Refractive Laser Surgery: Evaluation to Comanagement

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Evaluation

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What makes a good candidate?

- Motives
  - Is it realistic?
  - Job/sports
  - Previous CL wear
- Prescription
  - Does it fall within the treatable range
  - -up to -8.00D and up to +3.00D, 3.00D of cyl
  - *Surgeon dependent
- Age
  - Too young
  - Presbyopia
  - Monovision in select cases/established with CL monovision
- Rest of testing

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Evaluations in office

1. Autorefraction
2. Read glasses prescription
3. Refraction
4. Cycoplegic Refraction
5. Orb scan
6. Topography
7. Dominant eye
8. Pachs
9. Pupil size
10. Anterior segment exam
11. Posterior segment exam

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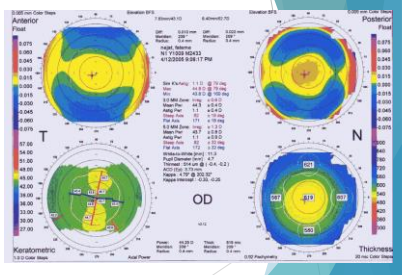
Orb Scan

- Anterior float
- Posterior float
- Keratometric pattern
- Pachymetry
- Risk factors to watch for:
  - Steep posterior float (early sign of keratoconus)
  - Difference in pachs, not a normal thickening up pattern



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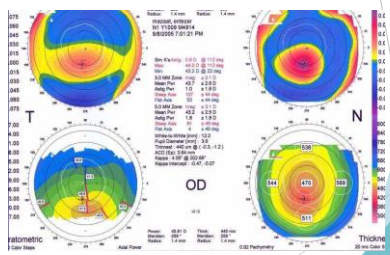
Orb Scan – With Contraindications



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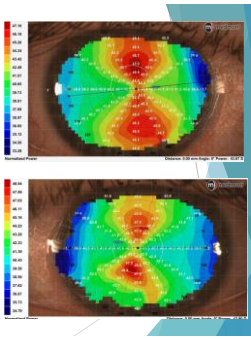
Testing - Topography

- Astigmatism
  - Regular or irregular
  - Symmetrical
  - Inferior steepening
- Dryness



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Patient Counseling/Expectations

- Post-operative dryness
  - Temporary
  - LASIK > PRK
- Glare/halos
  - Temporary
  - Consider current night vision
- Possibility of glasses for BCVA - goal is to decrease refractive error
- Out of CL 2 weeks before surgery

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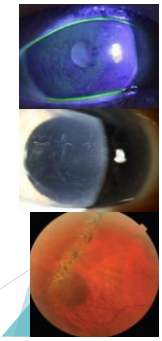
Ocular Contraindications

- Ocular surface/Dry eye Disease
- Corneal dystrophies
  - Map-dot fingerprint dystrophy → PRK
- Keratoconus
- Previous HSK/HZV
- Glaucoma
- High myopia
  - PRK (concern with LASIK flap suction and high IOP)



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Systemic Contraindications

Poor wound healers

- Diabetic if unstable
- Autoimmune conditions (more prone to dryness)
- Collagen vascular disorders
- Keyloid formers

Pregnant women/Breastfeeding

- Possible fluctuations in Rx
- CI with post-op drops (i.e. Ocuflox)
- Best to wait 3-6 months after pregnancy and lactation

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Systemic medications to consider:

1. Isotretinoin/Accutane
2. Amiodarone
3. Topiramate
4. Sumatriptan

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When to do PRK vs. LASIK

- Thinner corneas
- Steep K's (worry about suction)
- Epithelial irregularities/dystrophies/scars
- Predisposition to trauma
- Irregular astigmatism
- Astigmatism differences between the two eyes
- Younger patients

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Day of Procedure

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Day of Procedure

- Repeat scans (auto, topography, orb scan, refraction)
- Review process of LASIK/PRK so patient knows what to expect
- Review post-operative expectations/drops/restrictions
- Program iDesign
- Patient is prepped for surgery
- Procedure
- Post-op evaluation – ensure BCL/flap is in good position
- Review post-operative expectations/drops/restrictions

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Post-Op and Comanagement

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Post-op - Medications

- Always suggest patients have drops day of surgery
- Antibiotic/Ocuflox – QID x 1 week
- Steroid/Prednisolone
  - Every 1-2 hours day of surgery
  - LASIK: QID x 1 week
  - PRK: QID x 2 weeks, then taper TID x 1 week, BID x 1 week, QD x 1 week
    - Higher myopes and PRK will get steroid more frequently initially to help with haze
- Prolensa – PRK ONLY, QD x 3 days
- Preservative Free Artificial Tears – Q1-2h
- PRK: Neurontin/Gabapentin for nerve pain x 3 days

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Post-op

- Restrictions
- Comfort:
  - LASIK: discomfort the day of surgery is worst
  - PRK: 2-3 days after surgery can be worst day
  - Best to go home and sleep
- Visual recovery
  - LASIK – instant gratification
  - PRK – same visual outcome but with delayed gratification
    - Greater fluctuation in vision as eye heals

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Follow Up Schedule

- 1 day
- 4 day (PRK only for BCL removal)
- 1 week
- 1 month
- 3 month
- 6 month
- 12 month

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Risks/Complications/Side Effects

- Intraoperative flap complications - Rare
- Early PO period:
  - Haze associated with PRK (Lessened with mitomycin-C and increased steroid)
  - Flap dislocations (emergency)
  - Flap striae (temporary, usually do not interfere with vision)
  - Glare (temporary)
  - Epithelial ingrowth
- Late PO period:
  - Regression/residual Rx - seen with higher myopes
  - Can do PRK over LASIK, enhancement

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Post-op Dryness - Most Common

Temporary denervation of cornea from flap creation/damage to afferent sensory nerves

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Decreased corneal sensitivity

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Decreased blink rate

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Poor meibomian gland function/excretion

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Tear evaporation and decreased tearing

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Broken feedback loop

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Post-op Dryness

- LASIK > PRK
- Stress AT use - preservative-free fundamental to treatment
- Typically lasts first few months. Rarely is it a long-term issue > 1 year (<1%)
- Can consider:
  - Xiidra/Restasis
  - Eysuvis
  - Ointment at night
  - Hot compresses/MGD management
  - Punctal plugs

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Patient Examples

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LASIK Example: 38-year-old CF

- Active mom of 2.
- Tired of wearing glasses. Wears her CL from ~6:30 am to 9/10 pm
- Vision Testing

	OD	OS
Current Glasses	-2.50 sph	-2.50 sph
Autorefraction	-3.25 -0.50 x 004	-3.00 -0.25 x 107
Dry Refraction	-2.50 sph	-2.25 -0.50 x 085
Cyclo Refraction	-2.25 sph	-2.25 -0.50 x 090
VA	20/20	20/20

- Exam: Anterior and posterior segment wnl

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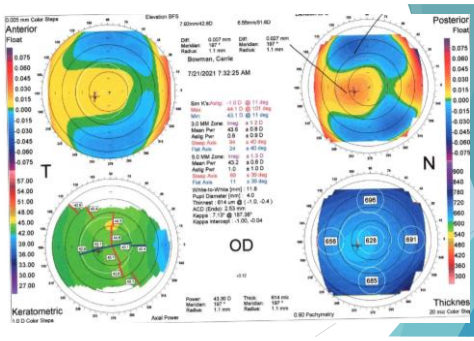

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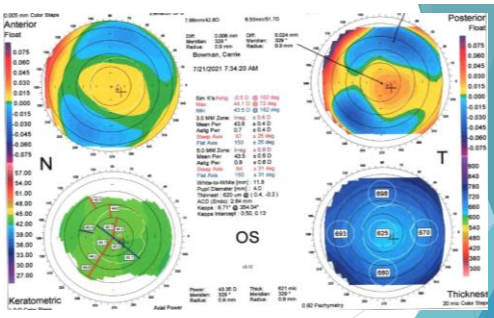

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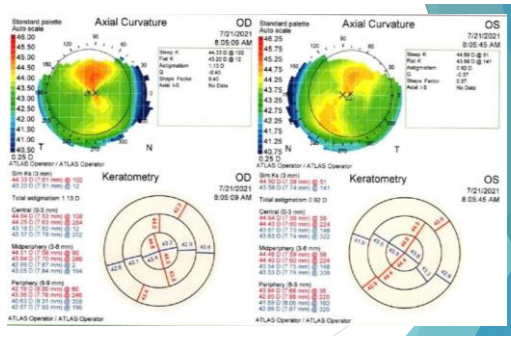

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LASIK Post-op Exams

- 1 day PO:
  - VA 20/20 OD, OS
  - Flap in good position
  - Subconjunctival hemorrhage d/t laser
- 1 week PO:
  - VA 20/20 OD, OS
  - Noted slight irritation and halos around lights
- 1 month PO:
  - VA 20/20 OD, OS
  - Still notes glare. Poor oily tear film noted

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PRK Example: 38-year-old CM

- No CL wear
- Active with sports: golf, softball
- Vision Testing:

	OD	OS
Current Glasses	+0.25 -2.00 x 054	PL -1.25 x 160
Autorefraction	+0.25 -1.75 x 044	+0.50 -1.25 x 162
Dry Refraction	+0.50 -1.75 x 045	+0.25 -1.25 x 165
Cyclo Refraction	+0.75 -2.00 x 050	+0.75 -1.25 x 165
VA	20/20	20/20

- Exam: Anterior and posterior segment wnl

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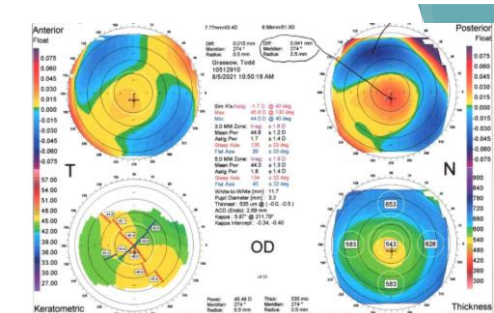

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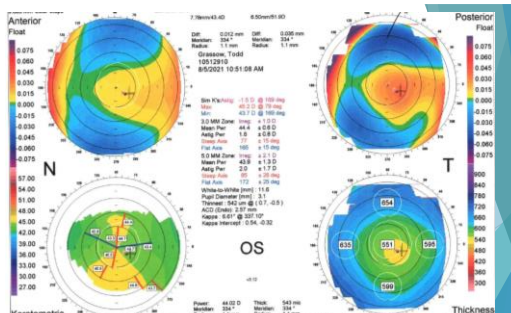

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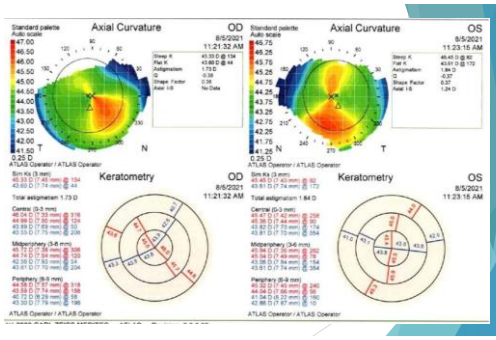

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PRK Post-ops Exams

- 1 Day PO
  - VA 20/20 OD, OS
  - BCL in good position
  - Epi at edges with central stream of cells
- 4 day PO
  - VA OD: 20/40-1 PH 20/25; OS: 20/50+2 PH 20/20
  - Epithelium healed, BCL removed
- 1 week PO
  - VA OD: 20/40-1 PH 20/20; OS: 20/40 PH 20/20
- 1 month PO
  - VA 20/15 OD, OS

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QUESTIONS?

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