SURGICAL CORRECTION OF ASTIGMATISM

FINANCIAL DISCLOSURES

- None

REFRACTIVE ERRORS

GLASSES

- \((+/-)\) Sphere + Astigmatism \(\times\) Axis

- \(-5.00 + 0.75 \times 090\)

ASTIGMATISM

- Mild, moderate or high
- Regular or irregular
- High irregular astigmatism - Keratoconus
- Surgical options treat REGULAR astigmatism > 0.75D

SURGICAL OPTIONS

- Corneal Procedures:
  - PRK/LASIK - Excimer laser
  - Conductive keratoplasty
  - INTACS - Corneal Inlays
  - Limbal Relaxing Incisions (LRI) / Astigmatic Keratotomy (AK)

- Intraocular Procedures:
  - Toric intraocular lens (IOL)
  - Phakic IOLS
**EXCIMER LASER**

**Surface Treatment**
- PRK
- Photorefractive keratectomy

**LASIK**
- Laser Assisted in-situ Keratomileusis

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**ASTIGMATISM AND CATARACTS**

- Choice of treatment based on degree of astigmatism
  - <1D of astigmatism place the cataract incision on the step axis
  - 1-3 D can be treated with special peripheral corneal relaxing incisions
  - 1-4.5 D treated with toric lens
  - Methods can be combined to treat higher degrees of astigmatism

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**CORNEAL ASTIGMATISM**

- Carefully measure corneal astigmatism preoperatively
- Multiple techniques: manual Ks, topography, IOL master/lenstar
- Check consistency of keratometry measurements
- Rule out keratoconus

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**CORNEAL INCISIONS**

- Various types: astigmatic keratectomy, limbal relaxing incisions
- Incisions performed in the peripheral cornea
- 90% depth of cornea
- Longer incisions reduce more astigmatism but also cut corneal nerve- dry eyes
- Under or over correction
- Development of irregular astigmatism

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**EXCIMER LASER**

- Reshape the cornea
- Treat healthy eyes that have astigmatism AND either hyperopia or myopia
- Does not treat presbyopia
LRI

- Premium lens that can be placed at the time of cataract surgery
- Higher degrees of astigmatism can be corrected (4.5 diopters)
- Contraindicated if capsule is compromised
- Alignment critical
MARK THE EYE
ALIGN THE LENS

TORIC VS CORNEAL INCISIONS

Torics
- More predictable result
- Higher level of astigmatism corrected
- No dry eye potential

Corneal Incisions
- Cheaper
- Can do without simultaneous cataract surgery
- Can be done if a lens cannot be placed in the capsular bag
- Combined with other premium lenses

SUMMARY

- Several options for astigmatism correction
- Refractive surgery
- Corneal incisions
- Premium Lens technology
- Tailored to individual patient
- Not covered by insurance

THANK YOU!