



Optometric
Education
Consultants

OCT and OCT Angiography in Glaucoma

Greg Caldwell, OD, FAAO

March 18, 2023

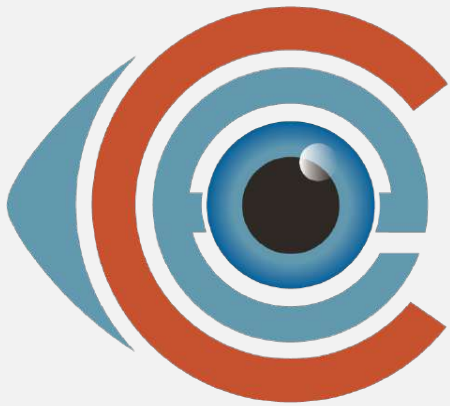


Disclosures- Greg Caldwell, OD, FAAO

All relevant relationships have been mitigated

- Lectured for: Alcon, Allergan, Aerie, B&L, BioTissue, Kala, Maculogix, Optovue, RVL, Heru, Santen
 - Disclosure: Receive speaker honorariums
- Advisory Board: Allergan, Alcon, Dompe, Eyenovia Tarsus, Visus
- I have no direct financial or proprietary interest in any companies, products or services mentioned in this presentation
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Optometric
Education
Consultants

OCT in my office:

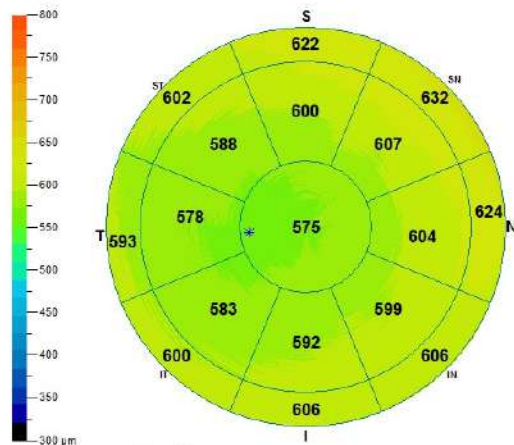
- A. OCT
- B. OCT and OCT Angiography
- C. No OCT technology

OCT Anterior Segment Applications in Glaucoma

OCT for Pachymetry in Glaucoma

Right / OD

Exam Date: 03/23/2018 15:32:50



Corneal Power		
Measurement Reliability Rating GOOD		
Within central 3mm		
	Net	Anterior
Power	42.47	48.52
		Posterior
		-6.17
Curvature radius		
Anterior:	7.750	Posterior: 6.482

Pachymetry OU Report

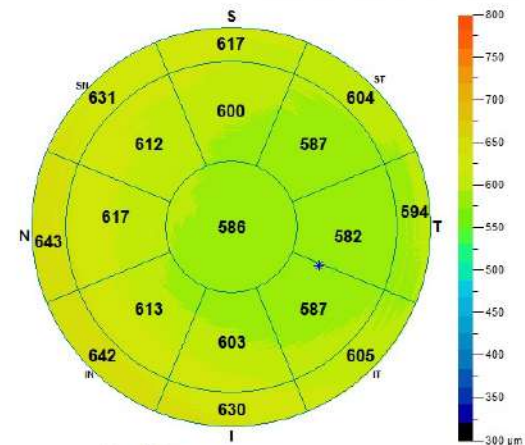
34 Signal Strength Index 39

Pachymetry Map

Pachymetry			
Pachymetry statistics within central 5mm			
	OD	OS	
SN-TT(2-5mm):	24	25	S-T(2-5mm): 8 -3
Min:	569	575	Location Y: -86 -582
Min-Median:	-22	-21	Min-Max: -52 -57
Min thickness indicated as *			

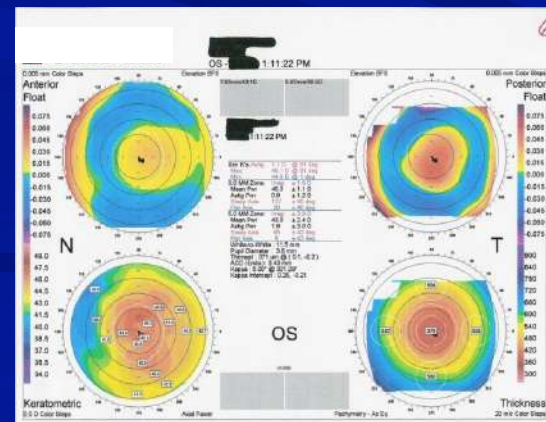
Left / OS

Exam Date: 03/23/2018 15:33:24

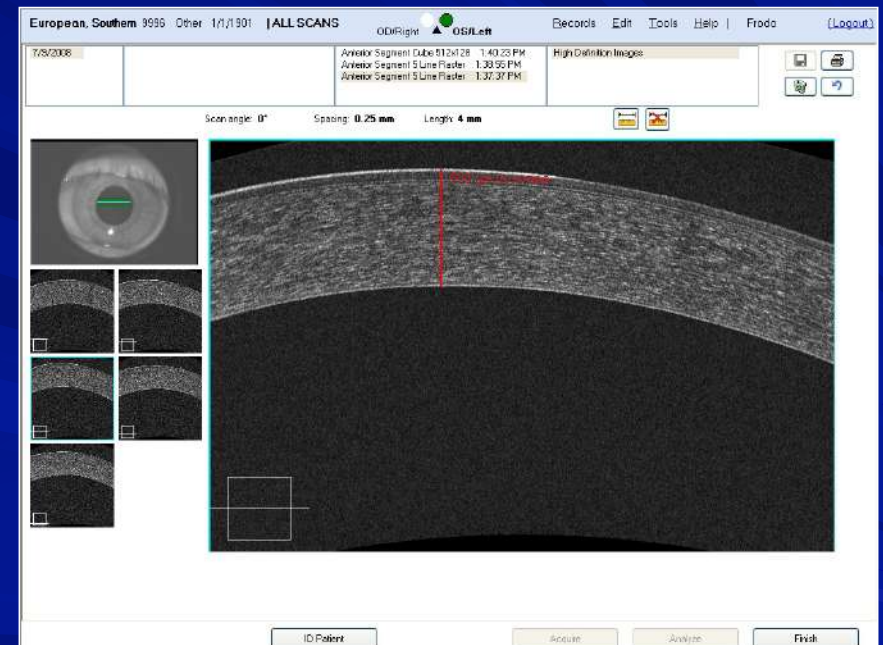
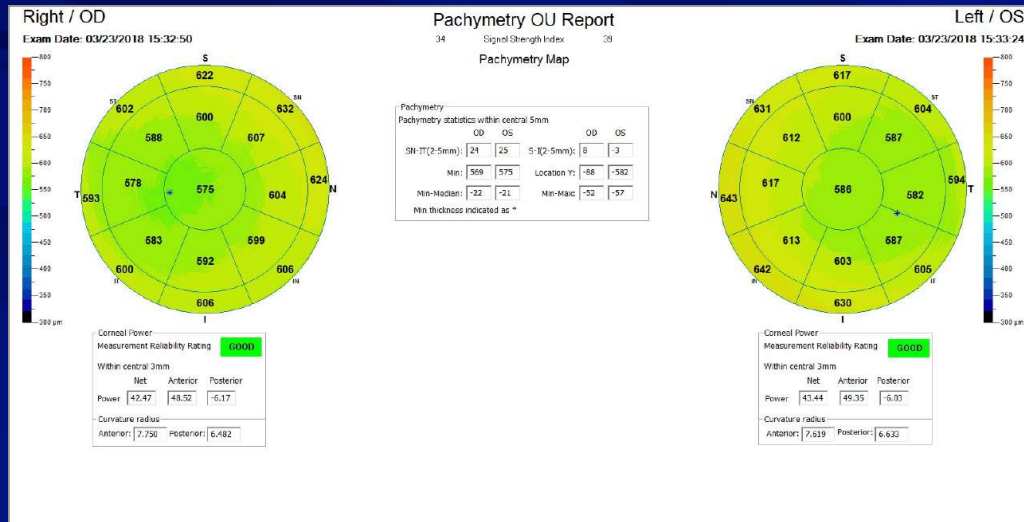


Corneal Power		
Measurement Reliability Rating GOOD		
Within central 3mm		
	Net	Anterior
Power	43.44	49.35
		Posterior
		-6.03
Curvature radius		
Anterior:	7.619	Posterior: 6.633

Ultrasonic versus Optical versus OCT



Anterior Segment Imaging Pachymetry



55-Year-Old Men

500 microns CCT and 21 mm Hg with Goldmann

What is the true IOP?

1. 18 mm Hg
2. 21 mm Hg
3. 24 mm Hg
4. Don't Know

600 microns CCT and 21 mm Hg with Goldmann

What is the true IOP?

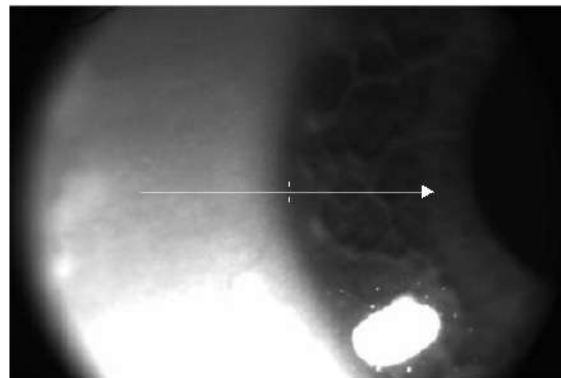
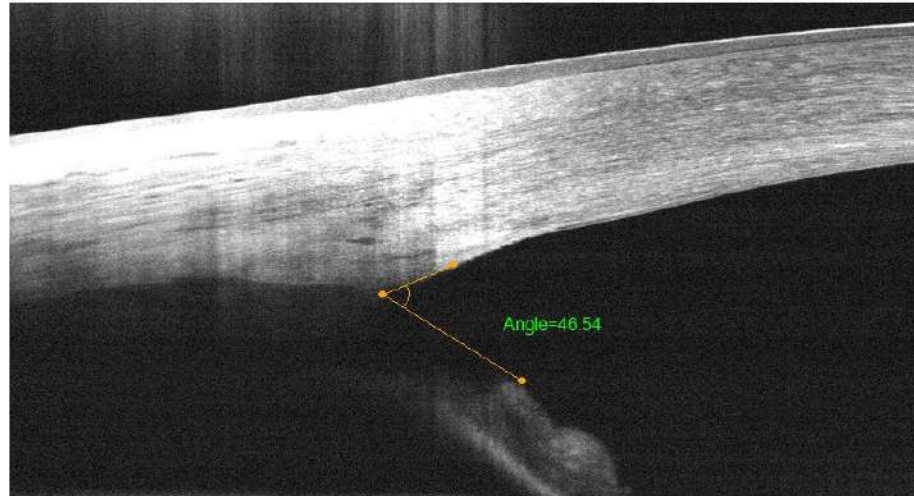
1. 18 mm Hg
2. 21 mm Hg
3. 24 mm Hg
4. Don't Know

Corneal Curvature
Corneal Thickness
Corneal Rigidity

Cornea Angle

Scene Quality Index Good: 90

Right / OD

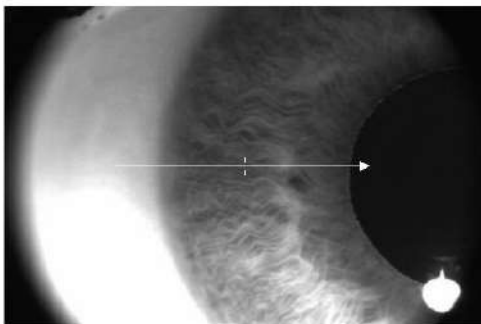
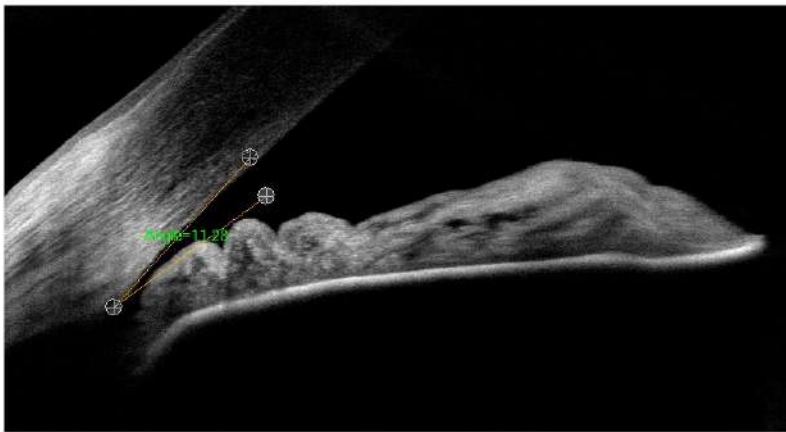


Less Than 15 Degrees Get Consult

Cornea Angle

Scan Quality Index Good: 66

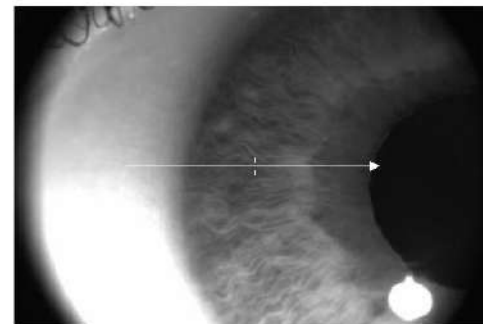
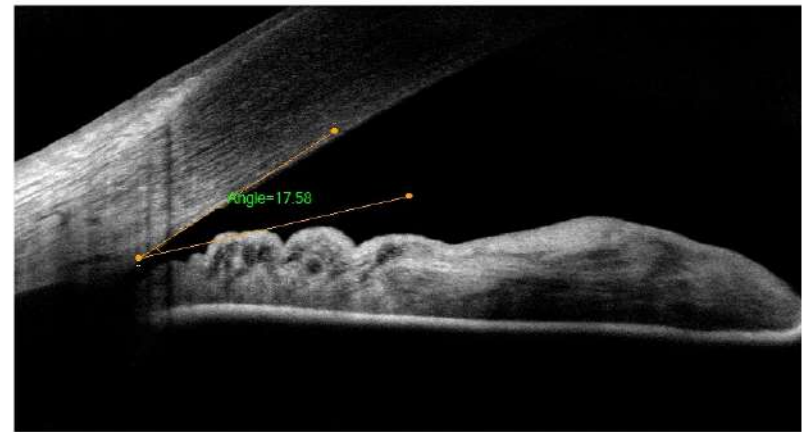
Right / OD



Cornea Angle

Scan Quality Index Good: 69

Left / OS

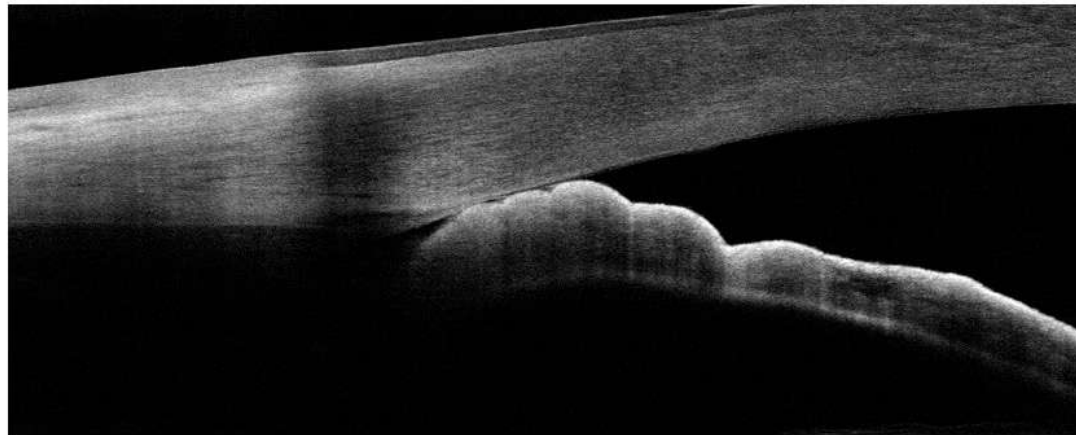


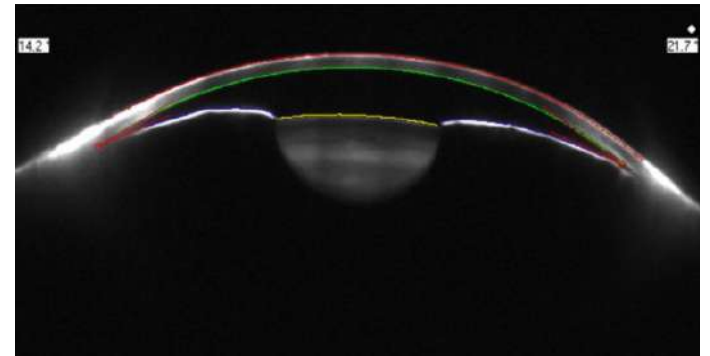
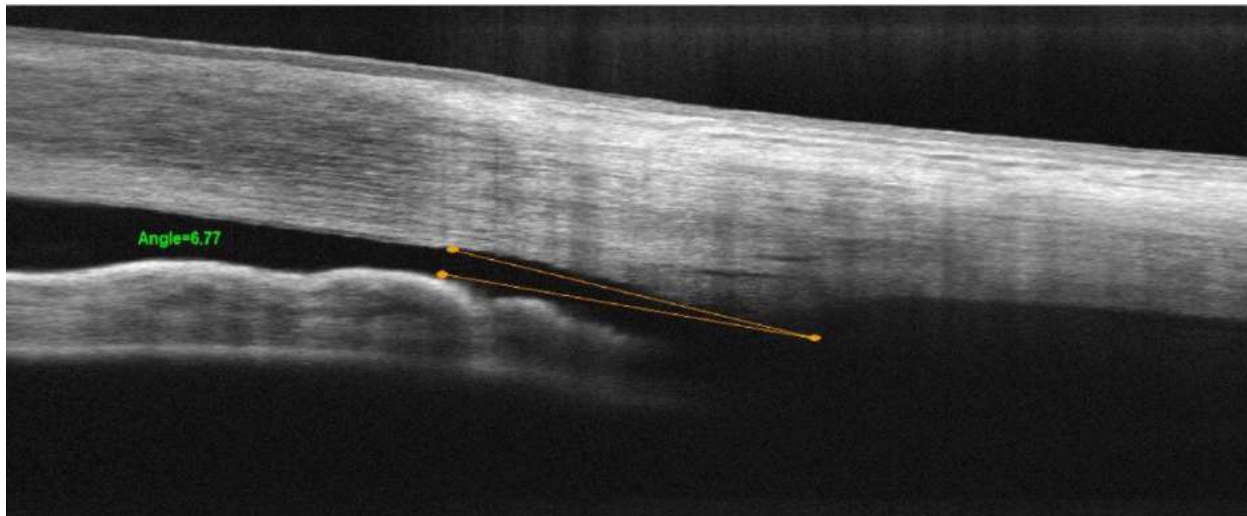
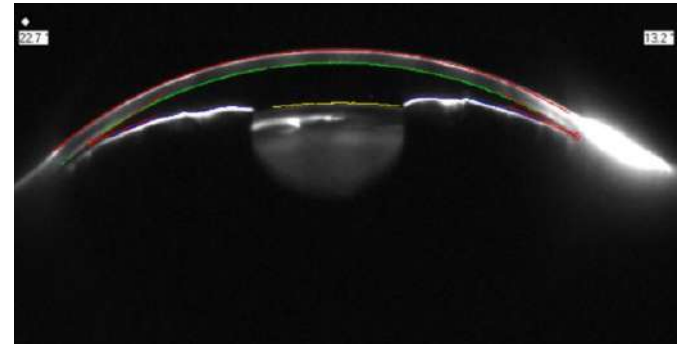
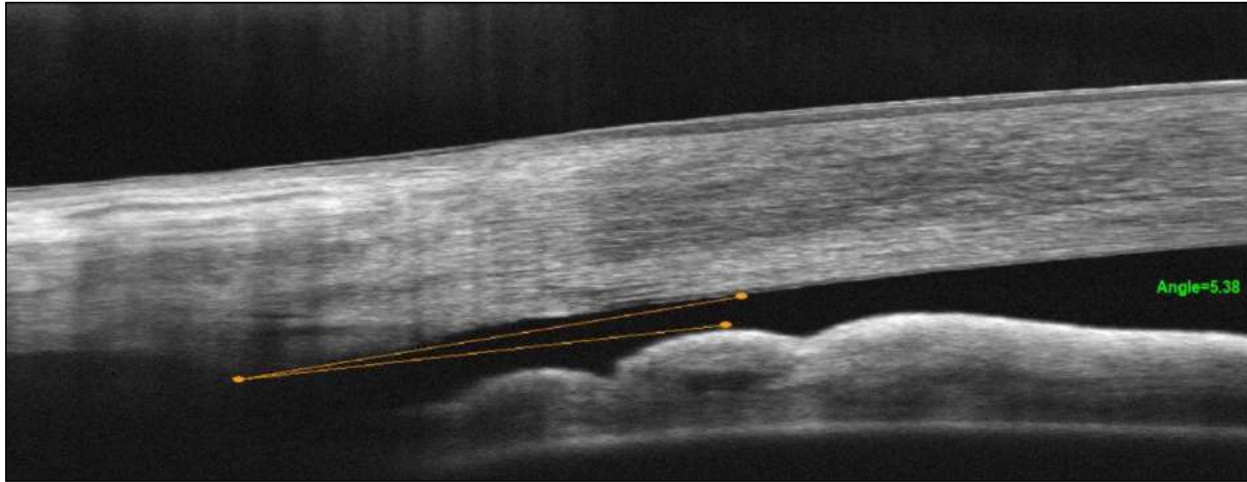
Closed Angle

Cornea Angle

Scan Quality Index Good 76

Right / OD

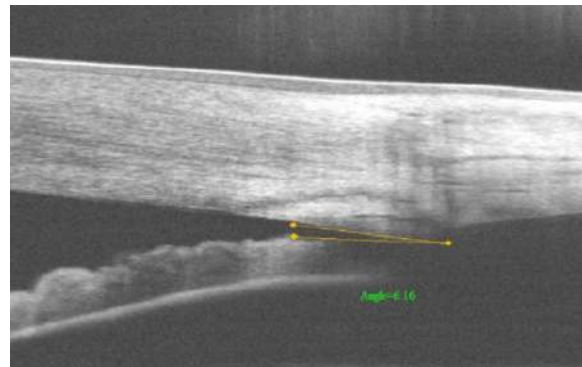
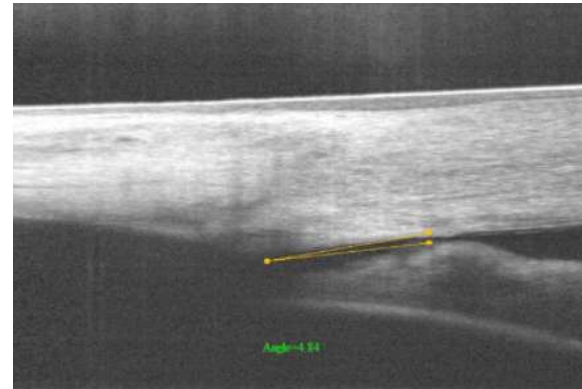




Assessment and Plan?

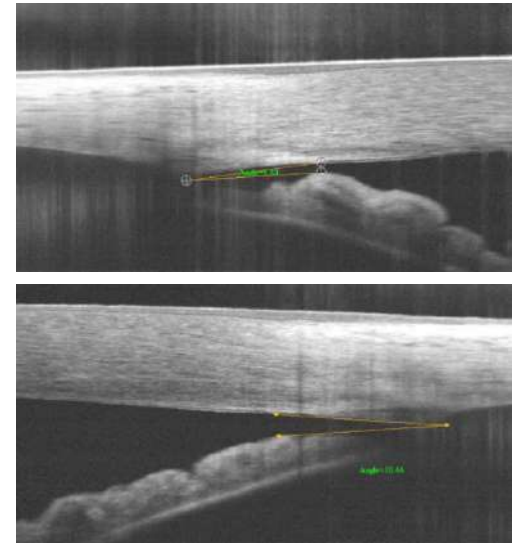
Backed into a closure corner

- 30 YOF
- 2018: Referred for narrow angles
- BVA: +2.00 DS 20/20; +1.25 DS 20/20
- Gonio: “slit OU” Grade 1 OU
- IOP 18 mm OU
- Dx: PACS OU
- Plan LPI OU

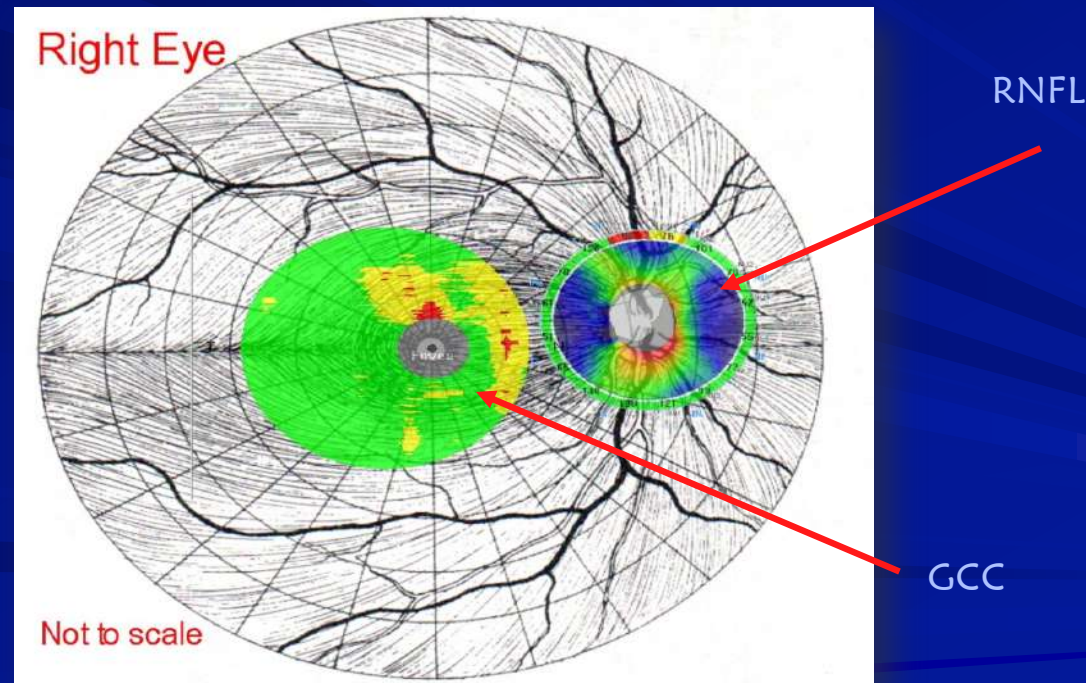


Backed into a closure corner

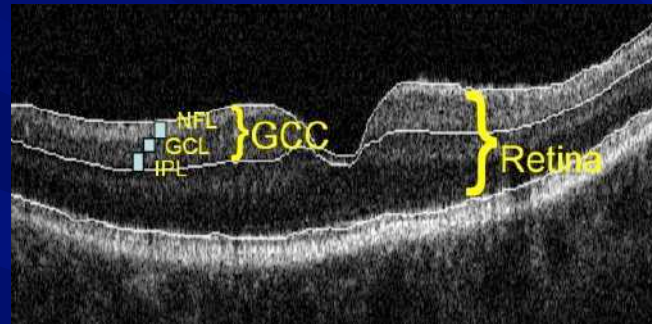
- Follow up (2018)
- No appreciable change after LPI
- Gonio: grade 1; no PAS, double hump sign
- Dx: plateau iris syndrome
- Plan: Discussion iridoplasty, pilocarpine, lens extraction
- Observation recommended
- Other glaucoma specialists may have different approach
 - welcome to second opinion
- Do not start any new medication without clearance
 - Cold and allergy meds



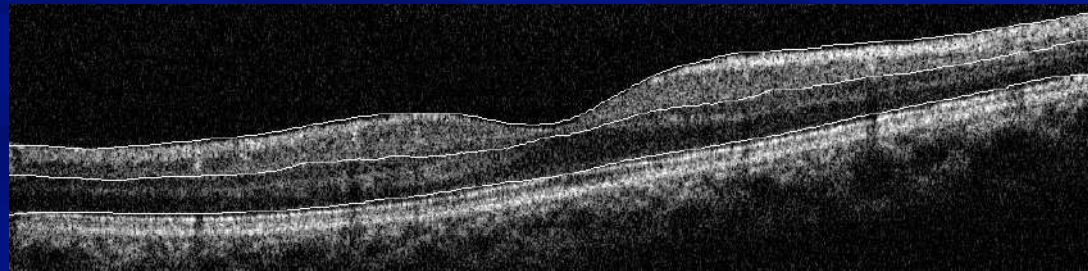
Overlay of the RNFL and GCC



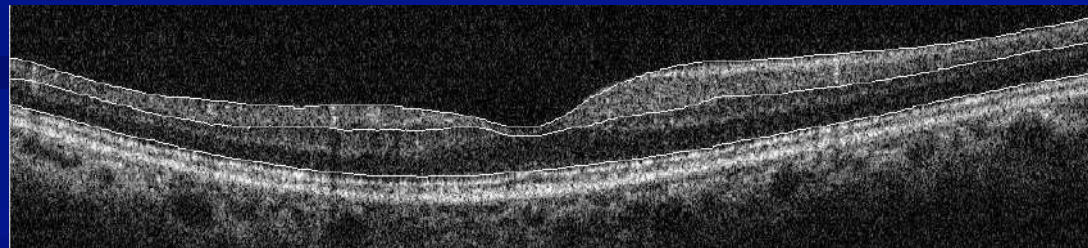
GCC Thinning in Glaucoma



Normal



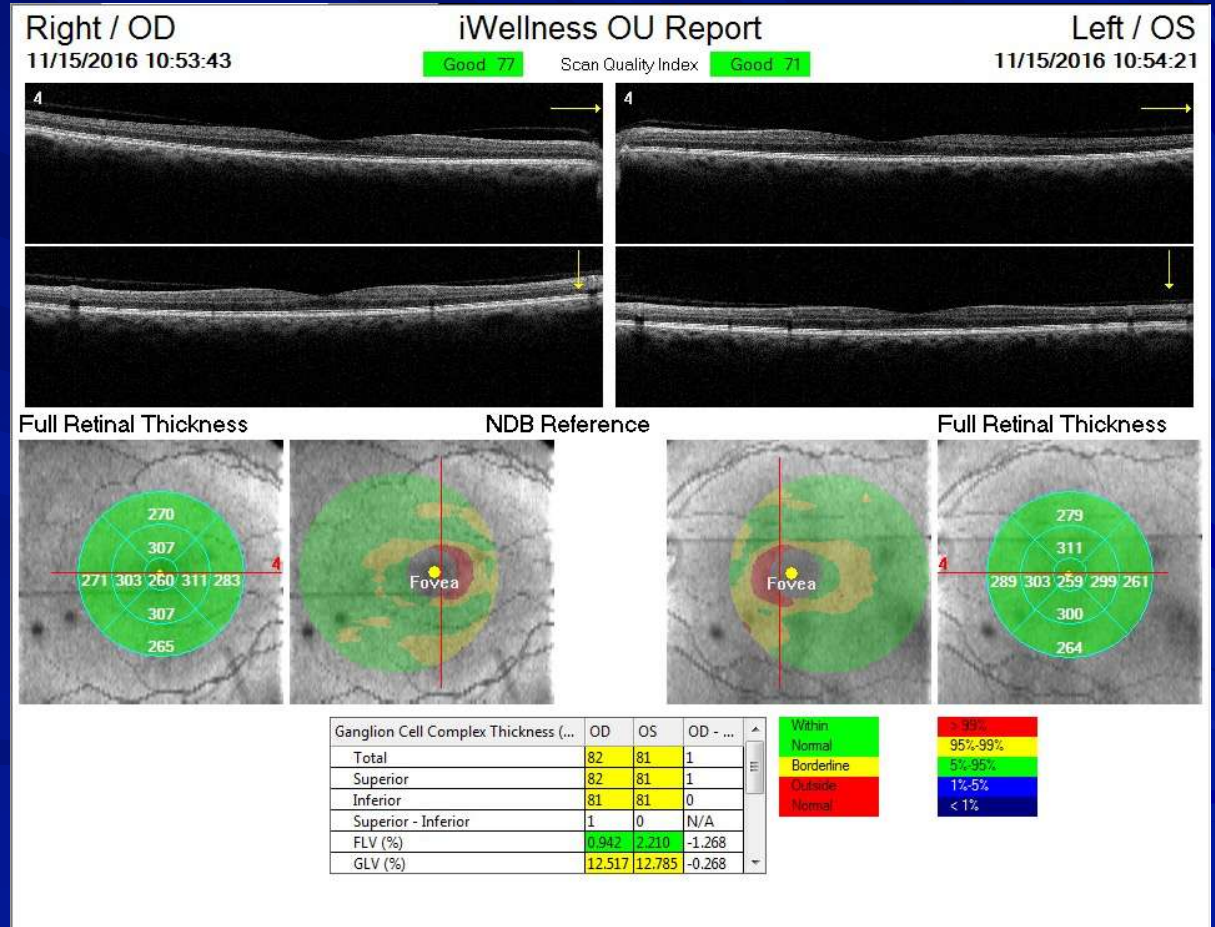
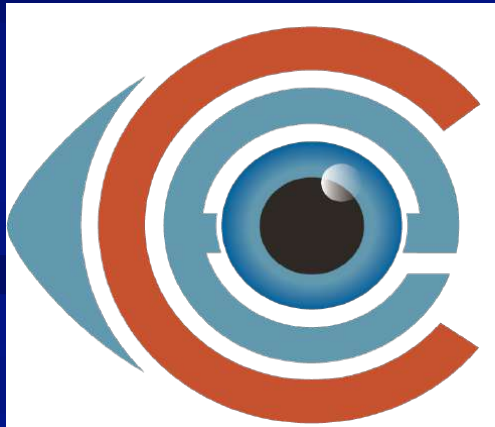
Glaucoma with thinner GCC



Test

👁️ This GCC thinning is most likely from glaucoma?

- ★ Yes
- ★ No
- ★ I don't know



Green, Red, Yellow, and Blue Disease

Physiologically Normal
OCT measure structure

Green, Red, Yellow, and Blue Disease

Hints to this Disease

🔗 If the disease is a bilateral disease

- ★ Glaucoma

- 📋 It is usually asymmetric

🔗 If the scans are symmetric

- ★ Then it most likely not disease – physiologically normal

- ★ Anatomical variation

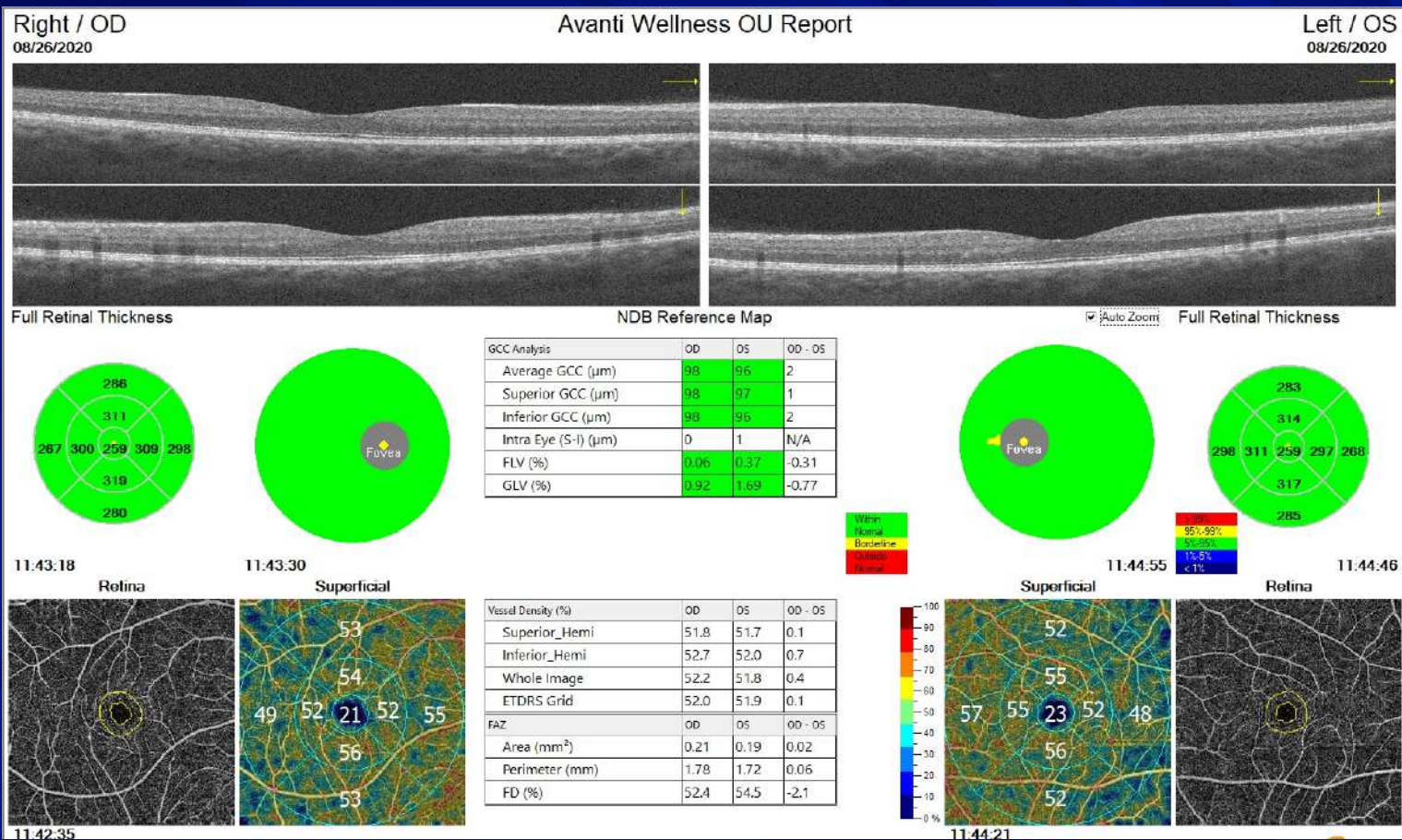
- 📋 Normal for that patient

🔗 Another hint is the GCC expected values

- ★ 85-100 microns

- ★ 92-95 microns

Symmetry and What is Being Tested



46-year-old woman with red-yellow disease

👁️ OD -0.75 20/20

👁️ OS -1.25 20/20

👁️ Systemic hx: thyroid dysfunction, high cholesterol

★ Medications for the above

👁️ IOPs 15 mm Hg OU 8:30 am

Right / OD
10/24/2016 08:27:57

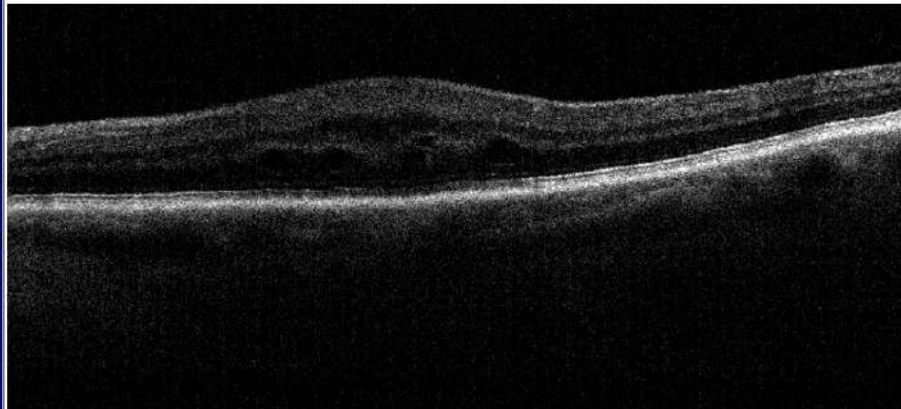
iWellness OU Report

Good 63 Scan Quality Index Good 57

Left / OS
10/24/2016 08:28:38

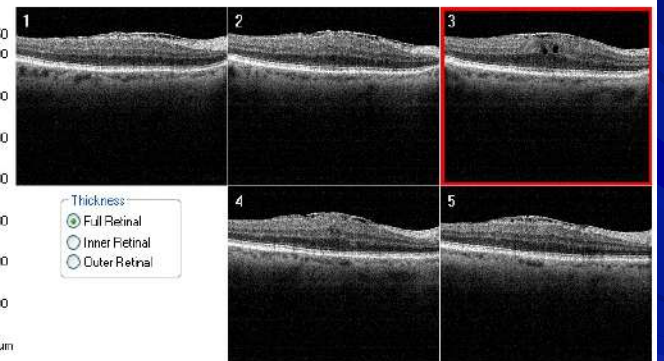
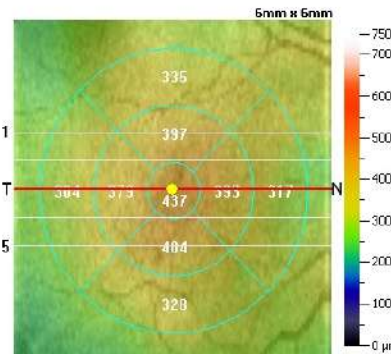
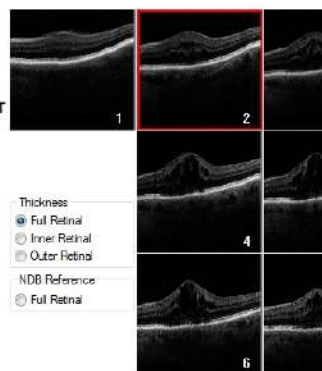
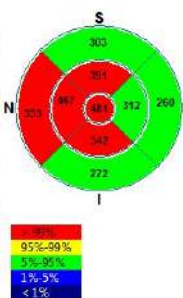
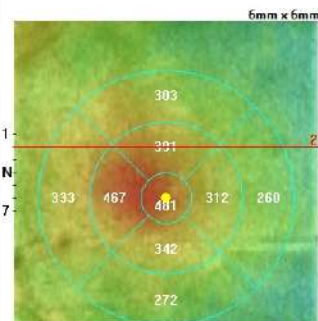
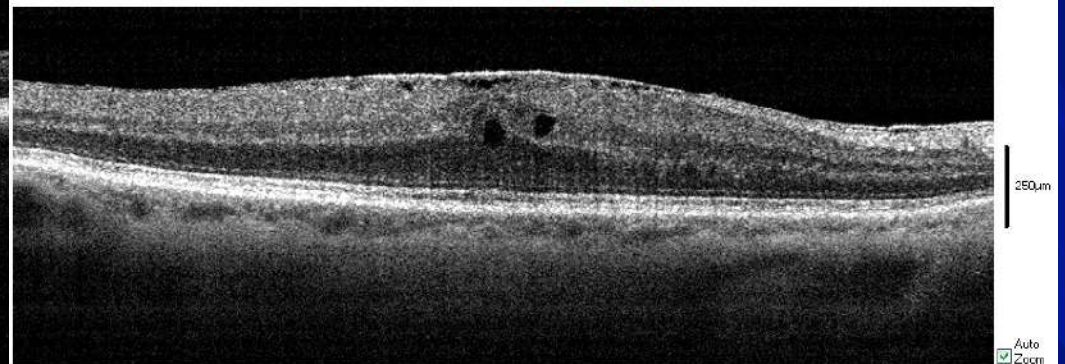
Retina Map

Scan Quality Index Good 47 View Reproducibility



Left Retina Map

Scan Quality Index Good 54



Thickness
Full Retinal
Inner Retinal
Outer Retinal

Print

Change Analysis

Comment

Print

Change Analysis

OU Report

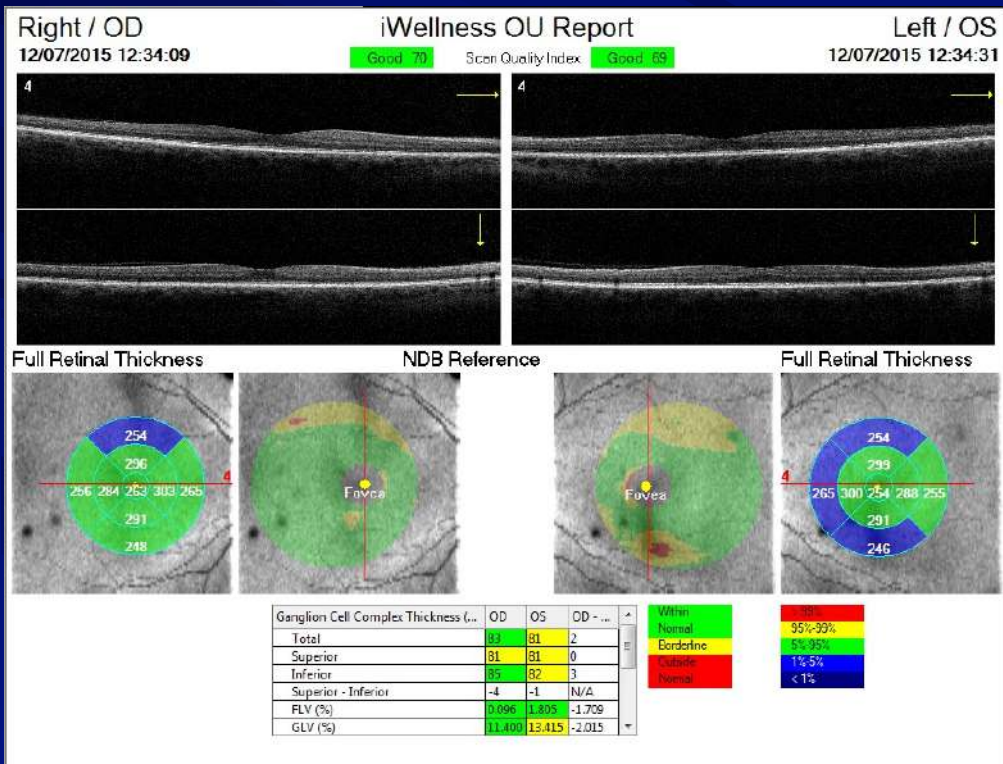
Comment

63-year-old woman with red, yellow, blue, and green disease

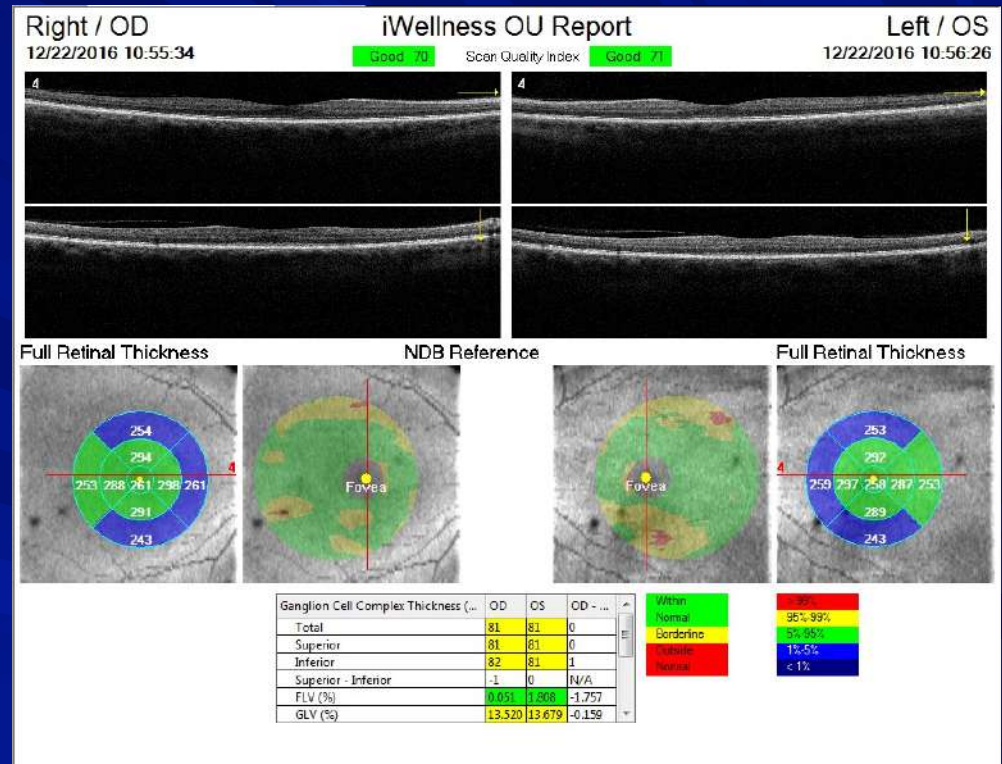
👁 OD plano/ +2.00 20/20

👁 OS -0.50/ +2.00 20/20

👁 IOPs 15-18 mm Hg OU 2011-2015



2015



2016

58-year-old with yellow disease

👁 OD +1.00 20/20

👁 OS +1.25 20/20

👁 IOPs: 13/15 mm Hg at 11:24 am

👁 (pay attention to FLV and GLV)

Right / OD

11/15/2016 10:53:43

iWellness OU Report

Good 77

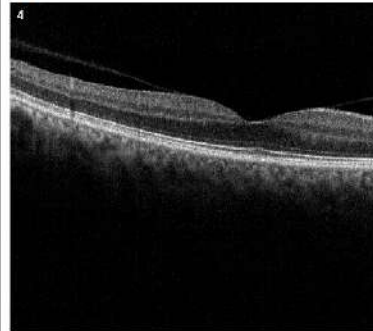
Scan Quality Index

Good 71

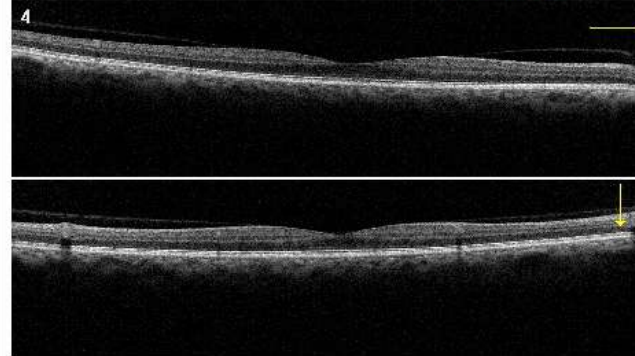
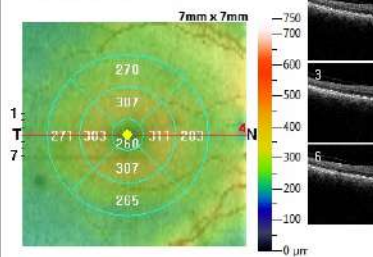
Left / OS

11/15/2016 10:54:21

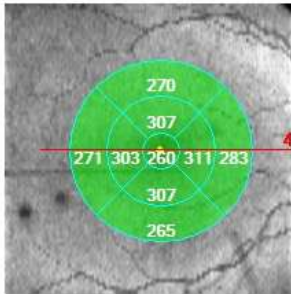
iWellness



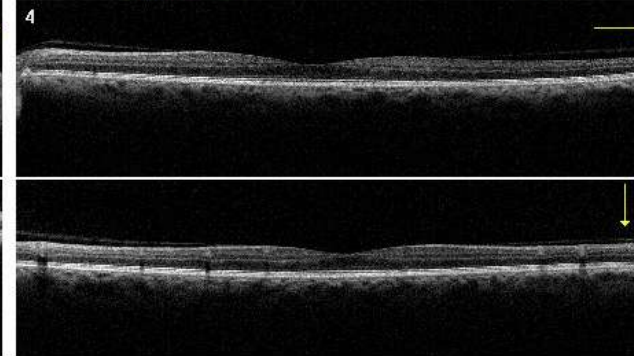
Full Retinal Thickness



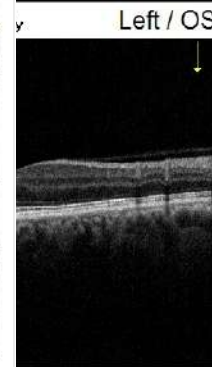
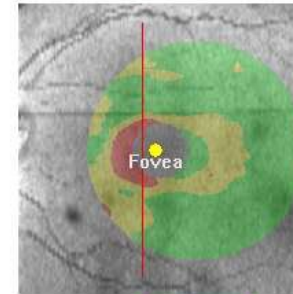
Full Retinal Thickness



NDB Reference

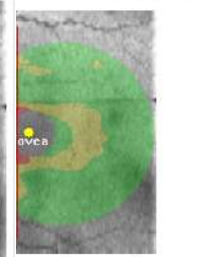


Full Retinal Thickness



Left / OS

NDB Reference



Ganglion Cell Complex Thickness (...)	OD	OS	OD - ...
Total	82	81	1
Superior	82	81	1
Inferior	81	81	0
Superior - Inferior	1	0	N/A
FLV (%)	0.942	2.210	-1.268
GLV (%)	12.517	12.785	-0.268

Within
Normal
Borderline
Outside
Normal

> 99%
95%-99%
5%-95%
1%-5%
< 1%

µm	Within Normal Borderline Outside Normal
81	Within
81	Normal
81	Borderline
0	Outside
2.210	Normal
12.785	Normal

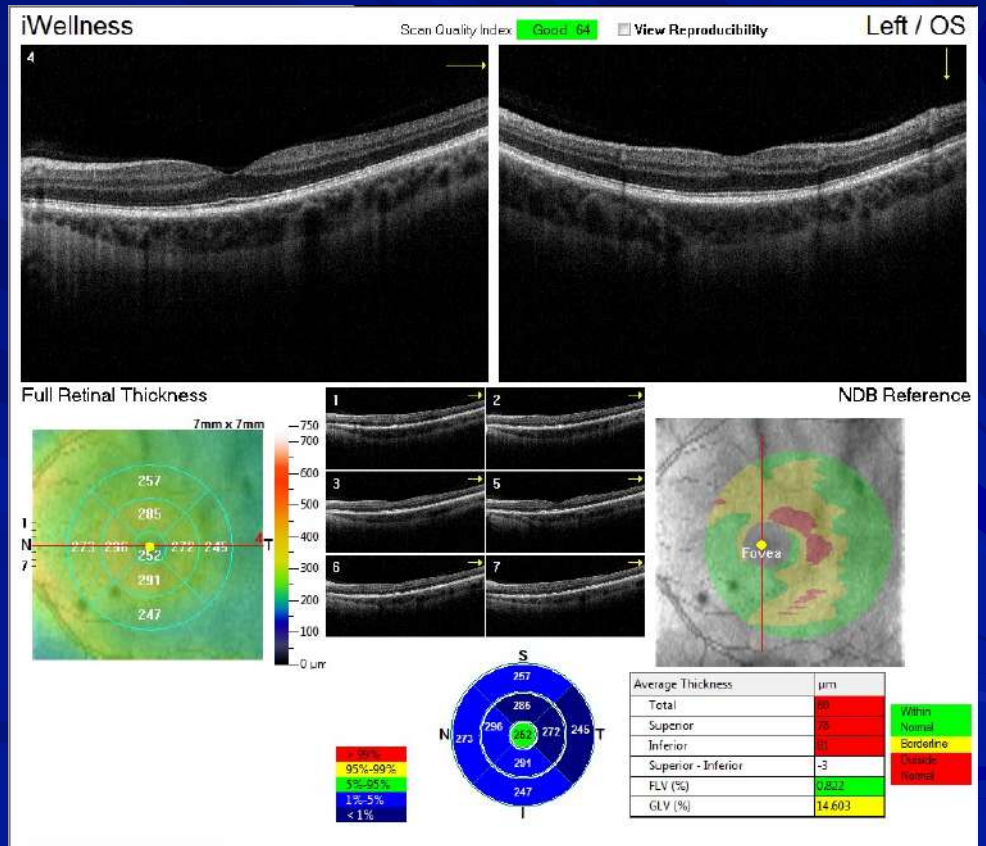
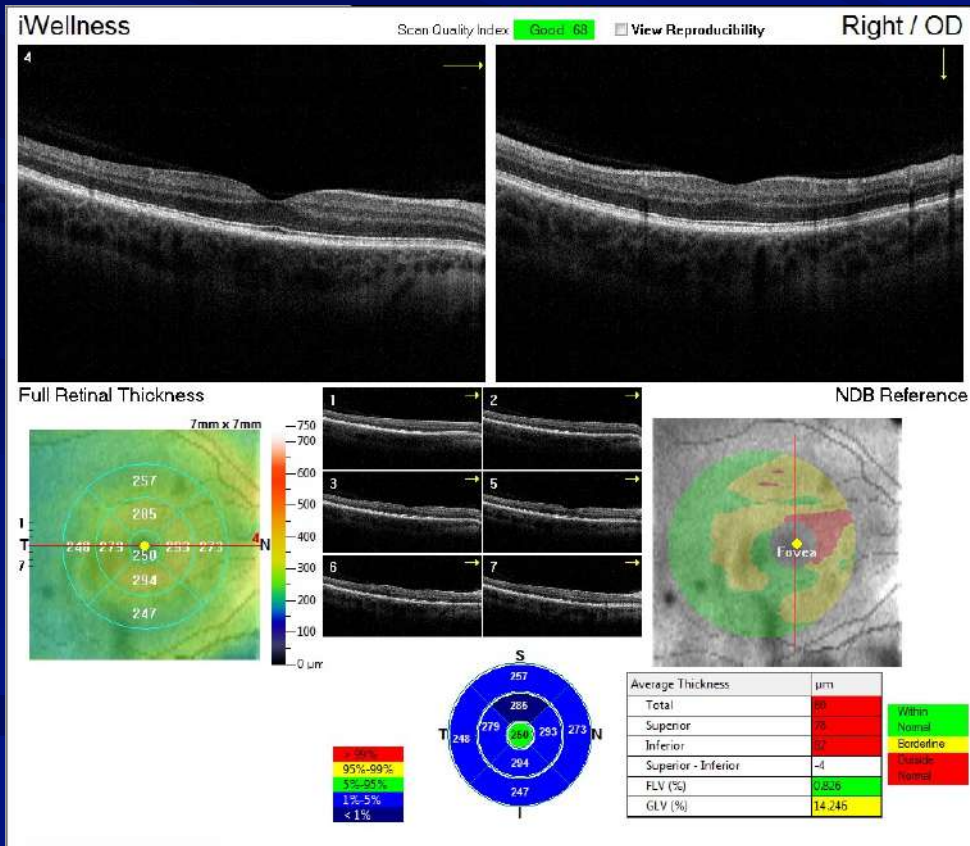
40 yo man with red, blue, green disease

👁️ OD -7.50 – 0.75 x 110 20/20

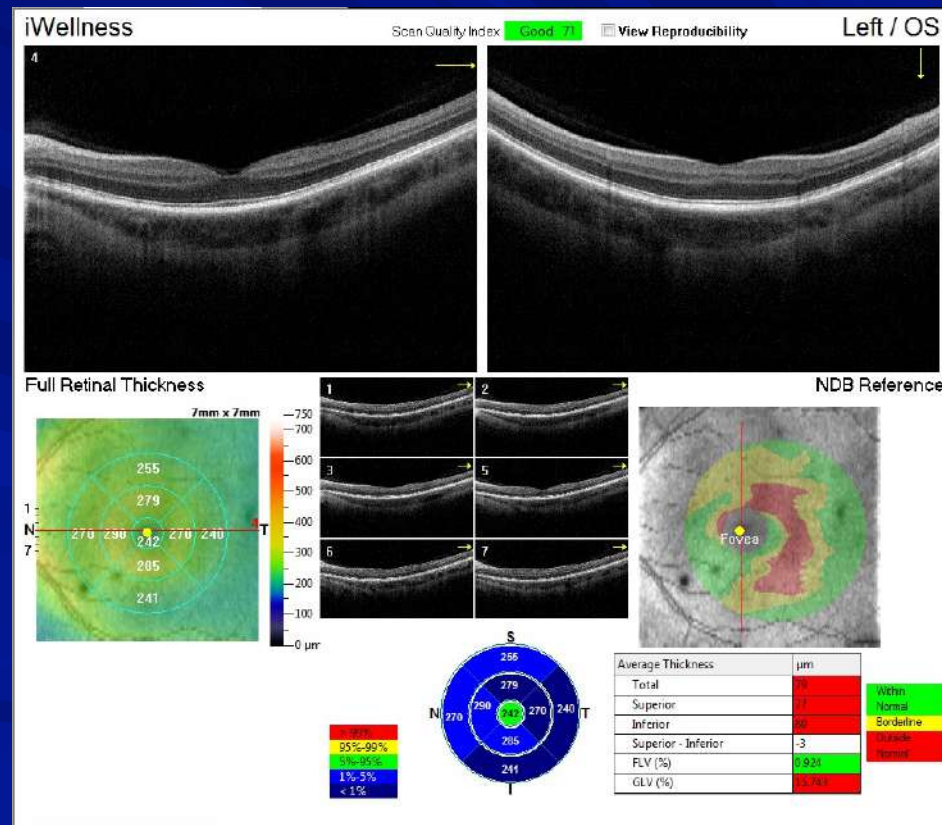
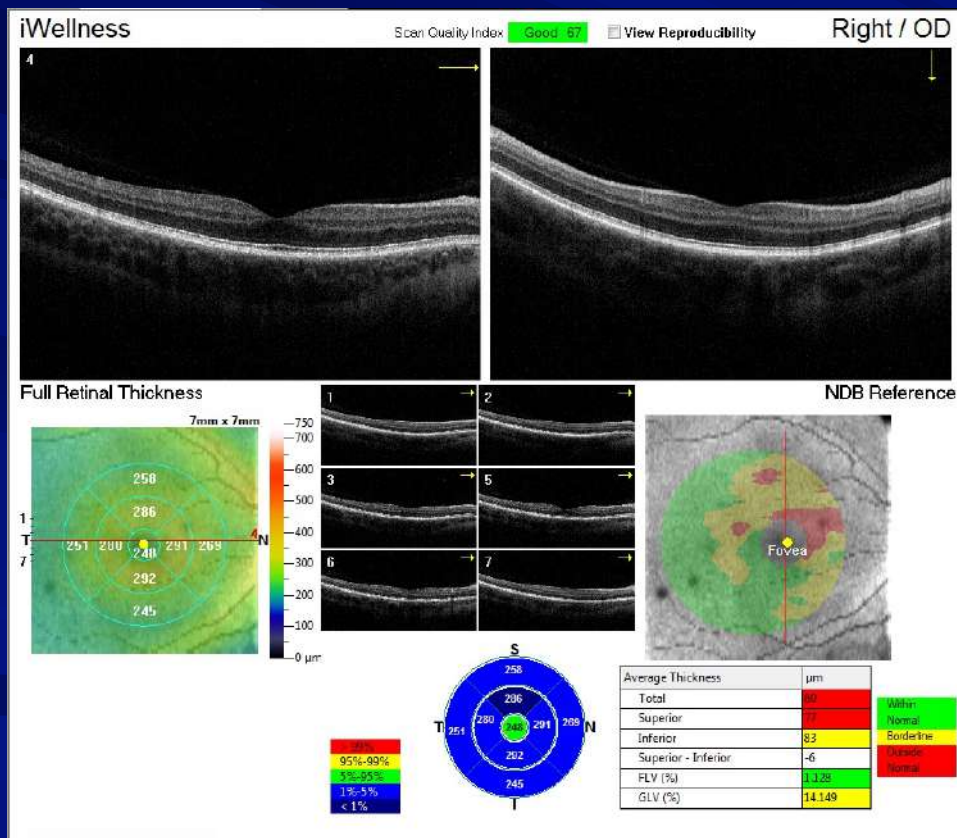
👁️ OS -7.50 – 0.75 x 105 20/20

👁️ IOPs: 15/13 mm Hg at 6:30 pm

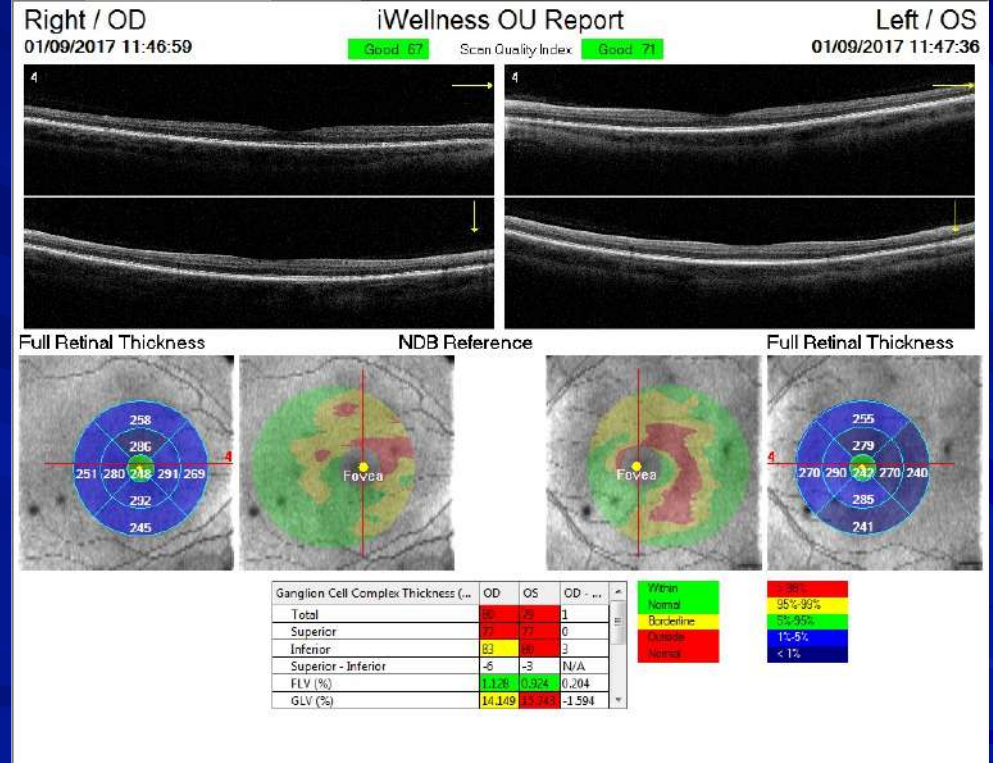
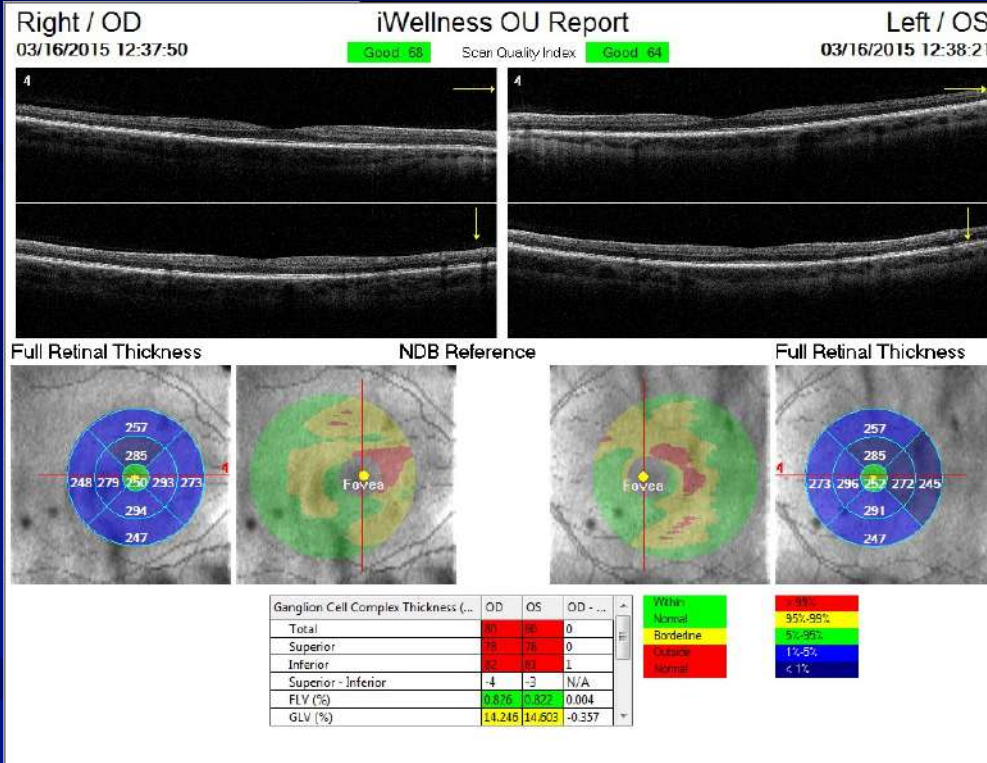
March 16, 2015



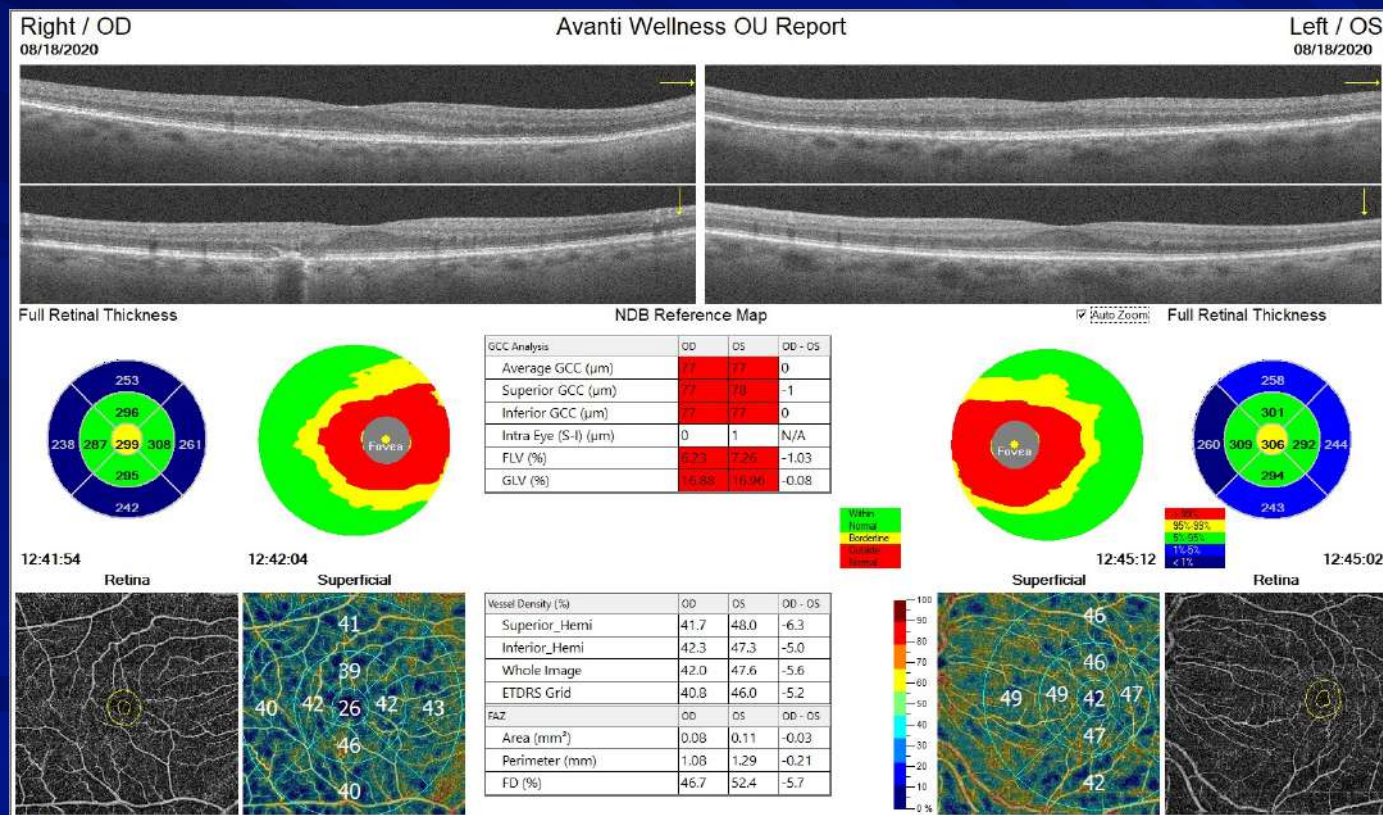
January 9, 2017



22 months apart

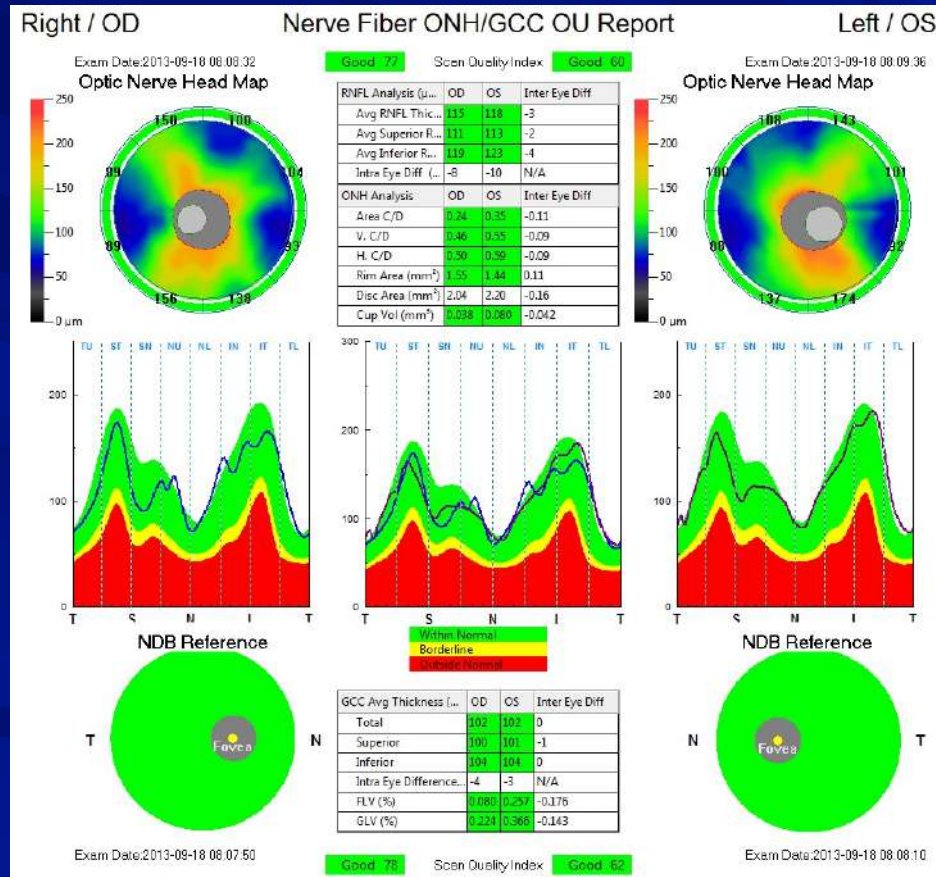


79-year-old woman with DM



Glaucoma

NFL and GCC



Right / OD

Nerve Fiber ONH/GCC OU Report

Left / OS

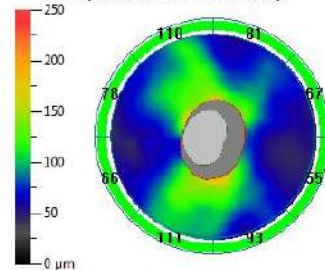
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Good 65

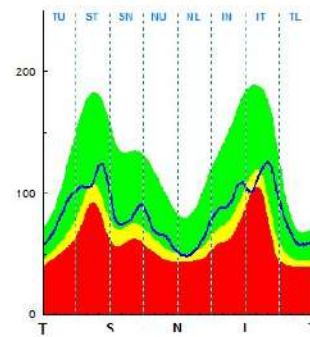
Scan Quality Index

Good 54

Optic Nerve Head Map



RNFL Analysis (μm)	OD	OS	Inter Eye Diff
Avg RNFL Thic...	83	77	6
Avg Superior R...	84	69	15
Avg Inferior R...	81	86	-5
Intra Eye Diff (...)	3	-17	N/A
ONH Analysis	OD	OS	Inter Eye Diff
Area C/D	0.47	0.76	-0.29
V. C/D	0.72	0.87	-0.15
H. C/D	0.70	0.95	-0.25
Rim Area (mm²)	1.20	0.57	0.63
Disc Area (mm²)	2.26	2.43	-0.17
Cup Vol (mm³)	0.206	0.458	-0.252



NDB Reference



Exam Date:2013-09-13 07:47:30

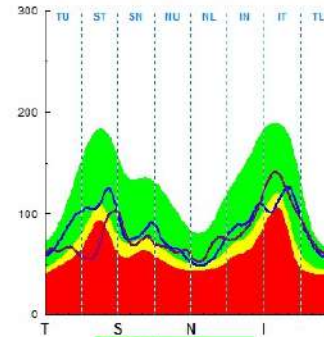
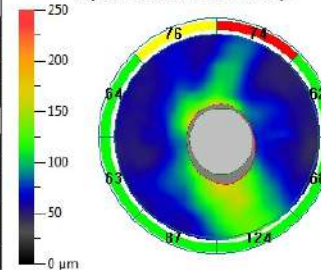
Good 65

Scan Quality Index

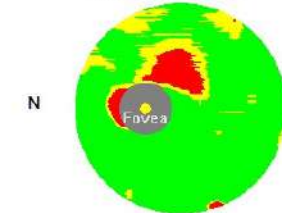
Good 56

Exam Date:2013-09-13 07:50:43

Optic Nerve Head Map



NDB Reference



Exam Date:2013-09-13 07:50:09

GCC Avg Thickness (μm)	OD	OS	Inter Eye Diff
Total	92	87	5
Superior	93	78	15
Inferior	92	96	-4
Intra Eye Difference...	1	-18	N/A
FLV (%)	1.060	4.583	-3.522
GLV (%)	9.130	9.583	-6.453

Right / OD

Nerve Fiber ONH/GCC OU Report

Left / OS

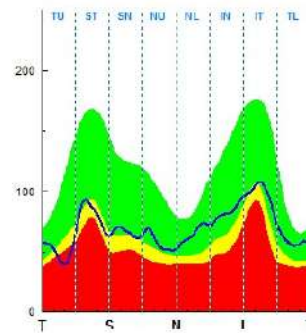
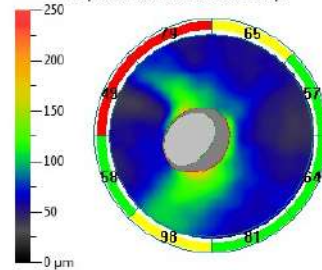
Exam Date: 2013-09-03 10:42:29

Good 51

Scan Quality Index

Good 47

Optic Nerve Head Map



NDB Reference



Exam Date: 2013-09-03 10:40:29

Good 51

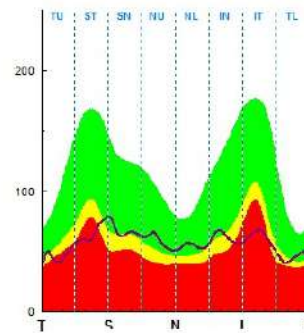
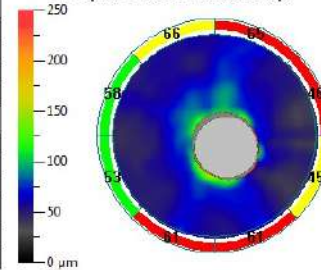
Scan Quality Index

Good 53

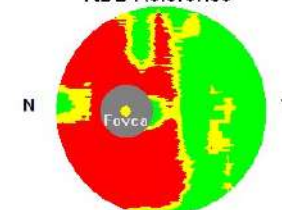
RNFL Analysis (μm)	OD	OS	Inter Eye Diff
Avg RNFL Thic...	89	57	12
Avg Superior R...	83	59	4
Avg Inferior R...	75	55	20
Intra Eye Diff (...)	-12	4	N/A
ONH Analysis	OD	OS	Inter Eye Diff
Area C/D	0.61	0.83	-0.24
V. C/D	0.85	0.95	-0.10
H. C/D	0.79	0.97	-0.18
Rim Area (mm²)	0.77	0.30	0.47
Disc Area (mm²)	1.94	2.03	-0.09
Cup Vol (mm³)	0.101	0.554	-0.393

Exam Date: 2013-09-03 10:43:43

Optic Nerve Head Map



NDB Reference



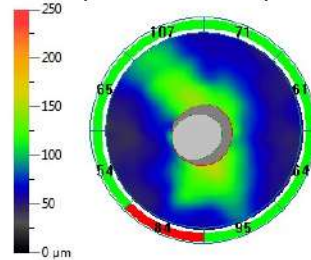
Exam Date: 2013-09-03 10:41:07

GCC Avg Thickness (μm)	OD	OS	Inter Eye Diff
Total	82	78	12
Superior	78	73	5
Inferior	85	81	18
Intra Eye Difference...	-7	6	N/A
FLV (%)	2.993	2.259	-6.225
GLV (%)	10.8	21.6	-10.765

Right / OD

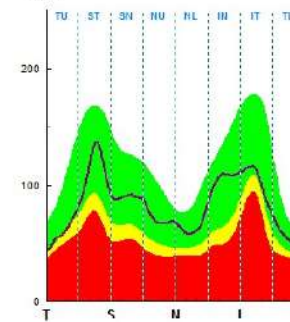
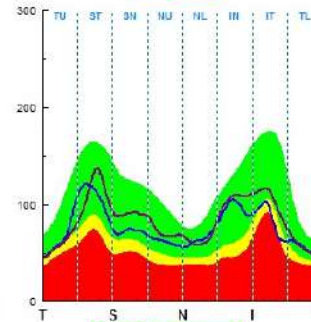
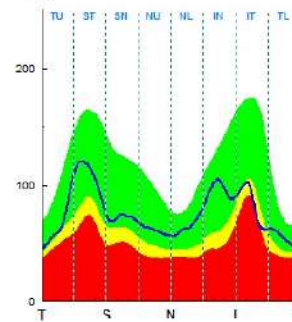
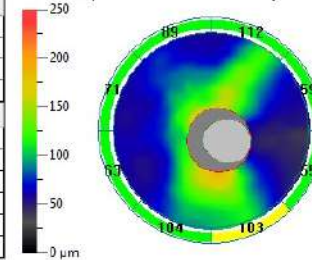
Nerve Fiber ONH/GCC OU Report

Left / OS

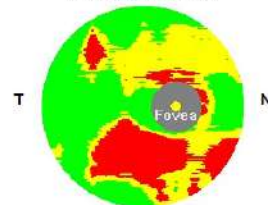
Exam Date: 2013-08-28 09:57:13
Optic Nerve Head Map

Good 42 Scan Quality Index Good 42

RNFL Analysis (μm)			
OD	OS	Inter Eye Diff	
Avg RNFL Thic...	75	82	-7
Avg Superior R...	70	83	-7
Avg Inferior R...	74	81	-7
Intra Eye Diff (...)	2	2	N/A
ONH Analysis			
OD	OS	Inter Eye Diff	
Area C/D	0.61	0.51	0.10
V. C/D	0.72	0.70	0.02
H. C/D	0.86	0.78	0.08
Rim Area (mm²)	0.69	0.97	-0.28
Disc Area (mm²)	1.78	2.00	-0.22
Cup Vol (mm³)	0.520	0.324	0.196

Exam Date: 2013-08-28 09:58:22
Optic Nerve Head Map

NDB Reference

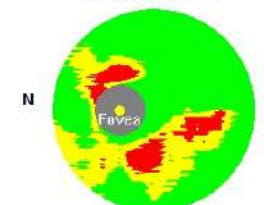


Exam Date: 2013-08-28 09:56:22

Good 51 Scan Quality Index Good 60

GCC Avg Thickness (μm)			
OD	OS	Inter Eye Diff	
Total	75	81	-6
Superior	78	85	-8
Inferior	72	76	-4
Intra Eye Difference...	6	10	N/A
FLV (%)	4.618	3.866	0.752
GLV (%)	17.6...	11.6...	5.991

NDB Reference



Exam Date: 2013-08-28 09:56:42

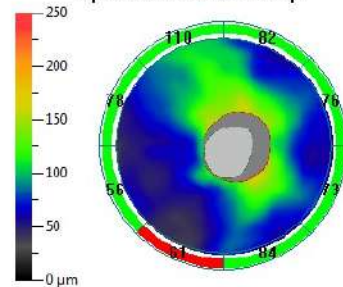
Right / OD

Nerve Fiber ONH/GCC OU Report

Left / OS

Exam Date: 2013-06-13 10:03:42

Optic Nerve Head Map



Good 58

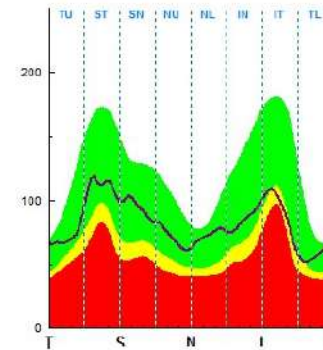
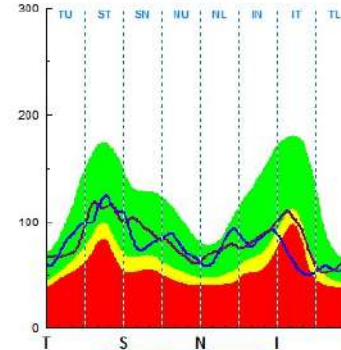
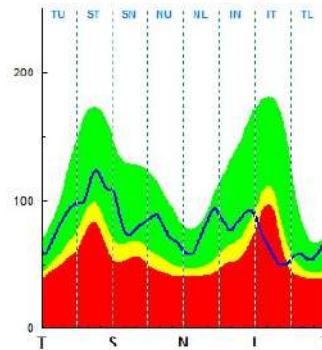
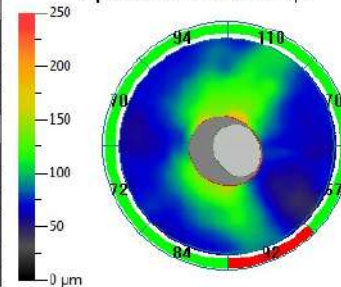
Scan Quality/Index

Good 53

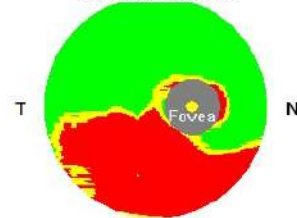
RNFL Analysis (μm)	OD	OS	Inter Eye Diff
Avg RNFL Thic...	78	81	-3
Avg Superior R...	86	86	0
Avg Inferior R...	69	76	-7
Intra Eye Diff (...)	17	10	N/A
ONH Analysis	OD	OS	Inter Eye Diff
Area C/D	0.53	0.49	0.04
V. C/D	0.79	0.77	0.02
H. C/D	0.75	0.68	0.07
Rim Area (mm²)	0.90	1.03	-0.13
Disc Area (mm²)	1.93	2.01	-0.08
Cup Vol (mm³)	0.228	0.197	0.031

Exam Date: 2013-06-13 10:04:49

Optic Nerve Head Map



NDB Reference



Exam Date: 2013-06-13 10:02:16

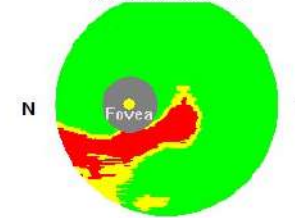
Good 61

Scan Quality/Index

Good 57

GCC Avg Thickness (μm)	OD	OS	Inter Eye Diff
Total	74	85	-11
Superior	87	91	-4
Inferior	63	79	-18
Intra Eye Difference...	26	12	N/A
FLV (%)	15.3	4.890	8.424
GLV (%)	19.0...	8.073	10.936

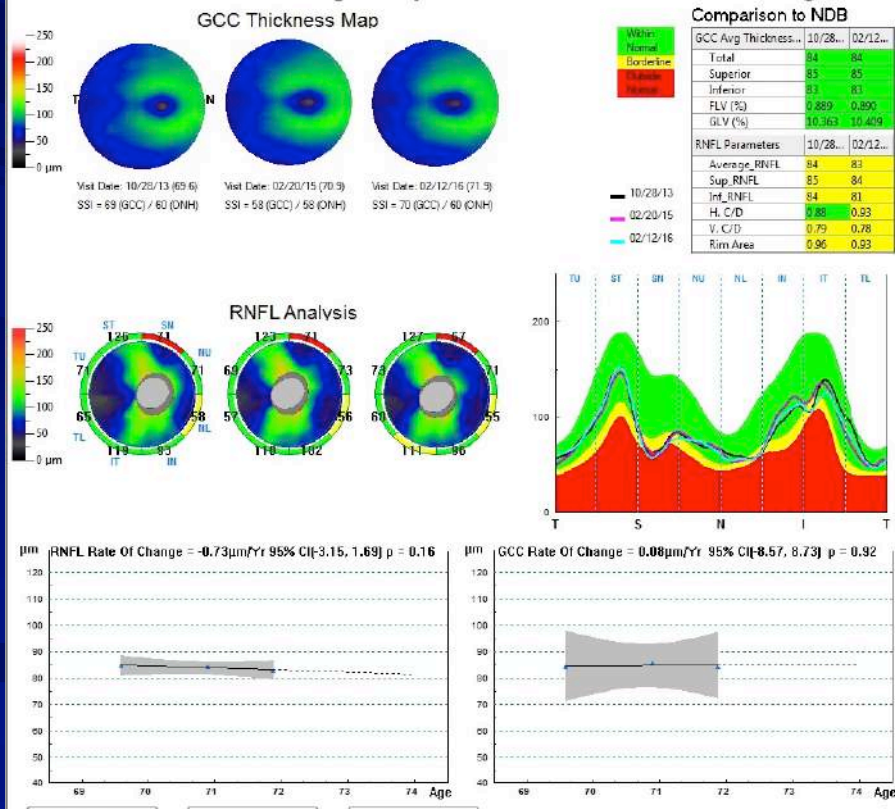
NDB Reference



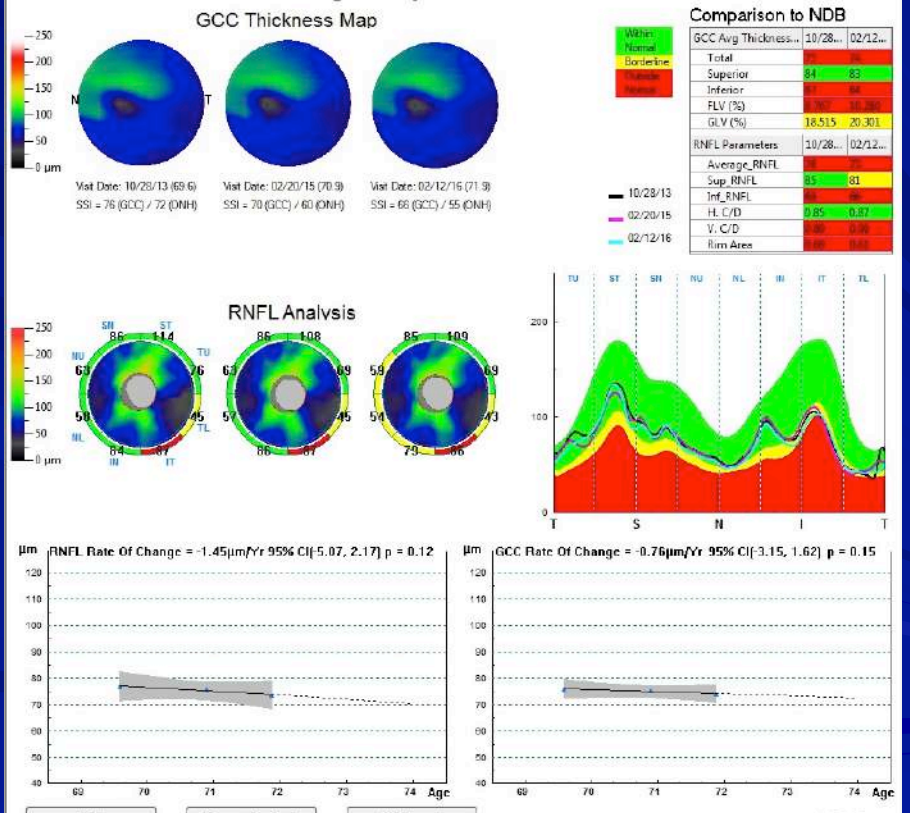
Exam Date: 2013-06-13 10:02:48

POAG

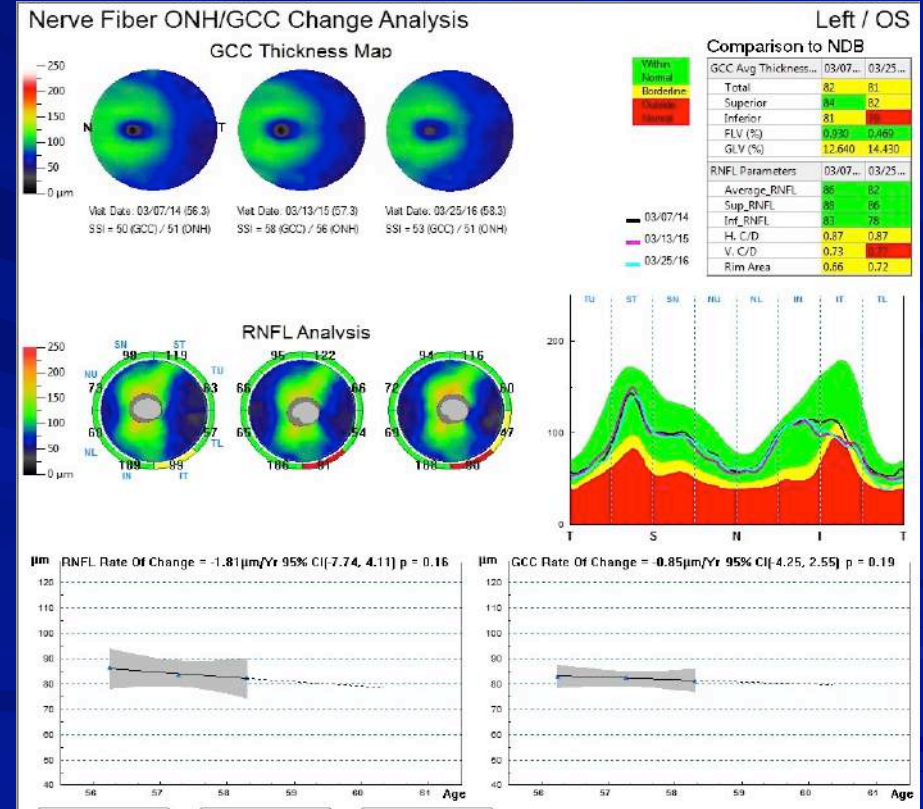
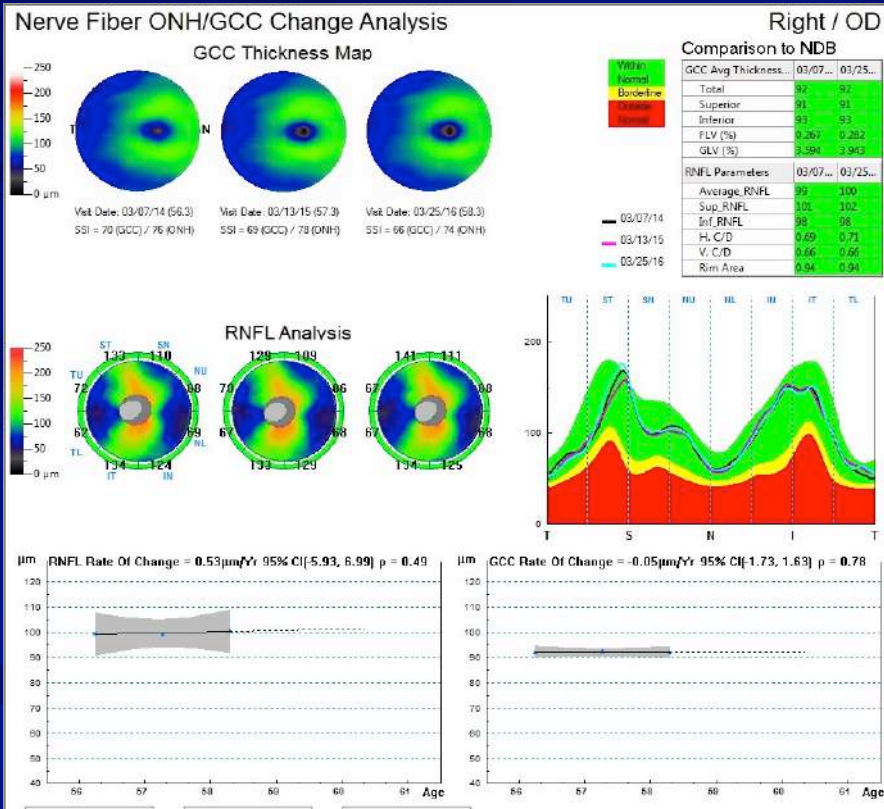
Nerve Fiber ONH/GCC Change Analysis



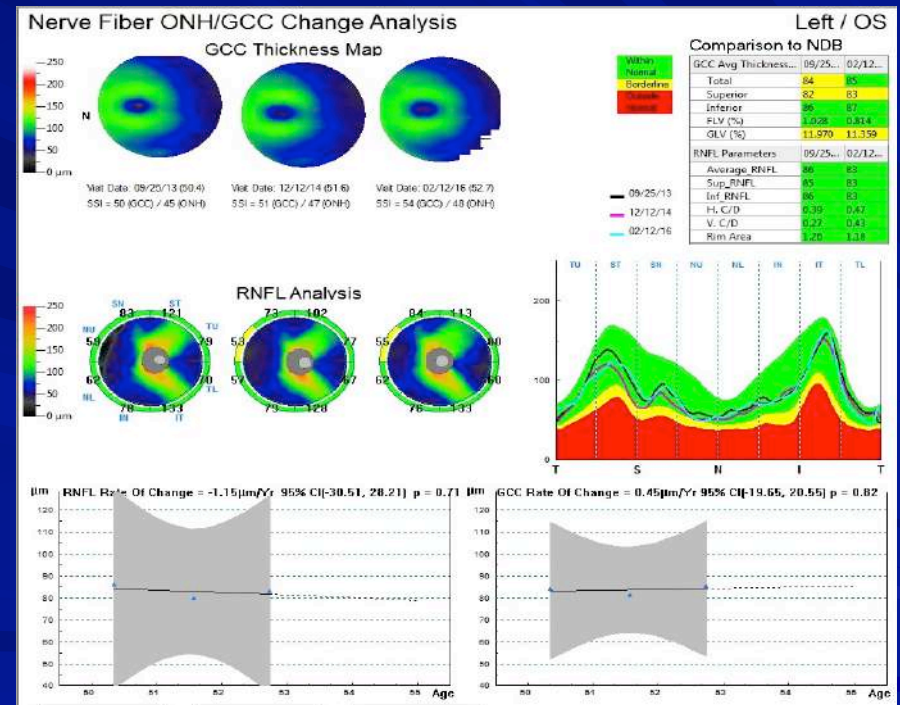
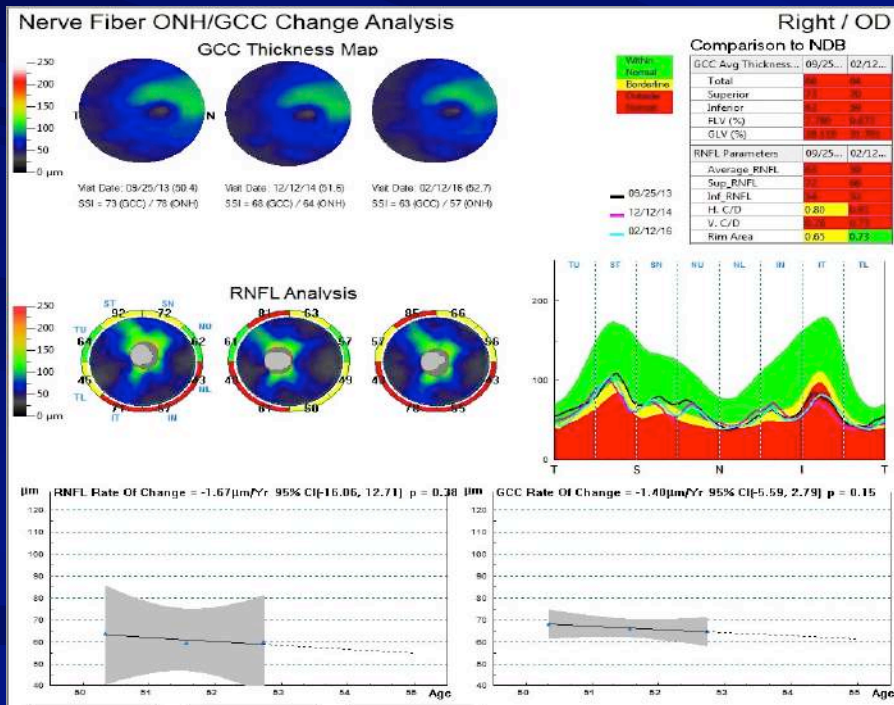
Nerve Fiber ONH/GCC Change Analysis



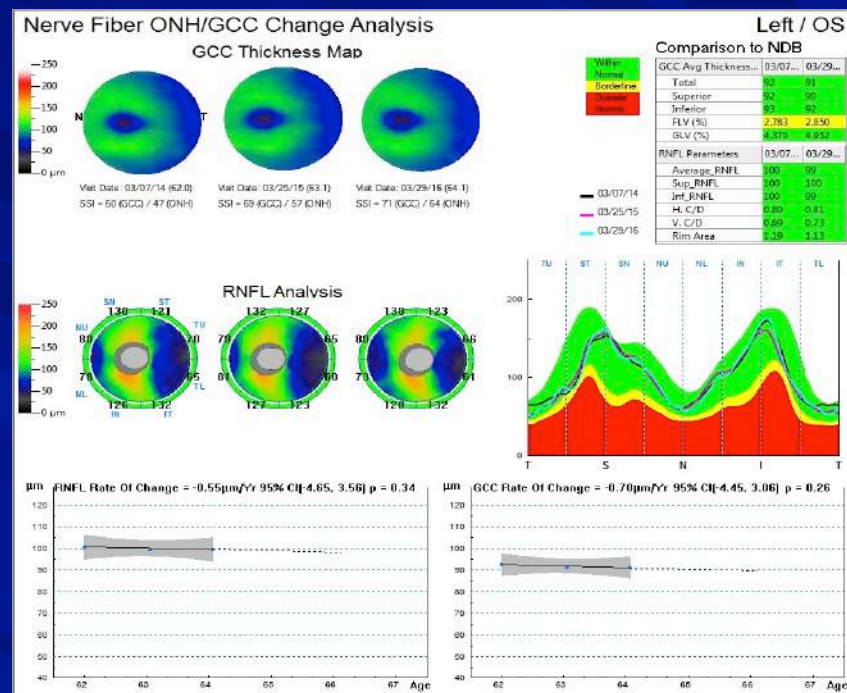
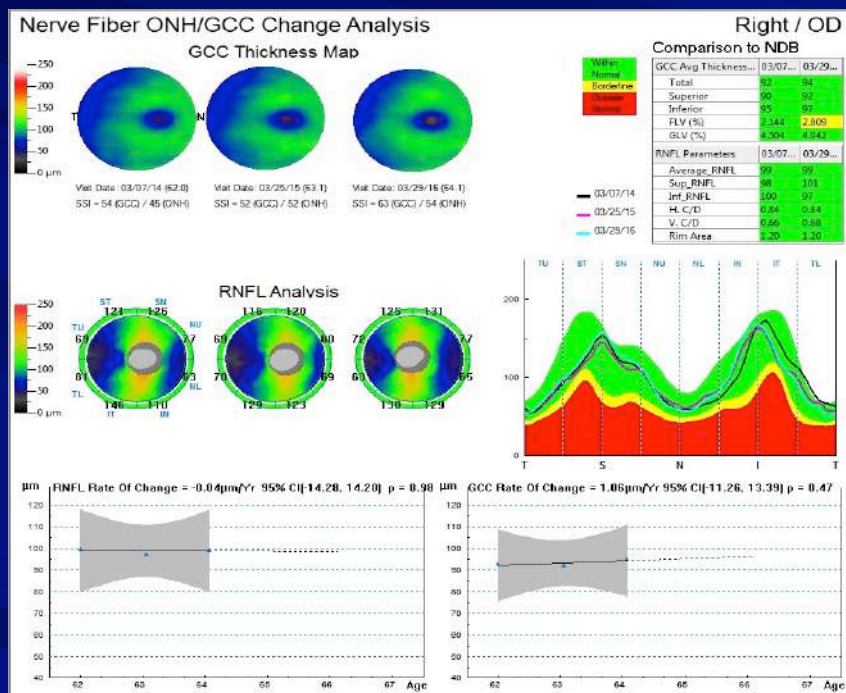
POAG



POAG



Glaucoma Suspect strong family history

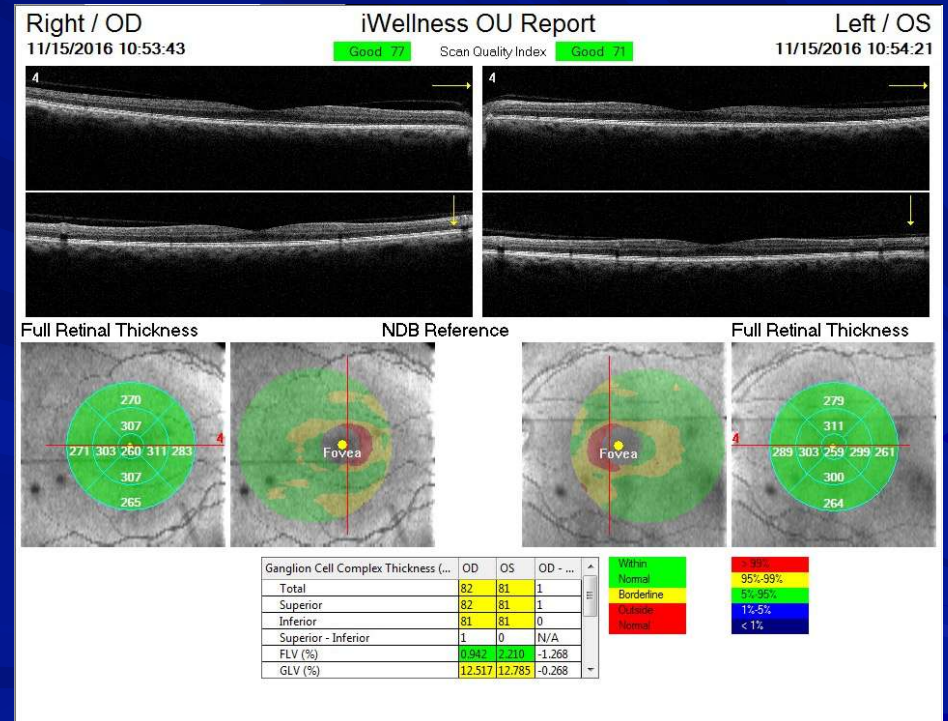
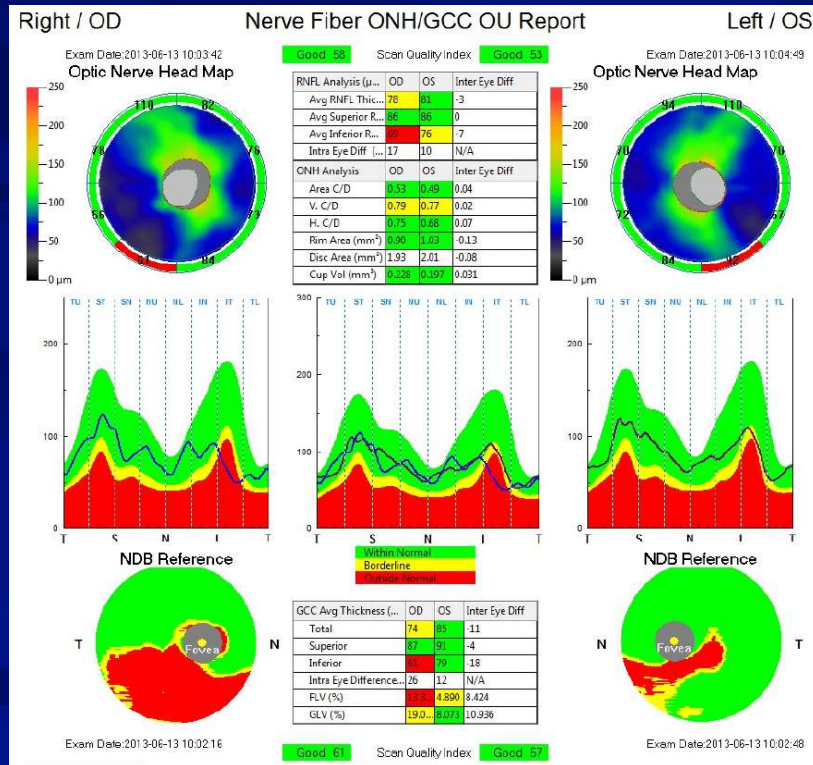




Test



Which OCT is most likely due to glaucoma?

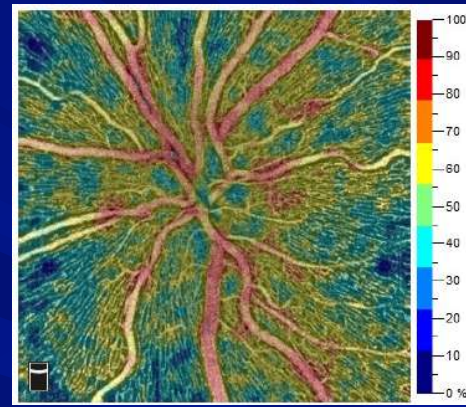
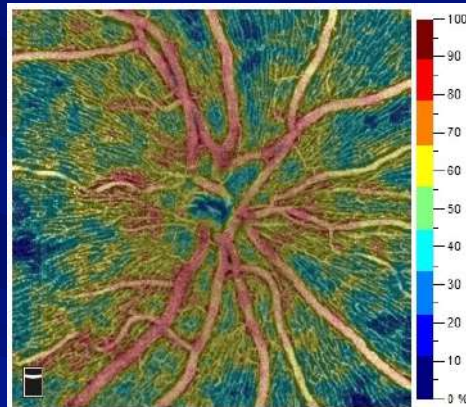


1

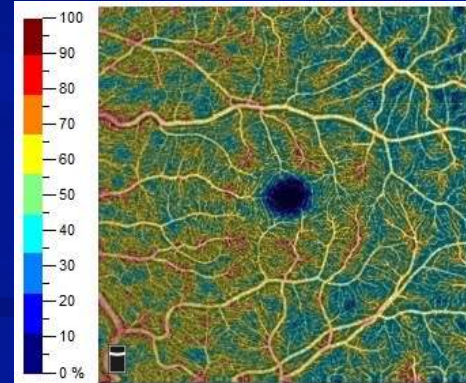
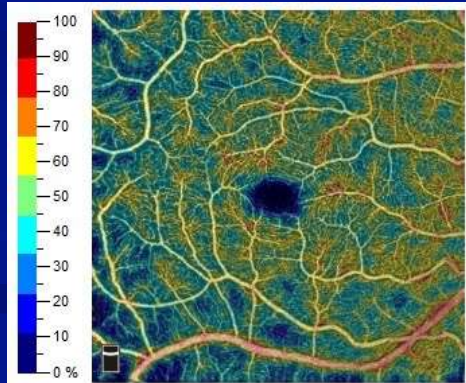
2

Learn What Normal Looks Like

Disc:
Radial Peripapillary
Capillaries



Retina:
Superficial Vascular
Complex



OD

OS

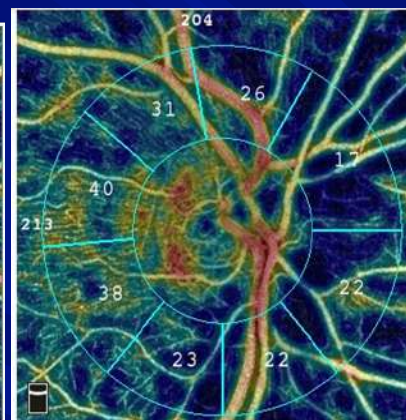
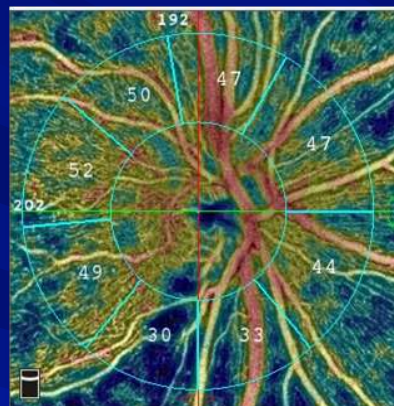
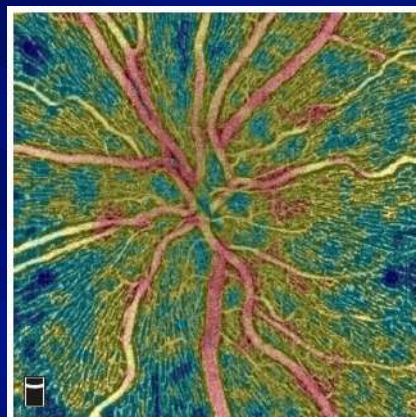
What Does Glaucoma Look Like?

Normal

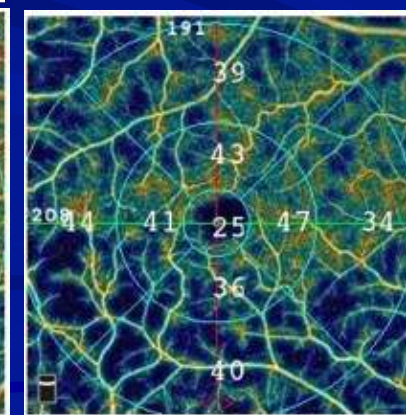
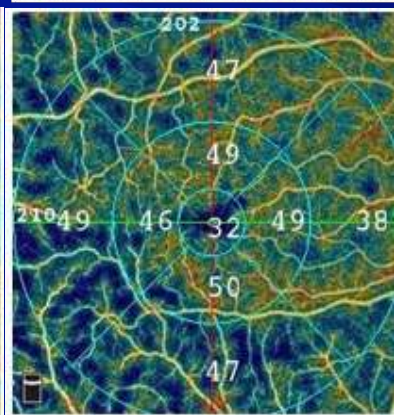
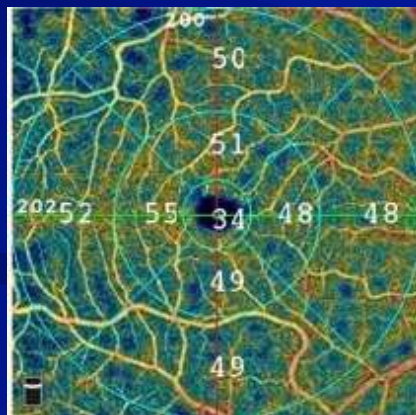
Moderate Glaucoma

Advanced Glaucoma

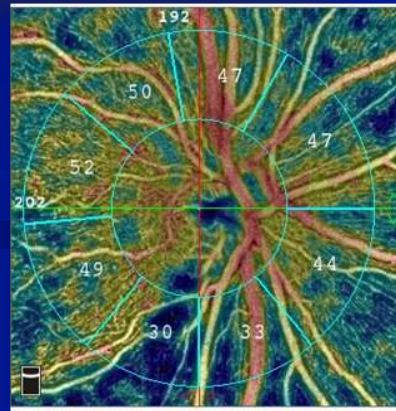
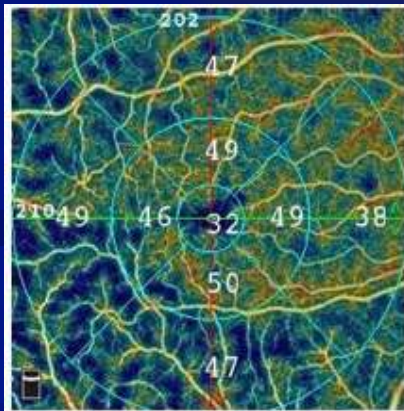
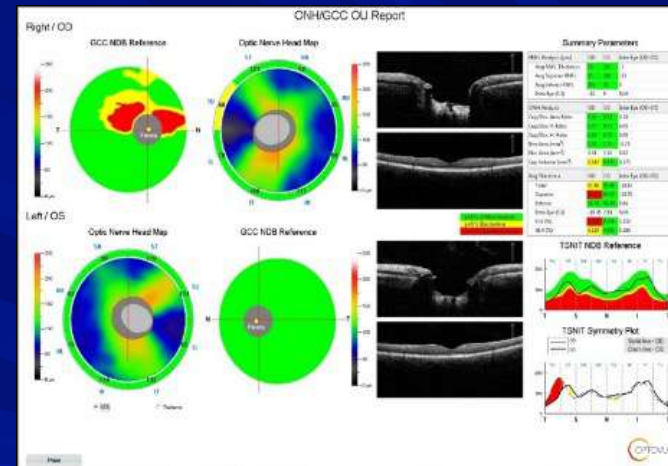
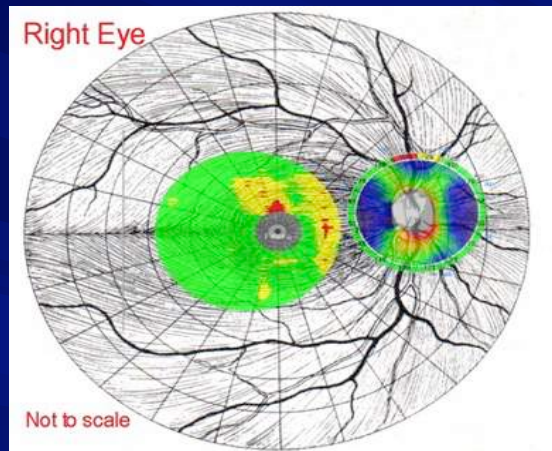
Disc



Retina



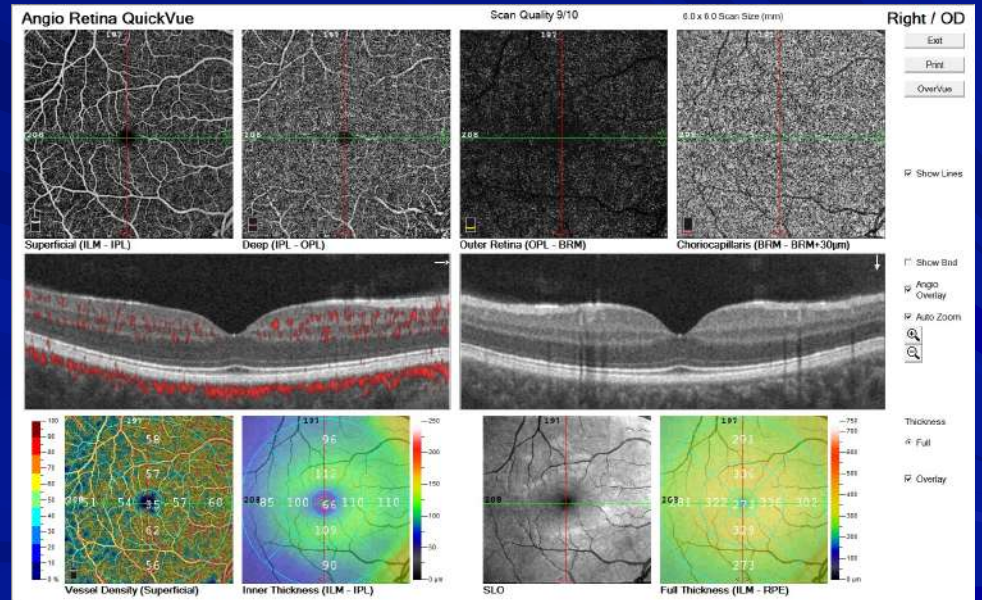
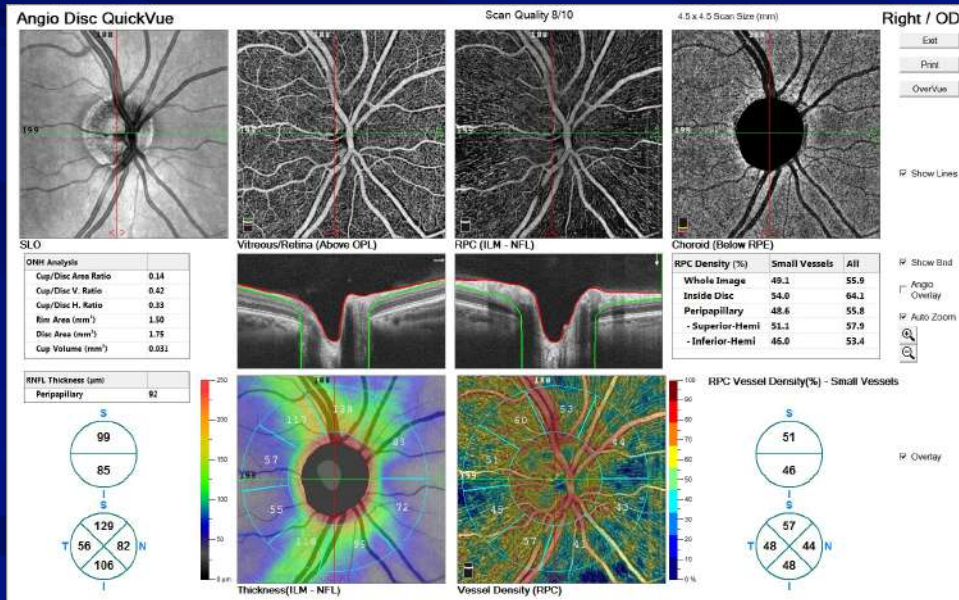
Glaucoma



How Does OCTA Change the Way You See Glaucoma?

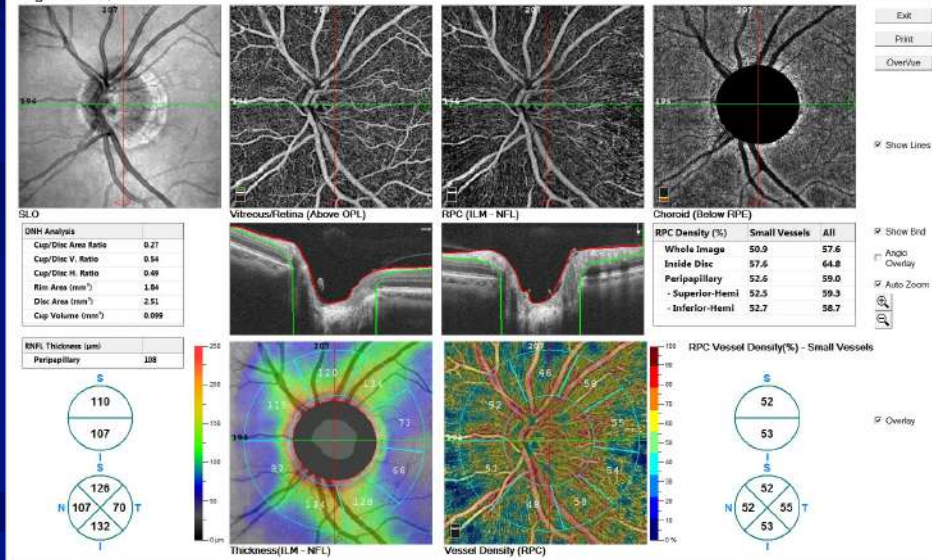
- 👁️ Shows early changes in the retina and optic disc
- 👁️ Adds new information to the diagnosis
- 👁️ Aids in progression detection

Review of Normal 25-year-old man

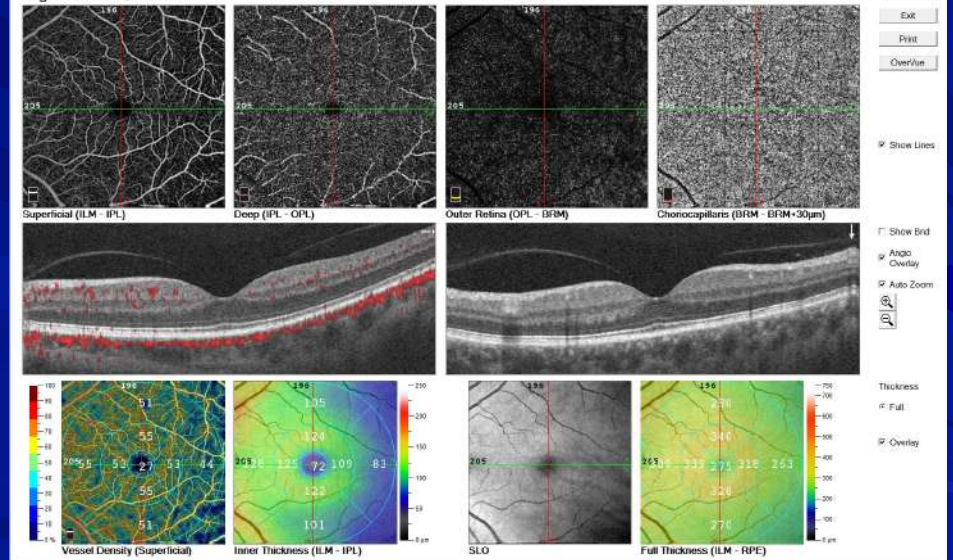


Review of Normal 60-year-old man

Angio Disc QuickVue

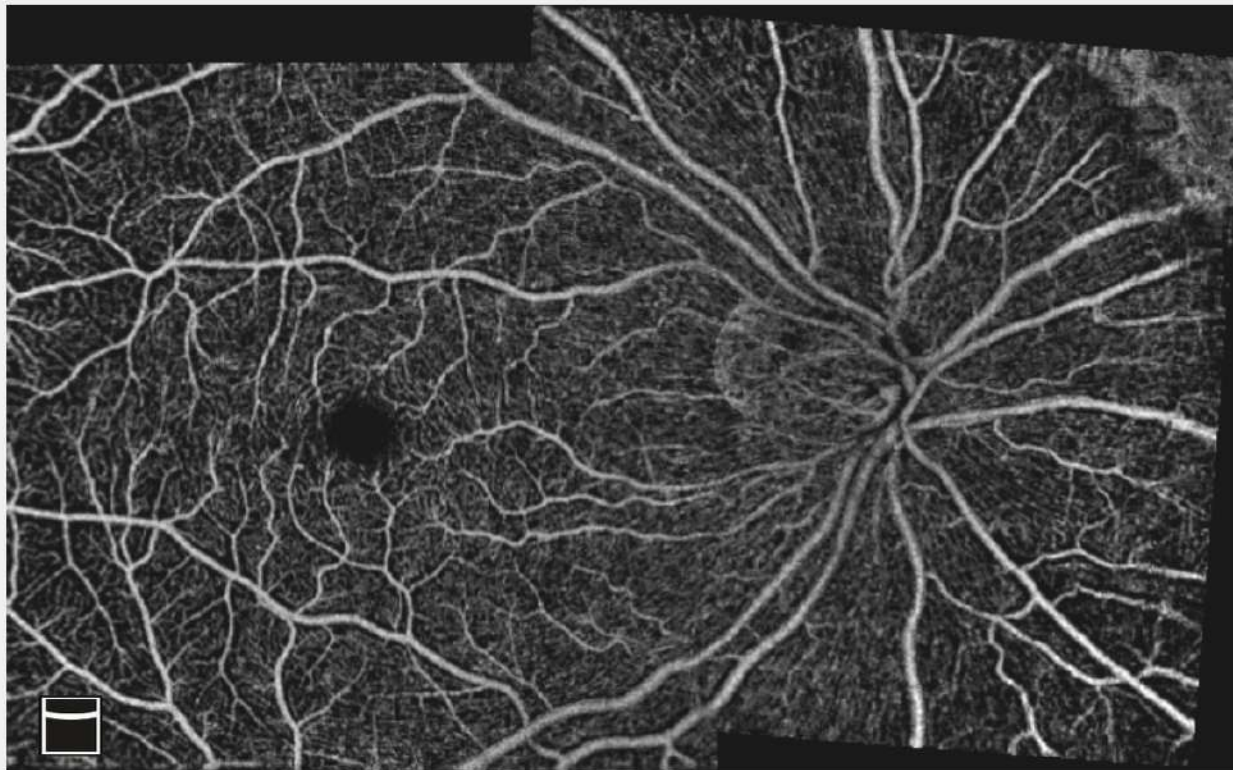


Angio Retina QuickVue



60-Year-Old Montage OD

Angio Montage



Right / OD

Exit

OverVue

QuickVue

Print

Reset View

☐ Edit

Montage Display

☒ Vitreous/Retina

☐ Outer/Choroid

Layers:

☒ Vitreous

☐ Superficial

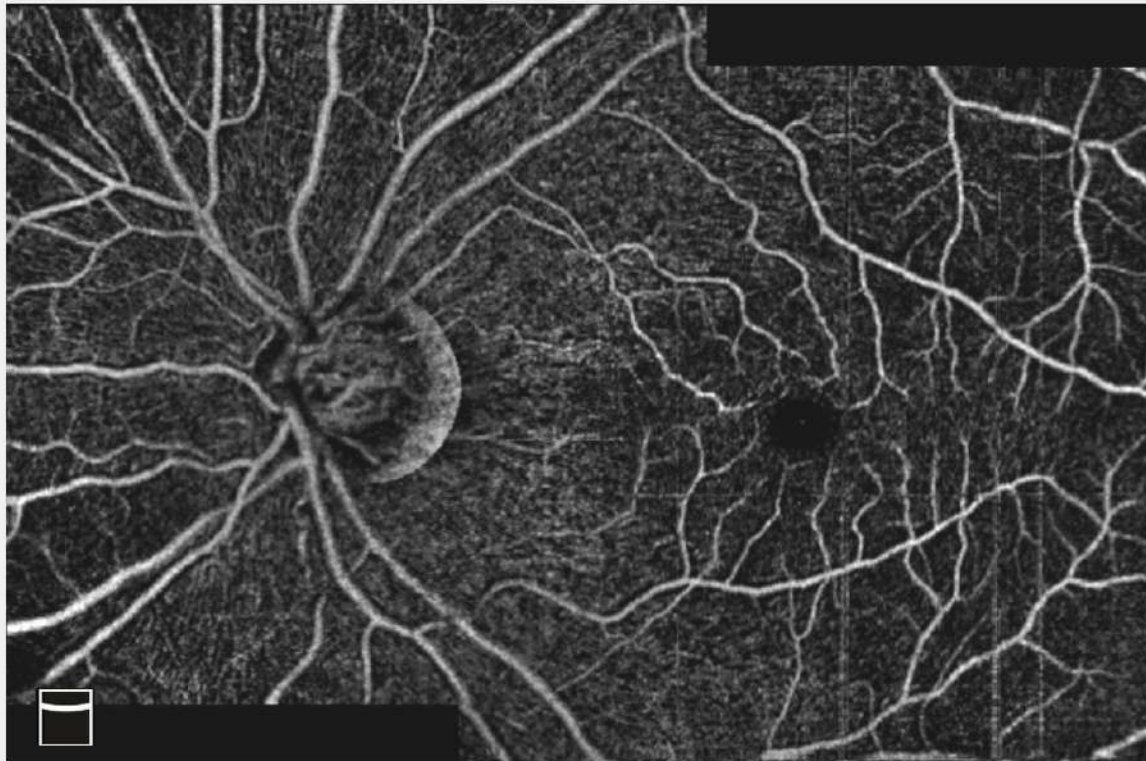
☐ Deep

☐ Greyscale

Click image to
select layer.
Use scrollwheel
to adjust layer.

60-Year-Old Montage OS

Angio Montage



Left / OS

Exit

OverVue

Print

Reset View

☐ Edit

Montage Display:

☒ Vitreous/Retina

☐ Outer/Choroid

Layers:

☒ Vitreous

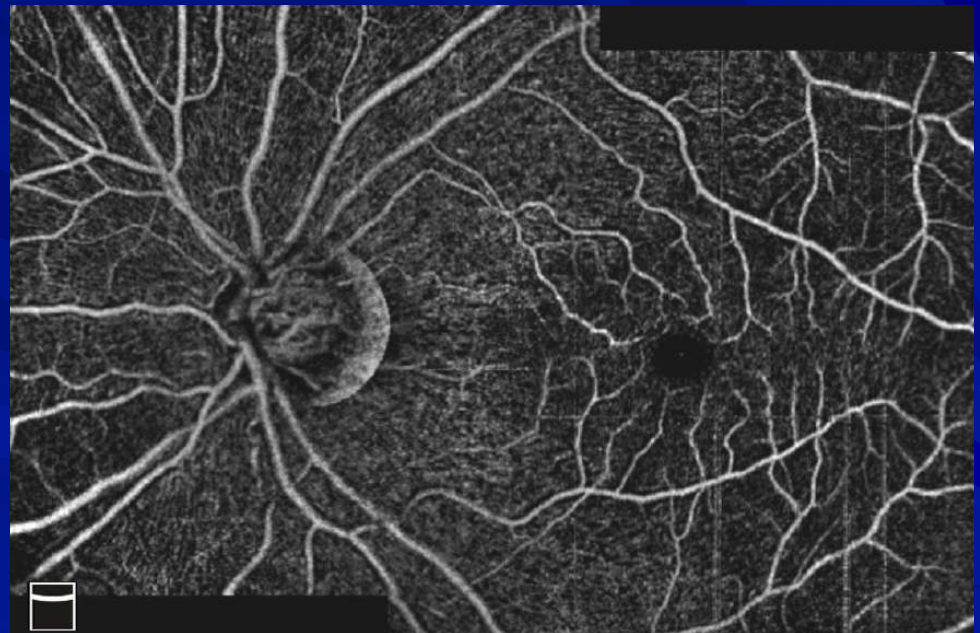
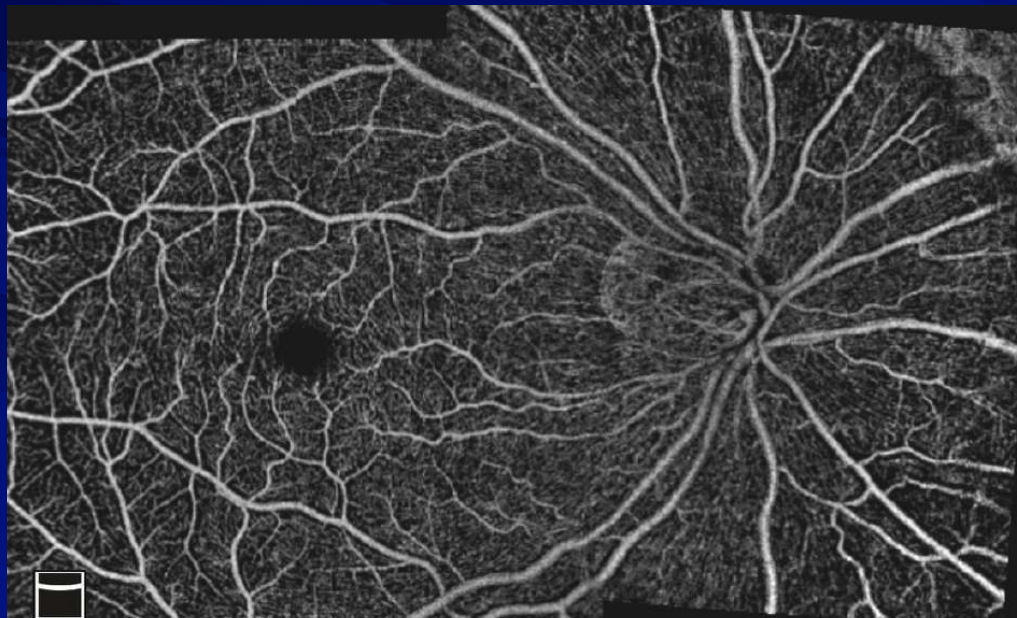
☐ Superficial

☐ Deep

☐ Greyscale

Click image to
select layer.
Use scrollwheel
to adjust layer.

60-Year-Old Montage OU

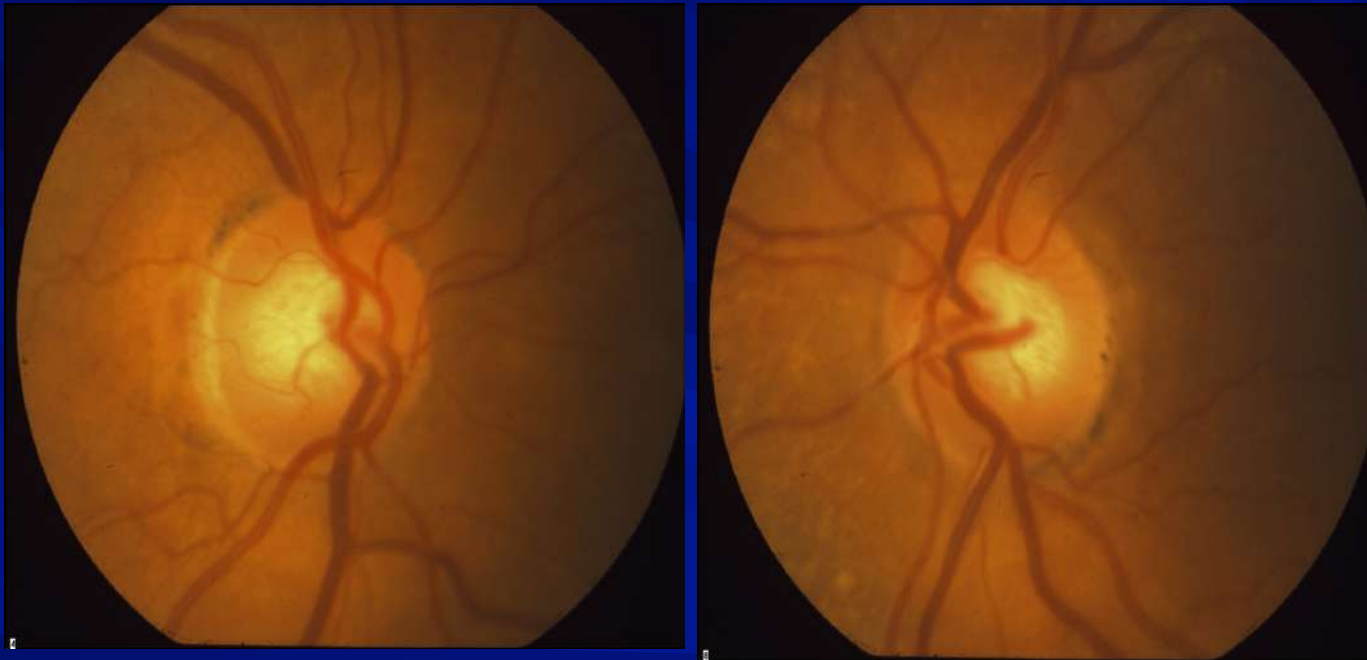


Bonus on Visual Fields

50-year-old woman

- 👁 Recently has moved to the area and needs followed for her “ocular hypertension”
- 👁 Diagnosed 18 months ago
- 👁 Currently is using Travatan qd OU (PM)
- 👁 VA 20/15 OU
- 👁 Externals: unremarkable
- 👁 SLE: slight hyperemia OU
- 👁 IOP: 13 OD and 14 OS @ 8:30 AM

ONH Appearance



Review of Records

Diurnal IOP without medication

- ★ OD 16-19 8:00 AM thru 5:30 PM

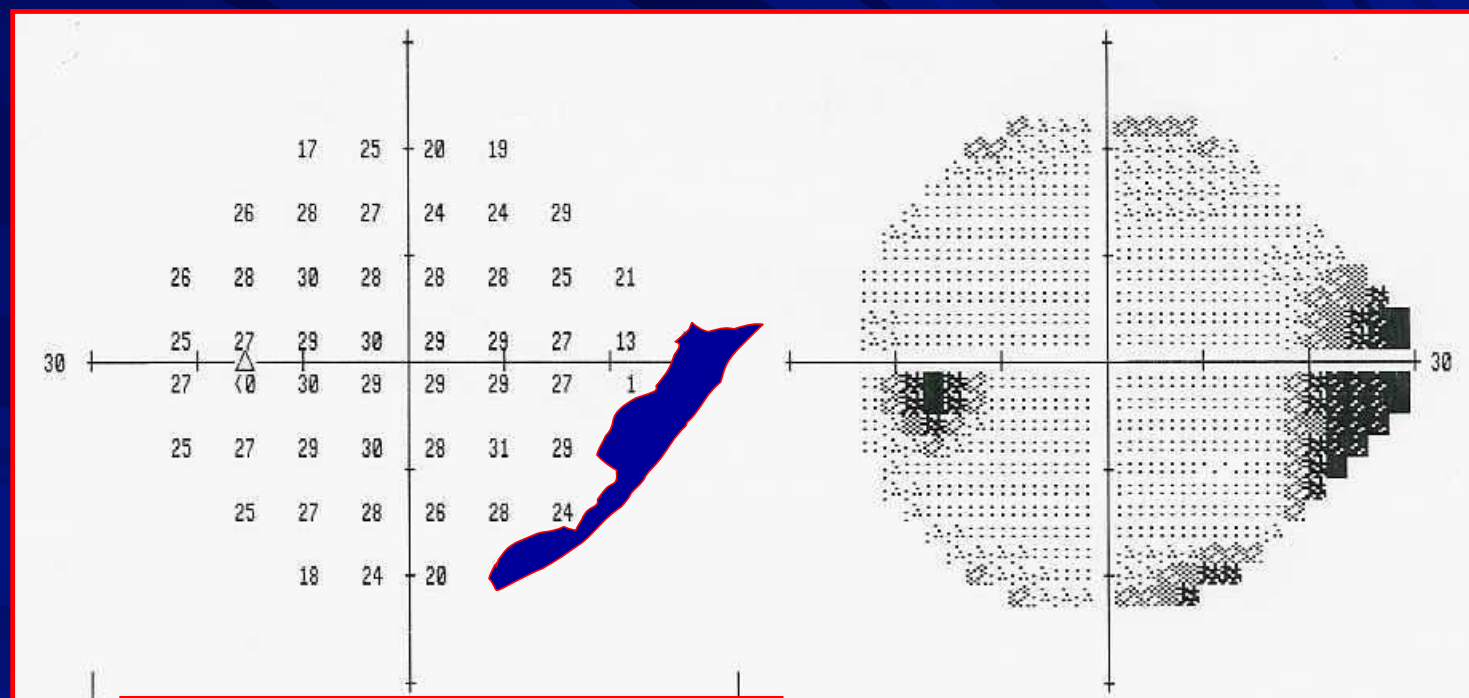
- ★ OS 17-20 8:00 AM thru 5:30 PM

Pachs

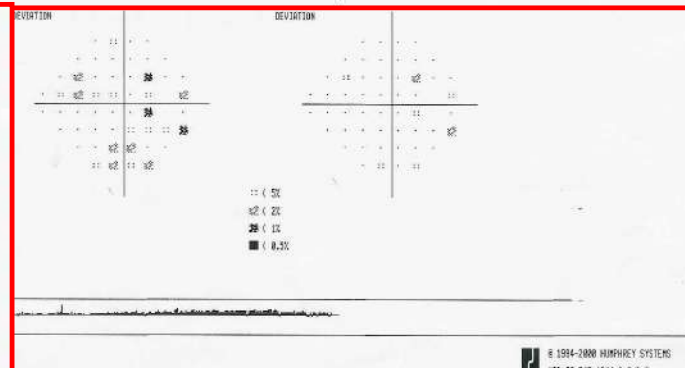
- ★ OD 505

- ★ OS 505

VF results



MD -5.14 DB P < 0.5%
 PSD 7.47 DB P < 0.5%



MD and PSD

MD

54 spots on 24-2

- ★ All 54 spots reduced by 1 DB (54DB)
- ★ MD 1DB

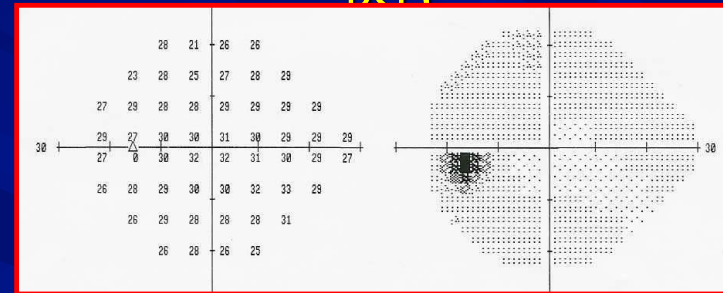
54 spots on 24-2

- ★ 27 spots reduced by 2 DB (54 DB)
- ★ MD 1 DB

54 spots on 24-2

- ★ 13.5 spots reduced by 4 DB (54DB)
- ★ MD 1 DB

PSD



Moderate PSD (More localized loss)

- ★ 3.00 DB

High PSD (Localized loss)

- ★ 5.00 DB

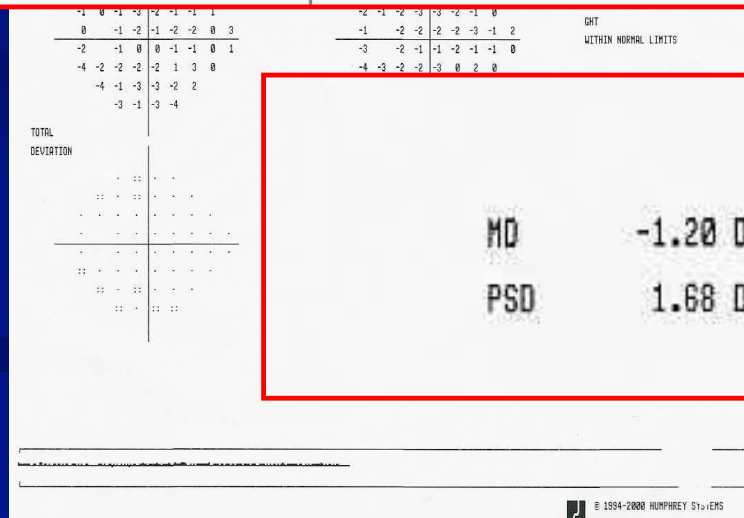
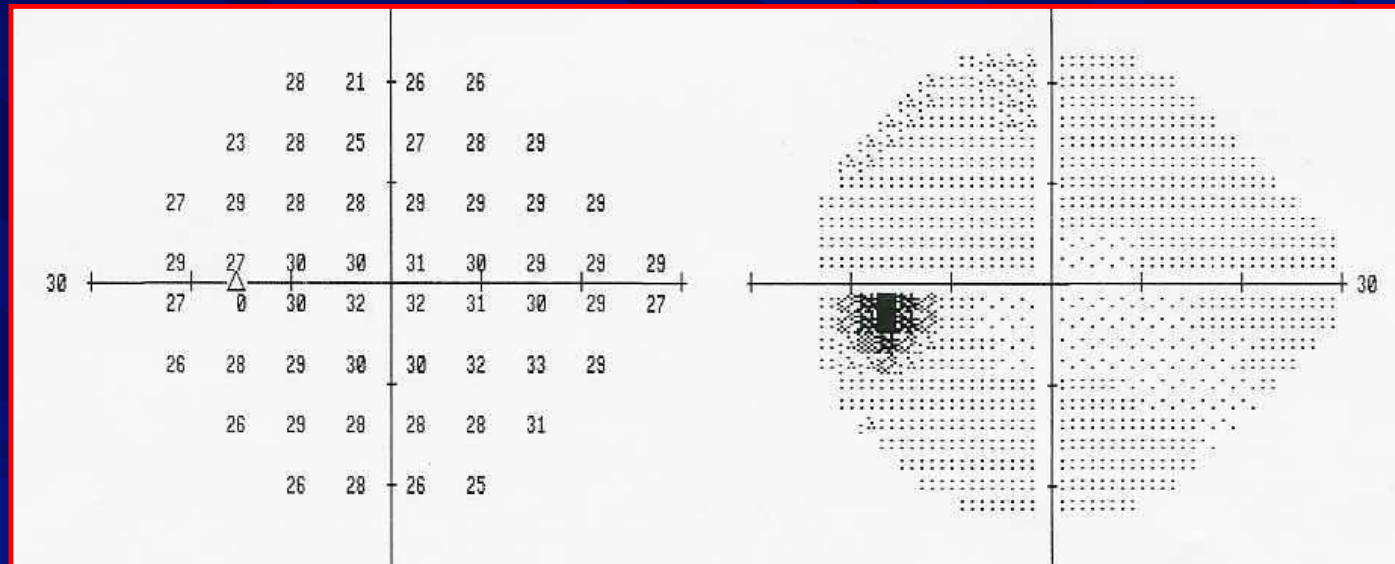
MD	-1.20 DB
PSD	1.68 DB

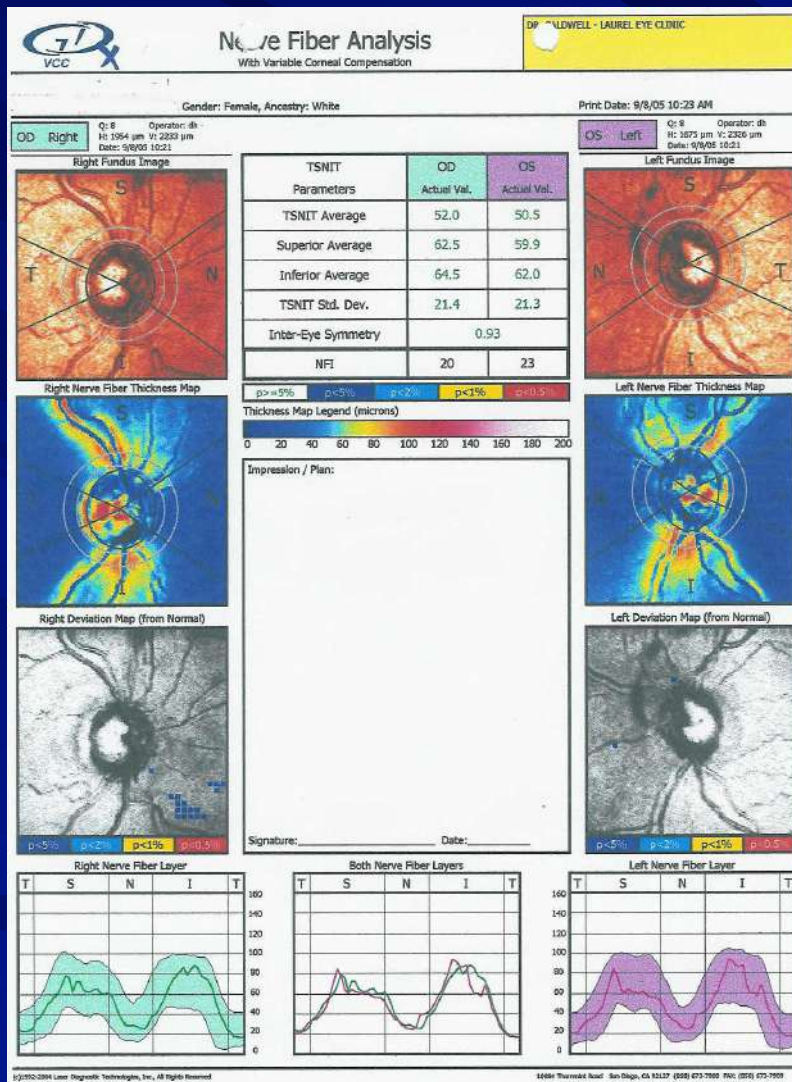
Discussion

Why is this patient being treated?

Treatment

- 👁 Repeat visual field
- 👁 Discontinue Travatan
- 👁 Get GDX nerve fiber analysis





GDX Results

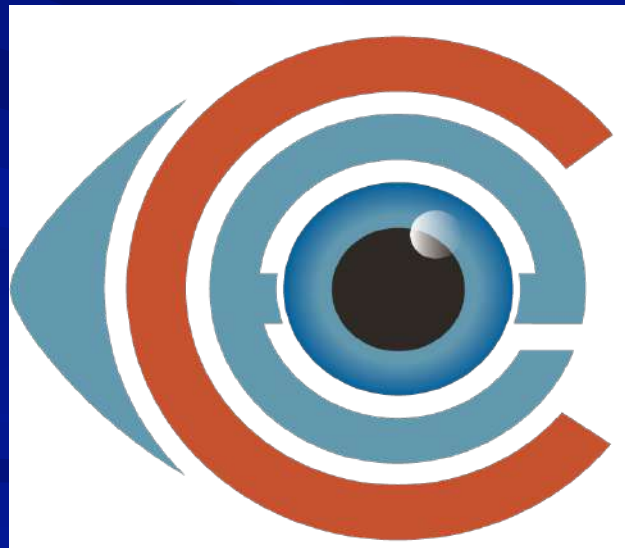
Cranium Keeper

- 👁️ Do not back door patients into the ocular hypertension treatment study
 - ★ Via thin pach results
- 👁️ A patient needs to be suffering from ocular hypertension to use the study
- 👁️ Thin pachs tell us:
 - ★ Patients with ocular hypertension are at high, medium or low risk for development
- 👁️ If you have a diagnostic instrument learn how it works and make proper interpretations

Test

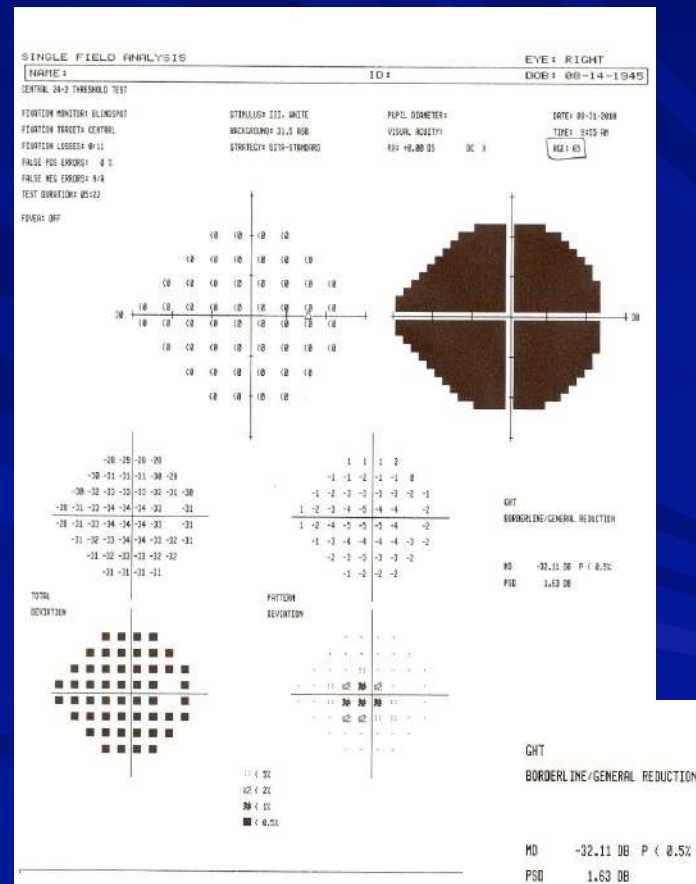
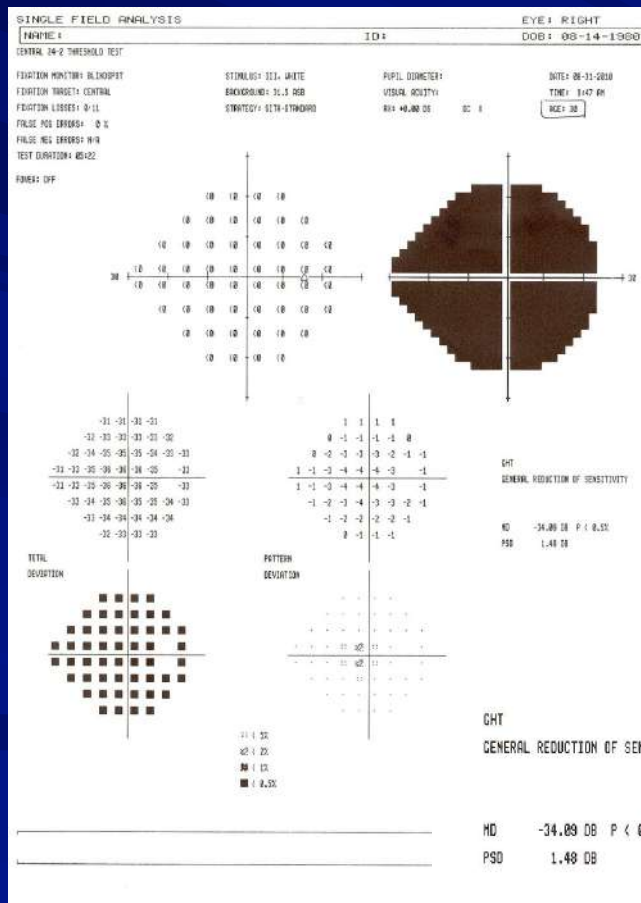
🔗 What's the Mean Deviation (MD) on a 24-2 Threshold Visual Field?

- ★ + 5 db
- ★ 0 db
- ★ -5 db
- ★ -12 db
- ★ -32 db
- ★ -50 db



Thoughts on Mean Deviation (MD)

What is the Mean Deviation on a visual field of a blind eye?



Thoughts on Mean Deviation (MD)

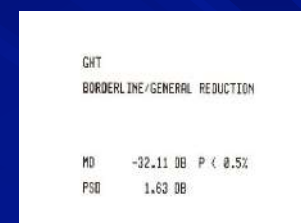
👁 Turn on your VF let it run

★ 30 DB (decibel)

👁 0-5 (1/6) 30% reduction

👁 5-10 (1/3) 40% reduction

👁 >10 (1/2) 50% reduction



👁 How many DB difference to reliable VF should cause a RAPD?

★ 3 DB for a small APD, the larger the difference the greater the APD

68-year-old woman with glaucoma

Wants second opinion for glaucoma management

Recently had cataract surgery OS with iStent

★ September 25, 2017

★ Dorzolamide 2% BID OS, Lumigan 0.01% QD OS

Our practice recently performed cataract surgery and Kahook dual blade (KDB) MIGS

★ July 24, 2018

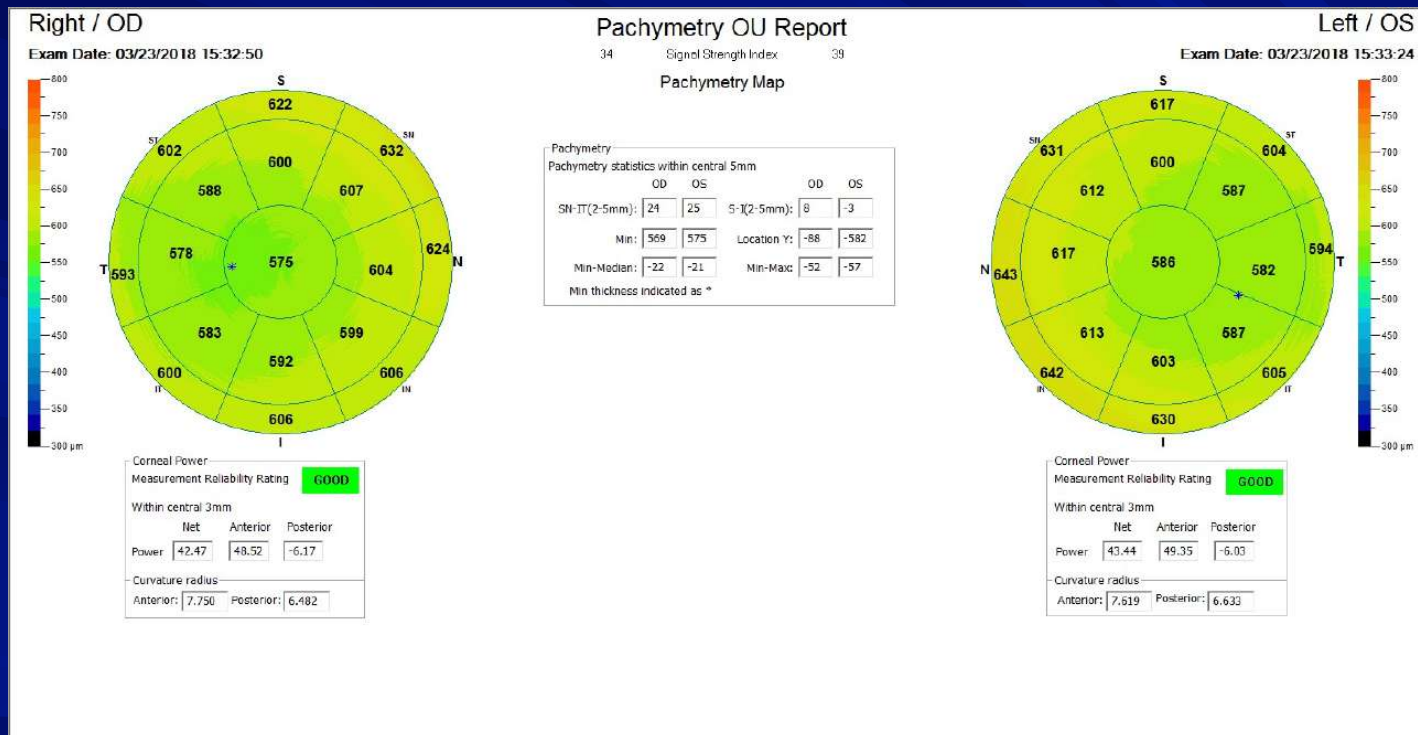
IOP_{GAT}: 12 and 16 at 11:27 am

J S

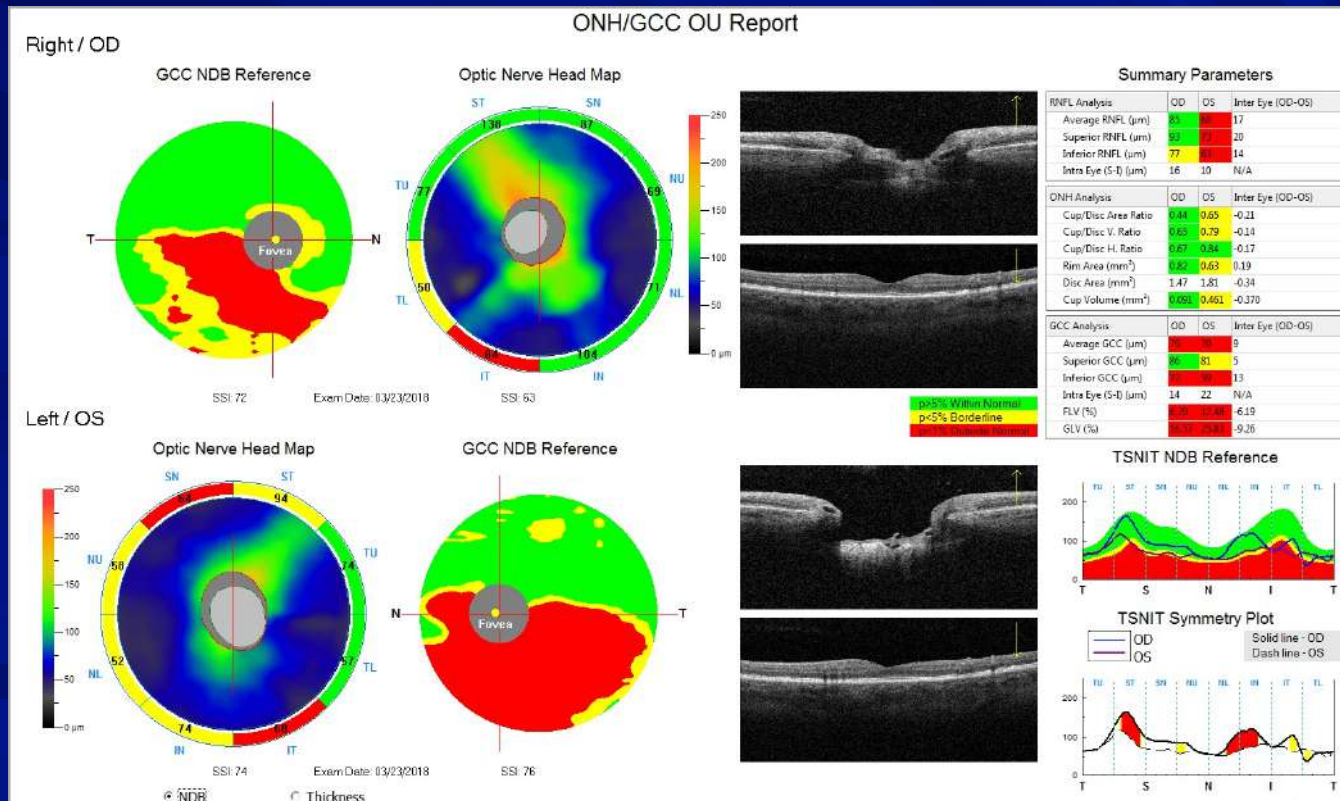
DFE - 3-23-18
VF - 3-23-18
OCT - 3-23-18
gonio -
photos -
Pach - 565/575
OCT-A - 2-25-19

I-stent = (L)
KDB = (R)

OCT for Pachymetry in Glaucoma



OCT GCC and NFL

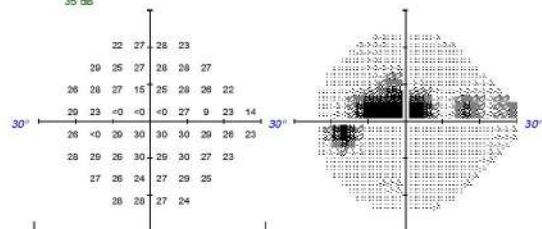


Visual Fields

Patient:
Date of Birth: **Aug 30, 1950**
Gender: **Female**
Patient ID:

OS Single Field Analysis Central 24-2 Threshold Test

Fixation Monitor: Gaze Monitor Stimulus: III, White Date: Mar 23, 2018
Fixation Target: Central Background: 31.5 asb Time: 3:11 PM
Fixation Losses: 0/0 Strategy: SITA Faster Age: 67
False POS Errors: 0% Pupil Diameter: 4.7 mm
False NEG Errors: 0% Visual Acuity:
Test Duration: 02:33 R: +2.75 DS
Fovea: 35 dB



GHT: Outside Normal Limits

VFI: 79%
MD24-2: -5.01 dB P < 1%
PSD24-2: 8.93 dB P < 0.5%

Total Deviation

Pattern Deviation

□ P < 5%
◻ P < 2%
◻ P < 1%
■ P < 0.5%

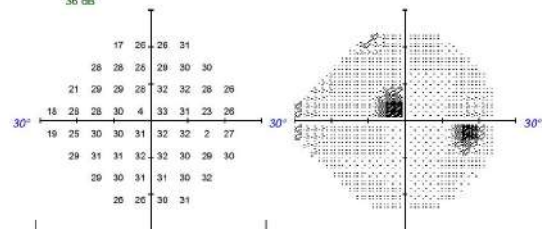
Comments

HFA 3.665 (2/7/14) 1.1 Version 1.0.5.165 Created: 3/1/2019 1:30:40 PM by Administrator Page 1 of 1

Patient:
Date of Birth: **Aug 30, 1950**
Gender: **Female**
Patient ID:

OD Single Field Analysis Central 24-2 Threshold Test

Fixation Monitor: Gaze Monitor Stimulus: III, White Date: Mar 23, 2018
Fixation Target: Central Background: 31.5 asb Time: 3:07 PM
Fixation Losses: 0/0 Strategy: SITA Faster Age: 67
False POS Errors: 0% Pupil Diameter: 4.3 mm
False NEG Errors: 0% Visual Acuity:
Test Duration: 01:59 R: +0.00 DS
Fovea: 36 dB



GHT: Outside Normal Limits

VFI: 82%
MD24-2: -1.62 dB P < 10%
PSD24-2: 4.96 dB P < 0.5%

Total Deviation

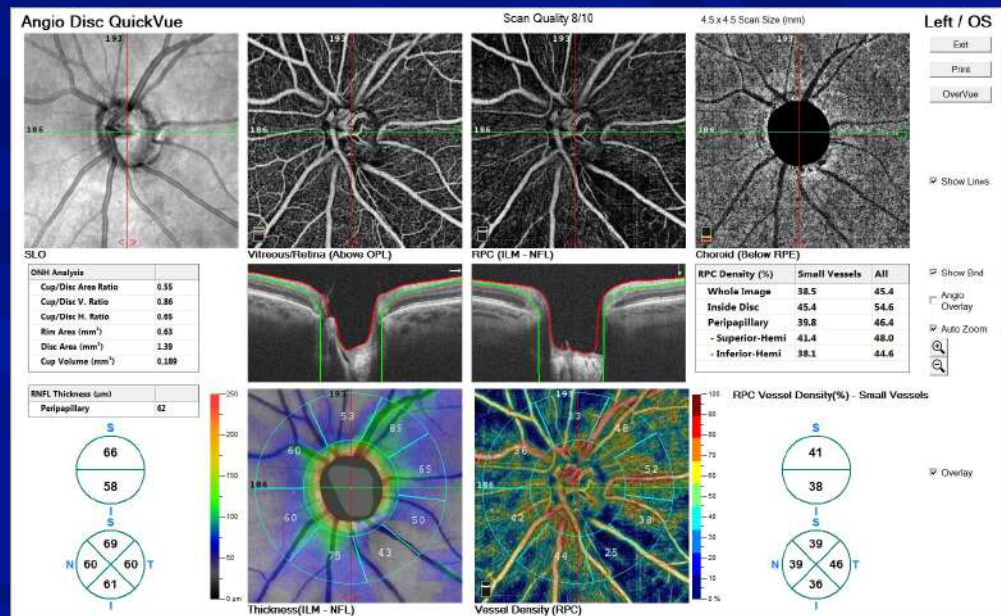
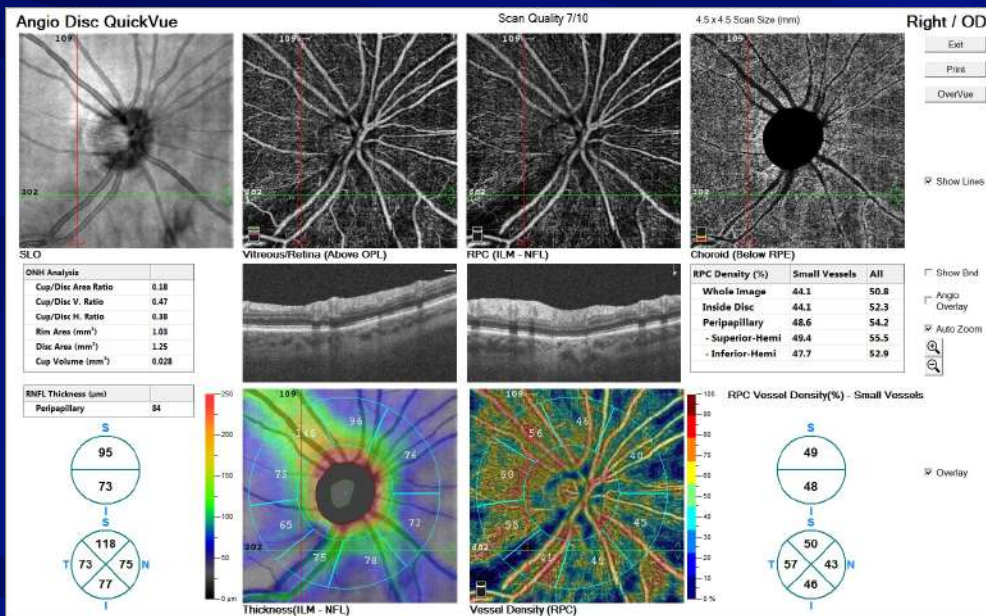
Pattern Deviation

□ P < 5%
◻ P < 2%
◻ P < 1%
■ P < 0.5%

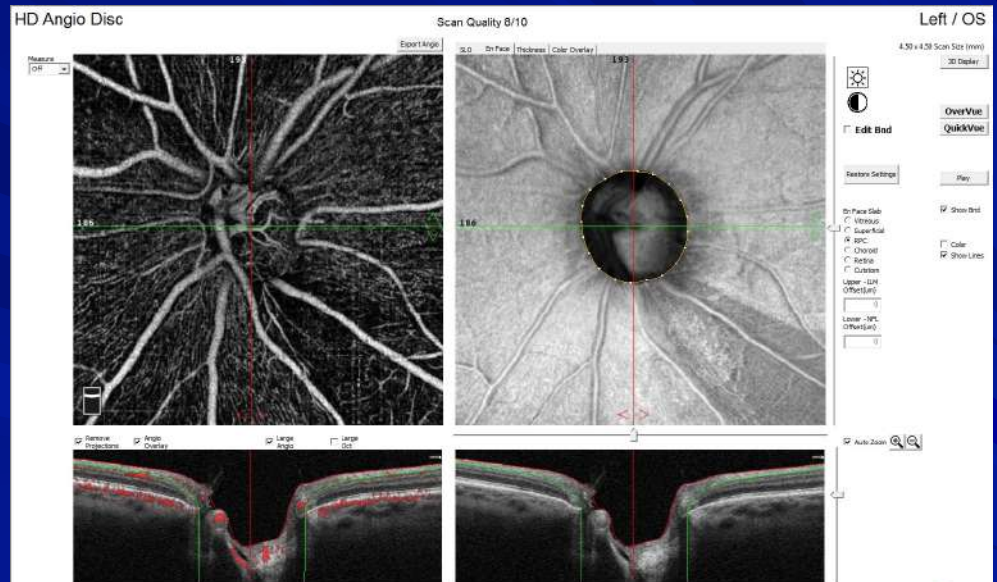
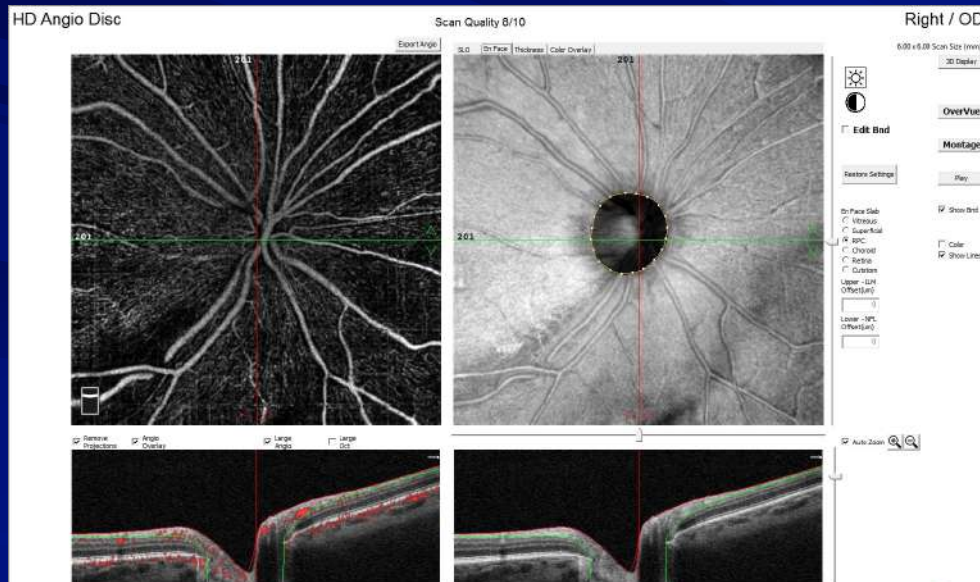
Comments

HFA 3.665 (2/7/14) 1.1 Version 1.0.5.165 Created: 3/1/2019 1:30:40 PM by Administrator Page 1 of 1

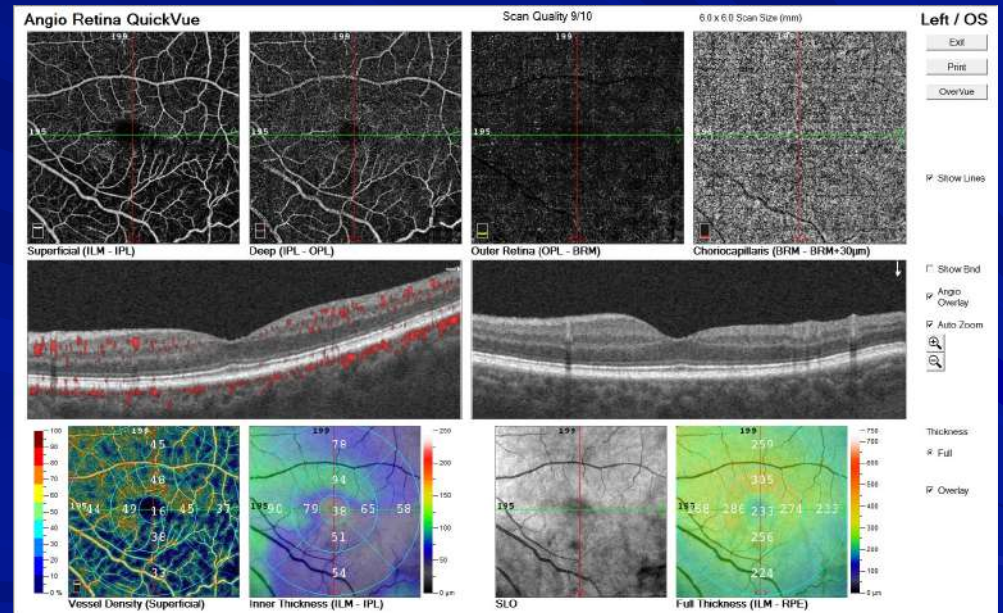
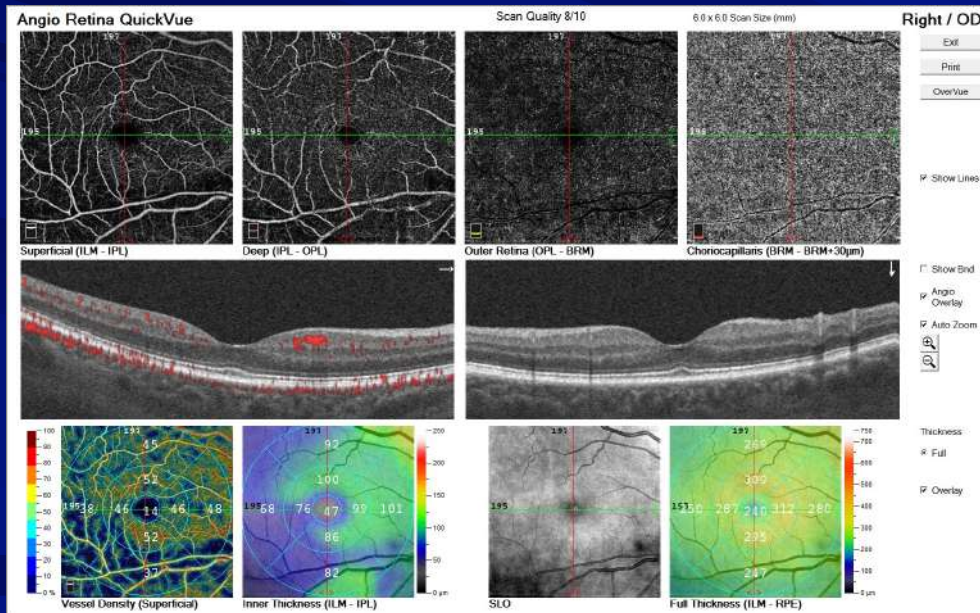
Angiography and AngioAnalytics of Disc



En Face Radial Peripapillary Capillaries (RPC)



Angiography and AngioAnalytics of Retina



Montage OD

Angio Montage



Right / OD

Exit

OverVue

Print

Reset View

☐ Edit

Montage Display

☒ Vitreous/Retina

☐ Outer/Choroid

Layers:

Vitreous

Superficial

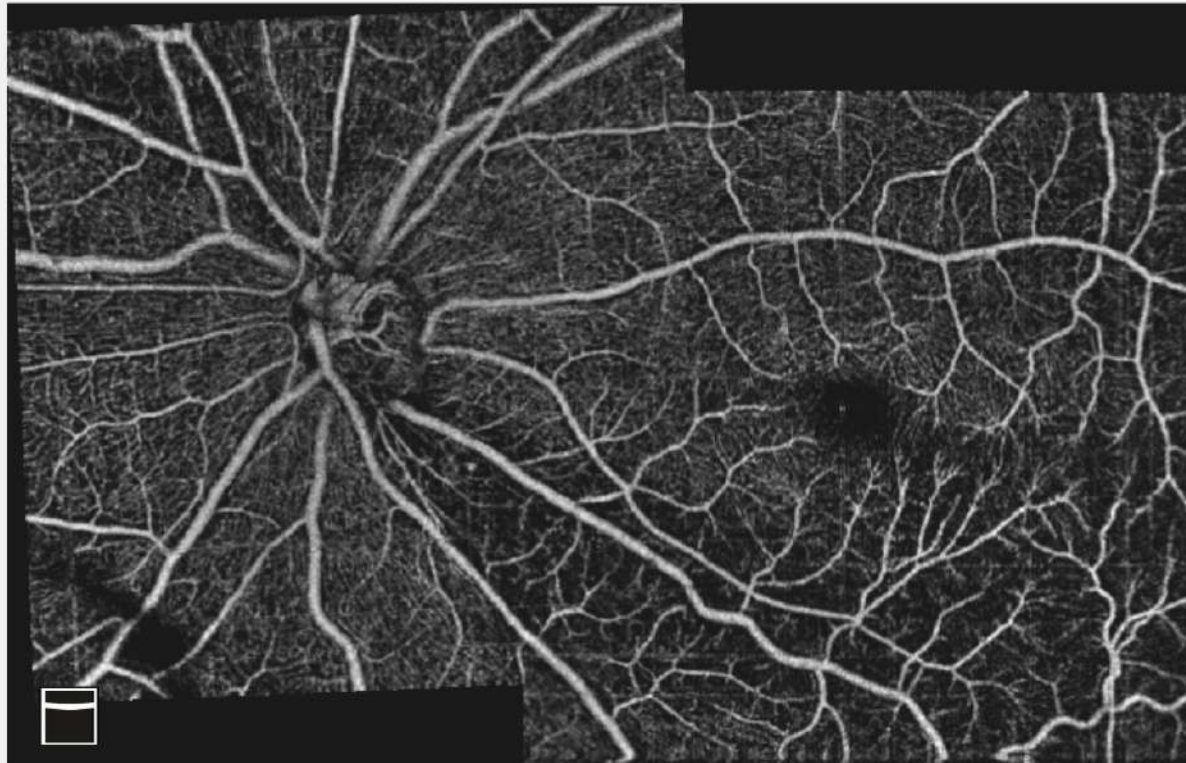
Deep

☐ Greyscale

Click image to
select layer.
Use scrollwheel
to adjust layer.

Montage OS

Angio Montage



Left / OS

Exit

OverVue

QuickVue

Print

Reset View

☐ Edit

Montage Display

☒ Vitreous/Retina

☐ Outer/Choroid

Layers:

Vitreous

Superficial

Deep

☐ Greyscale

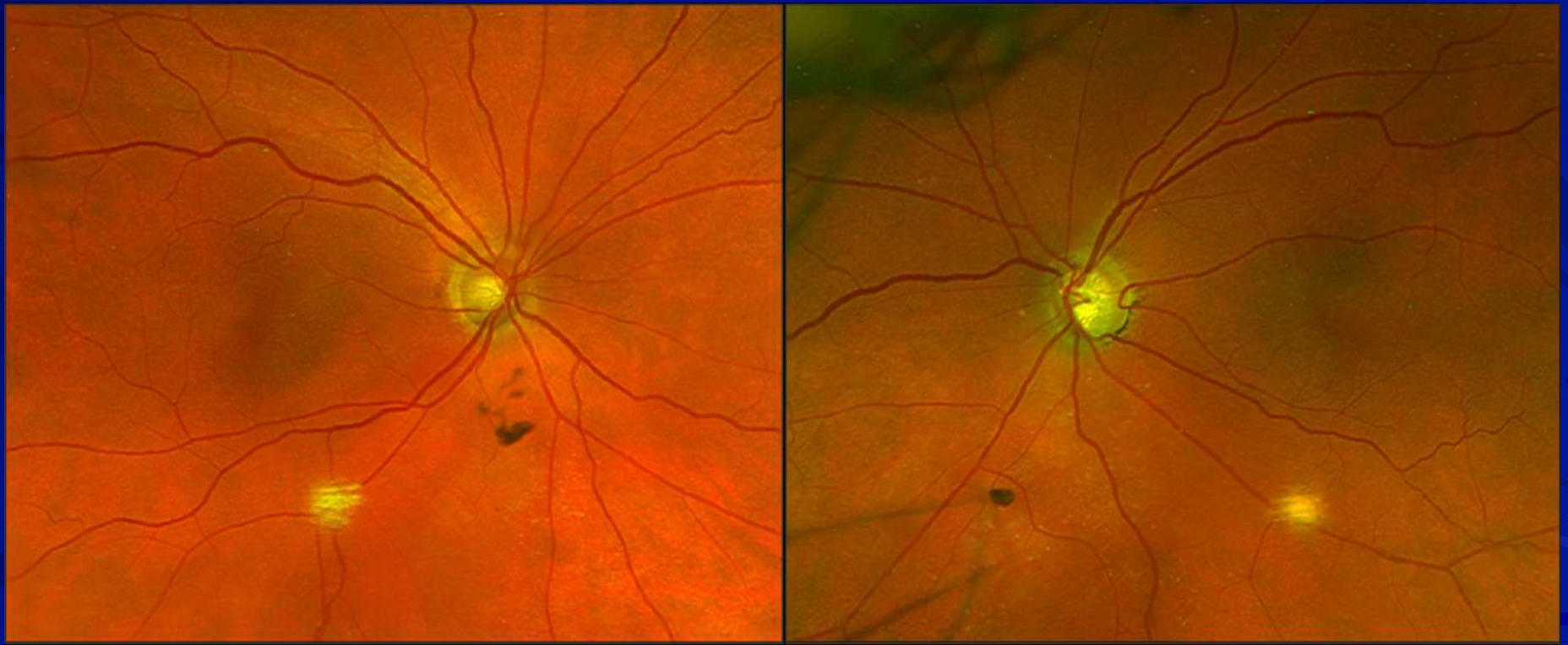
Click image to
select layer.
Use scrollwheel
to adjust layer.

Montage OU



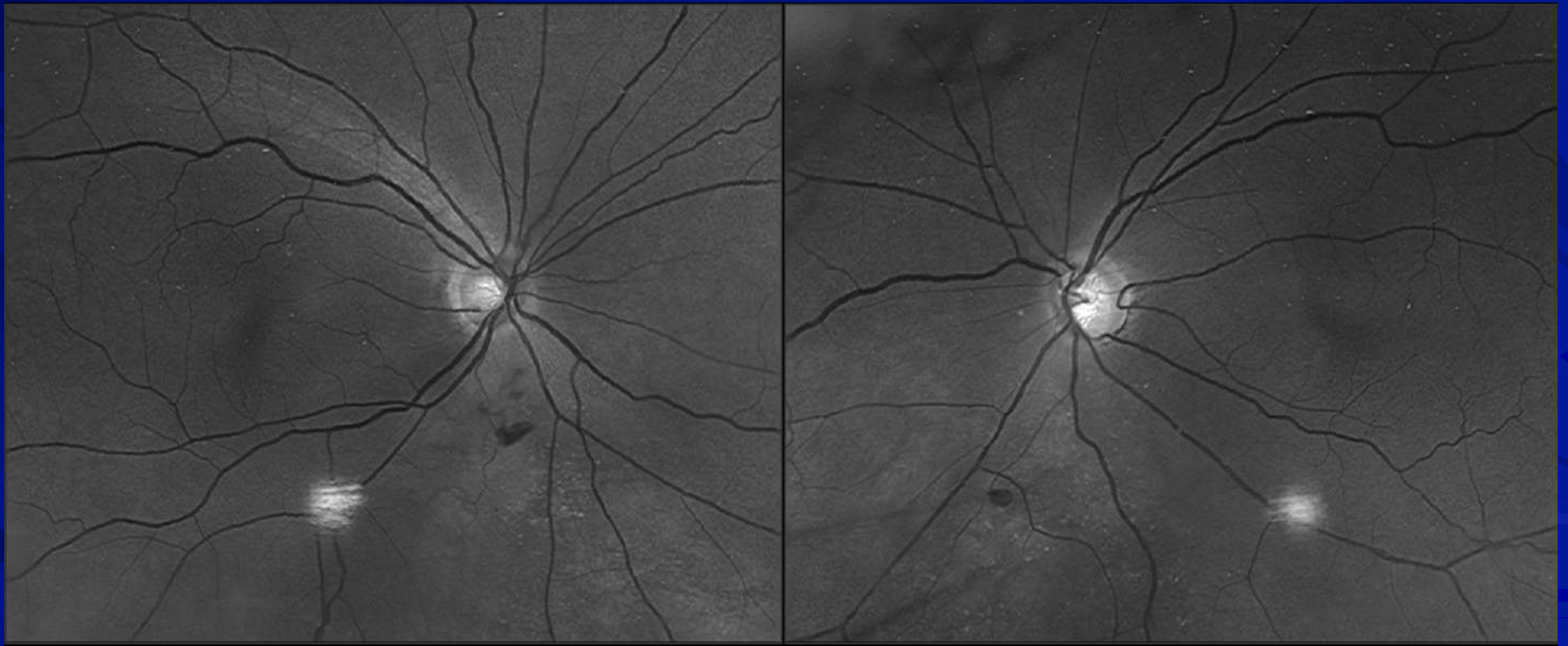
Update 2021

May 24, 2021



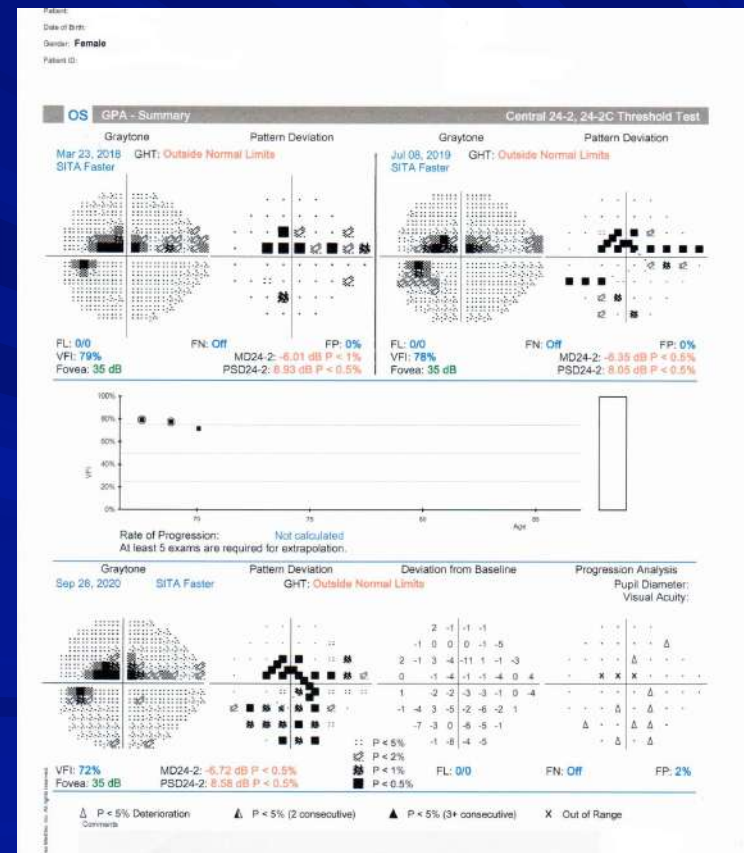
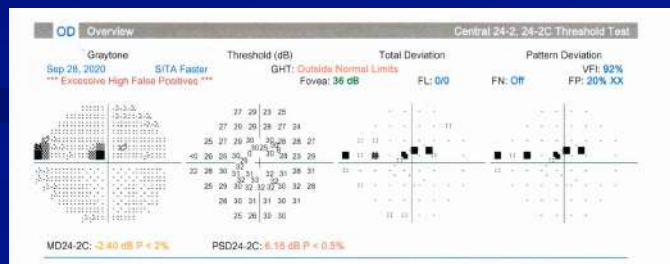
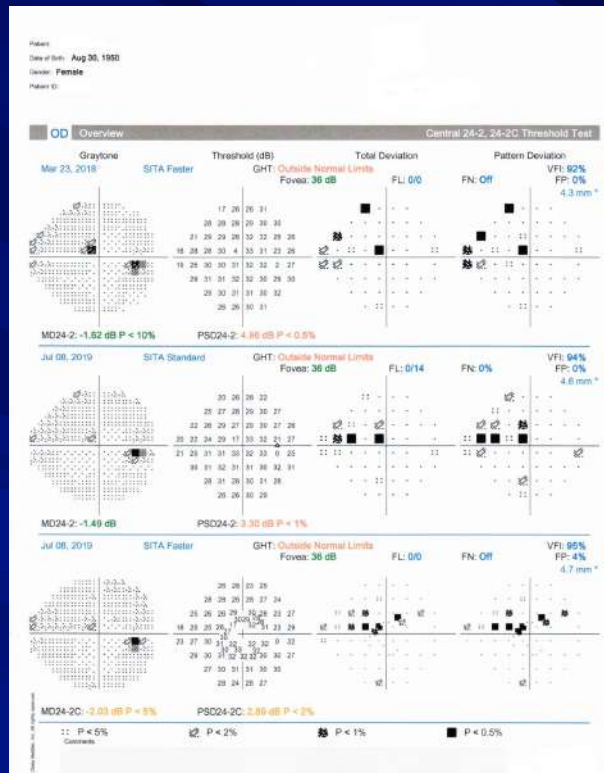
Update 2021

May 24, 2021



Update 2021

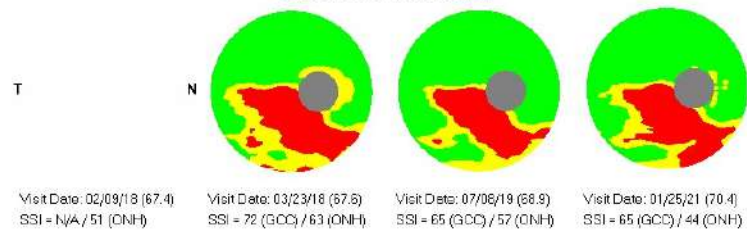
September 20, 2020



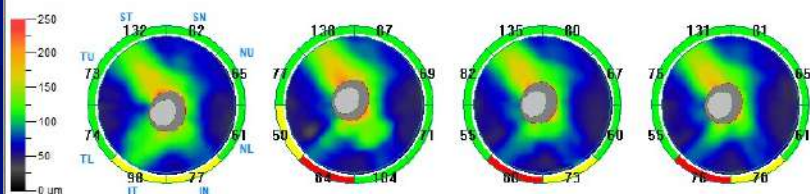
Update 2021 - January 25, 2021

Nerve Fiber ONH/GCC Change Analysis

GCC NDB Reference



RNFL Analysis



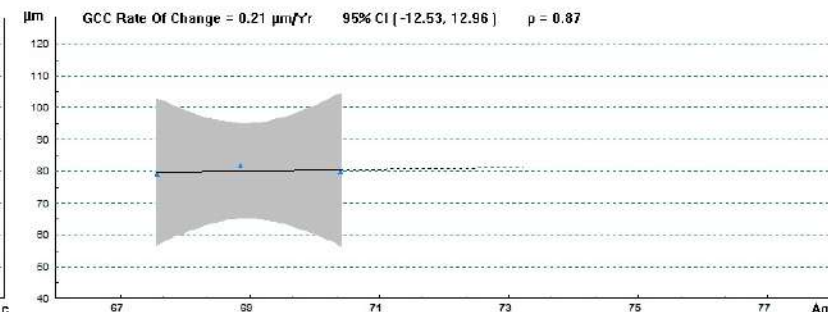
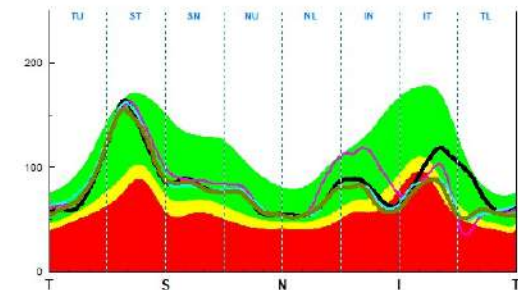
NDB

Thickness



Comparison to NDB

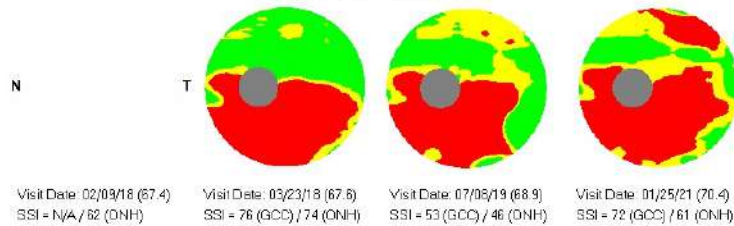
GCC Analysis	02/09/18	01/25/21
Average GCC (µm)	N/A	78
Superior GCC (µm)	N/A	86
Inferior GCC (µm)	N/A	74
FLV (%)	N/A	5.44
GLV (%)	N/A	15.67
RNFL/ONH Analysis	02/09/18	01/25/21
Average RNFL (µm)	83	77
Superior RNFL (µm)	88	80
Inferior RNFL (µm)	78	75
Cup/Disc H. Ratio	0.70	0.66
Cup/Disc V. Ratio	0.65	0.69
Rim Area (mm²)	0.83	0.81



Update 2021 - January 25, 2021

Nerve Fiber ONH/GCC Change Analysis

GCC NDB Reference



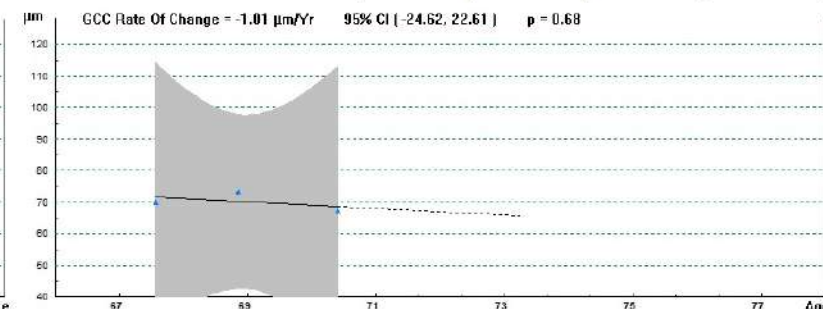
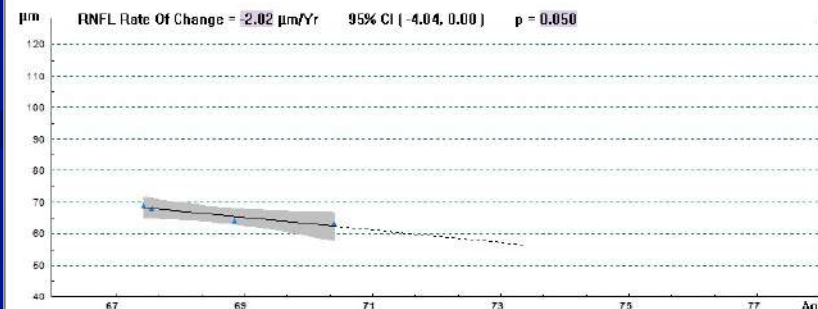
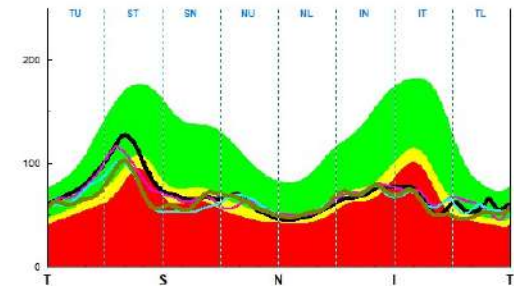
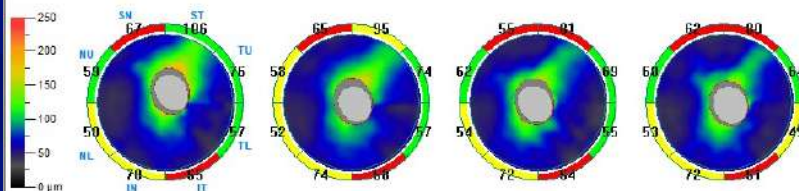
• NDB ○ Thickness

Comparison to NDB

GCC Analysis	02/09/18	01/25/21
Average GCC (μm)	N/A	68
Superior GCC (μm)	N/A	73
Inferior GCC (μm)	N/A	65
FLV (%)	N/A	12.15
GLV (%)	N/A	16.15
RNFL/ONH Analysis	02/09/18	01/25/21
Average RNFL (μm)	89	85
Superior RNFL (μm)	77	67
Inferior RNFL (μm)	81	59
Cup/Disc H. Ratio	0.88	0.90
Cup/Disc V. Ratio	0.80	0.87
Rim Area (mm ²)	0.59	0.48

Left / OS

RNFL Analysis



Update 2021 - January 25, 2021

HD Angio Disc Trend Analysis

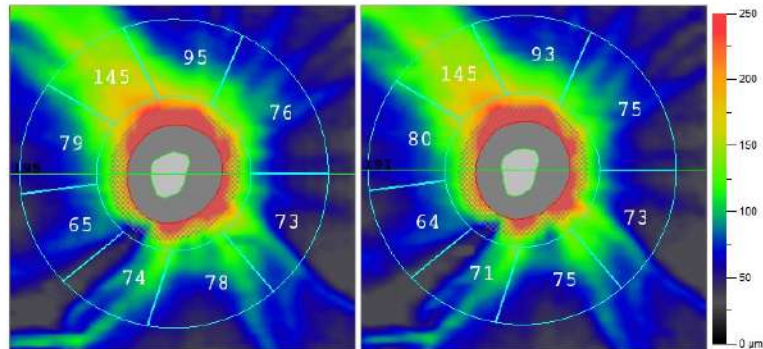
OD

OS

4.5 x 4.5 Scan Size (mm)

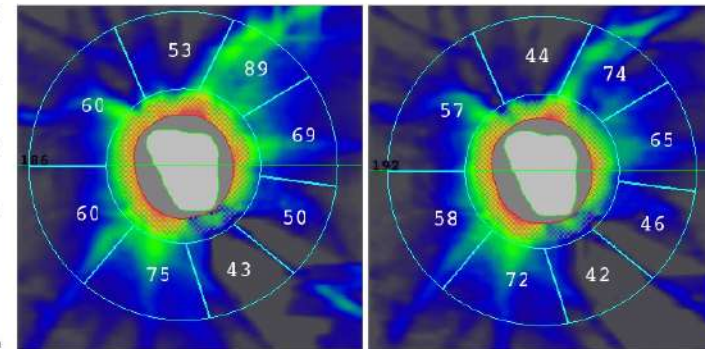
First: 02/25/2019 11:00:10; SQ: 7; 68 yrs

Last: 01/25/2021 10:33:19; SQ: 6; 70 yrs



First: 02/25/2019 11:02:26; SQ: 8; 68 yrs

Last: 01/25/2021 11:01:29; SQ: 7; 70 yrs



Thickness

⊗ RNFL

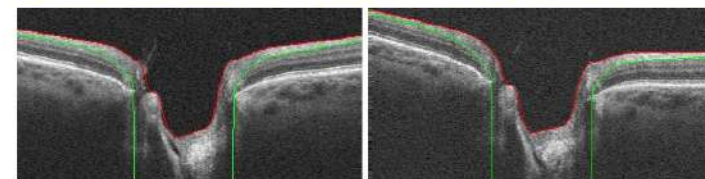
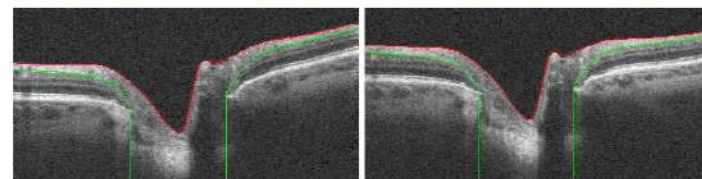
Vessel Density

⊗ RPC

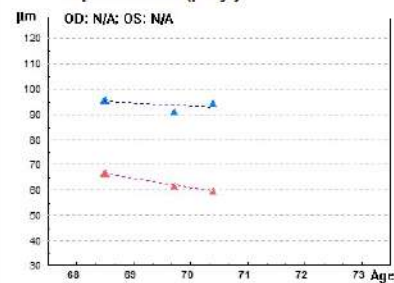
☒ Show Lines

☒ Show Bnd

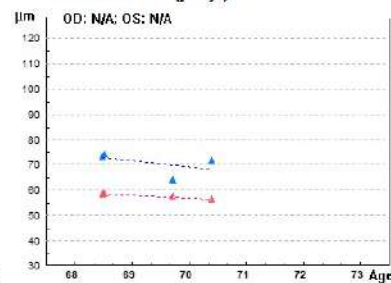
☒ Auto Zoom



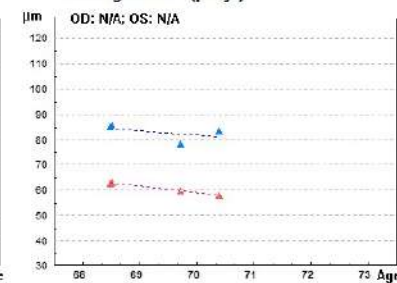
Superior RNFL (μm/yr)



Inferior RNFL (μm/yr)



Average RNFL (μm/yr)



	OD			OS		
	First	Last	Diff	First	Last	Diff
Avg RNFL(μm)	84	83	-1	62	58	-4
Superior RNFL(μm)	95	94	-1	66	59	-7
Inferior RNFL(μm)	73	71	-2	58	56	-2
Disc Area (mm ²)	1.25	1.22	-0.03	1.39	1.43	0.04
Rim Area (mm ²)	1.03	0.98	-0.04	0.63	0.62	-0.00
Cup Area (mm ²)	0.22	0.23	0.01	0.76	0.81	0.04
C/D Area Ratio	0.18	0.19	0.01	0.55	0.56	0.01
C/D V. Ratio	0.38	0.39	0	0.64	0.66	0

— OD
— OS

Update 2021 - January 25, 2021

HD Angio Disc Trend Analysis

OD

OS

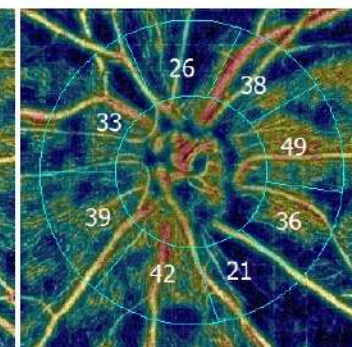
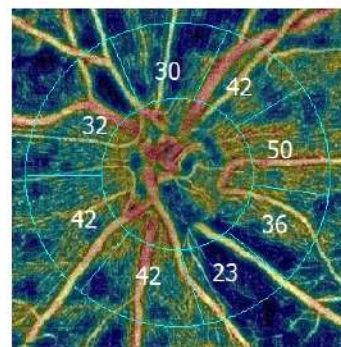
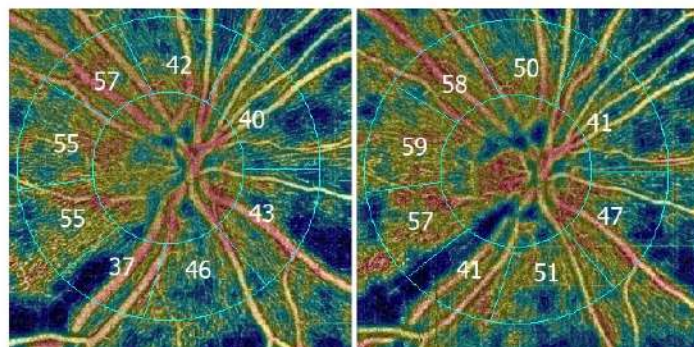
4.5 x 4.5 Scan Size (mm)

First: 03/12/2019 11:03:54; SQ: 6; 69 yrs

Last: 01/25/2021 10:33:19; SQ: 6; 70 yrs

First: 03/12/2019 11:07:05; SQ: 8; 69 yrs

Last: 01/25/2021 11:01:29; SQ: 7; 70 yrs



Thickness

○ RNFL

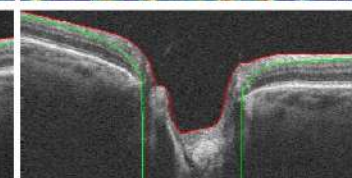
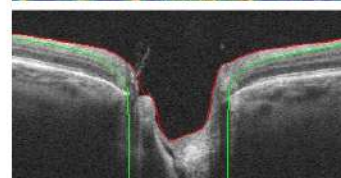
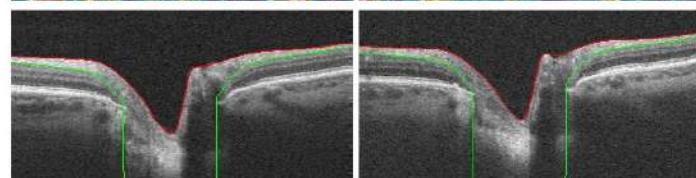
Vessel
Density

○ RPC

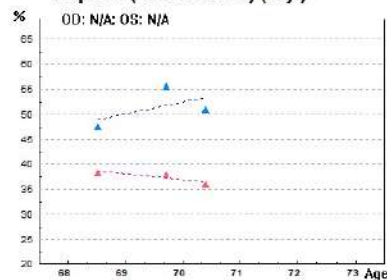
☒ Show Lines

☒ Show Bnd

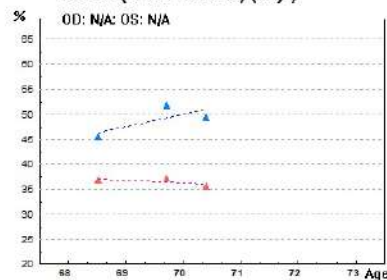
☒ Auto Zoom



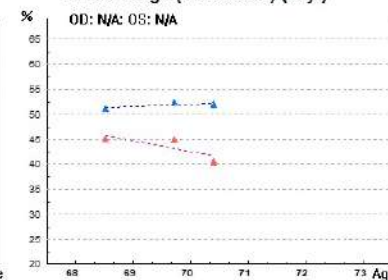
Superior (Small Vessels) (%/yr)



Inferior (Small Vessels) (%/yr)



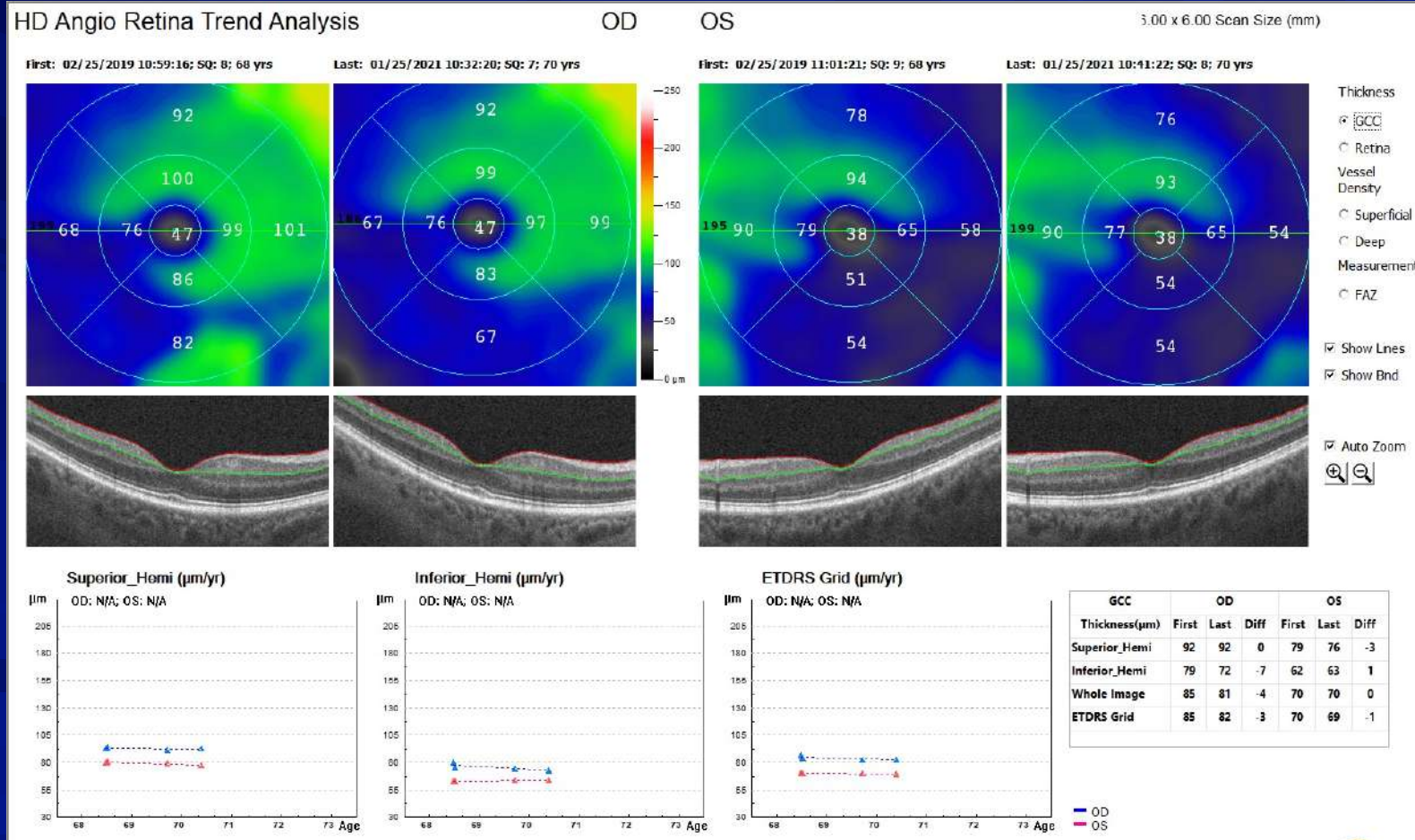
Whole Image (All Vessels) (%/yr)



Vessel	OD			OS		
	First	Last	Diff	First	Last	Diff
Superior (Small)	47.4	50.8	3.4	38.1	35.8	-2.3
Inferior (Small)	45.2	49.2	3.9	36.6	35.4	-1.1
Average (Small)	46.4	50.0	3.6	37.4	35.7	-1.7
Whole Image (All)	50.9	51.7	0.8	44.9	40.3	-4.6

— OD
— OS

Update 2021 - January 25, 2021



Update 2021 - January 25, 2021

HD Angio Retina Trend Analysis

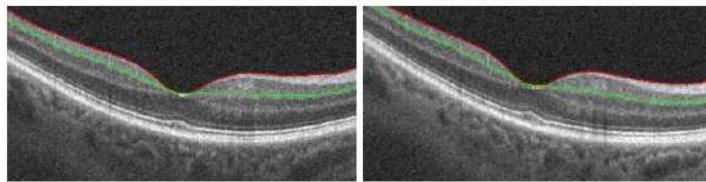
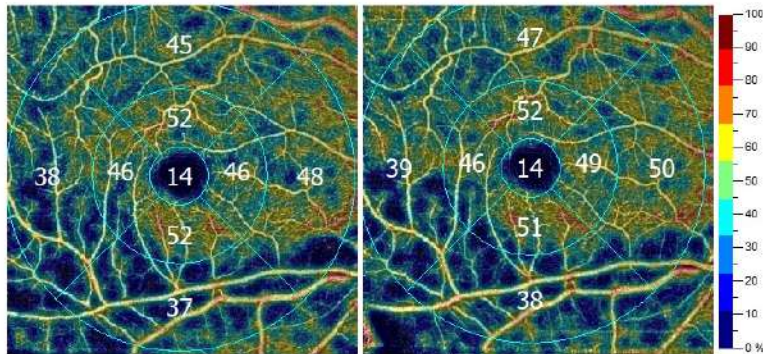
OD

OS

3.00 x 6.00 Scan Size (mm)

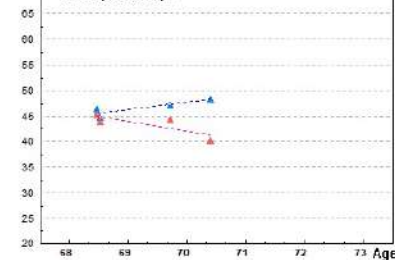
First: 02/25/2019 10:59:16; SQ: 8; 68 yrs

Last: 01/25/2021 10:32:20; SQ: 7; 70 yrs



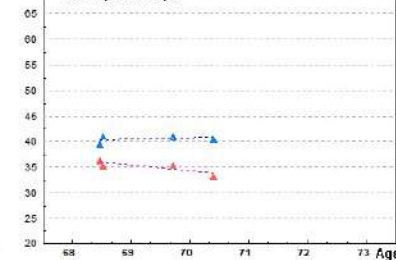
Superior_Hemi (%/yr)

OD: N/A; OS: N/A



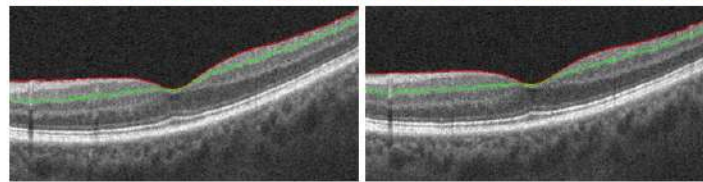
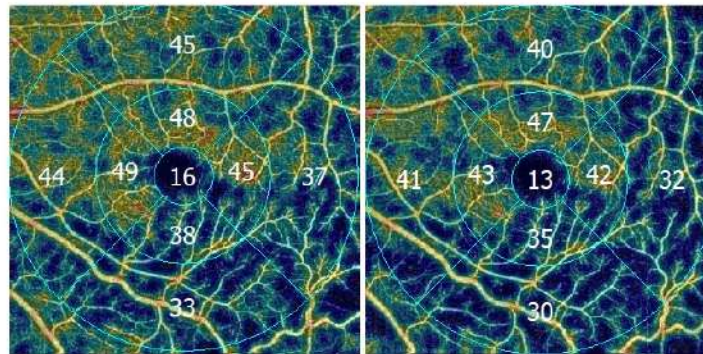
Inferior_Hemi (%/yr)

OD: N/A; OS: N/A



First: 02/25/2019 11:01:21; SQ: 9; 68 yrs

Last: 01/25/2021 10:41:22; SQ: 8; 70 yrs



Thickness

☐ GCC

☐ Retina

Vessel

Density

☒ Superficial

☐ Deep

Measurement

☐ FAZ

☒ Show Lines

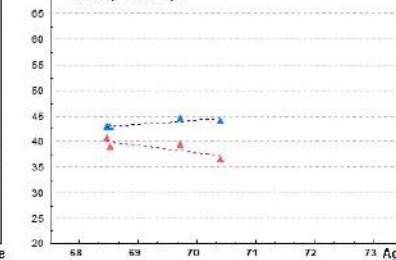
☒ Show Bnd

☒ Auto Zoom



ETDRS Grid (%/yr)

OD: N/A; OS: N/A



Vessel	OD			OS		
Density(%)	First	Last	Diff	First	Last	Diff
Superior_Hemi	46.1	48.2	2.1	45.1	40.0	-5.0
Inferior_Hemi	39.3	40.3	1.0	36.1	33.1	-3.0
Whole Image	42.6	44.0	1.3	40.4	36.5	-3.9
ETDRS Grid	42.7	44.0	1.3	40.4	36.4	-4.0

OD
OS

Update 2021 - January 25, 2021

HD Angio Retina Trend Analysis

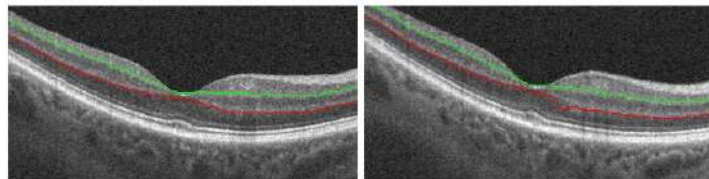
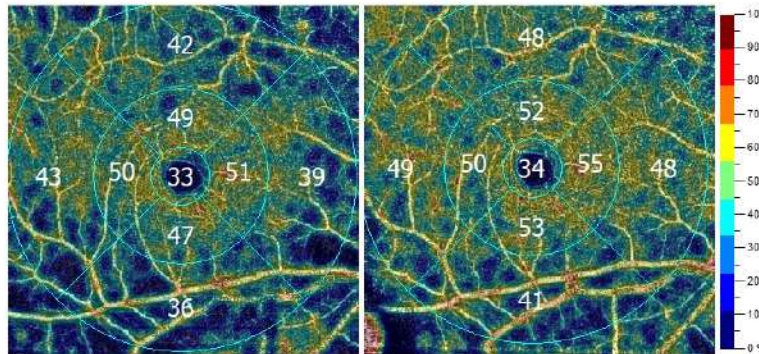
OD

OS

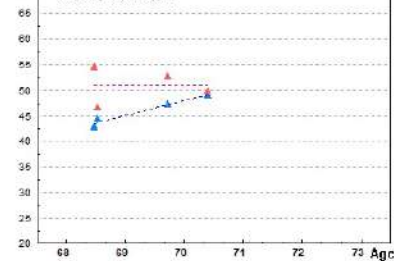
3.00 x 6.00 Scan Size (mm)

First: 02/25/2019 10:59:16; SQ: 8; 68 yrs

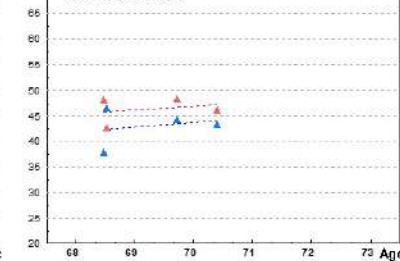
Last: 01/25/2021 10:32:20; SQ: 7; 70 yrs



Superior_Hemi (%/yr)
OD: N/A; OS: N/A

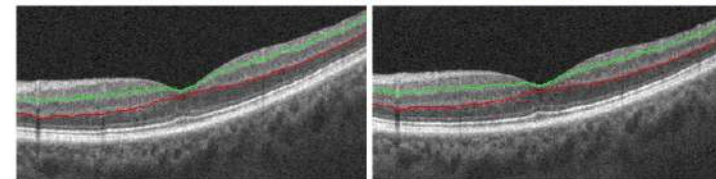
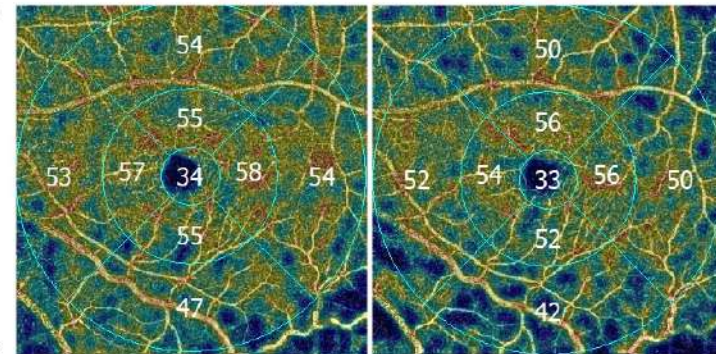


Inferior_Hemi (%/yr)
OD: N/A; OS: N/A

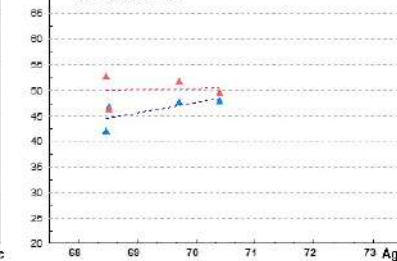


First: 02/25/2019 11:01:21; SQ: 9; 68 yrs

Last: 01/25/2021 10:41:22; SQ: 8; 70 yrs



ETDRS Grid (%/yr)
OD: N/A; OS: N/A



Thickness

☐ GCC

☐ Retina

Vessel

Density

☐ Superficial

☒ Deep

Measurement

☐ FAZ

☒ Show Lines

☒ Show Bnd

☒ Auto Zoom

Vessel	OD			OS		
	Density(%)	First	Last	Diff	First	Last
Superior_Hemi	42.6	48.9	6.3	54.4	49.7	-4.6
Inferior_Hemi	37.7	43.1	5.4	47.9	45.8	-2.0
Whole Image	40.1	45.8	5.7	51.0	47.8	-3.2
ETDRS Grid	41.8	47.6	5.8	52.6	49.4	-3.2

OD
OS

74-year-old man

POAG, OS > OD

Lumigan 0.01% QD OU

Combigan BID OU

2
E C

ENIR - 1-11-2012

DPE - ~~8-15-11~~ ~~9-11-12~~ ~~9-13-13~~, 9-9-14, 9-14-15, 9-27-16, 9-26-17, 9-25-18

VF - ~~1-11-12~~ ~~1-14-13~~ ~~1-13-14~~, ~~1-6-15~~ ~~1-11-16~~, 1-25-17, 1-26-18,

OCT - ~~8-15-11~~ ~~9-11-12~~ ~~9-13-13~~, 9-9-14, 9-14-15, 9-27-16, 9-26-17, 9-25-18

gnio - ~~4-11-11~~ ~~1-14-13~~ 5-10-12, 5-21-18

Photos - ~~3-24-09~~, 5-11-13, 5-30-17

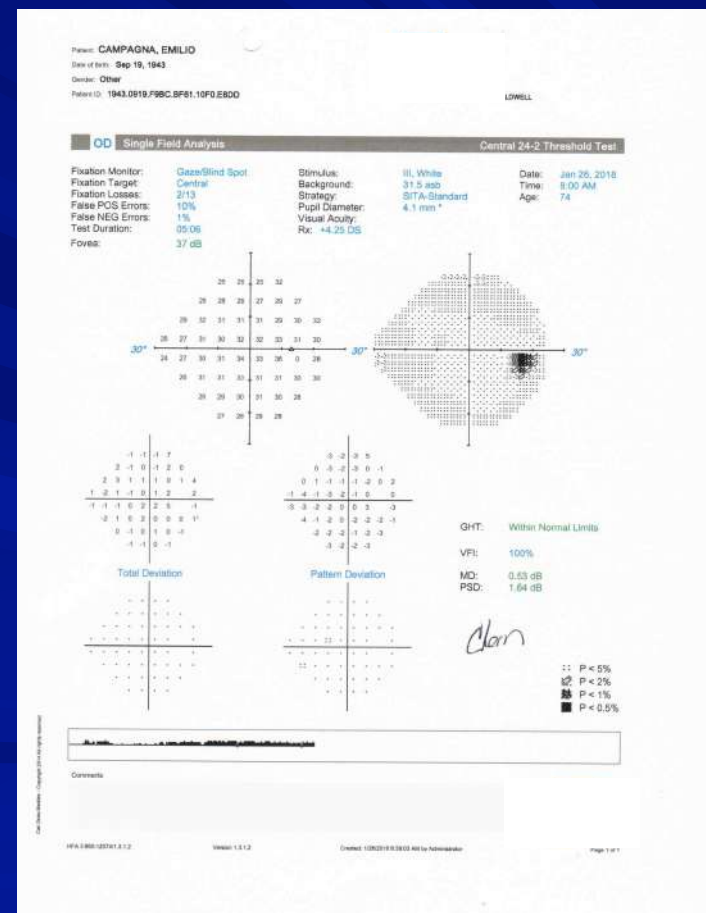
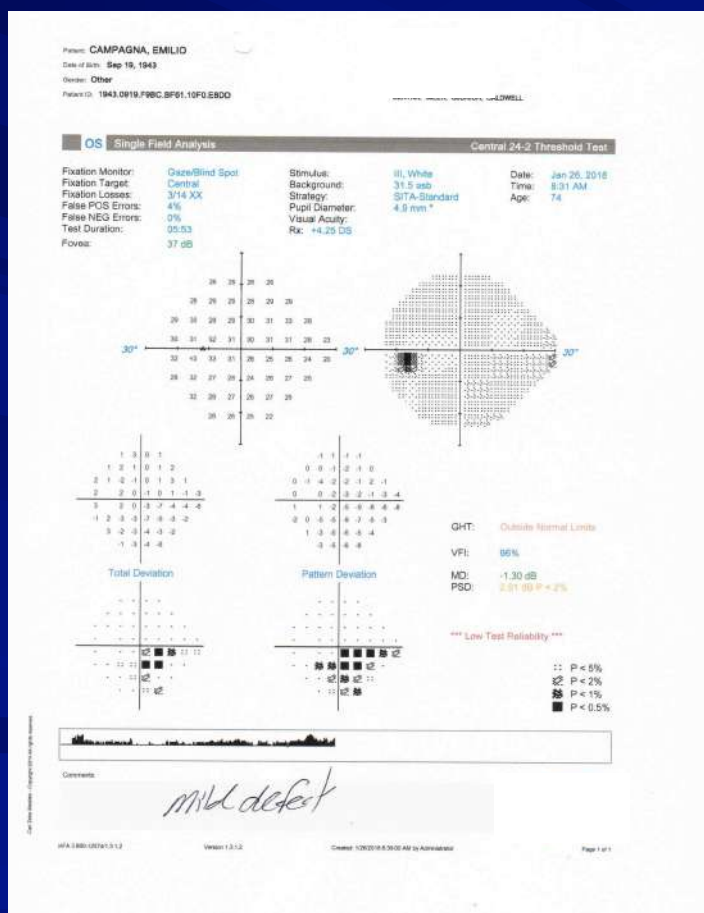
P. rds - 541/527

OCT-A - 9-25-18

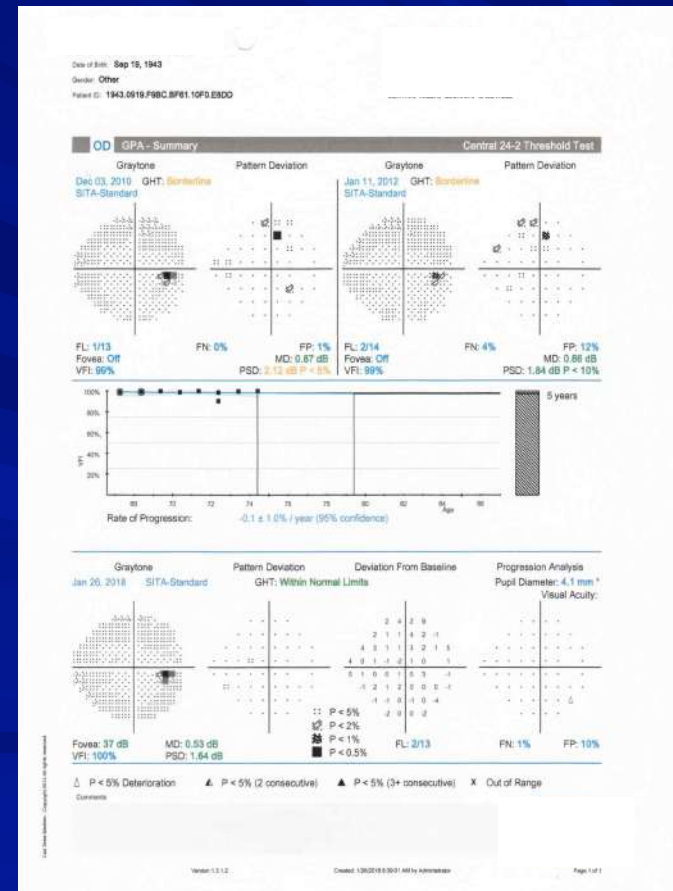
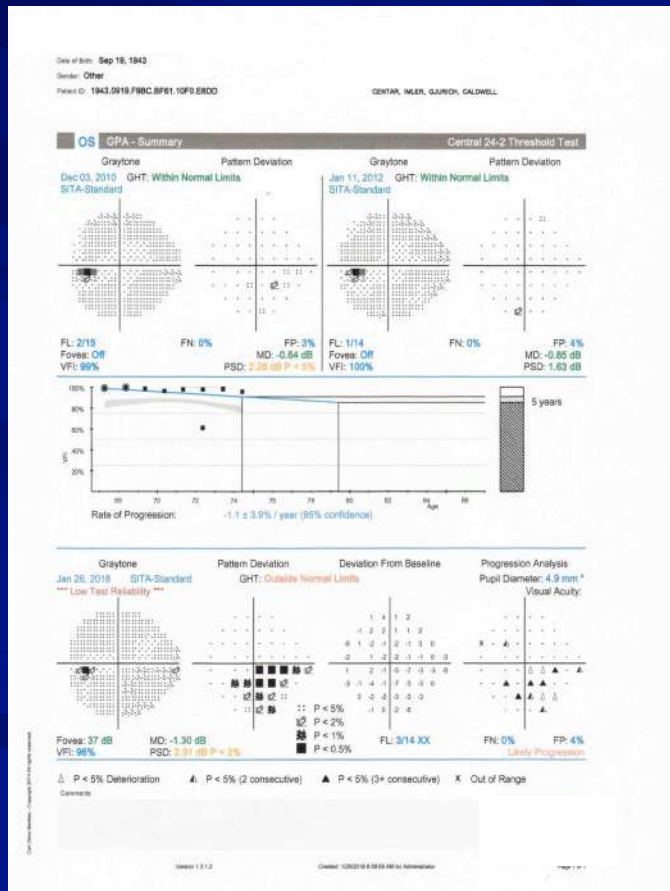
Baseline 38/35

Target 500

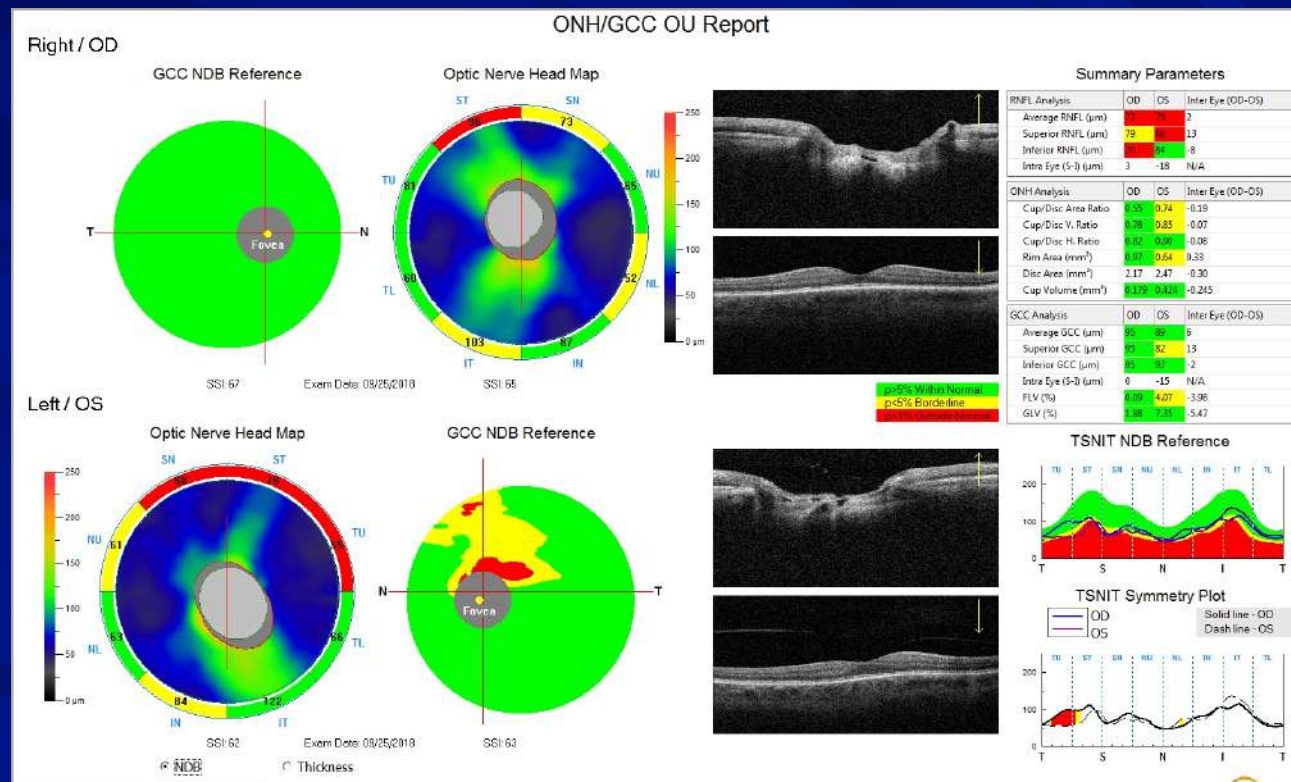
VF OD and OS 1-26-2018



VF OD and OS GPA 1-26-2018

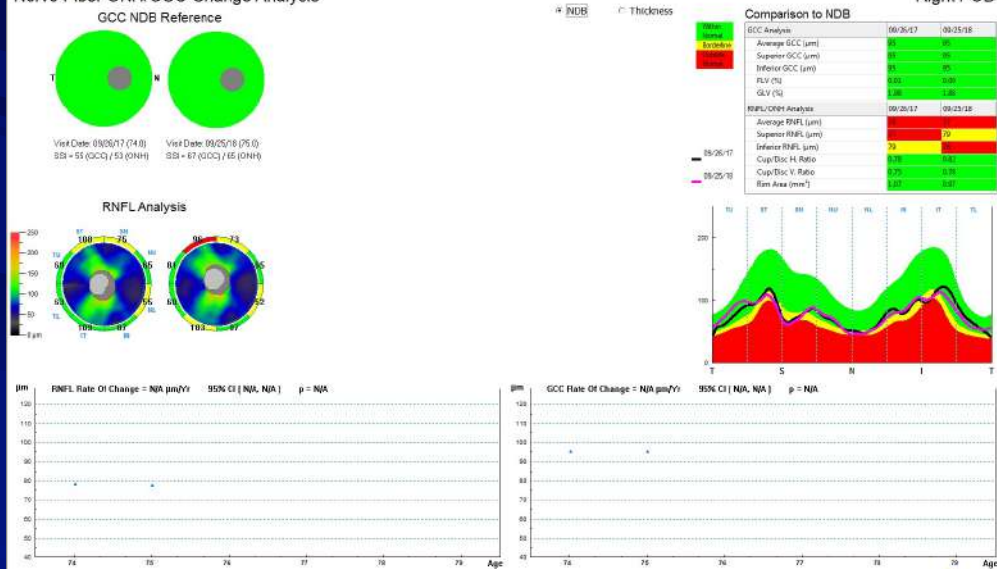


OCT NFL and GCC 9-25-2018

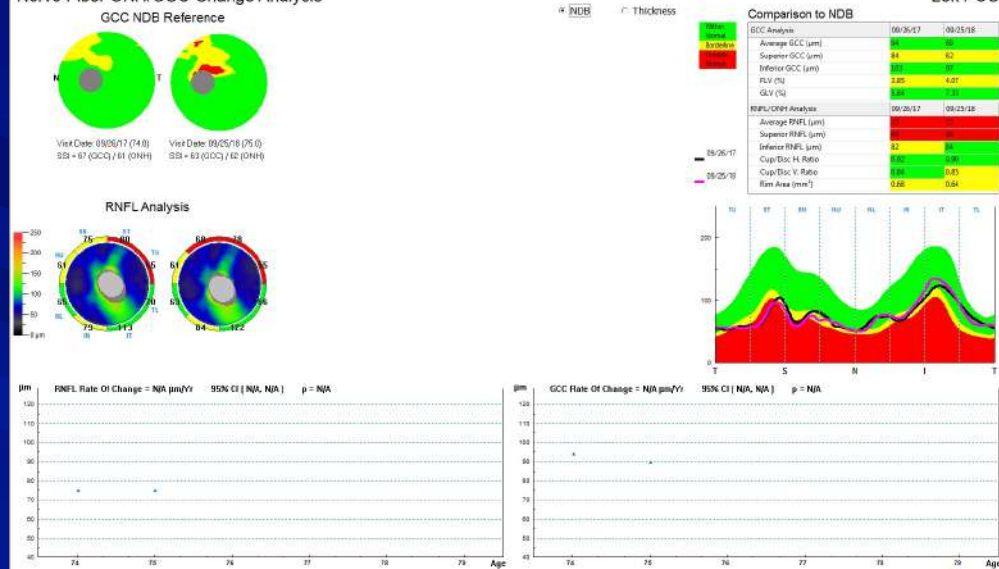


Change Analysis NFL-GCC

Nerve Fiber ONH/GCC Change Analysis

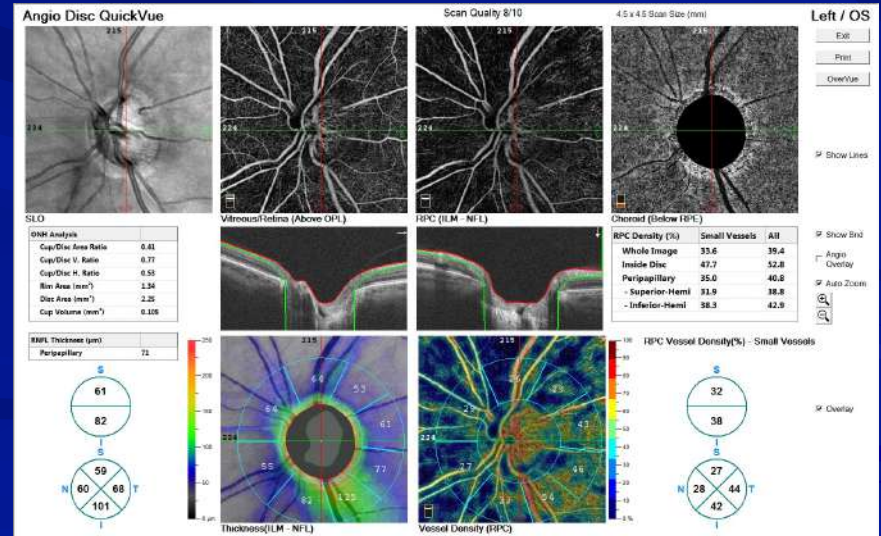
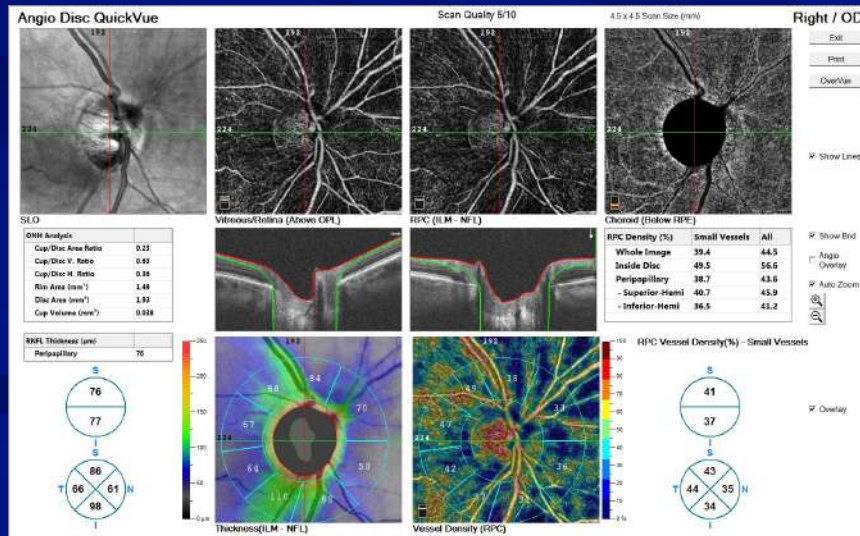
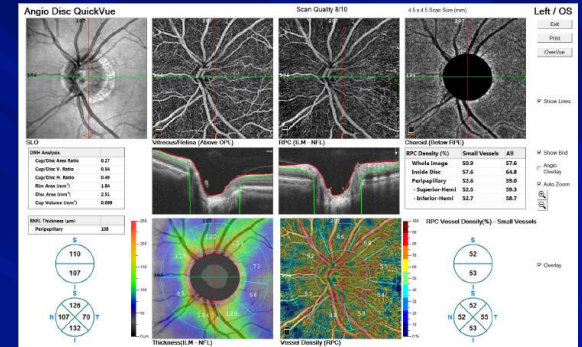
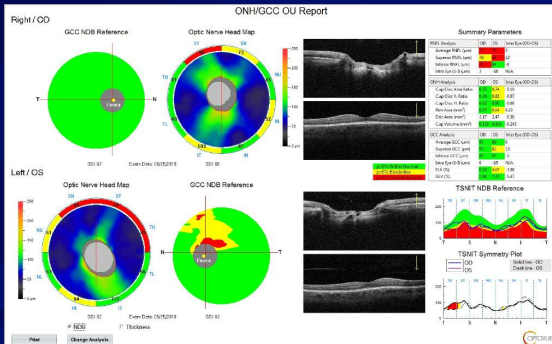


Nerve Fiber ONH/GCC Change Analysis

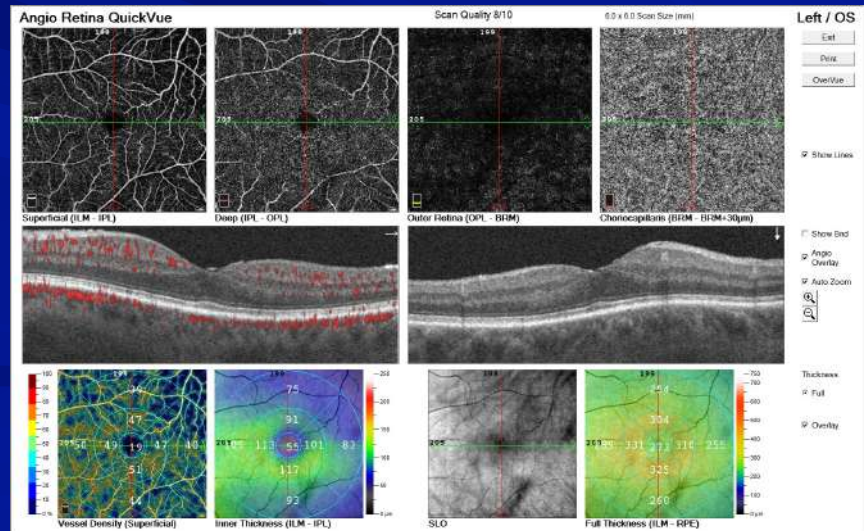
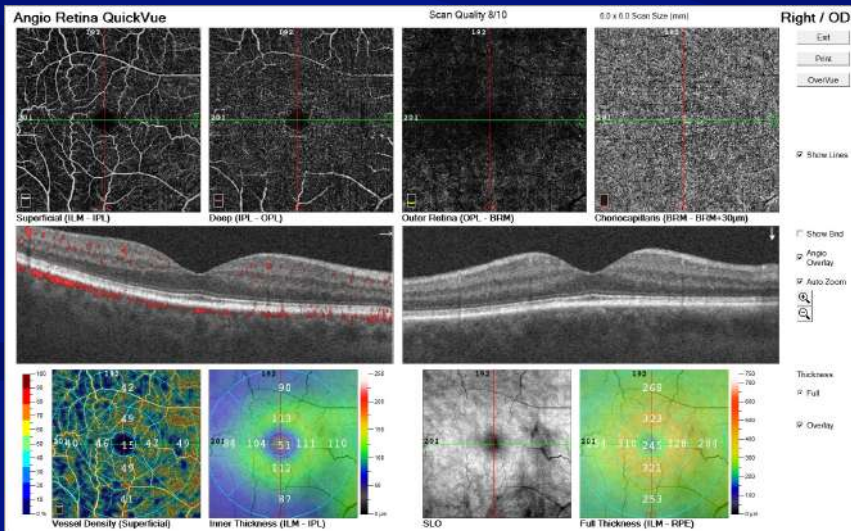
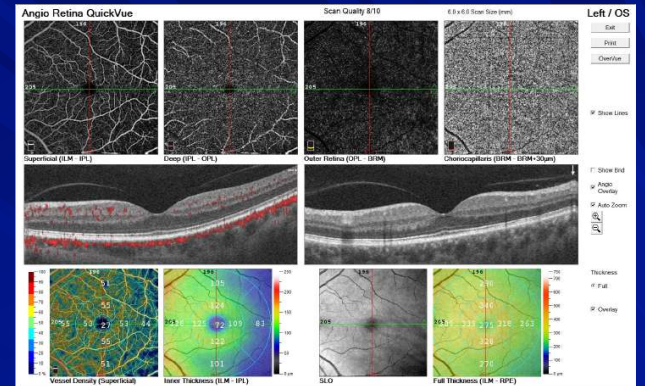
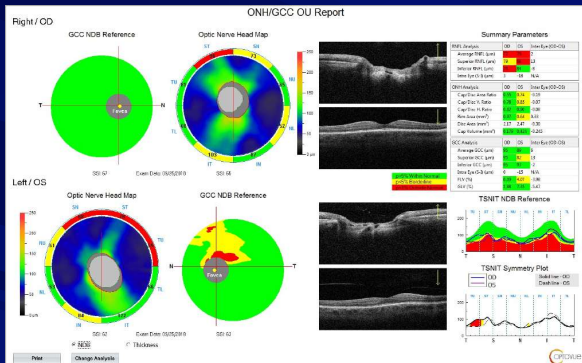


OCT-A 9-25-2018

POAG OS > OD

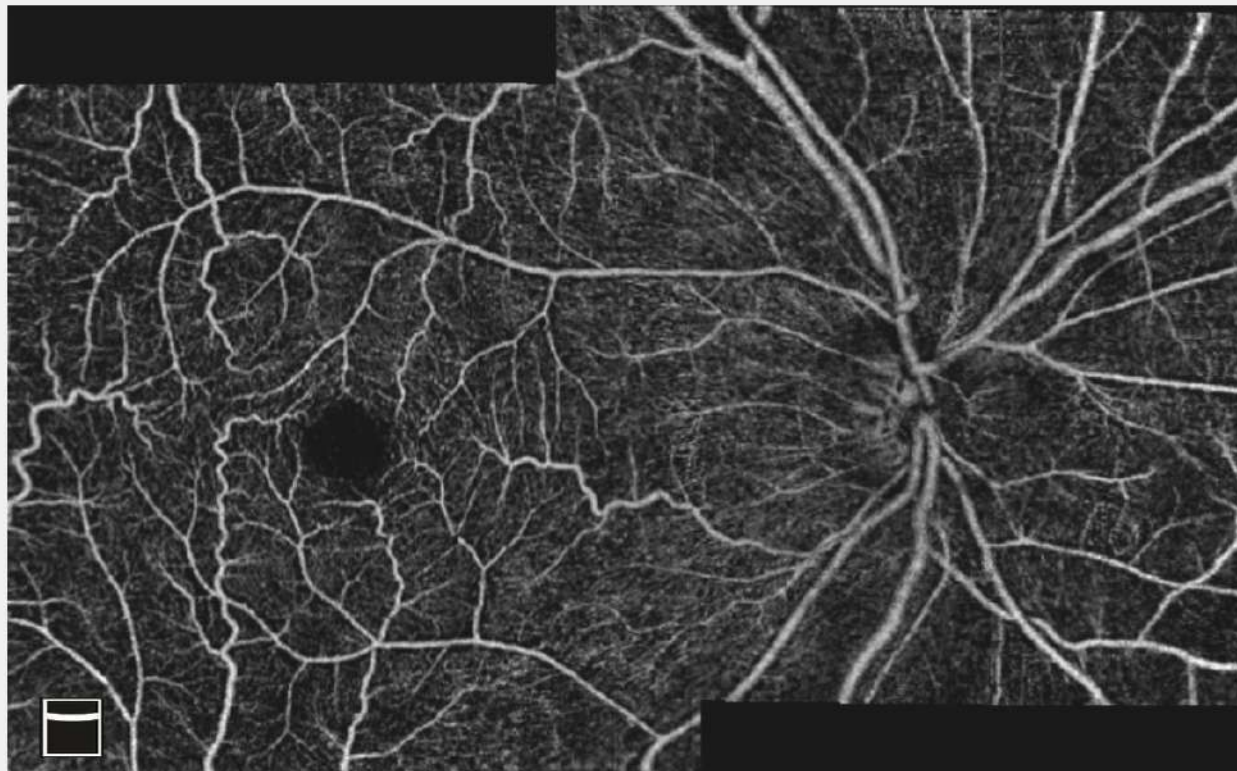


OCT-A 9-25-2018
POAG OS > OD



Montage OD

Angio Montage



Right / OD

Exit

OverVue

Print

Reset View

☐ Edit

Montage Display

☒ Vitreous/Retina

☐ Outer/Choroid

Layers:

Vitreous

Superficial

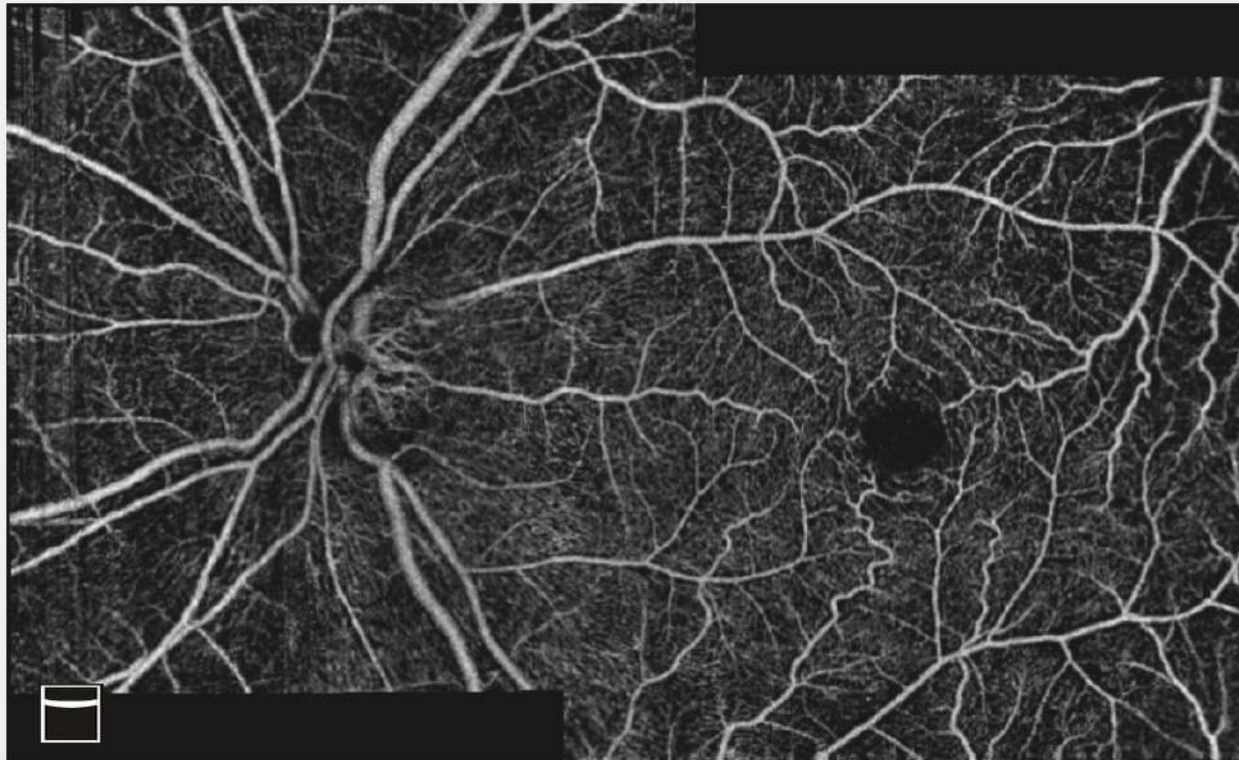
Deep

☐ Grayscale

Click image to
select layer.
Use scrollwheel
to adjust layer.

Montage OS

Angio Montage



Left / OS

Exit

OverVue

Print

Reset View

☐ Edit

Montage Display:

☒ Vitreous/Retina

☐ Outer/Choroid

Layers:

☒ Vitreous

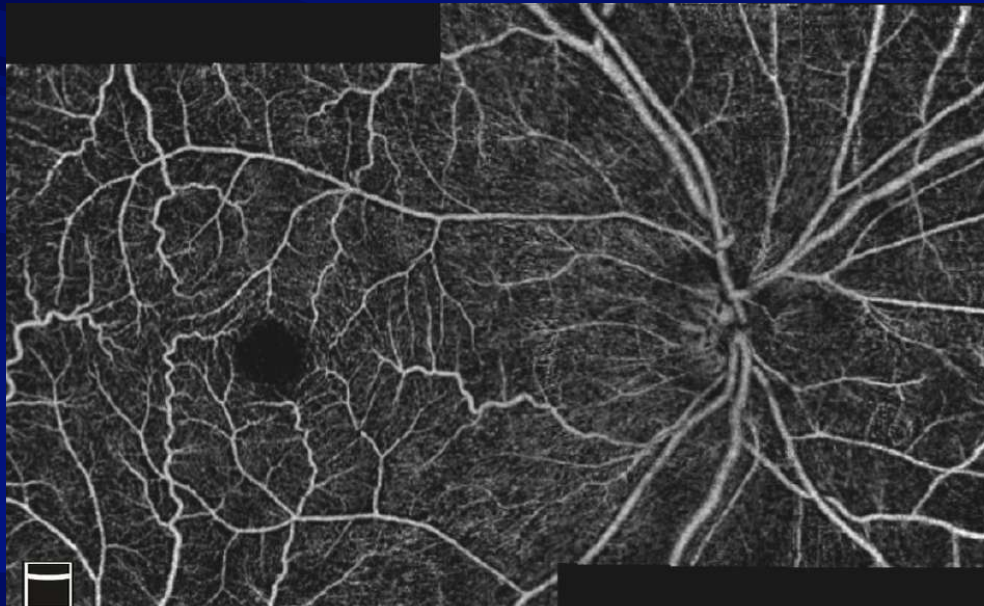
☐ Superficial

☐ Deep

☐ Greyscale

Click image to
select layer.
Use scrollwheel
to adjust layer.

Montage OU



They do read their EHR communication

Page 1 of 1

Drs. Centar & Imler

From:
Date: Tuesday, September 25, 2018 1:07 PM
To: <centarimler@atlanticbb.net>
Subject:

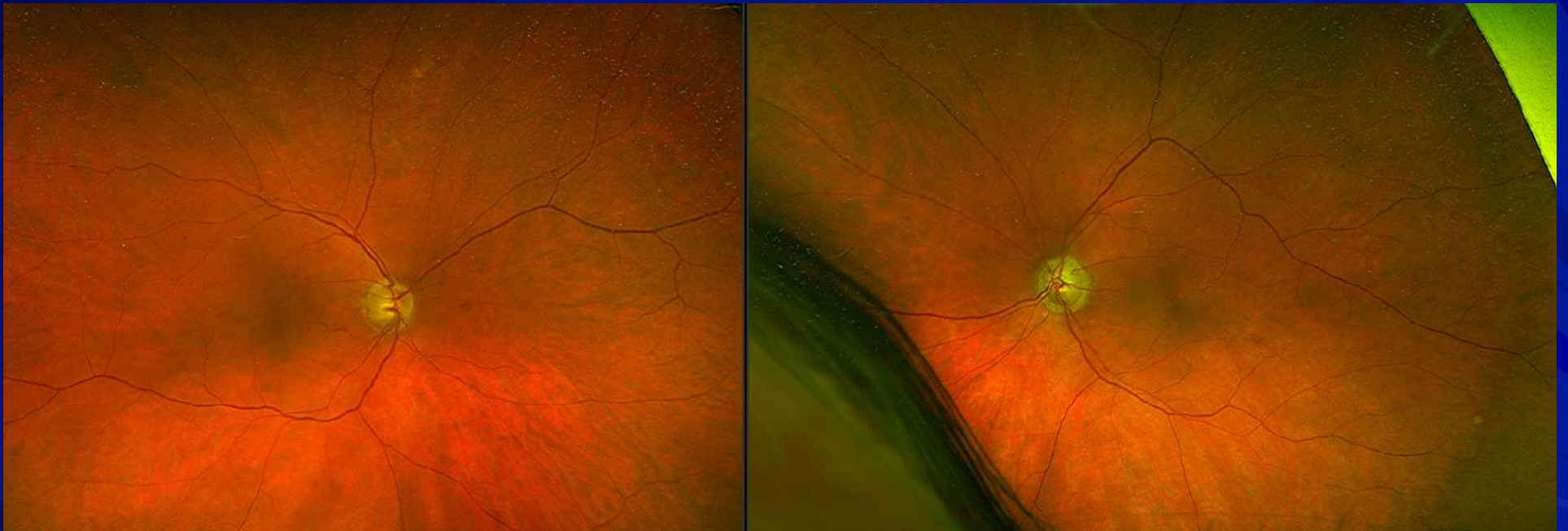
To Whom it may concern:

I was reading my patient chart online, which was emailed to me right after my office visit today. I noticed they have my weight recorded as 344 pounds. That weight is incorrect because I'm now at 333, which has been holding steady between 332 and 334 for several months now.

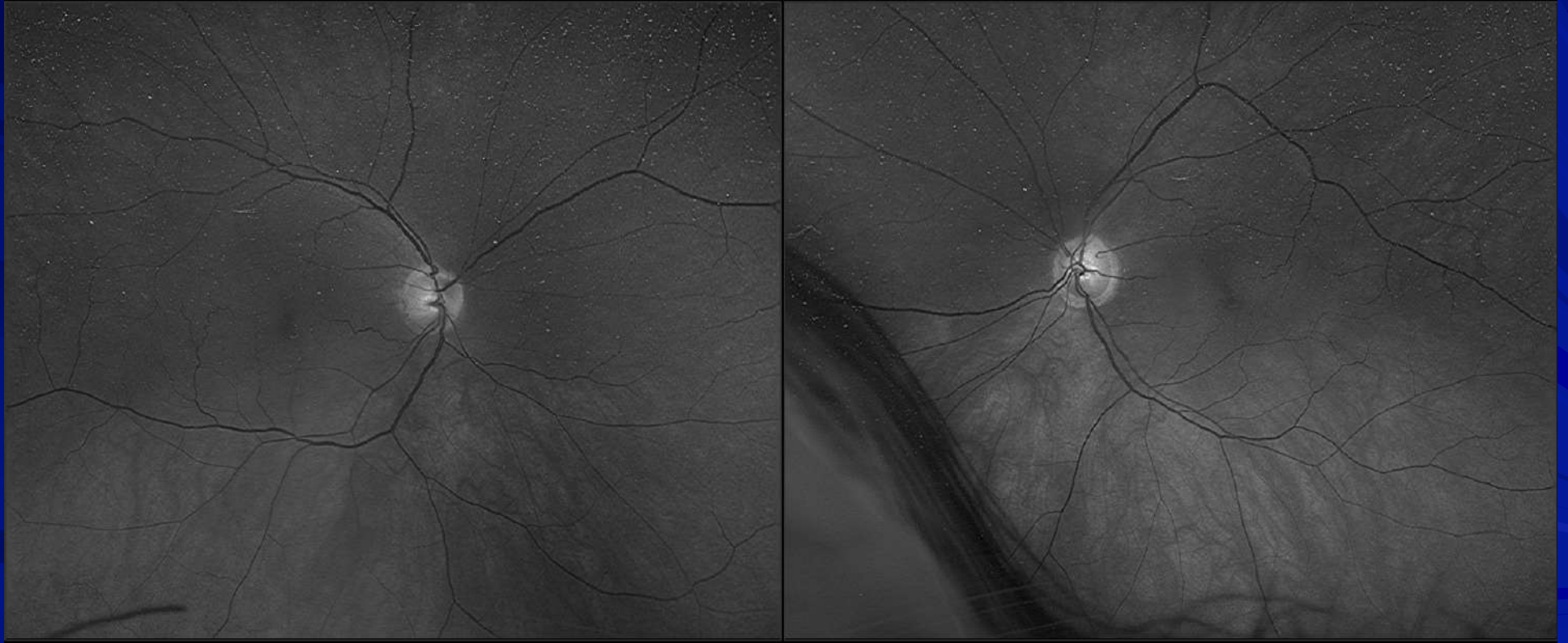
Sincerely,

Sent from my iPhone=

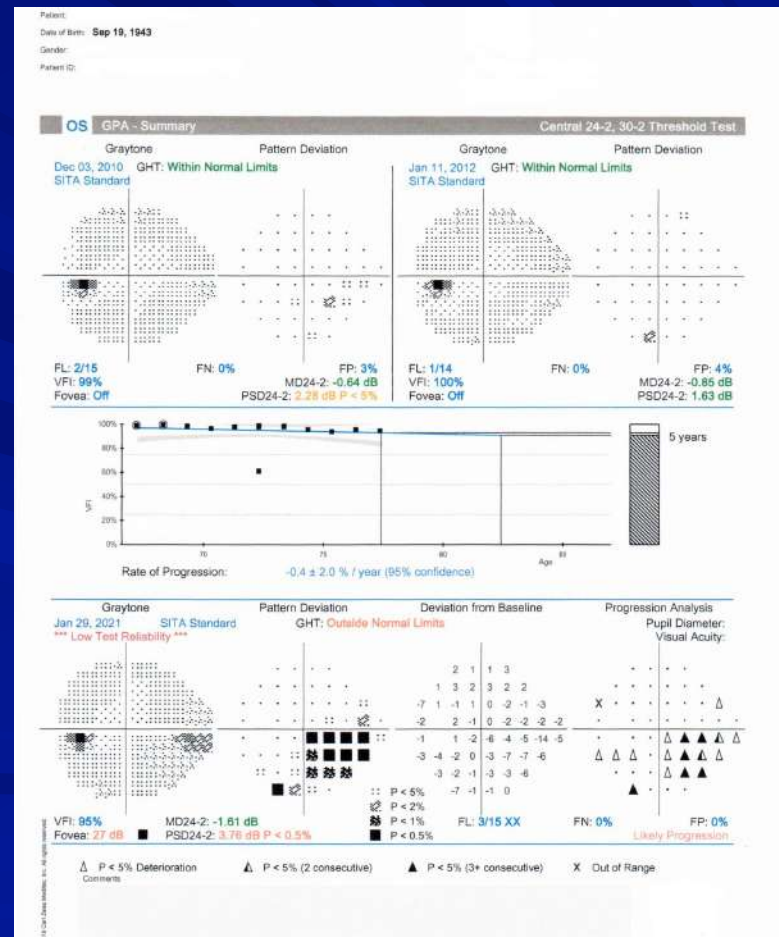
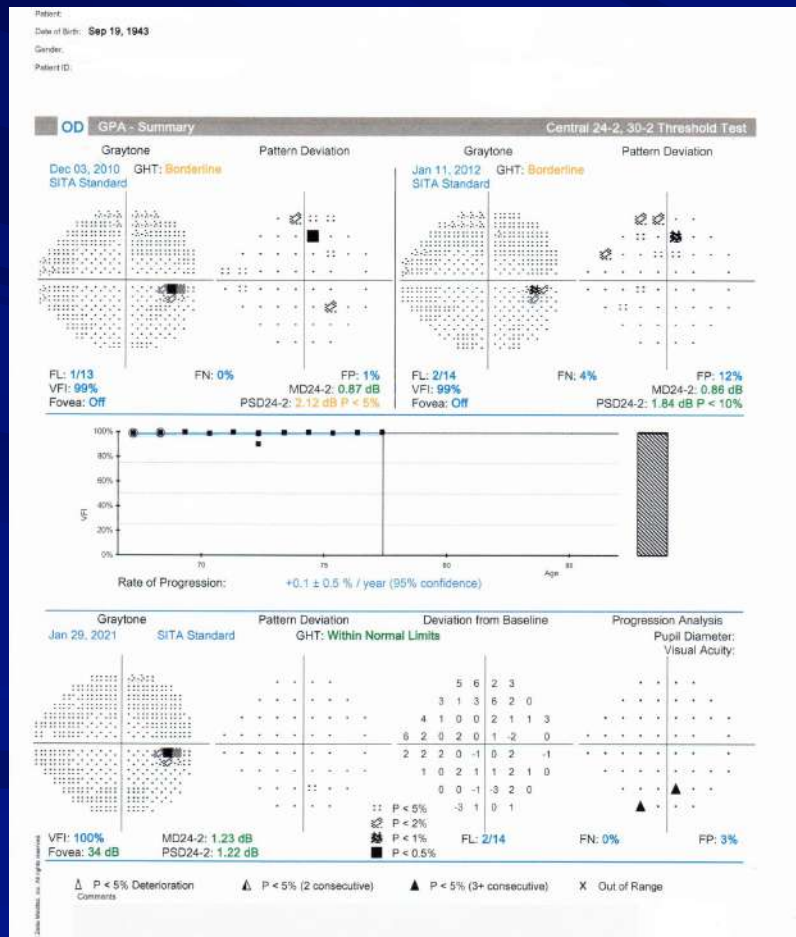
Update 2021- June 8, 2021



Update 2021- June 8, 2021

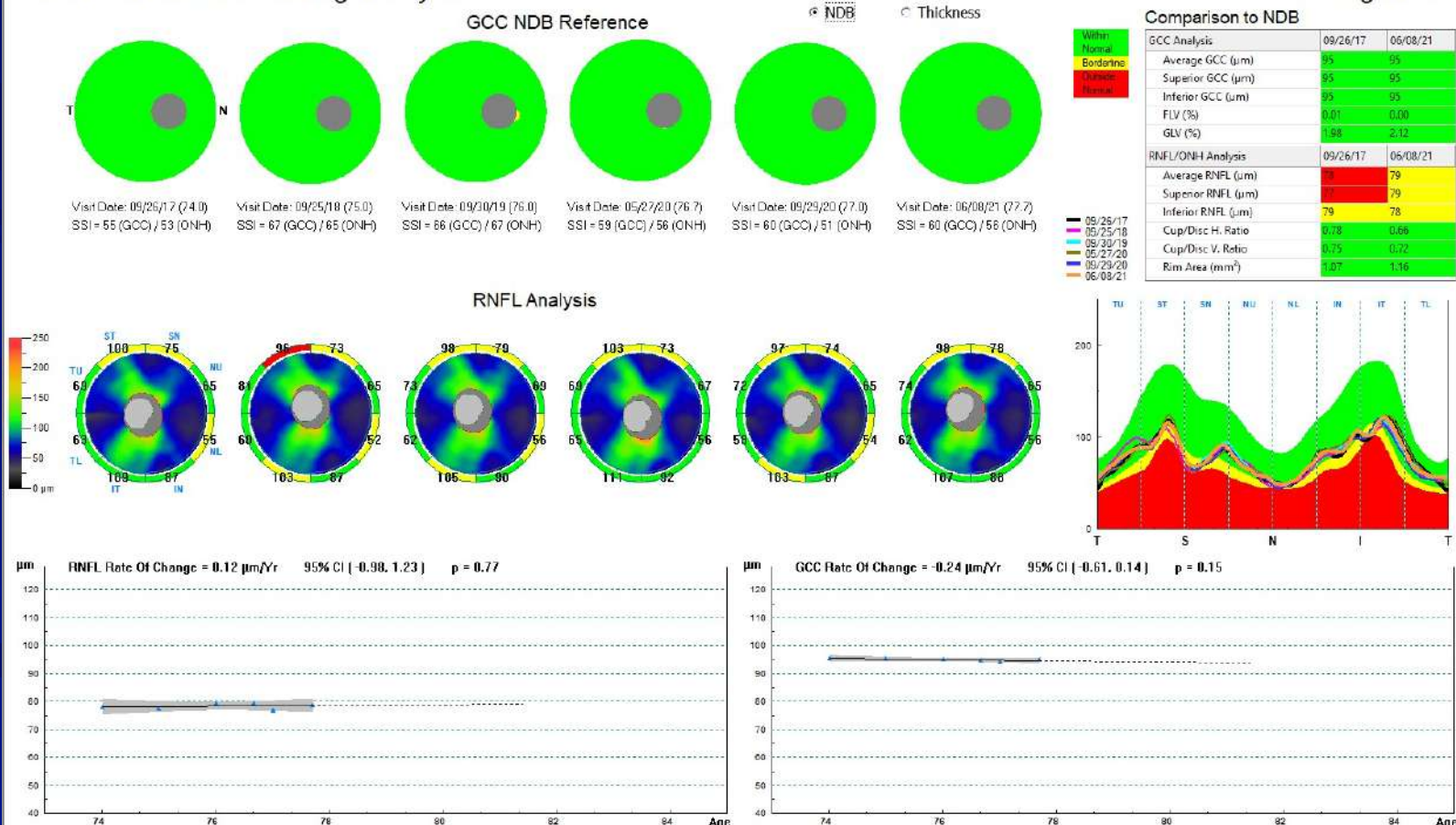


Update 2021- January 29, 2021



Update 2021- June 8, 2021

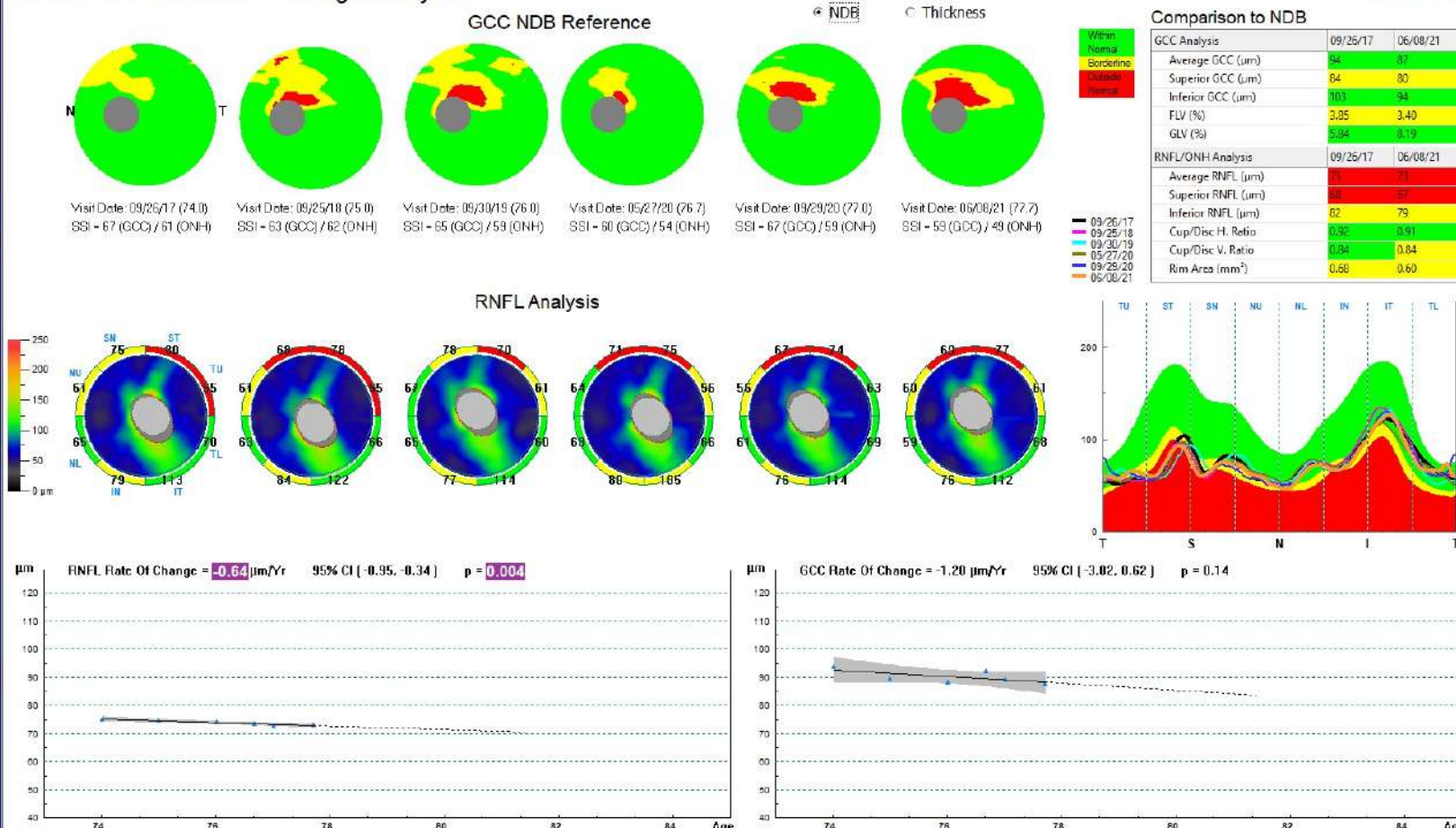
Nerve Fiber ONH/GCC Change Analysis



Update 2021- June 8, 2021

Nerve Fiber ONH/GCC Change Analysis

Left / OS



Update 2021- June 8, 2021

HD Angio Disc Trend Analysis

OD

OS

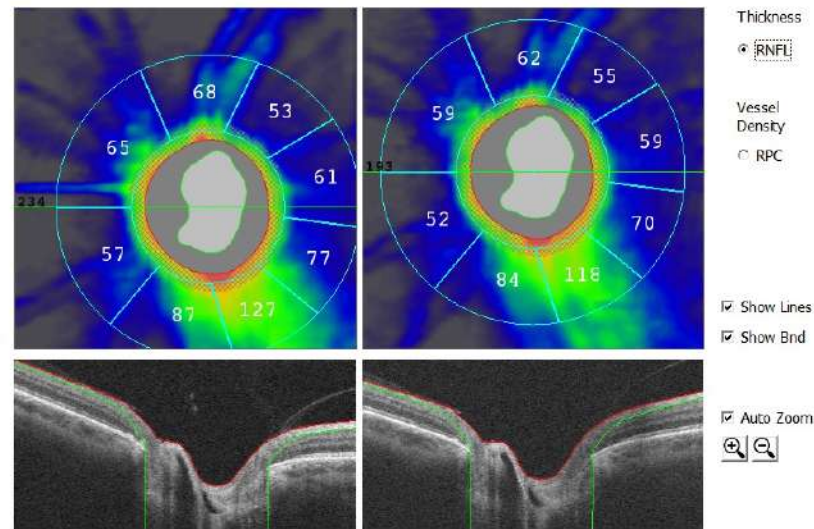
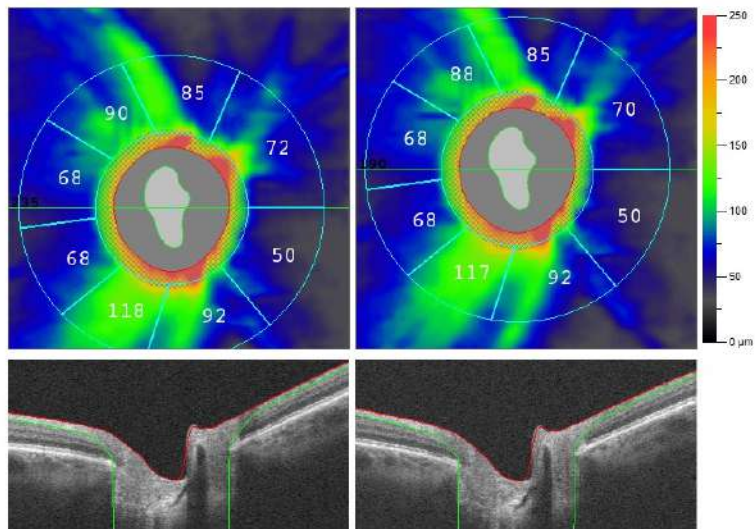
4.5 x 4.5 Scan Size (mm)

First: 09/26/2018 10:01:37; SQ: 8; 75 yrs

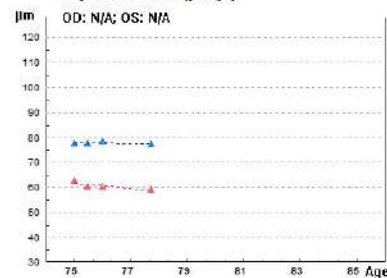
Last: 06/08/2021 08:55:48; SQ: 8; 78 yrs

First: 09/26/2018 10:04:04; SQ: 8; 75 yrs

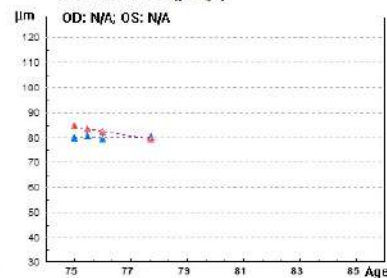
Last: 06/08/2021 09:00:20; SQ: 7; 78 yrs



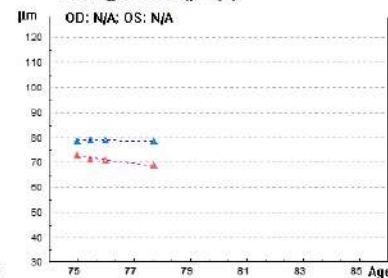
Superior RNFL (μm/yr)



Inferior RNFL (μm/yr)



Average RNFL (μm/yr)



	OD			OS		
	First	Last	Diff	First	Last	Diff
Avg RNFL (μm)	78	78	0	73	68	-5
Superior RNFL (μm)	77	77	0	62	59	-3
Inferior RNFL (μm)	79	80	1	84	79	-5
Disc Area (mm ²)	1.92	1.93	0.01	2.23	2.17	-0.06
Rim Area (mm ²)	1.50	1.50	-0.00	1.34	1.25	-0.09
Cup Area (mm ²)	0.42	0.44	0.01	0.89	0.93	0.03
C/D Area Ratio	0.22	0.23	0.01	0.40	0.43	0.03
C/D V. Ratio	0.35	0.36	0	0.52	0.54	0

— OD

— OS

Update 2021- June 8, 2021

HD Angio Disc Trend Analysis

OD

OS

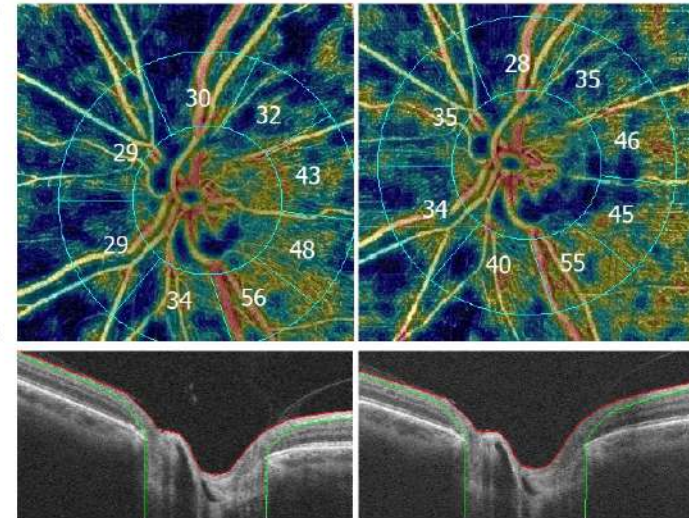
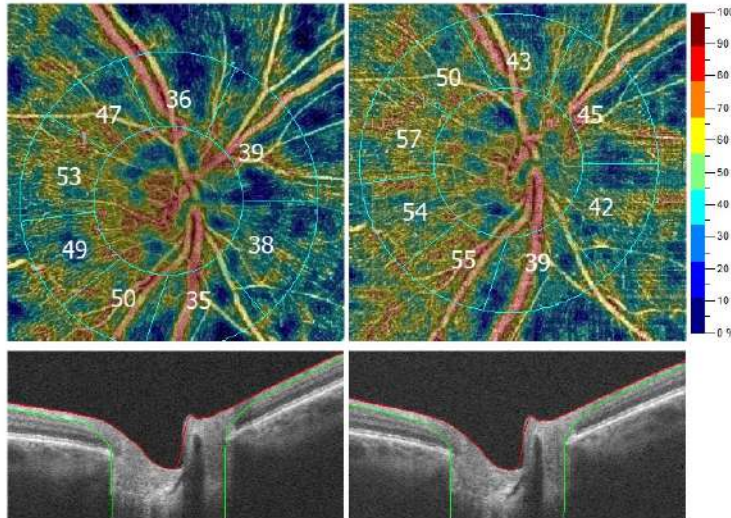
4.5 x 4.5 Scan Size (mm)

First: 09/26/2018 10:01:37; SQ: 8; 75 yrs

Last: 06/08/2021 08:55:48; SQ: 8; 78 yrs

First: 09/26/2018 10:04:04; SQ: 8; 75 yrs

Last: 06/08/2021 09:00:20; SQ: 7; 78 yrs



Thickness

☐ RNFL

Vessel
Density

☒ RPC

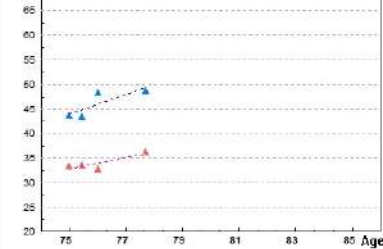
☒ Show Lines

☒ Show Bnd

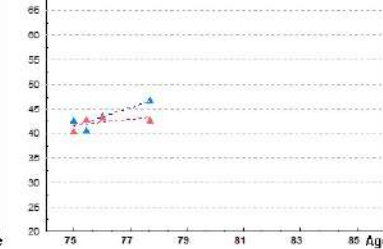
☒ Auto Zoom



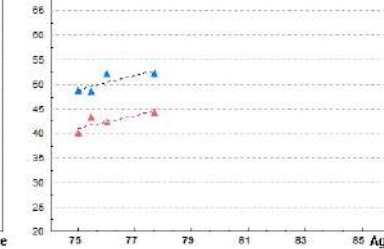
Superior (Small Vessels) (%/yr)
OD: N/A; OS: N/A



Inferior (Small Vessels) (%/yr)
OD: N/A; OS: N/A



Whole Image (All Vessels) (%/yr)
OD: N/A; OS: N/A



Vessel	OD			OS		
	Density (%)	First	Last	Diff	First	Last
Superior (Small)	43.5	48.6	5.1	33.2	36.0	2.8
Inferior (Small)	42.4	46.6	4.2	40.3	42.5	2.3
Average (Small)	43.0	47.6	4.7	36.6	39.2	2.6
Whole Image (All)	48.5	52.0	3.5	39.8	44.1	4.4

OD
OS

Update 2021- June 8, 2021

HD Angio Retina Trend Analysis

OD

OS

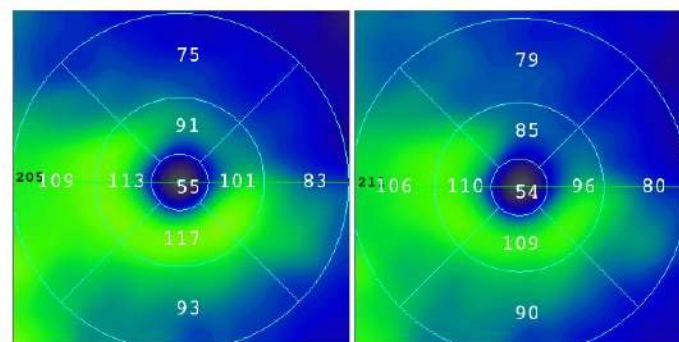
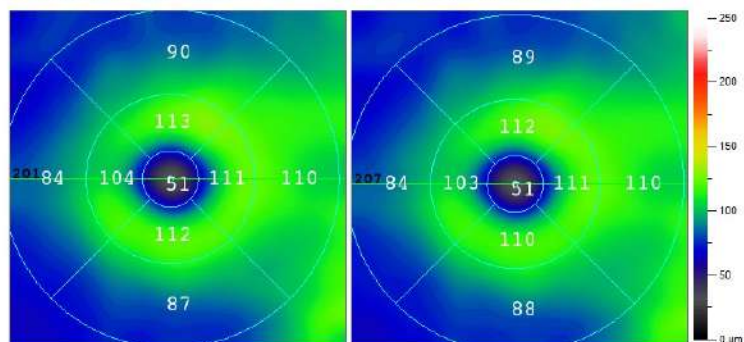
6.0 x 6.0 Scan Size (mm)

First: 09/26/2018 10:00:40; SQ: 8; 75 yrs

Last: 06/08/2021 08:53:44; SQ: 6; 78 yrs

First: 09/26/2018 10:03:10; SQ: 8; 75 yrs

Last: 06/08/2021 08:59:24; SQ: 6; 78 yrs

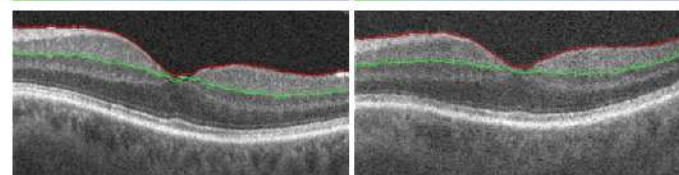
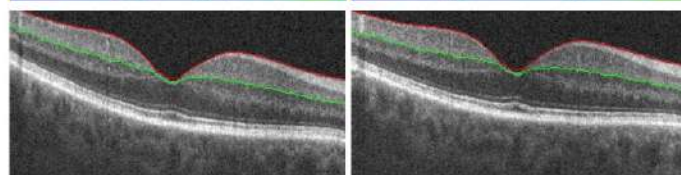


Thickness
☒ GCC
☐ Retna
☐ Vessel Density
☐ Superficial
☐ Deep
☐ Measurement
☐ FAZ

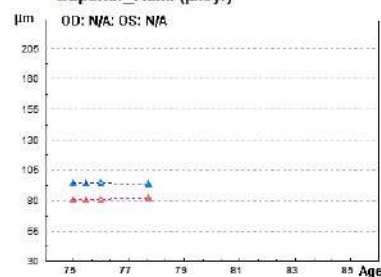
☒ Show Lines

☒ Show Bnd

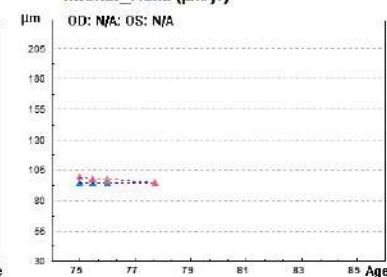
☒ Auto Zoom



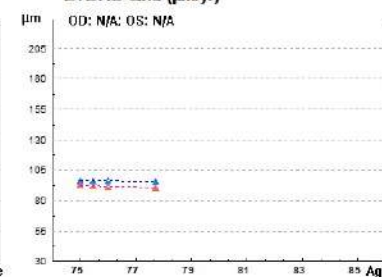
Superior_Hemi (μm/yr)



Inferior_Hemi (μm/yr)



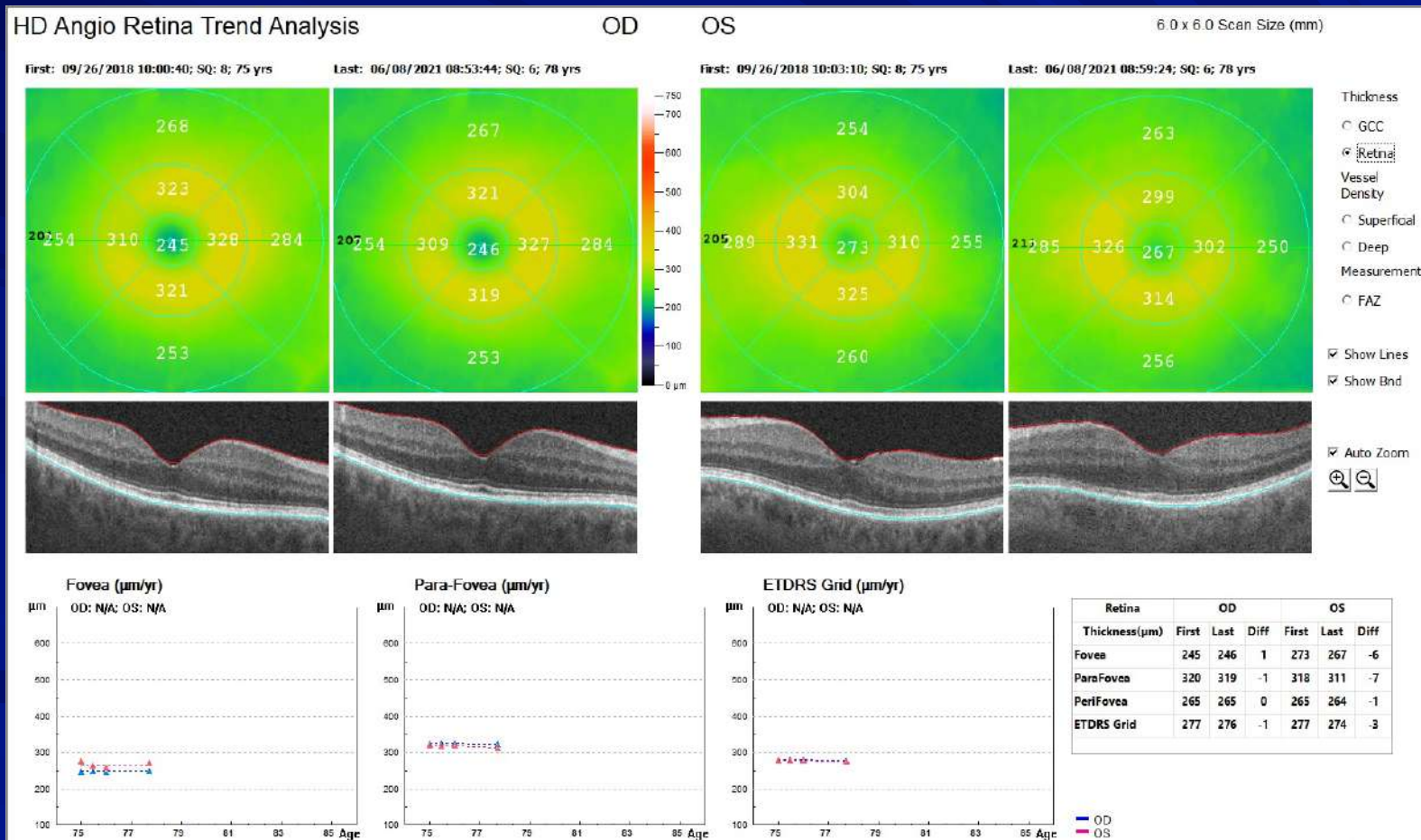
ETDRS Grid (μm/yr)



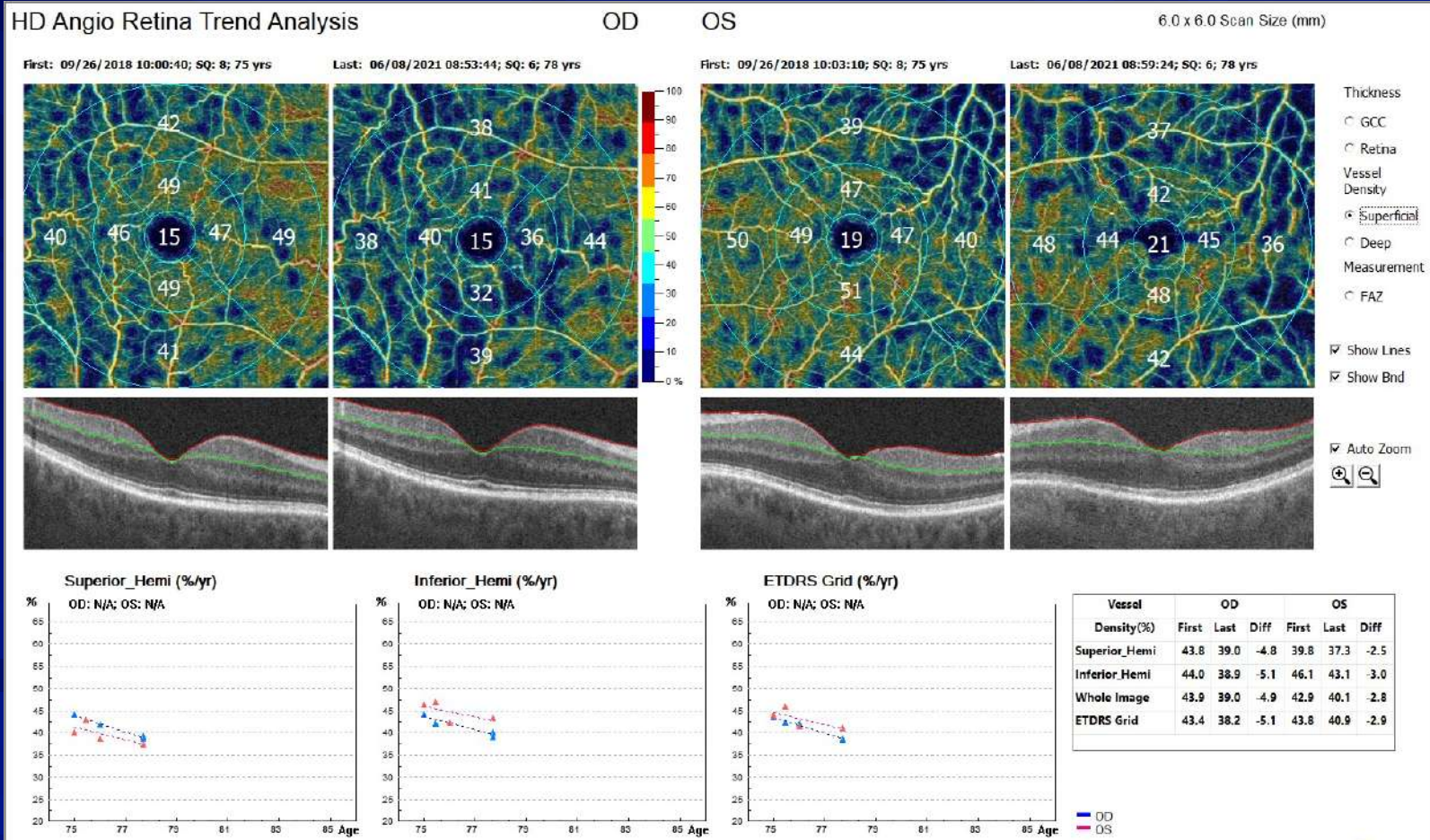
	OD			OS		
GCC	First	Last	Diff	First	Last	Diff
Thickness(μm)						
Superior_Hemi	94	93	-1	81	82	1
Inferior_Hemi	94	94	0	99	94	-5
Whole Image	94	93	-1	90	87	-3
ETDRS Grid	96	95	-1	93	90	-3

— OD
 — OS

Update 2021- June 8, 2021



Update 2021- June 8, 2021



Update 2021- June 8, 2021

HD Angio Retina Trend Analysis

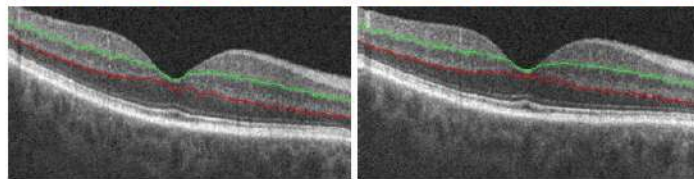
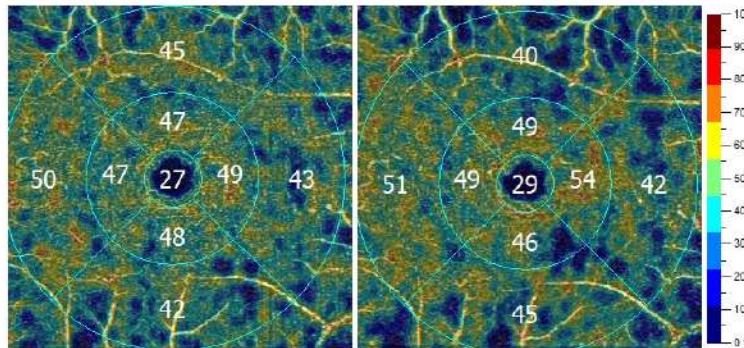
OD

OS

6.0 x 6.0 Scan Size (mm)

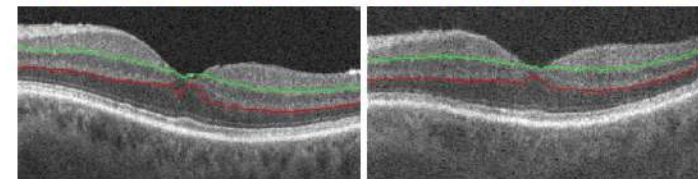
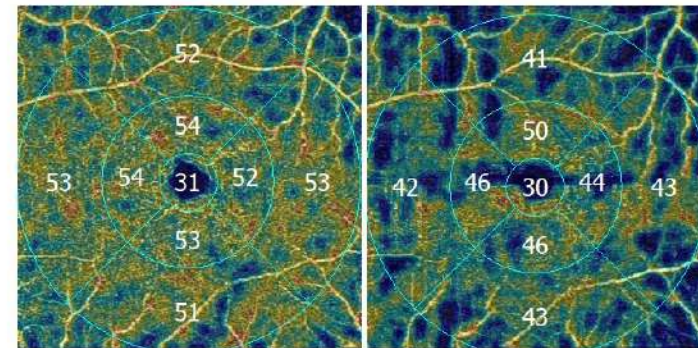
First: 09/26/2018 10:00:40; SQ: 6; 75 yrs

Last: 06/08/2021 08:53:44; SQ: 6; 78 yrs



First: 09/26/2018 10:03:10; SQ: 8; 75 yrs

Last: 06/08/2021 08:59:24; SQ: 6; 78 yrs



Thickness

☐ GCC

☐ Retina

Vessel Density

☐ Superficial

☒ Deep

Measurement

☐ FAZ

☒ Show Lines

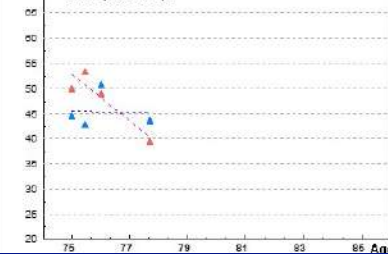
☒ Show Bnd

☒ Auto Zoom



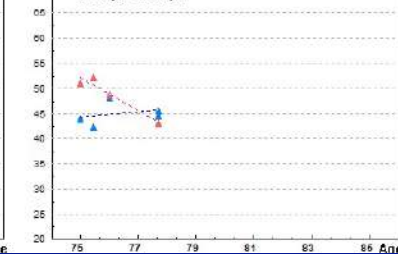
Superior_Hemi (%/yr)

OD: N/A; OS: N/A



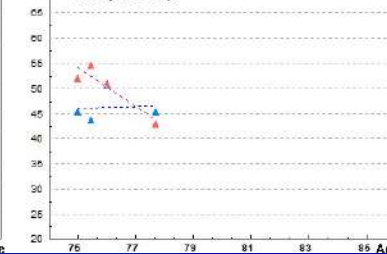
Inferior_Hemi (%/yr)

OD: N/A; OS: N/A



ETDRS Grid (%/yr)

OD: N/A; OS: N/A



Vessel	OD			OS		
Density(%)	First	Last	Diff	First	Last	Diff
Superior_Hemi	44.3	43.5	-0.7	49.7	39.2	-10.4
Inferior_Hemi	43.7	44.2	0.5	50.7	42.9	-7.8
Whole Image	44.0	43.9	-0.1	50.2	41.0	-9.2
ETDRS Grid	45.2	45.0	-0.1	51.8	42.8	-9.0

OD
OS

51-year-old man

👁 Ocular Hypertension since 2014

★ No treatment

👁 Pigment Dispersion

👁 Baseline IOP or Tmax 26/26

★ 2014— March 2018

👁 Today 30/32, new Tmax 9-25-18

DFE - 3-22-18

VF - 9-25-18

OCT - 3-22-18

gonio - 1-10-18

Photos -

Pachys - 589/589

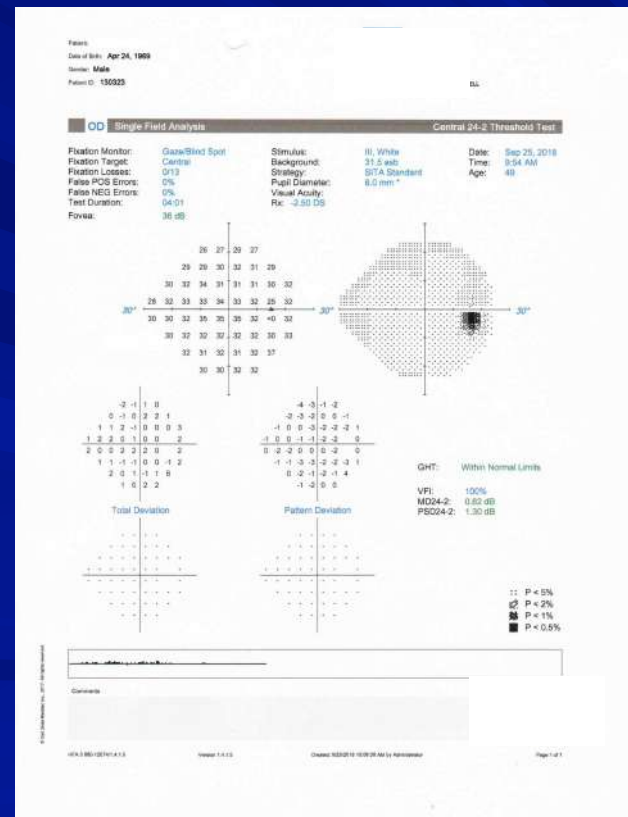
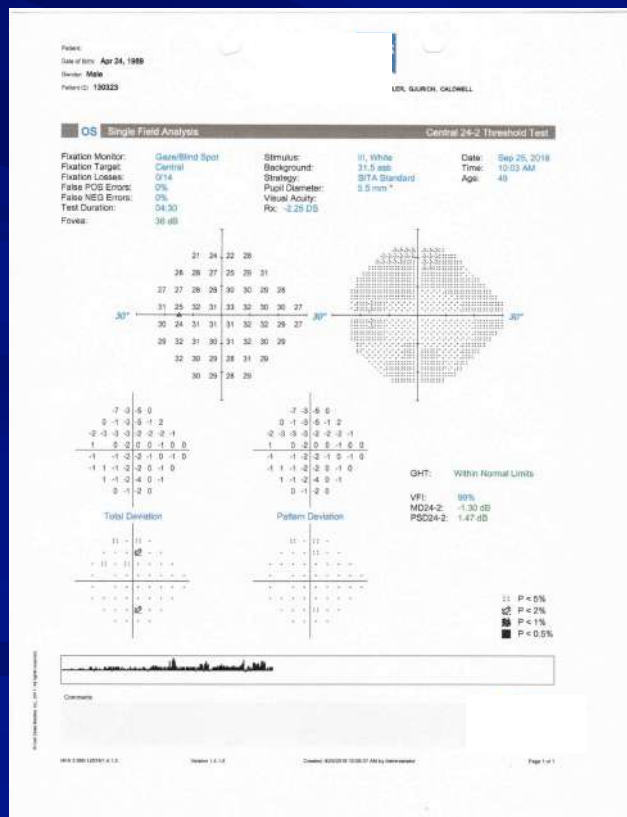
OCT-A - 9/25/18
disc

Baseline 26/26 1-9-14 to current
30/32 9-25-18

Pigment Dispersion

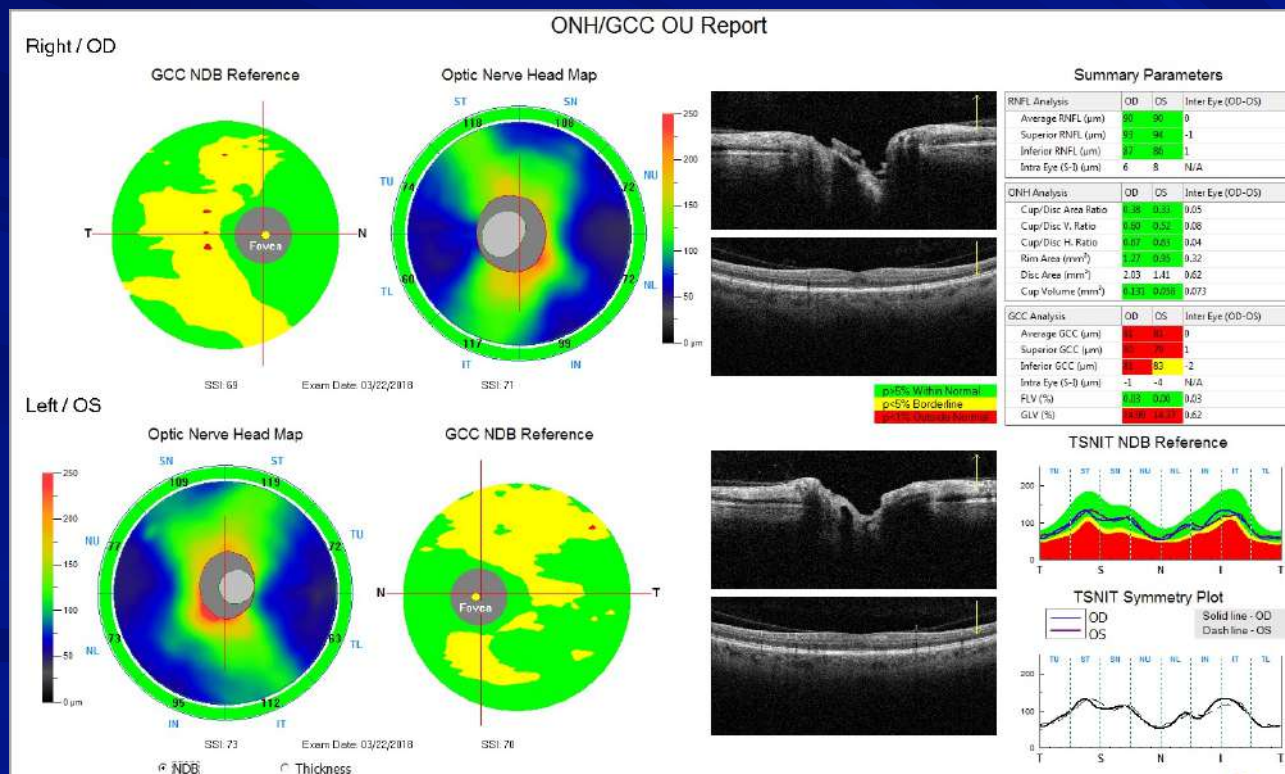
Fam Hx - mother?

VF 24-2 Sita-Faster 9-25-2018



OCT NFL and GCC

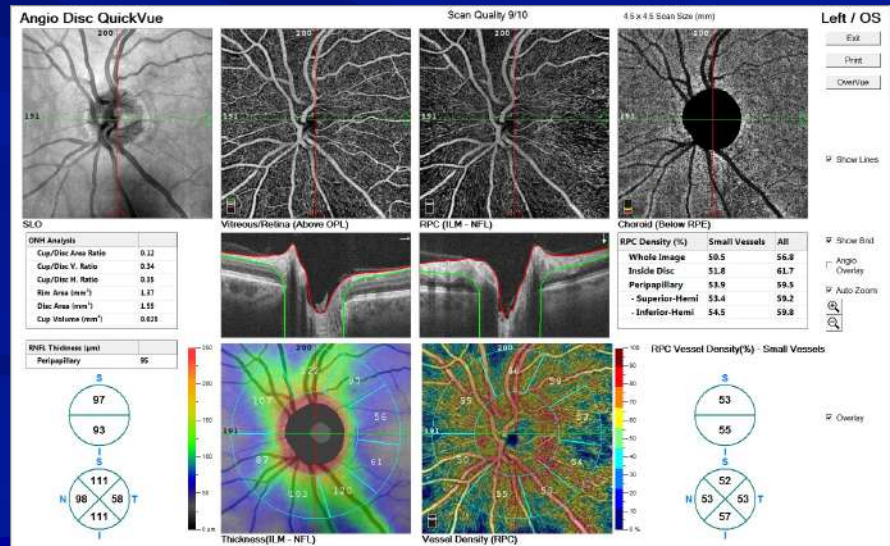
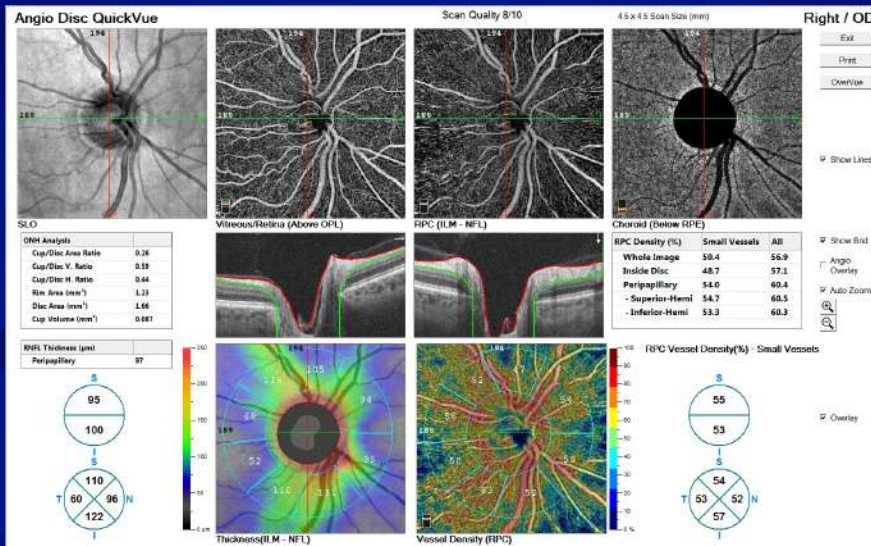
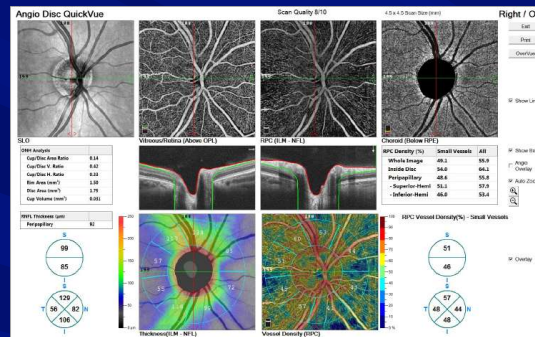
3-22-18



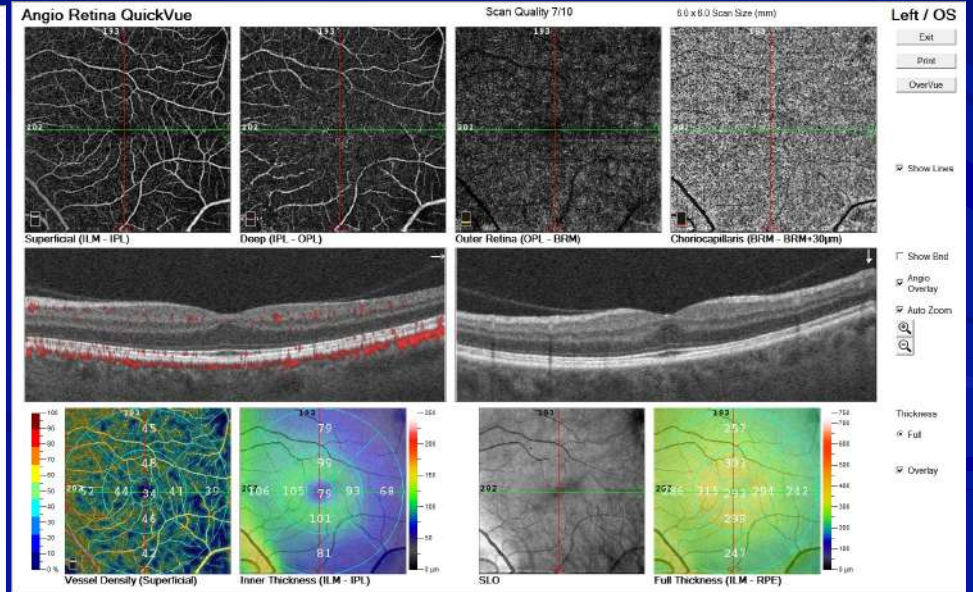
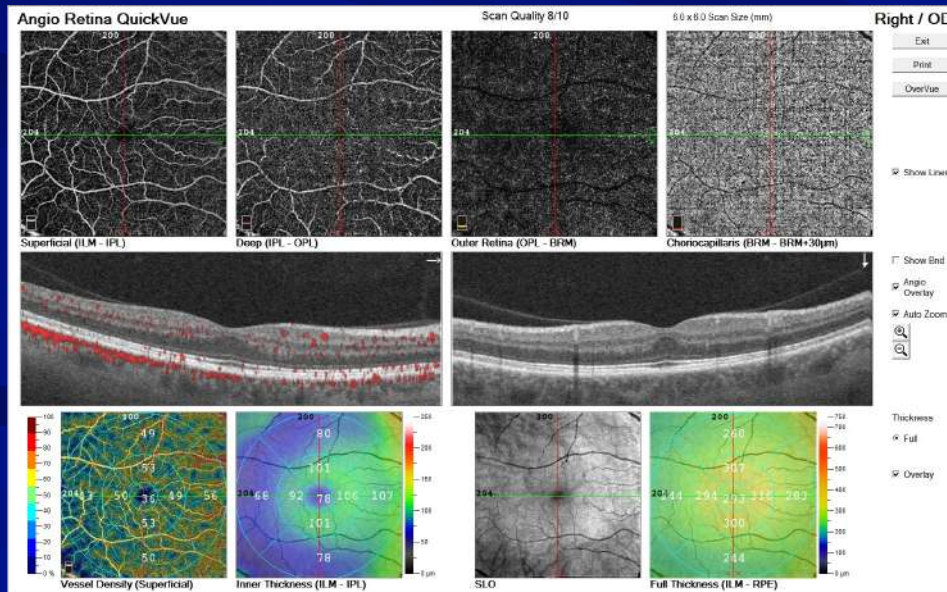
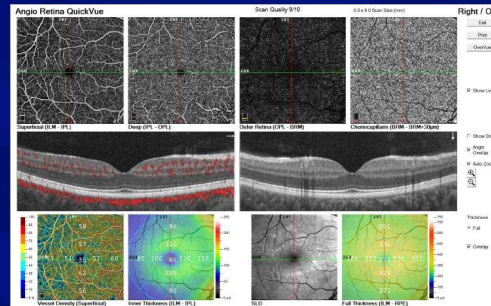
© NDB

© Thickness

OCT-A 9-25-2018

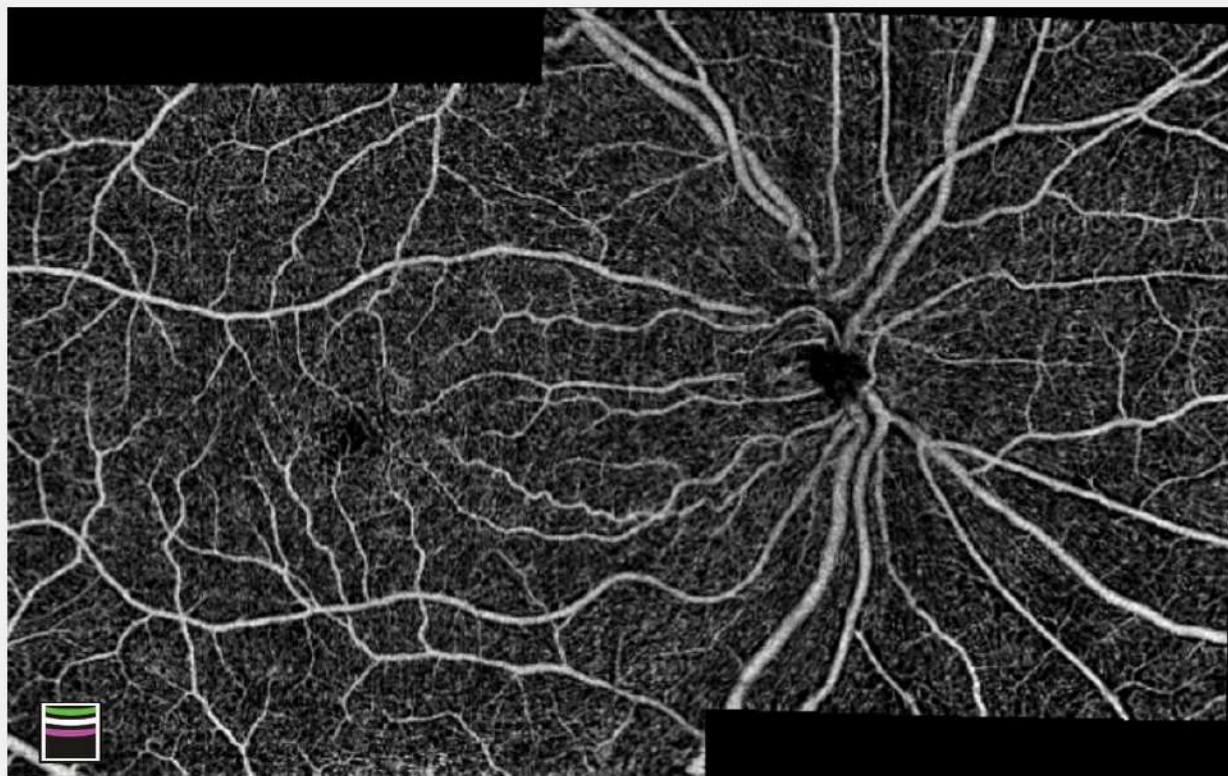


OCT-A 9-25-2018



Montage OD

Angio Montage



Right / OD

Exit

OverVue

Print

Reset View

☐ Edit

Montage Display

☒ Vitreous/Retina

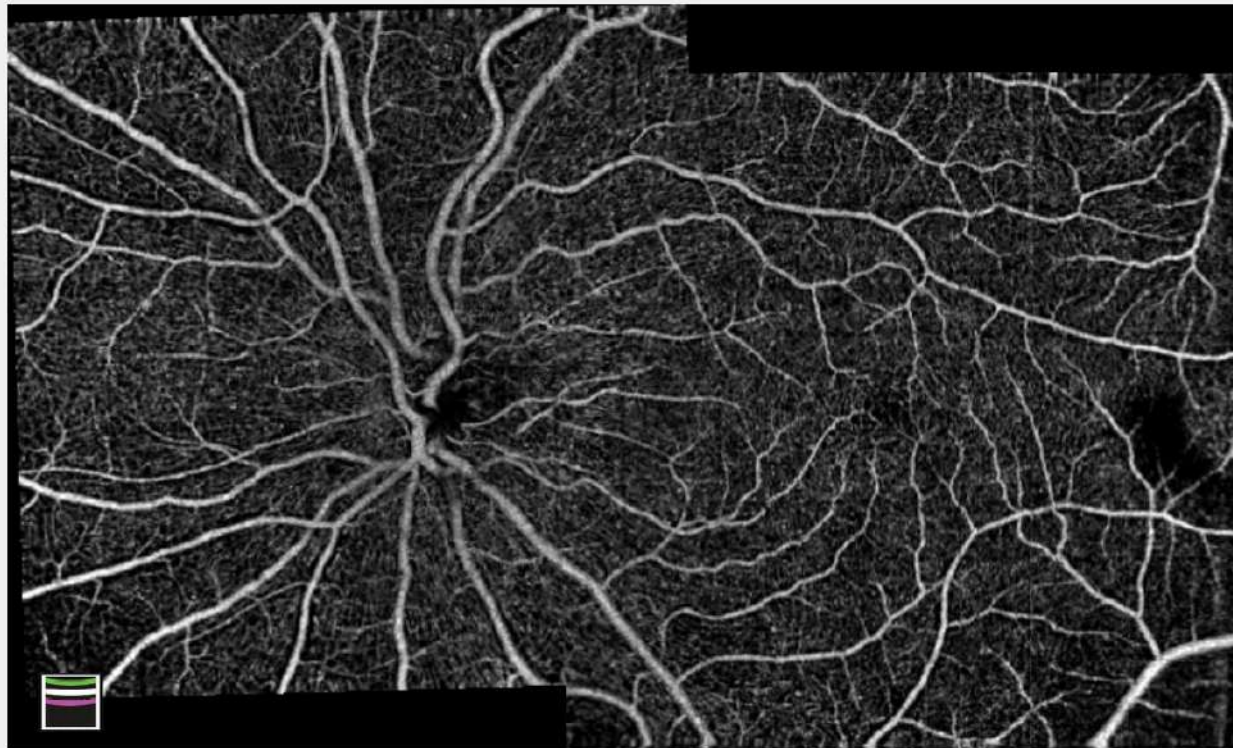
☐ Outer/Choroid

☒ Greyscale

Click image to
select layer.
Use scrollwheel
to adjust layer.

Montage OS

Angio Montage



Left / OS

Exit

OverVue

Print

Reset View

Edit

Montage Display

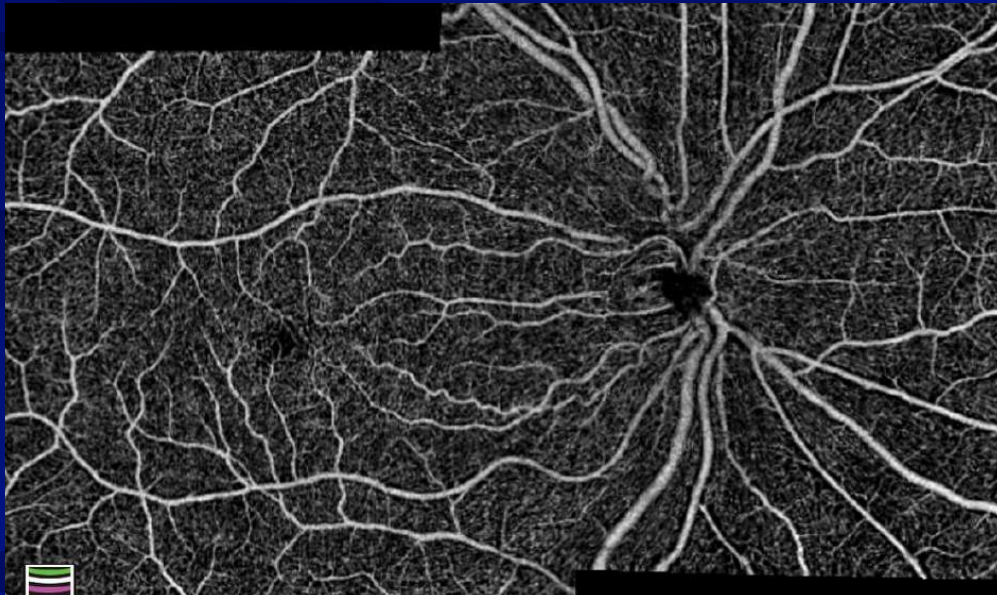
☒ Vitreous/Retina

☐ Outer/Choroid

☒ Greyscale

Click image to
select layer.
Use scrollwheel
to adjust layer.

Montage OU



Update 2021

MaximEyes - Electronic Health Records

MaximEyes Find Common Tasks Office Admin Incentive Programs Misc Windows

History Exam Other

Chief Complaint & HPI
 Eye Conditions
 Review of Systems
 Family History
 Social History
 Medical History Summary
 Preliminaries
 Contact Lens
 Refraction
 Binocular Vision
 Anterior Segment
 Posterior Segment
 Tests & Miscellaneous
 Final Findings
 Encounter Summary
 Images and Documents
 Flow Sheet
 General Flow Sheet
 Glaucoma Flow Sheet
 Clinical Information Record
 Clinical Decision Support
 Communications/Notes
 Encounter Overview - Brief

Edit Encounter

Save Cancel Print ?

Exam 3/29/2021 DOB 4/24/1958 Age 51 Prov. Gregory Caldwell Tech Serah A. Cobler Established

Pt Complaints month Glaucoma suspect eval/IOp/gonio/ONH photos HPI Notes Pt states no changes since LOV

HPI Details

Previous Spectacles 1 and 2 (General) Previous Spectacles 3 (General) and 4

Rx Date 3/7/2017 Purpose Status Source Remove Add Copy from Previous Encounter Copy from Rx History

Tonometry

Copy	Date	Reading 1				Reading 2			
		Method	Time	OD	OS	Method	Time	OD	OS
	03/29/2021	IOpcc ORA	8:34:51 AM	38.5	32.9	IOpcc ORA	8:34:58 AM	39.2	34.7
	09/28/2020	GAT Goldmann applanation tonometry	9:32:17 AM	31	28	ICare Rebound tonometry	9:06:09 AM	40	29
	03/24/2020	GAT Goldmann applanation tonometry	10:20:56 AM	30	30	ICare Rebound tonometry	9:22:30 AM	39	40
	09/27/2019	GAT Goldmann applanation tonometry	8:41:07 AM	26	25	ICare Rebound tonometry	8:41:07 AM	25	28
	03/27/2019	GAT Goldmann applanation tonometry	6:05:52 AM	35	31	ICare Rebound tonometry	7:55:52 AM	42	30
	09/25/2018	GAT Goldmann applanation tonometry	9:35:20 AM	30	32	ICare Rebound tonometry	9:09:51 AM	38	34
	03/22/2018	GAT Goldmann applanation tonometry	2:29:03 PM	26	26	NCT non-contact tonometry (air-puff tonometry)	2:02:47 PM	29.30	29.30

Pupils

OD OS

Pupils ☒ PERRLA ☐ PERRLA

Shape ☒ Round ☐ Round

Direct & Cons. ☒ RAPD absent ☐ RAPD absent

Size ☒ Dark Low Room ☐ Dark Low Room

TON

Restriction Notes

☒ Full and smooth ☐ Restricted

Cover Test

Correction Used Spectacles

Results Notes

Dt At 6 m Ortho

Nr At 40 cm 6 Exo

Tonometry

Topical Anesthetic Used

Method Initials Time OD OS

Reading 1 IOpcc ORA SAC 08:34:51 AM 38.5 32.9

Reading 2 IOpcc ORA SAC 08:34:58 AM 39.2 34.7

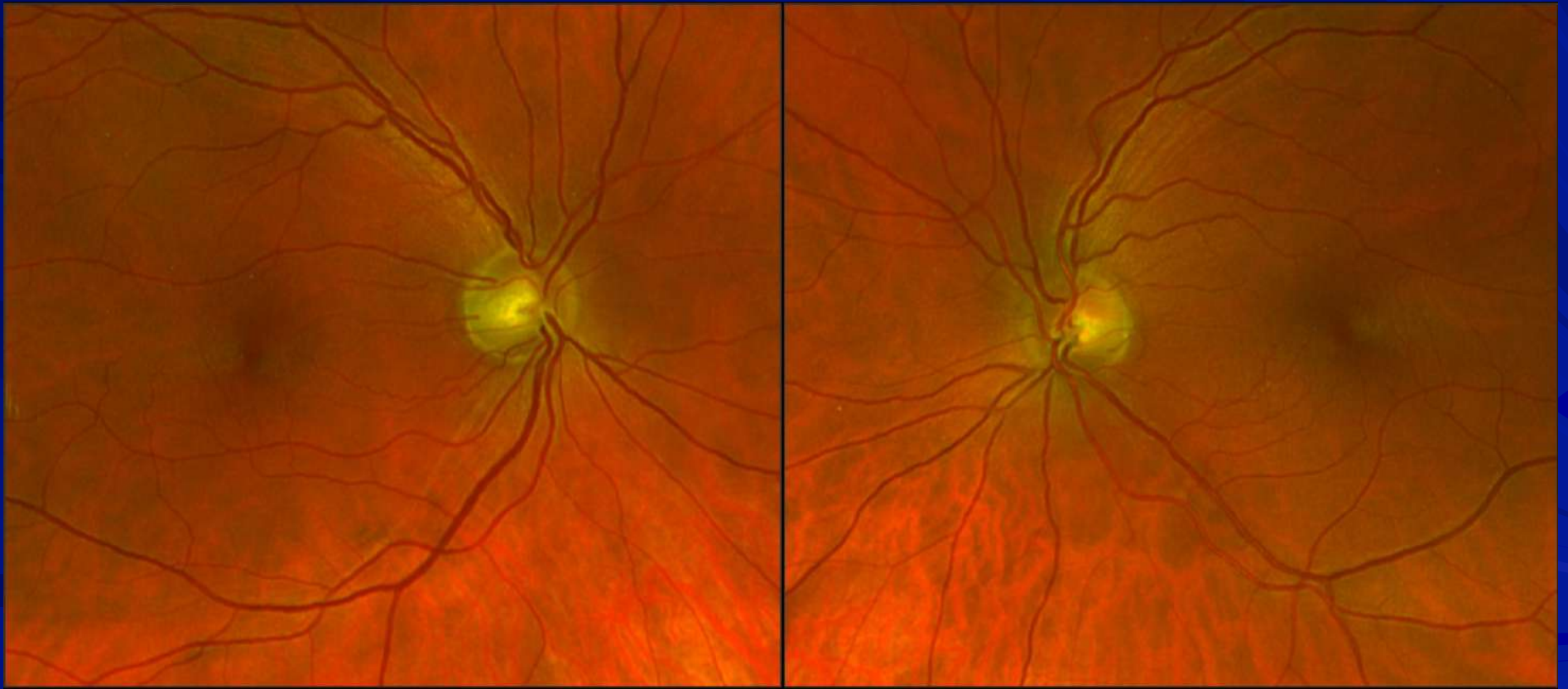
Notes AVG CH 8.4/10.1 WS 8.4/8.5

Man Exam Navigator

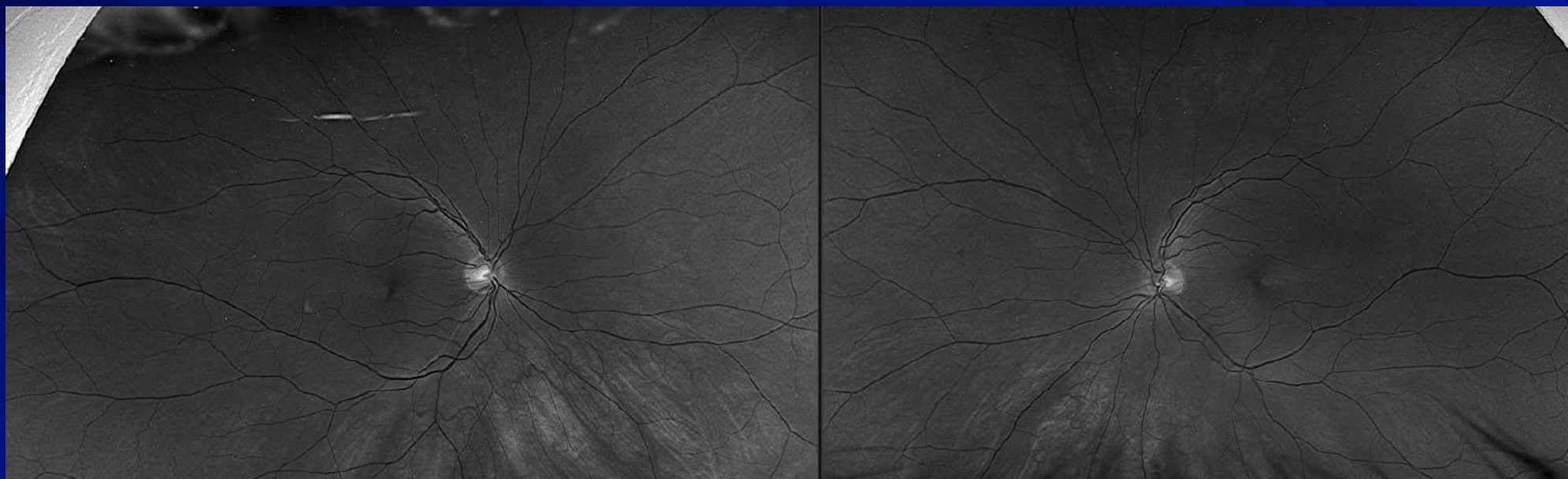
Travis Swires Patient Rooms Owner Task - Status Next priority

Ver 3.0 User: Grubod

March 29, 2021



March 29, 2021



Nerve Fiber ONH/GCC Change Analysis

Right / O

GCC NDB Reference



Visit Date: 03/22/18 (48.9) SSI = 63 (GCC) / 71 (ONH)
 Visit Date: 03/27/19 (49.9) SSI = 60 (GCC) / 50 (ONH)
 Visit Date: 09/28/20 (51.4) SSI = 71 (GCC) / 60 (ONH)

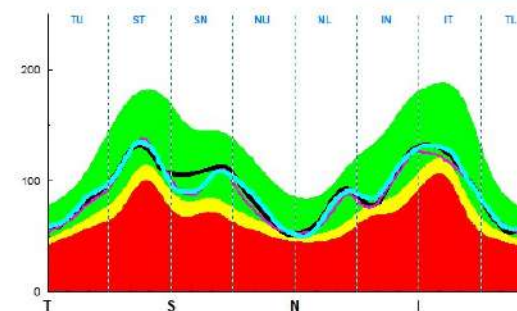
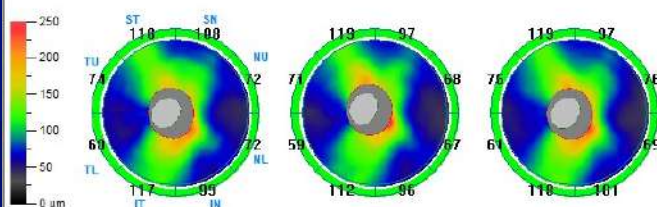
NDB Thickness

Within
Normal
Borderline
Outside
Normal

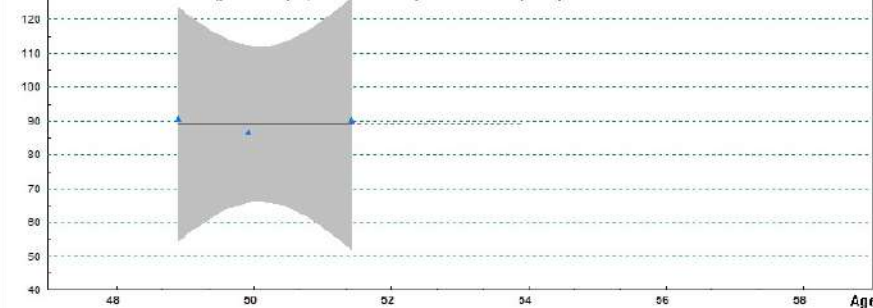
Comparison to NDB

GCC Analysis	03/22/18	09/28/20
Average GCC (μm)	81	82
Superior GCC (μm)	80	81
Inferior GCC (μm)	81	83
FLV (%)	0.02	0.00
GLV (%)	15.80	15.58
RNFL/ONH Analysis	03/22/18	09/28/20
Average RNFL (μm)	90	90
Superior RNFL (μm)	93	92
Inferior RNFL (μm)	87	88
Cup/Disc H. Ratio	0.67	0.57
Cup/Disc V. Ratio	0.60	0.52
Rim Area (mm²)	1.27	1.24

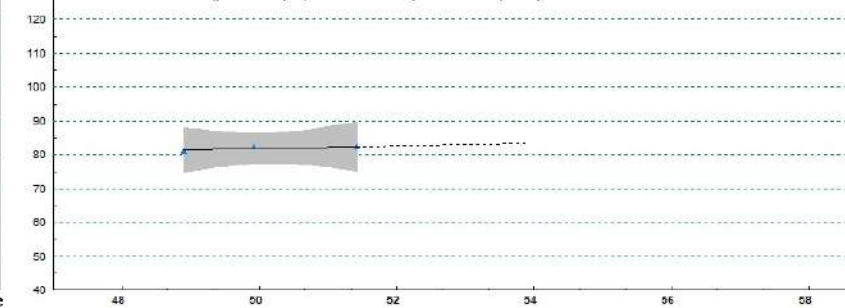
RNFL Analysis



μm RNFL Rate Of Change = 0.00 μm/Yr 95% CI [-21.89, 22.06] p = 0.97

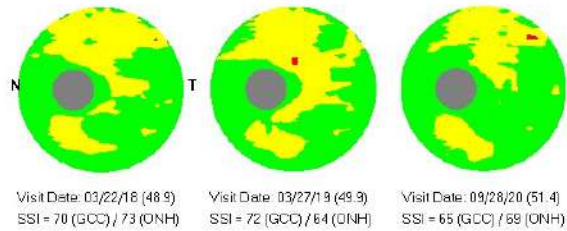


μm GCC Rate Of Change = 0.41 μm/Yr 95% CI [-3.82, 4.65] p = 0.43

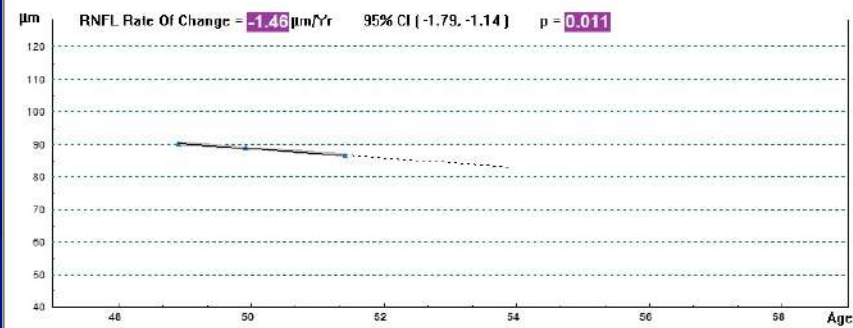
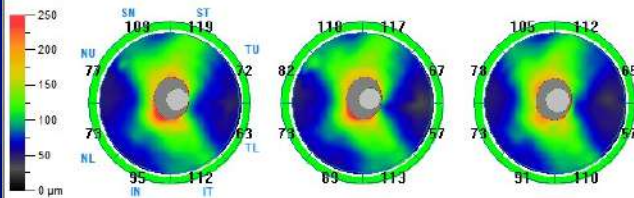


Nerve Fiber ONH/GCC Change Analysis

GCC NDB Reference



RNFL Analysis



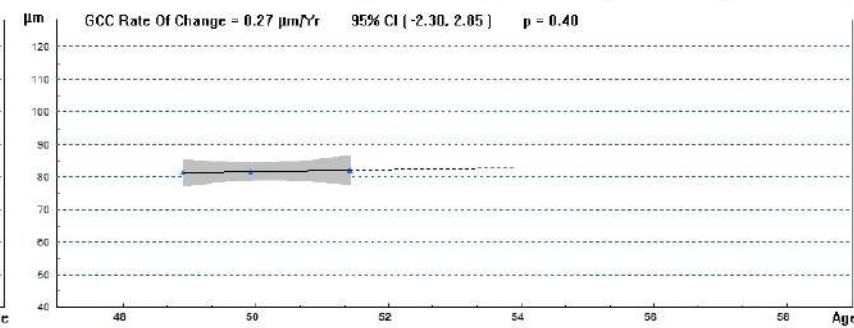
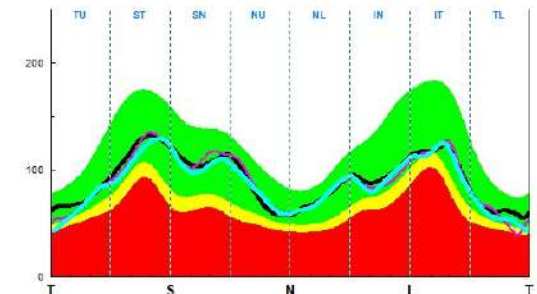
NDB

Thickness



Comparison to NDB

GCC Analysis	03/22/18	09/28/20
Average GCC (µm)	81	82
Superior GCC (µm)	79	80
Inferior GCC (µm)	83	83
FLV (%)	0.00	0.07
GLV (%)	14.37	15.70
RNFL/ONH Analysis	03/22/18	09/28/20
Average RNFL (µm)	90	88
Superior RNFL (µm)	94	90
Inferior RNFL (µm)	86	83
Cup/Disc H. Ratio	0.63	0.70
Cup/Disc V. Ratio	0.52	0.58
Rim Area (mm²)	0.95	0.86



HD Angio Disc Trend Analysis

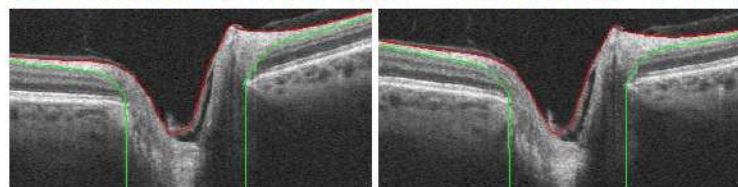
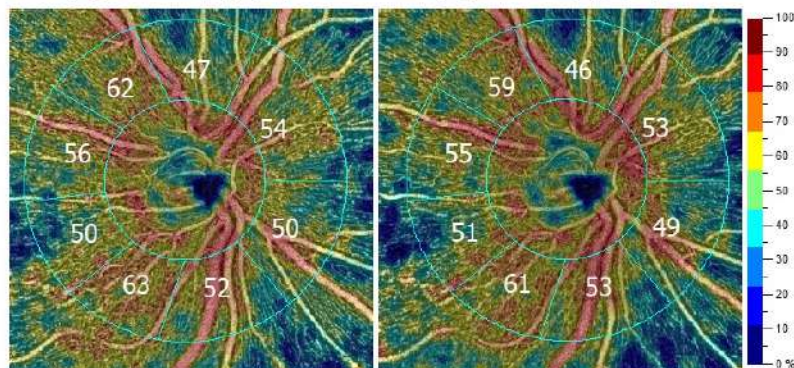
OD

OS

4.5 x 4.5 Scan Size (mm)

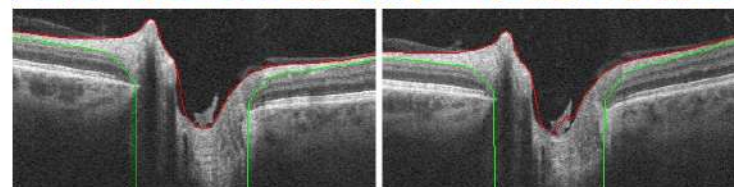
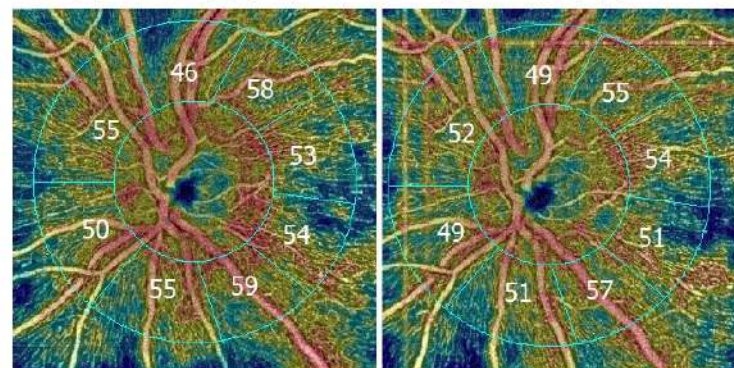
First: 09/25/2018 09:52:34; SQ: 8; 49 yrs

Last: 09/28/2020 08:47:49; SQ: 8; 51 yrs



First: 09/25/2018 09:53:48; SQ: 9; 49 yrs

Last: 09/28/2020 08:54:22; SQ: 8; 51 yrs



Thickness

☐ RNFL

Vessel Density

☒ RPC

☒ Show Lines

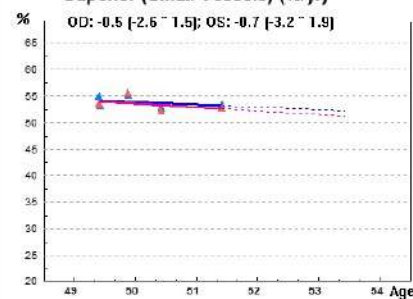
☒ Show Bnd

☒ Auto Zoom



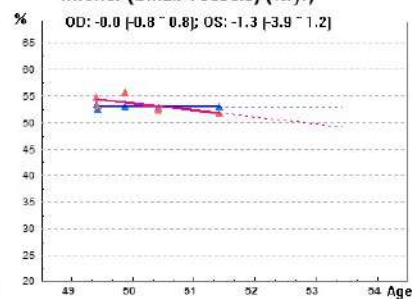
Superior (Small Vessels) (%/yr)

OD: -0.5 [-2.6 ~ 1.5]; OS: -0.7 [-3.2 ~ 1.9]



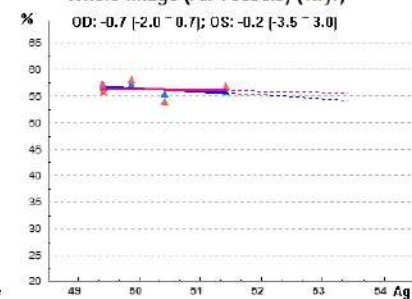
Inferior (Small Vessels) (%/yr)

OD: -0.0 [-0.8 ~ 0.8]; OS: -1.3 [-3.9 ~ 1.2]



Whole Image (All Vessels) (%/yr)

OD: -0.7 [-2.0 ~ 0.7]; OS: -0.2 [-3.5 ~ 3.0]



Vessel	OD			OS		
	Density (%)	First	Last	Diff	First	Last
Superior (Small)	54.7	53.2	-1.5	53.4	52.5	-0.9
Inferior (Small)	53.3	52.8	-0.4	54.5	51.6	-2.9
Average (Small)	54.0	53.0	-1.0	53.9	52.0	-1.9
Whole Image (All)	56.9	55.6	-1.3	56.8	56.5	-0.3

OD
OS

Print

Trend Analysis



HD Angio Retina Trend Analysis

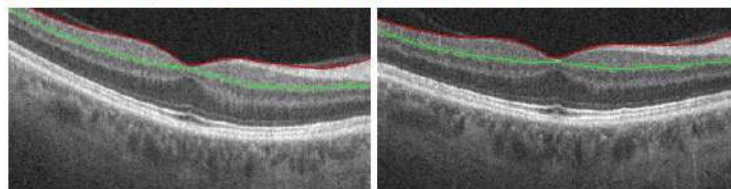
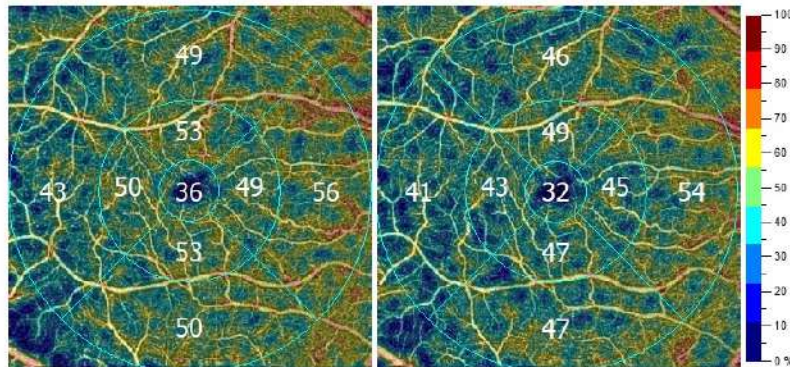
OD

OS

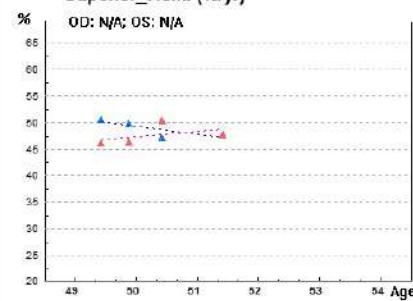
6.0 x 6.0 Scan Size (mm)

First: 09/26/2018 13:20:29; SQ: 8; 49 yrs

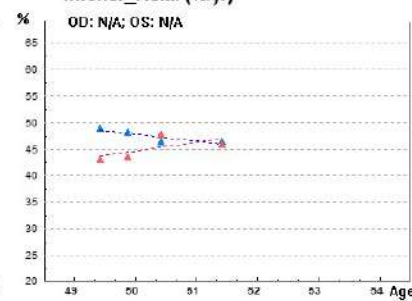
Last: 09/28/2020 08:47:03; SQ: 7; 51 yrs



Superior_Hemi (%/yr)
OD: N/A; OS: N/A

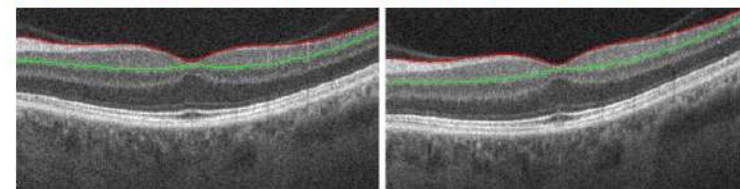
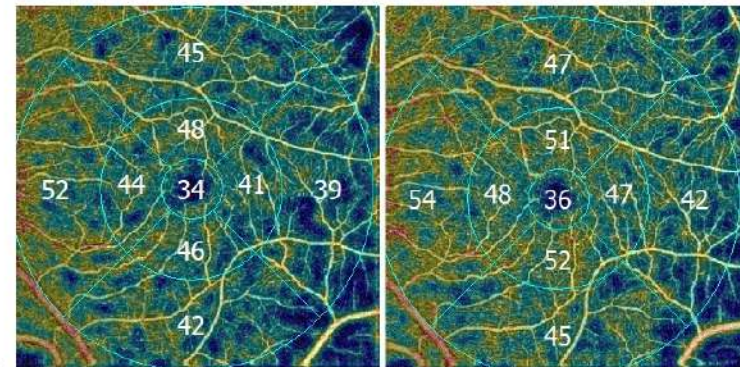


Inferior_Hemi (%/yr)
OD: N/A; OS: N/A

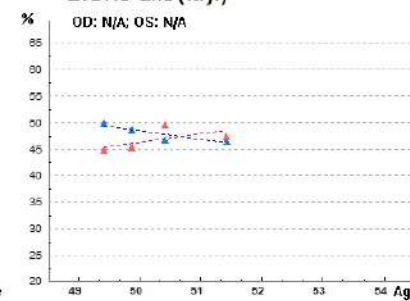


First: 09/26/2018 14:00:23; SQ: 7; 49 yrs

Last: 09/28/2020 09:47:15; SQ: 8; 51 yrs



ETDRS Grid (%/yr)
OD: N/A; OS: N/A



Thickness

- ☐ GCC
- ☐ Retina
- ☐ Vessel Density
- ☒ Superficial
- ☐ Deep
- ☐ Measurement
- ☐ FAZ

☒ Show Lines

☒ Show Bnd

☒ Auto Zoom



Vessel	OD			OS		
Density(%)	First	Last	Diff	First	Last	Diff
Superior_Hemi	50.3	47.5	-2.8	45.9	47.5	1.6
Inferior_Hemi	48.8	46.2	-2.6	42.9	45.7	2.8
Whole Image	49.6	46.9	-2.7	44.4	46.7	2.2
ETDRS Grid	49.6	46.3	-3.3	44.4	47.2	2.8

— OD
— OS

Print

Trend Analysis



HD Angio Disc Trend Analysis

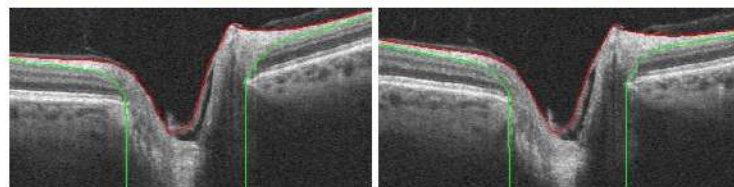
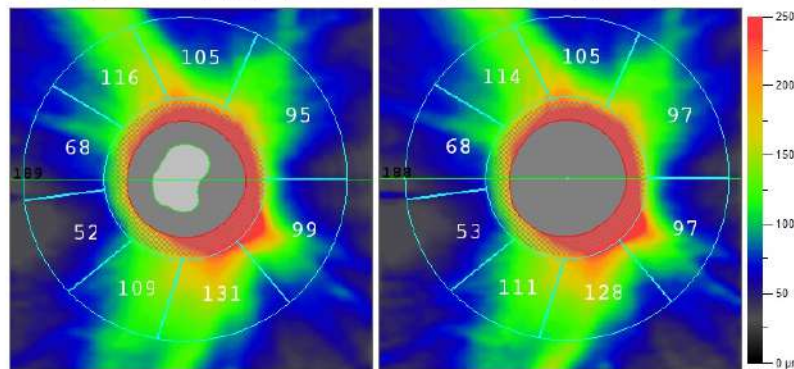
OD

OS

4.5 x 4.5 Scan Size (mm)

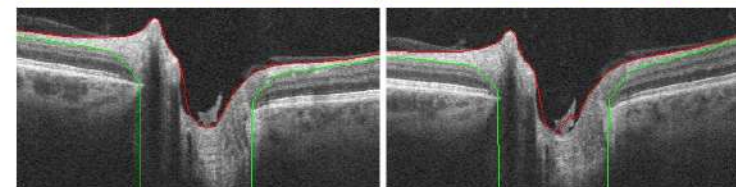
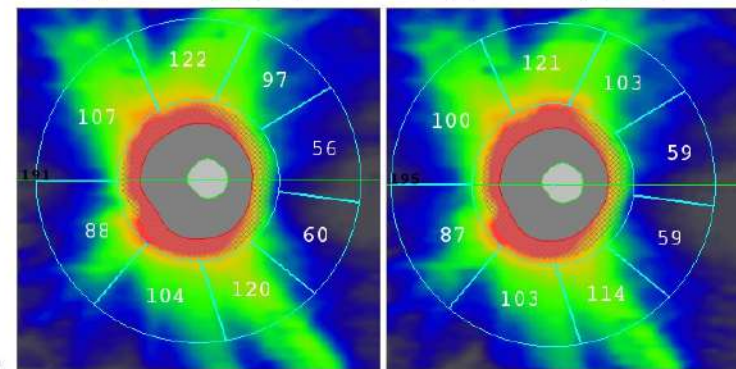
First: 09/25/2018 09:52:34; SQ: 8; 49 yrs

Last: 09/28/2020 08:47:49; SQ: 8; 51 yrs



First: 09/25/2018 09:53:48; SQ: 9; 49 yrs

Last: 09/28/2020 08:54:22; SQ: 8; 51 yrs



Thickness

☒ RNFL

Vessel Density

☐ RPC

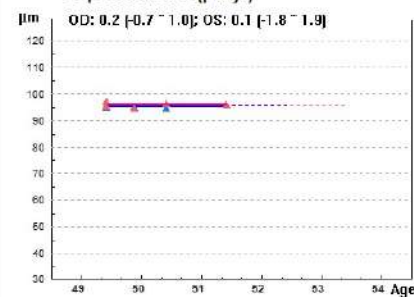
☒ Show Lines

☒ Show Bnd

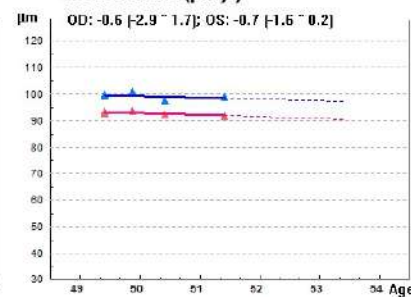
☒ Auto Zoom



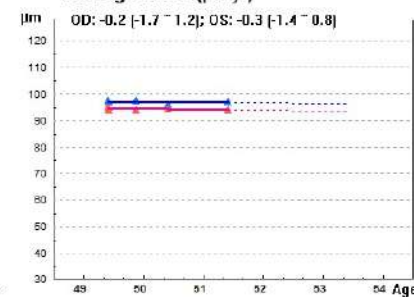
Superior RNFL (μm/yr)



Inferior RNFL (μm/yr)



Average RNFL (μm/yr)



	OD			OS		
	First	Last	Diff	First	Last	Diff
Avg RNFL(μm)	97	97	0	95	94	-1
Superior RNFL(μm)	95	95	0	97	96	-1
Inferior RNFL(μm)	100	98	-2	93	91	-2
Disc Area (mm ²)	1.66	1.64	-0.01	1.55	1.46	-0.10
Rim Area (mm ²)	1.23	1.64	0.41	1.37	1.26	-0.10
Cup Area (mm ²)	0.43	0.00	-0.43	0.18	0.19	0.01
C/D Area Ratio	0.26	0.00	-0.26	0.12	0.13	0.01
C/D V. Ratio	0.44	0.00	0	0.34	0.36	0

— OD
— OS

Print

Trend Analysis



HD Angio Retina Trend Analysis

OD

OS

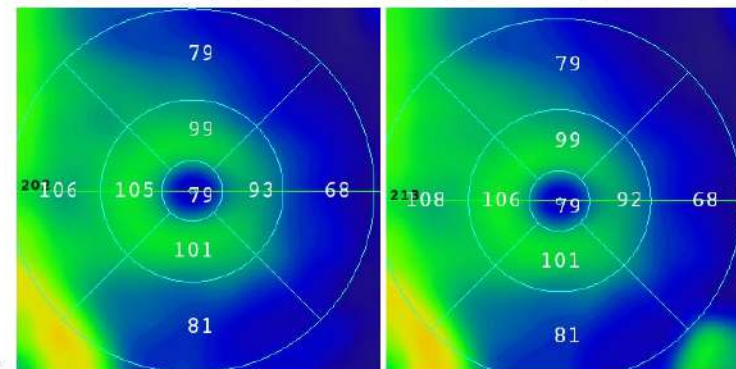
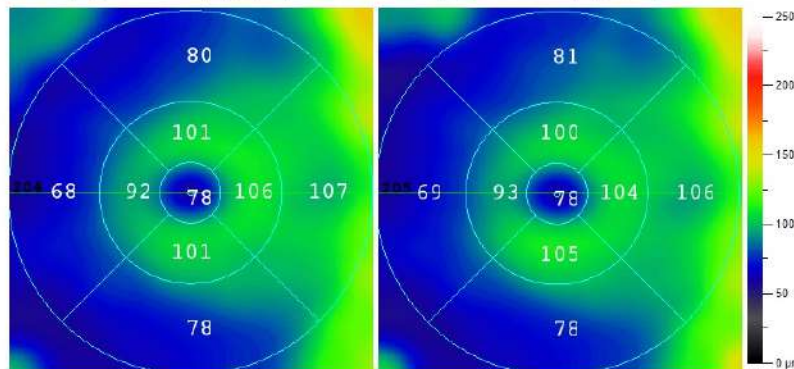
6.0 x 6.0 Scan Size (mm)

First: 09/26/2018 13:20:29; SQ: 8; 49 yrs

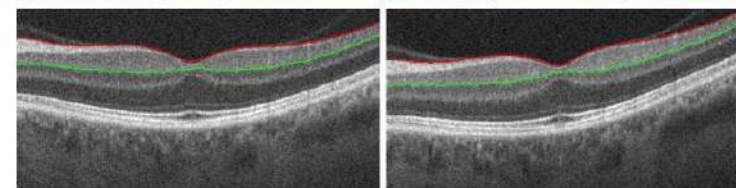
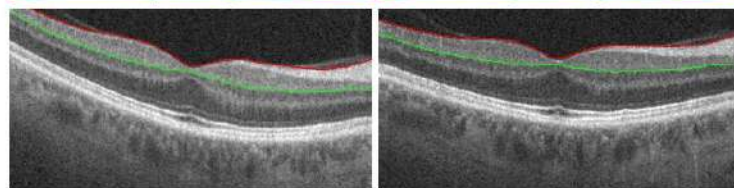
Last: 09/28/2020 08:47:03; SQ: 7; 51 yrs

First: 09/26/2018 14:00:23; SQ: 7; 49 yrs

Last: 09/28/2020 09:47:15; SQ: 8; 51 yrs



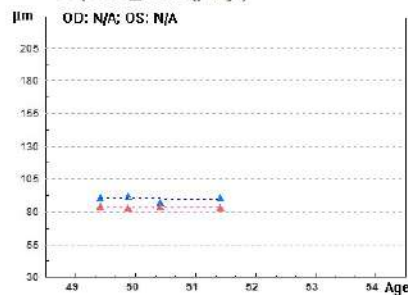
- Thickness
- ☒ GCC
- ☐ Retina
- Vessel Density
- ☐ Superficial
- ☐ Deep
- Measurement
- ☐ FAZ
- ☒ Show Lines
- ☒ Show Bnd



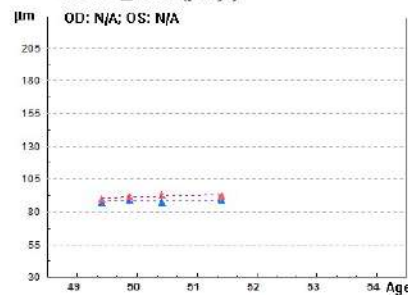
☒ Auto Zoom



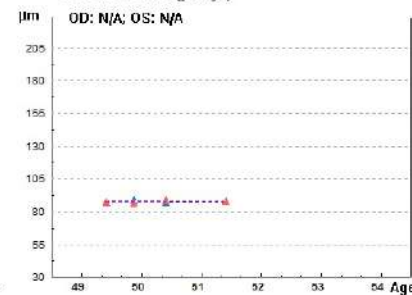
Superior_Hemi (μm/yr)



Inferior_Hemi (μm/yr)



ETDRS Grid (μm/yr)



	OD			OS		
Thickness(μm)	First	Last	Diff	First	Last	Diff
Superior_Hemi	90	90	0	83	83	0
Inferior_Hemi	87	88	1	89	92	3
Whole Image	89	89	0	86	87	1
ETDRS Grid	87	87	0	87	87	0

OD
OS

Print

Trend Analysis



IOPs 38 and 32

- 👁️ Ocular hypertension versus glaucoma reviewed with patient
- 👁️ OCT results reviewed with patient
- 👁️ Patient elects to monitor
 - ★ RTC in 4 months for IOP ck and Visual Field 24-2 OU

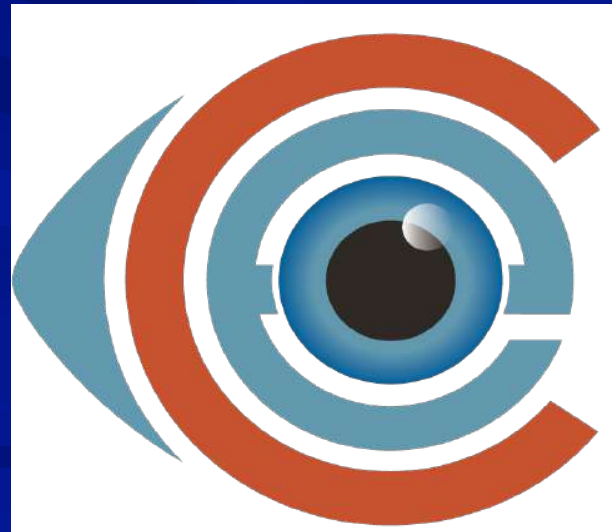
How Does OCTA Change the Way You See Glaucoma?

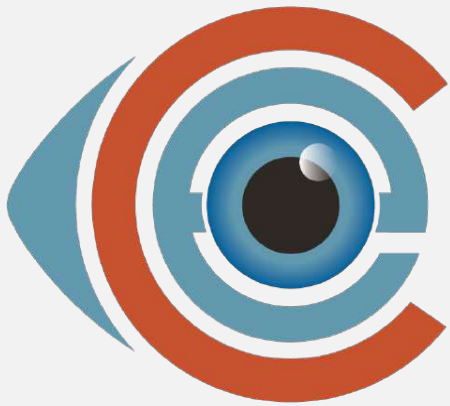
- 👁️ Shows early changes in the retina and optic disc
- 👁️ Adds new information to the diagnosis
- 👁️ Aids in progression detection

Question?

👉 I feel more comfortable in interpreting an OCT or OCT-A for the diagnosis, management, or treatment of glaucoma?

- ★ Strongly agree
- ★ Agree
- ★ Disagree
- ★ Strongly disagree





Optometric
Education
Consultants

Questions and Thank You

OCT and OCT Angiography in Glaucoma

Greg Caldwell, OD, FAAO

March 18, 2023

