

# 2022 GWCO Congress



## Macular Degeneration: A New Breed

Robert Reed Jr OD



# **Macular Degeneration: A New Breed**

**Robert Reed Jr OD **  
**GWCO Congress**  
**October 8, 2022**



# **Disclaimer:**

**Nobody pays me to say good things  
about their stuff**

**I speak from MY experience**

**If I offend you, I apologize**

# **Learning Objectives**

**After completing lecture  
attendee will be able to:**

- 1) Recognize new contributing causes of Macular Degeneration**
- 2) Implement new strategies to prevent & delay Macular Degeneration**
- 3) Articulate new options to maximize vision for patients with macular degeneration**

# Course Description

**It used to be Senile Macular Degeneration. Then it became Age Related Macular Degeneration. But in today's world everything is moving at an accelerated rate. So we're now dealing with 'just' Macular Degeneration in people in their 20s. How the HECK did THAT happen? This class delves into the multi-factoral proliferation of Macular Degeneration. It's evaluation, diagnosis, & how we can deal with it before it reaches it's awful, (frightful), conclusion.**

# MY 4 S's

## Stats -

Numbers are confusing

I Round off

Numbers give idea how big a deal something is

## Sources –

Jeffry Gerson OD FAAO

Jeffrey Anshel OD FAAO

Stuart Richer OD PhD FAAO

Gary Morgan OD

Articles/>100 hours of lecture since 2013/internet/patients

## Suppliers –

Eyepromise

Maculogix

## Statements –

**This IS VERY CONTROVERSIAL !!!**

**The science isn't final, but is growing fast.**

**Conclusions are mine.**

**I'd rather be wrong, than too late.**



# Pre knowledge Quiz

- 1) T or **F** Macular Degeneration means you can't be corrected to 20/20 by normal glasses?
- 2) **T** or F Standard testing for MD can be done with vision acuity, non-dilated retinal exam, and Amsler grid?
- 3) T or F Eye doctors are very accurate at detecting and diagnosing MD?
- 4) T or F The most important things for preventing MD are UV **p**olarized sunglasses and a good diet?
- 5) What percentage of Americans have a “healthy lifestyle” (exercise 20m/d, no smoking, BMI < 20, Healthy Eating Index.com in top 40%)

3%



# Pre knowledge Quiz

- 6) T or F **F** People should take “Eye vitamins” instead of a general purpose multivitamin.
- 7) T or F **F** All non-Rx brands of supplements are the same.
- 8) 25% of the average US person’s vegetable intake is from                      **French Fries**
- 9) 65% of the US population gets their daily intake of antioxidants from                     . **Coffee**
- 10) The daily dose of Lutein we need is                      **6mg** but the average US daily intake is                     . **<2mg**



**Outer Limits - 1<sup>st</sup> episode 1963**

**“The Galaxy Man”**

**Alien “monster” made of electromagnetic energy  
who inadvertently caused destruction**

**“He glowed & flickered like a person made of  
blue light.” the cop said.**



# **It Can't Happen To Me...Can It?**

## **Macular Degeneration Today**

**>11M in US 200M worldwide**

**#1 cause of blindness in US > 50yo**

**hey folks --- It's 1 of the BIG 3 !!!**

## **Projection**

**200% by 2050(likely 10-20 years)**

**worldwide 2X by 2040**

## **Population aging stats**

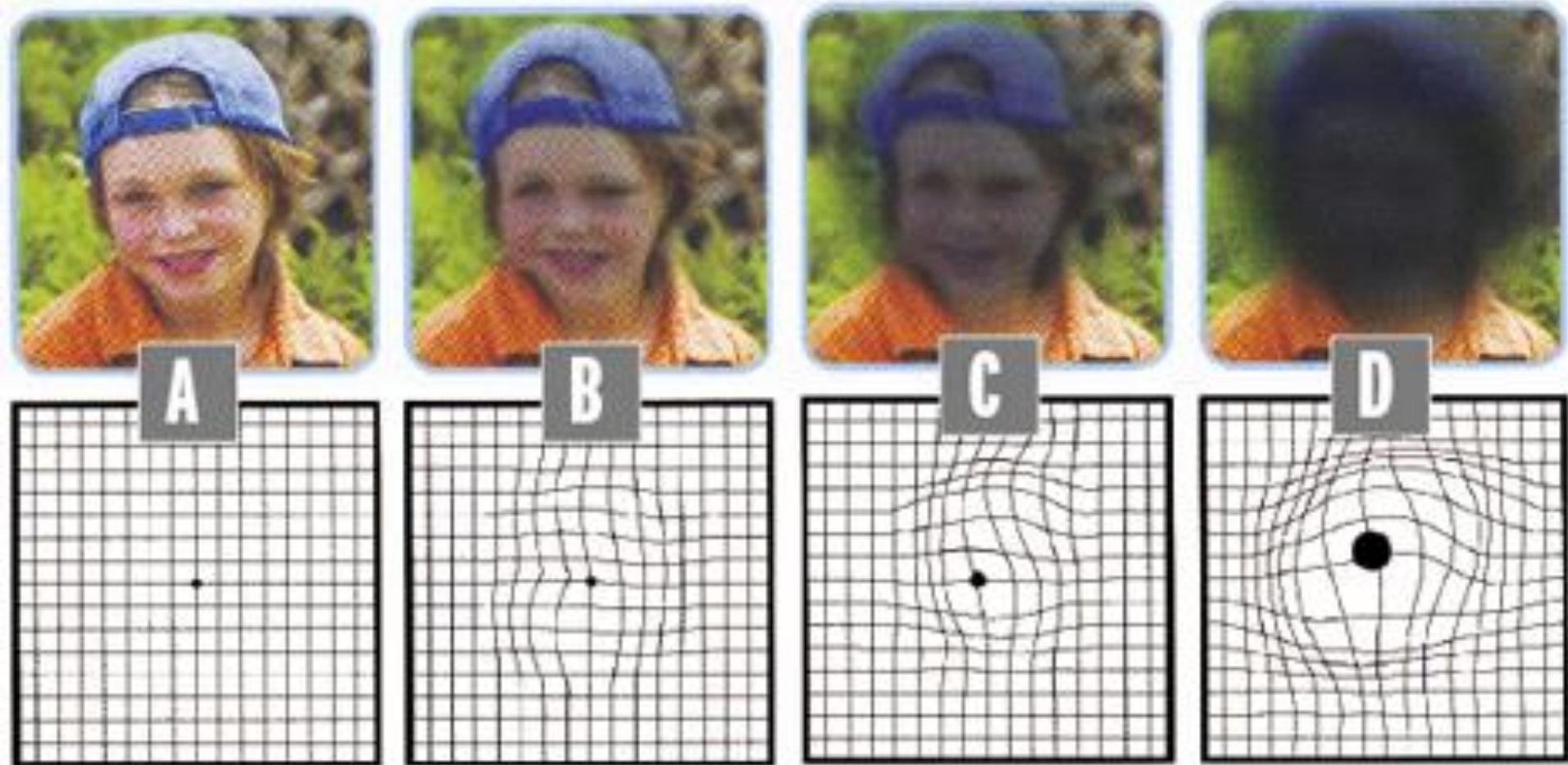
**>65yo most likely will live past 90**

**10,000 Boomers turn 65/d till 2029**

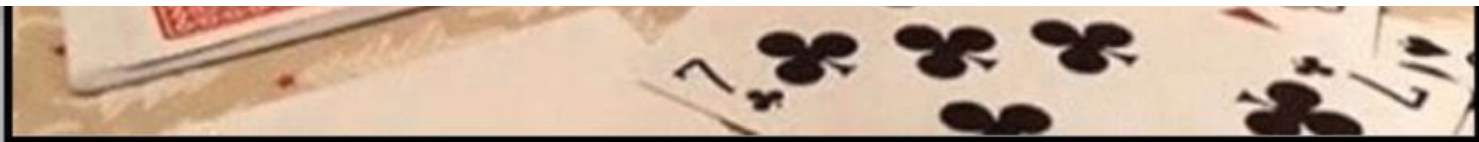
**In US (1<sup>st</sup> time) more people > 65 than < 21**

**7 generations alive (how's blind work?)**

# MD isn't that BIG of deal!?



GRAPHIC ILLUSTRATES THE PROGRESSION OF EYESIGHT MOVING FROM NORMAL VISION TO WET AMD ( A » D )



# **It Can't Happen To Me...Can It?**

**Study - JAMA Ophth June 2017**

**Macular Degeneration under-diagnosed (25% missed)  
320 of 1288 eyes had AMD but were told "OK"  
Of those, 30% had moderate AMD (large drusen)**

**MDs/ODs are equally 'inadequate'  
50/50 missed by either professional, it's NOT 'just ODs'**

**Macular degeneration poorly defined  
wide variation of WHAT's called AMD  
even though academically distinct classifications**

**Methods of Diagnosis are inadequate  
difficulty seeing with cataract  
small drusen hard to detect when scattered  
lacking adequate data comparison over time  
need - more training/photodocumentation/OCT**

# It Can't Happen To Me...Can It?

## Anecdotal evidence

- 1957 at 2 yr I got my first iphone\*
- 1984 Advent of computers ---- Remember CVS?
- \*me Senile Macular Degeneration only in 85yo
- 2001 AREDS 1
- 2002 Discovery of 4th photoreceptor responsible for circadian rhythm 2006
- AREDS 2 added lutein & zeaxanthin, removed betacarotene & <Zinc
- 2010 Discovery of HEV damaging macular tissues
- \*me Age Related Macular Degeneration regularly in 50yos
- \*me 2016 - First 27-31yos with Macular Degeneration AND 20/20 lost
- 2020 latest stats say 14-15M ---- 30+% increase in 2 years ????

## Everybody gets to play the MD game –DEMOS/Cards

Sleep disruption ipRGC photoreceptor controls melatonin

Other health considerations

DM, cancer, mood, attention, blood pressure, memory

Alzheimers/dementia INSIDE eye - Ret photos & OCT

My generation's



first eye phone!

# Grading Mac Degen

**Normal** – No drusen, normal pigmentation

**Early Dry MD** – VA OK, few small/medium size drusen, normal pigmentation

**Mod MD** – VA mild down, med & 1 large drusen, pigment changes, in 1/both eyes

**Adv MD** – VA down, large drusen 1/both eyes, pigment changes

**Wet MD** – neovasc membrane, hem, exudate

**Dry Geographic MD** – pig epi dies – atrophy





Q



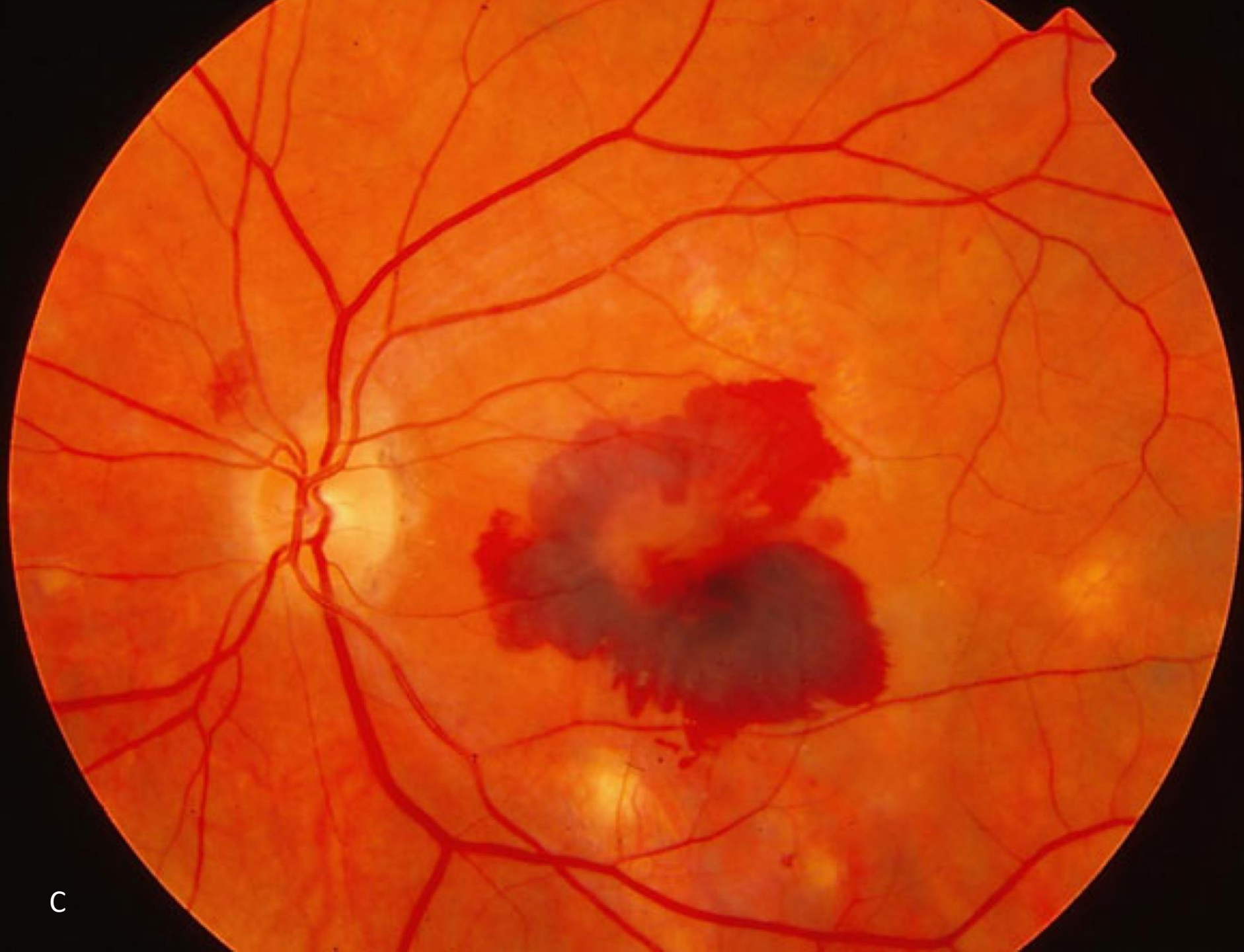
M



A



B



c



R



L



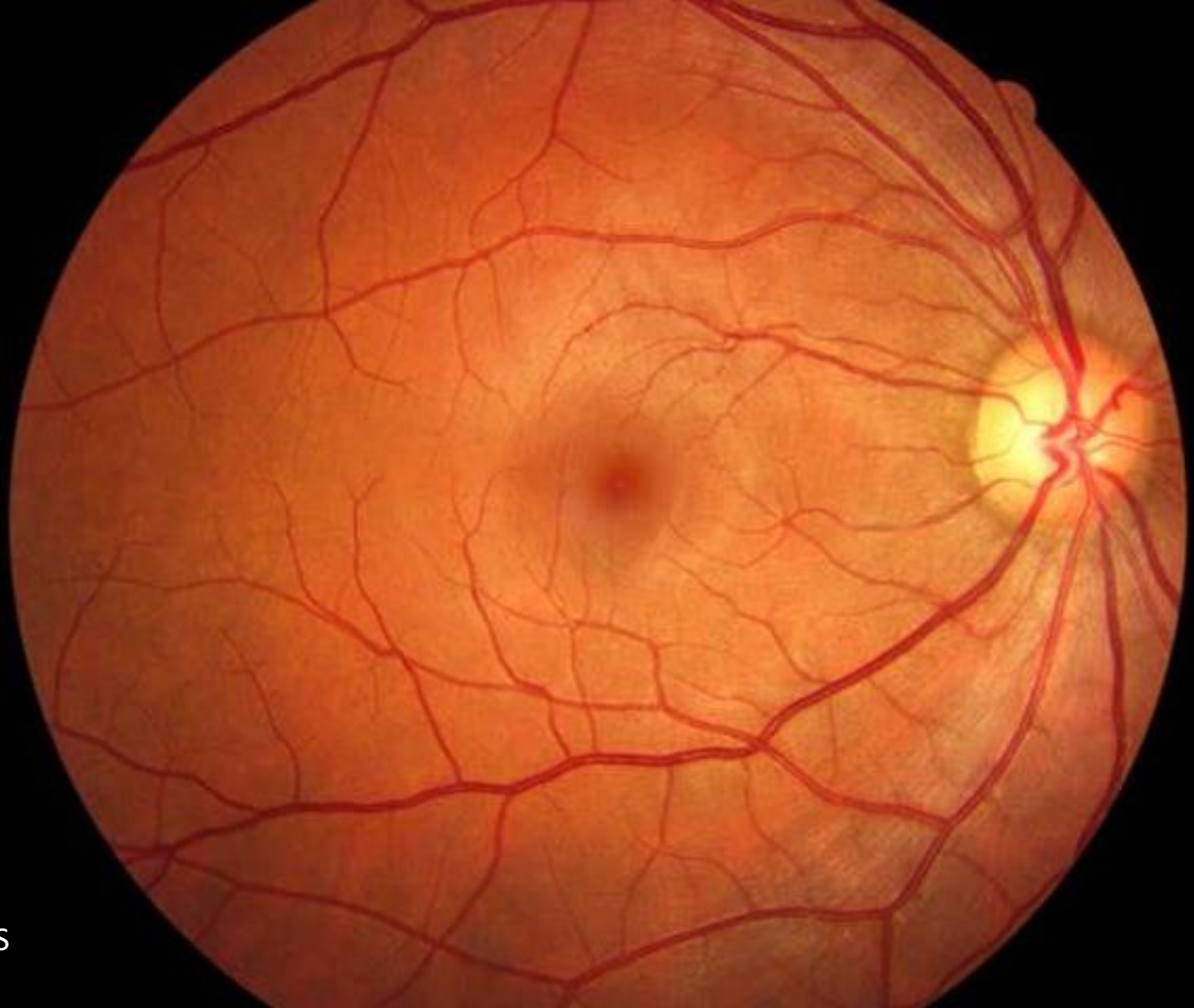
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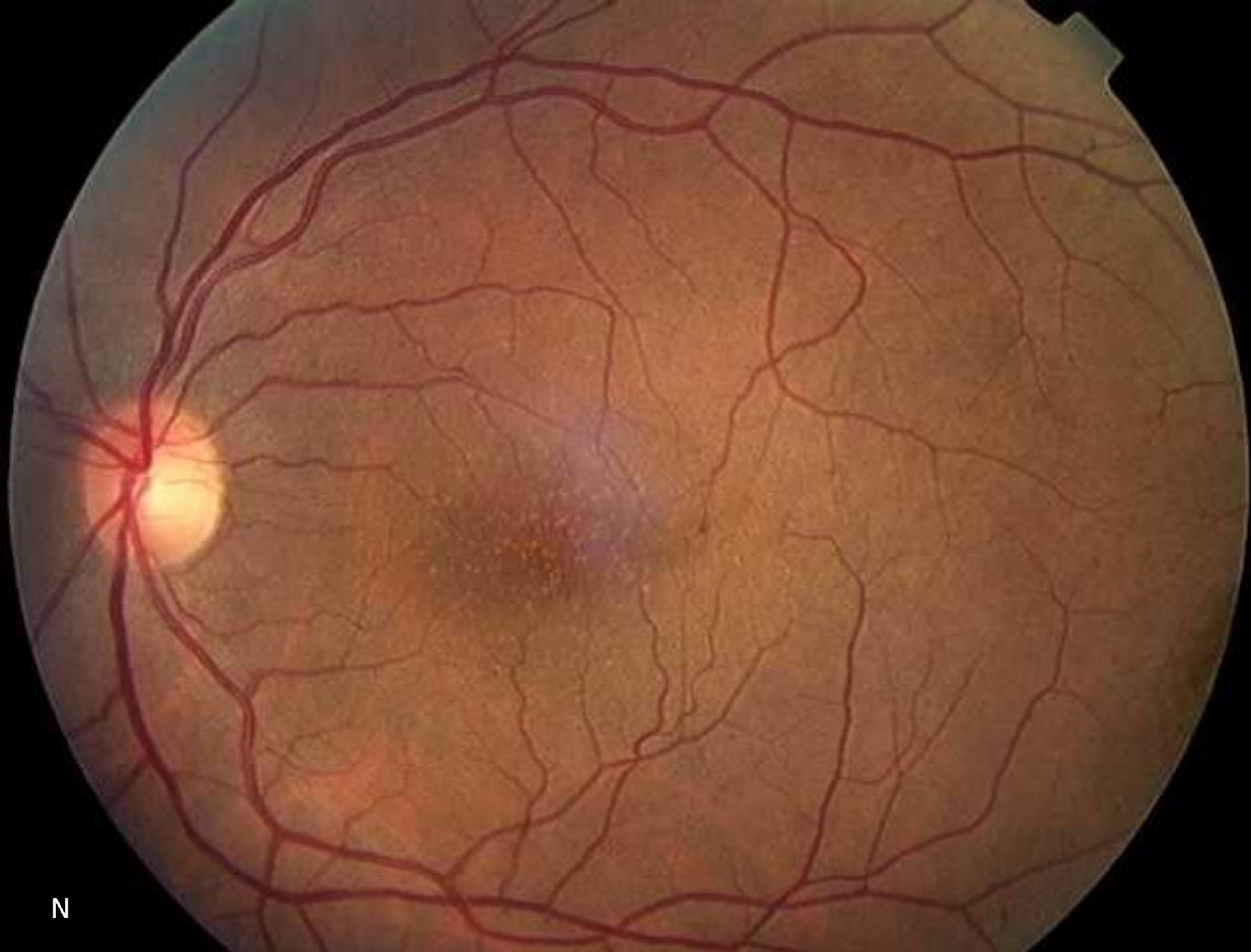




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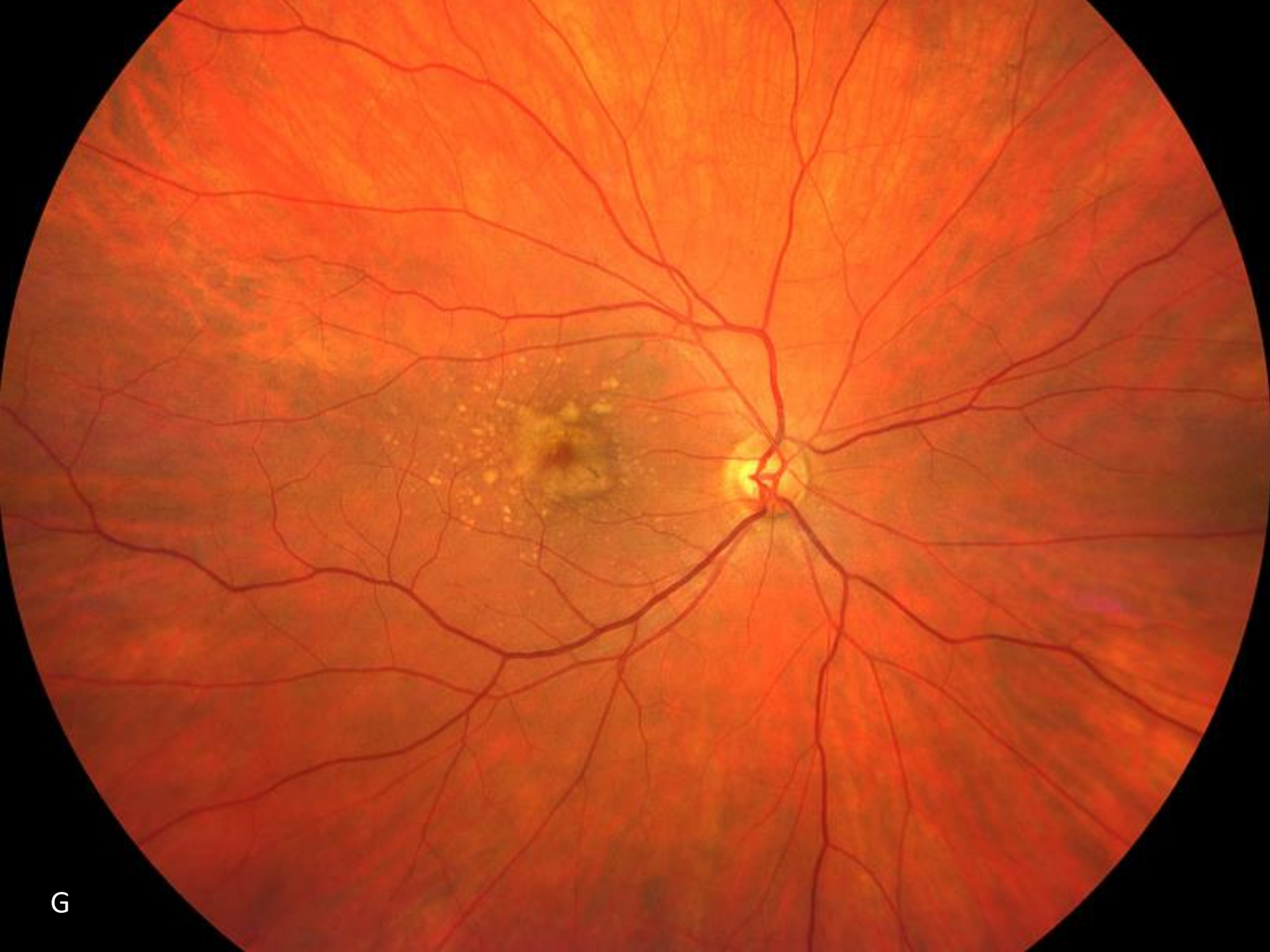
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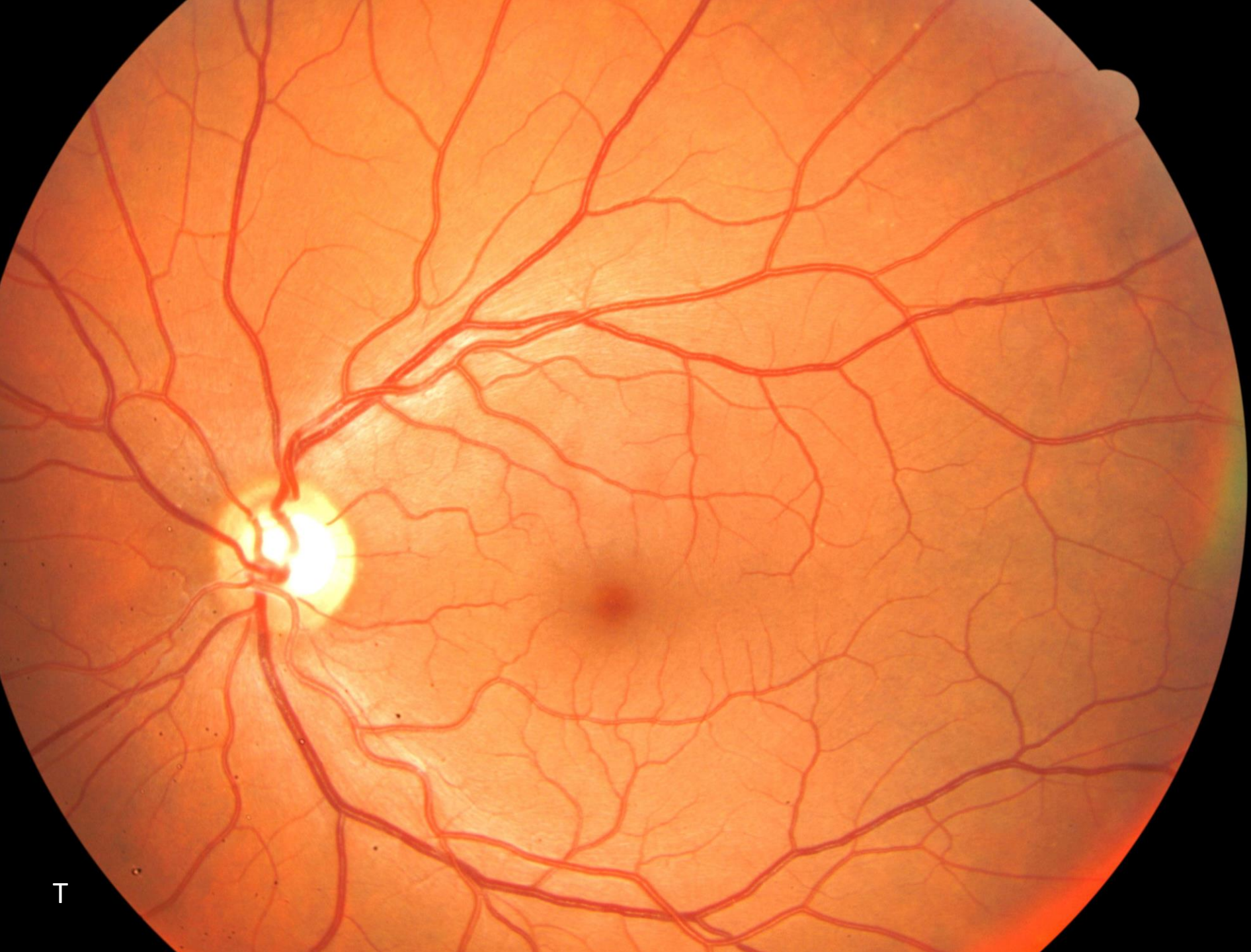
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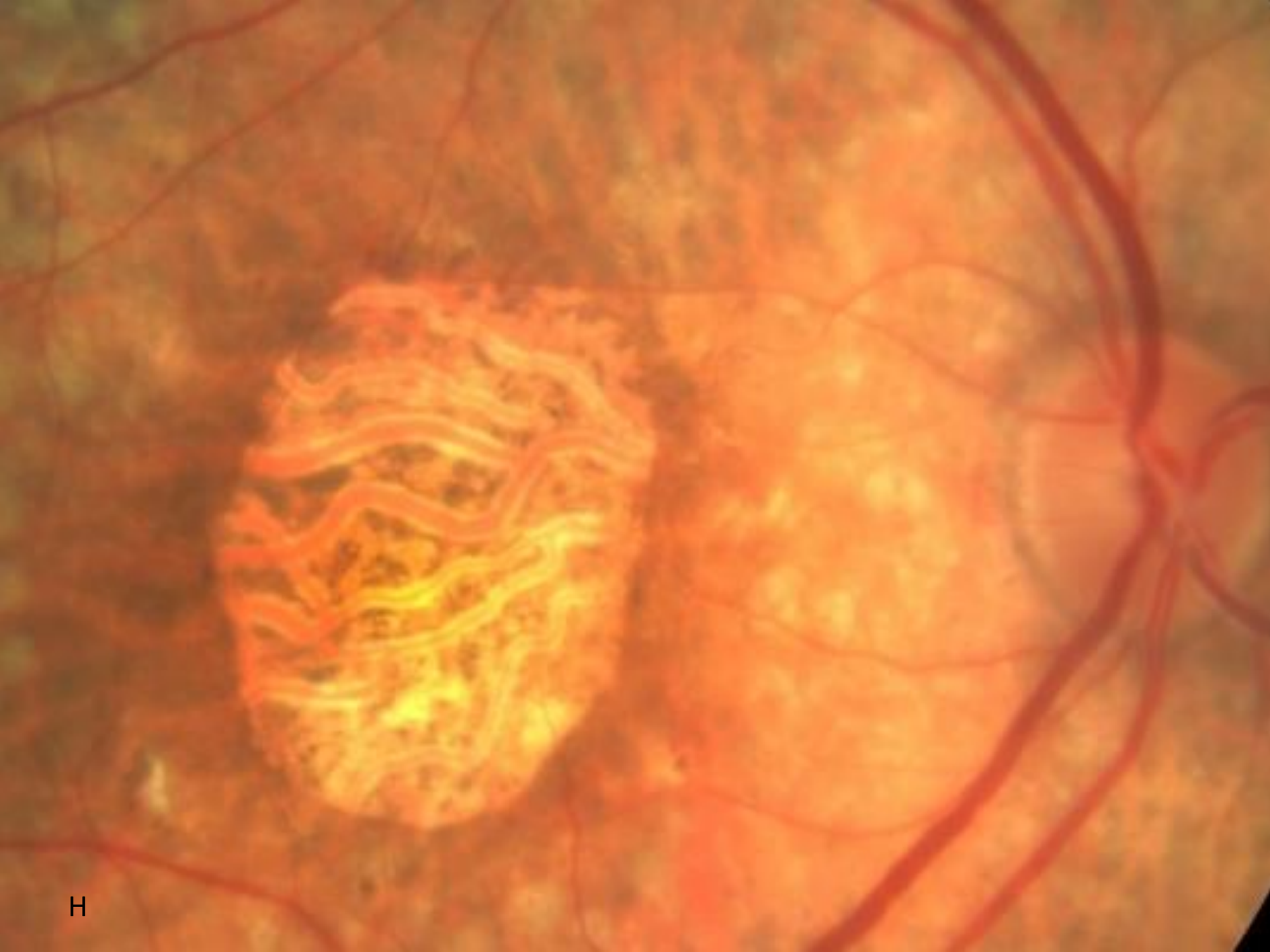


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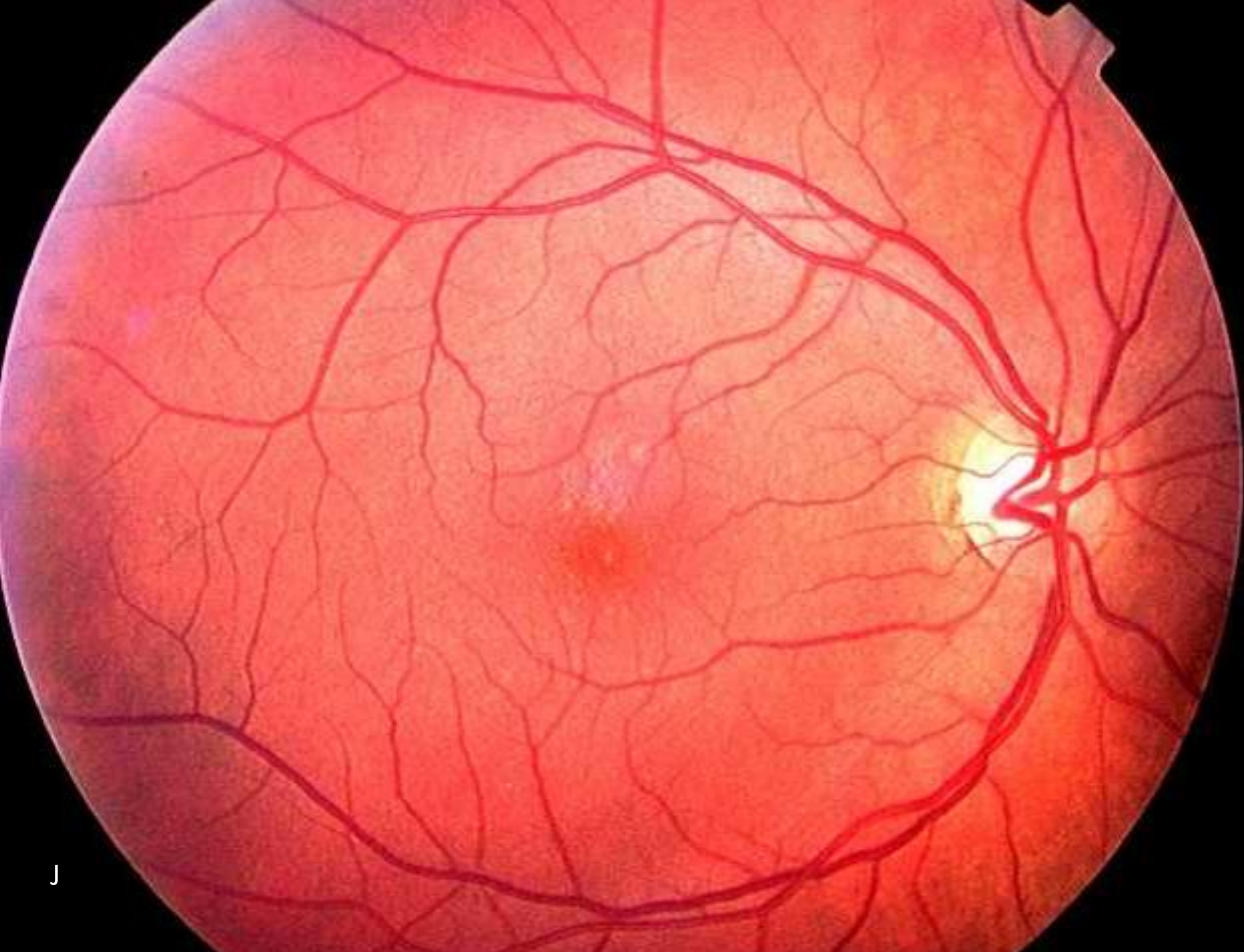


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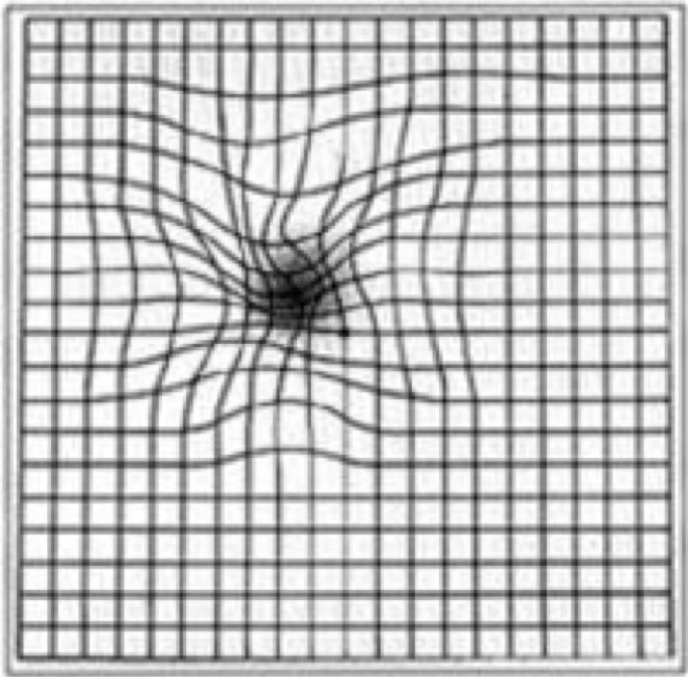
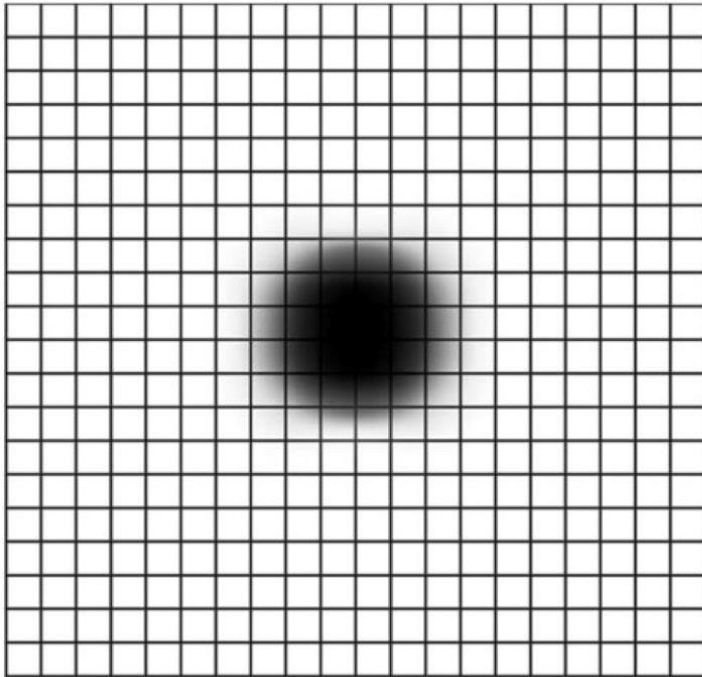
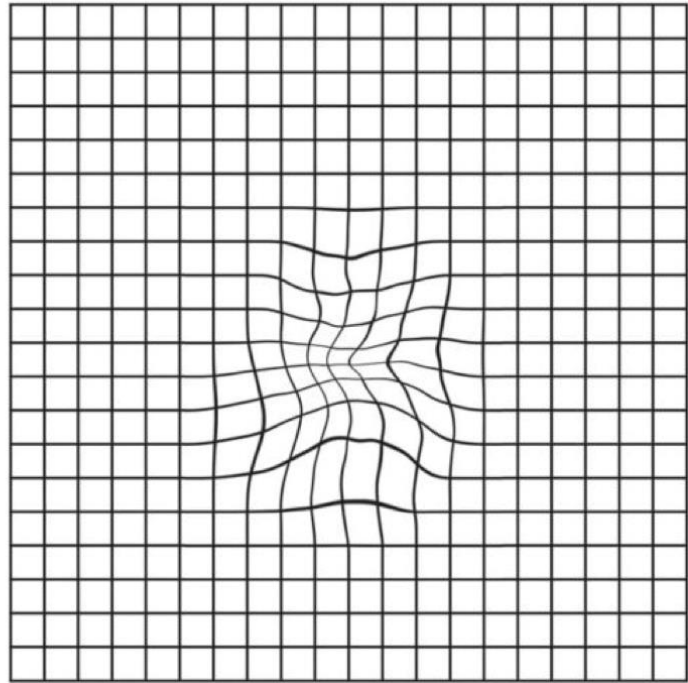
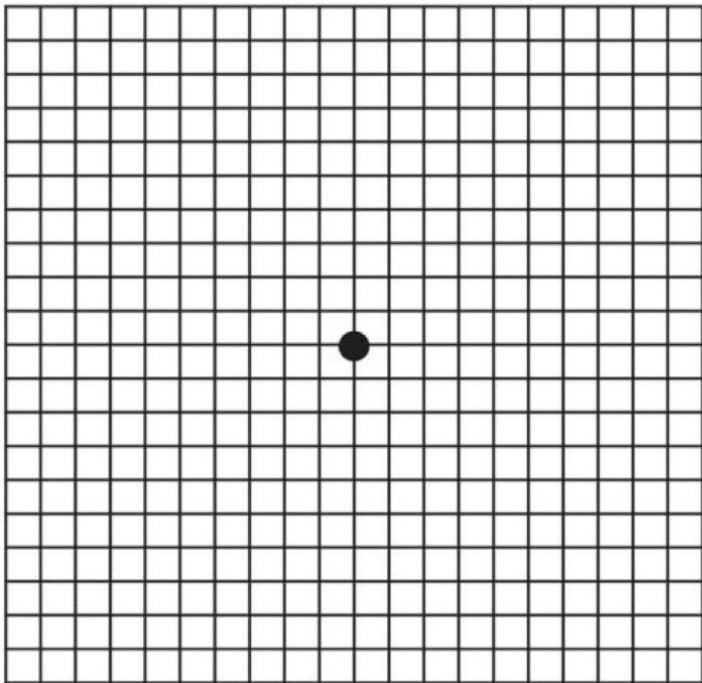


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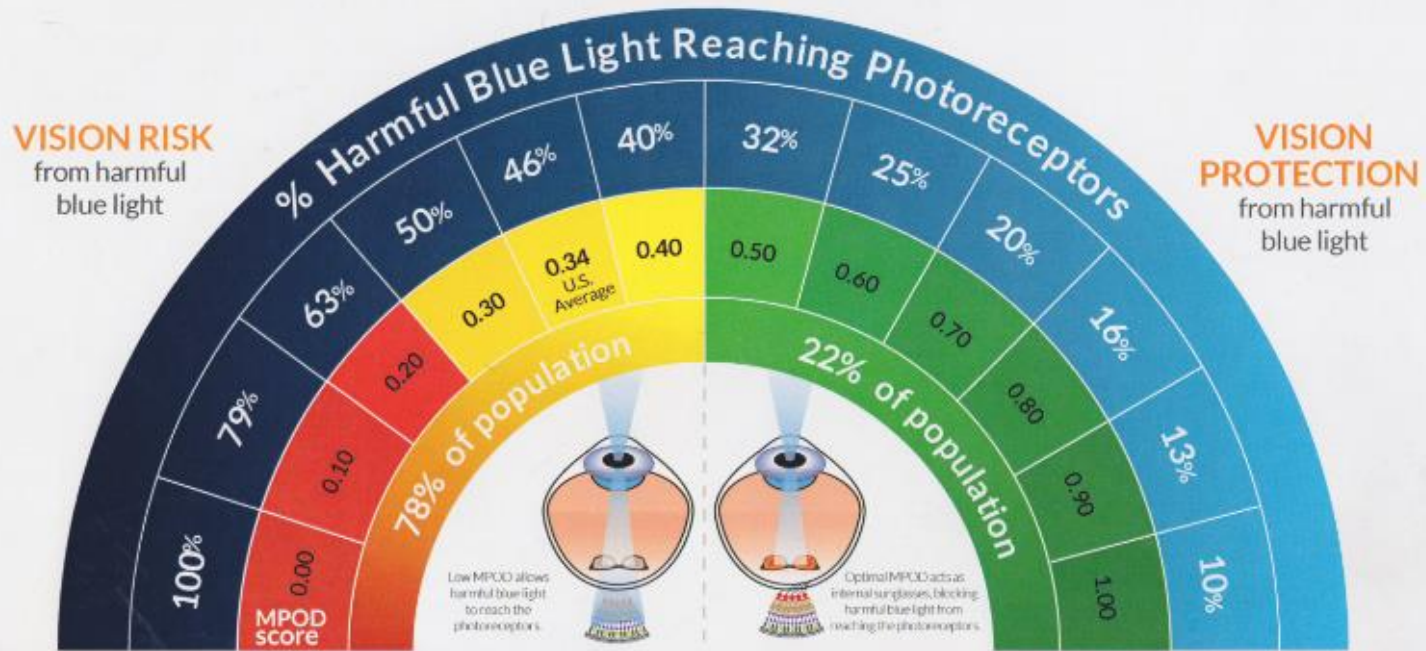
# QuantifEye II MPOD measurement dashboard

## How Does Your MPOD Measure Up?



Healthy, or dense, macular pigment protects your eyes from blue light damage. Evaluate your risk with macular pigment optical density (MPOD) measurement.

Where does your score fall?



300

Light Spectrum Wavelength

800

300 - 400  
**UV RANGE**  
Protect cornea/lens  
with *external* sunglasses

400 - 520  
**BLUE LIGHT HAZARD**  
Protect retina with  
*internal* sunglasses



Blue Light SOURCES:



Sunlight



Computers



TVs



Lights



Cell Phones



Tablets

# AdaptDX measures dark adaptation time

Progression

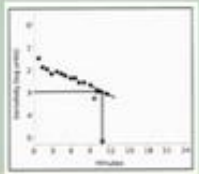
## No AMD

- No drusen small drusen  $\leq 63 \mu\text{m}$ )
- No AMD pigmentary abnormalities
- **Normal dark adaptation**



## Subclinical AMD

- No drusen or small drusen  $\leq 63 \mu\text{m}$
- No AMD pigmentary abnormalities
- **Impaired dark adaptation**



## Early AMD

- Medium drusen  $> 63 \mu\text{m}$  and  $\leq 125 \mu\text{m}$
- No AMD pigmentary abnormalities
- **Impaired dark adaptation**



## Intermediate AMD

- 1 large druse  $> 125 \mu\text{m}$  and/or
- Any AMD pigmentary abnormalities
- **Impaired dark adaptation**



## Advanced AMD

2 forms



Geographic Atrophy



Choroidal Neovascularization

THIS IS 20/20 VISION

**20/20**

THIS IS ALSO

**20/20**

AND SO IS THIS

**20/20**

SO IS THIS

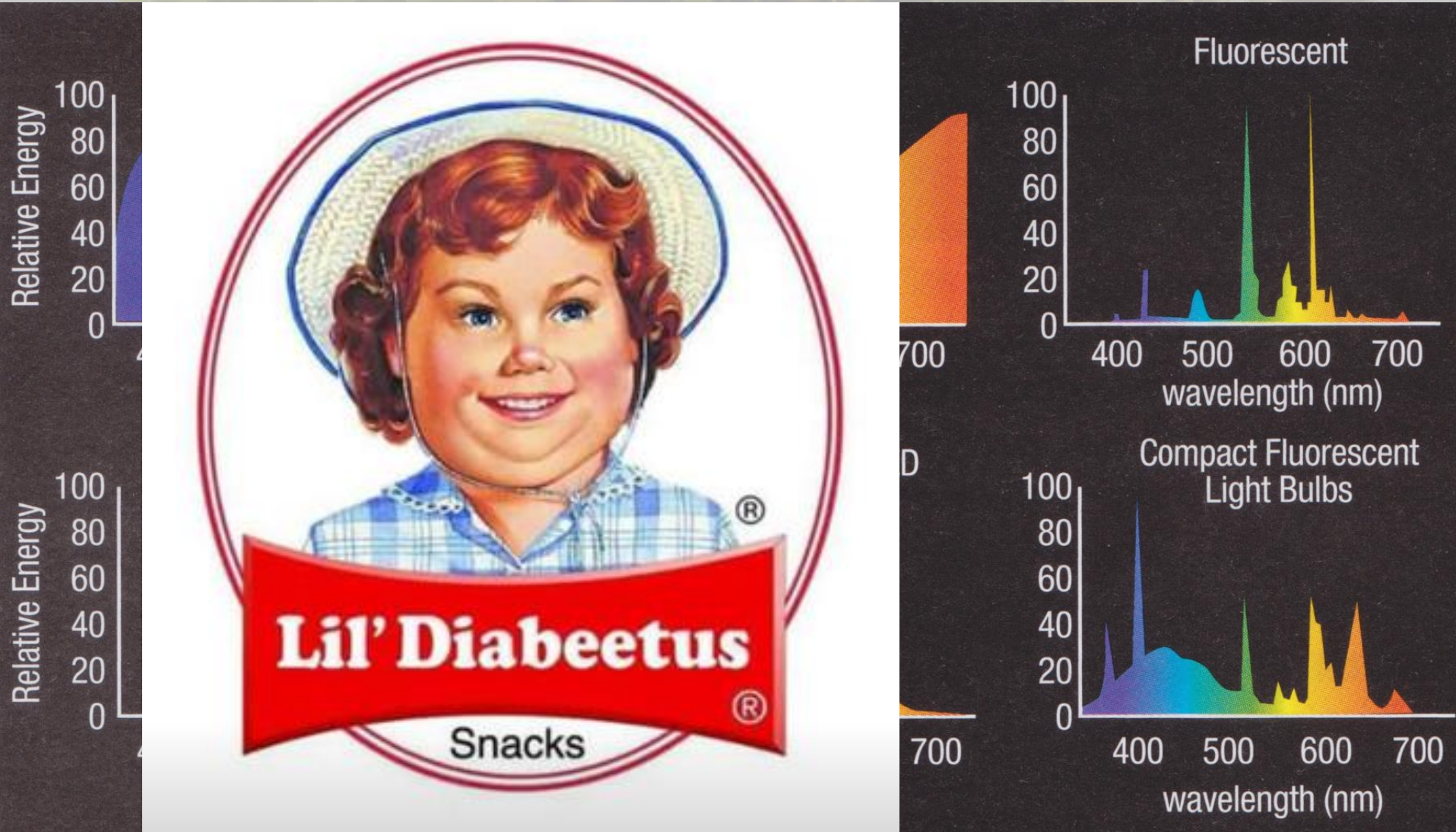
**20/20**

THIS IS 20/20 VISION

**20/20**



# MD Cause Factors



# Measuring blue light

What you need:

- 1) Ipad IOS v7.1
- 2) Hoya Vision Corp Viewer    OR    Bluetech  
App store \$109
- 3) Hoya blue light  
measuring device  
Hoya \$250
- 4) Patient
- 5) Patients device



MAGIC Etch A Sketch® SCREEN

I tried to login on my iPad.

Turns out it was an  
Etch-a-sketch and I don't own an  
iPad.

Also, I'm out of wine.

# Preventive Measures

## External

1) Transitions lenses - retro tested

2) HEV coatings

Essilor -Previncia

Kodak – Total Blue

Hoya – Recharge

Zeiss – Duravision BlueProtect

3) HEV lenses

Essential Blue series

BluTech Clearvision

Essilor Eyezen +

Shamir Blue Zero

# Preventive Measures

## External

4. Gunnar glasses non-rx or Rx \*

5. Sunglasses

BluTech sunglasses

Spy Happy lens

Costa sunglasses

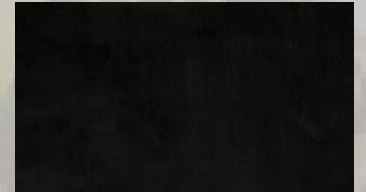
6. Reduce exposure

Cover-up Low tech, but effective

Apps for phones, computers

(f.lux.com / twilight / dimmer apple)

No tech 2 hrs before bed/none in bedroom



# Preventive Measures

## Internal

### 1) Dietary changes

**HARD greens - 9 kale salads a day, spinach, seaweed**

**Bright veggies & fruits – orange & red peppers**

**Studies - Can't "eat your way out" Farmed out/Fertilized/GMO**

### 2) ARED1 vs AREDS 2

**Most stuff on shelves similar formula – but vary quality**

**2015 supplement study of 44 bottles / 12 companies**

**20 % had what they said they were**

**Over 70 % had fillers (rice, grass, wheat, houseplant)**

**1/3 have none of product listed in bottle**

**'Walmarts' had only 4% of ANY of the product in bottle**

**Don't REPLACE daily vitamins**

**beta-carotene / lung cancer connection**

**zinc genetics can increase MD (16%)**

### 3) Eye Complex Supplements

**Specific formulas & concentration – Restore**

**how it works ---- my explanation to patients**

**Lutein/Zeaxanthin/Meso-Z - Macuhealth**



# Post Knowledge Quiz

1) T or **F** We now completely understand the effects of HEV light on vision and Macular Degeneration.

1) T or F Macular Degeneration only effects elderly?

**F**

1) T or F HEV blue light is 400nm – 500 nm zone?

1) **T** or F There are 3 types of photoreceptors?

1) **T** or F Blue light is a major cause of digital eye strain syndrome?

**T**



# Post Knowledge Quiz

- 6) **T** or F The Inverse Square Law says that if you cut the work distance in half you get 4x more blue light energy?
- 7) **T** or F LED & CFLs emit light at 459-484nm which affects ipRGC function?
- 8) T or **F** All the many new lens products for HEV are about the same effectiveness?
- 9) T or **F** None of our eye supplement formulas can reduce the rate of macular degeneration?
- 10) T or **F** We shouldn't do anything about macular degeneration until we have a sure cure?



# **Housekeeping**

**Thank you for your time.**

**Get your CE credit**

**Paras are the future of Optometry!**

**Tomorrow:**

**Journey Through Darkness**

