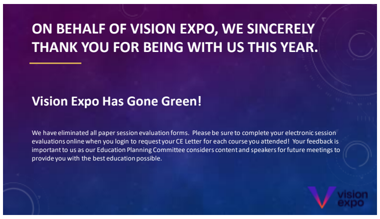
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• Main Stage - Exhibit Hall – Booth F11084
Our Main Stage sessions feature free, promotional content for all attendees.
• Vision Series - Thursday 9/18, Friday 9/19 and Saturday 9/20
Grab a bite to eat and continue learning over Breakfast 8:30-9:30am or Lunch 12:00-1:00pm!*
Listen to industry leaders as they address the latest clinical innovations in a relaxed and collaborative environment.
*Open to Optometrists only. Not for Credit. Meals offered on first-come, first-serve basis to pre-registered attendees.
• Exhibit Hall Hours
Thursday, Sept 18 b 9:30am – 6:00pm
Friday, Sept 19 9:30am – 6:00pm
Saturday, Sept 20 9:30am – 3:00pm
Conferee Cafe – Exhibit Hall – Booth P19087
Education Lounge – Level 1 - Conference Area
Conferee Happy Hour Thur, Sept 18 4:30 - 5:30pm
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A COMPREHENSIVE GUIDE TO CATARACT AND REFRACTIVE SURGERY
and
THE COLLABORATIVE APPROACH TO MANAGING CATARACT AND REFRACTIVE SURGERY
JERRY ROBBEN, OD
NEDA SHAMIE, MD
ARJAN HURA, MD
KRISTIN BARNES, OD
ROOM 502
SATURDAY, SEP 20TH
09:45 AM - 11:45 AM
01:00 PM - 03:00 PM
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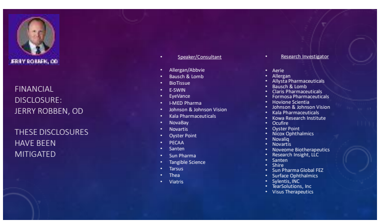
3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Novartis
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PECAA
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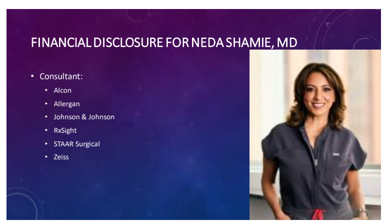
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• Zeiss

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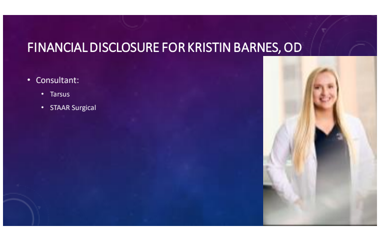
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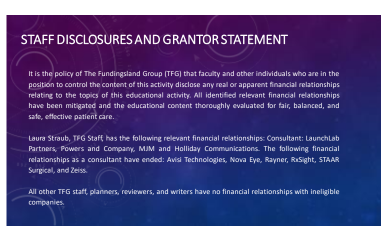
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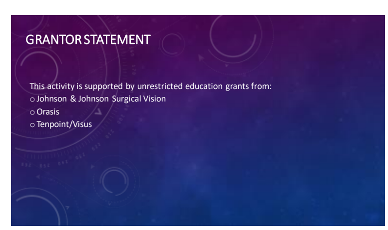
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LEARNING OBJECTIVES

- To discuss and educate on obvious and not so obvious refractive surgical candidates and how to educate effectively and accurately on surgical options.
- To educate on proper patient preparation and the OD's role prior to handing the patient off to the ophthalmologist for surgical consideration.
- To encourage/empower ODs to maintain a leading role in the pre, peri and post operative care for refractive surgery patients
- To discuss and further educate on the array of refractive surgical options that are available today
- To discuss how surgical options combined with topical medical treatments can enhance patient satisfaction in refractive surgery.

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NOTE ABOUT OBTAINING CREDIT

- We are pleased to inform you that COPE credits will be provided by Vision Expo for your participation in this event.
- Be sure to keep track of your attendance to ensure you receive your credits.
- You must have remained at the in-person event until the end of the program.
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Thank you for joining us!

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Synchronous Live
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COPE advises optometrists to contact the State or Provincial Board where they are licensed for verification of what is acceptable for license renewal.

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ARS – INTERACTIVE PROGRAM FOR POLLING

1. Simply press the button that corresponds with your answer choice
2. Your selection will appear in the LCD display
3. Please respond to **ALL** questions!

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POLLING QUESTION

Which best describes your practice setting?

1. Private solo practice
2. Private integrated practice
3. Corporate optometry
4. Hospital or clinical setting
5. Academic
6. Other

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POLLING QUESTION

Which represents your largest patient volume?

1. Primary eye care / routine exams
2. Dry Eye
3. Glaucoma
4. Retinal disease
5. Other

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REFRACTIVE PROGRAM FLOW

Part 1

- **Precop Considerations for Refractive Surgery**
  - Patient Identification
  - Patient Education/Expectations
  - Patient Preparation
- **Refractive Surgery**
  - Corneal Refractive Surgery
  - EVO ICL
  - RLE
  - Case Presentation

Part 2

- **Cataract Surgery**
  - Surgical tools
  - IOL choices
  - Case Presentation
- Pharmacological Presbyopia Correction
- **Post Operative Approaches for Refractive and Cataract Surgery**
  - Patient Care
  - Patient Education/Expectations
  - Complications
- Program Wrap Up

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WHO IS A GOOD REFRACTIVE SURGERY CANDIDATE?

With the advancements and multiple options available today, anyone who wishes to reduce the need for glasses and/or contact lenses may be a candidate for refractive surgery…

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PATIENT IDENTIFICATION

- Patient wishes to improve vision and/or reduce need for glasses and or CLs
  - Not always a "perfect" candidate based on older stipulations-keep an open mind
  - This does not always mean correction of emmetropia – in some cases the surgical reduction of the magnitude of the refractive error can still positively change a patient's life
- Patient who is a good refractive candidate, but who may not be aware that they are.
  - You are the eye expert…let them know of their options
    - "Have you ever thought about corrective eye surgery?"
    - "Did you know you are a good candidate for refractive eye correction?"
    - "Your prescription is perfect for surgery to correct?"

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PATIENT EDUCATION – SET EXPECTATIONS

- Educate about how a proposed refractive surgery may benefit their visual status
- Educate how that improvement may apply to their case and their visual complaints if applicable
- Balance the above with also setting proper visual expectations to not "make a promise that you can not keep" following surgery.
- Educate on cost and possible financing options
- Educate on proper time expectations to prepare their eyes and have the surgery.
- Educate on the need to prepare their eyes for the surgery

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PATIENT PREPARATION

- After the patient has been identified and educated and they wish to proceed with a refractive evaluation with OMD
  - We need to make sure the patient is "ready" to see the surgeon (the basics)
    - Does patient need medical necessity to proceed if insurance coverage is being used?
    - Pretesting obtained?
      - Comprehensive Exam with DFE and dilated pupil (can documented
      - BCVA
      - Corneal Topo, Elevometry, ?Toxic?
      - Glaucoma, Macular testing updated? Is the retina cleared today?
        - If retina pathology exists or may exist we need to assess and possibly locate retina specialist optimize it prior to Rx.
      - Endothelial Dystrophy testing updated? Any corneal or other concerns? GBM Dystrophy, Salzmann's Nodules, any irregularities, ICLN, other?
      - Is the patient symptomatic by head/his Rx?
      - What else…?
  - We need to prepare their eyes, specifically their ocular surface, for best results
  - AKA-TREAT DRY EYE!
  - Also need to ensure all other loose ends are tied up

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MANAGEMENT OF THE OCULAR SURFACE PRIOR TO SX

- Clinical science has demonstrated the importance of a healthy ocular surface for optimal outcomes in anterior segment surgery.
- The international TFOS-DEWS, DEWS II, DEWS III and MGD Workshop have provided a comprehensive understanding of ocular surface disease.
- Recent studies on DED prevalence among ocular surgery patients have heightened awareness of the importance of preoperative DED recognition.

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MANAGEMENT OF THE OCULAR SURFACE PRIOR TO SX

- **Cataract surgery patients frequently have unrecognized dry eye disease.**

PHACO study **143 cat pts who were scheduled for Sx**
77% had NaFl corneal staining, yet only 22% had DED diagnosis

Duke study **336 cat patients who were scheduled for Sx**
64% had abnormal OSDI, yet only 16% had DED diagnosis.

Gupta, et al found that 80% of 120 patients preparing for phaco had at least one abnormal tear test

1. Foster JEB, Meyrowitz HJ, Donnenfeld ED, Holzchuh MR, Vasconcelos VC, Goldberg DT. The PHACO Study Group. The Preoperative Health Assessment Questionnaire (PHAQ) Study: Quantifying the Prevalence of Ocular Surface Disease. Ophthalmology. 2021; 10.1016/j.ophtha.2021.10.030
2. Nguyen-Khoa DHE, Gayton JTV. The prevalence of dry eye disease in patients undergoing routine cataract surgery. Journal of Optometry and Refractive Surgery Annual Meeting; May 5-8, 2022; Los Angeles, CA.
3. Gupta PK, et al. Prevalence of ocular surface dysfunction in patients undergoing routine cataract surgery evaluation. Cataract Refract Surg. 2018 Sep

26

MANAGEMENT OF THE OCULAR SURFACE PRIOR TO SX

- **Corneal refractive patients frequently have symptomatic dry eye disease when screened.**

Refractive Surgery
PROWL studies 511 patients prior to LASIK
Avg age 30 yrs.
51% with abnormal baseline OSDI scores
mild 28%
mod 14%
severe 9%

1. Zuberman M, Hilmantel G, Tervo KM, et al. Symptoms and Satisfaction of Patients in the Patient-Reported Outcomes With Laser In Situ Keratomileusis (PROWL) Studies. JAMA Ophthalmol. 2007;125(1):125-32

27

Management of the Ocular Surface Prior To Sx

Preop Ocular Surface Assessment

- The ophthalmic surgery evaluation should begin with an ocular surface assessment.
- The healthy ocular surface defines visual quality and refractive stability in the ophthalmic surgery patient.
- The prudent OD and OMD, together, must convey to the patient the importance of effective ocular surface preparation regardless of the procedure.

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Management of the Ocular Surface Prior To Sx

Why Treat The Ocular Surface?

- The refractive ocular surface is defined by the air-tear film interface and the corneal surface.
- This surface is responsible for 60-70% of the optical power of the human eye.
- Any tear film disturbance or cornea surface alteration associated with ocular surface disease may significantly degrade visual acuity and/or vision quality.

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Management of the Ocular Surface Prior To Sx

What are features of the healthy ocular surface?

- Normal lid closure dynamics
- Normal lid globe apposition
- Adequate tear volume
- Normal tear composition
- Stable tear film
- Intact and stable corneal epithelium
- Intact and stable conjunctival epithelium
- Absent ocular surface inflammation
- Clean lid margins
- Unobstructed meibomian glands

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Management of the Ocular Surface Prior To Sx

Elements of preoperative ocular surface assessment

1. OSD Symptom Assessment
2. External exam Biomicroscopic examination
3. Diagnostic testing to detect the loss of ocular surface homeostasis
4. Imaging technology to define corneal surface injury and alterations of MG structure and function

32

Early Effects of Perfluorohexyloctane Ophthalmic Solution on Patient-Reported Outcomes in Dry Eye Disease: A Prospective, Open-Label, Multicenter Study

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Management of the Ocular Surface Prior To Sx

OSD Challenges

- The asymptomatic dry eye patient poses a major challenge to ECPs.
- We have talked about the importance of addressing the ocular surface prior to Sx for best post op results
- Eye surgery may destabilize an asymptomatic and barely compensated ocular surface creating symptoms and surgical complications.
- Preop patient education and management of OSD must be addressed prior to surgery.
- Patients are poorly receptive to OSD explanations for unmet expectations following ocular surgery.

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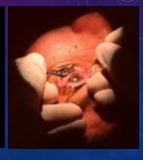
Management of the Ocular Surface Prior To Sx

Ophthalmic surgery may expose the ocular surface to the following disruptive factors:

- topical anesthetics and antiseptics
- limbal corneal incisions
- arcuate corneal incisions
- intraoperative ocular desiccation
- excessive ocular surface irrigation
- topical eyedrop preservative exposure
- NSAIDS
- altered lid/globe apposition
- sutured surface wounds



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Management of the Ocular Surface Prior To Sx

ASCRS Corneal Clinical Committee Algorithm

A streamlined DEWS II recipe approach to ocular surface preop evaluation tailored for the cataract and refractive surgery patient.

It is designed for the rapid distinction between visually significant OSD and nonvisually significant OSD among presurgical patients.

VS-OSD patients must be tuned up prior to biometry.

Specific point-of-service tests that define homeostasis loss are obtained and correlated with specific clinical exams (LLPP) that define the nature and severity of OSD.

- Osmolarity
- MMP-9
- Tear film interferometry

The algorithm guides the rapid normalization of the ocular surface of patients preparing for surgery regardless of their symptomatic awareness of dry eye.

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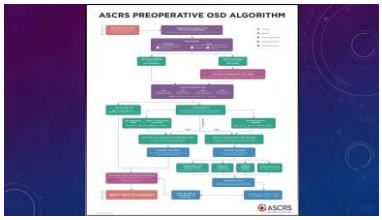

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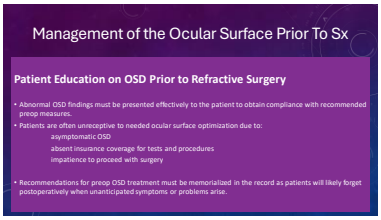

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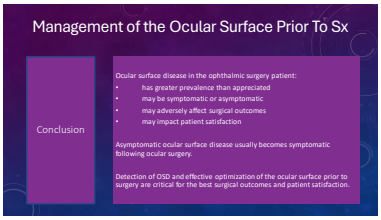

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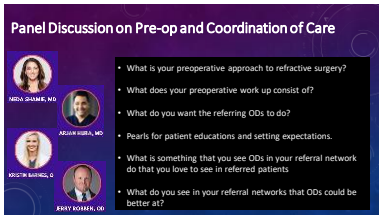

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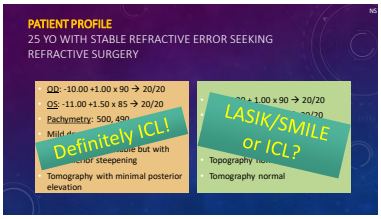

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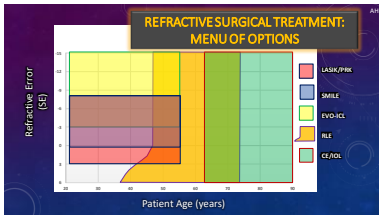

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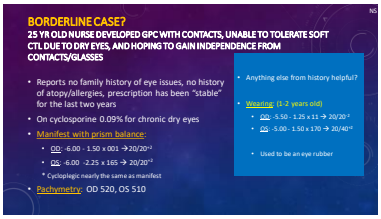

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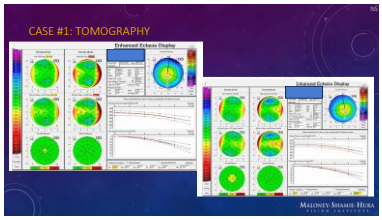

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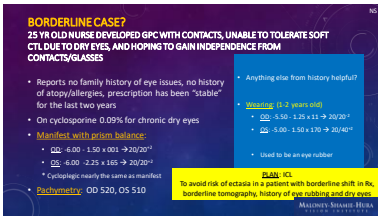

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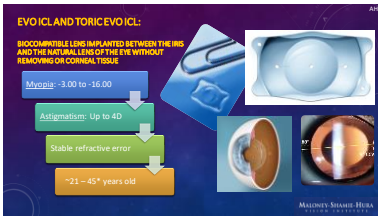

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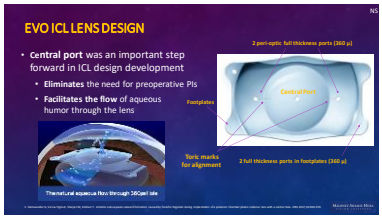

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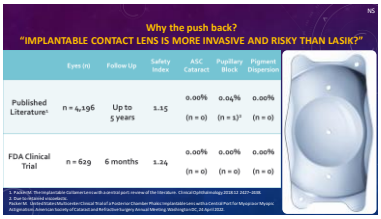

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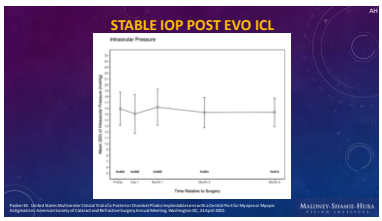

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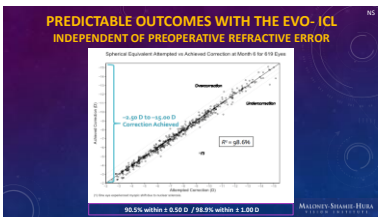

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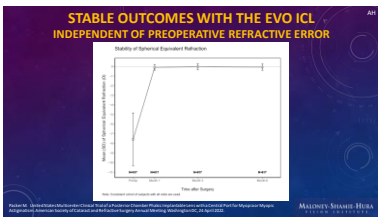

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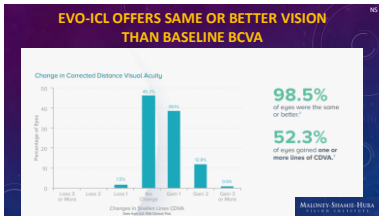

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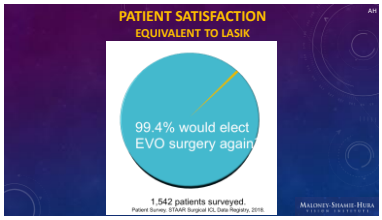

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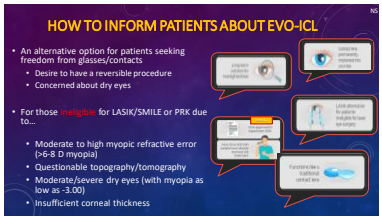

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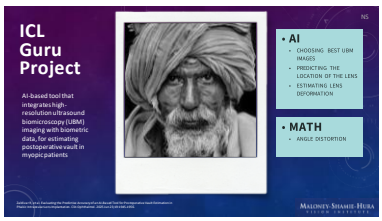

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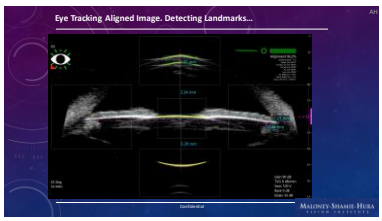

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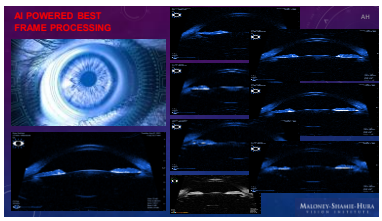

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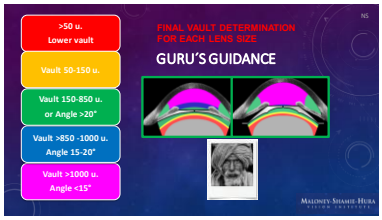

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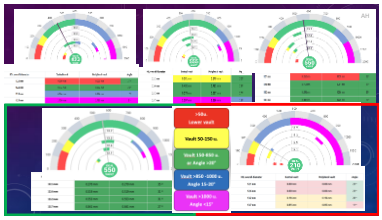

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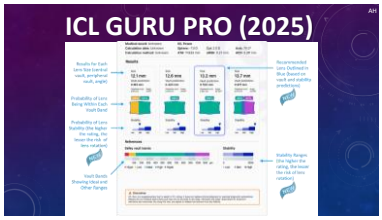

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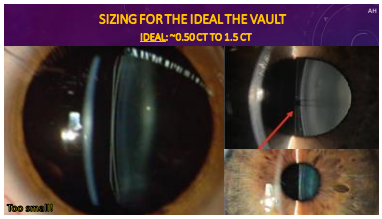

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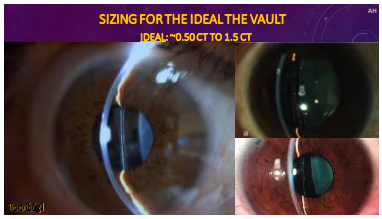

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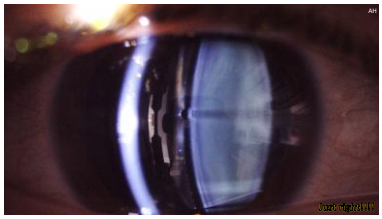

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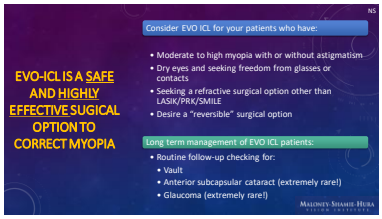

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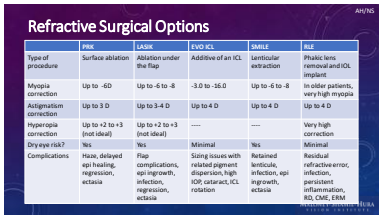

	PRK	LASIK	EVO ICL	SMILE	RLE
Type of procedure	Surface ablation	Ablation under the flap	Additive of an ICL	Lenticular extraction	Phakic lens removal and IOL implant
Myopia correction	Up to -6D	Up to -6 to -8	-3.0 to -16.0	Up to -6 to -8	In older patients, very high myopia
Astigmatism correction	Up to 3 D	Up to 3-4 D	Up to 4 D	Up to 4 D	Up to 4 D
Hyperopia correction	Up to +2 to +3 (not ideal)	Up to +2 to +3 (not ideal)	----	----	Very high correction
Dry eye risk?	Yes	Yes	Minimal	Yes	Minimal
Complications	Haze, delayed epi healing, regression, ectasia	Flap complications, epi ingrowth, infection, regression, ectasia	Sizing issues with related pigment dispersion, high IOP, cataract, ICL rotation	Retained lenticule, infection, epi ingrowth, ectasia	Residual refractive error, infection, persistent inflammation, RD, CME, ERM

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PRK

- Photorefractive Keratectomy
- FDA approved in 1995
  - Concept of stromal ablation was first developed in the 1980s
  - Development of excimer lasers allowed for precise ablative treatments
  - This was a key innovation as it removed the need for blade incisions


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- All-laser (excimer only)
- Use of Mitomycin C has dramatically reduced incidence of post-operative haze
- Approved for correction of myopia, hyperopia, and astigmatism

PRK

Step 1: Layer preparation
A dilated epithelial solution is applied to the cornea to dissolve the epithelial layer.

Step 2: Layer removal
De-epithelium layer is then removed to reveal Bo-Mn cells using a manual instrument.

Step 3: Corneal sculpting
An excimer laser sculpts the corneal tissue within a matter of seconds to correct the refractive error.

Step 4: Eye protection
Finally, a protective bandage lens is placed over the eye until the epithelium heals within a few days.

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PRK

- Recovery
  - Mild discomfort days 2-4
  - BCL out at POW1 visit
  - Functional vision after one-week, sharp vision in 3-6 weeks
- Advantages
  - Preserves corneal tissue
- Of Note
  - Recovery
  - Treatment range
  - Variable epithelial hyperplasia

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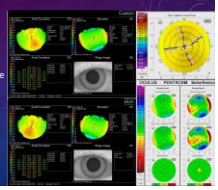
PRK Case Study 1

- 45-year-old F, second opinion after being told previously she was a LASIK candidate.
- Contacts uncomfortable, interfere with physical activity, gets make-up on them, irritate her eyes.
- Manifest refraction:
  - OD: -2.00 -1.00 x 010º
  - OS: -1.75 -0.75 x 170º
- Pachymetry 529 µm OD and 528 µm OS
- Normal SLE



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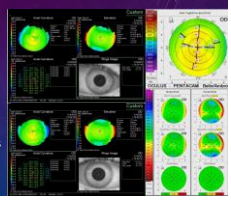
PRK Case Study 2

- 35-year-old F, second opinion for LASIK
- Frequent travel and outdoor activities like camping, contact lens hygiene a concern.
- Family history of PRK
- Manifest refraction:
  - OD: -3.00 sphere
  - OS: -2.00 sphere
- Pachymetry 462 OD and 461 OS
- Normal SLE



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LASIK

- Laser assisted in-situ keratomileusis
- FDA approved in 1999
- Two-step all-laser procedure
  - Femtosecond laser
  - Excimer laser
- Most popular elective surgery in history

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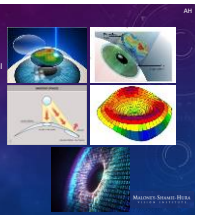
LASIK

- Wavefront-Guided
  - Customized ablation based on individual wavefront maps
  - HOAs treated
- Wavefront-Optimized
  - Blended peripheral treatments
  - Less SA induced
- Topography-Guided
  - Can be helpful for irregular corneas
- Ray-tracing!
  - Best of all worlds
  - The future of LASIK



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LASIK

- Highlights:
  - Recovery – near instantaneous
  - Broader treatment range – hyperopia, astigmatism
  - Enhancements
- Of note:
  - Involves flap creation

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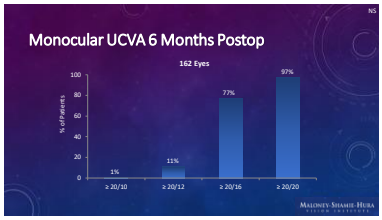

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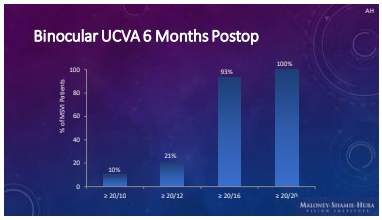

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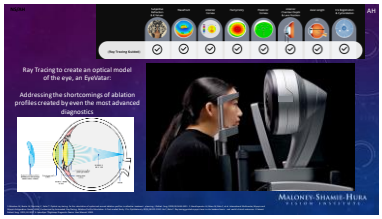

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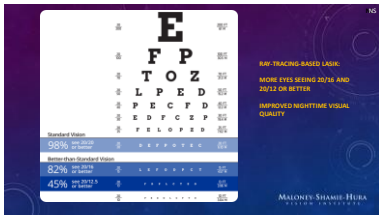

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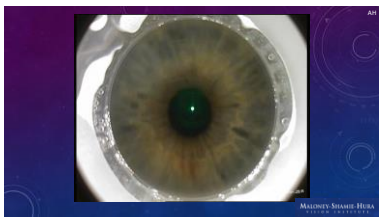

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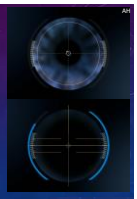
SMILE (PRO)

- New femtosecond laser
- More efficient (~8 seconds)
- Hyperopia being investigated overseas
- *Pending automatic centration*
- *Pending automatic cyclotorsion*
- *Pending syncing with other diagnostic devices*



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Q & A

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Thank You!

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