

Pentacam HD & AXL

How to Utilize the Holladay Report in a Cataract and Refractive Clinic

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Purpose of Holladay Report

- To facilitate the presentation of information for the busy cataract and refractive surgeon to provide the highest quality care

3/29/2018 JTH 2

Miscellaneous Settings

Version 1.21r33+ (25.01.2018)

3/29/2018 JTH

Display Setting are Fixed

Same Exact Exam w User Adjustment

Overlays

- Black & White Dashed Perimeter: Pupil Margin
- Black & White Plus Sign: Pupil Center
- Black Brackets: Limbal and Iris Geometric Center
- White Circle with Black Dot: Vertex Normal (Visual Axis)
- Small Black Circle: Minimum Pachymetry

Upper Middle Panel

Equiv K-Readings 65 (4.5mm Zone)			Details
EKR65 Flat K1:	42.97 D (177 °)	Q (6.0mm):	-0.23
EKR65 Steep K2:	45.66 D (87 °)	Total SA: Z(4+6+8,0)	+0.244 μm
EKR65 Mean:	44.31 D	Radial Ratio (B/F):	82.6 %
Astig EKR65:	2.69 D	RMS HOA WE (6mm):	0.300 μm

- EKR65: Flat, Steep and Astig – Use for IOL Calcs
- Total SA: Match with available Aspheric IOLs – 0.00, -0.18 & -0.27 μm
- RMS HOA WE (6 mm): Mean = 0.370μm, > 0.660μm concern, > 1.000μm already has retinal image problems due to cornea

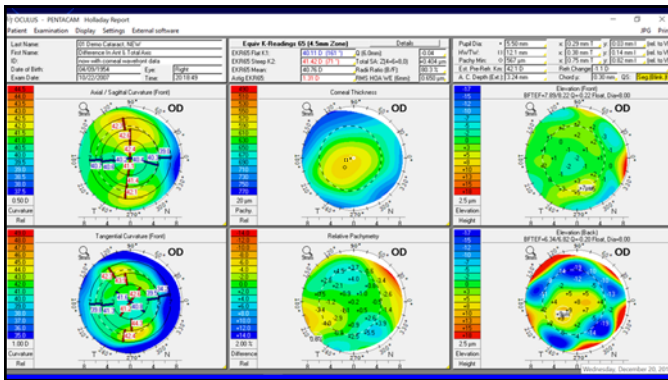
3/29/2018 JTH 7

Upper Right Panel

Pupil Dia:	+ 3.80 mm	x: 0.08 mm T	y: 0.02 mm S	rel. to VN
HWTW:	12.1 mm	x: 0.38 mm T	y: 0.14 mm I	rel. to VN
Pachy Min:	550 μm	x: 0.67 mm T	y: 0.40 mm I	rel. to VN
Est. Pre-Ref. Km:	44.5 D	Refr. Change:	+0.2 D	
A. C. Depth [Ext.]:	3.96 mm	Chord μ:	0.08 mm	QS: OK

- Pupil Diameter: 3 to 4 mm in photopic conditions
- HWTW: Diameter and location of the Chord of Angle Alpha
- Pachy Min: Location Temporal, but rarely Inferior more than 0.61 mm
- Estimated Pre Refractive Sx Mean K: For IOL Calc Double K method
- External ACD: For IOL Calcs
- Refractive Change from Refractive Sx: 0.0 in Virgin corneas
- Chord μ: normal 0.20 ± 0.11 mm, > 0.42 mm ↑ glare & halos multifocal

3/29/2018 JTH 8

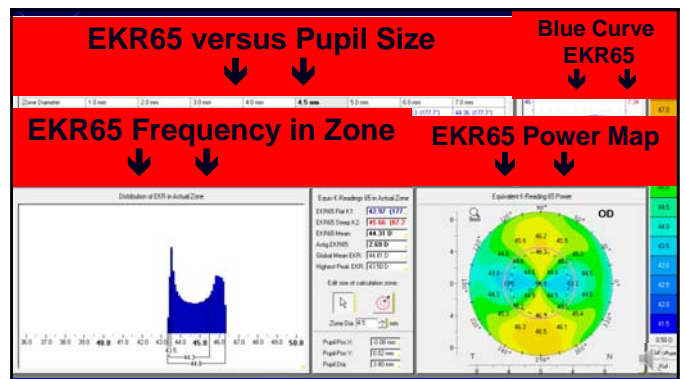
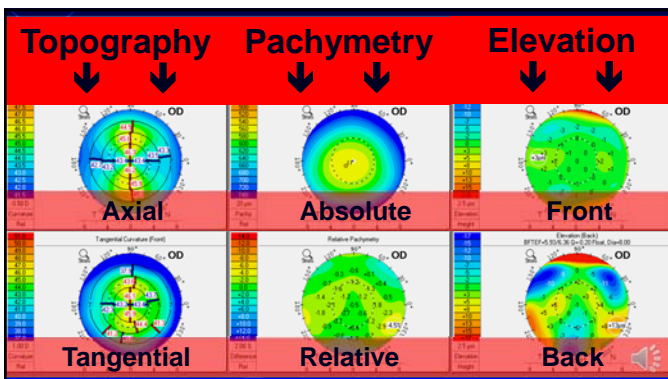


Six Color Maps

- Column 1: Topography
- Column 2: Corneal Thickness
- Column 3: Elevation

Blue and Green = Normal
Yellow = Suspicious
Red = Abnormal

3/29/2018 JTH 10



IOL Power Calculations

- Pentacam can measure FRONT & BACK SURFACE POWER
- Can Calculate:
 - Equivalent K-Reading (EKR65)
 - **65% Mean**, Peak & Average
 - Not **NET POWER**, which is ~1 D less

3/29/2018 JTH 13

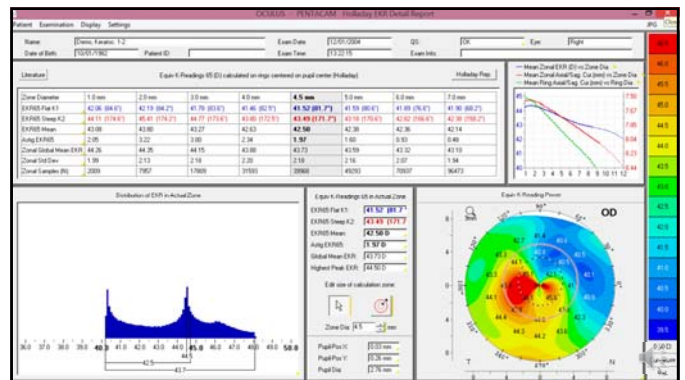
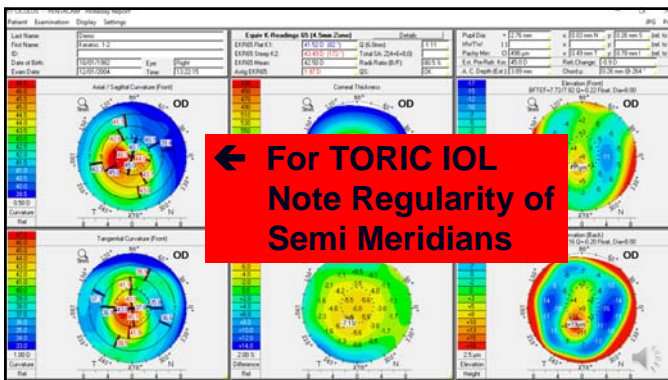
EKR65

- Reports Keratometry value but adjusts for Back Surface Power from Normal (Current IOL Formulas)
- If corneal front surface is 7.5 mm (45 D), but if back surface -0.3 D > normal:

$$\text{EKR} = 45.0 - 0.3 = 44.7 \text{ D}$$

Note: Net Power = 43.3 D

3/29/2018 JTH 14

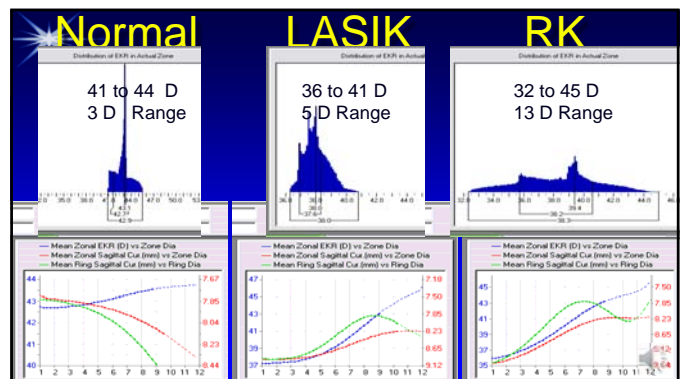


IOL Calcs – Abnormal Cornea

(Use **65% MEAN EKR**)

- Post Refractive Surgery
- Post PKP
- Keratoconus
- Corneal Scar
- Any Irregular Astigmatism

3/29/2018 JTH 17



Conclusions

- EKR – Use EKR65 for all IOL Calcs
- Look @ smaller zones than 4.5 mm if pupil very small (< 3.0 mm in dim light)

3/29/2018 JTH 19

Detection of Thinning Disorders

- **Normal Vertical location** of Pachy Min (Mean = -0.19 ± 0.21 mm), **> -0.61 mm** ↓
- Hot spot on Topography Maps
- Hot spot on Relative Pachy Map
- Hot spot on F & B Elevation Maps

3/29/2018 JTH 20

