that each co-managing PECP will fax a post-operative co-management exam form to DLV, following each post-operative visit.
9. Upon completion of post-operative care, the PECP will submit the appropriate claim to third-party payers or prepare patient billing for their portion of the post-operative treatment. The PECP should be a participating provider with Medicare and will bill and be paid directly by Medicare. If you are a Medicare provider, DLV can refer you to a medical billing service to assist you with billing Medicare for the co-managed portion of your care.

We look forward to a partnership with our affiliated co-managing doctors in which we can offer our cataract and lens implant patients the best and most convenient care!

CATARACT PATIENT CO-MANAGEMENT TREATMENT PLAN

WHAT IS FOLLOW-UP CARE?

After your cataract surgery, you will have several appointments with an eye care professional. You should understand that complications may not necessarily occur during surgery, but may occur after the surgery has been performed. For this reason, it is imperative that you have appropriate care by a qualified eye care professional following your surgery. He or she will perform tests to measure your visual acuity and, ultimately, if necessary, fit you for eyeglasses. In addition, your doctor will ensure that any post-surgery complications are detected and treated. This series of visits is called your “follow-up care.”

WHO IS QUALIFIED TO PROVIDE FOLLOW-UP CARE?

It is critical that your follow-up care be performed by a qualified eye care professional familiar with your case. Several different practitioners are qualified to provide this service. You should understand the roles that each may play in your recovery.



Your Surgeon

Your surgeon or his/hers associate is a licensed ophthalmologist, a medical doctor who specializes in ocular surgery. Your surgeon or his associate will also determine when you can be released from his or her care to return to your optometrist for further follow-up visits.



Your Optometrist

Many patients will return to see their PECP for their post-surgical care. Your optometrist is also the vision specialist who will examine and fit you for your glasses, if necessary, after recovery. Your optometrist will be in communication with DLV following each post-operative visit. If problems develop during the post-surgery follow-up period, your optometrist and your surgeon will communicate regarding your care until these have been resolved.



Another PECP

If you travel away from home to have surgery and wish to return home soon after surgery, or if you have any other personal reason for not receiving your follow-up care from your surgeon or optometrist, you may decide to see another eye care provider for your follow-up care. We will make arrangements with another provider, if you are unable to do your follow-up visits with the surgery center or your PECP.

SUMMARY

We hope this summary has helped to explain some facts about the cataract surgical process. Your optometrist and surgeon will explain the improvements in your vision that you may enjoy after cataract surgery. If you have any questions or concerns, now is the time to raise them. You may contact your optometrist or DLV at any time, before or after surgery, to answer your questions or address concerns.

TREATMENT PROTOCOLS

The volume of cataract surgeries will continue to increase as the population ages. So, we must stay educated in cataract surgery protocols and possible complications. A thorough pre-op exam and treatment of any existing problems may prevent complications from occurring after surgery. Though serious complications are rare, it is also important to know what post-op complications can occur and how you can manage them, and when it is time to refer the patient back to the surgeon.

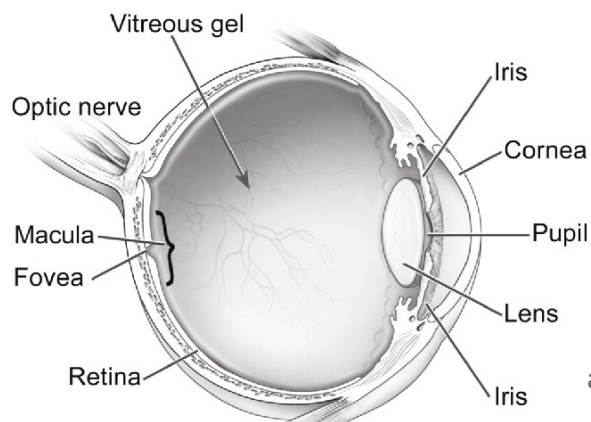
PRE-OP EXAM General Health

The first key to managing complications is to find ways to avoid them altogether or at least decrease their likelihood. This starts with astute observations during your pre-operative exam, and that starts with a general health history. Understanding the patient's overall health at the time of surgery can help chart the strategy of the procedure. It can also help predict and explain the prognosis and course of recovery.

Ask about systemic diseases that affect healing after cataract surgery, particularly **autoimmune diseases such as rheumatoid arthritis, collagen vascular and metabolic diseases, lupus and diabetes**.

Patients with rheumatoid arthritis are at risk for abnormal healing/melting of the corneal incision. Examine the patient's hands for telltale signs of disfigured digits. Lupus or other autoimmune diseases may increase the inflammatory response after surgery, resulting in pronounced post-op inflammation, high intraocular pressure, cystoid macular edema or even a corneal melt near the incision. If the history is positive for any of these diseases, you have some options to help provide that patient with a normal post-op healing course. The surgeon could consider more inert intraocular lenses (IOLs) made of acrylic instead of silicone, which would reduce a potential source of inflammation. Be prepared for the need to increase the steroid dosing early in the post-op period to control the ensuing inflammatory response. If the autoimmune disease is active, we recommend referring the patient to their rheumatologist prior to surgery for treatment and clearance. There are some concerns specific to diabetic patients: poor wound healing, and the risk exacerbating existing proliferative retinopathy and diabetic macular edema.

Diabetics with poor blood sugar control may have a slower recovery following surgery. Some may benefit from delaying surgery until their diabetes is under control. Diabetics often have denser cataracts and may be more prone to corneal edema and early IOP spikes after surgery. Diabetics who have had prior or ongoing history of diabetic macular edema may need to coordinate timing of their cataract surgery along with their anti-VEGF treatment with their retina specialist. Another important systemic issue in cataract surgery is the use of prostate medication in males. Use of these medications (Flomax/Tamsulosin, Cardura/Doxazosin, Saw Palmet-to), increase the risk of intraoperative floppy iris syndrome (IFIS) that can lead to damage to the iris or increased corneal edema. Stopping these medications does not reduce the risk. Please inform the surgeon prior to surgery if your patient is on one of these medications to allow the surgeon to prepare to prevent IFIS with intraoperative iris rings and epinephrine.



Anterior Segment Concerns

Examination of the eyelids prior to surgery should not be overlooked. The leading cause of endophthalmitis is the introduction of bacteria into the eye from the conjunctiva and ocular adnexa. It's important to diagnose and manage **blepharitis/meibomitis** prior to cataract surgery. Also, look for other lid conditions such as entropion, **ectropion** and **lower lid laxity** which can negatively impact healing and dry eye. Improper apposition of the lower eyelid can contribute to an inadequate clearing of bacteria, which

also increases the risk of endophthalmitis. Patients with cranial nerve dysfunction such as a seventh-nerve palsy, which results in an incomplete blink, are also at risk for corneal exposure problems and poor wound healing after cataract surgery. Lubricating ointments and a referral for surgical intervention may be indicated for these patients. **Pterygia, epithelial basement membrane dystrophy, Salzmann's nodular dystrophy or band keratopathy** can prevent accurate measurements and limit vision. To accurately assess the cornea for proper IOL power calculations, crisp and regular mires on the keratometer or topographer are essential. Discuss this with the patient prior to surgery to help manage post-op visual expectations. These patients may benefit from corrective surgery or aggressive treatment of the ocular surface with drops (ie Restasis, Xiidra, cyclosporine, steroids, tears and ointments, Vitamin A ointment) prior to the cataract procedure, which would provide for better corneal measurements and improved corneal transparency. **Epithelial Basement Membrane Dystrophy** is extremely common and frequently missed on exam. EBMD can lead to an increased risk of epithelial defects or edema following surgery, which can slow vision recovery and require a bandage contact lens.

Two additional corneal conditions to consider in counseling patients:

- **Fuchs' dystrophy.**

Patients with moderate to advanced Fuchs' are at risk of permanent corneal edema requiring corneal transplantation due to the strain that cataract surgery can put on already debilitated endothelial cells. With patients with Fuchs dystrophy, it is important to discuss prolonged recovery and blurry vision after surgery. Fuchs dystrophy have the possibility of increased corneal edema after surgery. Discuss use of viscoelastic during surgery to decrease risk of edema.

- **Herpes simplex keratitis.**

The Herpetic Eye Disease Study (HEDS) and other studies have shown that previous episodes of herpes simplex stromal keratitis are the single greatest contributing factor to subsequent bouts of recurrence. Trauma may also trigger recurrence. Because surgery involves some trauma to the eye, the surgeon may consider treating these patients prophylactically with oral and/or topical antivirals before and after surgery. Cataract surgery may be contraindicated if an episode of HSV keratitis has occurred within the last 6-12 months.

ADDITIONAL PRE-OP CONCERNS

Counsel patients with conditions which can result in weak zonular fibers and, in turn, increase the risk of a capsular rupture or tear. These include **Marfan's syndrome, Ehlers-Danlos syndrome, previous trauma and pseudoexfoliation (PXF)**. Patients with a traumatic cataract secondary to an impact injury are at heightened risk of capsular rupture potential. Pseudoexfoliation is the most common of these conditions. The surgeon will usually be prepared for potentially suturing the IOL in place or consider using a capsular tension ring, which might aid in centration of the IOL within the capsular bag. PXF also places the patient at higher risk for an IOP spike after surgery. Also perform a thorough dilated fundus examination to identify any pathology that may limit best visual acuity postoperatively or contribute to retinal tears or detachments following surgery. Consider referring patients with peripheral areas of weakness for prophylactic treatment by a retina surgeon prior to cataract surgery. Warn patients with a history of toxoplasmosis or histoplasmosis of the risk that the conditions could reactivate following cataract extraction. Also, look carefully for the presence of epiretinal membranes that can limit vision after surgery and can increase the risk of CME requiring pre-operative NSAID use.

POST-OP VISITS

During these visits you need to assess the early stages of recovery and rule out any serious problems. Most complications after cataract surgery present early in the post-op period and will be resolved by the time the patient is released by the surgeon. Review the post-op

medication regimen that is prescribed, confirm compliance and clarify any questions the patient may have about his or her recovery. A post-op kit and instructions will have been provided to the patient.

DROPLESS CATARACT SURGERY

DLV is happy to provide the convenience of dropless cataract surgery as an option, however it is not a commonly used option in DLV Vision. The drug is formulated at a compounding pharmacy under strict regulations. Before closing the eye after cataract surgery a formulation containing antibiotics and steroids is injected into the patient's anterior vitreous. This injection will take the place of post-operative drops. Dropless cataract surgery has shown to decrease incidence of endophthalmitis and CME. There may be certain patients that need to supplement the injection with topical drops. These patients include diabetics, ERM, patients with increased corneal edema following surgery or patients with breakthrough inflammation. Certain patients, due to anatomic issues of the capsule that cannot be diagnosed prior to surgery, are not candidates for the Dropless injection. For the first few days following surgery you may notice a faint white cloud on slit lamp examination and the patient may complain of a hazy vision and/or peripheral floaters. This is a normal finding which is caused by the injection settling down. DLV will communicate if a patient has undergone dropless cataract surgery.

KEY EXAM AREAS

During your post-op exams, pay careful attention to these key areas:

Visual Acuity.

It is not unusual for the patient to have reasonably good acuity immediately post-op. More dense and cataracts (usually seen in older patients), however, can often result in a delayed return of acuity. This is due to corneal edema from the higher levels of phaco energy used during the procedure. Increased levels of corneal edema are much more common in patients with corneal guttata or Fuch's dystrophy. Corneal edema, in fact, is the most common cause of decreased vision on day one post-op and should not be a cause for alarm – this is most common issue will see after surgery. Please reassure that

patient that this will clear over a few days or weeks. Given the variety of correction strategies available, including monovision corrections and multifocal IOLs, you should know what corrective strategy or targeted refraction the patient chose before you examine the patient.

The Incision.

Carefully inspect the incision for any evidence of poor healing or a wound leak. Signs associated with this problem are a shallow anterior chamber, an IOP of less than 5 mmHg, and some degree of corneal edema. A Seidel's test with fluorescein can help you verify a wound leak. Wound leaks are a serious issue. Not only do they delay visual recovery, but they put the patient at risk of intraocular infection or choroidal hemorrhaging due to the low IOP. Wound leaks require consultation with the surgeon. Significant wound leaks may require suturing for repair, while smaller leaks can usually be controlled by temporarily reducing the steroid medication and applying a bandage contact lens for a few days. Very rarely, the surgeon will need to place a suture in the main corneal incision after surgery. Typically this suture is removed by the surgeon in the clinic several weeks after the surgery. The visual acuity may be impacted by the change in K's after the suture is removed.

Corneal Integrity.

Assessment of the cornea's overall status can help you anticipate when the patient will recover best visual acuity. Stromal and epithelial herpetic keratitis can recur after cataract surgery. Cataract surgery may be contraindicated if an episode of HSV keratitis has occurred within the last 6-12 months. Depending on the difficulty and length of the surgery, the cornea can respond with varying degrees of edema and endothelial folds. In an uncompromised cornea, swelling will limit vision early on, but this tends to dissipate within the first week post-op, resulting in improved acuity. Patients with compromised corneal endothelial cell function or Fuchs' dystrophy can expect corneal edema to diminish more slowly, but they still tend to do well long-term. Whenever you note significant corneal

edema, be sure to consider IOP. A cloudy cornea with signs of microcystic edema is often a sign of elevated IOP following cataract surgery. Though rare, corneal abrasions can develop immediately following cataract surgery. We can usually resolve this problem with a bandage contact lens for one or two days. Also, we can temporarily decrease steroid usage to allow for improved epithelial migration; this can help the abrasion resolve quickly.

Anterior Chamber Status.

At day one the anterior chamber should appear well formed with moderate cellular reaction. A flat or shallow chamber may indicate a wound leak. The cellular reaction can be more pronounced in difficult cases, but fibrin within the anterior chamber or the presence of hypopyon is never normal. A dense anterior chamber reaction with visual obscuration of the anterior segment anatomy indicates bacterial endophthalmitis, which requires immediate attention and culturing. If a MIGS procedure was done at the time of cataract surgery, there may be a significant hyphema present in the immediate post-operative period. If hyphema is present but the IOP is well-controlled and the patient experiences no pain, reassurance is given to the patient that the hyphema should resolve over the course of 1-2 weeks at most. Continue the patient's prior glaucoma drops and make sure the steroid used is prednisolone or durezol. The steroid can continue at QID until the hyphema is resolved.

IOL Status Within the Capsular Bag.

IOL decentration/dislocation is not common with uncomplicated surgery but does occur. Most IOL dislocations result from trauma, known zonular weakness or in association with a tear in the posterior or anterior capsule. Dislocations often occur months to years after the original procedure, but may be seen the next day. Review any evidence of IOL dislocation with DLV. The surgeon may need to explant the IOL and then place it within the ciliary sulcus, or suture the implant in place. Besides examining the implant location, carefully inspect the integrity of the capsular bag. Early wrinkles within the posterior capsule can cause minor visual distortion or streaking of lights. Fortunately, these tend to fade throughout the early post-operative period as the capsule shrinks. In cases of posterior subcapsular cataracts, it is not uncommon to have early post-operative opacification of the posterior capsule until YAG laser can be performed at 3 months after surgery. This is due to a higher degree of remaining lens epithelial cells that adhere to the posterior capsule after surgery. Keep in mind, however, that YAG procedures carry a short-term risk of an immediate IOP spike. You can usually control this with topical IOP-lowering agents in conjunction with a short course of topical steroids. Historically, alpha agonists have proven to work well with anterior laser surgery. YAG laser capsulotomy also carries a slight long-term risk of retinal tear or detachment. So, it is important to monitor the patients after treatment. Several research studies are investigating different IOL designs and materials that will hopefully reduce the incidence of posterior capsule opacification. Posterior capsule rupture has been cited in up to 4.1% of all cataract surgeries. Tears of the posterior capsule that occur during surgery require special care to prevent loss of lens fragments within the eye. Evidence of free lens fragments postoperatively should be referred back to the surgeon. These loose particles can lead to chronic inflammation and IOP elevation, and thus need to be dealt with carefully.

Intraocular Pressure.

IOP spikes in the immediate post-op period occur in 5-14% of all cataract surgeries, regardless of technique. Several studies have linked the viscoelastic substance used to fill the anterior chamber with the incidence of a 24-hour post-op pressure spike. While the surgeon makes every attempt to remove the viscoelastic, complete removal is nearly impossible. Patients who present with pressures higher than 30mm Hg may complain of a dull headache or pain in and around the eye. A steamy cornea that indicates diffuse microcystic edema typically manifests with pressures at or above this level. You may need to refer this patient back to DLV for an anterior chamber tap through the paracentesis to immediately reduce IOP if the IOP is above 35 or the patient is symptomatic. If the anterior chamber tap is not an option, you can prescribe a topical pressure-lowering agent such as a beta-blocker, an alpha adrenergic agonist or a carbonic anhydrase inhibitor--either alone or in combination--to reduce the pressure. (Of course, beta blockers are contraindicated in patients with any

history of respiratory problems or slow heart rate). Once IOP is within normal limits, recheck the patient in 24-48 hours to rule out a rebound spike. Typically, IOP will have stabilized at the one-week visit, and it will be safe to discontinue the pressure-lowering drops.

SERIOUS COMPLICATIONS

Some of the more serious though less frequent complications associated with cataract surgery include:

Endophthalmitis.

This bacterial intraocular infection occurs in about 0.05-0.7% of cataract surgeries. The usual source of infection is the patient's own ocular surface, and most cultures are gram-positive organisms at work. Although rare, endophthalmitis is the biggest we face. Early diagnosis and treatment is critical. Without prompt treatment, the patient could lose an eye. A patient with endophthalmitis presents with a red, photophobic eye, usually within a few days after surgery. One important symptom is the presence of unusual pain and blurred vision early in the post-op period. Upon slit-lamp examination there will be a marked anterior chamber reaction with possible fibrin and hypopyon. Refer patients back to the surgeon immediately for intraocular culturing, intraocular antibiotics and possible vitrectomy.

Cystoid Macular Edema (CME)

often presents with unexplained decreased acuity within the first few weeks or months after surgery. At times, it can present nearly a month after surgery and persist for several months before it spontaneously resolves. CME may be difficult to detect on fundus examination alone. Therefore decreased visual acuity without other explanation should warrant an OCT. CME is treated by increasing steroid and NSAID drops.

Retinal Detachment.

The likelihood of retinal detachment after uncomplicated cataract surgery is less than 1%. Complicated cases involving posterior capsule rupture and vitreous loss increase the likelihood of retinal problems after surgery. The incidence does rise in highly myopic eyes – particularly males and patients with a family history, necessitating detailed retinal examination and prophylactic treatment of lesions that could contribute to a retinal detachment.

DLV Vision is committed to providing Continuing Education for the pre and post-operative management of surgical patients. We have provided an overview of treatment protocols in this manual, however, we encourage you to attend our Continuing Education seminars for discussions regarding these protocols and/or see the clinical presentations included in the doctor portal. Please contact our office if you have any questions regarding co-managing patients.



CATARACT CO-MANAGEMENT BILLING FOR MEDICARE

As per guidelines published by Medicare in 1992, specific components of major surgery were defined as the “global surgery package.” The components they identified included pre-operative care, intraoperative services, post-operative care (90 days), and in-office care for any postoperative complications. In addition, the value of post-operative care for surgical procedures was standardized and post-operative care for ophthalmic surgery was valued at 20% of the global surgery package. Medicare also published instructions to Medicare carriers on split billing of post-operative care, also known as post-operative co-management, within eye care. These instructions incorporate the following points, which are further defined in this section of our co-management manual:

1

Co-management requires a written transfer agreement between the surgeon and the receiving doctor(s).

2

Specific modifiers must be used on claims (54 - surgical care only; 55 - postoperative management only).

3

The receiving doctor cannot bill for any part of the service included in the global period until he/she has provided at least one service.

WRITTEN TRANSFER AGREEMENT

The transfer agreement between the surgeon and the co-managing doctor (optometrist) contains the surgeon’s discharge instructions and the effective transfer date. According to current Medicare policy, the transfer date is “determined by the date of the physician’s transfer order.” The responsibility for post-operative care may be transferred on or before the patient’s appointment for the subsequent follow-up visit with the receiving doctor, who may submit a claim for services once he or she has seen the patient. The split of post-operative care cannot be done or pre-arranged in advance of the surgery. Instead, a unique transfer agreement should be constructed for each patient.

Essential elements of the transfer agreement include the following:

- Patient Name
- Operative Eye
- Nature of Operation
- Transfer Date
- Results of First Post-Operative Visit
- Both doctors should retain copies of this documentation as part of the patient’s permanent records

They may also serve as a useful attachment on claims, as necessary.

MODIFIERS FOR CLAIMS SUBMISSION

Immediately following surgery, the surgeon can submit a claim for the surgical component of care using the appropriate CPT Code, i.e. 66984, and Modifier 54. This modifier is used to indicate the surgical event in a co-managed case. Medicare assigns 80% of the global fee to the intraoperative service. Later the surgeon will submit a claim for his/her portion of post-operative care. In order for this claim to be accurate, the surgeon needs to apply the date the optometrist assumed responsibility for the remaining post-operative care (the transfer date noted above). This claim will be filed using the appropriate CPT Code, i.e. 66984, and Modifier 55, which indicates post-operative management only. After the optometrist has seen the patient for post-operative care, he/she will submit a claim for the post-operative care provided, using the appropriate CPT Code, i.e. 66984, and Modifier 55. Again, in order for the claim to be accurate, the optometrist must know the date he/she assumed responsibility for post-operative care (the transfer date). Medicare uses chronology and the number of days to calculate the payment for care rendered by each doctor during the post-operative period (90 days). The fees submitted by the surgeon and optometrist will be different, depending on the number of days of post-operative care each one provided. **An example of billing by the surgeon and optometrist follows.** If you would like assistance with billing Medicare for your post-operative care, we have a medical billing service that we will refer you to. When submitting claims, many Medicare carriers instruct providers to write a comment in the body of the claim form, as follows:

Surgeon | Assumed post-operative care on January 2, relinquished care on January 10

Optometrist | Assumed post-operative care on January 2, relinquished care on January 10

OVERLAPPING POST-OPERATIVE CO-MANAGEMENT

Many patients will have cataract surgery performed on the second eye shortly after their first surgery, in which case post-operative care may overlap temporarily. When these patients are co-managed, claims for each surgery are handled separately. The surgeon will file the second claim with Modifier 79, to indicate the second surgery is unrelated to the first (different eye). Both surgery claims will also be filed using Modifier 54, to indicate post-operative care is being co-managed. The post-op care claims will include both Modifiers 55 and 79 for the surgeon and the optometrist. The chronology and windows of time on which payment is determined (as outlined above) are still relevant and the claims will be concurrent. The surgeon will determine if the transfer of care for the first surgery occurs before or after the second surgery. If the transfer of care for the first surgery occurs before the second surgery, then two transfer-of-care letters or forms and transfer agreement letters must be prepared, establishing a unique transfer date for each surgery. The comments provided herein relate to billing for cataract co-management for Medicare patients. Commercial carrier policies will vary. Should you have questions about a specific carrier's policy, we recommend you contact them directly. Also, if you have questions related to Medicare billing procedures, you can visit their website, www.cms.gov, or contact our office for assistance.

GENERAL PRACTICE INFORMATION

For a complete list of our patient services, directions, maps, and information about co-management of cataracts or our practice please visit DoughertyLaserVision.com and access the doctor's portal.

CATARACT - Premium Package

OD Post-Operative Visit Instructions

1 DAY POST OP

- UCVA
- SLE - record cells/flare, corneal edema, and lens position
- IOP - must perform on all patients

1 WEEK POST OP

- UCVA
- Refraction with BCVA
- Refraction - on all patients • SLE
- IOP

1 MONTH POST OP

- UCVA
- Refraction with BCVA
- Refraction - on all patients
- SLE
- IOP
- DFE - if patient has poor BCVA or complaints associated with retinal detachment

3 MONTH POST OP

- UCVA
- Refraction with BCVA
- Refraction - on all patients
- SLE
- IOP
- DFE - if patient has poor BCVA or complaints associated with retinal detachment

6 MONTH POST OP

- UCVA
- Refraction with BCVA
- Refraction - on all patients
- SLE
- IOP

12 MONTH POST OP

- UCVA
- Refraction with BCVA
- Refraction - on all patients
- SLE
- IOP

YEARLY EYE EXAMS AT YOUR OFFICE

Tips/Pointers

- If the patient has a stable residual Rx or PCO and needs a retreatment, please refer back to DLV after three months.
- If the cornea is clear, glasses or soft contact lenses may be prescribed if necessary to improve vision, as soon as 1-2 weeks after surgery.

Trouble Shooting

- Increased IOP POD#1 - Above 24, have patient start IOP drop (NOT prostaglandin) and see back the next day. If over 35, then send back to DLV same day for aqueous release.
- Lower thresholds if pre-existing severe glaucomatous optic nerve damage.
- Persistent increased IOP at one week - Treat with glaucoma drops and monitor. The ocular hypertension is usually temporary.
- Corneal edema - Mild, no need for further treatment. Moderate to severe, increase steroid to 2 hours and see back a few days later. Add Muro128 if persists.
- Decentered lens - Refer back to ADV.
- Severe pain, vision loss, hypopyon - Refer to retina specialist stat, or ADV if uncertain.
- Poor BCVA - Verify Refraction, then dilate and check for CME. If patient has decreased BCVA mild CME can be easily missed so we advise doing an OCT. If you do not have access to one, please send back to DLV.

CATARACT - Enhanced Package

OD Post-Operative Visit Instructions

1 DAY POST OP

- UCVA
- SLE - record cells/flare, corneal edema, and lens position
- IOP - must perform on all patients

1 WEEK POST OP

- UCVA
- Refraction with BCVA
- Refraction - on all patients
- SLE
- IOP

1 MONTH POST OP

- UCVA
- Refraction with BCVA
- Refraction - on all patients
- SLE
- IOP
- DFE - if patient has poor BCVA or complaints associated with retinal detachment

3 MONTH POST OP

- UCVA
- Refraction with BCVA
- Refraction - on all patients
- SLE
- IOP
- DFE - if patient has poor BCVA or complaints associated with retinal detachment

6 MONTH POST OP

- UCVA
- Refraction with BCVA
- Refraction - on all patients
- SLE
- IOP

12 MONTH POST OP

- UCVA
- Refraction with BCVA
- Refraction - on all patients
- SLE
- IOP

YEARLY EYE EXAMS AT YOUR OFFICE

Tips/Pointers

- If the patient has a stable residual Rx or PCO and needs a retreatment, please refer back to DLV after three months.
- If the cornea is clear, glasses or soft contact lenses may be prescribed if necessary to improve vision, as soon as 1-2 weeks after surgery.

Trouble Shooting

- Increased IOP POD#1 - Above 24, have patient start IOP drop (NOT prostaglandin) and see back the next day. If over 35, then send back to DLV same day for aqueous release.
- Lower thresholds if pre-existing severe glaucomatous optic nerve damage.
- Persistent increased IOP at one week - Treat with glaucoma drops and monitor. The ocular hypertension is usually temporary.
- Corneal edema - Mild, no need for further treatment. Moderate to severe, increase steroid to 2 hours and see back a few days later. Add Muro128 if persists.
- Decentered lens - Refer back to ADV.
- Severe pain, vision loss, hypopyon - Refer to retina specialist stat, or ADV if uncertain.
- Poor BCVA - Verify Refraction, then dilate and check for CME. If patient has decreased BCVA mild CME can be easily missed so we advise doing an OCT. If you do not have access to one, please send back to DLV.

CATARACT - Standard Package

OD Post-Operative Visit Instructions

1 DAY POST OP

- UCVA
- SLE - record cells/flare, corneal edema, and lens position
- IOP - must perform on all patients

1 WEEK POST OP

- UCVA
- Refraction with BCVA
- Refraction - on all patients •
- SLE
- IOP

1 MONTH POST OP

- UCVA
- Refraction with BCVA
- Refraction - on all patients
- SLE
- IOP
- DFE - if patient has poor BCVA or complaints associated with retinal detachment

3 MONTH POST OP

- UCVA
- Refraction with BCVA
- Refraction - on all patients
- SLE
- IOP
- DFE - if patient has poor BCVA or complaints associated with retinal detachment

YEARLY EYE EXAMS AT YOUR OFFICE

Tips/Pointers

- If the patient has a stable residual Rx or PCO and needs a retreatment, please refer back to DLV after three months.
- If the cornea is clear, glasses or soft contact lenses may be prescribed if necessary to improve vision, as soon as 1-2 weeks after surgery.

Trouble Shooting

- Increased IOP POD#1 - Above 24, have patient start IOP drop (NOT prostaglandin) and see back the next day. If over 35, then send back to DLV same day for aqueous release.
- Lower thresholds if pre-existing severe glaucomatous optic nerve damage.
- Persistent increased IOP at one week - Treat with glaucoma drops and monitor. The ocular hypertension is usually temporary.
- Corneal edema - Mild, no need for further treatment. Moderate to severe, increase steroid to 2 hours and see back a few days later. Add Muro128 if persists.
- Decentered lens - Refer back to ADV.
- Severe pain, vision loss, hypopyon - Refer to retina specialist stat, or ADV if uncertain.
- Poor BCVA - Verify Refraction, then dilate and check for CME. If patient has decreased BCVA mild CME can be easily missed so we advise doing an OCT. If you do not have access to one, please send back to DLV.

LASIK

OD Post-Operative Visit Instructions

1 DAY POST OP

- UCVA
- SLEx - make sure no infection, DLK, and flap is clear and smooth

1 WEEK POST OP

- UCVA
- Refraction - if patient is complaining
- SLEx - make sure no infection, DLK, and flap is clear and smooth

1 MONTH POST OP

- UCVA
- Refraction - on all patients
- SLEx

3 MONTH POST OP

- UCVA
- Refraction - on all patients
- SLEx

6 MONTH POST OP

- UCVA
- Refraction - only if necessary
- SLEx

12 MONTH POST OP

- UCVA
- Refraction - only if necessary
- SLEx

YEARLY EYE EXAMS AT YOUR OFFICE

Tips/Pointers

If the patient has a residual Rx and needs a retreatment please refer back to DLV after three months and the Rx is stable.

Trouble Shooting

- DLK - If trace to mild, increase steroid to one drop every hour and see back the following day. If moderate or worse, increase steroid to one drop every hour and refer back to DLV IMMEDIATELY. In all cases, if DLK moves central or there is loss of vision, at day 3 or 4, refer the patient back to DLV IMMEDIATELY to wash out the flap. Waiting beyond day 4 could result in permanent haze and loss of best corrected vision.
- Flap Straie - Refer back to DLV immediately.
- Severe Dry Eye/SPK - If persists more than a few days increase ATs to one drop every 30 minutes, start on Restasis, and or temporary plugs.

IMPLANTABLE CONTACT LENS (ICL)

OD Post-Operative Visit Instructions

1 DAY POST OP

- UCVA
- SLEx - record cell/flare, corneal edema, PI patency, and lens vault
- IOP - must perform on all patients

1 WEEK POST OP

- UCVA
- Refraction - on all patients
- SLEx
- IOP

1 MONTH POST OP

- UCVA
- Refraction - on all patients
- SLEx
- IOP
- DFE - if patient has poor BCVA or complaints associated with retinal detachment

3 MONTH POST OP

- UCVA
- Refraction - on all patients
- SLEx
- IOP
- DFE - if patient has poor BCVA or complaints associated with retinal detachment

12 MONTH POST OP

- UCVA
- Refraction - only if necessary
- SLEx

YEARLY EYE EXAMS AT YOUR OFFICE

Tips/Pointers

If the patient has a residual Rx and needs a retreatment please refer back to DLV after three months and the Rx is stable.

Trouble Shooting

- Increased IOP - Above 35, refer back to DLV.
- Corneal Edema - Mild, no need for further treatment. Moderate to severe, increase steroid to 6-8 times per day and see back a few days later.
- Blocked PI - Refer back to DLV.
- Hyphema - Refer back to DLV. Scattered red blood cells in the anterior chamber are okay.
- Low IOP - Below 6, check for leaking wound. If anterior chamber is well formed, then can see back the next day. If low IOP or wound leak persists for more than 3 days, can put a contact lens on to help with digital pressure or send back to DLV for a suture.

PRK

OD Post-Operative Visit Instructions

1 DAY POST OP

- UCVA
- SLEx - make sure no infection, contact lens is in place, and no significant stromal haze

1 WEEK POST OP

- UCVA
- SLEx - make sure no epithelial defects
- Remove bandage contact lens and check IOP
- SLEx - again once contact off to make sure no infection, and no significant stromal
- Check IOP to ensure patient is not a steroid responder

1 MONTH POST OP

- UCVA
- Refraction
- SLEx - make sure no infection, and no significant stromal haze
- Check IOP to ensure patient is not a steroid responder

3 MONTH POST OP

- UCVA
- Refraction
- SLEx
- Check IOP to ensure patient is not a steroid responder

6 MONTH POST OP

- UCVA
- Refraction
- SLEx
- Check IOP to ensure patient is not a steroid responder

YEARLY EYE EXAMS AT YOUR OFFICE

Tips/Pointers

- If the patient has a residual Rx and needs a retreatment please refer back to DLV after three months and the Rx is stable.
- Moderate stromal haze - increase steroid to QID for the first month. May need to increase further if stromal haze is severe.

REFRACTIVE LENS EXCHANGE (RLE)

OD Post-Operative Visit Instructions

1 DAY POST OP

- UCVA
- SLEx - record cells/flare, corneal edema, and lens position
- IOP - must perform on all patients

1 WEEK POST OP

- UCVA
- Refraction - on all patients
- SLEx
- IOP

1 MONTH POST OP

- UCVA
- Refraction - on all patients
- SLEx
- IOP
- DFE - if patient has poor BCVA or complaints associated with retinal detachment

3 MONTH POST OP

- UCVA
- Refraction - on all patients
- SLEx
- IOP
- DFE - if patient has poor BCVA or complaints associated with retinal detachment

6 MONTH POST OP

- As you see fit

YEARLY EYE EXAMS AT YOUR OFFICE

Tips/Pointers

If the patient has a residual Rx or a PCO and needs a retreatment please refer back to DLV after three months.

Trouble Shooting

- Increased IOP - Above 24, have a patient start IOP drop (NOT prostaglandin) TID and see back the next day. If over 35, then refer back to DLV same day for A/C burp.
- Corneal Edema - Mild, no need for further treatment. Moderate to severe increase steroid to 6-8 times per day and see back a few days later.
- Decentered Lens - Refer back to DLV.
- Severe Redness Or Hypopyon - Refer back to DLV.
- Poor BCVA - Dilate and check for CME, if patient has decreased BCVA mild CME can be easily missed so we advise doing an OCT. If you do not have access to one please send back to DLV.

CORNEAL CROSS LINKING (CXL)

OD Post-Operative Visit Instructions

1 DAY POST OP

(Patient Will Be Wearing A Bandage Contact Lens)

- UCVA
- SLEx - make sure no infection, contact lens is in place, and no significant stromal haze

1 WEEK POST OP

- UCVA
- SLEx - make sure no epithelial defect
- Remove contact lens
- Refraction/BCVA
- SLEx - again once contact off to make sure no infection, and no significant stromal haze

1 MONTH POST OP

(Optional at your Office)

- UCVA
- Refraction

- SLEx - make sure no infection, no significant, and no significant stromal haze
- IOP

3 MONTH POST OP

- Send to Dougherty Laser Vision to perform all required study testing

6 MONTH POST OP

- Send to Dougherty Laser Vision to perform all required study testing

YEARLY EYE EXAMS AT YOUR OFFICE

Tips/Pointers

The patient may get back into their usual RGP, scleral or soft lens as soon as the bandage lens is removed at 4-7 days. If the patient has a small abrasion at the time of surgery, the bandage lens should not be removed until the epithelium has healed.

CORNEAL CROSS LINKING AND INTACS

OD Post-Operative Visit Instructions

1 DAY POST OP

(Patient Will Be Wearing A Bandage Contact Lens)

- UCVA
- SLEx - make sure no infection, contact lens is in place, no significant stromal haze, and intact are at approx 50% stromal depth

1 WEEK POST OP

- UCVA
- SLEx - make sure no epithelial defects
- Remove contact lens
- Refraction / BCVA
- SLEx - again once contact off to make sure no infection, no significant stromal haze and intacs are at approx 50% stromal depth

1 MONTH POST OP

- UCVA
- Refraction
- SLEx - make sure no infection, no significant stromal haze, and intacs are at approx. 50% stromal depth
- IOP
- Refer back to DLV so we can perform required study testing including pentacam/orbiscan/endocount/remove sutures

3 Month POST OP

- Send to DLV to perform all required study testing

6 MONTH POST OP

- Send to DLV to perform all required study testing

YEARLY EYE EXAMS AT YOUR OFFICE

Tips/Pointers

The patient may get back into their usual RGP, scleral or soft lens as soon as the bandage lens is removed at 4-7 days. If the patient has a small abrasion at the time of surgery, the bandage lens should not be removed until the epithelium has healed.

SMILE

OD Post-Operative Visit Instructions

1 DAY POST OP

- UCVA
- SLEx - make sure no infection, DLK, focal inflammatory keratitis and cap is clear and smooth

1 WEEK POST OP

- UCVA
- Refraction - if patient is complaining

1 MONTH POST OP

- UCVA
- Refraction - on all patients
- SLEx

3 MONTH POST OP

- UCVA
- Refraction - on all patients
- SLEx

6 MONTH POST OP

- UCVA
- Refraction - only if necessary
- SLEx

YEARLY EYE EXAMS AT YOUR OFFICE

Tips/Pointers

If the patient has a residual Rx and needs a retreatment please refer back to DLV after three months if the Rx is stable.

Trouble Shooting

- DLK- If trace to mild, increase steroid to one drop every hour and see back the following day. If moderate or worse, increase steroid to one drop every hour and refer back to DLV IMMEDIATELY. In all cases, if DLK moves central or there is loss of vision, at day 3 or 4, refer the patient back to DLV IMMEDIATELY to wash out the cap. Waiting beyond day 4 could result in permanent haze and loss of best corrected vision.
- Focal Inflammatory Keratitis - If trace to mild, increase steroid to one drop every hour and see back the following day. If moderate or worse, increase steroid to one drop every hour and refer back to DLV IMMEDIATELY. In all cases, if FIK moves central or there is loss of vision, at day 3 or 4, refer the patient back to DLV IMMEDIATELY to wash out the cap. Waiting beyond day 4 could result in permanent haze and loss of best corrected vision.
- Cap Straie - Refer back to DLV immediately.
- Severe Dry Eye/Spk - If persists more than a few days, increase ATs to one drop every 30 minutes, start on Restasis Xiidra, and or temporary plugs.

SLT

OD Post-Operative Visit Instructions

2-5 DAY POST OP

- BCVA
- SLEx - record cells/flare and corneal edema (very rare) - communicate any concerns to surgeon
- IOP - must perform on all patients with a call to surgeon if > 24 or more than 5 points above baseline (whichever is higher)

6-8 WEEKS POST SLT (AFTER SECOND EYE IS DONE IN BILATERAL CASES)

- BCVA
- SLEx - basic anterior segment exam
- IOP - assess whether predetermined goal has been achieved

If goal IOP achieved (75% of patients), resume regular monitoring for progression every 3-4 months

If goal IOP is not achieved, proceed to treatment plan B (will have been communicated with initial consult)

Regular follow ups as per glaucoma treatment standards (every 3-4 months) are necessary even when SLT is used as a medication sparing treatment. Even though results last 1-5 years, there are cases of early failure that need to be caught. In addition, we do not want to give patients a false sense of security or impression that their condition has been cured. Best reminder for patients that they have a chronic condition that needs close monitoring is to establish that pattern.

Even if IOP is deemed to remain within target range, we recommend a “check-in” with our glaucoma specialist once every 12-18 months with copies of all tests and IOP readings to double check and confirm lack of progression. This will help protect you and your patients in the long run. The choice of frequency of visits with Dr. Vosoghi or Dr. Chen of course remains yours.

LPI

OD Post-Operative Visit Instructions

6-8 DAY POST OP

- BCVA
- SLEx - confirm PI open through pupil transillumination (usually placed 12, 3, or 9 O'clock) record cells/flare and corneal edema (very rare) - communicate any concerns to surgeon
- IOP - must perform on all patients with a call to surgeon if > 22 or more than 5 points above baseline (whichever is higher)

All patients get treated with Lotemax or Prednisolone drops QID x 5 days to prevent inflammation and closure of PI. In rare cases, there may be breakthrough inflammation that happens after steroid withdrawal day 7 or 8. In such cases, restarting steroids with a 16 day taper (every 4 days down by one drop) starting at QID dosing usually does the trick.

4-5 WEEKS POST LPI (After Second Eye Is Done In Bilateral Cases)

- BCVA
- SLEx - same as above
- IOP - assess whether IOP is elevated

MONTH 2-3 POST LPI

- A final check-up with glaucoma surgeon is recommended to ensure PIs are open and make any final decisions on need for medications in cases where IOP is judged to be above goal.

Roughly 50% of narrow angle patients can go on at some point to develop a need for IOP therapy. These cases usually do very well with cataract surgery (even refractive lens exchange) as removing the natural lens creates a lot of space in the AC, deepening the angle, and in many cases removing the main risk factor for glaucoma. These cases can be co-managed as any other cataract referral to DLV and include refractive options for optimal vision after surgery. The other option is to start drop therapy and monitor closely for progression or worsening of PAS and IOP with a short threshold for referral. These patients need regular follow-ups as per glaucoma treatment standards (every 3-4 months) unless they have successfully been treated with lens exchange. After lens exchange, their risk of glaucoma (assuming normal IOP) drops down to that of the regular population for their age.

CO-MANAGEMENT CONSENT FORM

Patient Name:

Surgeon: Dr. Paul Dougherty / Dr. Asha Balakrishnan / Dr. Joseph Chen / Dr. Lynn Zhang

It is my desire to have Dr. _____, my own ophthalmologist/optometrist, (name of eye doctor) perform my post operative follow-up care. I understand that during the post-operative period my ophthalmologist / optometrist will contact my surgeon immediately if I experience any complications related to my eye surgery.

It is usual and customary for the patient to pay each doctor separately for any non-covered services that each doctor provides. I am requesting that DLV Vision accept the entire global fee and forward the appropriate co-management fee to my ophthalmologist/optometrist. I understand that for the package I have selected, the fee to be paid to my ophthalmologist/optometrist for the additional non-covered post-operative care provided is \$_____.

I further authorize all doctors and other health care personnel involved in performing this procedure and providing care to share with one another information relating to my health, my vision, or this procedure deemed relevant to provide me with appropriate care.

Patients' Signature

Date

Witness' Signature

Date

Cataract Co-Management Confirmation Form

Patient Name:

DOB:

First Eye Surgery Date: Eye: OD/OS IOL: Goal:

Second Eye Surgery Date: Eye: OD/OS IOL: Goal:

1. Premium Refractive Package
2. Enhanced Refractive Package
3. Standard Lens Package

Dear _____,

Dougherty Laser Vision has offered the above-mentioned patient the three-cataract surgery vision correction packages. The patient has chosen the package marked above. The post-operative services we recommend that you provide are listed in Attachment A to this letter. These reflect the services that we provide to patients who elect to return to our practice for their post-operative care. Of course, some patients may have specific needs that require additional services beyond those identified above.

By you agreeing to co-manage with us, we expect that you deliver the services to the patient as set forth in Attachment A. Should post surgery problems arise outside of your scope of care, you will be obligated to notify DLV upon discovery of these problems. For patients who elect to be co-managed, we reduce our fee for the Premium Refractive Package by \$500 per eye, and for the Enhanced Refractive Package by \$250 per eye. You are free to charge the patient the amount that you feel reflects the fair value of the services you perform.

If you agree to provide co-management services for the above-mentioned patient in accordance with the terms set forth in this letter, please sign where indicated below and return the letter to us. I look forward to a positive working relationship with you in the future to achieve the best possible patient outcomes.

Sincerely,

DLV Vision

I agree to provide co-management services to _____ who will receive a:
☐ Standard Lens Package ☐ Enhanced Lens Package ☐ Premium Refractive Package from
Dougherty Laser Vision in accordance with the terms of this letter.

Signature: _____ O.D.
Print: _____ O.D.

Co-Management Confirmation Form

Date:

Dear Doctor:

Thank you for agreeing to Co-Manage patient, _____, with Dougherty Laser Vision. As always, we strive to provide a continuum of highly effective coordinated care with our Co-Management partners. Co-Management respects the patient's right to select the health care providers of their choice, while assuring that we will coordinate to provide the patient with the best clinical outcome possible.

Patient, _____ DOB: _____
was seen in our office pertaining to the following procedures:

The patient has scheduled surgery on :

The patient will return to your office for:

Pre-operative Exam on:

1 Day Post-Operative Exam on:

1 Week Post-Operative Exam on:

If you have any questions, please contact the patient's counselor at our practice:

As part of your commitment as the Co-Managing Partner, please review the co-management guidebook which contains all the possible services to be performed as your Co-Managing responsibility.

Thank you for agreeing to co-manage with us to respect our patient's choice

Sincerely,

DLV Vision

Optometric Co-Management Compliance

Dear Affiliate Doctor,

We hope this letter finds you well. We are writing to inform you about recent developments in the field of optometric co-management compliance. The Office of Inspector General (OIG) for the U.S. Department of Health and Human Services published Advisory Opinion 22-14, which has approved certain aspects and denied others of a request made by an ophthalmology practice regarding their proposed continuing education (CE) programs designed for local optometrists.

In their analysis, the OIG concluded that each of the Proposed Arrangements implicates the federal Anti-Kickback Statute, 42 U.S.C. 1320a-7b(b), (the AKS) because, “under each, Requestor would give something of value (the CE programs) to local optometrists who are positioned to refer patients, including [f]ederal health care program beneficiaries, to Requestor for surgery.”

Additionally, we would like to bring to your attention a recent settlement case involving the former owner of a Rhode Island ophthalmology chain. The settlement amounts to \$1.1 million and stems from a false claims inquiry conducted by the United States. To learn more about this case, please visit the following link: www.justice.gov/usao-ri/pr/former-owner-ri-ophthalmology-chain-pay-11m-settlement-false-claims-inquiry-united-states

In light of these recent developments, both DLV Vision and ADV Vision have taken steps to ensure compliance with the applicable regulations. We would like to outline the changes that have been implemented:

1. DLV Vision and ADV Vision will no longer provide Continued Education credit at a free cost
2. DLV Vision and ADV Vision have updated the Co-Management Guidebook

For more detailed information regarding the recent developments and the implications for our co-management processes, we encourage you to review the following document: Date:

Dear Doctor:

Thank you for agreeing to Co-Manage patient, _____, with Dougherty Laser Vision. As always, we strive to provide a continuum of highly effective coordinated care with our Co-Management partners. Co-Management respects the patient's right to select the health care providers of their choice, while assuring that we will coordinate to provide the patient with the best clinical outcome possible.

Patient, _____ DOB: _____
was seen in our office pertaining to the following procedures:

The patient has scheduled surgery on :

The patient will return to your office for:

Pre-operative Exam on:

1 Day Post-Operative Exam on:

1 Week Post-Operative Exam on:

If you have any questions, please contact the patient's counselor at our practice:

As part of your commitment as the Co-Managing Partner, please review the co-management guidebook which contains all the possible services to be performed as your Co-Managing responsibility.

Thank you for agreeing to co-manage with us to respect our patient's choice

Sincerely,

DLV Vision

Should you have any questions or concerns, please do not hesitate to contact Ron Zepeda at RZepeda@DoughertyLaserVision.com. He will be available to provide further clarification and guidance.

Thank you for your understanding and cooperation.

Sincerely,

DLV Vision

ADV Vision

INCISIONAL GLAUCOMA SURGERY

OD Post-Operative Visit Instructions

Given the higher risk and liability associated with incisional glaucoma surgeries, they will not be co-managed. Our glaucoma surgeon will take over the intense post-operative management for at least 3 months with frequent updates to the referring doctor. Follow ups after stabilization of the eye will be determined based on the comfort level of the referring doctor in monitoring post incisional surgery glaucoma patients (checking for bleb leaks, blebitis, scarring, infection, etc.). Training for those ODs interested in such management can be provided. In either case, patients having undergone incisional glaucoma surgery will need to be rechecked by our glaucoma surgeon every 3-12 months depending on risk factors for long term complications of surgery and the primary doctor's comfort level.

DR. VOSOCHI'S GLAUCOMA TIPS

Narrow Angles

Narrow angles and Narrow Angle Glaucoma are among the most under/misdiagnosed conditions in the eye world. The following are tips to avoid missing this relatively common condition:

1. Perform Gonioscopy or anterior segment OCT on patients' first visit to your office and every 10 years if angles open.
2. Perform Gonioscopy in ALL patients who are suspicious for glaucoma, ocular hypertensives, or hyperopes.
3. When in doubt, refer patient for a quick second opinion. Much better to be safe given the terrible potential consequences of an acute narrow angle episode.
4. Avoid dilating narrow angle patients if possible until they have had protective/preventive iridotomy performed.

Normal Tension Glaucoma

Up to 1/3 of glaucoma patients in major studies (particularly in middle aged female patients) have NTG. These patients tend to have sight threatening visual field loss much earlier than standard POAG patients. Here are some tips to avoid missing NTG:

1. Consider a baseline OCT nerves or optic nerve photo (or both) in all patients explaining to them the need to set a normal baseline and screen for the common condition of glaucoma. It is invaluable to have baseline comparison if you become suspicious in the future.
2. Be extra vigilant in examining the optic nerves of female patients in the 35-60 age group with a history of Migraine headaches, Raynaud's phenomenon, anemia, or low blood pressure annually. Consider including these questions in your history intake questionnaires to screen for those at highest risk.

DR.CHEN'S GLAUCOMA TIPS

Post Incisional Glaucoma Surgery

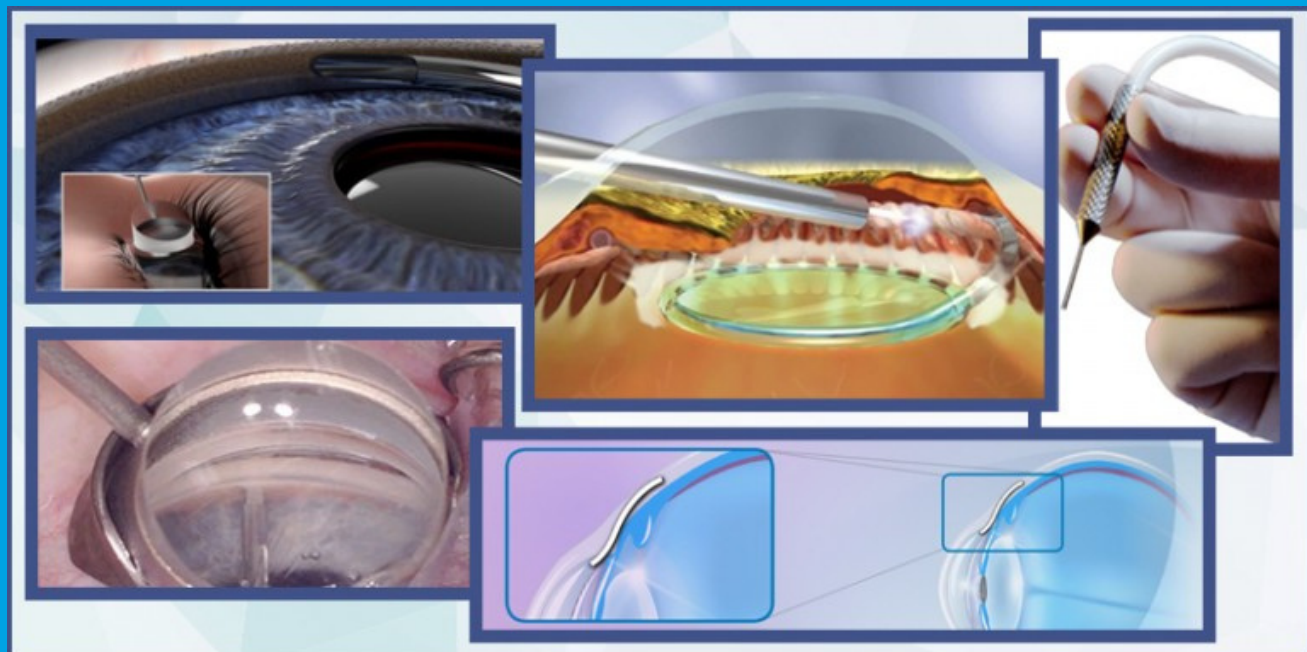
If a trabeculectomy or a Xen gel stent was performed, then there should be a superior bleb noted on examination. Notes from the surgeon should have a description of the bleb as well as how well it is functioning from the last visit, but over the timeframe of years, the bleb site can change in morphology and function. From a functional standpoint, the IOP will usually tell the story of how the bleb is functioning. If the IOP stays stable at goal, then this generally means that the bleb is functioning well with minimal scarring over time. However, if the bleb begins to scar or fail, the IOP can increase, sometimes dramatically. If it is noted that bleb scarring is occurring and IOP is increasing, please send the patient back to the glaucoma surgeon for evaluation for possible change in glaucoma medications, bleb needling or further procedures to control the IOP.

Also, if the IOP decreases significantly over time, this could mean that there is now a bleb leak. Sometimes patients can describe feeling extra water/tears that they didn't feel before. A gentle Seidel test over the bleb site can sometimes show a pinpoint leak that is not obvious on first examination. If there is a brisk leak, then there may be hypotony and a shallow or flat chamber. If this occurs, then send the patient urgently to be seen by the glaucoma specialist. With any leak, it is important to begin patients on antibiotic drops immediately to prevent endophthalmitis. With the Xen gel stent, also watch for any extrusion of the stent, which would be equivalent to a bleb leak and require antibiotics and immediate follow-up by a glaucoma specialist. Similarly, if a tube shunt or Ahmed valve was placed, please also monitor for any possible exposure of any part of the tube outside of the conjunctiva, which would also warrant immediate return to the glaucoma surgeon and need for surgical repair. With any incisional glaucoma surgery, it is important to be aware that patients commonly have worsened dry eye and dry eye symptoms, likely due to the lid/bleb interface and worsened coverage of the tears on the cornea. Patients need to be advised that they might need more frequent artificial tears, punctal plugs, or further dry eye treatment. However, incisional glaucoma surgery usually lessens the burden of glaucoma medications which can help improve the ocular surface as well.

Lastly, with any surgery that creates a bleb, there is higher risk for blebitis or endophthalmitis at any point in the future. Be vigilant for increased eye pain, increased redness around the bleb site, and especially increased AC inflammation, which could indicate potential blebitis.

MIGS Surgery

Patients who have had a MIGS surgery can have a significant hyphema in the immediate post-operative period due to surgery done on the angle structures. The hyphema is nearly always self-resolving within 2 weeks. The patient should be told that their vision will be very blurred while the hyphema is present but will resolve back to pre-operative visual acuity once the hyphema resolves. Due to the risk of hyphema after MIGS surgery, patients are usually asked prior to surgery whether they are on any blood thinners such as aspirin/Plavix/Xarelto/Coumadin, etc. If the patient's blood thinners can be safely stopped per their cardiologist or primary care physician, the patient is usually asked to stop their blood thinners prior to both MIGS procedures and incisional glaucoma surgery. Patients should be kept on all their glaucoma drops after MIGS procedures until all inflammation has resolved and IOP is shown to be significantly improved. If the MIGS procedure was successful and IOP improved, the glaucoma surgeon may begin to stop individual glaucoma medications at the POM1 timeframe.



DR. VOSOGHI'S AND DR. CHEN'S GENERAL GLAUCOMA TIPS

A Since glaucoma is a common eye condition, having an index of suspicion in your at risk patients and always being on the lookout is important. Based on your patient's profile at the time of exam, you can determine what type of glaucoma each is at highest risk for and focus in on your exam to be most efficient.

As a general rule, here are common risk factors to look for:

1. POAG - Myopes, African Americans (and other non-whites), the elderly, corneas, family history.
2. Pigment Dispersion - Young myopic males > females. Don't forget pupil illumination to check for iris transillumination and checking the corneal endothelium for a Krukenberg spindle on all myopes to screen for this condition.
3. Pseudoexfoliation - Those of Scandinavian or Russian descent. Look for deposits on lens once dilated. These patients can sometimes have very dramatic increases in IOP from visit to visit and should be monitored closely.
4. Narrow Angles - Asian and Hispanic hyperopic females are at highest risk. Family history sometimes present. All hyperopes should undergo either gonioscopy or anterior section OCT to screen given the high incidence in this population. When in doubt, refer for second opinion given the potentially devastating consequences of missing this diagnosis. Every case of Acute Narrow Angle Glaucoma can be prevented with early detection and preventive Laser Iridotomy.
5. Normal Tension Glaucoma - Middle aged females with a history of Migraines, Raynaud's phenomenon, low blood pressure, anemia, or thyroid problems are at highest risk. It is highly recommended this information be solicited from your patients on your history questionnaires to screen those at highest risk.

B Dr. Vosoghi and Dr. Chen recommend consideration of a one-time baseline second opinion on all glaucoma and glaucoma suspect patients. As part of the consultation, you will be given feedback on:

1. Accuracy of your diagnosis and any patient specific considerations.
2. Recommendations for frequency of monitoring, follow up exams, and testing.
3. Baseline OCT if you do not have one.
4. Any recommended treatments for your patients.

INCISIONAL GLAUCOMA SURGERY

OD Post-Operative Visit Instructions

Having recommendations by a specialist documented on your patients will help you avoid unnecessary liability, justify and establish the importance of more frequent visits to your patients and their insurance carriers, and ensure the safest and highest level of care for your patients in the long run. Dr. Vosoghi and Dr. Chen look forward to helping you take care of your glaucoma patients with his involvement titrated to your preferences and comfort level.

SLT, DR. VOSOGHI'S FAVORITE GLAUCOMA TREATMENT

Selective Laser Trabeculoplasty or SLT is frequently thought of as a second line treatment for open angle glaucoma or a last resort before incisional surgery. This line of thinking has changed in the last couple of years and Dr. Vosoghi strongly favors SLT as a first line or early adjunct to glaucoma medications. The reasons for this include:

1. The safety and efficacy profile of SLT easily rivals any class of medication currently available on the market. We expect 20-30% pressure reductions from baseline in 75-85% of patients with almost no side effects (with the exception of the rare and transient IOP spike or blurry vision for a few days).
2. 50% of patients on drops have a significant degree of non-compliance based on pharmacy record studies. SLT takes away the concern for compliance with drops (or at least limits them).
3. Drops frequently have side effects including cosmetic concerns for the PGAs, heart/lung concerns for Beta-Blockers, fatigue/dry mouth/allergy concerns with Alpha-Agonists, and lack of long term efficacy (tachyphylaxis)/allergy concerns with CAs. SLT avoids these considerations.
4. Many of our patients find the lifestyle modification required by taking drops daily (work schedule disruption, contact lens wear disruption, etc) a big inconvenience. SLT gives your patients a chance to avoid inconvenience.
5. Cost. With insurance coverage for medications becoming less and less appealing to our patients, SLT frequently presents a savings of hundreds of dollars per year over medications.

Of course, we will continue to offer SLT as a second line or adjunct to medications as well. For information on Co-Management of SLT, please refer to the "OD Post-Operative Visit Instructions" section or call our office directly at 805.987.5300.

MIGS, DR. CHEN'S FAVORITE GLAUCOMA TREATMENT

Dr. Chen's favorite MIGS procedure is the OMNI canaloplasty and goniotomy, in which the OMNI device is used to perform a 360 degree canaloplasty and at least 180 degree goniotomy. This procedure is an ab-interno procedure that can be done in conjunction with cataract surgery or stand-alone. For many patients, it can lower the IOP significantly and prevent them from needing further incisional surgery. The recovery is usually within 2-3 weeks, with minimal discomfort. However, as mentioned above, there may be a hyphema that can last for 2 weeks and subsequently temporary blurred vision, which is discussed with the patient beforehand. Long-term risk is generally minimal. Any MIGS procedure can help to provide a stopgap lasting for possibly years prior to needing a more invasive surgery such as trabeculectomy. However, as with any glaucoma procedure, IOP may not be at goal after MIGS. Prior to any glaucoma surgery, patient must be reminded that glaucoma is a chronic lifelong disease requiring frequent monitoring and treatments, and that multiple different treatments may be necessary over the course of a lifetime.

Dr. Chen's favorite incisional surgery is still trabeculectomy. A well-functioning trabeculectomy can last for decades, even up to the rest of the patient's life, which has yet to be proven with any other glaucoma surgery. The risks, however, are higher in trabeculectomy, as mentioned above, and Dr. Chen has found that the Xen gel stent has proved to be a safer alternative to trabeculectomy when IOP goals are not as extreme or the glaucoma not as severe. The Xen gel stent has a lower risk of hypotony due to the size of the lumen of the stent and is easier to place as well as remove if necessary. However, the same scarring risk still applies to both the Xen gel stent as well as trabeculectomy which could lead to increased IOP.

DR. ZHANG'S APPROACH TO DRY EYE PATIENTS

How To Differentiate Between Mild, Moderate, Severe Dry Eye Patients?

Based on symptoms both subjective (questionnaire) and objective (exam findings). Mild to moderate dry eye may need just otc treatments +/- one prescription dry eye drop +/- punctal plugs. These patients typically will see me 3 to 4 times about 1 month apart and then they can go back to OD for every 4-6 month followup maintenance visits. They are great BlephEx+ LipiFlow candidates if they only have Mild to moderate blepharitis. Moderate to severe dry eyes will need more therapy: like amniotic membrane placement and serum tears in addition to all the other treatments mentioned above. Moderate to severe blepharitis will need lipiflow and IPL. They will take at least 4-6 months before they are stable enough to go back to OD for maintenance.

Dry Eye Causes, Symptoms, Risk Factors, Diagnosis

Dry eye is definitely multifactorial. Genetics play a role bc ocular rosacea often affected fair skinned individuals more. Certain diseases like Parkinson's, thyroid disease, sjogrens, and other autoimmune diseases are linked with dry eyes. Some medications (both systemic and topical) will have side effects causing dry eyes. Environmental factors also play a role: weather (humidity, winds, smoke), occupation (screen time decreases blink rates), diet (more omega are better, alcohol and spicy foods causes rosacea to worsen).

When Should You Refer?

Anytime you feel that you have done the most you can for a patient and they are still symptomatic.

Treatment: Xidra vs. Cequa

It's more an insurance issue. Restasis is the most well covered. But doesn't work very well in a lot of more severe patients. I find that both xidra and cequa works better than restasis, but cost is often an issues, so I end up prescribing the compounded medicine Klarity C from imprismisrx, which is 1 percent cyclosporine. Prokera (severe dry eyes, initial trauma, not good for maintenance). Serum tears, I use a lot but this is not a good option if they have autoimmune related dry eyes as their serum wi have inflammatory markers which I don't want going into their eyes.

DR. ZHANG'S In-Office Dry Eye Treatments

Intense Pulsed Light (IPL) Dry Eye Guidelines for IPL

What type of candidates (fair-skinned patients with MGD. Ipl can only be used on patients with Fitzpatrick type 1-4. Ideal candidates are the ones with blood vessels around the lid margin)

Each treatment is 1 month apart. Ideally needs 3 to 4 treatment follow-ups with Dr. Zhang prior to going to co-managing OD

LipiFlow Who is a candidate? Anyone with mild MGD.

Treatment Process

The LipiFlow Thermal Pulsation System from TearScience is one of the only treatments to target the leading cause of dry eye: blockages in the Meibomian glands.

Step 1

The patient will be given a LipiFlow scan, which makes sure LipiFlow is the proper treatment for dry eyes. This scan only takes 10 minutes.

Step 2

LipiFlow eyepieces are applied to patient's eyelids, and they use gentle pulses of heat and pressure to open up patient's blocked ducts. The entire LipiFlow treatment takes about 12 minutes.

Step 3

The patient's Meibomian glands are unblocked and can now function normally, providing the patient's eyes with the natural oils they need to stay comfortable.

Results of Lipiflow

LipiFlow is a safe, gentle treatment that unblocks the clogged ducts that cause Meibomian Gland Dysfunction. When the patient comes in for your LipiFlow treatment, an eyepiece will be placed on patient's eyelids that sends gentle pulses of heat and pressure. These pulses will clear gland blockages and allow them to function normally again.

DR. ZHANG'S DRY EYE TIER SYSTEM

The entire LipiFlow treatment lasts about 12 minutes, is painless, and you can get back to your life as soon as you get up from the chair! Patients typically see results immediately, and many need only one treatment to correct their condition.

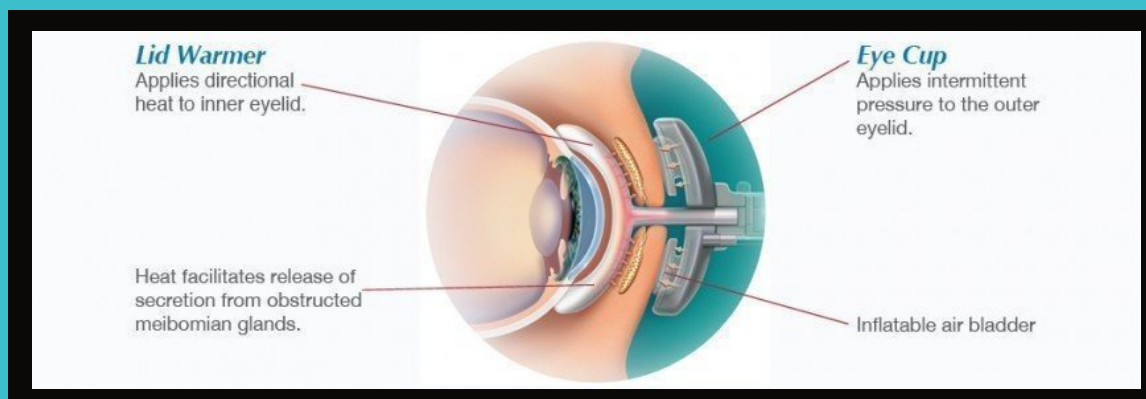
Intense Pulsed Light (IPL)

Dry Eye Patient A:

Sees Dr. Zhang for diagnosis, Dr. Zhang for treatment (If IPL keep internally for 3 follow-ups and then go back to the OD), co-managed with the OD

Dry Eye Patient B:

See Dr. Zhang for diagnosis, Dr. Zhang for treatment, not co-managed with OD, stays internally with OD



ABOUT DR. MOISES ENGHELBERT, MD

Retina Specialist

Moises Enghelberg, DO, MSc is a highly skilled ophthalmologist specializing in the field of vitreoretinal diseases. With expertise in the diagnosis and treatment of various conditions affecting the eyes, Dr. Enghelberg is dedicated to providing exceptional care to his patients.

Dr. Moises Enghelberg's education and training background include:

- Medical School: Dr. Enghelberg attended Touro College of Osteopathic Medicine, where he received his Doctor of Osteopathic Medicine (DO) degree.
- Residency: He completed his ophthalmology residency at Larkin Community Hospital, gaining extensive clinical experience and specialized training.
- Board Certifications: Dr. Enghelberg is certified by the American Osteopathic Association (AOA) in the field of Ophthalmology.

Dr. Enghelberg's primary specialties include:

1. Ophthalmology: As an ophthalmologist, Dr. Enghelberg is trained to diagnose, manage, and treat a wide range of eye conditions, ensuring optimal eye health and vision for his patients.
2. Vitreoretinal Diseases: Dr. Enghelberg specializes in the diagnosis and treatment of vitreoretinal diseases, which involve the vitreous humor and the retina of the eye. He employs advanced techniques and innovative treatments to address these complex conditions.

Dr. Enghelberg provides comprehensive care for various eye conditions, including but not limited to:

- Age-Related Macular Degeneration:
- Diabetic Retinopathy
- Eye Trauma
- Hereditary Retinal Disorders
- Ocular Oncology & Uveitis
- Retinal Tears
- Retinal Detachment
- Vitreoretinal Diseases

Dr. Enghelberg offers a comprehensive range of treatments and procedures to address his patients' eye conditions, including:

- Eye Trauma Surgery
- Intravitreal Injections
- Laser Surgery for Retinal Disorders
- Management of Ocular Tumors:
- Pars Plana Vitrectomy
- Retinal Detachment Repair

RETINA TREATMENTS OFFERED BY DR. MOISES ENGHELBERT, MD

Eye Injections

Intravitreal Injections are a common procedure used to improve the vision lost from retinal conditions such as macular degeneration and diabetic macular edema. It is a safe, effective, and quick procedure performed in the office with minimal to no discomfort. It involves administering a medication into the vitreous, the jelly-like structure that fills the middle of the eye.

Laser (Panretinal Photocoagulation)

Using a laser, the doctor treats the peripheral retina, where diabetic changes are causing damage. The macula, which is responsible for most of our vision, especially central vision, is not treated. The procedure causes abnormal blood vessels to shrink and scar and prevents further growth of new blood vessels.

Laser (Retinopexy)

A retinal laser procedure in which the doctor treats the retinal tear by creating a barrier around it to reduce the risk of retinal detachment.

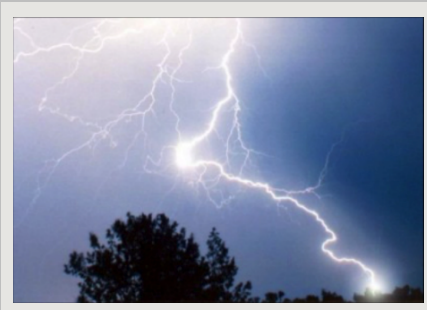

Surgery

Vitrectomy refers to the removal of the vitreous, the clear, gel-like substance that fills the center of the eye using small openings in the white part of the eye. Additional treatments such as removal of scar tissue, retinal laser, or placement of gas or oil bubble are performed during this surgery as needed.

WHEN TO REFER A PATIENT TO ADV FOR A RETINA CONSULTATION WITH DR. MOISES ENGHELBERT, MD?

A. Patient Symptoms


If a patient presents with a new onset of any of the following symptoms, consider referring for a Retina Consultation as follows:

Symptom or History	Patient Sees	Refer	Differential Diagnoses
Photopsia (Flashes of Light): Usually lightning bolt or an arc shaped flicker or flash of light lasting seconds and located on the side of the vision		Within 1 week	<ul style="list-style-type: none">• Posterior Vitreous Detachment• Retinal Tear• Retinal Detachment
Floater: Gray or brown moving spots in the vision which can be in the form of dots, cobwebs, "lint", "insects" in the vision		Within 1 week	<ul style="list-style-type: none">• Posterior Vitreous Detachment• Retinal Tear• Vitreous Hemorrhage• Retinal Detachment

WHEN TO REFER A PATIENT TO ADV FOR A RETINA CONSULTATION WITH DR. MOISES ENGHELBERT, MD?

Symptom or History	Patient Sees	Refer	Differential Diagnoses
Shadow or Curtain in Vision: Sudden loss of one part of the vision appearing like a shadow or a curtain		Same day (or next day)	<ul style="list-style-type: none"> • Retinal Detachment • Posterior Vitreous Detachment • Branch Retinal Artery Occlusion • Vitreous Hemorrhage
Central Vision Loss: Sudden vision loss in center of the vision		Same day Same day or within a few days	<ul style="list-style-type: none"> • Branch Retinal Artery Occlusion • Wet Age-related Macular Degeneration • Macular Hole
Complete Vision Loss: Sudden vision loss in the entire vision		Same day Same day or within a few days	<ul style="list-style-type: none"> • Central Retinal Artery Occlusion • Ischemic optic neuropathy • Vitreous Hemorrhage • Central Retinal Vein Occlusion

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Symptom or History	Patient Sees	Refer	Differential Diagnoses
<p>Distortion: When reading, letters appear wavy or like you are looking through water. When looking at a straight edge of objects such as a door, it appears bent or crooked.</p>	 <p>The diagram consists of two circular frames. The left frame, labeled 'Normal Vision', shows a straight red door with a white handle and a white frame. The right frame, labeled 'Metamorphopsia (Distortion)', shows the same red door but with a wavy, distorted appearance, where the lines are bent and crooked.</p>	<p>Within a few days</p> <p>(unless from ERM –within 1 month)</p>	<ul style="list-style-type: none"> • Wet Age-related Macular Degeneration • Macular Hole • Macular Edema • Epiretinal Membrane (ERM)

Following patients can be seen nonurgent for Retina consultation and can continue follow-up with the primary eye care provider (as per your comfort level) after that:

- Patients with type 1 or 2 diabetes mellitus should be examined at least once a year by their primary eye care provider, and preferably by the Retina specialist at least once upon any signs of diabetic retinopathy
- Patients with known age-related macular degeneration or those older than 60 years of age and with a family history of macular degeneration who are interested in a baseline retina exam
- Patients with hereditary retinal conditions like retinal dystrophy, retinitis pigmentosa, macular dystrophy, cone-rod dystrophy

WHEN TO REFER A PATIENT TO ADV FOR A RETINA CONSULTATION WITH DR. MOISES ENGHELBERT, MD

B. Clinical Signs on Eye Exam

If you notice the following findings on the eye exam, consider referring for a Retina Consultation:

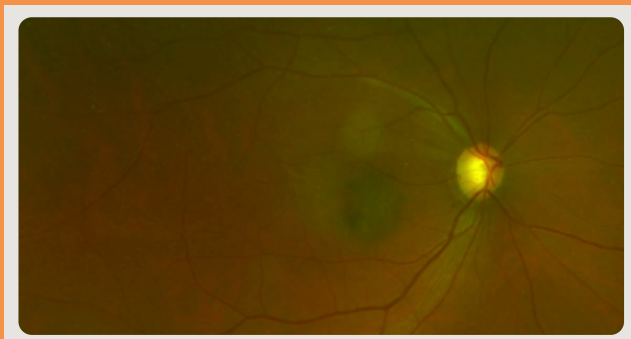
- Visual acuity decline from previous or a new significant difference between the two eyes not correctable with refraction (eg. Macular edema)
- Confrontational visual field deficit in certain quadrants in one or both eyes (eg. Retinal detachment)
- A new relative afferent pupillary defect on pupil testing (eg. Ischemic optic neuropathy)
- Anterior chamber cell or flare outside of routine postoperative period (eg. Uveitis)
- Hypopyon – collection of white layer of cells (WBCs) in the anterior chamber (eg. Endophthalmitis)
- Posterior synechiae – adhesions of pupil margin to the lens, irregular pupil (eg. Uveitis)
- Dislocated (edge of lens visible in the pupil) or shaky cataractous lens (eg. Phakodonesis)
- Dislocated intraocular lens (optic of the intraocular lens not well centered in visual axis) or shaky intraocular lens (eg. Pseudophakodonesis)
- Vitreous prolapse in anterior chamber (eg. Complicated cataract surgery or trauma)
- Shafer's sign – “tobacco dust” or brown pigmented cells in anterior vitreous (eg. Retinal tear)
- Absence of red reflex, no view to fundus (eg. Vitreous Hemorrhage)
- Retinal hemorrhages (eg. Diabetic retinopathy)
- Cotton wool spots (eg. Diabetic retinopathy)
- Macular edema and hard exudates – swelling of the macula and yellow lipid deposits in or under the retina (eg. Diabetic macular edema)
- Drusen – yellow deposits under the retina (eg. Dry age-related macular degeneration)
- Macular Scar (eg. Advanced wet age-related macular degeneration)
- Folds or elevation in the retina (eg. Retinal detachment)
- Thin areas of the retina and pigment changes noted on peripheral retinal exam (eg. Retinal holes and Lattice degeneration)

WHEN TO REFER A PATIENT TO ADV FOR A RETINA CONSULTATION WITH DR. MOISES ENGHELBERT, MD

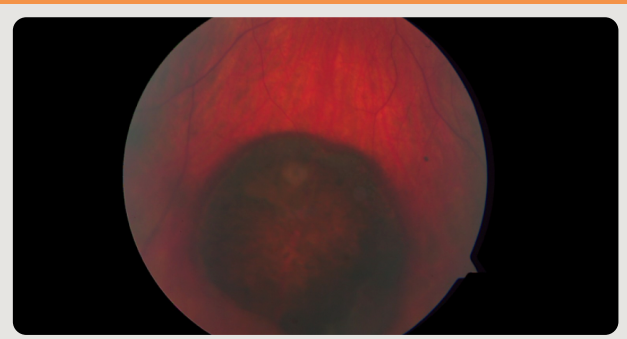
C. Imaging Findings

Following are some examples of findings on retinal imaging modalities such as fundus photography, optical coherence tomography (OCT), and fundus autofluorescence, which would prompt you to consider referring to DLV for a Retina Consultation:

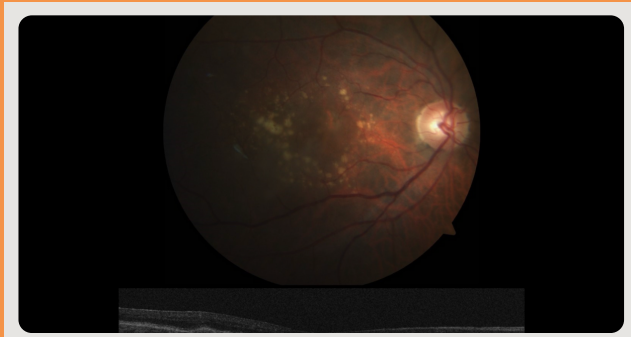
Choroidal Nevus



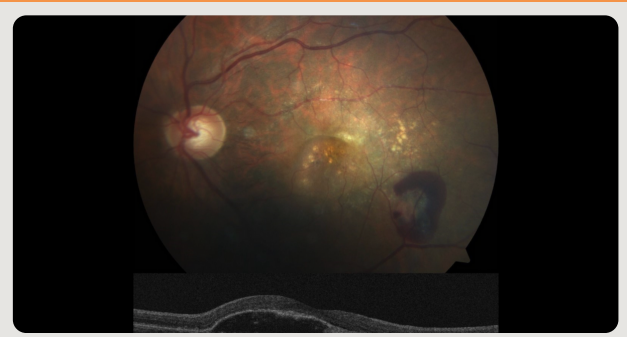
CHRPE



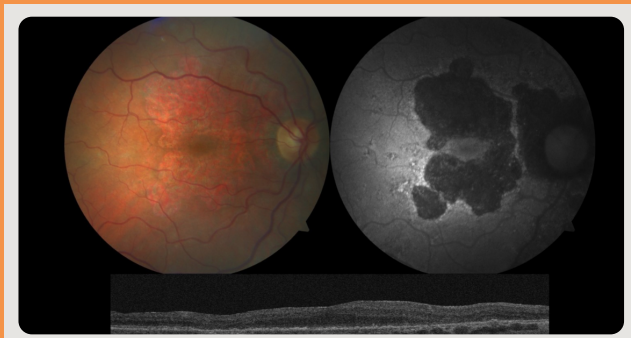
Dry AMD



Wet AMD



Dry AMD - Advanced Stage (Geographic Atrophy)

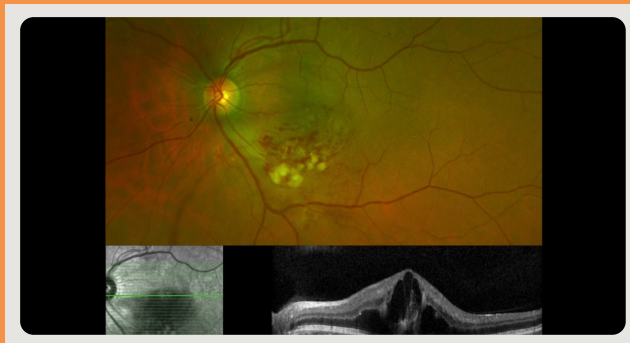


Diabetic Retinopathy

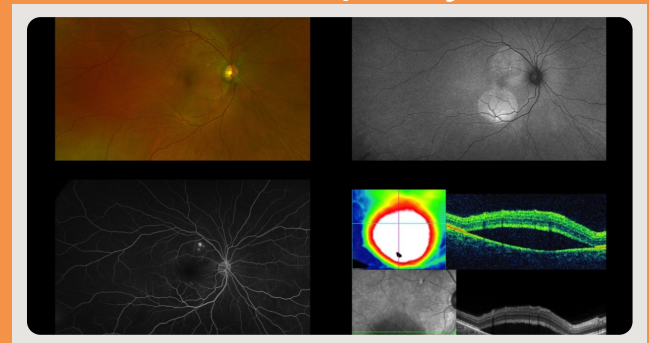


WHEN TO REFER A PATIENT TO ADV FOR A RETINA CONSULTATION WITH DR. MOISES ENGHELBERT, MD?

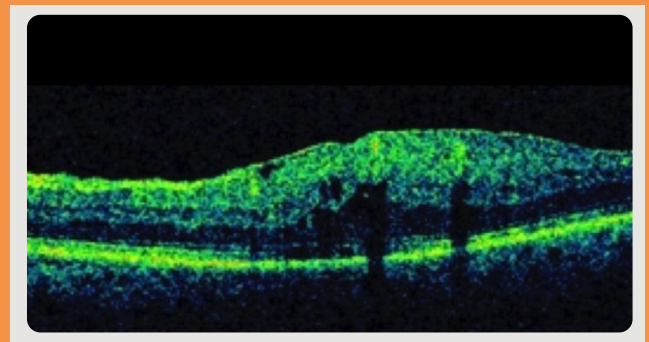
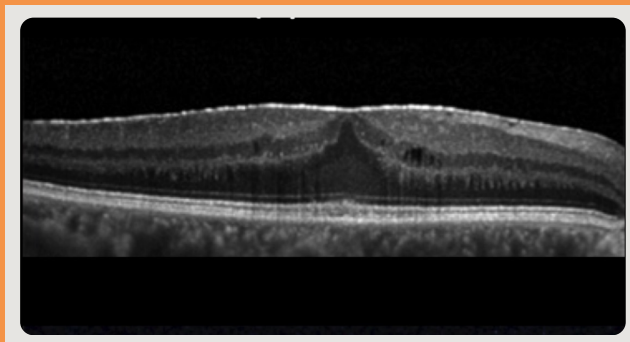
Branch Retinal Vein Occlusion



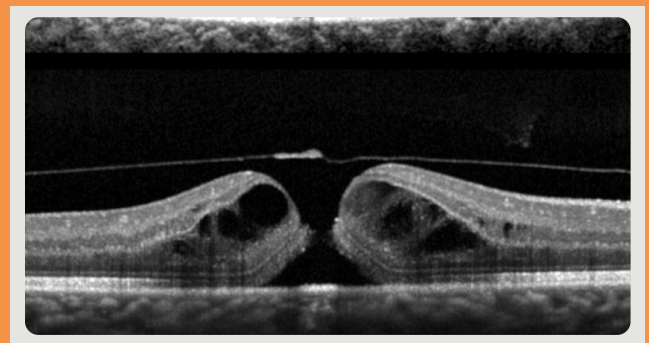
Central Serous Retinopathy



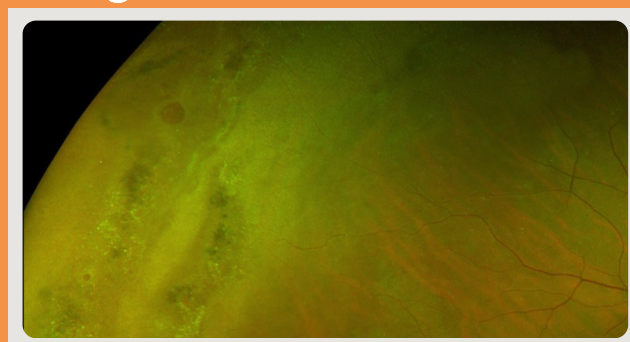
Macular Pucker (Epiretinal Membrane)



Macular Hole

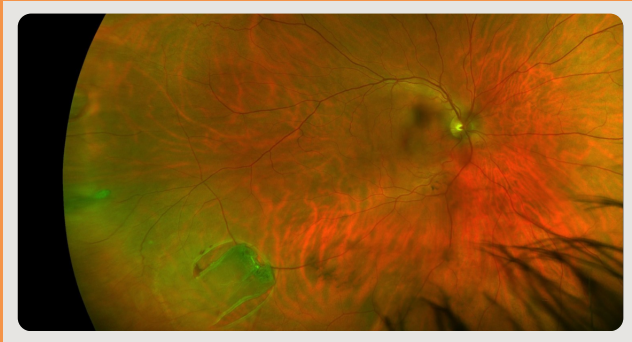


Lattice Degeneration and Retinal Holes

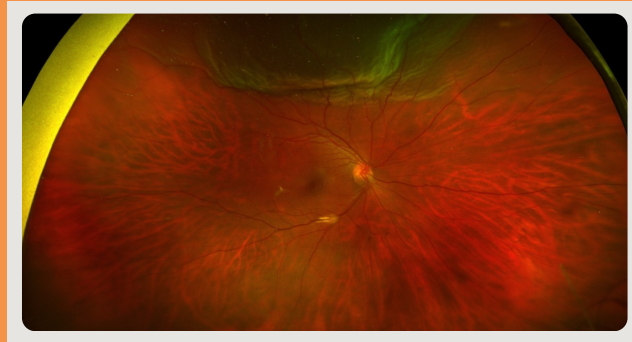


WHEN TO REFER A PATIENT TO ADV FOR A RETINA CONSULTATION WITH DR. MOISES ENGHELBERT, MD?

Retinal Tear



Retinal Detachment



D. Second Opinion

- If a patient is under the care of another Retina specialist, a second opinion should be considered in the following situations:
 1. Patient is not confident about the diagnosis
 2. Patient is interested in exploring other available treatment options
 3. Patient has had multiple surgeries or procedures or treatments without significant improvement of symptoms or vision
 4. You, as the patient's trusted primary eye care provider, have questions about the current diagnosis or treatment plan
- Remember: While a second opinion almost never hurts, it helps on multiple fronts. First, it helps build patient's confidence and improves compliance to treatment, second, it helps the retina specialist by having a second set of eyes evaluating the condition and affirming the diagnosis and treatment and thereby reducing liability, and lastly, it helps increase the trust the patient has in you as a caring primary eye care provider.
- In most situations, after the second opinion, and after all questions have been addressed and the patient is educated about their diagnosis and treatment, the patient returns to the treating Retina specialist for continuity of care, unless the patient specifically requests to transfer the care to the Retina service at DLV.

COMMON RETINAL CONDITIONS -TIPS & TRICKS

Age-related Macular Degeneration (AMD)

- Optical coherence tomography (OCT) is a crucial imaging tool for AMD to look for fluid (intraretinal fluid within the retina and subretinal fluid under the retina) to differentiate wet from dry AMD as the treatment is vastly different.
- Some conditions to keep in mind that get commonly misdiagnosed as AMD include central serous retinopathy, macular telangiectasia, hereditary macular dystrophy, and drug toxicity.
- Dry AMD has drusen on OCT and is managed with regular eye exams, Amsler grid monitoring, and AREDS supplements, in addition to healthy lifestyle changes.
- Wet AMD is called “wet” because of fluid in the retina and is treated with injections of anti-VEGF medications every 4-12 weeks. If detected and referred to Retina in time, most of the lost vision can be recovered and preserved. As the patient’s primary eye care provider, you play a very important role in this.
- Consider sharing this educational video with your AMD patients (created by Dr. Shah, courtesy Eye Know More): https://www.youtube.com/watch?v=WEMrvs_eUoI&list=PLD_8PXJMDyo_LzmY9fsf2CabS4YxToXYd
- Low vision resources such as handheld and stand magnifiers, high illumination lamps, high power add (see section at the end) that you can help patients with play a huge role in AMD and the Retina doctor works closely with you to achieve the best functional vision for the patient with reduced central visual acuity.

Diabetic Retinopathy

- The primary eye care provider should perform annual screening for diabetic retinopathy for all diabetic patients. However, whenever retinal hemorrhages or microaneurysms are noted on fundus exam, it is important to refer for Retina consultation as the exam findings are sometimes only the “tip of the iceberg” and may miss the true extent of the disease.
- During retina consultation, in addition to OCT, Dr. Shah prefers to perform a baseline ultra wide-field fluorescein angiography (UFWFA) on patients with visible diabetic retinopathy because it allows detection of retinopathy severity with much higher accuracy than fundus photography or dilated eye exam alone. This has become the standard of care at most institutes.
- Treatment with injections of anti-VEGF medications or with retinal laser is indicated when there is macular edema, neovascularization, or vitreous hemorrhage. Retina surgery with vitrectomy and endolaser may be required in cases of non-clearing vitreous hemorrhage.

COMMON RETINAL CONDITIONS -TIPS & TRICKS

Retinal Artery Occlusion

- Sudden new vision loss and white opaque areas of the retina (sector or entire retina) are signs of branch or central retinal artery occlusion.
- Time is of the essence. These patients should be emergently referred to the Retina doctor. With a timely referral, the Retina doctor may be able to perform an office procedure to release pressure from the eye - potentially a vision-saving procedure.
- It is a systemic disease. Depending on the situation, referral to Emergency Room may be pursued to further evaluate for stroke and blood clots in the heart.

Retinal Vein Occlusion

- Flame hemorrhages and cotton wool spots are the key features on an exam, in a sector or entire retina – branch or central retinal vein occlusion (RVO).
- Age, hypertension, obesity, diabetes, glaucoma, and hyperlipidemia are the main risk factors.
- During retina consultation, in addition to OCT, Dr. Shah prefers to perform a baseline ultra wide-field fluorescein angiography (UFWFA) on patients with RVO because it allows detection of ischemia that may require retinal laser treatment.
- OCT imaging is useful to detect macular edema, which, if present, requires treatment with injection of anti-VEGF medications periodically.
- Young patients with RVO with no known cause require a laboratory workup for evaluation of uncommon clotting conditions.

Central Serous Retinopathy (CSR)

- Commonly misdiagnosed as macular degeneration. If a patient has had “macular degeneration” since before 50 years of age, it is more likely to be CSR.
- A typical patient is a young man with a new vision decline or distortion in one eye. Visual acuity is minimally reduced.
- Typical risk factors are high-stress levels, systemic corticosteroid use, hypertension, and sleep apnea.
- Look for a small PED and a larger amount of overlying fluid under the retina on OCT.
- Diagnosis is confirmed during retinal consultation with fluorescein angiography. Treatment, if not improving spontaneously, will involve oral medication (eplerenone) and/or laser treatment.

COMMON RETINAL CONDITIONS -TIPS & TRICKS

Macular Pucker (Epiretinal Membrane)

- Best diagnosed with OCT raster scan and thickness map.
- Recommend early referral to Retina as surgical treatment relatively earlier in the course of the disease achieves better long-term visual acuity.

Vitreomacular Traction and Macular Hole

- Refer relatively urgently for Retina consultation as earlier treatment achieves a better visual outcome.
- Duration and size of hole both help predict visual prognosis.
- Small macular holes may be treated with eye drops and may close. Moderate to large holes usually require retina surgery with vitrectomy, membrane peel, gas, and postoperative gaze down positioning, with a high success rate.

Cystoid Macular Edema

- Commonly misdiagnosed as macular degeneration. If a patient has had Pseudophakic Cystoid Macular Edema (Irvine Gass syndrome) is a common cause of reduced vision after seemingly uneventful cataract surgery where you are not able to refract the patient any better than say 20/40, and the patient is unhappy and puzzled. An OCT scan can reveal macular edema that may not be visible on an exam. If the central macular thickness is over 300 microns or if cysts are visible, consider referring to a Retina specialist within a week. Early treatment of macular edema (eye drops and possibly injections) can help improve vision and reduce patient and cataract surgeons' frustration.

Vitreous Hemorrhage

- Common causes include proliferative diabetic retinopathy, posterior vitreous detachment, retinal tear, retinal detachment, and retinal vein occlusion.
- Urgent referral for Retina consultation is recommended. B scan ultrasonography helps visualize the status of the underlying retina and helps plan the treatment.

Posterior Vitreous Detachment

- Retina consultation is recommended to look carefully with a 360-degree thorough retina exam to look for retinal tears.
- Patient is recommended follow-up in 6 weeks, then in 3 months, and thereafter in 1 year.
- With active floaters, defer refraction for about 3 months from onset, so that floaters have minimal impact on the refraction.

COMMON RETINAL CONDITIONS -TIPS & TRICKS

Lattice Degeneration and Retinal Holes

- Lattice degeneration means areas of thinning of the peripheral retina seen as a change in color, pigment clumps, and/or crosshatching of sclerotic vessels. These thin areas may also have retinal holes and should be evaluated by the Retina specialist, as treatment with laser retinopexy may be required in some cases.
- If a myopic patient is seeking LASIK, a careful peripheral retinal exam should be performed to look for these abnormalities, and any suspicious area noted should prompt a referral to the Retina specialist prior to LASIK, because laser retinopexy prior to LASIK may be indicated.

Retinal Tear

- Urgent Retina consultation to confirm retinal tear and perform urgent laser retinopexy to reduce risk of retinal detachment.

Retinal Detachment

- Urgent Retina consultation to confirm diagnosis and plan treatment, which is usually urgent within 1-2 days or so. Duration and extent of retinal detachment are used to decide how promptly surgery is to be done.
- One of the main side effects of retina surgery is that if the patient has a cataract, worsening of cataract is to be expected within 1 year, at which time, cataract surgery may be indicated. Refraction update is also indicated usually at 3 months after retina surgery, to keep up with the worsening cataract.

Dislocated Intraocular Lens

- When the edge of the IOL is visible in the pupil, or the IOL-bag complex jiggles upon eye movement or blinking, refer to Retina for consultation within 1-3 weeks. If significant, a patient may require retina surgery with vitrectomy and intraocular lens exchange.

Uveitis

- Inflammation in the anterior chamber or posterior segment should warrant evaluation by a Retina specialist to evaluate for the underlying cause and to treat complications of uveitis such as macular edema.

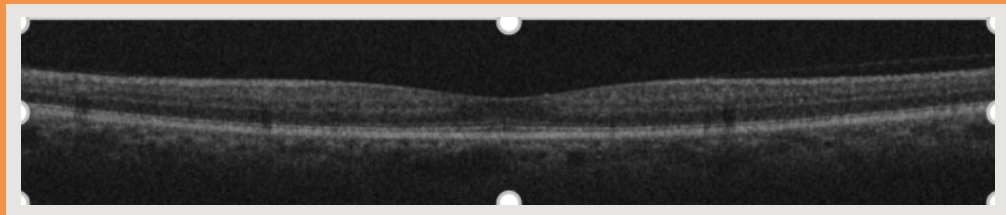
Choroidal Nevus and Melanoma

- “Freckle” in the eye (choroid) is a common reason for referral to Retina, especially after incidental finding of a greenish pigmented lesion on fundus photos. Referral to Retina is important as specific high-risk features on exam and imaging help differentiate melanoma (malignant) from a nevus (benign). A choroidal nevus is followed periodically to look for any growth. A choroidal melanoma requires treatment with radiotherapy or laser.

RETINAL DIAGNOSTIC MODALITIES

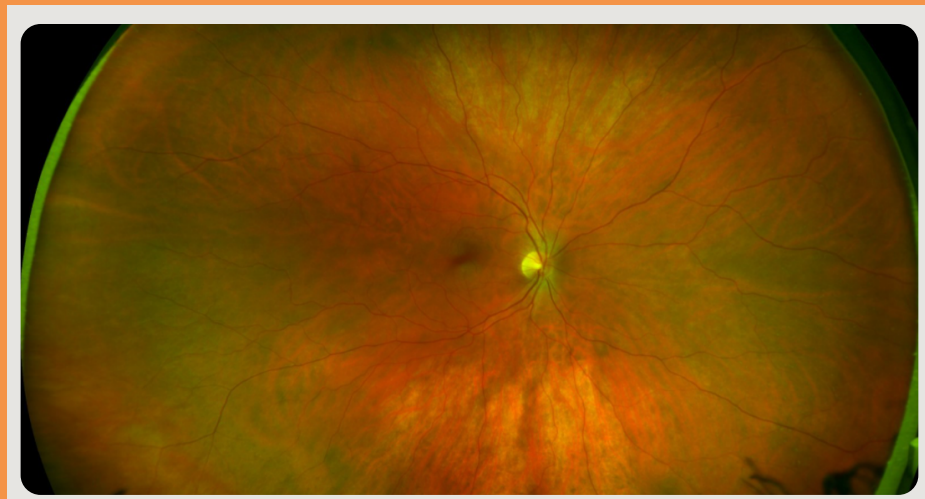
At DLV, we are proud to have the latest retinal diagnostic equipment to facilitate safe, efficient, and accurate diagnosis of retinal conditions for our patients. Dr. Shah believes in multi-modal imaging, which means in addition to a thorough dilated retinal exam, the sum of all the diagnostic tools plays a role to put things into perspective for accurate diagnosis, precise monitoring of treatment response, and optimization of retinal care for our patients.

Optical Coherence Tomography (OCT)



- Scans the Macula in high resolution providing both raster lines (cross-sectional images) and thickness map – recommend scanning through raster lines so as not to miss pathology
- Allows visualization of different layers of the retina in fine detail
- Allows detection and monitoring of fluid (in or under the retina)
- Allows detection and monitoring of membrane or traction on the macula
- Precise measurement of size of macular hole
- Common conditions monitored with OCT: Macular Degeneration, Diabetic Macular Edema, Cystoid Macular Edema, Retinal Vein Occlusion, Macular Hole, Epiretinal Membrane
- If you are getting poor image quality, try using artificial tear eye drops in patient's eyes prior to imaging. That can enhance image quality by making optical surfaces smooth.

Wide-field Fundus Photography

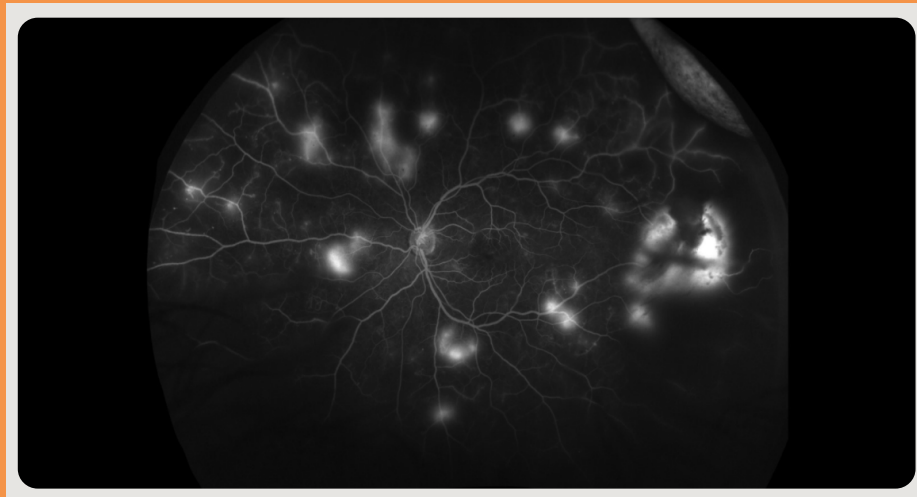


RETINAL DIAGNOSTIC MODALITIES

Wide-field Fundus Photography

- Allows capturing the image of the central and peripheral retina in one shot
- Nice tool to monitor choroidal and retinal lesions, the extent of diabetic retinopathy, and peripheral retinal degeneration
- A great way to show the image and explain to patients about their retinal condition

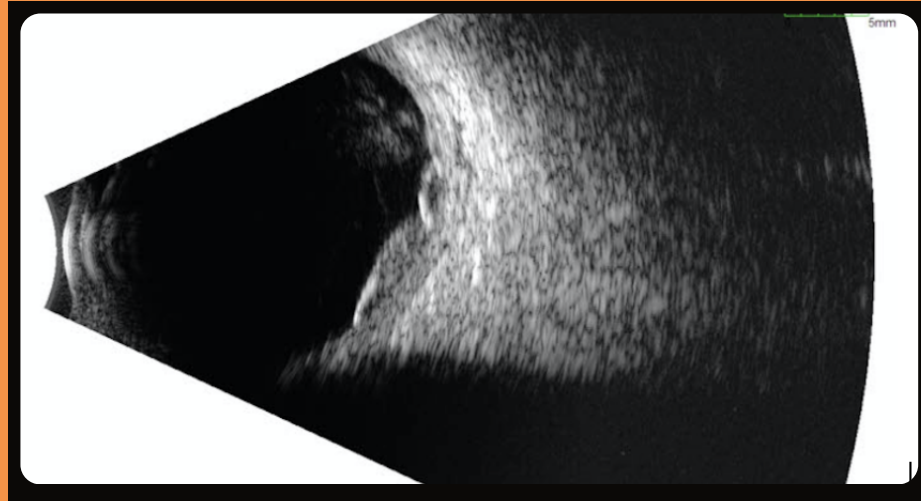
Ultra wide-field Fluorescein Angiography



- Fluorescein angiography is a test where fluorescein dye is injected into the arm and the images are captured with a filter on the camera. It produces black and white images, where the white indicates the fluorescein dye. It highlights any areas of leakage or new blood vessel growth or inflammation.
- It is very useful for grading the severity of diabetic retinopathy as the clinical exam and fundus photos can sometimes “under-diagnose”; it is not uncommon to see florid neovascularization as seen in the picture above from proliferative diabetic retinopathy.
- Retinal vein occlusion, posterior uveitis, central serous retinopathy, and macular degeneration are other conditions that benefit from fluorescein angiography testing.

RETINAL DIAGNOSTIC MODALITIES

B-scan Ophthalmic Ultrasonography



- B-scan Ophthalmic Ultrasonography is commonly performed when there is a choroidal mass lesion or if there is a dense cataract or a vitreous hemorrhage obstructing the view to the retina.
- It uses sound energy to reflect from ocular structures and creates an image depending on reflectivity of structures inside the eye.
- It involves placing a probe on the eyelid with the eyes closed and having patient move their eyes in different directions.

Genetic Testing

- Certain hereditary conditions such as Macular dystrophy, Best disease, Stargardt's disease, Cone-Rod dystrophy, and Retinitis pigmentosa are diagnosed based on family history, patient symptoms, dilated retinal exam, and multimodal imaging as above. In addition, genetic testing is offered for detecting the specific gene mutation and to identify the inheritance pattern to provide counseling and information about the exact condition to our patients.
- We use a noninvasive Saliva-based genetic testing technique (whenever possible) and it is usually at no cost to our patients.

RETINA TREATMENTS

Observation and Eye Drops

- These are reasonable initial options for some conditions such as cystoid macular edema.

Eye Injections

- Intravitreal eye injection is a common, safe, quick, and effective office procedure used to treat many retinal conditions including wet age-related macular degeneration, diabetic macular edema, and retinal vein occlusion with macular edema. Dr. Shah uses a technique that causes minimum to no pain, in order to improve patient experience and improve compliance.
- Procedure: The eye is numbed using an anesthetic medication and cleaned with an antiseptic solution. Once the eye is numb, a tiny needle is used to deliver the desired medication into the eye through the sclera. The eye is then rinsed to wash off excess antiseptic.
- Possible side effects: burning or irritation (usually resolve within 24 hours, recommend using artificial tears to soothe the eye), floaters (usually resolve within a few days), subconjunctival hemorrhage (not to be concerned about and resolves on its own within 1-2 weeks without any effect on vision). The main risk of the procedure is an infection called endophthalmitis. Fortunately, the risk of this infection is very low, occurring in approximately 1 in 3000 injections. If the patient experiences worsening eye pain, sensitivity to light, or worsening vision, then you should have the patient contact Dr. Shah's office immediately.
- Ongoing treatment may be required every 1-3 months and depends on the exam, OCT, and specific condition

Retina Laser

- Laser Retinopexy: Used to treat retinal tear by creating gray burns in the retina using a laser to surround the retinal tear.
- Laser Panretinal Photocoagulation (PRP) or Targeted Retinal Photocoagulation: Used to treat proliferative diabetic retinopathy and retinal vein occlusion with neovascularization by application of laser spots to ischemic areas of the retina.

RETINA TREATMENTS

Retina Surgery

- **Pars Plana Vitrectomy (PPV):** Vitrectomy is the most common retina surgery for a variety of conditions such as epiretinal membrane, macular hole, retinal detachment, and vitreous hemorrhage. It is usually done under local anesthesia by injecting an anesthetic medication behind the eye while the patient is sedated with intravenous medication. During surgery, the instruments are placed into the vitreous through the sclera via 3 small incisions, and the vitreous is removed and replaced with water. Additional treatments as necessary are done including laser treatment to the retina (for vitreous hemorrhage and retinal detachment), membrane peeling from retina surface (for epiretinal membrane and macular hole), removing fluid from under the retina (for retinal detachment), and placing either air, gas or oil bubble into the back of the eye. The instruments are then removed from the eye and the eye is patched. The patient may be recommended to position the head in a certain way (such as face-down position for 24 hours) to help maximize the success of surgery. The patient is examined on the day after the surgery when the eye patch is removed in the office and the eye drops are started after that.
- **Scleral buckle:** Scleral buckle is a form of retina surgery for retinal detachment during which a belt is placed around the eye under the eye muscles. The goal is to indent the sclera inwards to bring it close to the retina. Freezing or laser treatment is used to treat the retinal tears during this surgery. It may be done by itself or combined with vitrectomy as above.
- **Choroidal drainage:** A choroidal drainage is a form of retina surgery during which a small scleral opening is created to drain the blood or fluid collected underneath it. It may be combined with vitrectomy as above.
- **Pars Plana Lensectomy (PPL):** When a cataract surgery has a complication where the cataractous lens drops posteriorly, the retina surgeon needs to perform a pars plana lensectomy which means removal of the retained lens material using vitrectomy setup.
- **Intraocular lens exchange:** When a previously implanted intraocular lens becomes loose or dislocates posteriorly, retina surgery is required to remove this dislocated IOL and replace a new IOL.

Low Vision and Retina

While our goal is to improve the vision of each of our retina patients, some conditions, such as advanced macular degeneration, do result in central vision loss that is irreversible. Fortunately, most of these patients do have vision outside their central area of vision loss. We believe in helping these patients with low vision to maximize their residual vision to help keep them as independent as possible. Remember legal blindness does not equal to functional blindness. By making small modifications and utilizing your assistance with low vision aids, these patients can continue to function and lead a fulfilling life.

How can you, as the patient's primary eye care provider, help patients with low vision?

- Treat dry eyes aggressively – a smooth tear film and controlled ocular surface disease reduces distortion and improves the ability to use the residual vision
- Update refraction and consider high power adds (starting at +3.00D or +3.50D, and in some cases going to +4.50)
- Ensure eyeglasses are free of smudges and dirt
- Consider separate glasses for distance and near vision
- Lighting – Patients with low vision require high illumination when doing any activity, consider suggesting LED light lamps and clip-on LED lighting for eyeglasses
- Polarized sunglasses with yellow or orange tint are best for low vision patients; avoid excessively dark glasses (dark brown/dark gray/black) as these reduce amount of light entering the eye and reduce visibility
- Suggest use of backlit electronic devices such as iPad or Kindle as the contrast is much better than on traditional newspaper
- Consider offering use of Low Vision Devices such as clip-on loupes that can fit on top of prescription glasses, lighted handheld magnifier, stand magnifier, Magnabrite, handheld video magnifier like Ruby, closed-circuit television such as Merlin, spectacle mounted telescope, IrisVision
- Consider maximizing use of alternative senses: Devices like Smart Reader HD or OrCam, voice-assisted home control technologies such as Amazon Alexa on Amazon Echo, Google Assistant on Google Home, or Apple Siri on Apple HomePod.
- Setting right expectations: “You do not need 20/20 vision for activities of daily living! For example: Small print Bible: 20/30, Driving: 20/40, Small column newsprint: 20/50, Newspaper headlines: 20/400, Self-grooming: 20/60, McDonald's menu: 20/80. The key is in accepting your level of vision, learning to adapt and make best use of the vision that you have, and overcoming the fear of going blind or losing your independence. You will do great!”



REFRACTIVE SURGERY GUIDELINES

805.987.5300 • doughertylaservision.com • info@doughertylaservision.com

Myopic LASIK

Up to -6 to -8

Hyperopic LASIK

Up to +3

Toric LASIK

Up to -6

PRK/LASEK

thin K, up to -3

SMILE

-1 to -8

Vision ICL

-3 to -16

Vision ICL Toric

-1 to -4

Lensectomy

>45 yo, high +/-

Keratoconus

Intacs, CXL



CATARACT SURGERY REFRACTIVE PACKAGES

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PACKAGES	LENS DESCRIPTION	COST	NEED FOR GLASSES OR CONTACT LENSES	LASER ENHANCEMENT (COST) **IF NEEDED	ASTIGMATISM TREATMENT INCLUDED	MONOVISION	LASER ASSISTED CATARACT SURGERY OPTIONAL	CoManagement
BASIC IOL PACKAGE	<ul style="list-style-type: none"> • Basic IOL • Non-Aspheric 	Medicare Covered + Co-Ins. + Deductible	YES For Reading, Computer And Likely Distance	\$2995/Eye	NO	NO	NO	YES-Ins Payment
ECONOMY IOL PACKAGE	<ul style="list-style-type: none"> • Aspheric IOL 	\$1600Plus Medicare Covered + Co-ins. + Deductible	YES For Near And Computer, Unless Monovision	\$995/Eye	YES	YES	YES \$1625 Extra PerEye	YES-Ins + Eco Package Payment
PREMIUM IOL PACKAGE	<ul style="list-style-type: none"> • Softec HDO (Eye Care Provider's #1 CHOICE of Premium Lens) • Panoptix Lens • Panoptix -Plus • Vivity • Vivity Toric 	\$3600 – Softec HD or TOric Lens \$4100 – Panoptix Lens -Plus Medicare Covered + Co-ins. + Deductible	NO In Some Cases Just For Reading And Possibly Computer If No Monovision	Included	YES	YES	YES \$1625 Extra PerEye	YES-Ins + Pre Package Payment



WHICH PACKAGE IS BETTER FOR ME?

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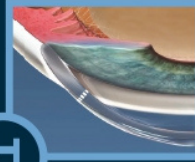
REFERENCE PACKAGE	UP CLOSE READING	INTERMEDIATE/DISTANCE COMPUTERVISION	LASIKLASIK DISCOUNTEDINCLUDED	ASTIGMATISMMNOVISION CORRECTION
STANDARD				
ENHANCED				
PREMIUM				

The Cataract Procedure

1

Incision

A small incision is made to allow an instrument to pass into the eye.



2

Removing the Cataract

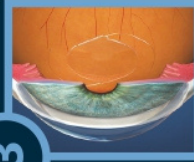
Ultrasonic waves are used to break the cataract into small pieces to be suctioned away.



3

Inserting the New Lens

The new lens is inserted into the capsular bag inside the eye where the cloudy natural lens was once located.



DoughertyLaserVision.com

CALL (805) 987-5300

TEXT (818) 874-3048



What exactly is a cataract?

A cataract is a clouding of the normally clear lens in your eye. Though painless, cataracts can blur your vision by restricting the amount of light that enters your eye.

In addition to hazy vision, indications of cataracts include increasing glare, poor night vision, **difficulty reading small print, and a change in how your eyes perceive colors.**

Camarillo

1821 E Daily Dr.
Camarillo, CA 93010
Phone: 805.987.5300

Encino

16542 Ventura Blvd., Ste 400
Encino, CA 91436
Phone: 805.987.5300

Newbury Park

1000 Newbury Rd. Ste. 220
Thousand Oaks, CA 91320
Phone: 805.987.5300

Simi Valley

2796 Sycamore Dr., Ste 101
Simi Valley, CA 93065
Phone: 805.987.5300

Ventura

5682 Telephone Rd. Ste. 1
Ventura, CA 93003
Phone: 805.987.5300

Westlake Village

4353 Park Terrace Dr., Ste 150
Westlake Village, CA 91361
Phone: 805.987.5300

Your Lens Options



Monofocal

- Standard lens option
- Will require glasses at all distances



Astigmatism

- Addresses astigmatism
- Great quality distance vision
- Will require glasses for near vision unless monovision employed



Multifocal

- Splits light into distance and near components
- **Offers the potential for freedom from glasses**
- Glare and halo will occur at night and low light situations



Softec HD

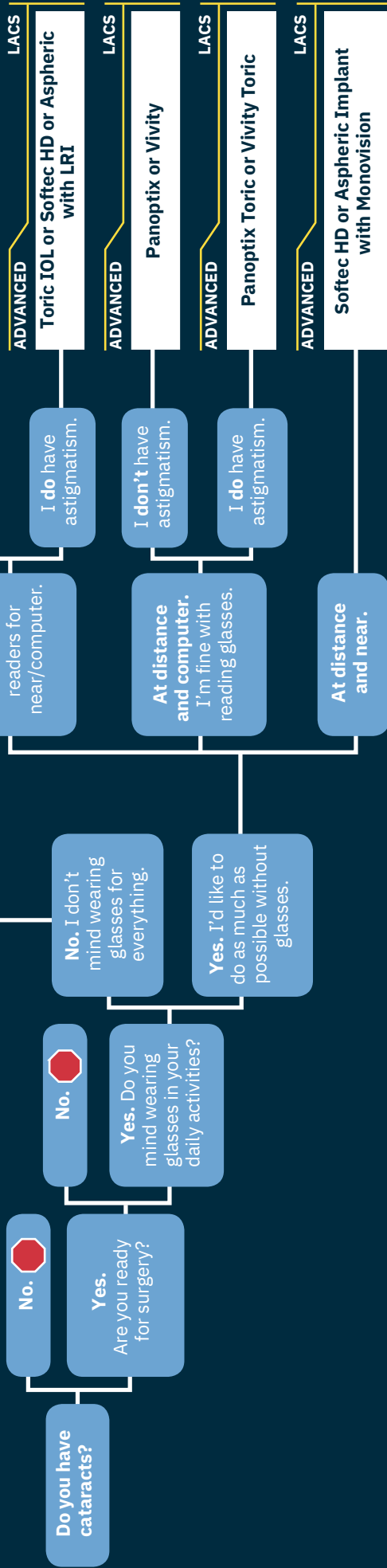
- Increased depth of focus
- Great quality of vision
- Will require glasses for near vision unless monovision employed



Aspheric

- No increased depth of focus
- Great quality of vision
- Will require glasses for near vision unless monovision employed

Your Vision Decision



Is cataract surgery right for me?

1. Are you frustrated with your vision?
2. Do you feel like your lifestyle is impaired by your vision?
3. Do you have trouble seeing while driving (especially at night)?
4. Do you experience glare or halos at night?
5. Is your vision level getting worse?

Laser-Assisted Cataract Surgery

- Ziemer Z8 Laser-Assisted Cataract Surgery (LACS) is a **custom, blade-free** cataract removal procedure now offered at DLV Vision.
- Surgeons experience **more control and precision**, plus LACS features real-time tools for an accurate visual of what's going on inside the eye.
- LACS and a variety of intraocular lenses may give patients even **more visual freedom** after cataract surgery, helping them **remain active for decades**.
- **Limbal Relaxing Incisions (LRI)**, for control of astigmatism, are made even more accurate with the laser.

