Get Going With Glaucoma

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Disclosure Slide
Dr Schmidt

- Dr Schmidt is a consultant or advisor for the following:
  - Tarsus
  - Orasis
  - Allergan
  - B&L
  - Harrow Pharmaceuticals
  - Topcon
  - Glaukos

  - All potential conflicts of interest have been mitigated

- Heru
- Lenz Therapeutics
- Sydnexis
- Thea Pharmaceuticals
- Sight Science
- Ocumetra
- Tenpoint Pharmaceuticals

What's the Big Deal About Glaucoma?

- There is a lot of Glaucoma out there…
- They just all don't need to be treated!
- Huh?

What Is The Incidence of Glaucoma?

- What percentage of patients in the U.S. have glaucoma?

Incidence of Glaucoma

- POAG – 10%
- OHT – 35%
- If a sibling has glaucoma – 50%
- If you have it – 70% of offspring!!

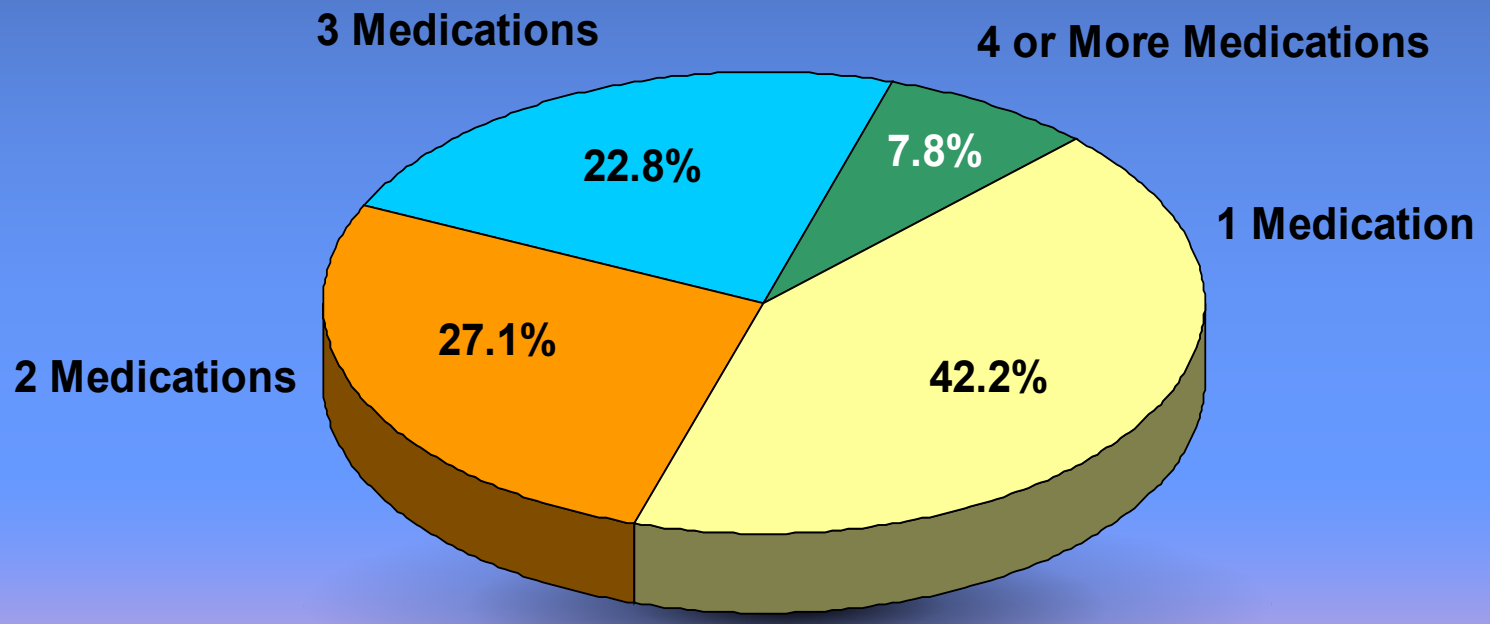
Primary Open Angle Glaucoma

- POAG affects 2.7 million people over age 40 in the US (NEI website 2017)
- Glaucoma decreases visual function – at a rate far greater than previously thought
  - ~10% of all TREATED POAG pxs experience VF loss (GRF website 2017)
- Glaucoma accounts for over 10 million px visits per year and costs the healthcare system $2.5 B annually

Barriers to treating glaucoma

- “I don’t have any glaucoma patients.”
- “I don’t have the right equipment.”
- “ I feel uncomfortable initiating therapy.”
- “What Happens If I Can’t Control The IOP”

Majority of Patients on More Than One IOP-Lowering Medication



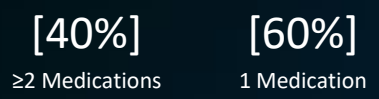
Schappert. National Center for Health Statistics. 1995.

Individualizing the Target IOP

Target IOP should be individualized and updated as needed

- Periodically reassess the IOP target by comparing optic nerve status (optic disc appearance, quantitative assessments of disc and nerve fiber layer) and VF with previous examinations[1]
- Consider switching or adding medications if target is not yet achieved with initial therapy[1]
- Many patients require 2 or more medications to achieve target IOP[2]

Number of IOP-lowering medications used
(NDTI Audit)[2]



IOP=intraocular pressure; NDTI=National Disease and Therapeutic Index™; VF=visual field.

1. Prum BE, et al. *AAO PPP*: POAG. Available at https://www.aao.org/Assets/77dc248e-f025-4b65-a016-14491633d7a4/636621550399270000/primary-open-angle-glaucoma-2015-pdf.
2. Glaucoma ATU Message Recall Study Report, July 5, 2018.

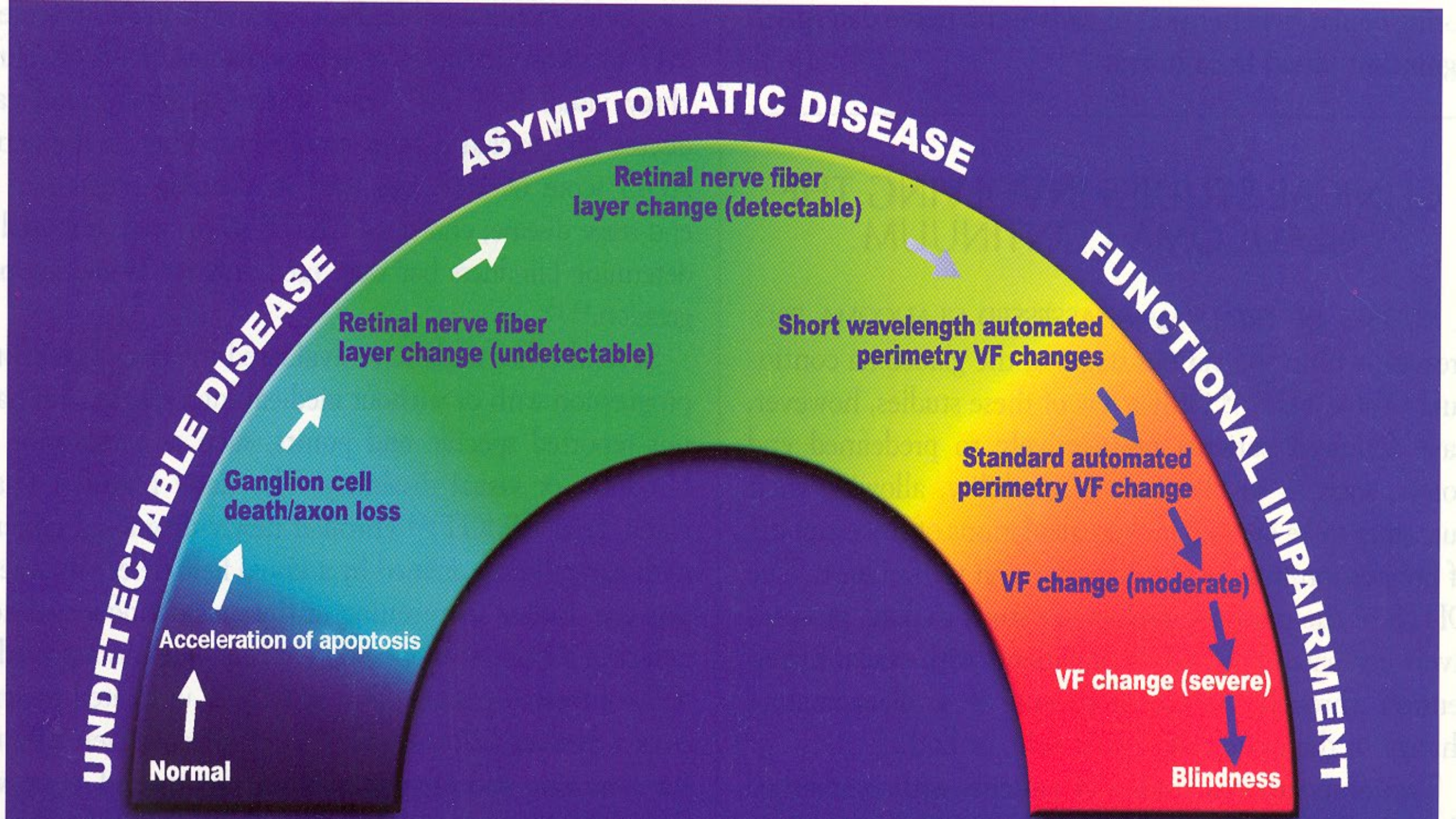
Allergan

The diagnostic shift

- Shift towards earlier diagnosis
- Change in the definition of the stages of glaucoma
- More aggressive monitoring of suspects

What is the best way to build a glaucoma practice?

What are some clinical findings that would make us think that a patient may develop glaucoma?


UNDETECTABLE DISEASE
ASYMPTOMATIC DISEASE
FUNCTIONAL IMPAIRMENT
Normal
Acceleration of apoptosis
Ganglion cell death/axon loss
Retinal nerve fiber layer change (undetectable)
Retinal nerve fiber layer change (detectable)
Short wavelength automated perimetry VF changes
Standard automated perimetry VF change
VF change (moderate)
VF change (severe)
Blindness

Clinical Care Guidelines and Best Practices

- **Glaucoma**

- Glaucoma affects almost 5 million people in the U.S., but people who are at risk for glaucoma (i.e. glaucoma suspects) number up to 20 million. The risk of conversion to glaucoma once a person has been diagnosed as a glaucoma suspect is >10% over a 5-year period. It is incumbent upon us as doctors to identify early and monitor glaucoma suspects. And once these patients convert to glaucoma, by whatever means you believe that to be, it is absolutely incumbent upon us to treat these patients. The leading reason why optometrists are sued for malpractice is the FAILURE TO DIAGNOSE GLAUCOMA.

- The following guidelines are a summary of the AOA Clinical Practice Guidelines for glaucoma. There are some additions based on a collective 80 years of treating advanced glaucoma. These additions solidify these guidelines to become the Keplr way.

- **I. Identifying risk factors**

- The more risk factors one has, the more likely one is to develop glaucoma. Identifying risk factors in the context of a comprehensive examination is clearly the most effective means of identifying those patients who are at risk for glaucoma.

- The risk factors for glaucoma are best remembered by the mnemonic: **FINDACAR**

AOA Recommendations

- Gonioscopy -
- Gonio is superior to the Von-Herick method
- Anterior segment OCT is **NOT** a replacement for gonioscopy
- Gonioscopy should be performed on all glaucoma patients and glaucoma suspects on a yearly basis.
-
- > Fundus Photography-
- Fundus photos should be taken yearly. Also, when a change in the appearance of the optic nerve is suspected.
- *Fundus photography is **NOT** as sensitive to denoting change over time as an OCT or clinical examination of the optic nerve.

AOA recommendations

- OCT – at least yearly. Perform more frequently if you suspect progression or if things change clinically
- VF testing- 2x/year is recommended. Why?

Glaucoma Risk Analysis

- The most important means of increasing recognition of glaucoma
- Greatly increases your level of suspicion for the disease

Glaucoma Risk Factors

- FINDACAR
- The more risk factors one has, the more likely one is to develop glaucoma
- The more risk factors one has, the lower the IOP target should be

Glaucoma Risk Factors

- F- Family history
- I – Intraocular pressure
- N – Nearsightedness
- D – Diabetes (or other CV disease)
- A – Age
- C – Corneal thickness
- A – Asymmetry
- R - Race

A risk factor analysis is critical

- For the diagnosis
- To increase your level of suspicion
- For initiating therapy
- For changing therapy

- BUT…are any of these more important than others?

OHTS – The Nitty Gritty

- The most predictive factors for conversion:
  - Older age
    - 22% increase/ decade
  - Larger horizontal and vertical C/D
    - 32% increase/0.1 larger
  - Higher baseline IOP
    - 10% increase/ mm Hg
  - Thinner corneas
    - 71% increase in risk/ 40 microns thinner

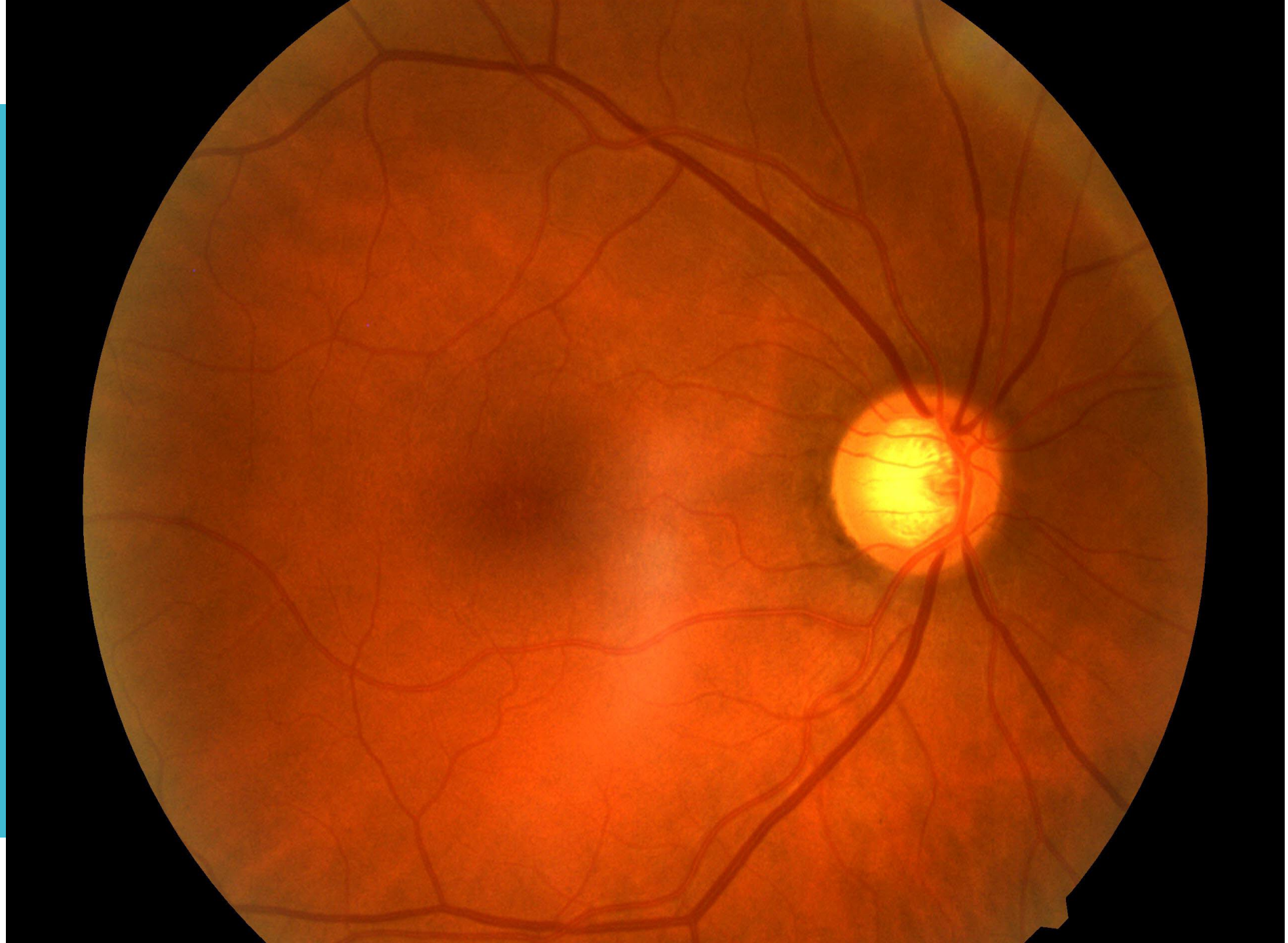
Therapeutic Shift

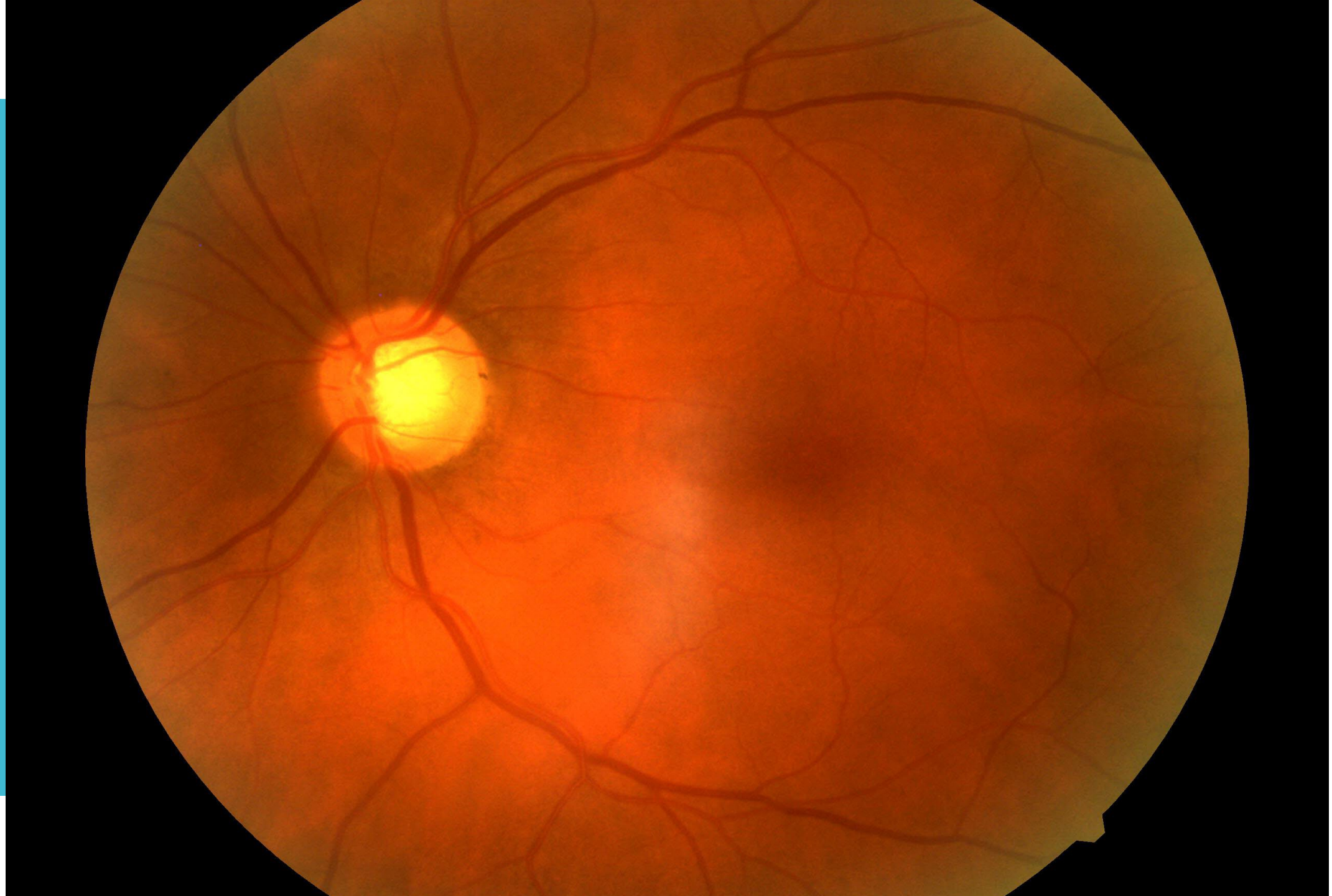
- Treat earlier
- Treat more aggressively
- Better understanding of what adequate therapy is
- Changing treatment paradigm

Case 1

- 66 y/o Caucasian Female
- PMH: Anemia, Hypothyroid
- FMH: Mother- POAG

- She is concerned about glaucoma and wants your opinion
- For what type of exam should you schedule her?
- What type of tests should you perform at that 1st exam?
- BTW her IOP is 23mm Hg OD, 22mm Hg Os
- C/D .8/.8 OU





SO- TREAT or no treat???

- What factors would lead you to monitor rather than treat
  - Or Vice Versa
- Do We Need Any More Data?
- What makes you feel comfortable about monitoring without therapy?

IOP 30mmHg, CCT 600µ

Glaucoma Risk Estimator

Age 70	RIGHT EYE MEASUREMENTS			LEFT EYE MEASUREMENTS		
	1st	2nd	3rd	1st	2nd	3rd
Untreated Intraocular Pressure *(mm Hg)*	30	30	30	30	30	30
Central Corneal Thickness *(microns)*	600	600	600	600	600	600
Vertical Cup to Disc Ratio by Contour	0.55			0.55		
Pattern Standard Deviation (◉ Humphrey *(dB)* ○ Octopus loss variance *(dB)*)	1.0	1.0		1.0	1.0	

Print | Reset

9.1%

The patient's estimated 5-year risk (%) of developing glaucoma in at least one eye.

Glaucoma risk is 9.1%

IOP 20mmHg, CCT 500µ

Glaucoma Risk Estimator

Age 70	RIGHT EYE MEASUREMENTS			LEFT EYE MEASUREMENTS		
	1st	2nd	3rd	1st	2nd	3rd
Untreated Intraocular Pressure *(mm Hg)*	20	20	20	20	20	20
Central Corneal Thickness *(microns)*	500	500	500	500	500	500
Vertical Cup to Disc Ratio by Contour	0.55			0.55		
Pattern Standard Deviation (◉ Humphrey *(dB)* ○ Octopus loss variance *(dB)*)	1.0	1.0		1.0	1.0	

Print | Reset

20.7%

The patient's estimated 5-year risk (%) of developing glaucoma in at least one eye.

Glaucoma risk is 20.7%

When Do You See Her Back?

- What do you do on those subsequent visits?
- How do you schedule them?
- How do you code them?
- What are you trying to achieve?

Now, how are we going to code this?

And Why Are We Doing It This Way?

	Problems	Data	Patient Management
Level 2	• 1 self-limited/minor	• Minimal or none	• Minimal risk
Level 3	• 2 or more self-limited/minor • 1 stable chronic • 1 uncomplicated acute	**Any 2 of these**: • Review external notes • Review results of tests • Ordering tests **OR** • Assessment requiring an independent historian	• Low risk
Level 4	• 1 worsening chronic • 2 or more stable chronic • 1 undiagnosed with uncertain prognosis • 1 acute with systemic symptoms • 1 acute complicated	**Any 3 of these**: • Review external notes • Review results of tests • Ordering tests • Assessment requiring an independent historian **OR** • Independent interpretation of test performed by another **OR** • Discussion of management or test interpretation with another external provider	• Moderate Risk **Such as**: • Prescription drug management • Decision regarding minor surgery with risk factors • Decision regarding elective surgery without risk factors • Diagnosis/treatment significantly limited by social determinants of health

Visual field instruments

- SAP, Table top or Virtual reality headset?
- Which strategy to employ?
- Are they still in?

Visual Fields and Glaucoma

- Are they still cool?
- Are they considered the standard of care?
- How often?
- Do they better measure early detection or progression?

Are certain VF parameters more predictive for progression?

- Johnson, Sample et al. – AJO 8/2002 177-185
- Highest predictors of conversion
  - GHT “outside normal limits”
  - 2 hemifield clusters worse than 5% level
  - 4 abnormal (P<.05) locations on pattern deviation probability plot
  - Specificity increased with 2nd confirmatory VF test

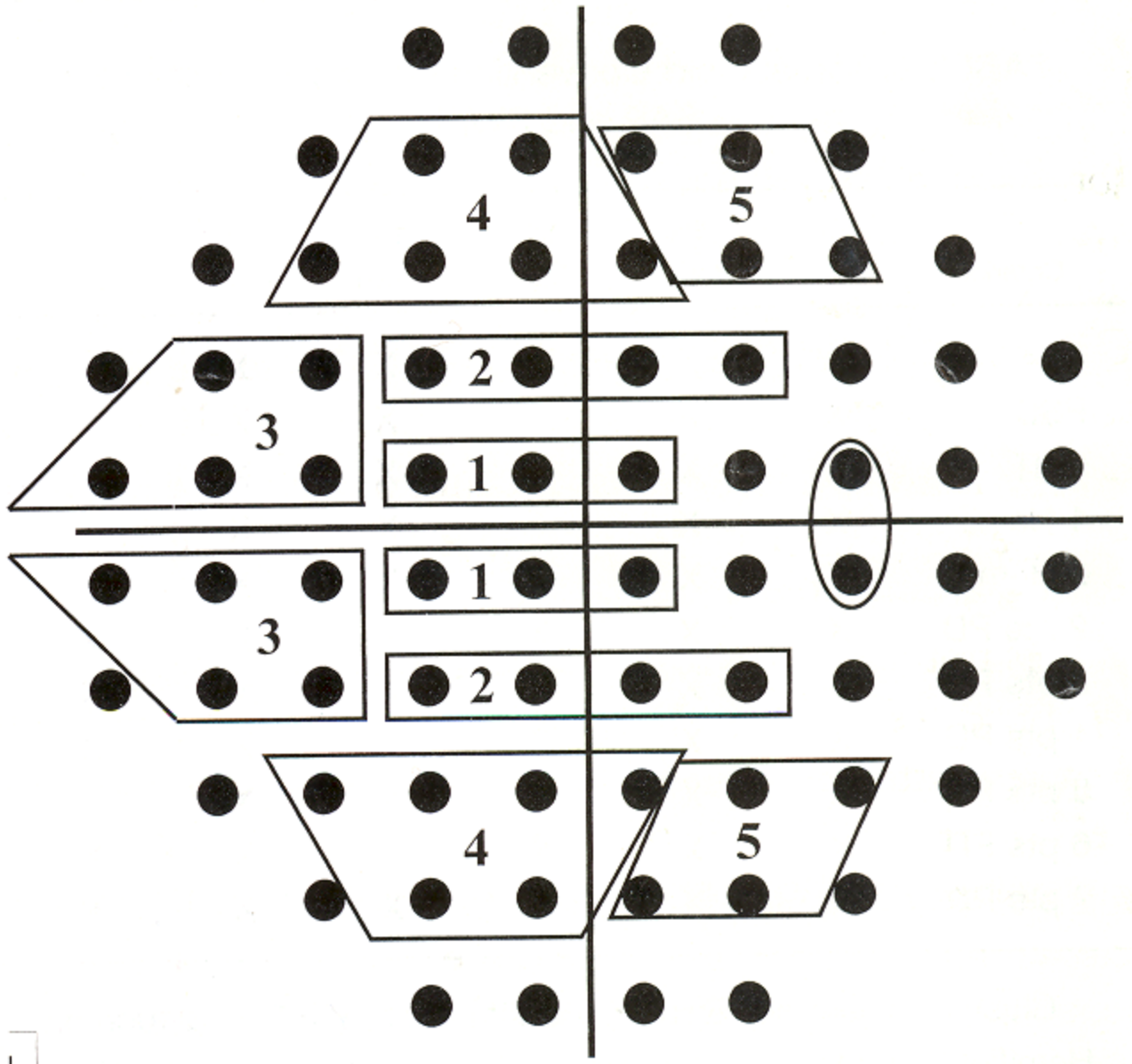


FIGURE 1. Representation of the point clusters that comprise the glaucoma hemifield test segments.

How often should VF be performed on POAG pxs?

1. 1x/yr
2 .2x/yr
3. 1x every other year
4. PRN

Quick journal review

- Practical recommendations for measuring rates of visual field change in glaucoma.
  - BC Chauhan, DF Garway-Heath et al (Br J Ophthalmol 2008; 92:569-573)

  - Provides practical recommendations for frequency of VF testing based on how quickly one is worried about VF changes
  - Sufficient amounts of VF must be obtained early in observation to establish a baseline and rule out fast progressors
  - To detect small levels of change more frequent tests are needed – large levels of progression are detected more easily with less testing
  - (For a -1.0 MD change 7 tests/year are required to detect in 2 years but only 4 tests/year are needed to detect at 5 years)
  - Only 3 tests/ year are needed to detect a -4.0 dB change at 2 years

- SO…???

There is definitely a shift in the use of Visual Fields

- More Frequent Testing Early in The Disease
- What does “Establishing a Baseline” really mean?
- Cluster test strategy
- What about 10-2?
- What about 24-2C?

- What about the newer devices????

How To Improve VF Test Results

1. Shorten the test time
2. Change the Testing Strategy
3. Increase Spot Size
4. Improve the Testing Environment
5. Increase Frequency of Testing

ORIGINAL STUDY

Perimetric Comparison Between the IMOvifa and Humphrey Field Analyzer

Takashi Nishida, MD, PhD, Medi Eslani, MD, Robert N. Weinreb, MD, Juan Arias, MD, Cristiana Vasile, MD, MAS, Vahid Mohammadzadeh, MD, and Sasan Moghimi, MD

J Glaucoma • Volume 32, Number 2, February 2023

- IMOvifa (TEMPO) reduced measurement time by 39%
- MD, PSD, and VFI values for IMOvifa showed good agreement with HFA SITA-Fast strategy.
- Reduced fatigue for both patient and examiner

Brand New Study

- Comparison of TEMPO binocular perimeter and Humphrey visual field analyzer – Nishida, Weinreb – Sci Rep, 2023

- 40% shorter test time (260.6 secs as compared to 429.1secs) – binocular test time
- Similar results in reliability indices and results
- Patients preferred TEMPO 73% to 17%

Get your practice “glaucoma-ready”

- Staffing issues
  1. Do you have enough?
  2. Are you using them properly?
  3. DO THEY UNDERSTAND GLAUCOMA?
  4. *Do they know you treat glaucoma?*

Billing and Coding Issues

- In General:
  - Be as specific as possible
  - If you do it, bill it
  - CPT codes and ICD-10 codes must correlate
  - Medical record must correlate with what you bill

A year in the life...

- 92004/014
- 92015
- 99213 (x2)
- 99214
- 92133
- 92083 (x2)
- 92250
- 92226-50
- 92020
- 76514

- How much is that worth to your practice?

The Glaucoma Examination

- New patient, initial exam
  - Raise your clinical suspicion
  - Everybody's a candidate
  - Risk analysis
  - What procedures should you perform?
  - What are you trying to achieve?

New patient exam

1. History is important
2. Perform a complete ophthalmic exam
3. Pay particular attention to IOP (denote time)
4. Detailed, dilated evaluation of ONH
5. Pachymetry
6. Fundus Photography
7. Patient discussion

The New Patient

- You don’t have to make the diagnosis on the first exam
- You don’t have to start treatment on the first day
- You don’t have to perform every test on the first day
- People don’t go blind from POAG overnight!!!

The new patient

- Reschedule for “further testing”
  - When?
  - Which tests first?
  - Do you have spots on your schedule?
  - How long of an appointment slot?
  - What are you trying to achieve?
  - This parallels other specialties

The established glaucoma px

- Standard of care: exams Q3mth(at least)
- On *EVERY* visit
  - Review of history
  - Review of risk factors
  - Review of compliance and side effects
  - VA
  - IOP
  - Slit lamp exam
  - ONH exam
  - And generally something else...

Glaucoma follow-up exams

- What are you looking for?
  - Deviation from baseline
  - Signs of progression (rim recession, VF worsening, parametric progression)
  - IOP trends
  - Long term stability
- Px education is key at each visit
- If progression is suspected or if meds are changed see earlier than 3 mths

Glaucoma suspect template

1. Complete ophthalmic exam, then...
   - 3-4 wks – IOP/ VF (or imaging), decide to treat, follow further or discharge
   - If following – 3-4 wks IOP and imaging (or VF)
   - Decide to treat, follow further or discharge
   - If following – 3 months IOP, gonio, ONH evaluation
   - If treating 3-4 weeks to assess tx efficacy

Notes:______________________________
____
____

GLAUCOMA PROGRESS

Pachymetry: Date____________
OD__________ OS__________

NAME________________________________ DOB________________ FHX____________________

Date	IOP	Target	C/D	Dil	Gonio	VF	OCT	FP	VA	Ref	Sx	Meds

*1-9.22 → pt had not been using Lumigan

Notes: Referral from Dr. Constantine

GLAUCOMA TRACKING SHEET

Pachymetry: Date 6·27·22
OD 532 OS 528

NAME Donald CimaRolli DOB 3·11·54 FHX Father

Date	IOP	Target	C/D	Dil	Gonio	VF	OCT	FP	VA	Ref.	Sx	Meds
12/6/21	23/23		.6/.65 .65/.7					✓	20/30 20/30	✓		DIC cosopt + Alphagan Begin combigan OU BID
1/31/22	23/23						✓		40 25--			Lumigan OU QHS Cont. Combigan OU BID
3/28/22	16/16	16				✓			30++ 60++			Lumigan OU QHS Combigan OU BID
6·27·22	18/17			✓					30- 30--			Lumigan OU QHS Gen. Comb OU BID
10-13-22	18/18	16	.6/.65 .6/.7	no	combigan x3 days				40+ 50+			Rx gen. combigan OU BID cont. Lumigan OU QHS
1-9-22	20/29	16	.65/.7 .7/.7		✓			✓	20- 25-	✓		Gen combigan OU BID Lumigan OU QHS
3·2023	18/18	16	.7/.8 .75/.8			✓			30-- 40--			Gen combigan OU BID Lumigan OU QHS
6·19·23	19/19	16	.6/.65 .75/.75				✓		40+ 50-			Gen combigan OU BID Lumigan OU QHS
10·17·23	12/12 iCare	tech only visit				✓			NR			BRim +TIm BID. DIC Lum. Rocklatan QHS
11·20·23	19/20 gold	16	.8/.8 .8/.8						30 50++			Brim OU BID-TIM BID Rocklatan OU QHS
2·19·24	24/22	16	only used drop + T½			QD		✓	20 20	✓	drops.	Reviewed dosage of all use as prescribed, cont sec
4·15·24	16/17	16	.7/.75 .75/.8						25 25			drop therapy. Cont Tim Am, Brim BID, Rocklatan nightly
7·15 2024	18/18 gold	16	.6/.7 .7/.7			✓			30 40			timolol .5% ou a.m. Rocklatan OU QHS Brim OU BID

OMNI EYE SPECIALISTS

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Wilmington, North Carolina 28409
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HOW TO USE YOUR DROPS:

Use the _____ top drop _____ times a day in _____ eye(s).

Use the _____ top drop _____ times a day in _____ eye(s).

Use the _____ top drop _____ times a day in _____ eye(s).

Use the _____ top drop _____ times a day in _____ eye(s).

Use the _____ top drop _____ times a day in _____ eye(s).

A few words of wisdom

- Make the patient a partner
- Information is power
- It may take multiple VF before a defect is evident
- Construct a diurnal curve
- A patient may be a G suspect for years

What are some clinical findings that would make us think that a patient may develop glaucoma?

JAMA Ophthalmology | Original Investigation

Assessment of Cumulative Incidence and Severity of Primary Open-Angle Glaucoma Among Participants in the Ocular Hypertension Treatment Study After 20 Years of Follow-up

Michael A. Kass, MD; Dale K. Heuer, MD; Eve J. Higginbotham, MD; Richard K. Parrish, MD; Cheryl L. Khanna, MD; James D. Brandt, MD; Joern B. Soltau, MD; Chris A. Johnson, PhD; John L. Keltner, MD; Julia B. Huecker, MS; Bradley S. Wilson, MA; Lei Liu, PhD; J. Phillip Miller, AB; Harry A. Quigley, MD; Mae O. Gordon, PhD; for the Ocular Hypertension Study Group

IMPORTANCE Ocular hypertension is an important risk factor for the development of primary open-angle glaucoma (POAG). Data from long-term follow-up can be used to inform the management of patients with ocular hypertension.

OBJECTIVE To determine the cumulative incidence and severity of POAG after 20 years of follow-up among participants in the Ocular Hypertension Treatment Study.

DESIGN, SETTING, AND PARTICIPANTS Participants in the Ocular Hypertension Treatment Study were followed up from February 1994 to December 2008 in 22 clinics. Data were collected after 20 years of follow-up (from January 2016 to April 2019) or within 2 years of death. Analyses were performed from July 2019 to December 2020.

INTERVENTIONS From February 28, 1994, to June 2, 2002 (phase 1), participants were randomized to receive either topical ocular hypotensive medication (medication group) or close observation (observation group). From June 3, 2002, to December 30, 2008 (phase 2), both randomization groups received medication. Beginning in 2009, treatment was no longer determined by study protocol. From January 7, 2016, to April 15, 2019 (phase 3), participants received ophthalmic examinations and visual function assessments.

MAIN OUTCOMES AND MEASURES Twenty-year cumulative incidence and severity of POAG in 1 or both eyes after adjustment for exposure time.

RESULTS A total of 1636 individuals (mean [SD] age, 55.4 [9.6] years; 931 women [56.9%]; 1138 White participants [69.6%]; 407 Black/African American participants [24.9%]) were randomized in phase 1 of the clinical trial. Of those, 483 participants (29.5%) developed POAG in 1 or both eyes (unadjusted incidence). After adjusting for exposure time, the 20-year cumulative incidence of POAG in 1 or both eyes was 45.6% (95% CI, 42.3%-48.8%) among all participants, 49.3% (95% CI, 44.5%-53.8%) among participants in the observation group, and 41.9% (95% CI, 37.2%-46.3%) among participants in the medication group. The 20-year cumulative incidence of POAG was 55.2% (95% CI, 47.9%-61.5%) among Black/African American participants and 42.7% (95% CI, 38.9%-46.3%) among participants of other races. The 20-year cumulative incidence for visual field loss was 25.2% (95% CI, 22.5%-27.8%). Using a 5-factor baseline model, the cumulative incidence of POAG among participants in the low-, medium-, and high-risk tertiles was 31.7% (95% CI, 26.4%-36.6%), 47.6% (95% CI, 41.6%-53.0%), and 59.8% (95% CI, 53.1%-65.5%), respectively.

CONCLUSIONS AND RELEVANCE In this study, only one-fourth of participants in the Ocular Hypertension Treatment Study developed visual field loss in either eye over long-term follow-up. This information, together with a prediction model, may help clinicians and patients make informed personalized decisions about the management of ocular hypertension.

TRIAL REGISTRATION ClinicalTrials.gov Identifier: NCT00000125.

JAMA Ophthalmol. doi:10.1001/jamaophthalmol.2021.0341
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Supplemental content

Author Affiliations: Author affiliations are listed at the end of this article.

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Key Points

Question Do 20-year follow-up data from the Ocular Hypertension Treatment Study inform the management of patients with ocular hypertension?

Findings In this cohort study of 1636 participants with ocular hypertension who participated in the Ocular Hypertension Treatment Study, the 20-year cumulative incidence of primary open-angle glaucoma was 46% in 1 or both eyes, and the cumulative incidence of visual field loss was 25% after adjusting for exposure time.

Meaning This study's findings, together with a predictive model, may help clinicians and patients make informed personalized decisions about the management of ocular hypertension.

In the end it comes down to the risk of not treating vs the burden of treatment

Case 2
Hot Off The Press!

- 58 y/o BM– scheduled for routine exam
- CC- Blurry vision at near and distance. Has not had an exam or "many years"
- Exam results
  - New Rx Improved VA to 20/20
  - SLE – normal
  - IOP – 24mmHg OD, 26mm Hg OS
  - C/D - ~.8/.8 OU
- So what do we do now?

This Is A Huge Opportunity!!

- Do we do additional testing at this initial visit?
- Do we reschedule them for further testing?
  - If so, what testing and when?
- What are we trying to accomplish at this first visit?
- How do we bill the first visit?
- What do we do (and bill) at successive visits?

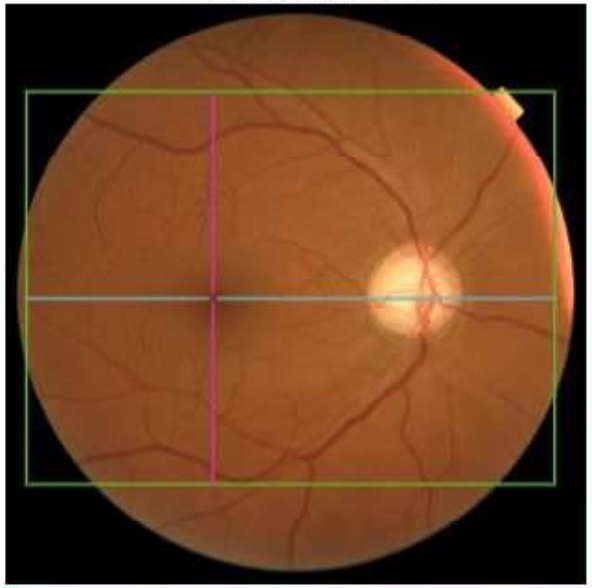
- Let's go through this…

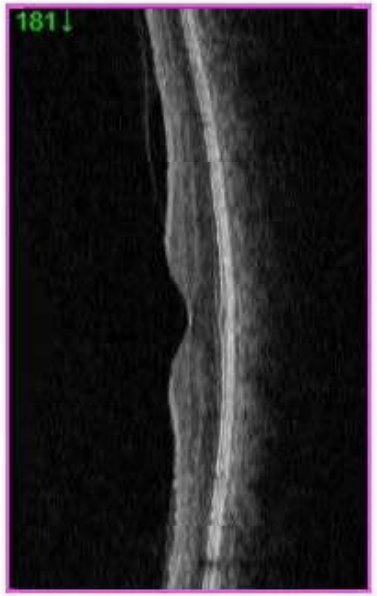
Name: Marcell Hatten DOB: 06/23/1961 Age: 63 Scan: 3D(12.0x9.0mm - 512x128)

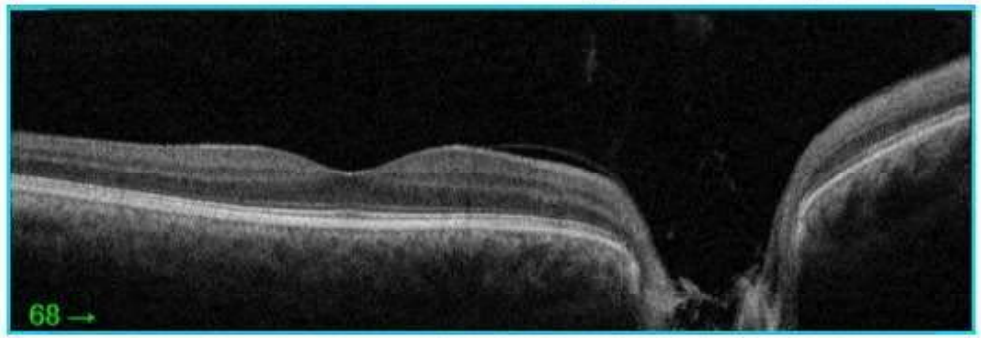
OD

Image Quality: 57 Analysis mode:Fine (2.0.8)

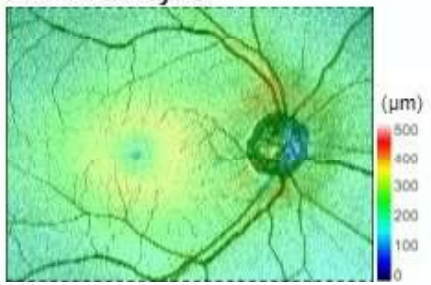
Capture Date:07/03/2024

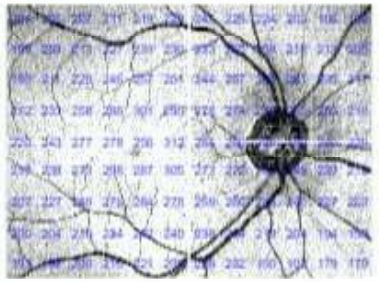


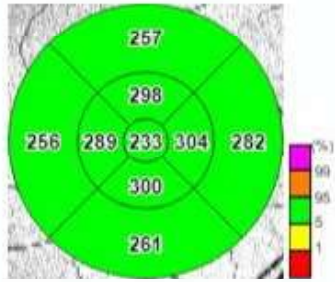




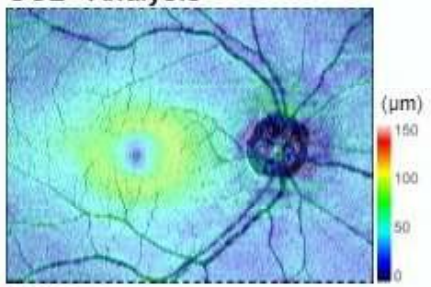
Retina Analysis

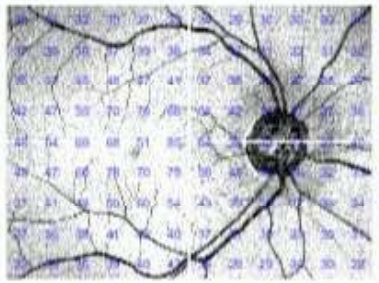


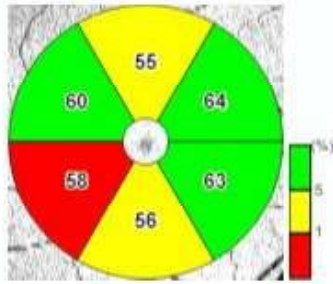




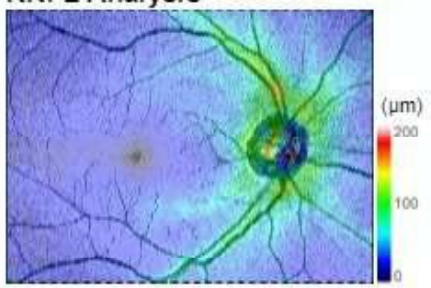
GCL+ Analysis

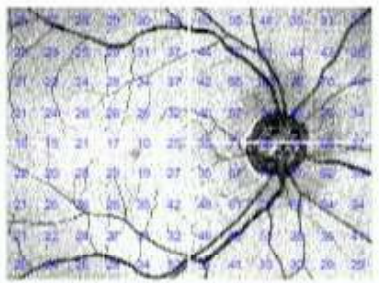


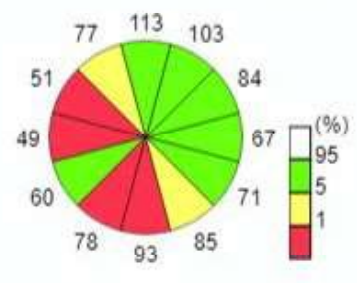




RNFL Analysis



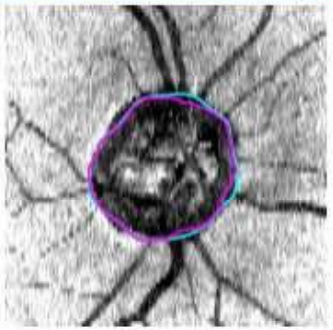




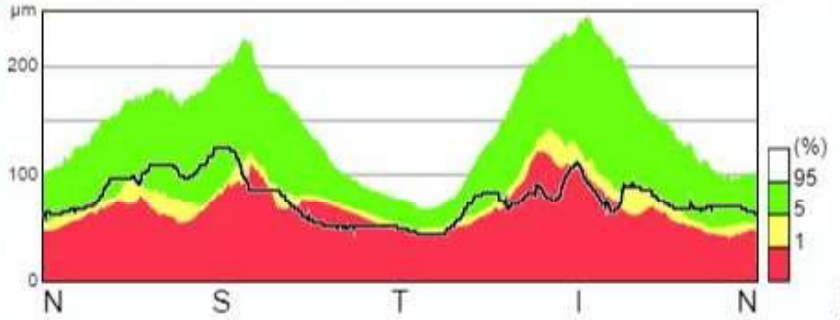
Disc Topography

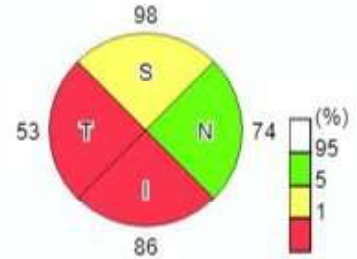
Rim Area	(mm^2)	0.12
Disc Area	(mm^2)	3.27
Linear CDR		0.98
Vertical CDR		0.96
Cup Volume	(mm^3)	0.90

Reference Plane Height: 120µm



Disc margin
Cup margin





RNFL Average Thickness 78 µm

Comments:

Signature:

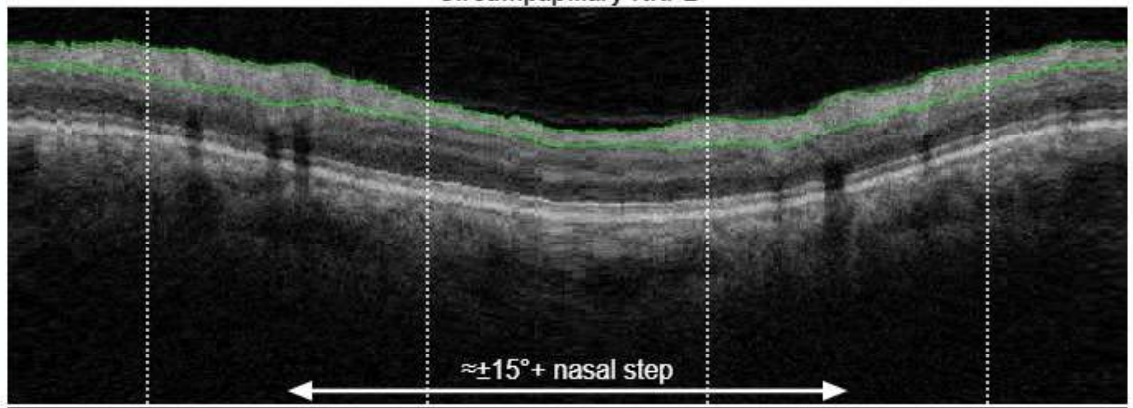
Date:

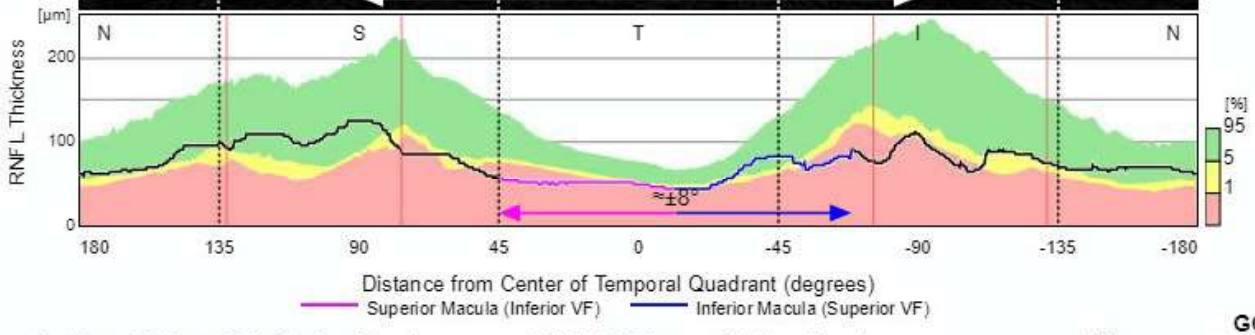
OD

Image Quality: 57 Analysis mode:Fine (2.0.8)

Capture Date:07/03/2024

Circumpapillary RNFL

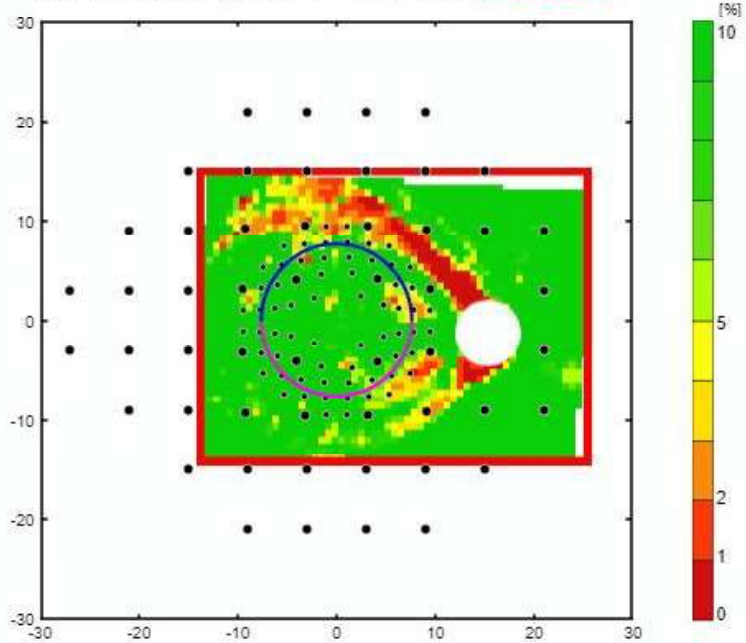




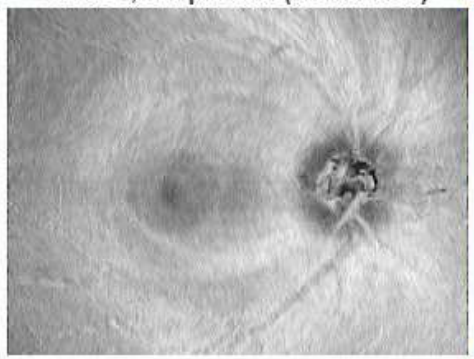
Distance from Center of Temporal Quadrant (degrees)

Superior Macula (Inferior VF) Inferior Macula (Superior VF)

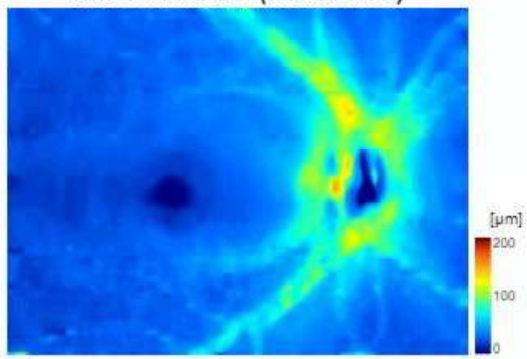
RNFL Probability and VF Test points (Field View)

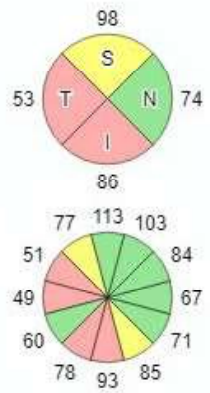


En-face, 52.0µm Slab (Retina View)

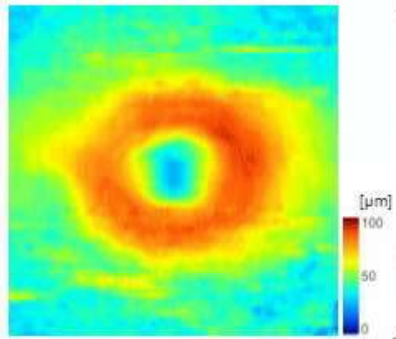


RNFL Thickness (Retina View)

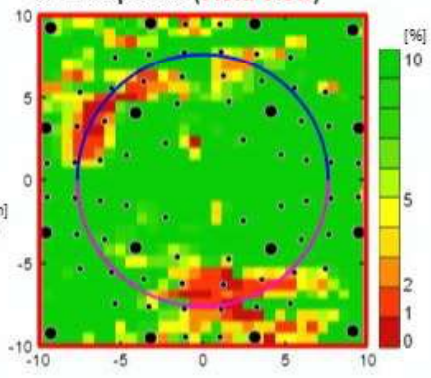




GCL+ Thickness (Retina View)



GCL+ Probability and VF Test points (Field View)



Comments:

Signature:

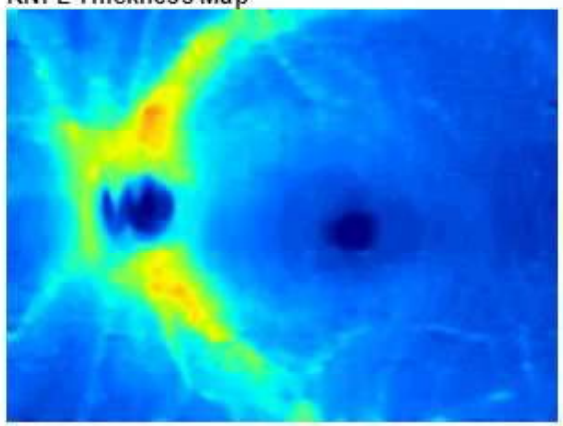
Date:

Name: Marcell Hatten DOB: 06/23/1961 Age: 63 Scan: 3D(12.0x9.0mm - 512x128)

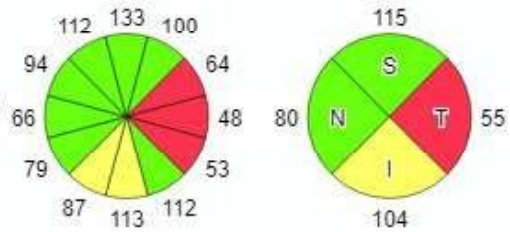
OS

Image Quality: 58 Analysis mode:Fine (2.0.8)
Capture Date:07/03/2024

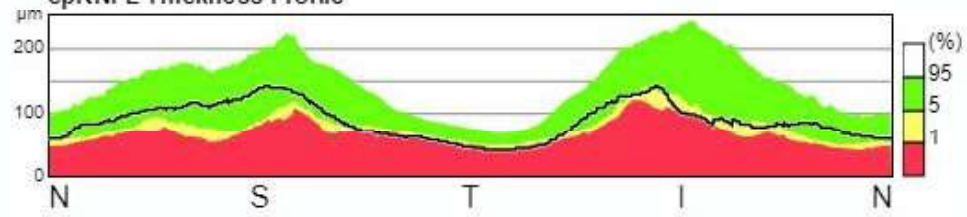
RNFL Thickness Map



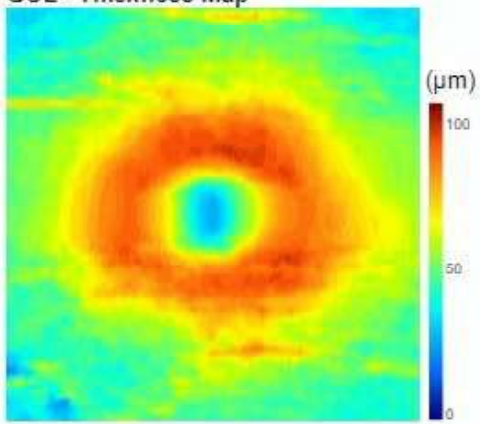
Average cpRNFL Thickness(µm) : 88



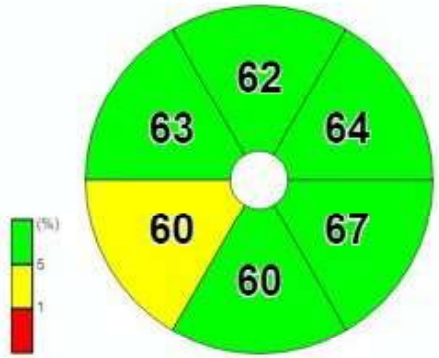
cpRNFL Thickness Profile

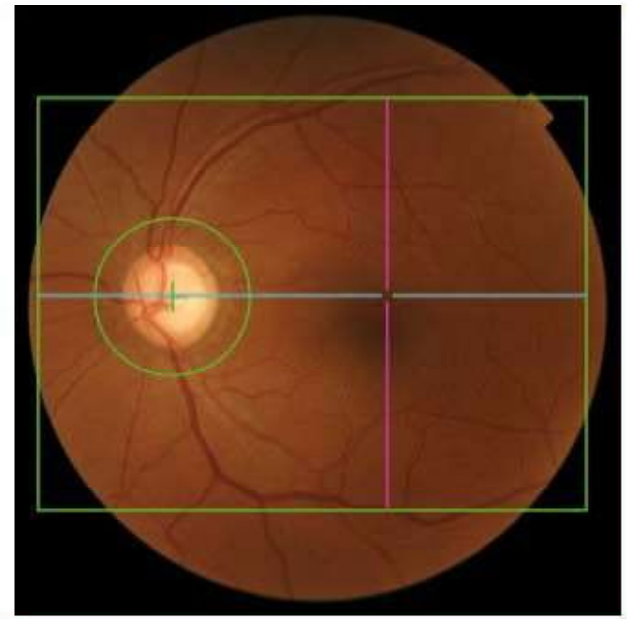


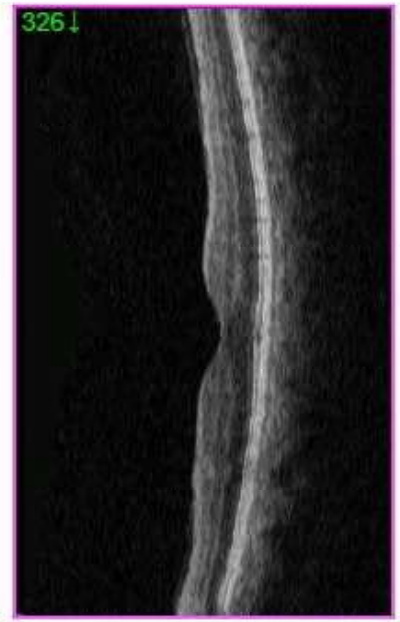
GCL+ Thickness Map



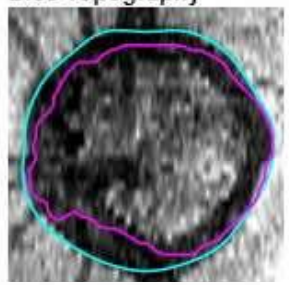
Average GCL+ Thickness (µm) : 63





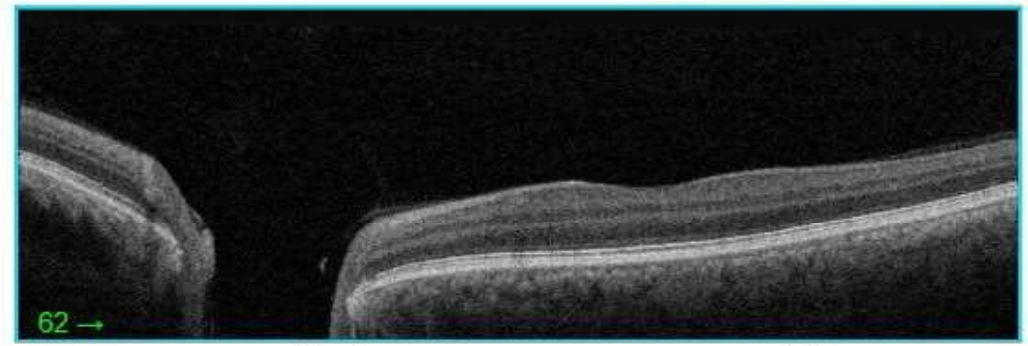


Disc Topography



Disc Area	(mm^2)	3.22
Rim Area	(mm^2)	0.63
Vertical CDR		0.86
Cup Volume	(mm^3)	1.02

(%) 5 1



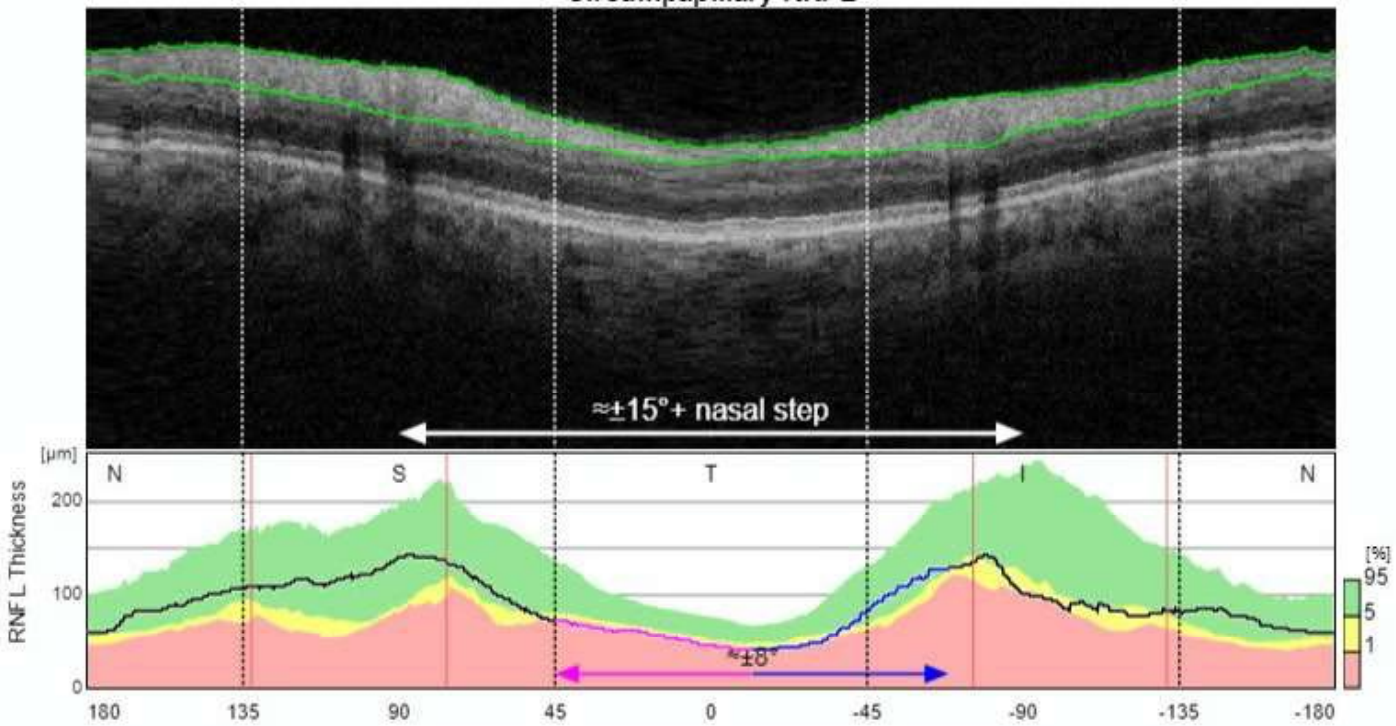
Comments: Signature: Date:

Name: Marcell Hatten DOB: 06/23/1961 Age: 63 Scan: 3D(12.0x9.0mm - 512x128)

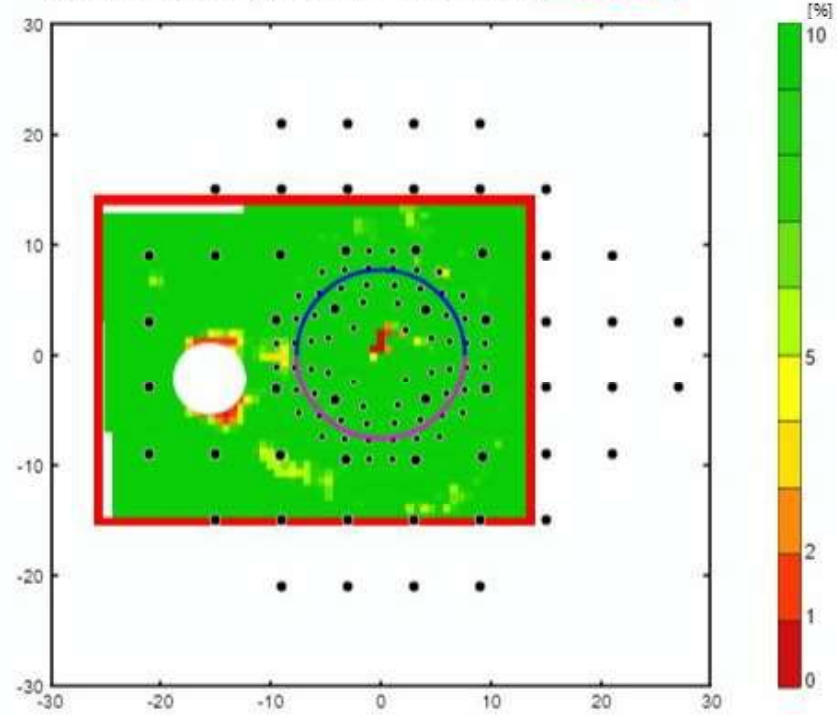
OS

Image Quality: 58 Analysis mode:Fine (2.0.8)
Capture Date:07/03/2024

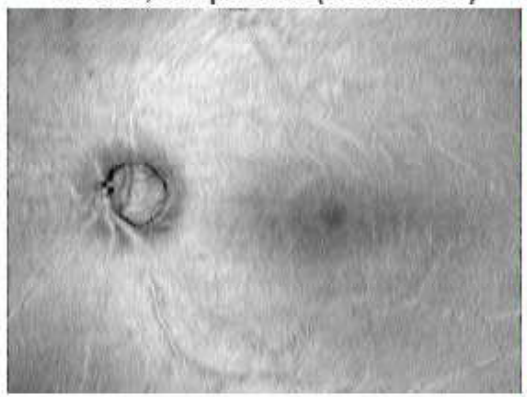
Circumpapillary RNFL



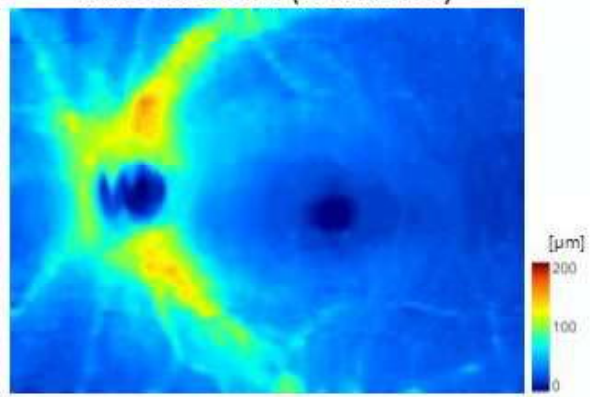
RNFL Probability and VF Test points (Field View)

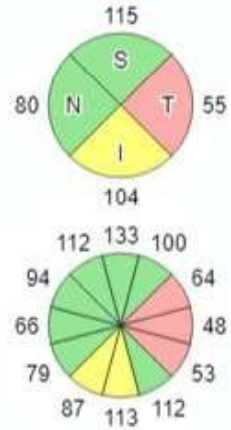


En-face, 52.0µm Slab (Retina View)

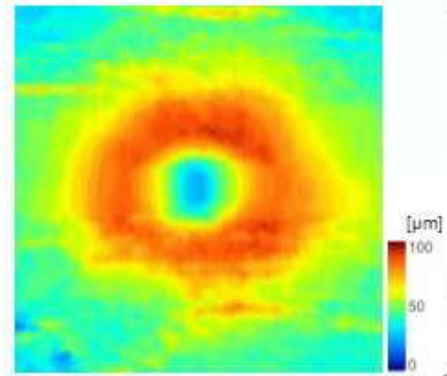


RNFL Thickness (Retina View)

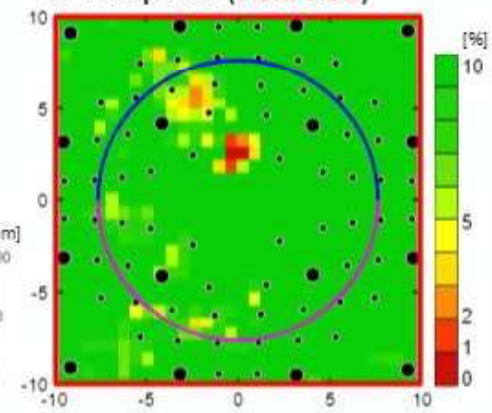




GCL+ Thickness (Retina View)



GCL+ Probability and VF Test points (Field View)



Comments: Signature: Date:

Visit 2

- How to schedule
- What test(s) to perform
- What do you bill

- What about visit 3? And 4 and 5…?

ID: 104215

CENTRAL 24-2 THRESHOLD TEST

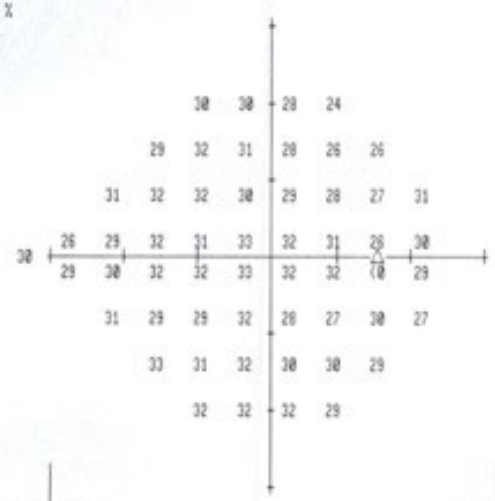
FIXATION MONITOR: GAZE/BLIND SPOT
FIXATION TARGET: CENTRAL
FIXATION LOSSES: 1/10
FALSE POS ERRORS: 10 %
FALSE NEG ERRORS: 1 %
TEST DURATION: 02:50

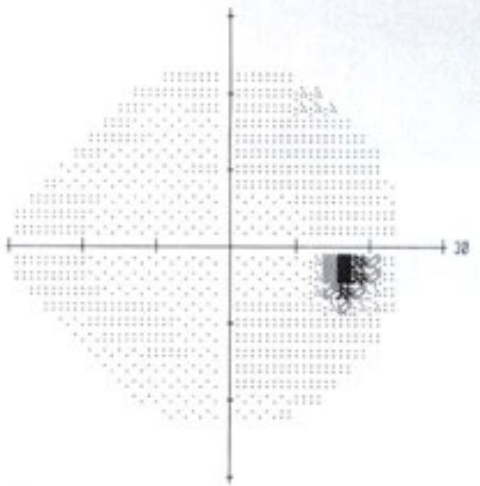
FOVEA: OFF

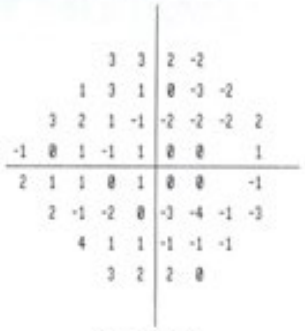
STIMULUS: III, WHITE
BACKGROUND: 31.5 ASB
STRATEGY: SITA-FAST

PUPIL DIAMETER:
VISUAL ACUITY:
RX: +4.00 OS DC X

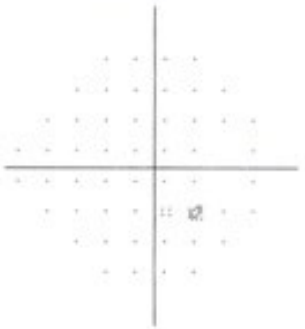
DATE: 06-07-2019
TIME: 7:54 AM
AGE: 66

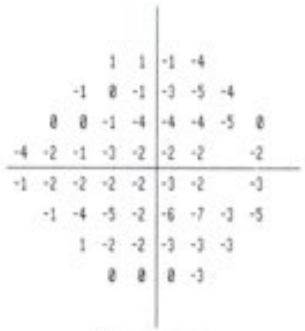




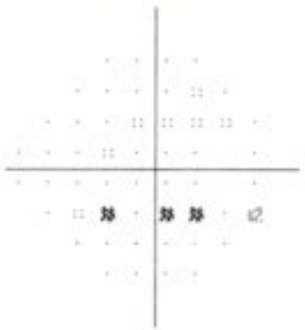


TOTAL DEVIATION





PATTERN DEVIATION



GHT
OUTSIDE NORMAL LIMITS

VFI 99%

MD +0.20 DB
PSD 1.85 DB P < 5%

:: < 5%
▨ < 2%
▩ < 1%
■ < 0.5%

BLADEN EYE CENTER
ERIC SCHMIDT, O.D. /M. SUTTON SCHILAWSKI
409 E. BROAD ST
ELIZABETHTOWN NC 28337
910.862.4268

CENTRAL 24-2 THRESHOLD TEST

FIXATION MONITOR: GAZE/BLIND SPOT
FIXATION TARGET: CENTRAL
FIXATION LOSSES: 1/10
FALSE POS ERRORS: 4 %
FALSE NEG ERRORS: 0 %
TEST DURATION: 02:59

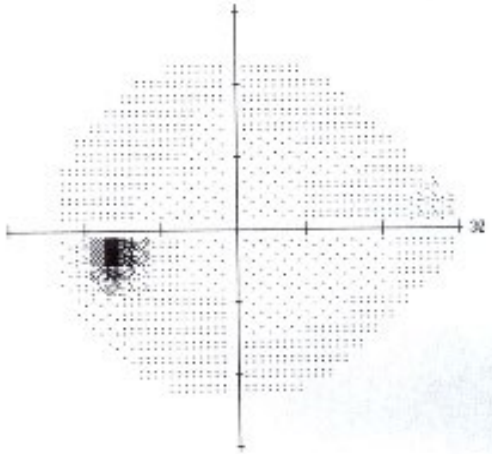
FOVEA: OFF

STIMULUS: III, WHITE
BACKGROUND: 31.5 ASB
STRATEGY: SITA-FAST

PUPIL DIAMETER:
VISUAL ACUITY:
RX: +1.50 DS OC X

DATE: 26-07-2019
TIME: 7:59 AM
AGE: 66

			28	29	27	25		
		29	29	31	30	30	30	
	32	32	30	32	32	31	31	29
33	29	30	32	32	33	29	29	26	23
	33	0△	30	32	33	31	31	30	28
	32	31	27	30	32	32	30	28
		32	29	30	30	27	26	
			27	27	29	30		



		2	2	1	-2			
	1	1	2	1	1	2		
1	1	0	1	1	0	1	0	
-1		1	0	1	-1	-2	-3	-4
3		-1	0	0	-1	0	0	1
2	1	-5	-1	0	0	-1	-1	
	2	-1	-1	-1	-3	-4		
		-3	-3	0	1			

TOTAL DEVIATION

		0	1	-1	-4			
	0	-1	0	0	0	0		
0	-1	-2	0	-1	-1	-1	-1	
-2		-1	-2	-1	-4	-4	-5	-6
1		-1	-2	-1	-3	-2	-2	-1
1	-1	-6	-3	-2	-2	-2	-2	
	0	-3	-2	-2	-5	-5		
		-5	-5	-2	-1			

PATTERN DEVIATION

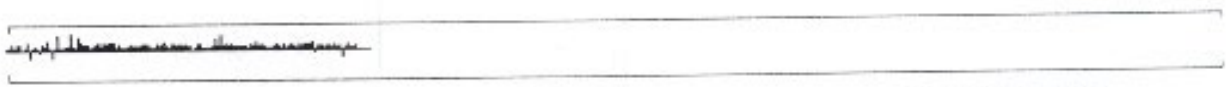
: (5%
: (2%
: (1%
■ (0.5%

GHT
BORDERLINE

VFI 88%

MD -8.32 DB
PSD 1.77 DB P (10%

BLADEN EYE CENTER
ERIC SCHMIDT, O.D. /M. SUTTON SCHILAWSKI
420 E. BROAD ST
ELIZABETHTOWN NC 28337
910.862.4200



Disease: ID: Algorithm Ver: A3, 2, 1, 8

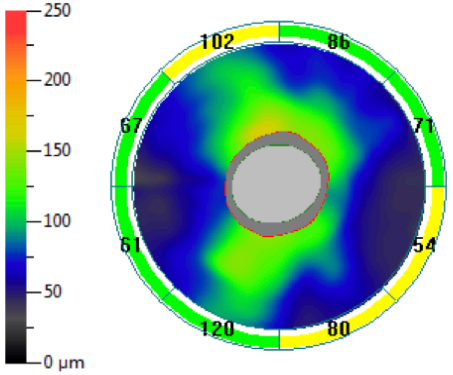
Right / OD Nerve Fiber ONH/GCC OU Report Left / OS

Exam Date:2019-03-29 08:41:36

Good 63 Scan Quality Index Good 59

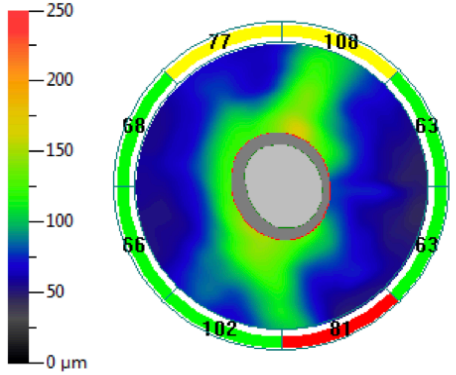
Exam Date:2019-03-29 08:42:37

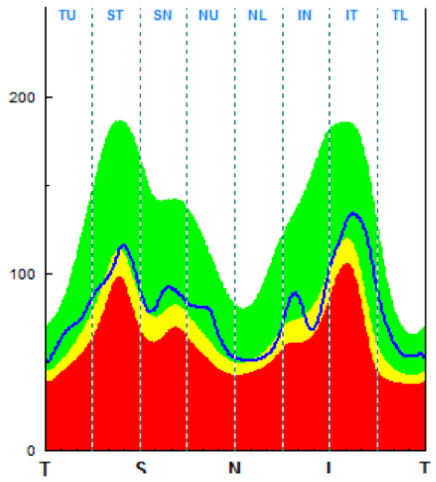
Optic Nerve Head Map

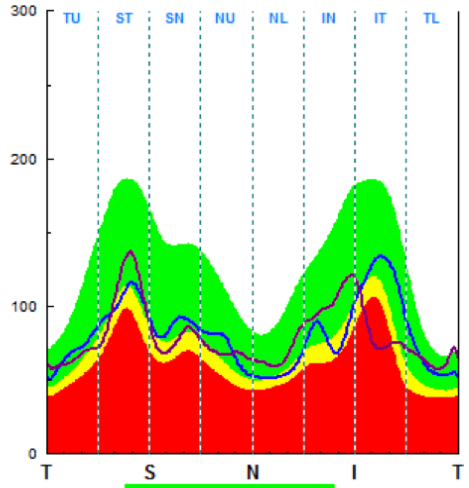


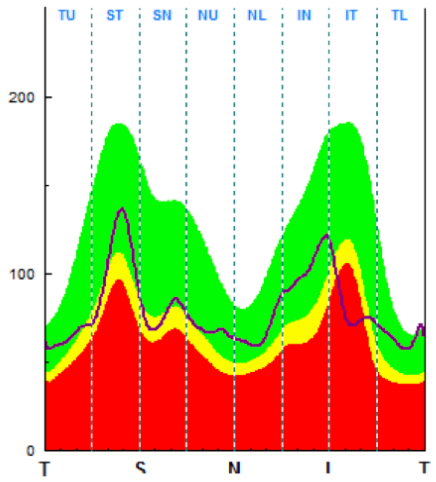
RNFL Analysis (µm)	OD	OS	Inter Eye Diff
Avg RNFL Thick...	80	79	1
Avg Superior R...	81	79	2
Avg Inferior RNFL	79	78	1
Intra Eye Diff (S...	2	1	N/A

ONH Analysis	OD	OS	Inter Eye Diff
Area C/D	0.65	0.61	0.04
V. C/D	0.79	0.82	-0.03
H. C/D	0.90	0.81	0.09
Rim Area (mm^2)	0.84	0.96	-0.12
Disc Area (mm^2)	2.42	2.42	0.00
Cup Vol (mm^3)	0.679	0.578	0.101



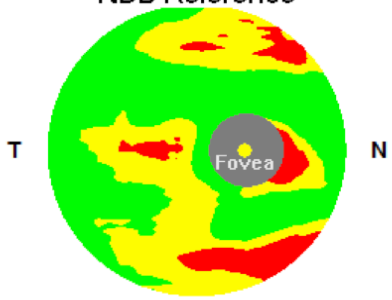






Within Normal
Borderline
Outside Normal

NDB Reference



GCC Avg Thickness (µm)	OD	OS	Inter Eye Diff
Total	80	86	-6
Superior	81	88	-7
Inferior	79	84	-5
Intra Eye Difference (...	2	4	N/A
FLV (%)	1.402	2.140	-0.738
GLV (%)	14.9...	9.353	5.598

NDB Reference

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Good 67 Scan Quality Index Good 74

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