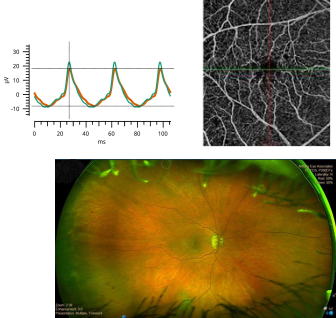


Michael Cymbor, OD, FAAO
COPE 91261-TD

Retina Update



1

Disclosure Dr. Cymbor

- Key opinion leader and/or speaker for:
 - Visionix (Optovue)
 - Quidel
 - New World Medical
 - LKC Technologies
 - Allergan
 - Tarsus
 - Topcon
 - Thea

All financial relationships have been mitigated

2

Ways to reach out

mcymbor@nittanyeye.com



MIKECYMBOR.COM

3



Fred H. Carlin,
O.D. Community
Vision Foundation

- www.fhcvision.org

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Case

- 63 Y/O WM
- HA1C8.1
- On Toujeo (insulin)
- Recently started taking Ozempic, Jardiance
- OchTx moderate NPDR, Hypertensive retinopathy, Chronic Angle closure glaucoma – mild, YAG PI 2020 OU, SLT 2020 OU
- IOP 21.2mmHg OD and 23.3 mmHg OS

5

In the Management of Diabetic Retinopathy

- When is the right time to refer to retina?



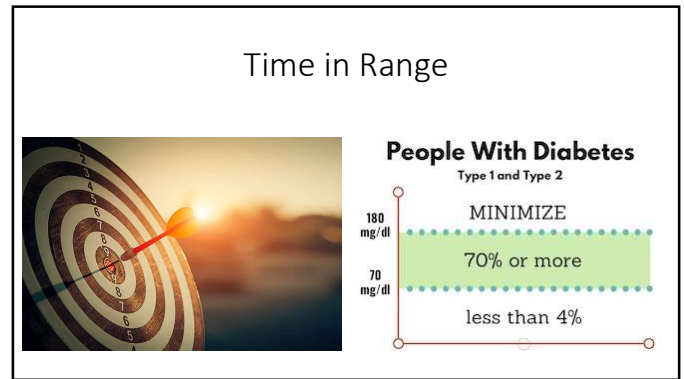
6

Are you asking about HA1C?

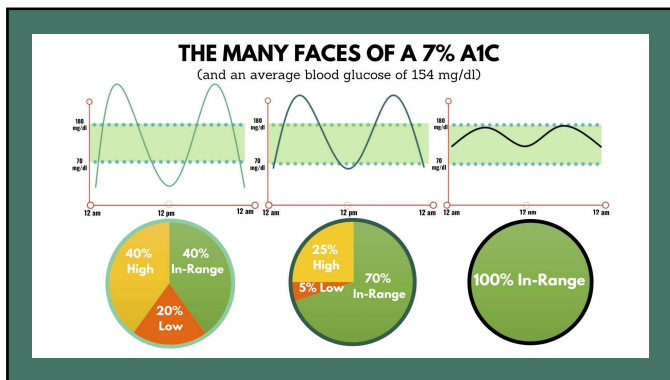
Is there a better metric?



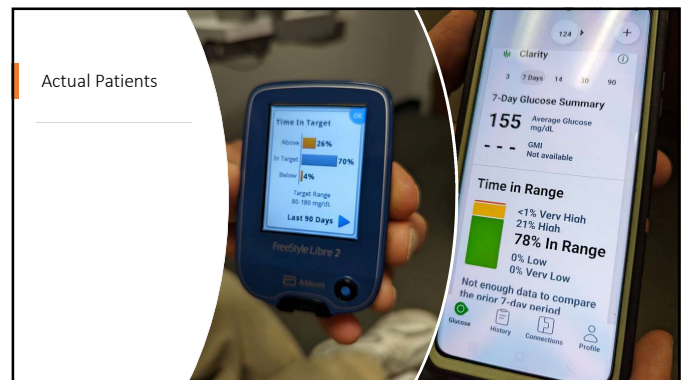
7



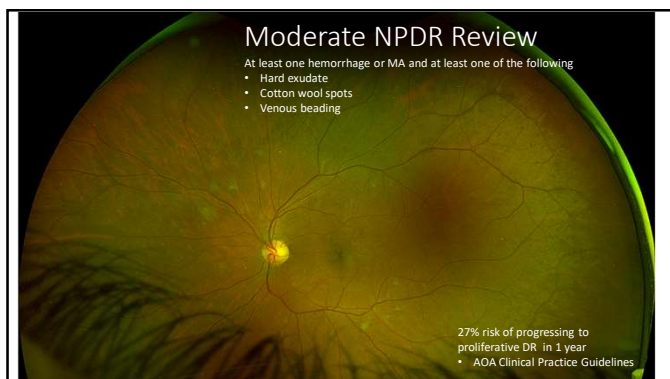
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9



10



11



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- Greater than 50% chance of converting to proliferative DR in 1 year
- AOA Clinical Practice Guidelines
- And...consult with an ophthalmologist

[illegible]

Device and Test Information

RET-001™
Serial number: 0031451
Test protocol: DR Assessment

MicroVision Medical Technologies, Inc.
Form version: 2.13.7
Reference date: 2023-23-09-09
Electronic-Sensor Trips

Pass Score	Fail Score
Operator selected limits (7.0 = 2.5%)	Operator limits
95% Reference Interval (22.4 = 26.7)	95%

ERG

Left Eye


16 Hz	12 Hz	16 Hz	12 Hz
29.0(96%)	27.0 = 32.0	13.1(94%)	11.1 = 37.2
22.5(82%)	26.2 = 30.0	10.2(76%)	10.2 = 30.0

Pupill

Left Eye

Area ratio	Area ratio
1.3(19%)	1.3 = 3.1
1.2(20%)	1.3 = 3.1

OD CODER







OD Coder


g0DCoder@imk · 325 subscribers · 10 videos

This channel deals with all things coding and coding. It will help navigate the rough waters...more

[Customize channel](#) [Manage videos](#)

**YouTube**



OD Coder


- Fundus Photography 92250**
 - \$35.98
 - Written order and interpretation
 - Bilateral
 - Unilateral RT or LT with 52 modifier (reduced services)
 - Not a substitute for a dilated exam
 - "if the study is performed as a screening, it is not covered by medicare"
 - Mutually exclusive with OCT nerve/macula – 59 modifier
- Now covered with E11.9**

Glare sensitivity H53.71
 Retinal ischemia H35.82
 Visual discomfort H53.143
 Visual distortions of shape and size H53.15

+
o •

OD Coder Update

- 92137 OCT Angiography
 - Jan 1
 - Both traditional mac OCT 92134 and OCT-A 92137 must be performed and interpreted the same day
 - Cannot be billed with 92133 or separately with 92134
- National Average
 - 92134 \$31
 - 92137 \$57
- Any codes that are reimbursable with 92134
- No glaucoma codes



3

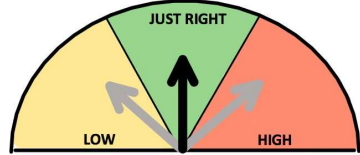
OD Coder  

- 92273 Full field electroretinogram for diabetes
- 92274 Multifocal electroretinogram
- \$118.32
- Written order, Interpretation and report
- Any diabetic retinopathy code
- Changes in retinal vascular appearance H35.011-013
- Hypertensive retinopathy H35.031-033
- Retinal ischemia H35.82




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Which is worse for diabetic retinopathy, blood glucose levels that are too high or too low?



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Blood sugar limbo may exacerbate retinopathy



- “Our results show that these periodic low glucose levels cause an increase in certain retinal cell proteins, resulting in an overgrowth of blood vessels and worsening diabetic eye disease,”
- Akrit Sodhi, MD, PhD, Chuanyu Guo, Monika Deshpande, Yuxi Mu, Isha Kachwala, Haley Mingority, Taylor Niese, Savalan Babapour-Farrokhfar, Michael Ramadzu, Jaron Sanchez, Nensley Inamdar, Thomas V. Johnson, Miguel Flores-Bellver, Maria Valeria Carito-Soler, Silvia Montanez. HIF-1 α accumulation in response to transient hypoglycemia may worsen diabetic eye disease. Cell Reports. Published January 2023. DOI: <https://doi.org/10.1016/j.celrep.2022.111976>

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What about GLP-1's?

Glucagon-like peptide

- Hormone released when food is eaten to slow gastric emptying
- Increases insulin release
- Controls the feeling of satiety after eating

Options

- Trulicity
- Ozempic
- Rybelsis
- Mounjaro

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In the Management of Diabetic Retinopathy

- When is the right time to refer to retina?
 - Advanced diagnostics like OCT-A and ERG can help




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Physical activity = lower risk of Diabetic Retinopathy

- In Type 1
 - Along with lipid levels
- In Type 2
 - Impact is more pronounced in **vision threatening DR**
 - Improves lipid profile, BMI and blood pressure


Ren C, Liu W, Li J, Cao Y, Xu L, Lu P. Physical activity and risk of diabetic retinopathy: a systematic review and meta-analysis. Acta diabetologica. 2020 Aug 1;56:823-37.



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Diabetic Retinopathy Exercise Tips

- Prioritize blood sugar control
 - Monitor levels, increase gradually to reduce BS dips
- Proper footwear
 - Peripheral neuropathy issues – custom fitting
- Cardio and Strength training
 - Yoga and Tai Chi
- Use caution within 1 week of intravitreal injections
 - Slightly increased risk of vitreous hemorrhage, endophthalmitis



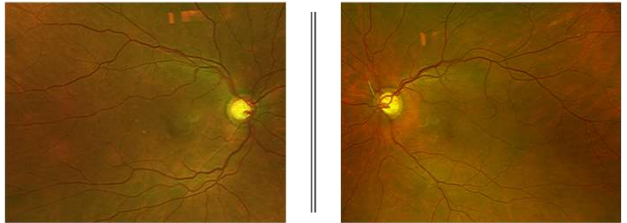
26

Case

- 80 Y/O W/F
- Dx with AMD 2013
- Used AREDS/AREDS2 "off and on"
- 6 months ago Adapt Dx Rod Intercept 13.2

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Optomaps



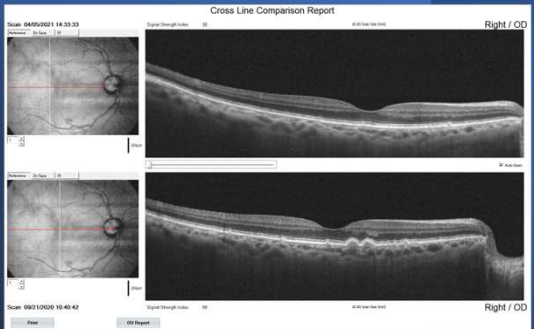
28

And now...

- 6 months ago, began new supplement, reports excellent compliance
- Begins a consistent walking program
- Adapt Dx 12.1 (Baseline 13.2)

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Cross Line Comparison Report



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OD Coder

YouTube

- **Computer ophthalmic imaging posterior segment 92134**
- \$37.80
- Written order and report
- Bilateral
 - Unilateral RT or LT with 52 modifier (reduced services)
- Once every 2 months
- Pathologies
 - Hundreds
 - Visual distortion of shape and size* H53.15
 - Scotomas and visual field defects H53.411-483
 - Retinal ischemia H35.82
 - Degenerative myopia H44.2E1-2E3
 - Other long-term drug treatment Z79.899 (baseline and annually)
- Mutually exclusive with 92250**

AMD Staging

Category 1: Early AMD characterized by fewer than five small drusen, each below 63µm in size.

Category 2: Mild AMD defined as multiple small drusen, a single intermediate-sized drusen from 63µm to 124µm or RPE changes.

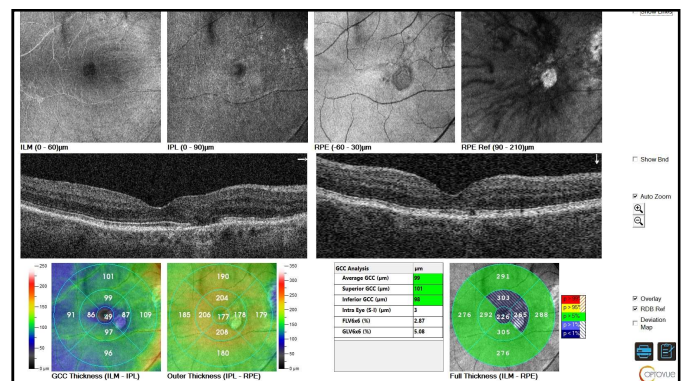
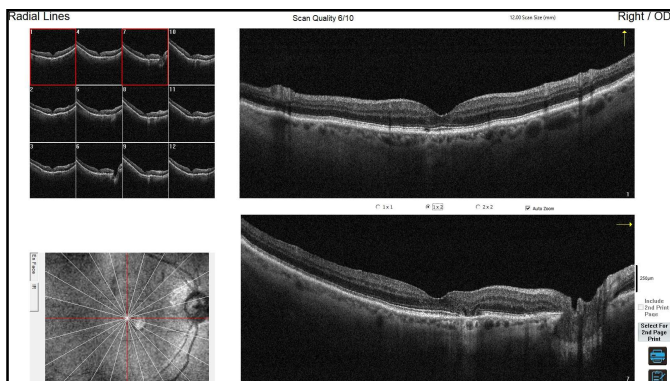
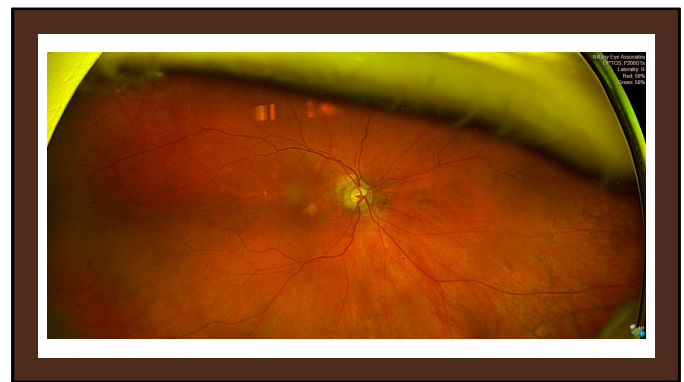
Category 3: Moderate AMD characterized by one large drusen greater than 125µm, extensive intermediate drusen or GA non-centrally.

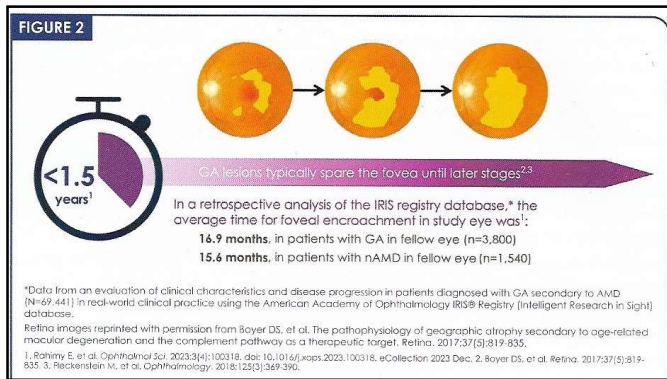
Category 4: Advanced AMD defined as more than one large drusen or GA centrally.

Mild AMD characterized by medium-sized drusen (63µm to 125µm)

Intermediate AMD demonstrating large-sized drusen (>125µm)

Age-Related Eye Disease Study Research Group. The AREDS system for classifying age-related macular degeneration from stereoscopic color fundus photographs: the Related Eye Disease Study Report Number 6. *Am J Ophthalmol*. 2001;132(5):668-81.



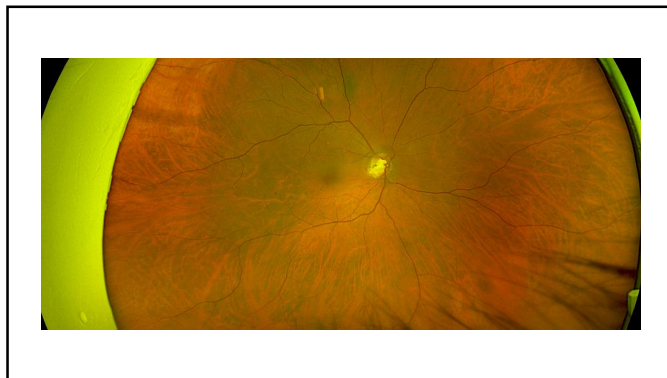


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Case

- 67 Y/O W/M
- Here for comprehensive exam complaining of occasional floaters
- BP 130/91 RAS, "white coat syndrome"
- Low risk glaucoma suspect based on large cupping

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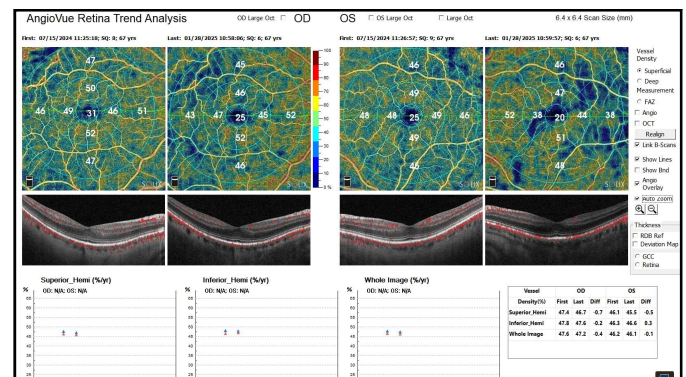


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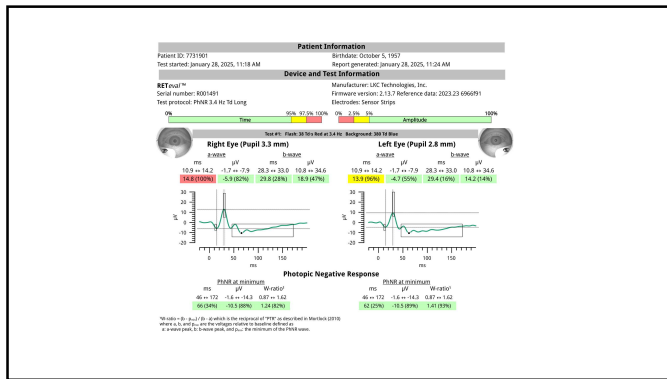
Diagnosis

- Hypertensive Retinopathy
 - Performed same day OCT-A
- Plan
 - Return for OCT-A and ERG

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Hypertensive Retinopathy

- Signs
 - constricted and tortuous arterioles
 - retinal hemorrhage
 - hard exudates
 - cotton wool spots
 - Nerve edema
 - widening of the arteriole reflex
 - arteriovenous crossing signs
 - copper or silver wire arterioles

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Underdiagnosis of Hypertensive Retinopathy

- Low Sensitivity of Detection Methods
 - Sensitivity of detecting HR ranged from **3% to 21%**
 - Indicating that many cases may go unnoticed
 - van den Born RJ, Hukman CA, Hoekstra JB, Schlingemann RO, van Meurs WJ, van der Wal AC, et al. (2017) Systematic review: systematic review. BMJ. 2017;355(8000):73.
- High Prevalence Yet Limited Recognition
 - **44%** of referred hypertensive patients **had undiagnosed HR**
 - including HR in the assessment of end-organ damage increased the number of patients requiring treatment from **3% to 14%**
 - HR is often overlooked in treatment decisions
 - Kolman SA, van Sijl AM, van der Sluis FA, van der Ree MA. Consideration of hypertensive retinopathy as an important end-organ damage in patients with hypertension. J Hum Hypertens. 2017 Feb;31(2):121-125.
- Diagnostic Challenges and Variability
 - High interobserver (**20% to 40%**) and intraobserver (**10% to 33%**) variability
 - Schmedier RE. Hypertensive retinopathy: a window to vascular remodeling in arterial hypertension. Hypertension. 2008 Jan;51(1):43-4.

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Summary

Your patients are counting on us to help manage the 3 most common retinal diseases

Improving and refining management protocol leads to better patient care

Our patients deserve it

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Thank You!!!

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MIKECYMBOR.COM

Facebook, LinkedIn, YouTube icons

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