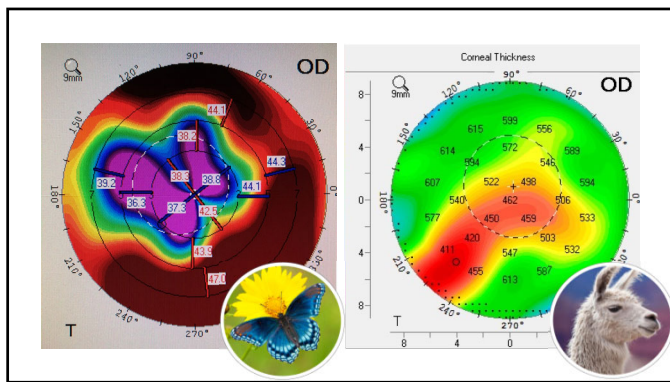


**Irregular Cornea and Cataract:
Who Goes First?**

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Objectives

- ▶ Identify common causes of unreliable preoperative keratometry
- ▶ Understand patient-specific thresholds for treating corneal pathology first
- ▶ Review planning considerations when cataract surgery is first



Ocular Surface Disease

Incidence up to 22%

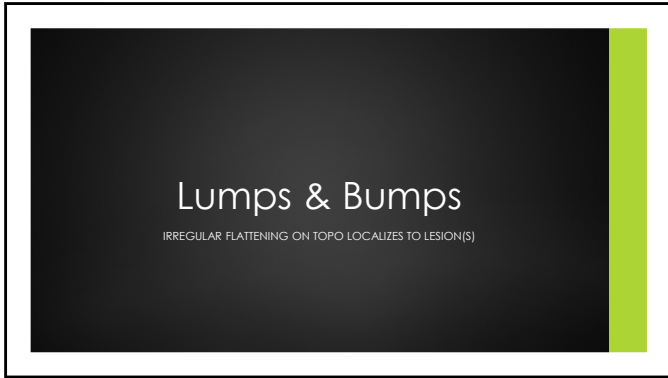
Moss SE, et al. Optom Vis Sci 2008

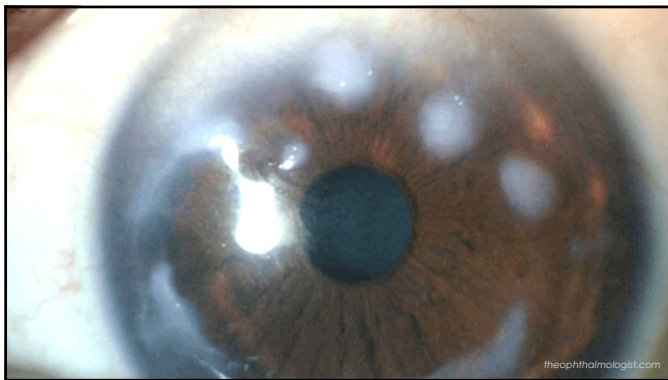
ASCRS

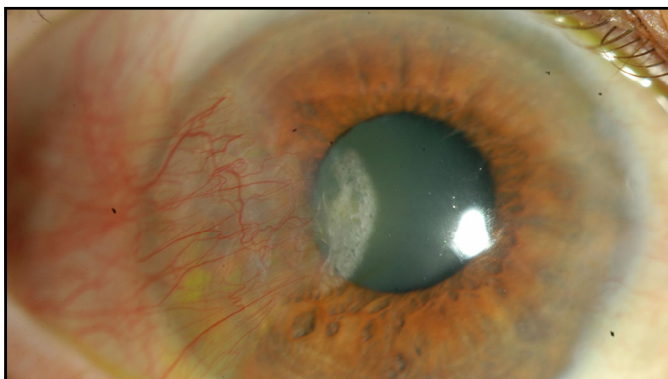
ASCRS PREOPERATIVE OSD ALGORITHM

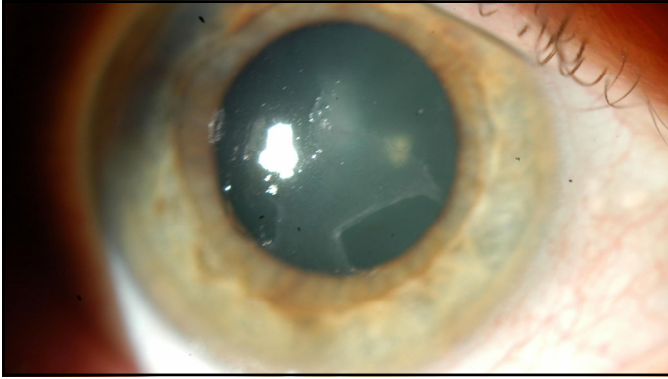
Contact Lens Warpage

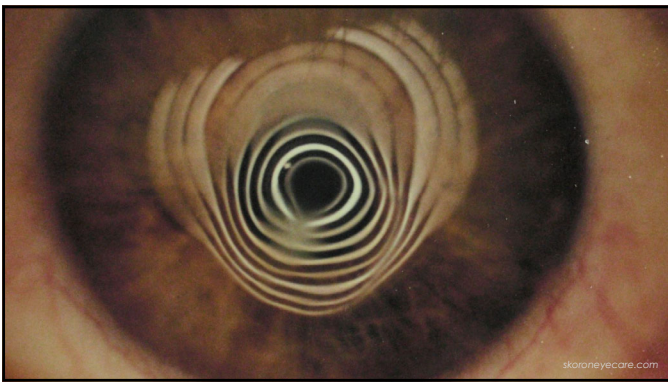
- Incidence up to 12% (Wang X, et al. CLAO J 2002)
- SCL, 2-4 wks (Wang X, et al. CLAO J 2002)
- RGP, 9 wks (Wang X, et al. CLAO J 2002)
- SCL, 2 wks (Hashemi H, et al. Cont Lens Ant Eye 2008)
- SCL, 1-3 wks (Rayess Y, et al. CJO 2018)
- RGP, 3-9 wks (Tsai PS, et al. JCRS 2004)
- In general, RGP and long-term wearers at higher risk

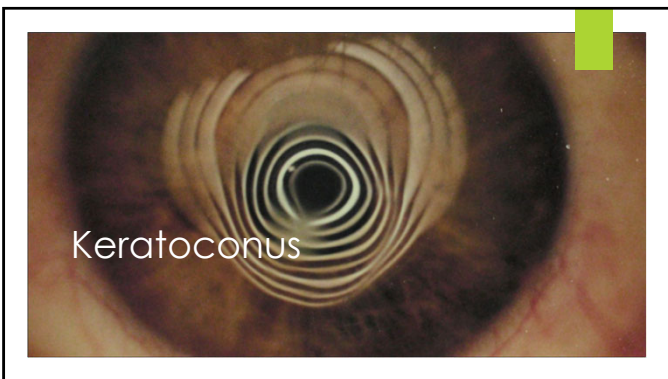






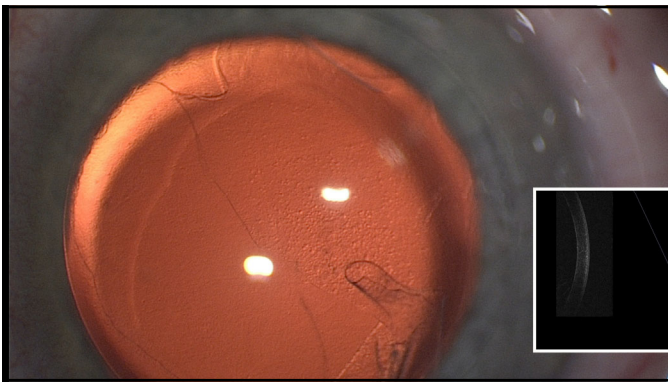


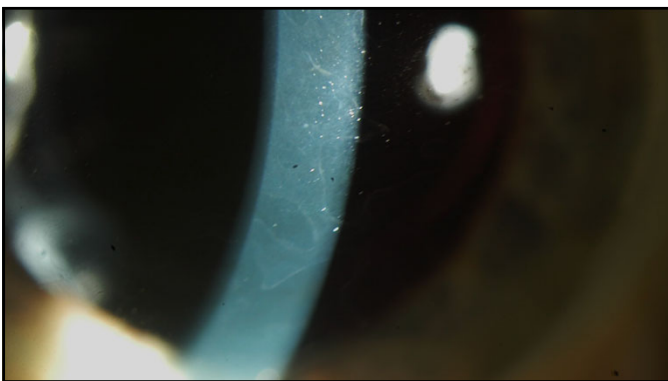


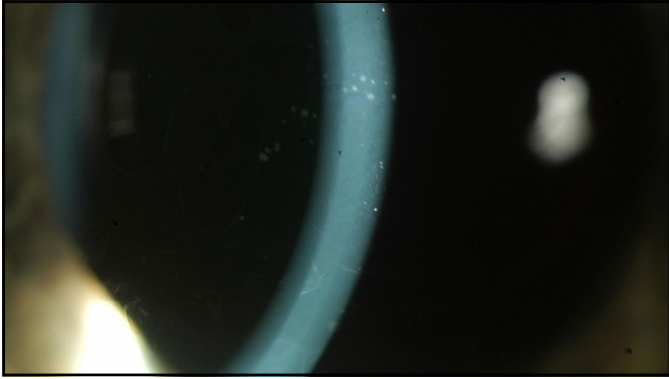


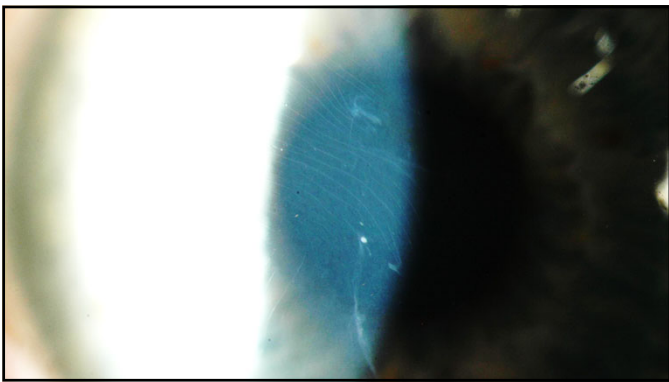
Keratoconus

Corneal Dystrophies

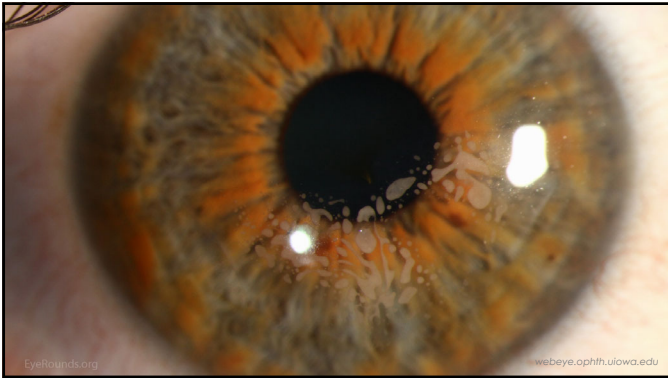


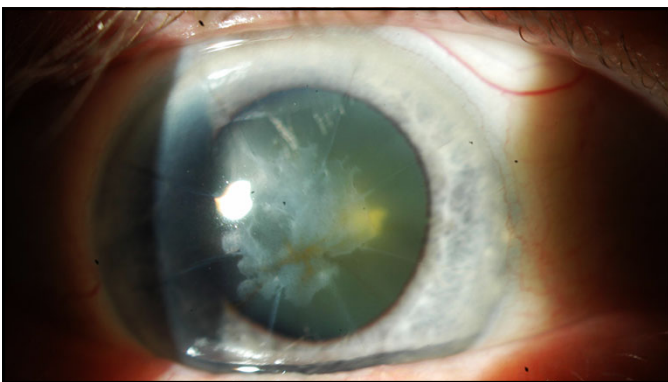


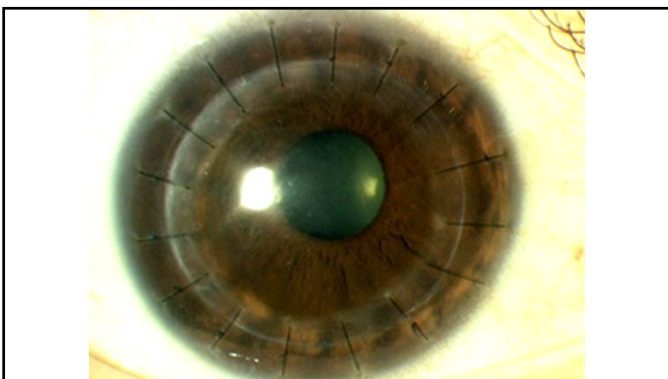












Objectives

- ▶ Identify common causes of unreliable preoperative keratometry
- ▶ **Understand patient-specific thresholds for treating corneal pathology first**
- ▶ Review planning considerations when cataract surgery is first

Recommended Keratometric Accuracy

- ▶ Average K: everyone
- ▶ Cylinder: toric and presbyopia correcting IOL candidates
- ▶ Is it regular?
- ▶ Is the corneal condition progressive?
- ▶ Will treatment of the corneal condition change K's?
- ▶ "Measure twice, cut once"
- ▶ Outside-in approach

Objectives

- ▶ Identify common causes of unreliable preoperative keratometry
- ▶ Understand patient-specific thresholds for treating corneal pathology first
- ▶ **Review planning considerations when cataract surgery is first**

Case by Case

- ▶ Provide supplemental patient counseling
- ▶ OSD & CLW: N/A
- ▶ Nodular degeneration & PTG: rethink toric
- ▶ Central scar: N/A
- ▶ KCN: **anticipate hyperopic surprise**, rethink toric
 - ▶ Use SRK/T formula^{1,2}
 - ▶ Aim -1.0 D for K<48, -1.75 D for 48 <K< 55, -2.4 D for K>55 (use standard K = 43.25)¹

1. Watson MP, et al. BJO 2014
2. Savini G, et al. JCRS 2019

Case by Case

- ▶ FED: **anticipate hyperopic surprise**, rethink toric
 - ▶ Mild: aim -0.25 to -0.5, whether DMEK expected or not^{1,2}
 - ▶ Mod-sev: aim -0.5 to -1.0, but consider triple procedure²
- ▶ ABMD: rethink toric
- ▶ Prior LVC: use ASCRS calculator
- ▶ Prior RK: anticipate hyperopic shift and diurnal variation, rethink toric
- ▶ Prior PK: rethink toric

1. Wacker K, et al. Ophthalmology 2018
2. Schoenberg ED, et al. JCRS 2015

Case Review #1

- ▶ 60yo male p/w VS cataract and 2 mm nasal pterygium
- ▶ Ks 44.00 @180, Kf 42.00 @90
- ▶ He desires a toric IOL
- ▶ Cornea first or cataract?

Case Review #2

- ▶ 90yo male p/w VS cataract and stable 2 mm nasal pterygium
- ▶ Ks 44.00 @180, Kf 42.00 @90
- ▶ He desires a toric IOL
- ▶ Cornea first or cataract?

Case Review #3

- ▶ 90yo male p/w VS cataract and 8mm V x 2 mm H temporal pterygium
- ▶ Ks 44.00 @180, Kf 42.00 @90
- ▶ He doesn't mind wearing glasses
- ▶ Very deep orbits
- ▶ Cornea first or cataract?

Case Review #4

- ▶ 55yo male p/w VS cataract and moderate KCN
- ▶ Mainly regular astigmatism
- ▶ RGP lens intolerant
- ▶ He desires a toric IOL
- ▶ Cornea first or cataract?

Case Review #5

- ▶ 55yo male p/w VS cataract and moderate KCN
- ▶ Irregular astigmatism
- ▶ RGP lens tolerant
- ▶ He desires a toric IOL
- ▶ Cornea first or cataract?

Case Review #6

- ▶ 55yo male p/w VS cataract and moderate KCN
- ▶ Irregular astigmatism
- ▶ RGP lens intolerant
- ▶ He desires a toric IOL
- ▶ Cornea first or cataract?

Case Review #7

- ▶ 65yo female p/w VS cataract and FED with AM blur
- ▶ She desires a presbyopia-correcting IOL
- ▶ Cornea first or cataract?

Case Review #8

- ▶ 65yo male p/w VS cataract and 8-cut RK
- ▶ AM MRx +2.50 +2.50 x45
- ▶ PM MRx +1.00 +2.50 x45
- ▶ He desires a presbyopia-correcting IOL
- ▶ Cornea first or cataract?

Summary

- ▶ Unreliable preoperative keratometry warrants eval and mgt
- ▶ Most modern cataract surgery patients have high refractive expectations which usually indicates eval and mgt of corneal pathology first
- ▶ When performing cataract surgery in the context of untreated corneal pathology, adjust the plan (and expectations) accordingly
