Newsletter 2021 July for HOCT-1F

From Huvitz

HOCT-1F

Ver 1.3.2 July 27. 2021

Huvitz Re:define, Re+create

HOCT-1F

Angiography
Biometry
Corneal Topography

How are you? We're very pleased to get in touch with you again.
We hope that everyone overcome COVID19 safely, meet face to face soon.
We're sincerely appreciated all your interests and treatment with our HOCT.

We added two optional functions, Biometry and Corneal Topography in our HOCT in the early of 2021.
We've made them complete after the first release thanks to your advices,
this version 1.3.2 is including all improvements for biometry & topography.
Deep learning algorithm based on AI technology is applied to enhance the analysis of glaucoma.

This version is including the following improvements:

- AL measurement in Biometry let you get SimK such as Kf, Ks for IOL lens consecutively.
- A new sophisticated algorithm Kf, Ks values are applied to calculate SimK so that could be close to those of Refracto-Keratometer.
- Deep learning algorithm based on AI technology is applied to enhance the analysis of glaucoma.
- The dialog box for IOL calculation can be printed.

This is the newsletter summarizing all improvements included into the latest Version 1.3.2 and we are constantly working on other improvements after listening to your advices carefully.

Thank you again for your sincere interest in HOCT. We'll keep going to be with you and your expectation.
I hope that you will enjoy playing with our OCT.

Huvitz Re:define, Re+create

HOCT-1F

Contents

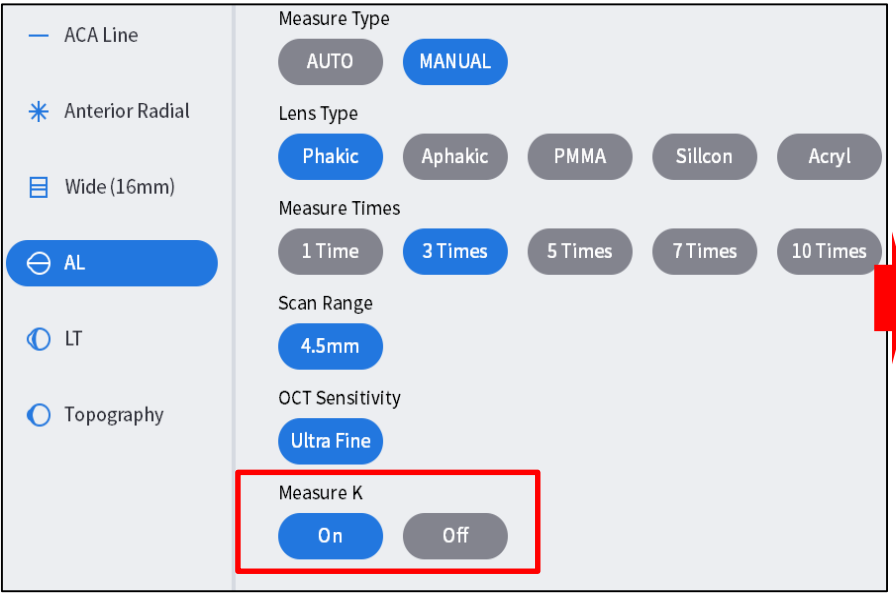
- A consecutive SimK measurement after AL measurement
- SimK values compared to those of ARK-1
- Improved Glaucoma Analysis with AI technology
- Report from IOL calculation page
- Additional information for Corneal Topography
- How to measure a fine Biometry & Corneal Topography.

Huvitz Re:define, Re+create

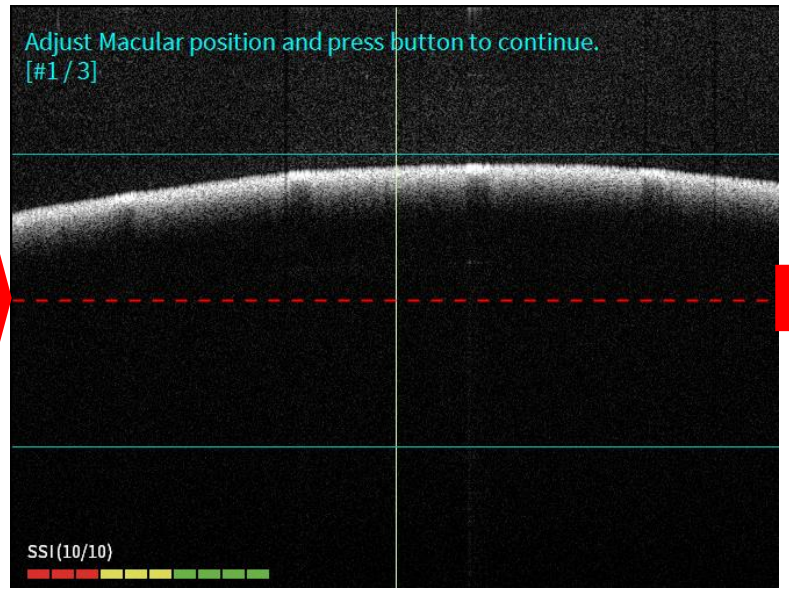
A consecutive SimK after AL measurement

- Measurement Setting
- Getting AL measurement 3times
- Setting a wide anterior lens
- Getting SimK
- Confirming a result

A consecutive measurement of AL and SimK

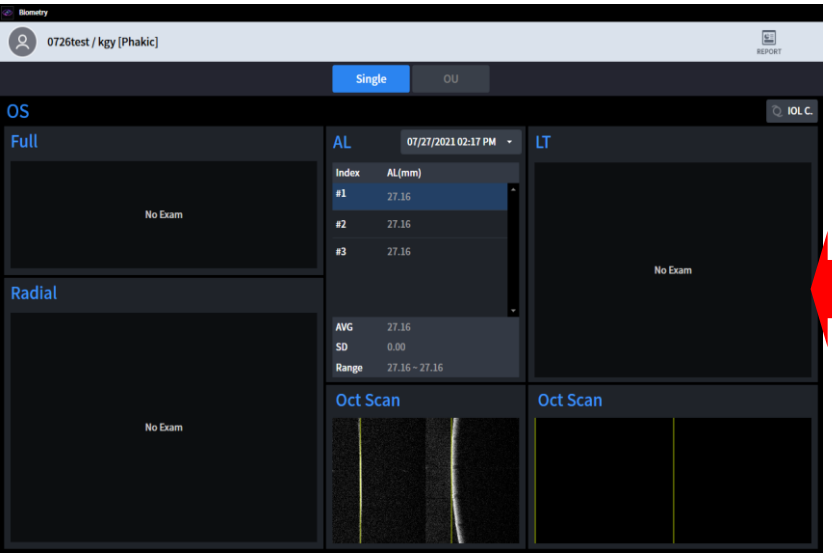


< Selection of Measure K >

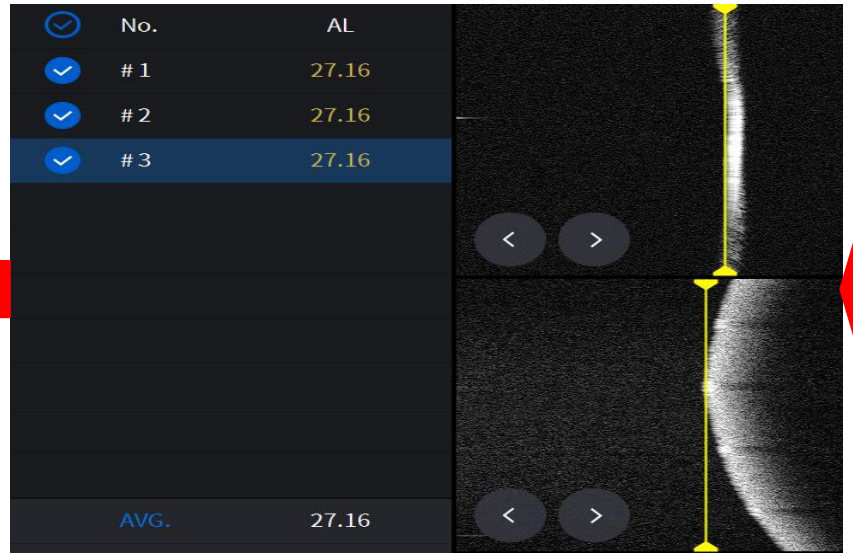


< Adjusting to get AL >

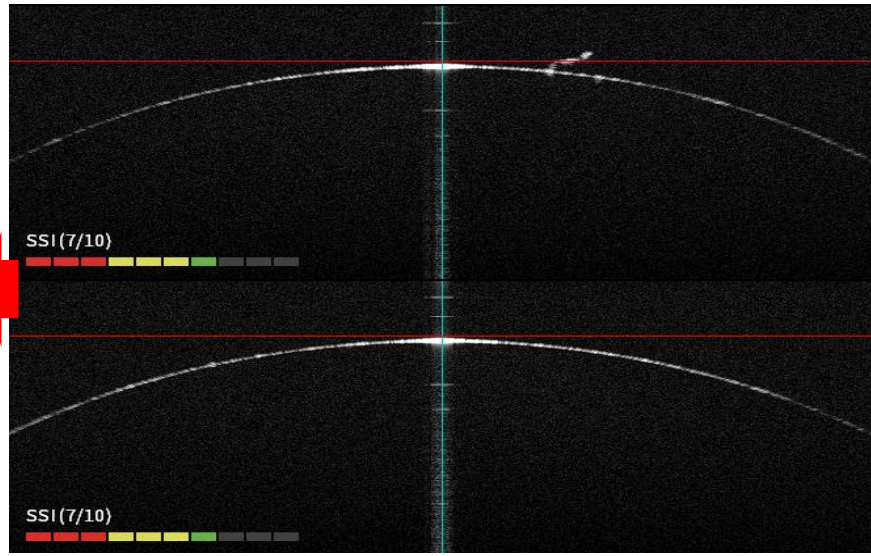
< Setting a wide anterior lens >



< Analysis Page >



< Confirming AL measurement >



< Adjusting to get topography>

SimK values adjusted to be close to those of R/K devices

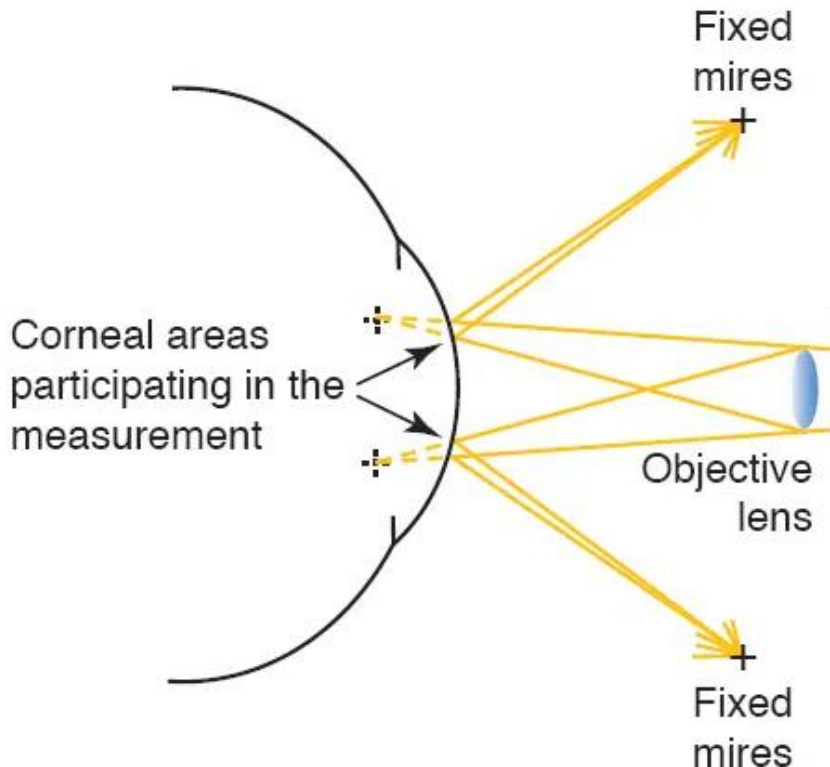
- SimK of a cornea topography
  are derived from curvatures of a wide range of a cornea.

- Curvature of R/K devices
  are derived from curvatures at the central 3mm.

- IOLs
  have been calculated from curvatures of R/K devices.

- SimK om HOCT
  Applies a new sophisticated algorithm to be similar to those of RK devices.

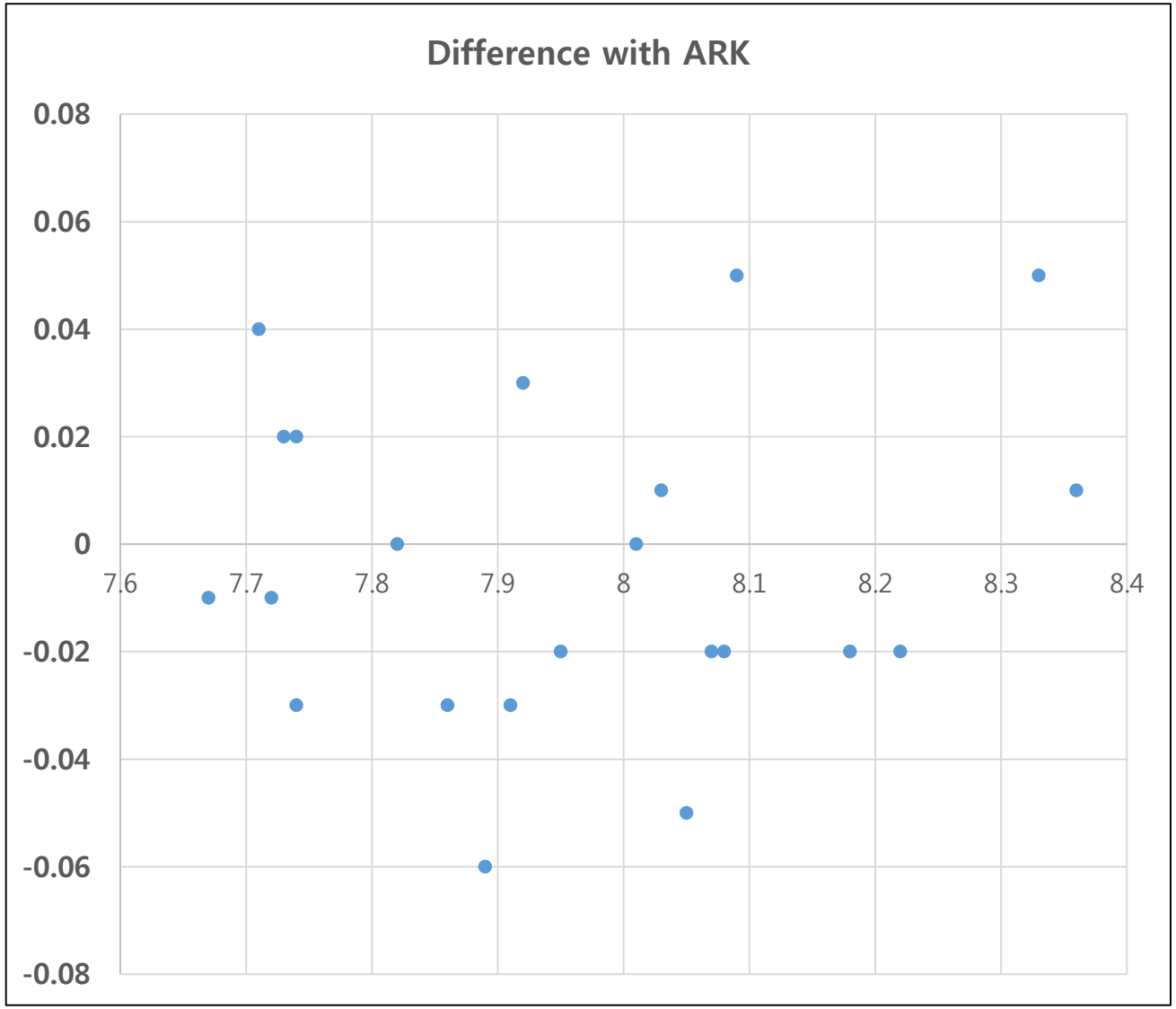
- Result in laboratory
  Our values are compared with those of ARK-1.



* Topography calibration should be done again with Ver 1.3.2

Data

	OD		OS	
	ARK-1	HOCT-1	ARK-1	HOCT-1
	R1	R2	R1	R2
Patient 1	7.71	7.72	7.66	7.67
Patient 2	8.01	8.01	7.93	7.95
Patient 3	8	8.05	8.04	8.03
Patient 4	7.95	7.92	8.06	8.08
Patient 5	7.82	7.82	7.88	7.91
Patient 6	8.38	8.33	8.37	8.36
Patient 7	8.16	8.18	8.2	8.22
Patient 8	7.75	7.71	7.76	7.74
Patient 9	8.05	8.07	8.14	8.09
Patient 10	7.71	7.74	7.75	7.73
Patient 11	7.83	7.86	7.83	7.89
Max Diff	**-0.05**	0.13	**-0.06**	-0.12
Shift	**-0.003**	-0.008	**-0.008**	-0.038



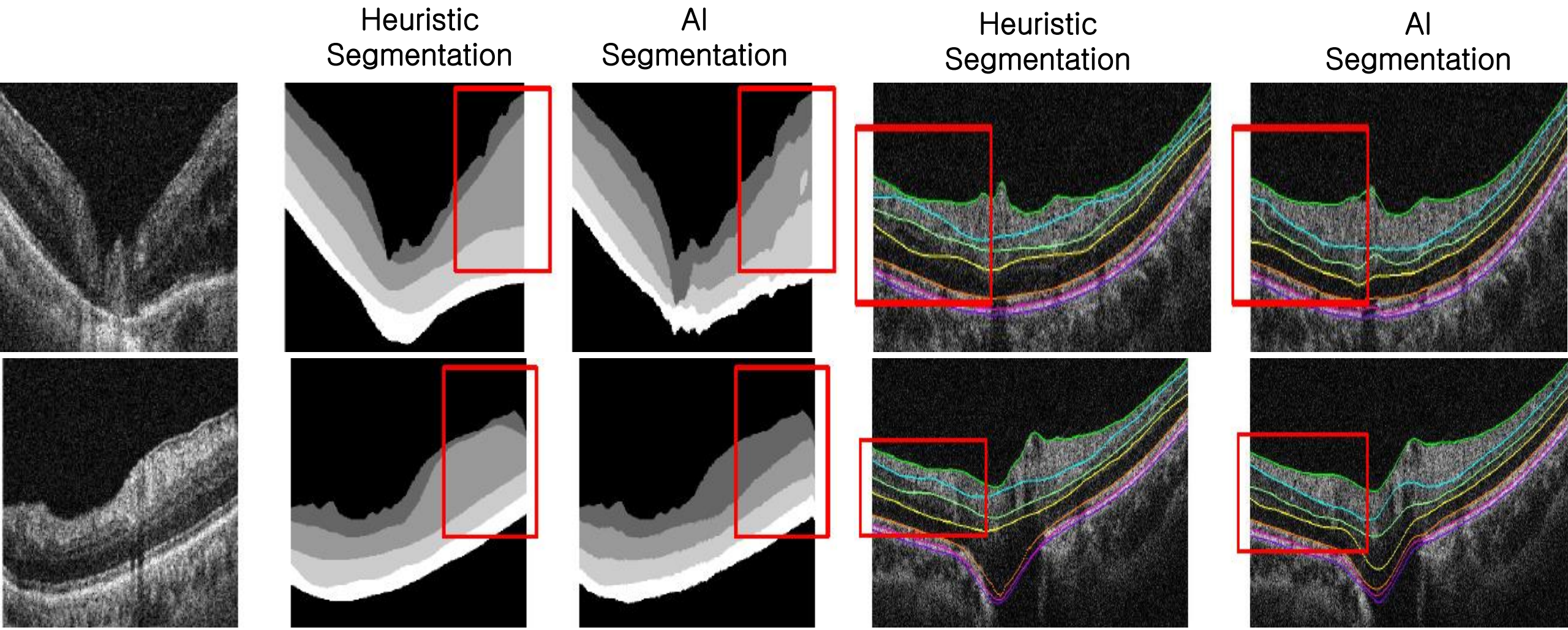
Enhanced Analysis for Glaucoma

- Traditional heuristic segmentation versus Deep Learning
  Deep learning based on AI technology is much more robust than a traditional one.

- Example of the comparison with HOCT and Cirrus
  About TSNIT, Quarter/Clock RNFL chart

- Appendix
  All NFL comparison of old aged people in laboratory between HOCT and Cirrus.

Traditional heuristic segmentation versus Deep Learning

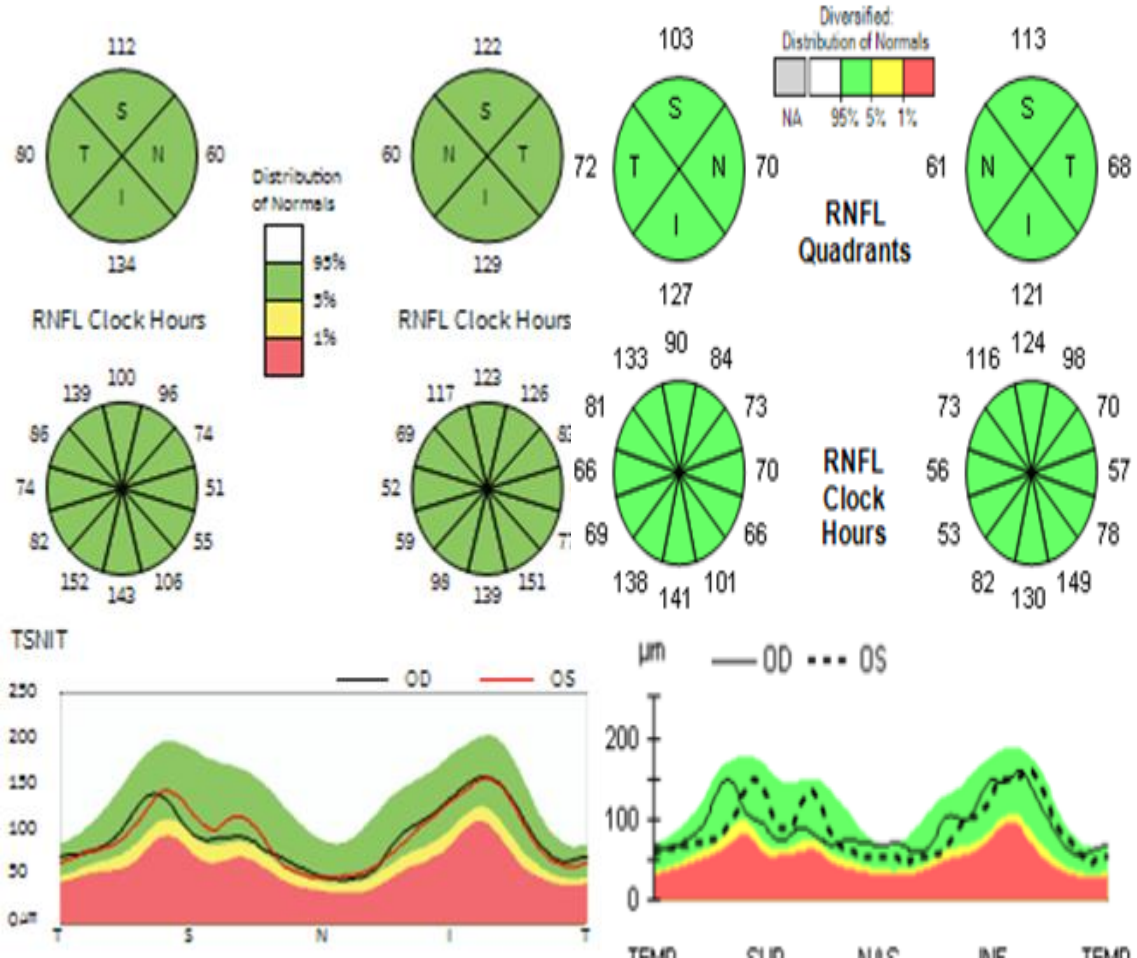


- Deep Learning algorithm based on AI is much more robust than a traditional method especially against a weak signal and a noise.

Comparison between HOCT and Cirrus

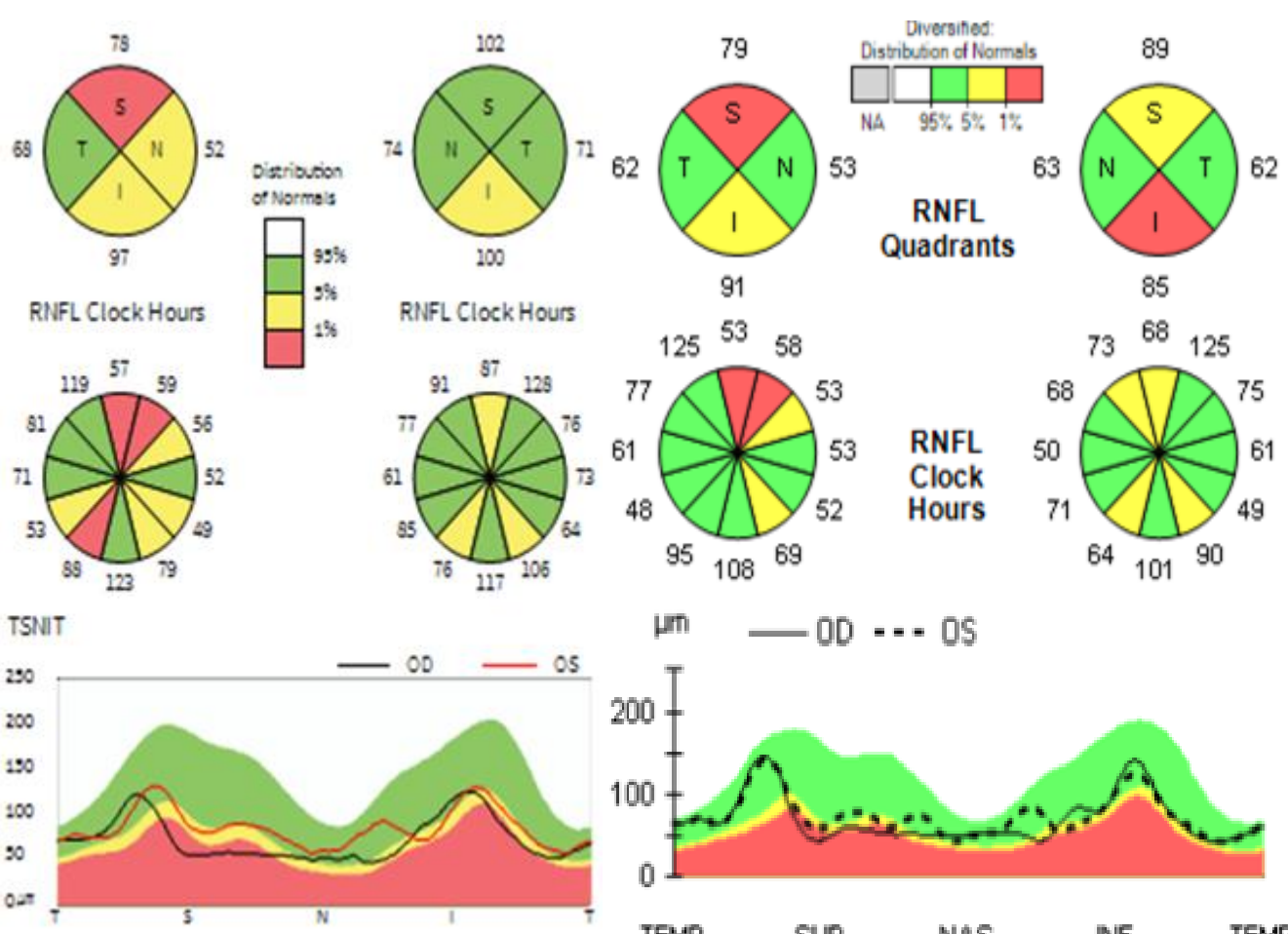
Male
Birthdate: 1974

Normal case

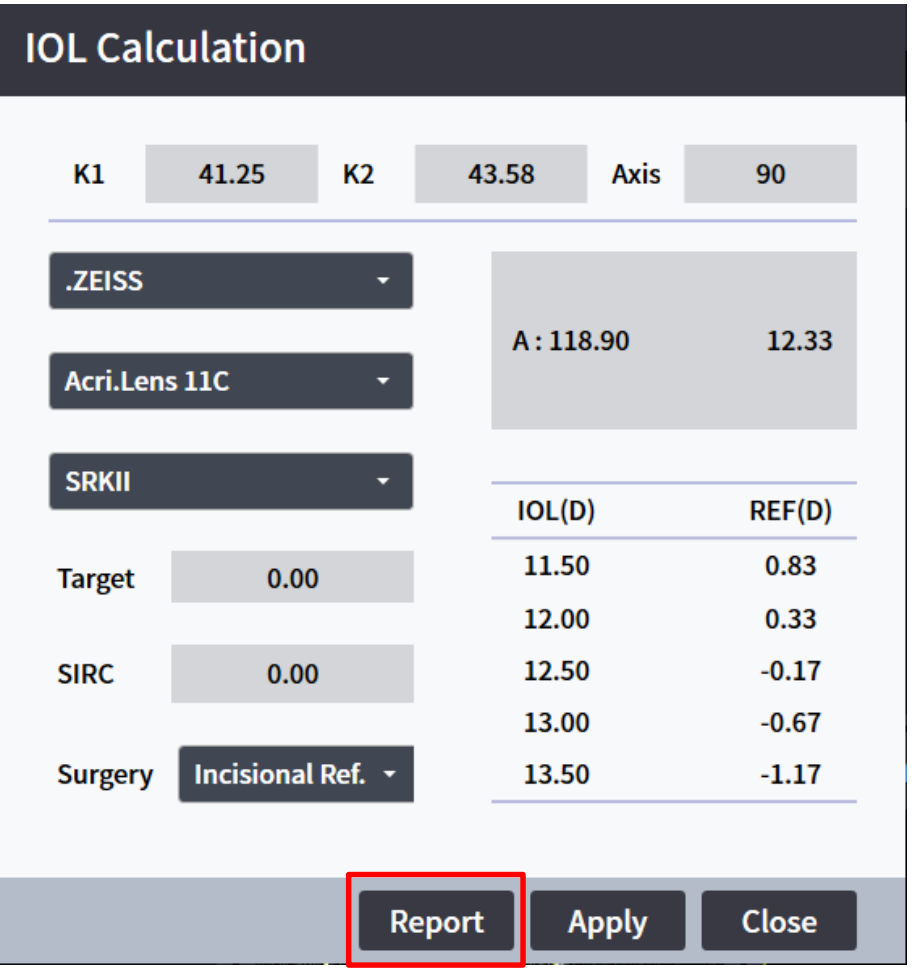


Male
Birthdate: 1976

Suspicious case

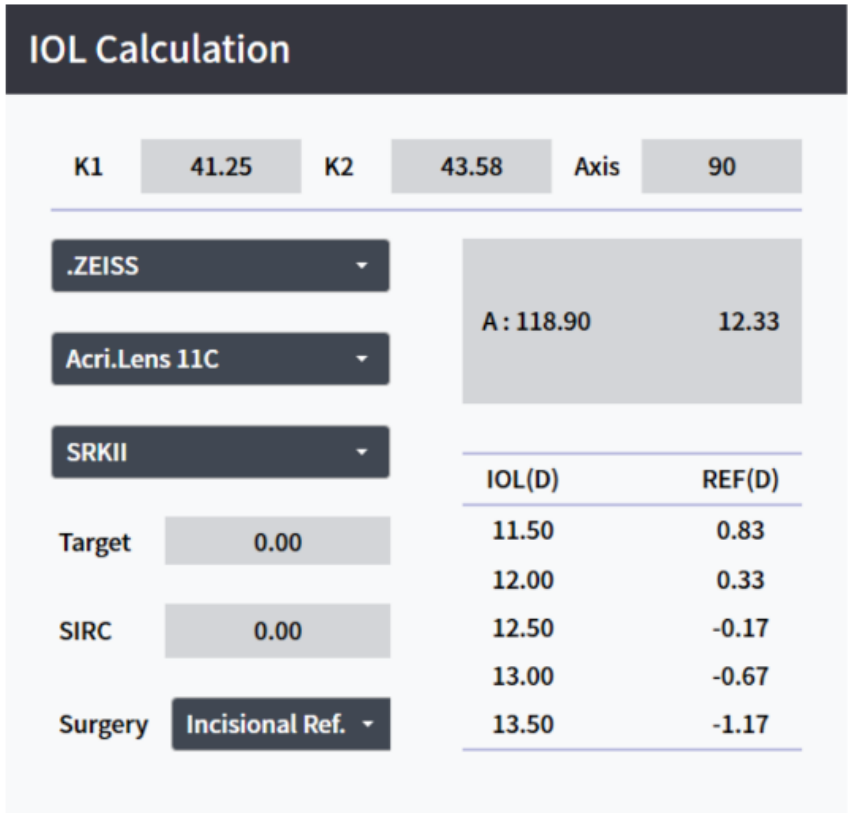


Report for IOL



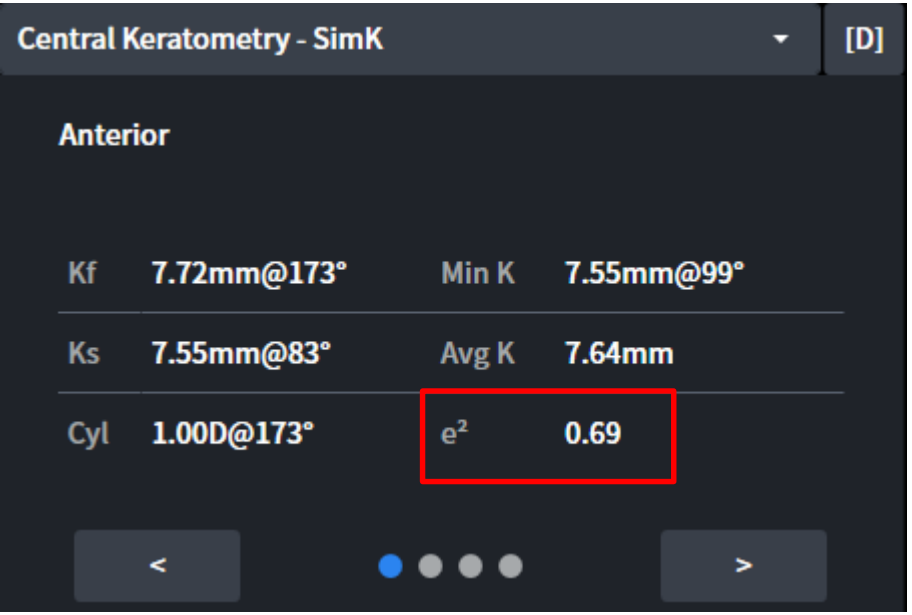
Huvitz Biometry [OS]
8.0x8.0mm / A1024xB16

Name : kgy | Gender : M | Physician : | Exam date : 7/27/2021
Id : 0726_test | DOB : 1/1/1971 | Gender : Asian | Operator : | Exam time : 2:17 PM



Comments | Signature | Info. SN:SN00000000

Additional information for a corneal topography



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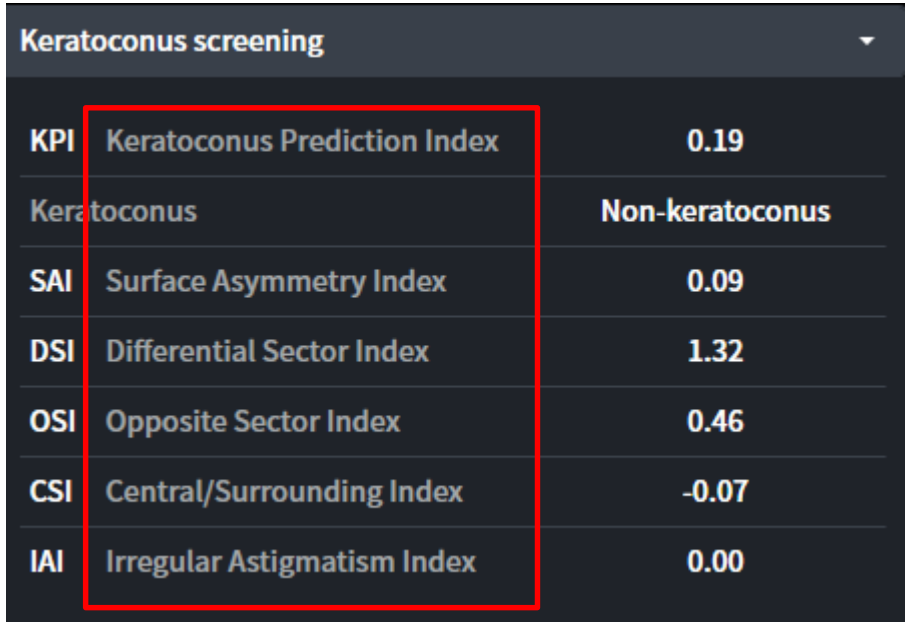

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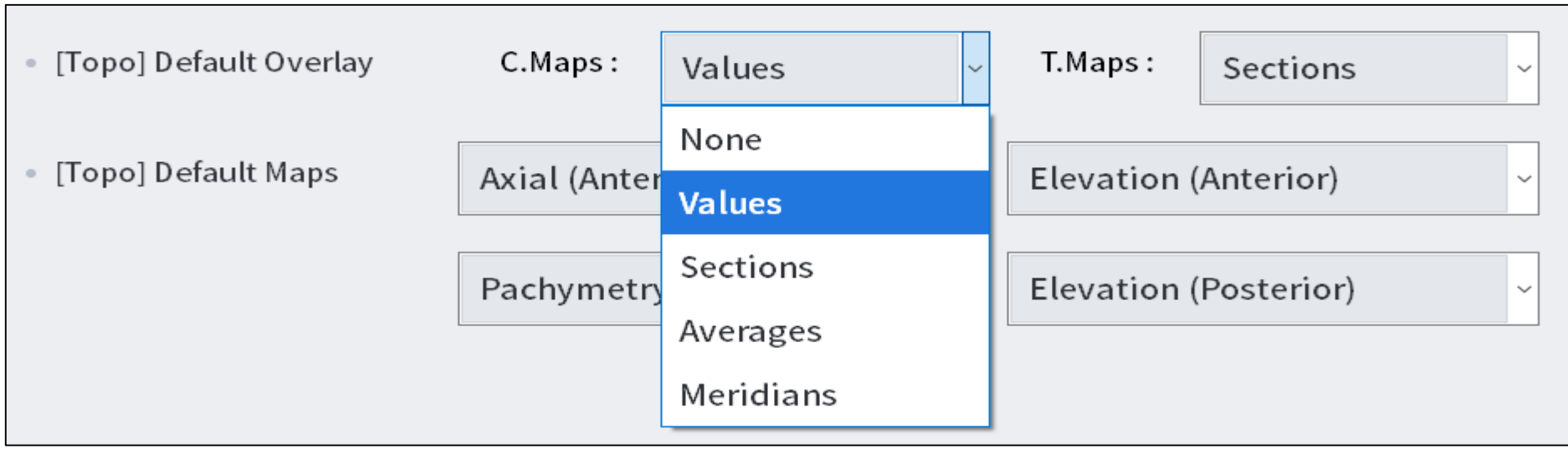


< Layout Setting including Meridian overlay>

RNFL
Comparison Test

Experiment Condition

- HOCT : 5 times, Cirrus : 2times
- HOCT Setting :
  256x256, 512x96, 512x96, 256x256, 256x256
- Cirrus Setting :
  256x256, 256x256

- 9 People : OD & OS

- The following pages consist of
  HOCT 256x256 | HOCT 512x96 | Cirrus 256x256 | Cirrus 256x256

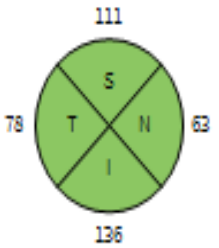
OD OS OD OS

1) Lee_cs (1974)

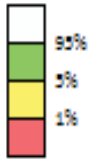
	OD	OS
Average RNFL Thickness	95 µm	89 µm
RNFL Symmetry	86%	
Rim Area	1.15 mm²	1.18 mm²
Disc Area	1.79 mm²	1.81 mm²
Average C/D Ratio	0.59	0.58
Vertical C/D Ratio	0.57	0.59
Cup Volume	0.227 mm³	0.223 mm³

	OD	OS
Average RNFL Thickness	93 µm	90 µm
RNFL Symmetry	74%	
Rim Area	1.09 mm²	1.21 mm²
Disc Area	1.75 mm²	1.81 mm²
Average C/D Ratio	0.60	0.57
Vertical C/D Ratio	0.59	0.57
Cup Volume	0.231 mm³	0.204 mm³

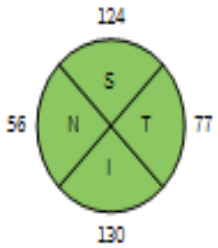
RNFL Quadrant



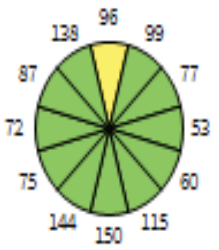
Distribution of Normals



RNFL Quadrant



RNFL Clock Hours



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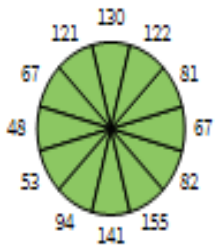
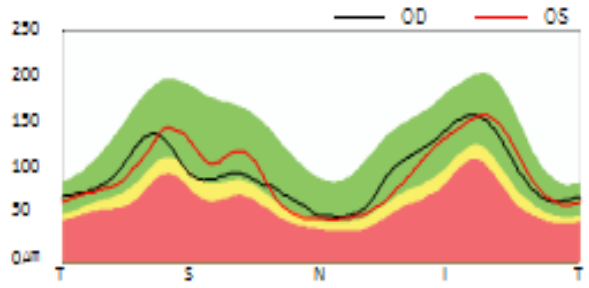
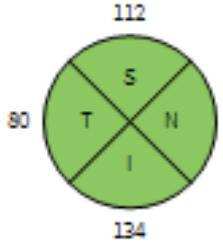


TSNIT

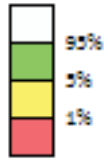


Norm		Summary		Norm
0.72-0.99	88	RNFL Sym. (%)	88	0.72-0.99
98.68-126.12	97	RNFL Avg. (µm)	97	98.68-126.12
0.22-0.80	0.59	C/D Ratio (Vert)	0.53	0.22-0.80
0.06-0.66	0.43	C/D Ratio (Area)	0.40	0.06-0.66
0.87-2.35	1.18	Rim Area (mm)	1.36	0.87-2.35
1.57-3.55	2.08	Disc Area (mm)	2.27	1.57-3.55
0.00-0.42	0.18	Cup Vol. (mm)	0.18	0.00-0.42

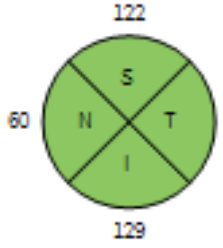
RNFL Quadrant



Distribution of Normals



RNFL Quadrant



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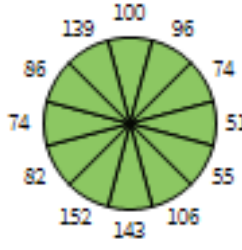

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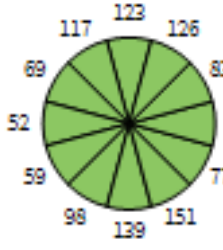

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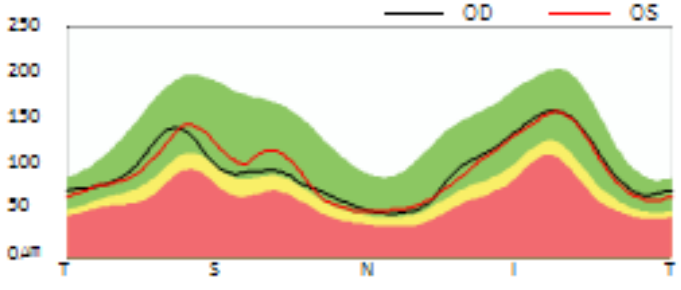

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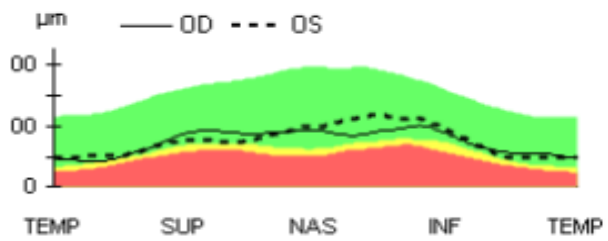
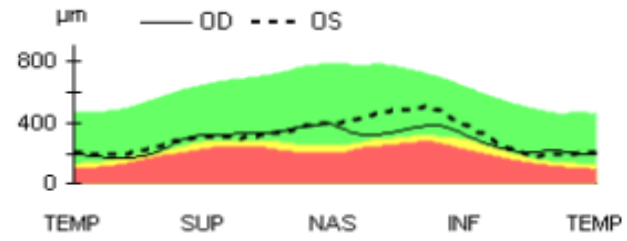
0.22-0.80	0.53	C/D Ratio (Vert)	0.53	0.22-0.80
0.06-0.66	0.42	C/D Ratio (Area)	0.39	0.06-0.66
0.87-2.35	1.25	Rim Area (mm)	1.39	0.87-2.35
1.57-3.55	2.14	Disc Area (mm)	2.27	1.57-3.55
0.00-0.42	0.19	Cup Vol. (mm)	0.17	0.00-0.42

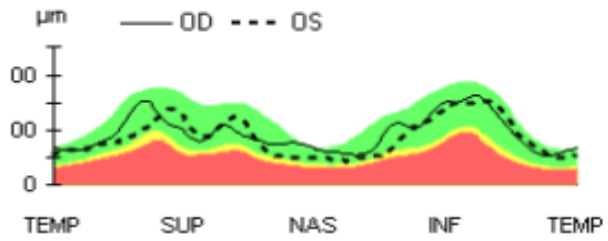
Neuro-retinal Rim Thickness



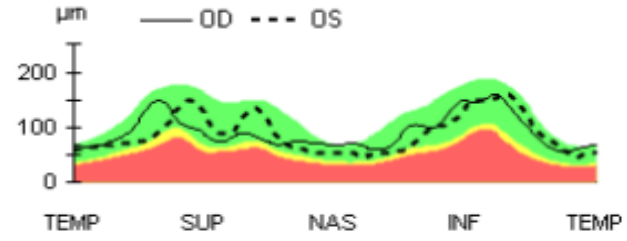
Neuro-retinal Rim Thickness

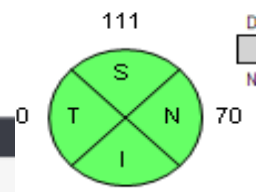


RNFL Thickness

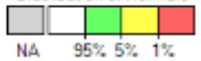


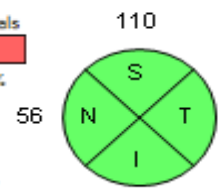
RNFL Thickness



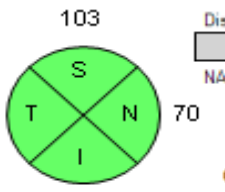


Diversified: Distribution of Normals

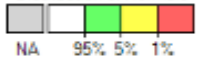


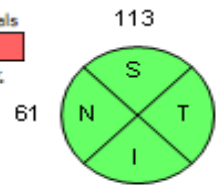


RNFL Quadrants

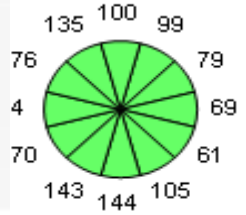


Diversified: Distribution of Normals

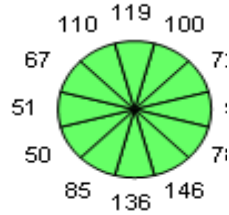


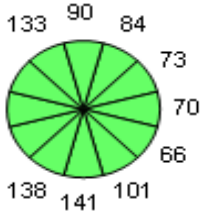


RNFL Quadrants

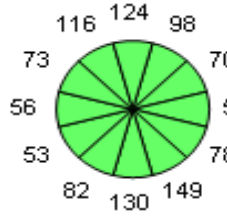


RNFL Clock Hours





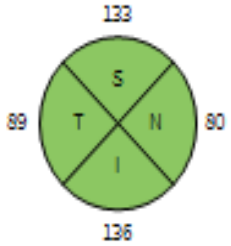
RNFL Clock Hours



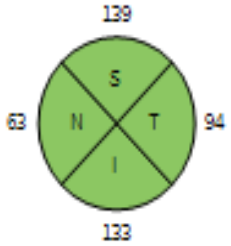
OD OS OD OS

2) Lee_hc (1976)

RNFL Quadrant



RNFL Quadrant



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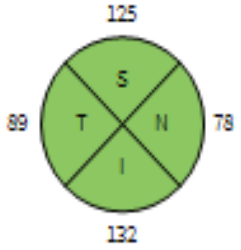
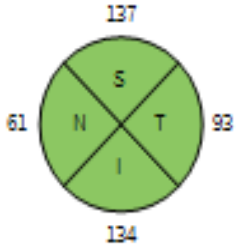
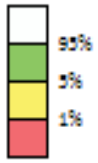


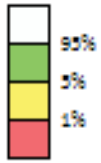
RNFL Quadrant



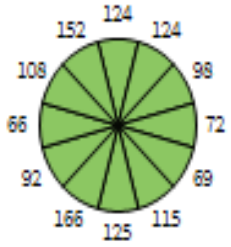
Distribution of Normals



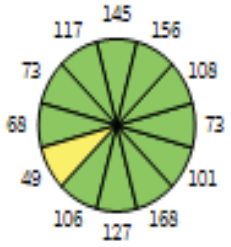
Distribution of Normals



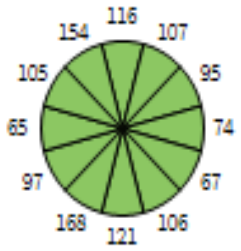
RNFL Clock Hours



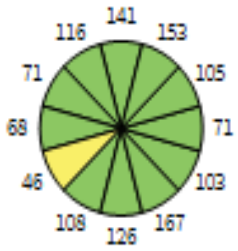
RNFL Clock Hours



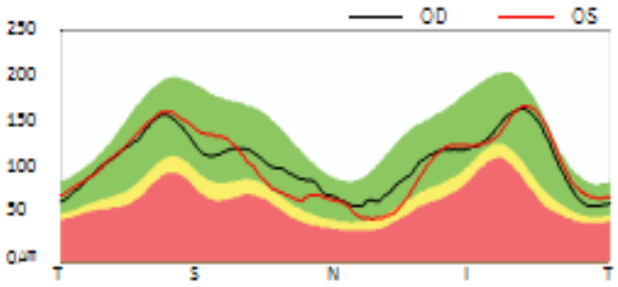
RNFL Clock Hours



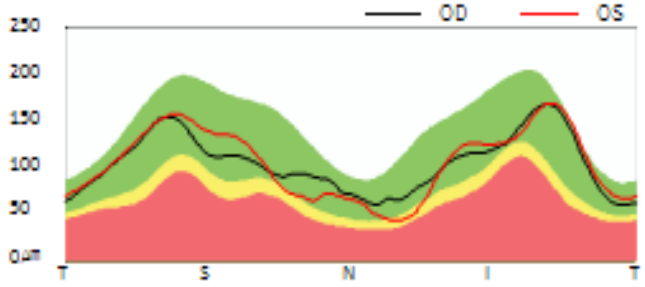
RNFL Clock Hours



TSNIT



TSNIT

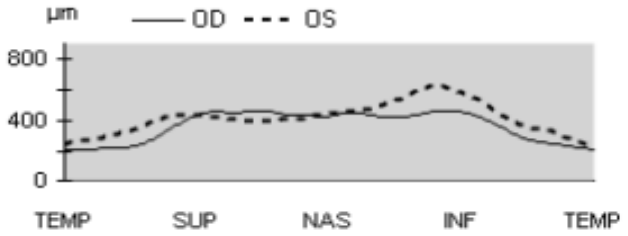


Norm		Summary		Norm	Norm		Summary		Norm
0.73-0.99	93	RNFL Sym. (%)	93	0.73-0.99	0.73-0.99	93	RNFL Sym. (%)	93	0.73-0.99
99.16-126.59	109	RNFL Avg. (um)	107	99.16-126.59	99.00-126.43	106	RNFL Avg. (um)	106	99.00-126.43
0.21-0.79	0.39	C/D Ratio (Vert)	0.35	0.21-0.79	0.21-0.79	0.37	C/D Ratio (Vert)	0.35	0.21-0.79
0.05-0.65	0.22	C/D Ratio (Area)	0.21	0.05-0.65	0.06-0.65	0.22	C/D Ratio (Area)	0.21	0.06-0.65
0.88-2.36	1.31	Rim Area (mm)	1.17	0.88-2.36	0.88-2.36	1.24	Rim Area (mm)	1.11	0.88-2.36
1.55-3.53	1.68	Disc Area (mm)	1.49	1.55-3.53	1.56-3.54	1.59	Disc Area (mm)	1.41	1.56-3.54
0.00-0.42	0.05	Cup Vol. (mm)	0.03	0.00-0.42	0.00-0.42	0.05	Cup Vol. (mm)	0.03	0.00-0.42

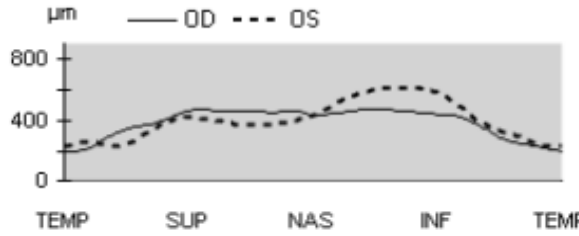
	OD	OS
Average RNFL Thickness	89 μm	92 μm
RNFL Symmetry	95%	
Rim Area	1.07 mm²	1.07 mm²
Disc Area	1.31 mm²	1.17 mm²
Average C/D Ratio	0.44	0.28
Vertical C/D Ratio	0.38	0.26
Cup Volume	0.085 mm³	0.023 mm³

	OD	OS
Average RNFL Thickness	89 μm	89 μm
RNFL Symmetry	95%	
Rim Area	1.08 mm²	1.08 mm²
Disc Area	1.27 mm²	1.21 mm²
Average C/D Ratio	0.40	0.31
Vertical C/D Ratio	0.37	0.29
Cup Volume	0.071 mm³	0.026 mm³

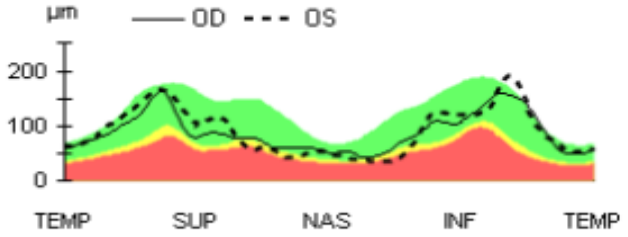
Neuro-retinal Rim Thickness



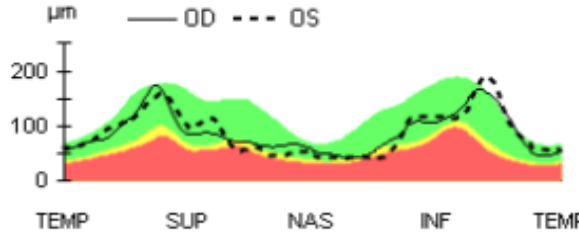
Neuro-retinal Rim Thickness



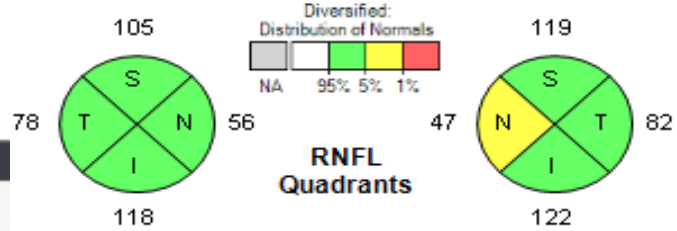
RNFL Thickness



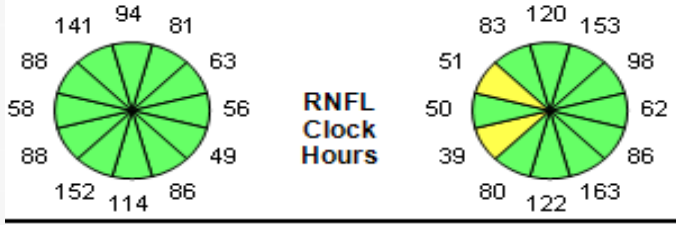
RNFL Thickness



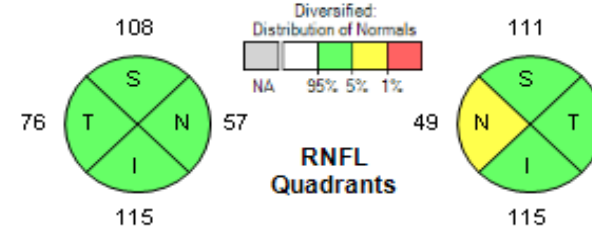
RNFL Quadrants



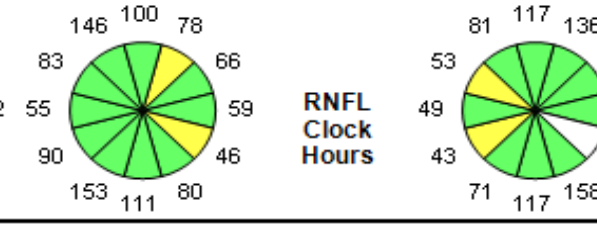
RNFL Clock Hours



RNFL Quadrants



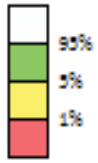
RNFL Clock Hours



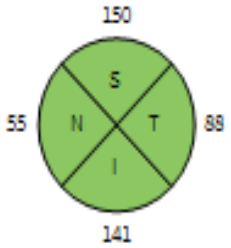
OD OS

RNFL Quadrant

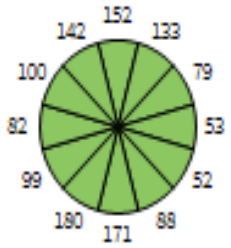
Distribution of Normals



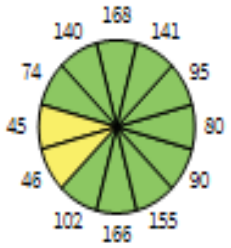
RNFL Quadrant



RNFL Clock Hours



RNFL Clock Hours



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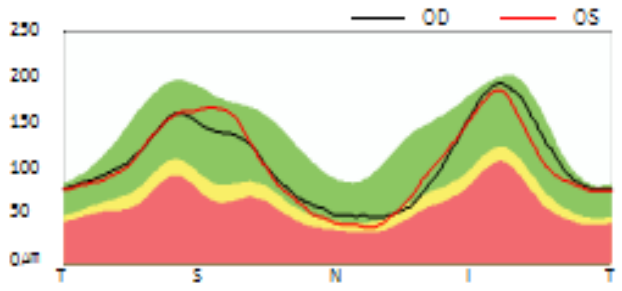

Norm		Summary		Norm
0.72-0.98	96	RNFL Sym. (%)	96	0.72-0.98
98.21-125.64	111	RNFL Avg. (um)	109	98.21-125.64
0.23-0.81	0.52	C/D Ratio (Vert)	0.41	0.23-0.81
0.07-0.67	0.23	C/D Ratio (Area)	0.21	0.07-0.67
0.86-2.34	1.32	Rim Area (mm)	1.55	0.86-2.34
1.59-3.57	1.72	Disc Area (mm)	1.96	1.59-3.57
0.00-0.43	0.03	Cup Vol. (mm)	0.03	0.00-0.43

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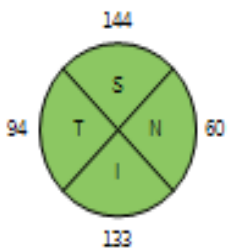
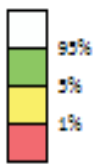
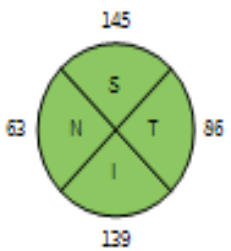
RNFL Quadrant



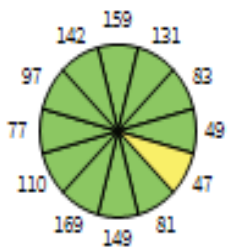
Distribution of Normals



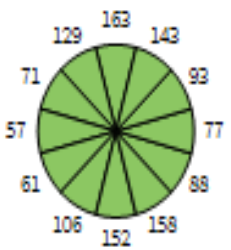
RNFL Quadrant



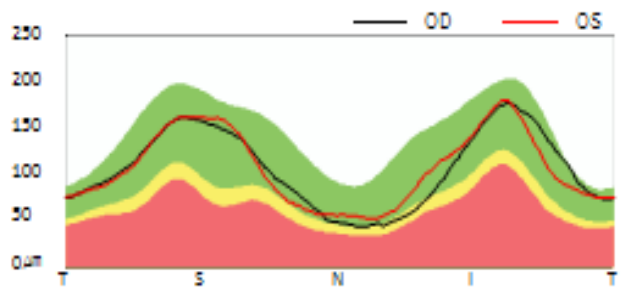
RNFL Clock Hours



RNFL Clock Hours



TSNIT



Norm		Summary		Norm
0.72-0.98	94	RNFL Sym. (%)	94	0.72-0.98
98.37-125.80	108	RNFL Avg. (um)	108	98.37-125.80
0.22-0.80	0.49	C/D Ratio (Vert)	0.41	0.22-0.80
0.07-0.66	0.24	C/D Ratio (Area)	0.19	0.07-0.66
0.86-2.35	1.40	Rim Area (mm)	1.54	0.86-2.35
1.58-3.56	1.85	Disc Area (mm)	1.90	1.58-3.56
0.00-0.42	0.04	Cup Vol. (mm)	0.03	0.00-0.42

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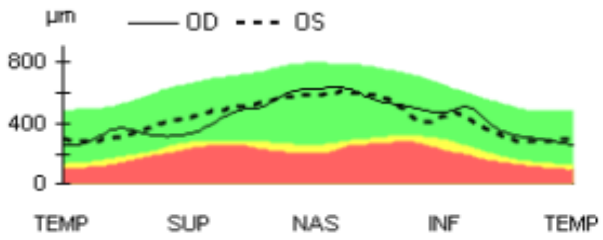
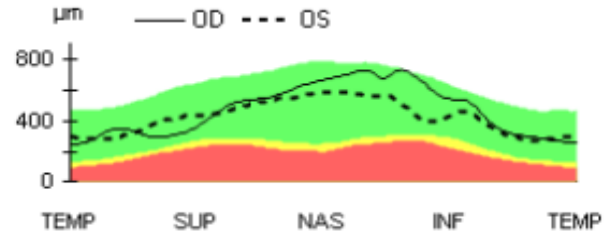
	OD	OS
Average RNFL Thickness	97 μm	92 μm
RNFL Symmetry	85%	
Rim Area	1.41 mm²	1.42 mm²
Disc Area	1.66 mm²	1.68 mm²
Average C/D Ratio	0.37	0.38
Vertical C/D Ratio	0.43	0.39
Cup Volume	0.039 mm³	0.038 mm³

	OD	OS
Average RNFL Thickness	95 μm	91 μm
RNFL Symmetry	86%	
Rim Area	1.59 mm²	1.42 mm²
Disc Area	1.83 mm²	1.70 mm²
Average C/D Ratio	0.35	0.39
Vertical C/D Ratio	0.39	0.42
Cup Volume	0.037 mm³	0.041 mm³

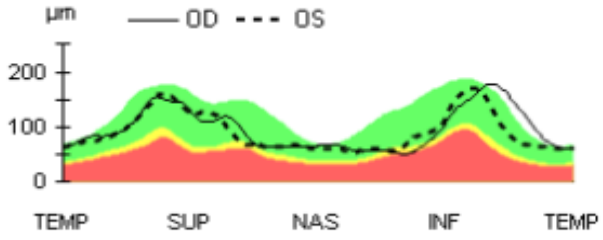
Neuro-retinal Rim Thickness



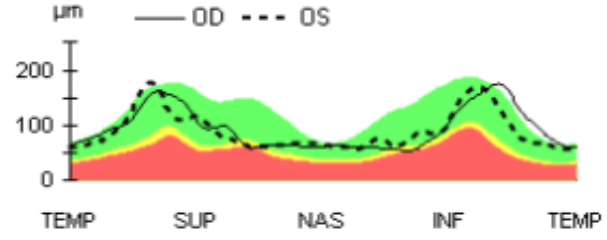
Neuro-retinal Rim Thickness

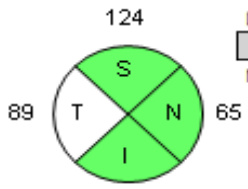


RNFL Thickness

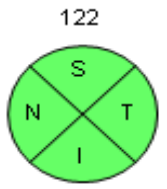


RNFL Thickness

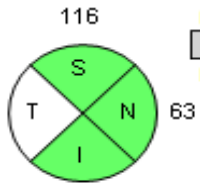




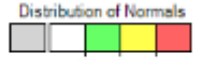
Diversified: Distribution of Normals

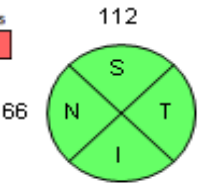


RNFL Quadrants

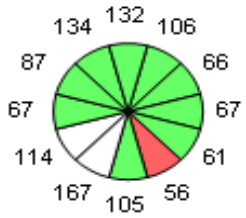


Diversified: Distribution of Normals

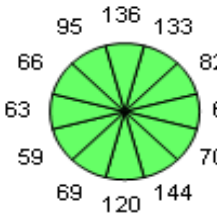


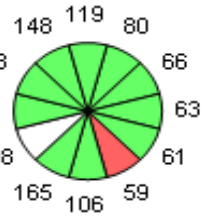


RNFL Quadrants

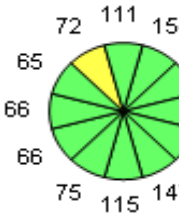


RNFL Clock Hours





RNFL Clock Hours



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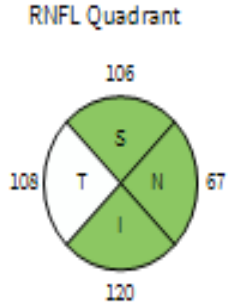
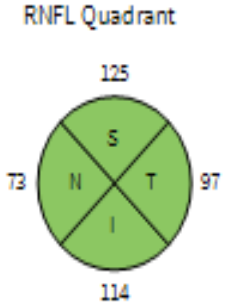
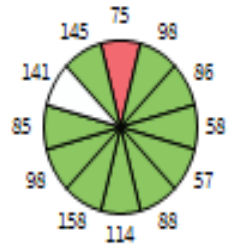
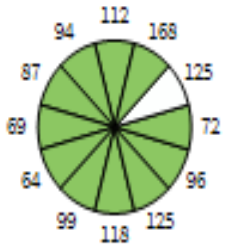
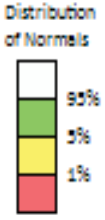
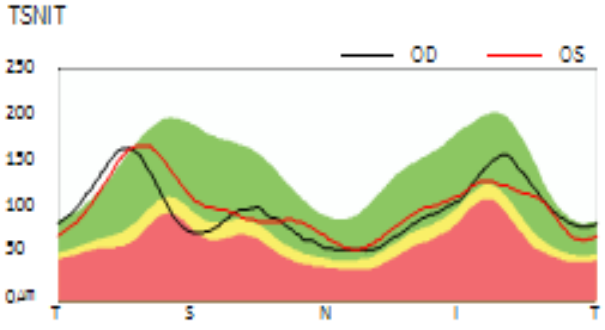




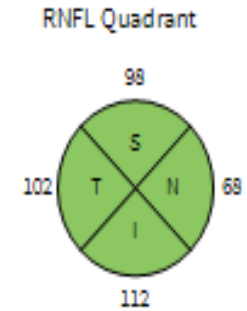


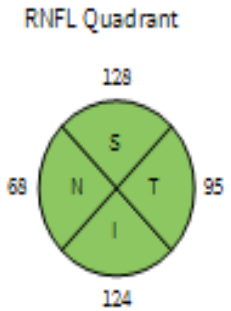


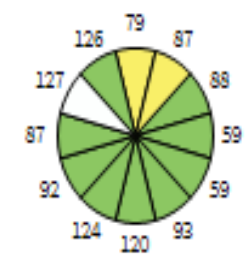


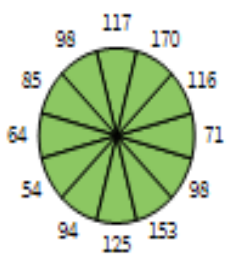


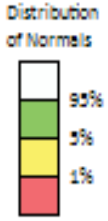
Norm		Summary		Norm
0.71-0.98	81	RNFL Sym. (%)	81	0.71-0.98
97.89-125.32	100	RNFL Avg. (um)	102	97.89-125.32
0.23-0.81	0.57	C/D Ratio (Vert)	0.50	0.23-0.81
0.08-0.67	0.41	C/D Ratio (Area)	0.34	0.08-0.67
0.85-2.34	1.29	Rim Area (mm)	1.47	0.85-2.34
1.60-3.58	2.17	Disc Area (mm)	2.24	1.60-3.58
0.00-0.43	0.15	Cup Vol. (mm)	0.15	0.00-0.43

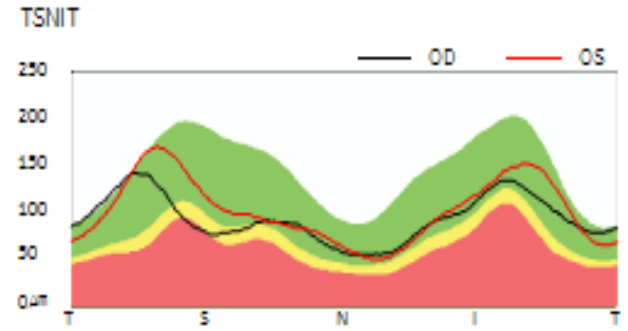










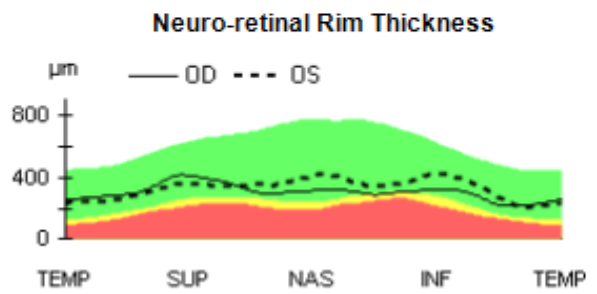


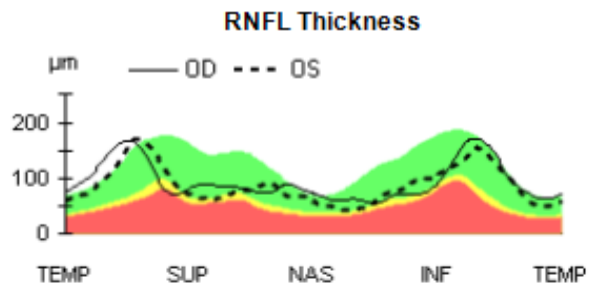
Norm		Summary		Norm
0.71-0.98	84	RNFL Sym. (%)	84	0.71-0.98
97.89-125.32	95	RNFL Avg. (um)	104	97.89-125.32
0.23-0.81	0.58	C/D Ratio (Vert)	0.53	0.23-0.81
0.08-0.67	0.44	C/D Ratio (Area)	0.39	0.08-0.67
0.85-2.34	1.18	Rim Area (mm)	1.44	0.85-2.34
1.60-3.58	2.09	Disc Area (mm)	2.36	1.60-3.58

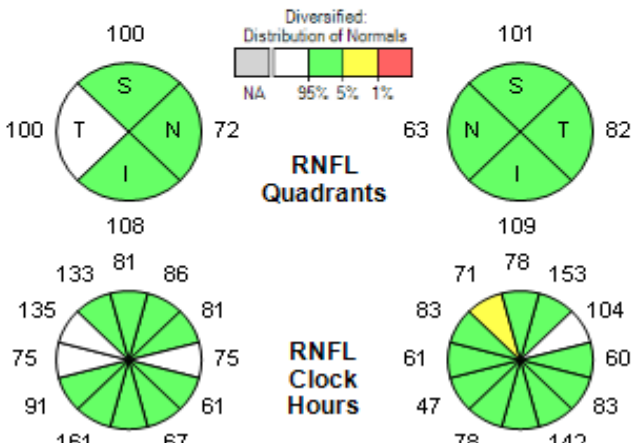
(1969)

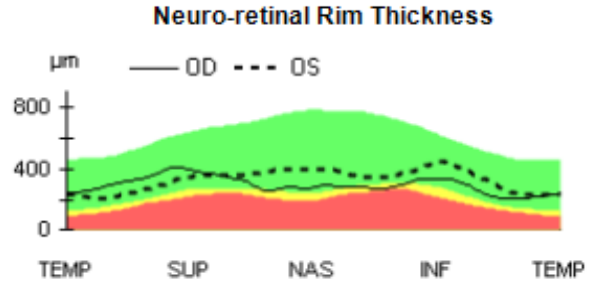
	OD	OS
Average RNFL Thickness	95 µm	89 µm
RNFL Symmetry	87%	
Rim Area	1.13 mm²	1.29 mm²
Disc Area	1.72 mm²	1.95 mm²
Average C/D Ratio	0.57	0.57
Vertical C/D Ratio	0.53	0.50
Cup Volume	0.194 mm³	0.207 mm³

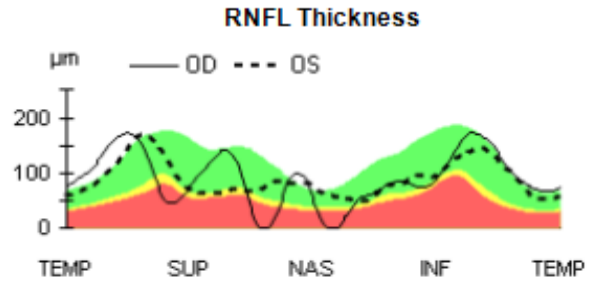
	OD	OS
Average RNFL Thickness	91 µm	90 µm
RNFL Symmetry	63%	
Rim Area	1.08 mm²	1.28 mm²
Disc Area	1.65 mm²	1.92 mm²
Average C/D Ratio	0.57	0.57
Vertical C/D Ratio	0.51	0.49
Cup Volume	0.182 mm³	0.195 mm³

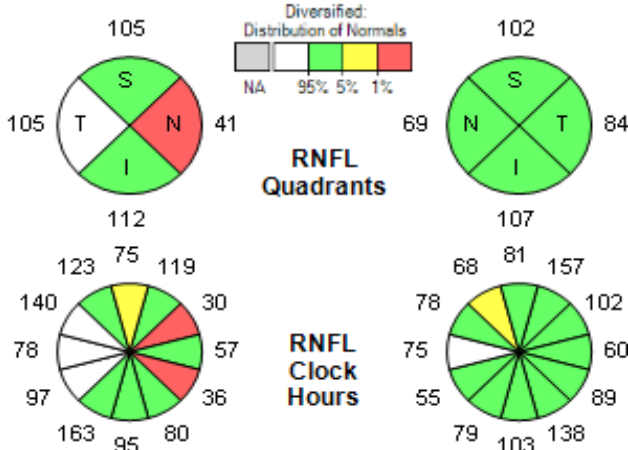












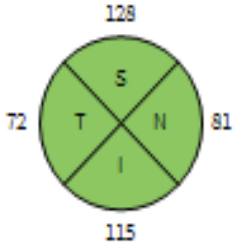
OD OS

5) jhl OD OS (1975)

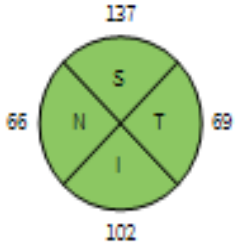
	OD	OS
Average RNFL Thickness	88 µm	81 µm
RNFL Symmetry	93%	
Rim Area	0.95 mm²	0.96 mm²
Disc Area	1.61 mm²	1.65 mm²
Average C/D Ratio	0.64	0.64
Vertical C/D Ratio	0.61	0.44
Cup Volume	0.194 mm³	0.130 mm³

	OD	OS
Average RNFL Thickness	86 µm	84 µm
RNFL Symmetry	93%	
Rim Area	1.00 mm²	0.98 mm²
Disc Area	1.68 mm²	1.64 mm²
Average C/D Ratio	0.63	0.63
Vertical C/D Ratio	0.61	0.46
Cup Volume	0.196 mm³	0.125 mm³

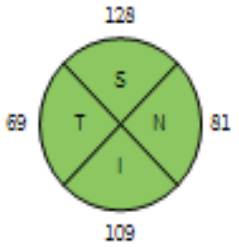
RNFL Quadrant



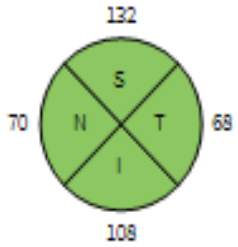
RNFL Quadrant



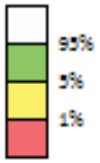
RNFL Quadrant



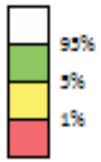
RNFL Quadrant



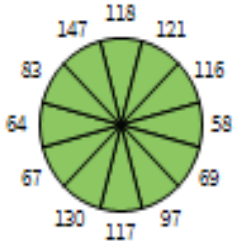
Distribution of Normals



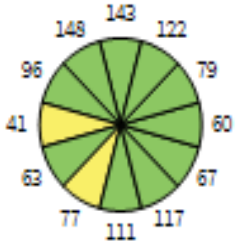
Distribution of Normals



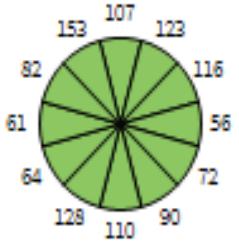
RNFL Clock Hours



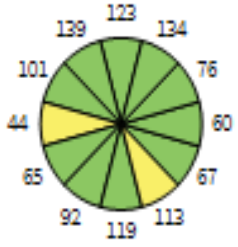
RNFL Clock Hours



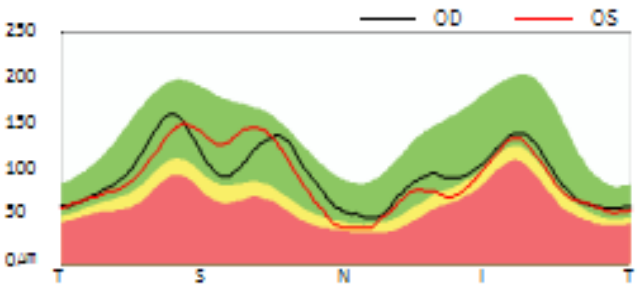
RNFL Clock Hours



RNFL Clock Hours



TSNIT



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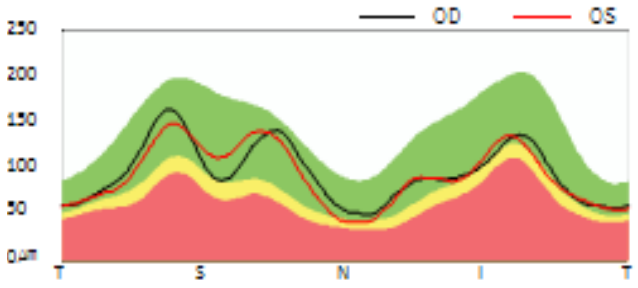
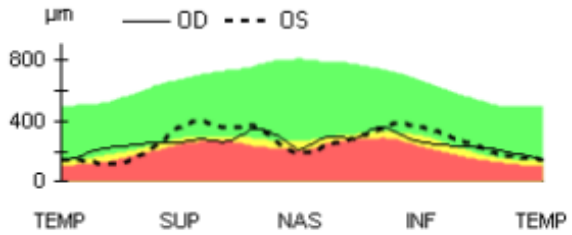


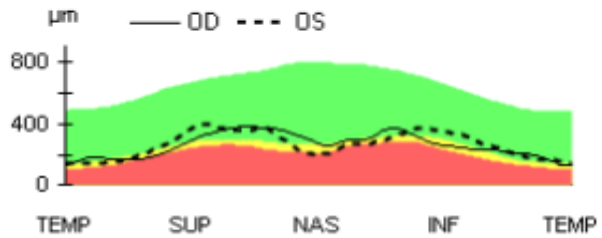
Norm		Summary		Norm
0.73-0.99	88	RNFL Sym. (%)	88	0.73-0.99
99.00-126.43	99	RNFL Avg. (um)	94	99.00-126.43
0.21-0.79	0.70	C/D Ratio (Vert)	0.66	0.21-0.79
0.06-0.65	0.45	C/D Ratio (Area)	0.48	0.06-0.65
0.88-2.36	0.96	Rim Area (mm)	1.06	0.88-2.36
1.56-3.54	1.73	Disc Area (mm)	2.06	1.56-3.54
0.00-0.42	0.12	Cup Vol. (mm)	0.10	0.00-0.42

Norm		Summary		Norm
0.72-0.99	93	RNFL Sym. (%)	93	0.72-0.99
98.84-126.27	97	RNFL Avg. (um)	94	98.84-126.27
0.21-0.79	0.67	C/D Ratio (Vert)	0.64	0.21-0.79
0.06-0.66	0.43	C/D Ratio (Area)	0.44	0.06-0.66
0.87-2.36	1.02	Rim Area (mm)	1.16	0.87-2.36
1.57-3.54	1.78	Disc Area (mm)	2.09	1.57-3.54
0.00-0.42	0.12	Cup Vol. (mm)	0.10	0.00-0.42

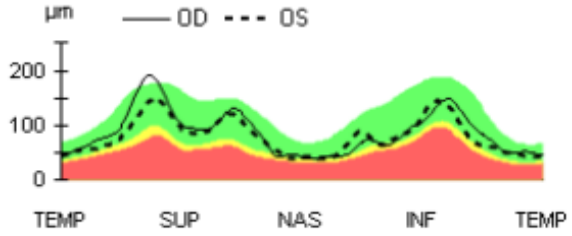
Neuro-retinal Rim Thickness



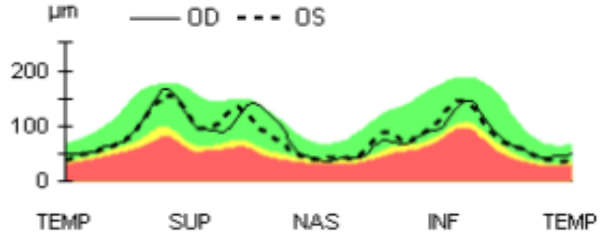
Neuro-retinal Rim Thickness



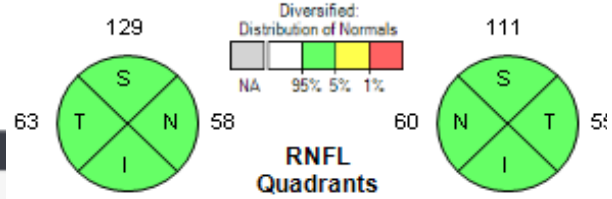
RNFL Thickness



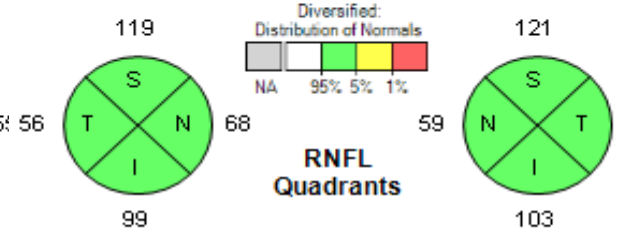
RNFL Thickness



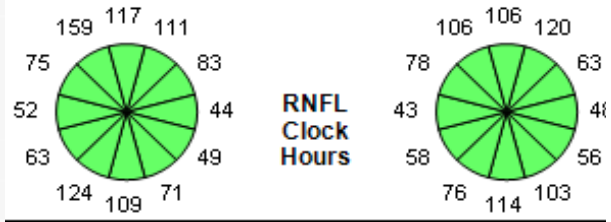
RNFL Quadrants



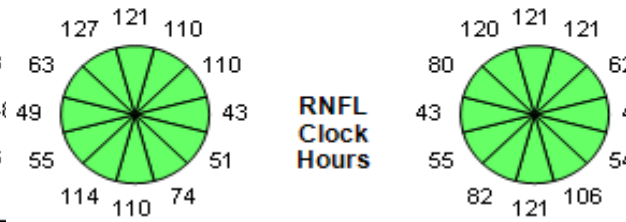
RNFL Quadrants



RNFL Clock Hours

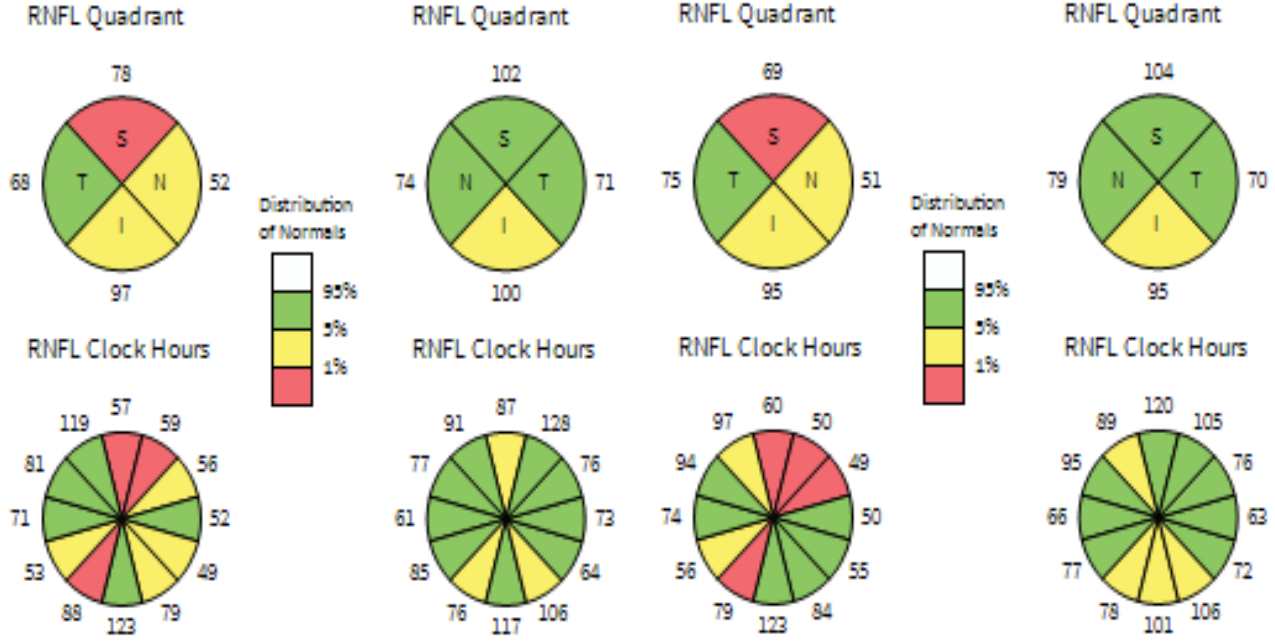


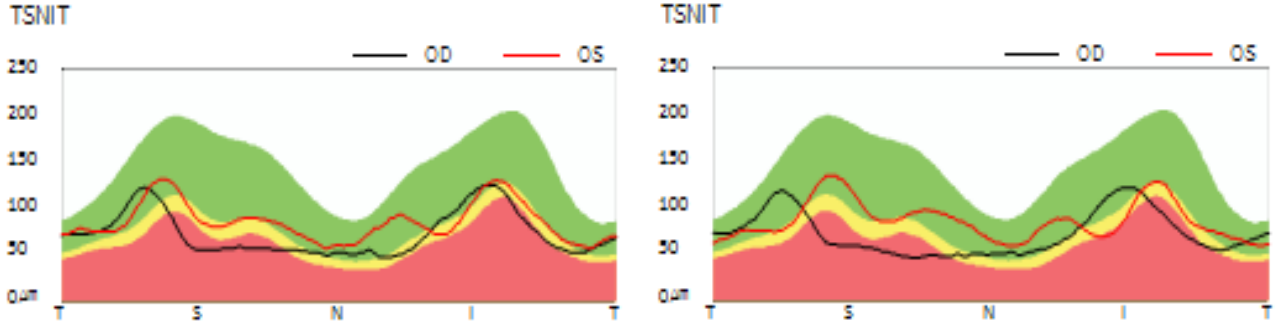
RNFL Clock Hours



OD OS OD OS (1976)

6) jmk



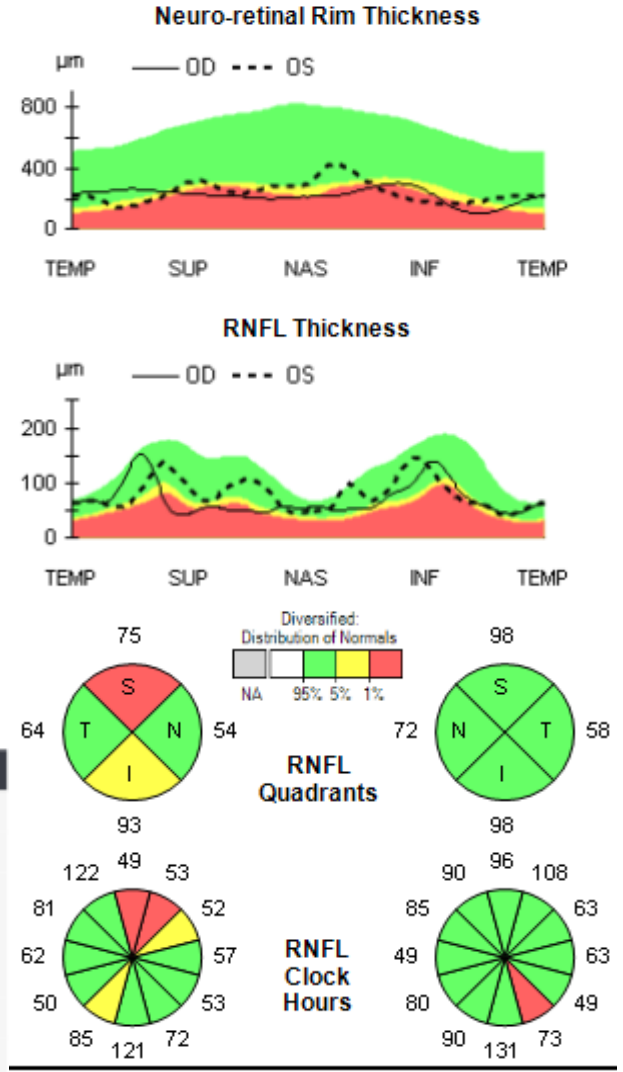


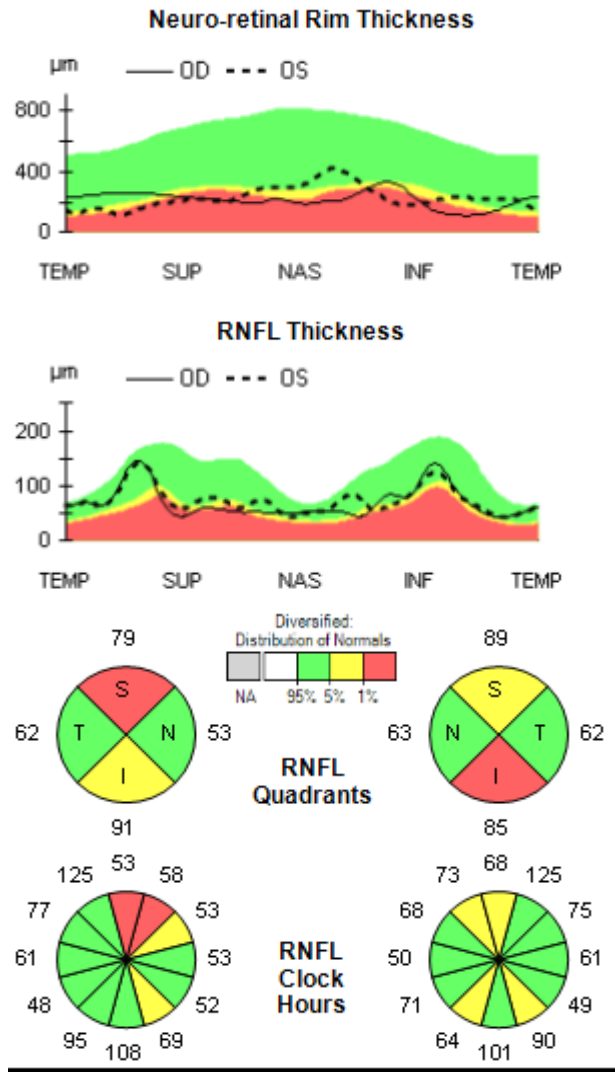
Norm		Summary		Norm
0.73-0.99	70	RNFL Sym. (%)	70	0.73-0.99
99.16-126.59	74	RNFL Avg. (um)	87	99.16-126.59
0.21-0.79	0.84	C/D Ratio (Vert)	0.69	0.21-0.79
0.06-0.65	0.57	C/D Ratio (Area)	0.53	0.06-0.65
0.88-2.36	0.68	Rim Area (mm)	0.88	0.88-2.36
1.55-3.53	1.58	Disc Area (mm)	1.87	1.55-3.53
0.00-0.42	0.14	Cup Vol. (mm)	0.16	0.00-0.42

Norm		Summary		Norm
0.73-0.99	8	RNFL Sym. (%)	8	0.73-0.99
99.00-126.43	73	RNFL Avg. (um)	87	99.00-126.43
0.21-0.79	0.81	C/D Ratio (Vert)	0.70	0.21-0.79
0.06-0.65	0.63	C/D Ratio (Area)	0.49	0.06-0.65
0.88-2.36	0.51	Rim Area (mm)	0.85	0.88-2.36
1.55-3.53	1.38	Disc Area (mm)	1.65	1.55-3.54
0.00-0.42	0.13	Cup Vol. (mm)	0.11	0.00-0.42

	OD	OS
Average RNFL Thickness	71 µm	82 µm
RNFL Symmetry	41%	
Rim Area	0.80 mm²	0.90 mm²
Disc Area	1.49 mm²	1.55 mm²
Average C/D Ratio	0.67	0.64
Vertical C/D Ratio	0.67	0.65
Cup Volume	0.204 mm³	0.214 mm³

	OD	OS
Average RNFL Thickness	71 µm	75 µm
RNFL Symmetry	91%	
Rim Area	0.80 mm²	0.87 mm²
Disc Area	1.53 mm²	1.59 mm²
Average C/D Ratio	0.68	0.67
Vertical C/D Ratio	0.69	0.68
Cup Volume	0.220 mm³	0.231 mm³





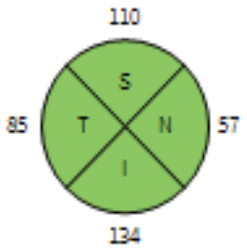
OD OS OD OS

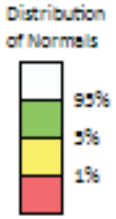
7) dnp (1973)

	OD	OS
Average RNFL Thickness	87 µm	89 µm
RNFL Symmetry	87%	
Rim Area	1.40 mm²	1.48 mm²
Disc Area	1.51 mm²	1.99 mm²
Average C/D Ratio	0.27	0.50
Vertical C/D Ratio	0.28	0.50
Cup Volume	0.025 mm³	0.121 mm³

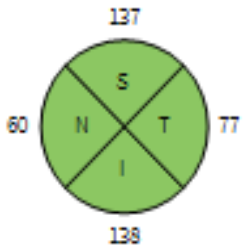
	OD	OS
Average RNFL Thickness	87 µm	90 µm
RNFL Symmetry	86%	
Rim Area	1.52 mm²	1.40 mm²
Disc Area	1.61 mm²	1.92 mm²
Average C/D Ratio	0.23	0.51
Vertical C/D Ratio	0.21	0.54
Cup Volume	0.020 mm³	0.126 mm³

RNFL Quadrant

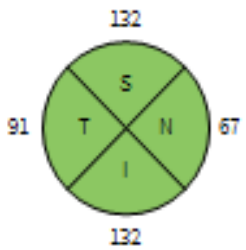


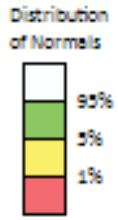


RNFL Quadrant

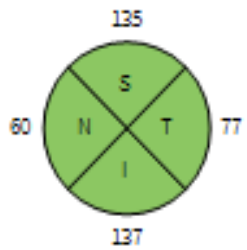


RNFL Quadrant

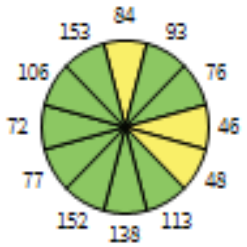




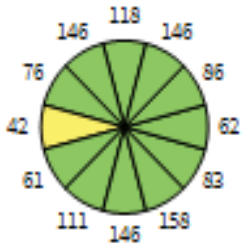
RNFL Quadrant



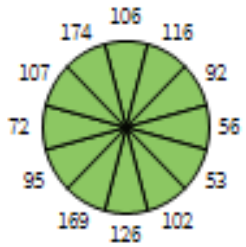
RNFL Clock Hours



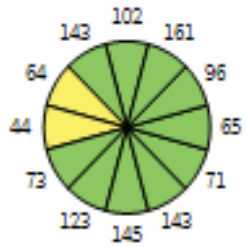
RNFL Clock Hours



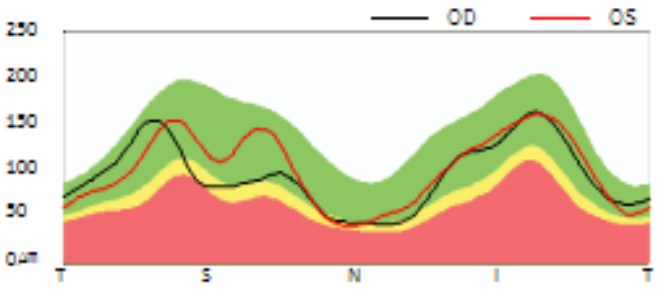
RNFL Clock Hours



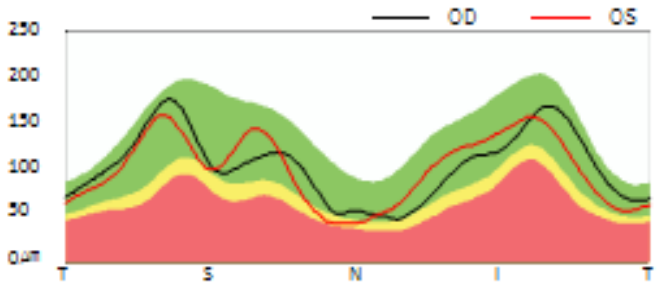
RNFL Clock Hours



TSNIT



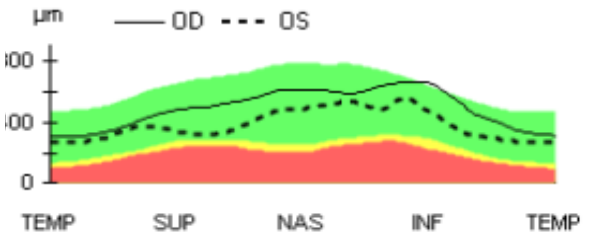
TSNIT



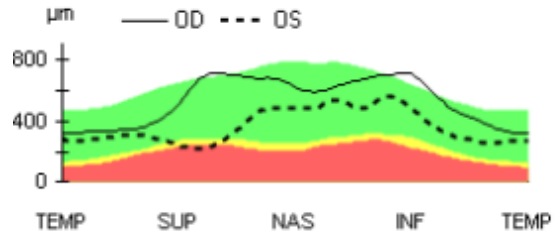
Norm		Summary		Norm
0.72-0.99	84	RNFL Sym. (%)	84	0.72-0.99
98.68-126.12	97	RNFL Avg. (um)	103	98.68-126.12
0.22-0.80	0.16	C/D Ratio (Vert)	0.42	0.22-0.80
0.06-0.66	0.05	C/D Ratio (Area)	0.25	0.06-0.66
0.87-2.35	2.10	Rim Area (mm)	2.06	0.87-2.35
1.57-3.55	2.21	Disc Area (mm)	2.76	1.57-3.55
0.00-0.42	0.00	Cup Vol. (mm)	0.09	0.00-0.42

Norm		Summary		Norm
0.72-0.99	85	RNFL Sym. (%)	85	0.72-0.99
98.52-125.96	106	RNFL Avg. (um)	102	98.52-125.96
0.22-0.80	0.18	C/D Ratio (Vert)	0.43	0.22-0.80
0.06-0.66	0.06	C/D Ratio (Area)	0.28	0.06-0.66
0.87-2.35	1.91	Rim Area (mm)	1.83	0.87-2.35
1.58-3.56	2.02	Disc Area (mm)	2.53	1.58-3.56
0.00-0.42	0.01	Cup Vol. (mm)	0.09	0.00-0.42

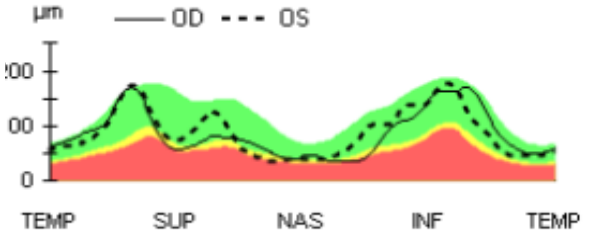
Neuro-retinal Rim Thickness



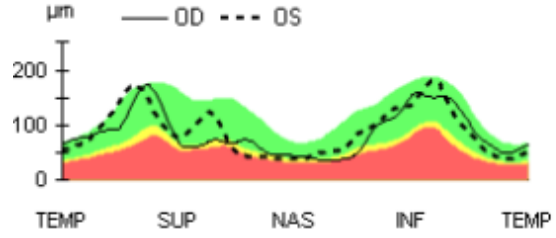
Neuro-retinal Rim Thickness

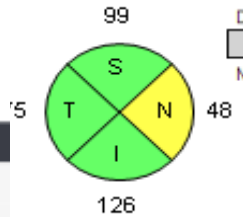


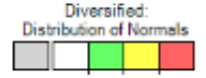
RNFL Thickness



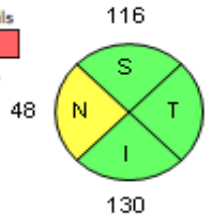
RNFL Thickness

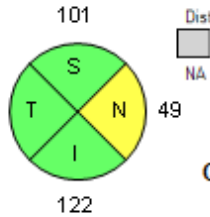


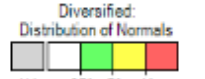




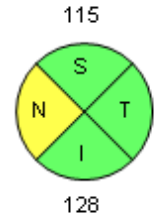
RNFL Quadrants

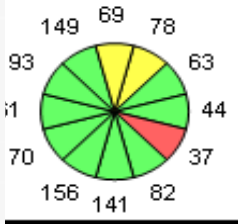




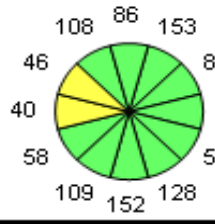


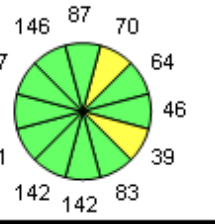
RNFL Quadrants





RNFL Clock Hours





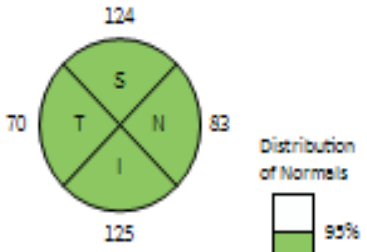
RNFL Clock Hours

OD OS 8) hwk OD OS (1976)

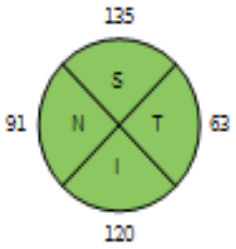
	OD	OS
Average RNFL Thickness	89 µm	88 µm
RNFL Symmetry	86%	
Rim Area	1.27 mm²	1.22 mm²
Disc Area	1.68 mm²	1.65 mm²
Average C/D Ratio	0.50	0.50
Vertical C/D Ratio	0.47	0.52
Cup Volume	0.143 mm³	0.121 mm³

	OD	OS
Average RNFL Thickness	88 µm	86 µm
RNFL Symmetry	89%	
Rim Area	1.19 mm²	1.24 mm²
Disc Area	1.61 mm²	1.67 mm²
Average C/D Ratio	0.52	0.50
Vertical C/D Ratio	0.47	0.52
Cup Volume	0.152 mm³	0.127 mm³

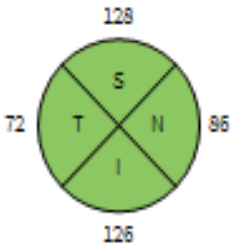
RNFL Quadrant

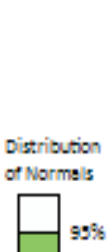


RNFL Quadrant

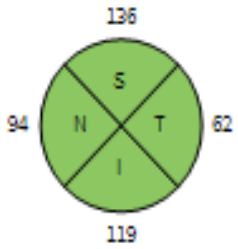


RNFL Quadrant

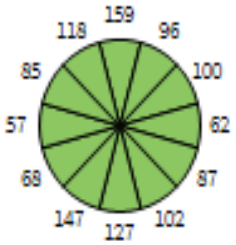




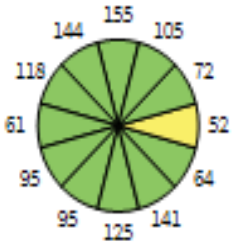
RNFL Quadrant



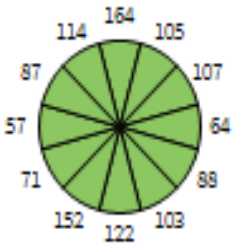
RNFL Clock Hours



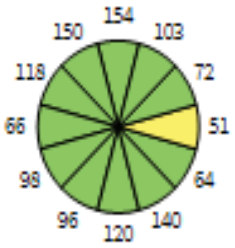
RNFL Clock Hours



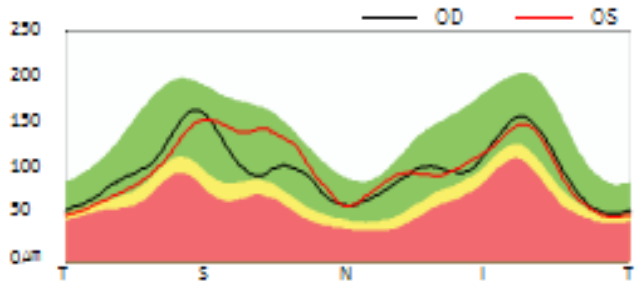
RNFL Clock Hours



RNFL Clock Hours



TSNIT



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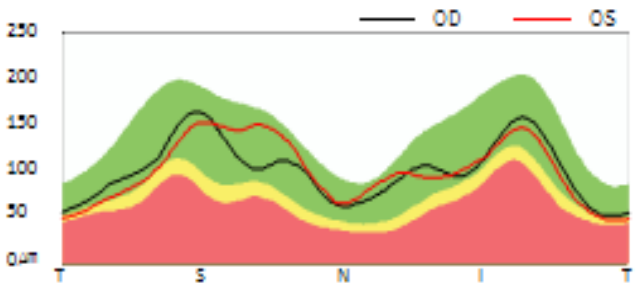
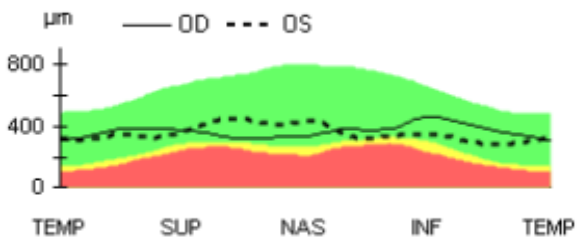


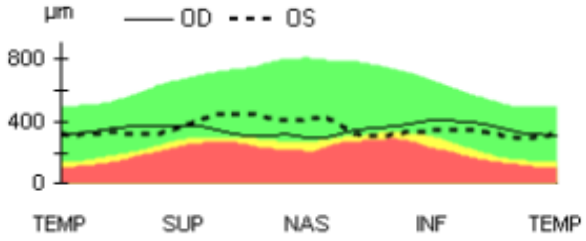
Norm		Summary		Norm
0.73-0.99	87	RNFL Sym. (%)	87	0.73-0.99
99.00-126.43	101	RNFL Avg. (um)	102	99.00-126.43
0.21-0.79	0.53	C/D Ratio (Vert)	0.57	0.21-0.79
0.06-0.65	0.37	C/D Ratio (Area)	0.37	0.06-0.65
0.88-2.36	1.16	Rim Area (mm)	1.20	0.88-2.36
1.56-3.54	1.84	Disc Area (mm)	1.90	1.56-3.54
0.00-0.42	0.13	Cup Vol. (mm)	0.11	0.00-0.42

Norm		Summary		Norm
0.73-0.99	88	RNFL Sym. (%)	88	0.73-0.99
99.00-126.43	103	RNFL Avg. (um)	103	99.00-126.43
0.21-0.79	0.50	C/D Ratio (Vert)	0.54	0.21-0.79
0.06-0.65	0.36	C/D Ratio (Area)	0.36	0.06-0.65
0.88-2.36	1.17	Rim Area (mm)	1.25	0.88-2.36
1.56-3.54	1.83	Disc Area (mm)	1.95	1.56-3.54
0.00-0.42	0.13	Cup Vol. (mm)	0.11	0.00-0.42

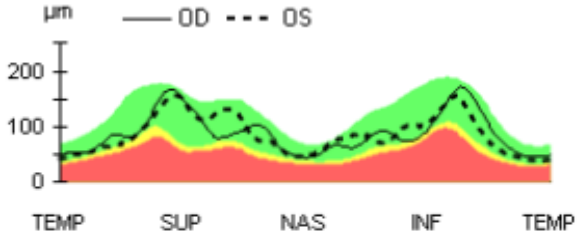
Neuro-retinal Rim Thickness



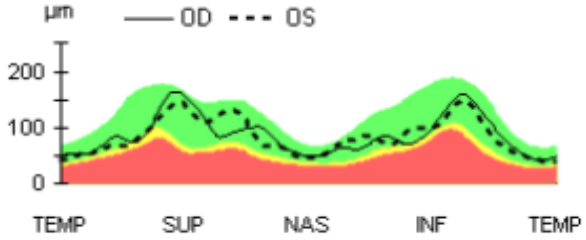
Neuro-retinal Rim Thickness



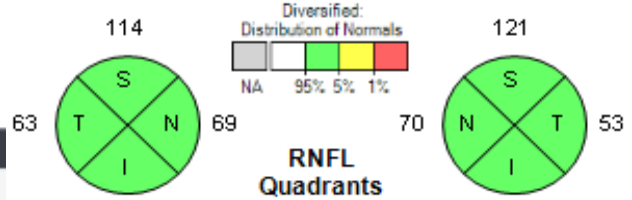
RNFL Thickness



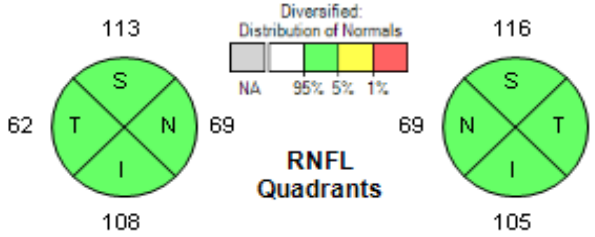
RNFL Thickness



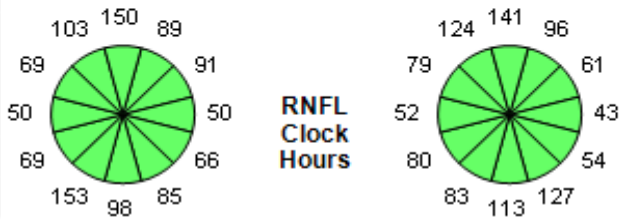
RNFL Quadrants



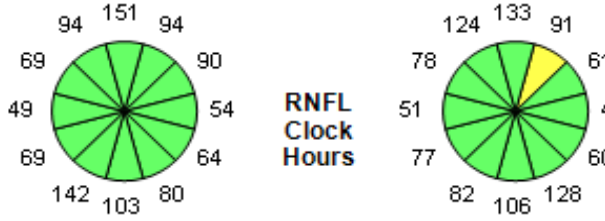
RNFL Quadrants



RNFL Clock Hours



RNFL Clock Hours

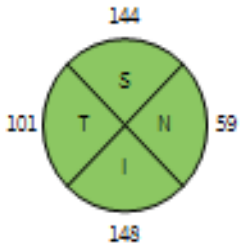


OD OS OD 9) Jhm (1977) OS

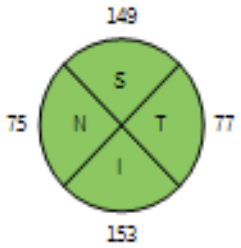
	OD	OS
Average RNFL Thickness	104 µm	100 µm
RNFL Symmetry	67%	
Rim Area	1.32 mm²	1.50 mm²
Disc Area	1.49 mm²	1.80 mm²
Average C/D Ratio	0.35	0.41
Vertical C/D Ratio	0.23	0.34
Cup Volume	0.051 mm³	0.097 mm³

	OD	OS
Average RNFL Thickness	103 µm	101 µm
RNFL Symmetry	69%	
Rim Area	1.37 mm²	1.48 mm²
Disc Area	1.54 mm²	1.78 mm²
Average C/D Ratio	0.34	0.41
Vertical C/D Ratio	0.24	0.34
Cup Volume	0.049 mm³	0.094 mm³

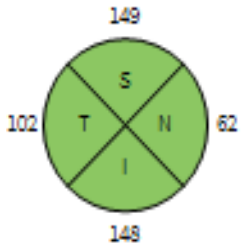
RNFL Quadrant



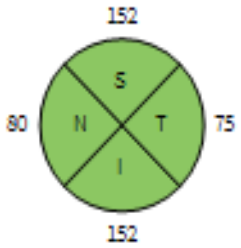
RNFL Quadrant



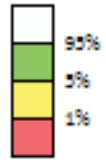
RNFL Quadrant



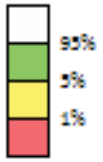
RNFL Quadrant



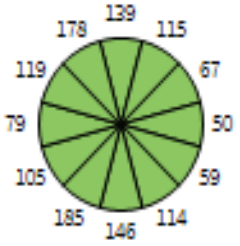
Distribution of Normals



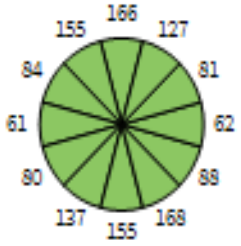
Distribution of Normals



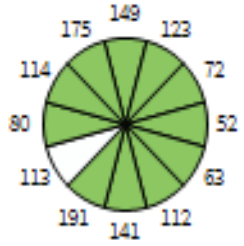
RNFL Clock Hours



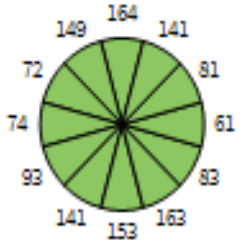
RNFL Clock Hours



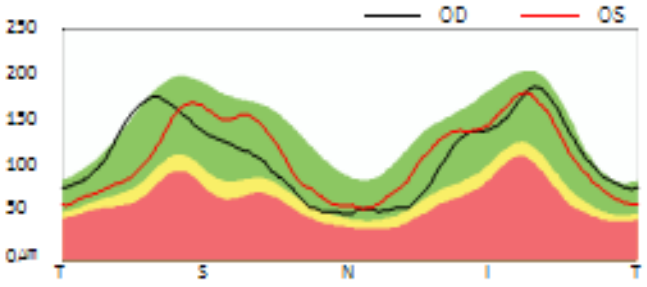
RNFL Clock Hours



RNFL Clock Hours



TSNIT



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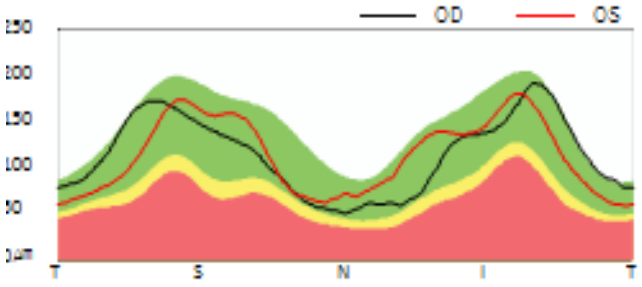
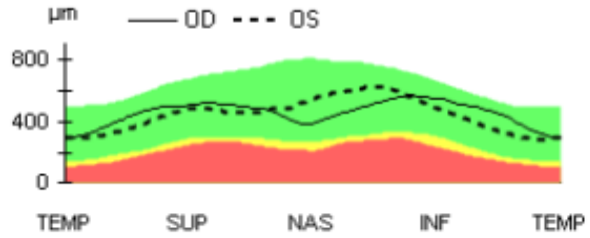
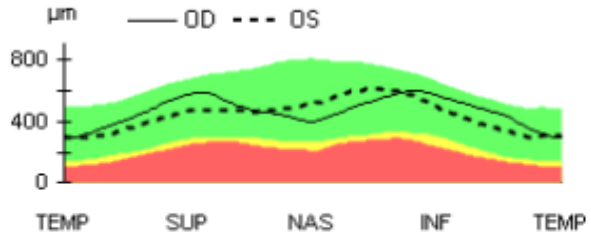


Norm		Summary		Norm	Norm		Summary		Norm
0.73-0.99	76	RNFL Sym. (%)	76	0.73-0.99	0.73-0.99	75	RNFL Sym. (%)	75	0.73-0.99
99.32-126.75	113	RNFL Avg. (um)	114	99.32-126.75	9.16-126.59	115	RNFL Avg. (um)	115	99.16-126.59
0.20-0.79	0.30	C/D Ratio (Vert)	0.42	0.20-0.79	0.21-0.79	0.27	C/D Ratio (Vert)	0.46	0.21-0.79
0.05-0.65	0.19	C/D Ratio (Area)	0.27	0.05-0.65	0.05-0.65	0.17	C/D Ratio (Area)	0.26	0.05-0.65
0.88-2.37	1.43	Rim Area (mm)	1.45	0.88-2.37	0.88-2.36	1.45	Rim Area (mm)	1.55	0.88-2.36
1.55-3.53	1.76	Disc Area (mm)	1.97	1.55-3.53	1.55-3.53	1.74	Disc Area (mm)	2.10	1.55-3.53
0.00-0.42	0.04	Cup Vol. (mm)	0.09	0.00-0.42	0.00-0.42	0.04	Cup Vol. (mm)	0.09	0.00-0.42

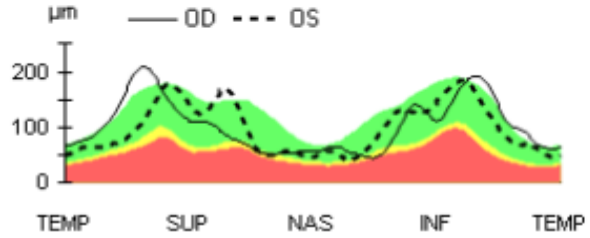
Neuro-retinal Rim Thickness



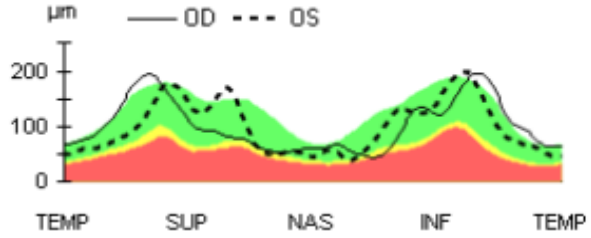
Neuro-retinal Rim Thickness

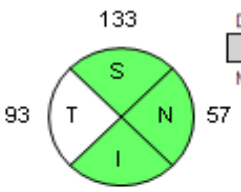


RNFL Thickness

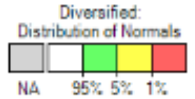


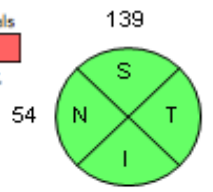
RNFL Thickness



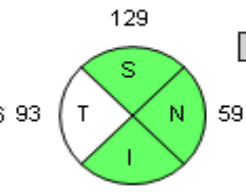


Diversified: Distribution of Normals

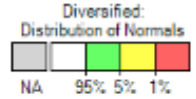


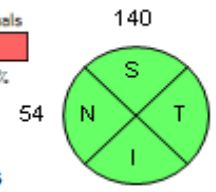


RNFL Quadrants

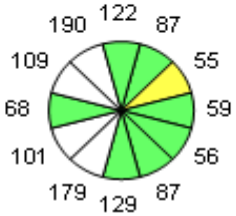


Diversified: Distribution of Normals

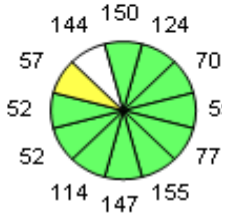


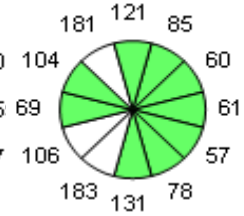


RNFL Quadrants

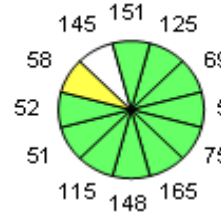


RNFL Clock Hours





RNFL Clock Hours



Corneal Topography Measurement

How to make a good corneal topography(I)

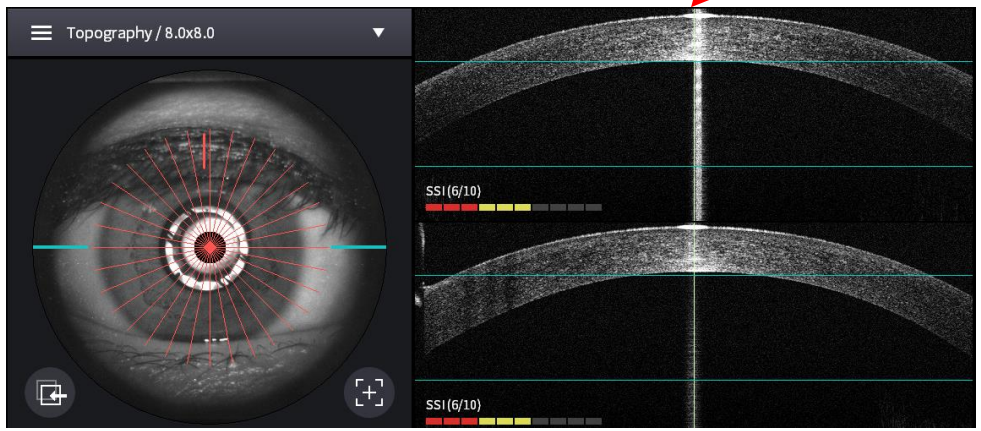
①

Make sure that a forehead and a chin are put against a supporter and a chinrest tightly.

②

- Press “Start Scan” button, approach to a patient slowly.
- Find out a corneal signal according to an anterior live image,
- And then press “Optimize”button to make a signal stronger

③

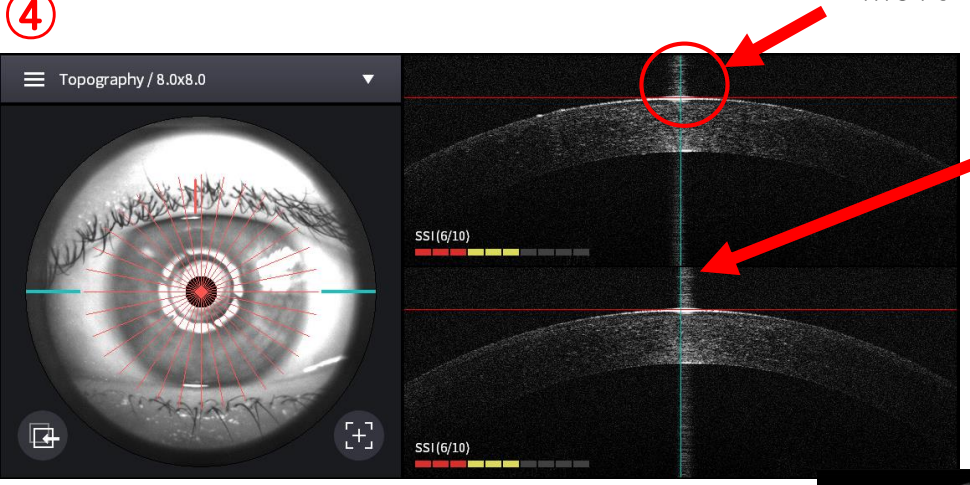


- Rotate a joystick upward or downward if there is no a central reflection,
- Then the central reflection is shown at the upper B-scan.

How to make a good corneal topography(II)

④

Move the upper of a cornea to the red line

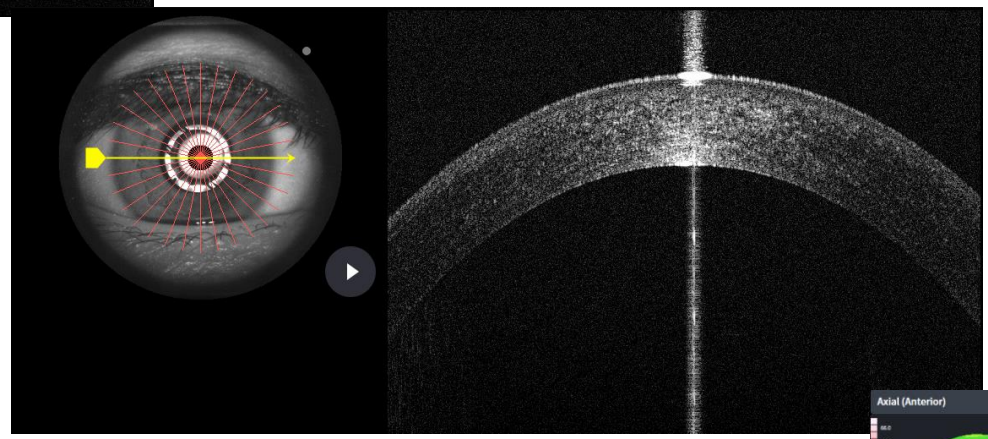


Move HOCT's body toward to a left side or a right side slightly,

Then, the central reflection at the lower B-scan is shown.

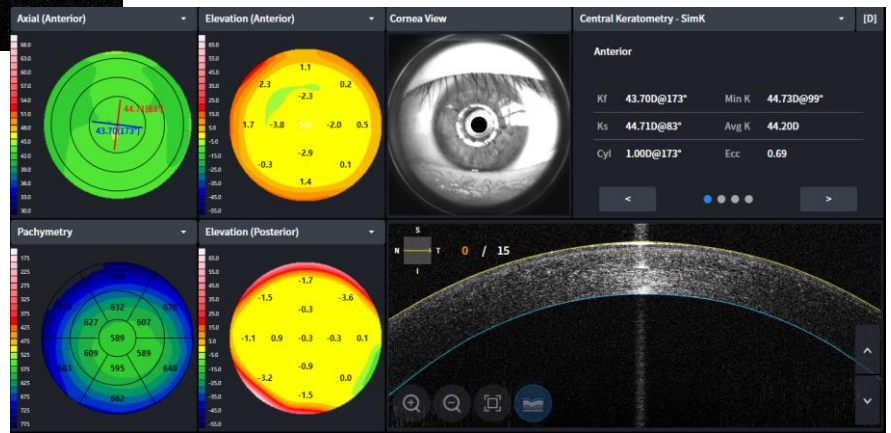
Push HOCT's body toward to a patient slightly,
in order that The top of a cornea is located at the red line.

⑤



Strong & symmetric B-scan
at a confirmation display.

⑥

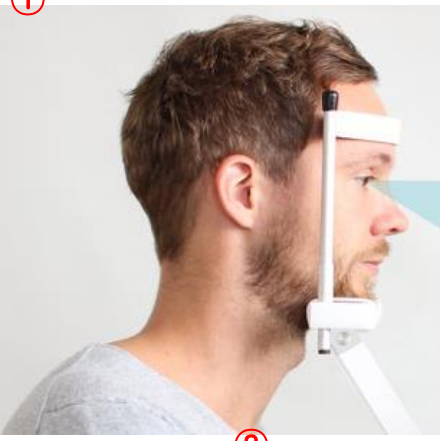


Analysis
Display

Axial Length Measurement

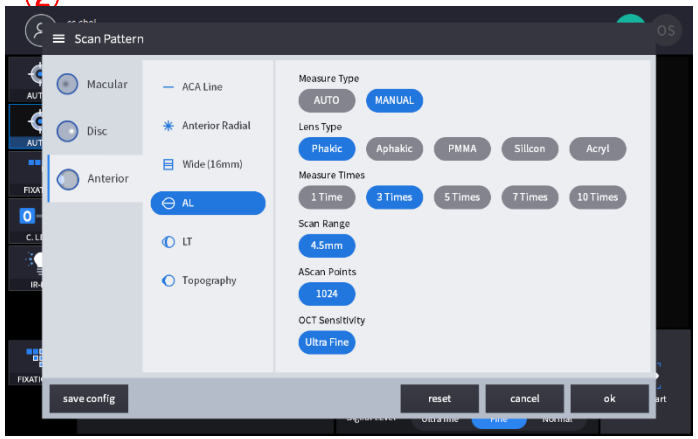
How to make a perfect AL measurement(I)

①



Make sure that a forehead and a chin are put against a supporter and a chinrest tightly.

②

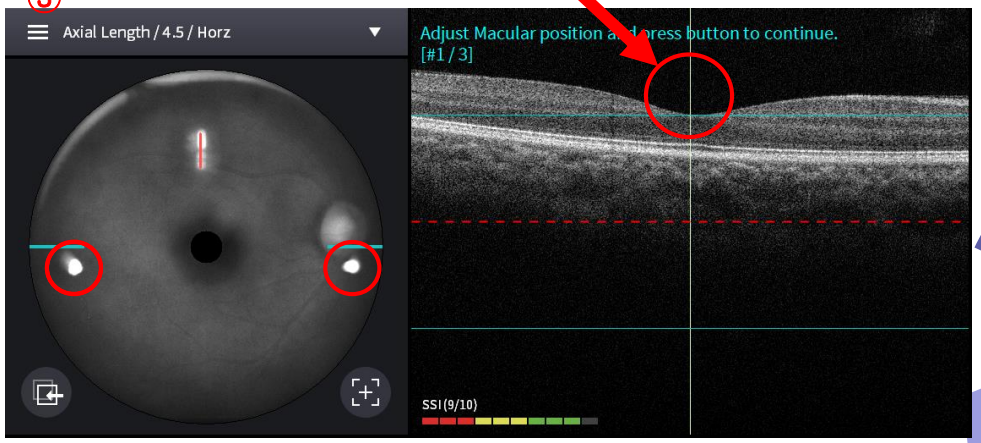


Recommended Setting

.– Manual Measurement

Fovea

③



- Check if there is a fovea in B–scan.
- Let a patient blinked and relaxed once.
- Then press a joystick if a signal is good.
- A patient must keep its posture until the next joystick pressing.

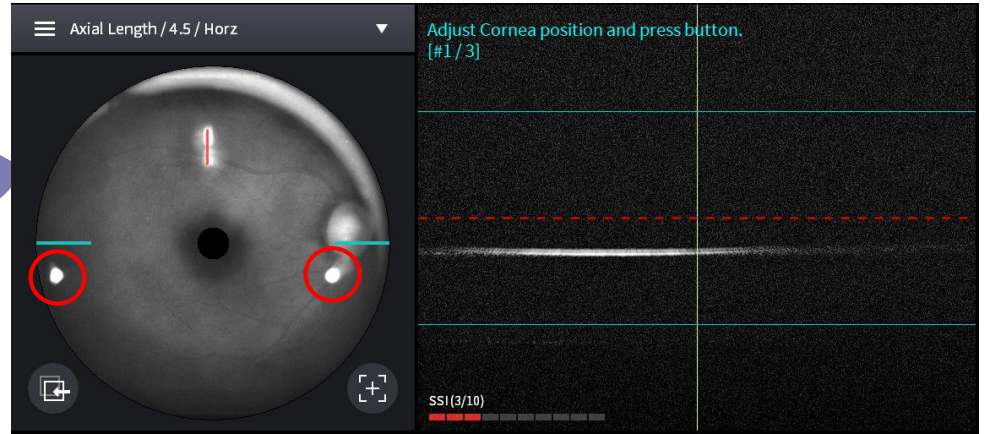
Keep its posture and fixation

Blink & Relaxed

Note

- Check if a patient keep a working distance with two working dots or not.
- This first searching takes a quite long to find out a proper position and a strong signal.

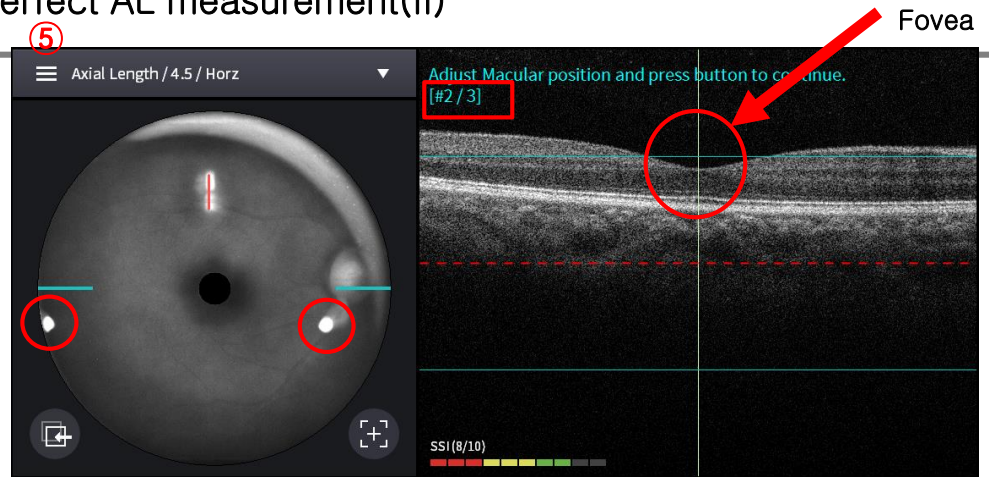
④



- Press a joystick if a signal is found.
- Let a patient blinked and relaxed while an internal motor is moving to the macular.

How to make a perfect AL measurement(II)

⑤

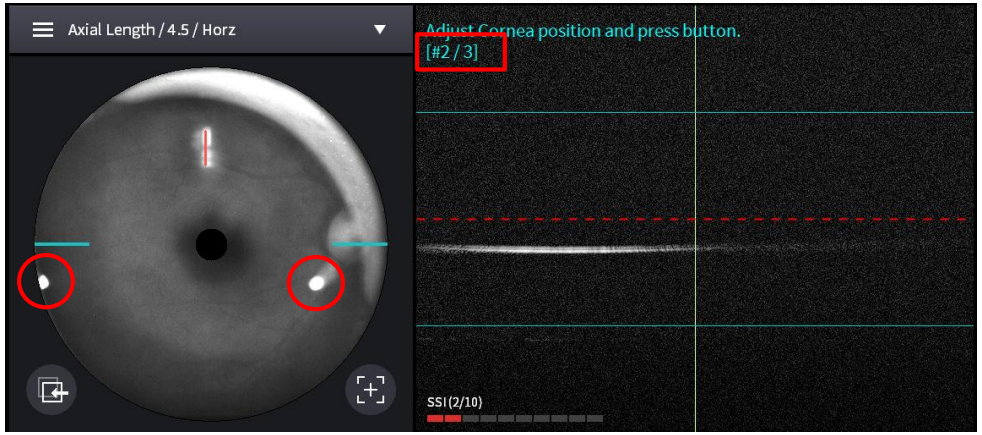


Fovea

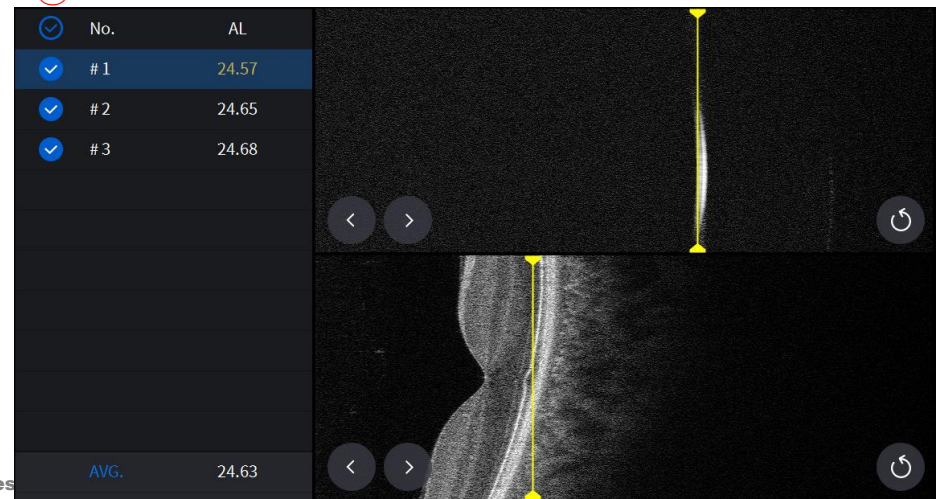
- Press a joystick if there is a fovea in B-scan.
- A patient must keep its posture until the next joystick pressing.

- Press a joystick if there is a corneal signal.
- Let a patient blinked and relaxed while an internal motor is moving to the macular.

⑥



⑦



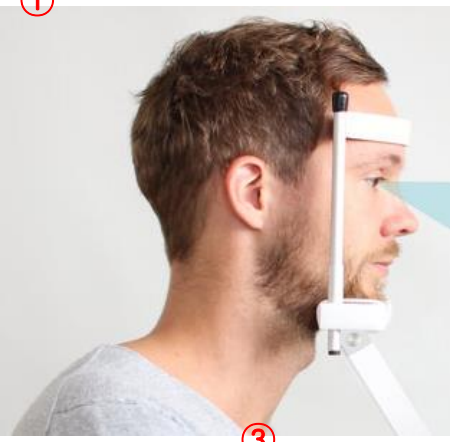
Note

- Check if a patient keep a working distance with two working dot or not.
- The second and the third measurements are done fast with the same procedure.

Lens Thickness Measurement

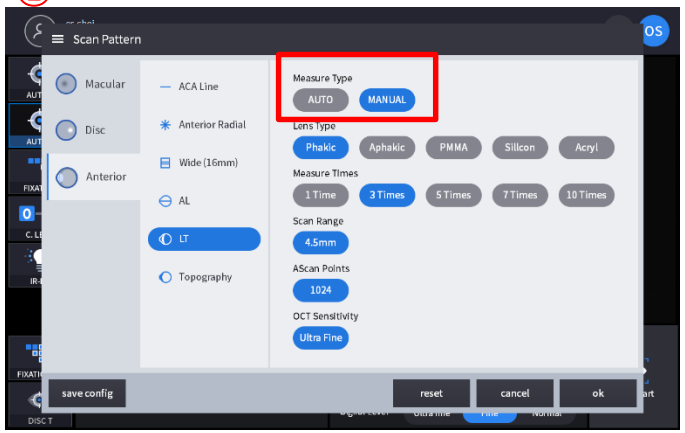
How to make a perfect LT measurement(I)

①



Make sure that a forehead and a chin are put against a supporter and a chinrest tightly.

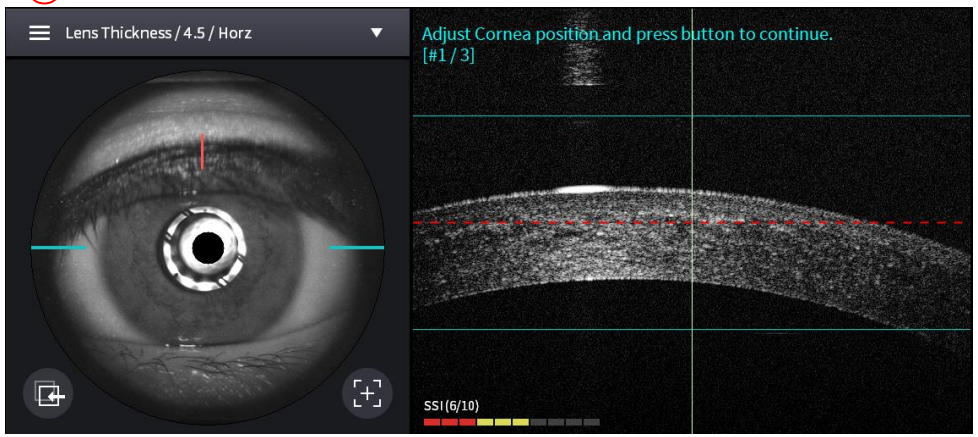
②



Recommended Setting

.- Manual Measurement

③



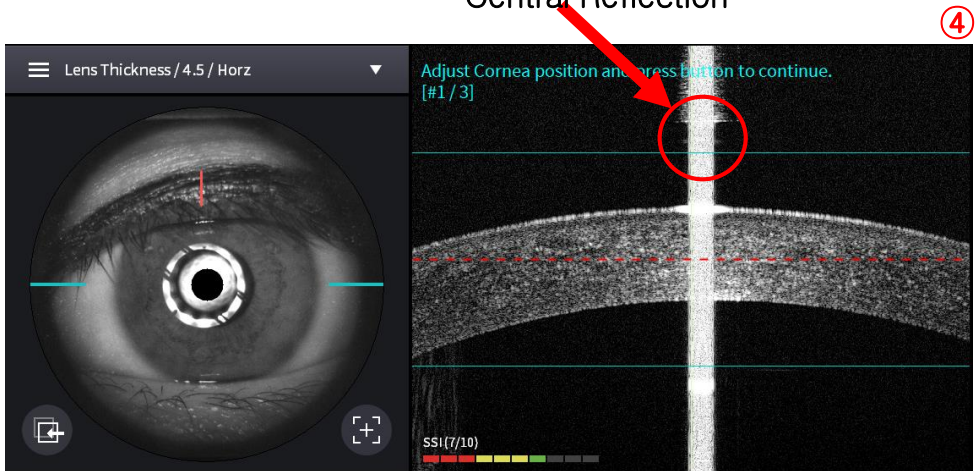
- Press “Start Scan” button, approach to a patient slowly.
- Find out a corneal signal according to an anterior live image,
- And then press “Optimize”button to make a signal stronger

Note

- This first searching takes a quite long to find out a proper position and a strong signal.

Central Reflection

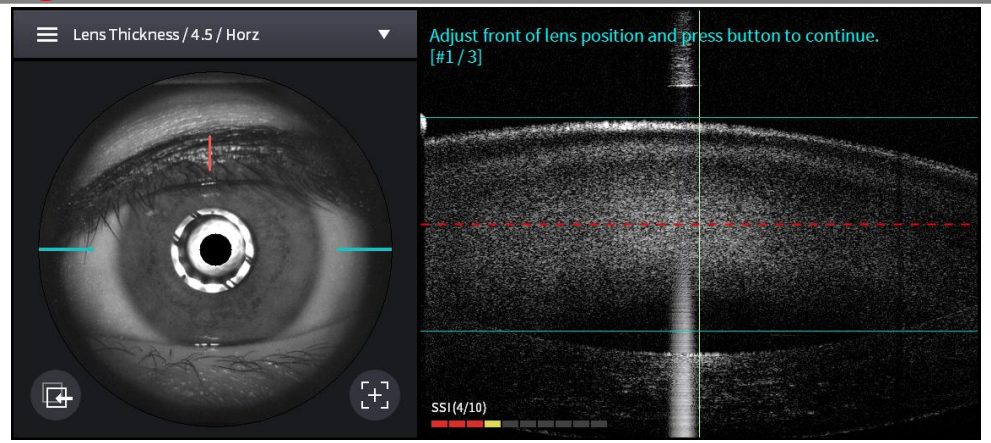
④



- Rotate a joystick upward or downward if there is no a central reflection.
- Then the central reflection is shown at the upper B-scan.
- Let a patient blink and relaxed.
- And press a joystick if a signal is ok.
- A patient must keep its posture until the next two joystick pressing.

How to make a perfect LT measurement(II)

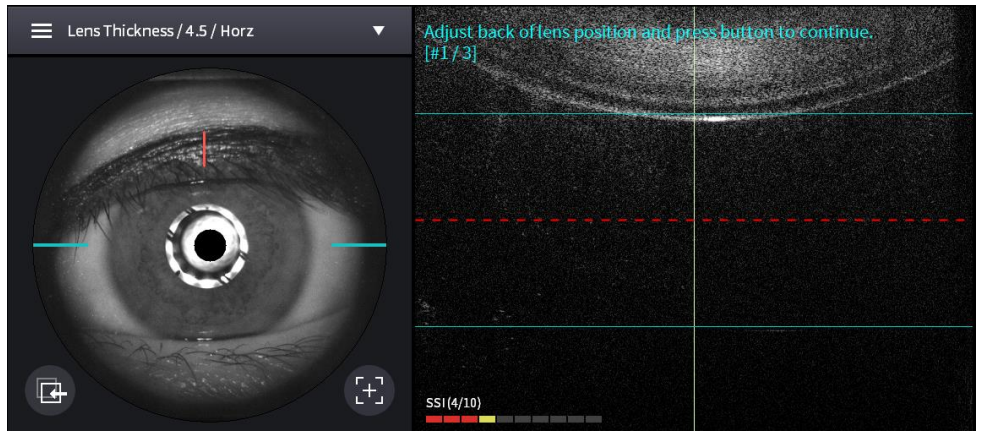
⑤



- Press a joystick if there is a front side of a lens.
- A patient must keep its posture until the next joystick pressing.

- Press a joystick if there is a rear side of a lens.
- And then let a patient blinked and relaxed while an internal motor is moving to the cornea.

⑥

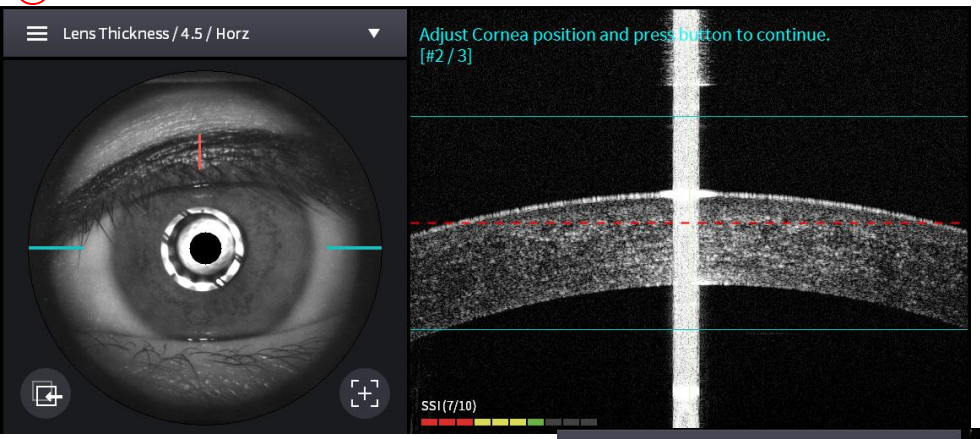


Note

- Check if a patient keep its posture after taking a cornea to taking a rear side of a lens.
- The second and the third measurements are done fast with the same procedure.

How to make a perfect LT measurement(III)

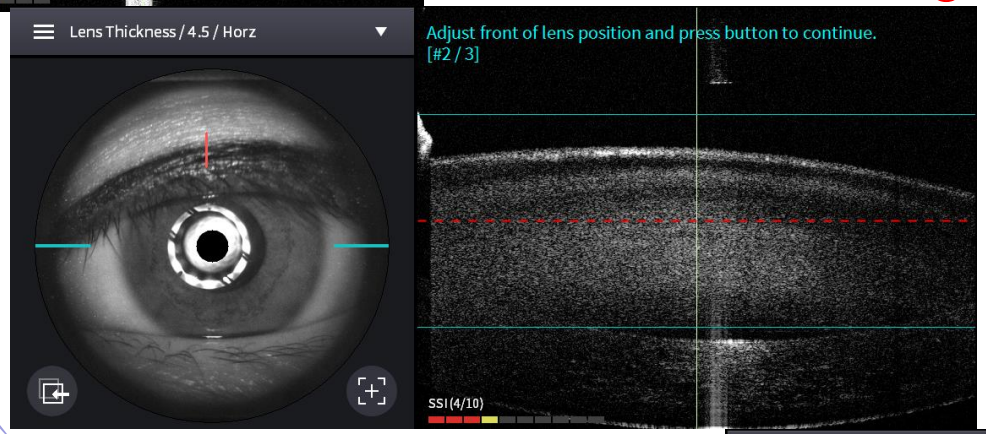
⑦



- Press a joystick if there is a front side of a lens.
- A patient must keep its posture until the next two joystick pressing.

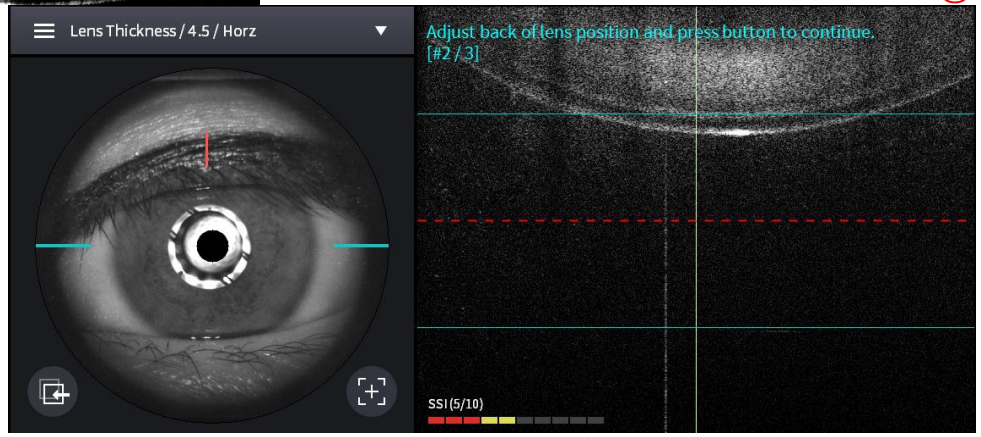
Keep its posture and fixation

⑧



- Press a joystick if there is a front side of a lens.
- A patient must keep its posture until the next joystick pressing.

⑨

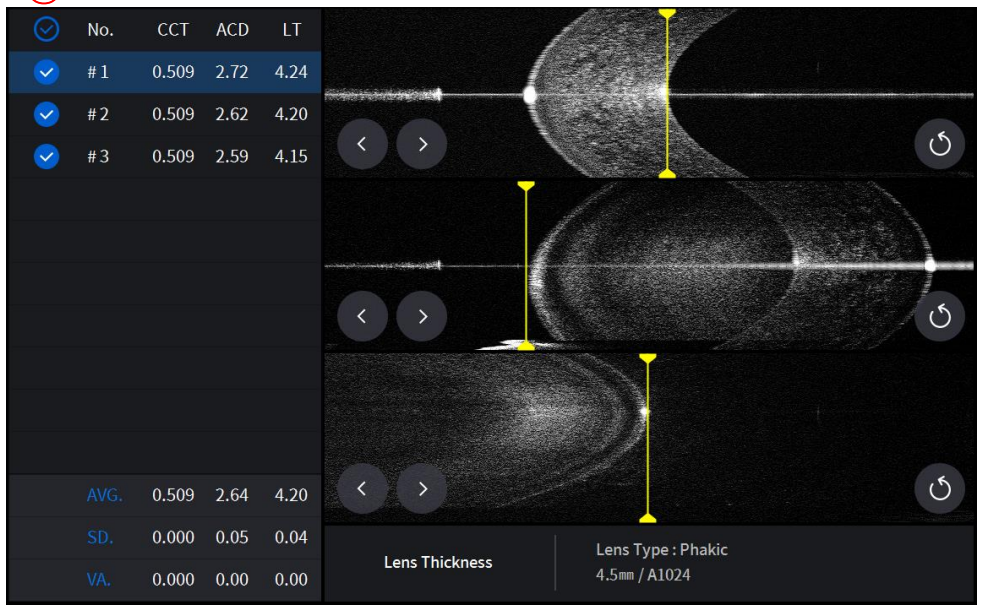


Blink & Relaxed

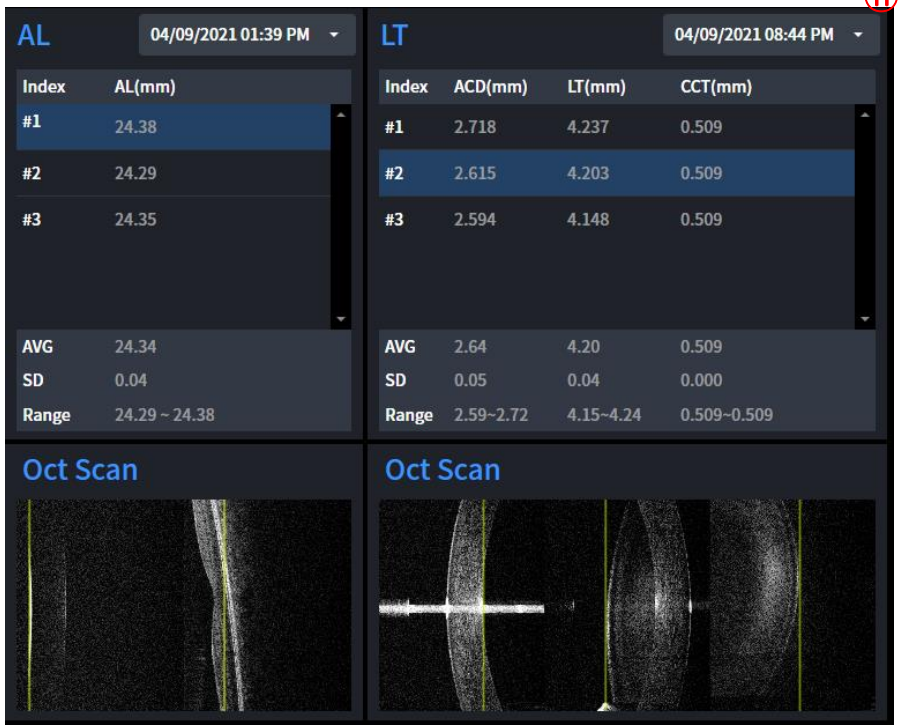
- Press a joystick if there is a rear side of a lens.
- Let a patient blinked and relaxed while an internal motor is moving to the cornea

How to make a perfect LT measurement(IV)

⑩



⑪



HOCT-1F

Beginning is half done.
Endless beginnings are a life itself.

Thank you

Huvitz Re:define, Re+create