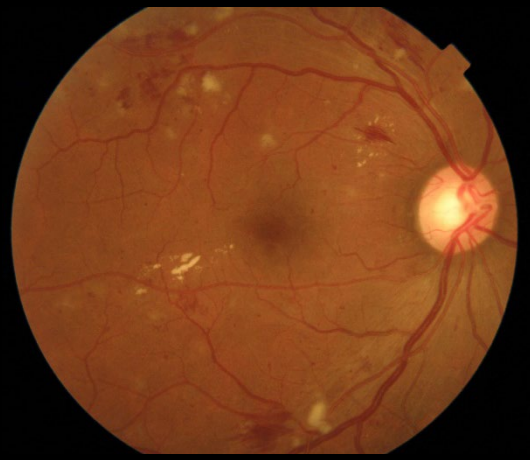
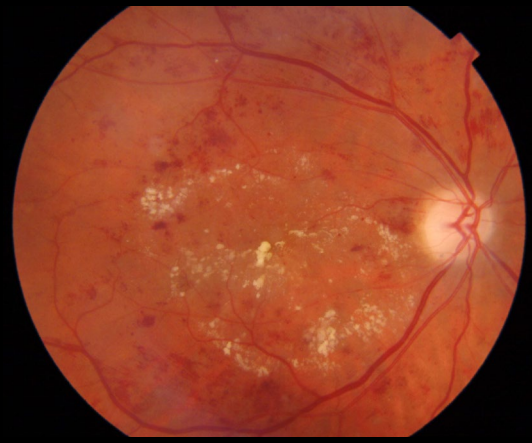
R2L v R2H
The new Grading Criteria
Do you know when to refer?



Mrs Samantha Mann
SELDESP clinical lead
BARS President



Reminder of Diabetic Retinopathy Stages

- Progressive changes from R0 to R3A (proliferative retinopathy).
- R2 changes were previously referred to ophthalmology but seldom treated. Capacity issues in Ophthalmology
- High risk R2 changes have a higher risk of progression to R3A (50% over 1yr) and can sometimes have R3A in the periphery.
- M1 can occur at any stage (R1-R3)

asymptomatic

R0- no retinopathy

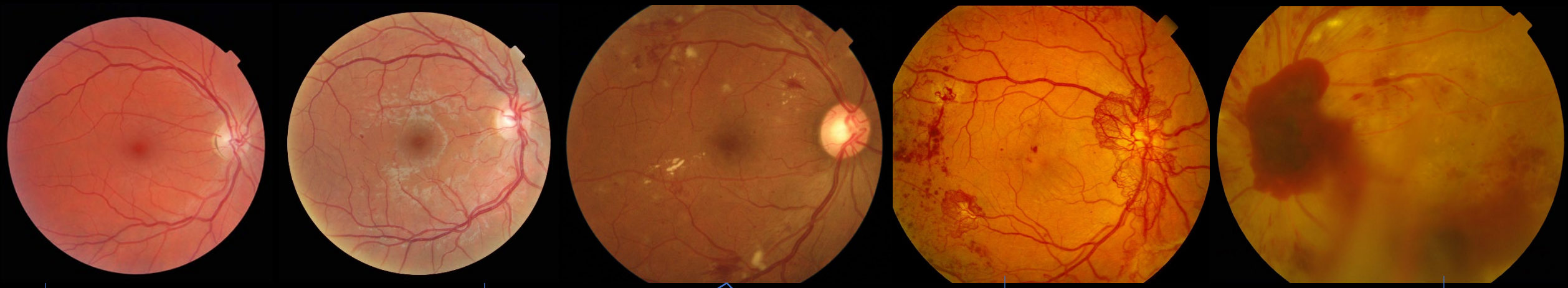
R1- Mild NPDR

R2- mod-severe NPDR

R3A- Proliferative/ New blood vessels

Vitreous Haemorrhage- Symptomatic

R3A- advanced- with bleeding into vitreous



DESP

Low risk

High risk

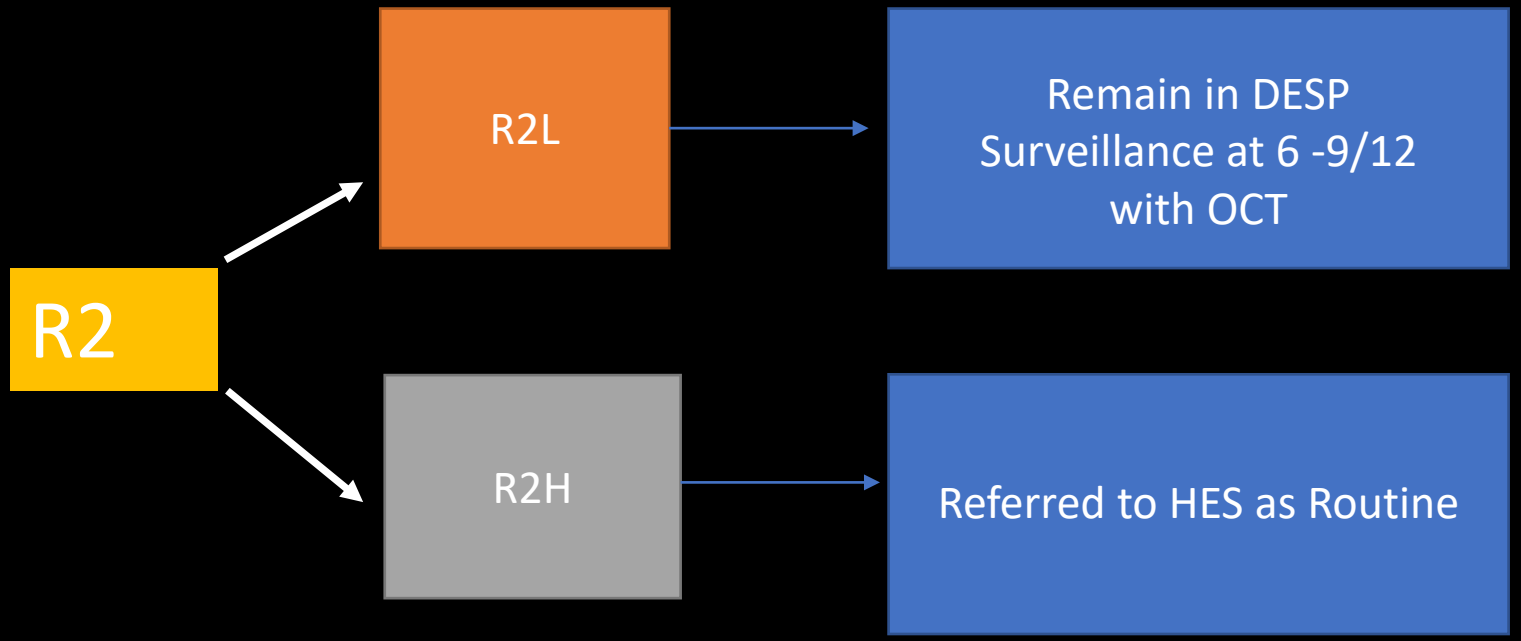
HES

Classification of Retinopathy

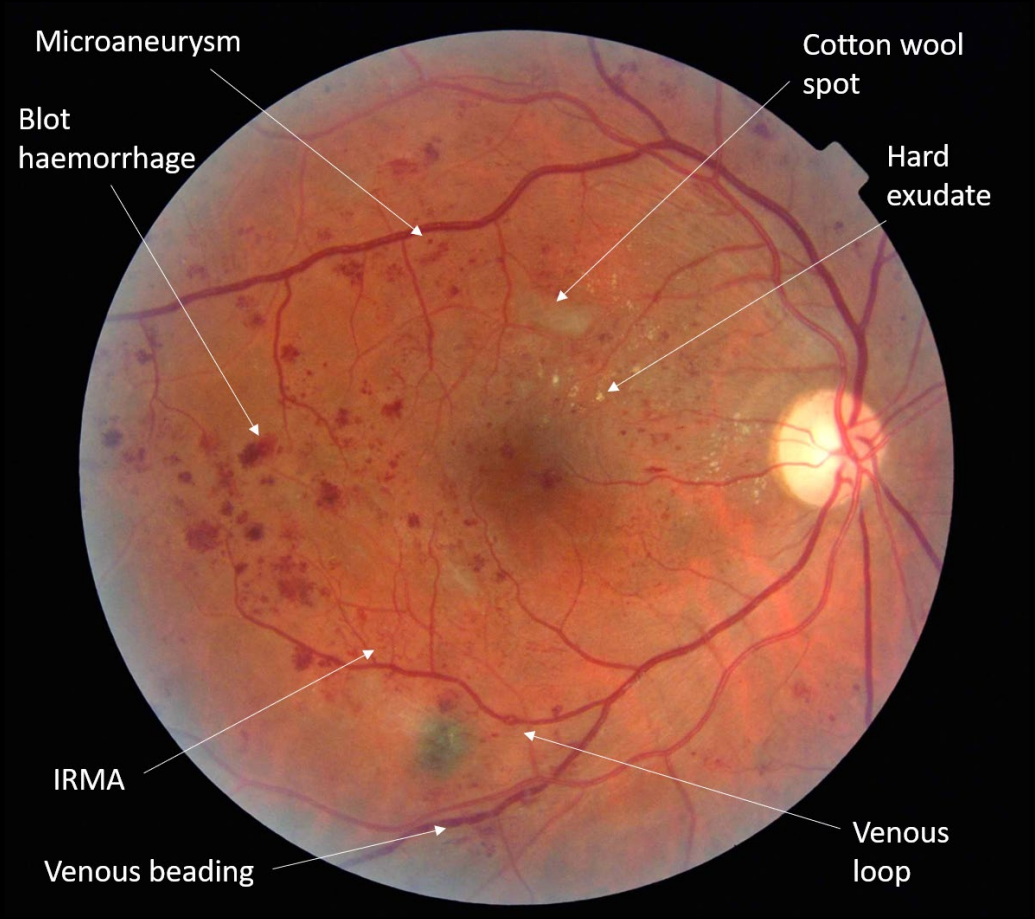
ETDRS Report No 9, 10,12 & 18

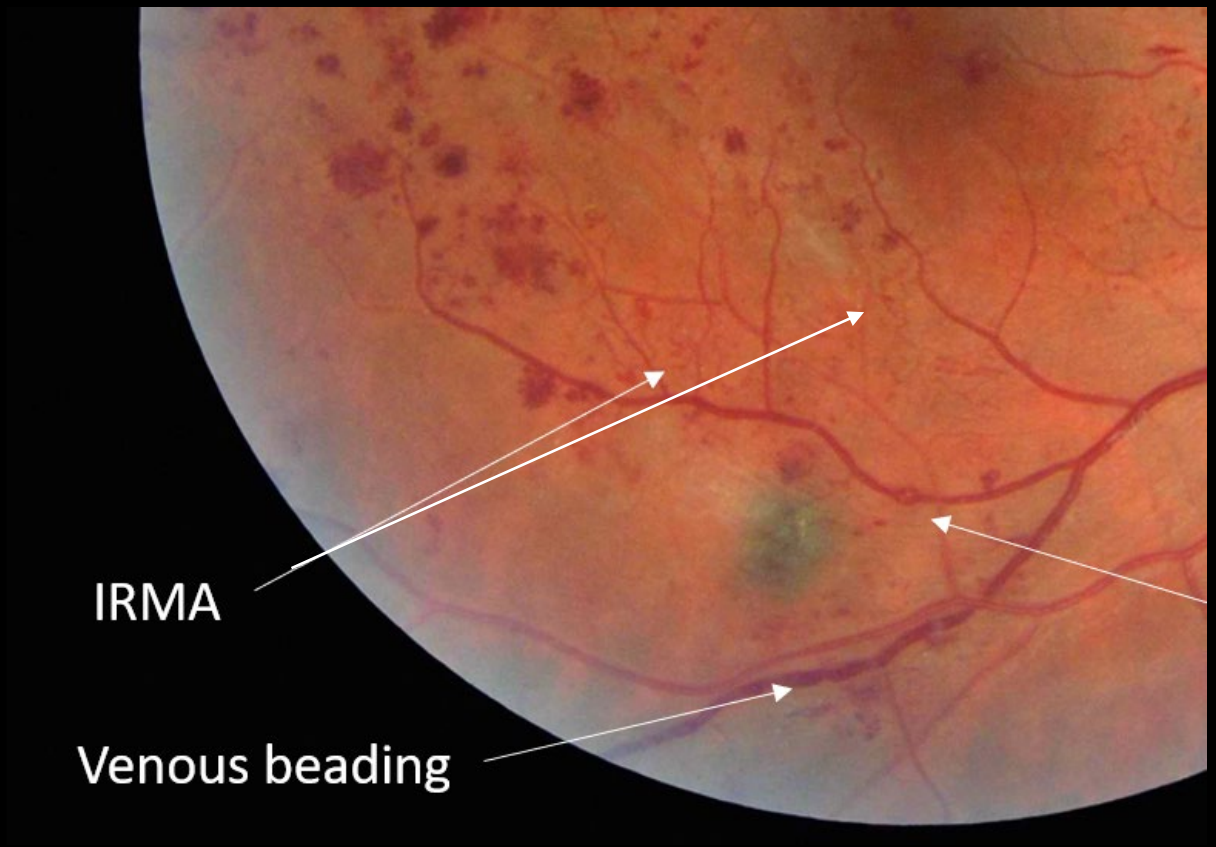
ETDRS	AAO	UK NSc	1 yr risk of progression to PDR	Outcome
10 none	No DR	R0		2 yearly Screening in UK
20 (microaneurysms only)	Mild NPDR	R1	5%	Annual screening in UK
47 Moderately severe NPDR	Mod NPDR	R2 (L)	12-27%	6 monthly surveillance pathway with OCT
53A-D severe NPDR	Severe NPDR	R2 (H)	52%	Refer to Hospital to seen within 2-3/12
53E very severe NPDR	Very Severe NPDR	R2 (H)	75%	Refer to Hospital to see within 1-2 months
61 mild/mod PDR	Low risk PDR High risk PDR	R3	30% (low risk to high risk PDR)	Refer Urgently to Hospital for PRP
	DME (centre or non centre involving)	M1	Can occur at any stage of retinopathy	Refer to OCT surveillance clinic

R2 refinement



Reminder of Retinopathy Features

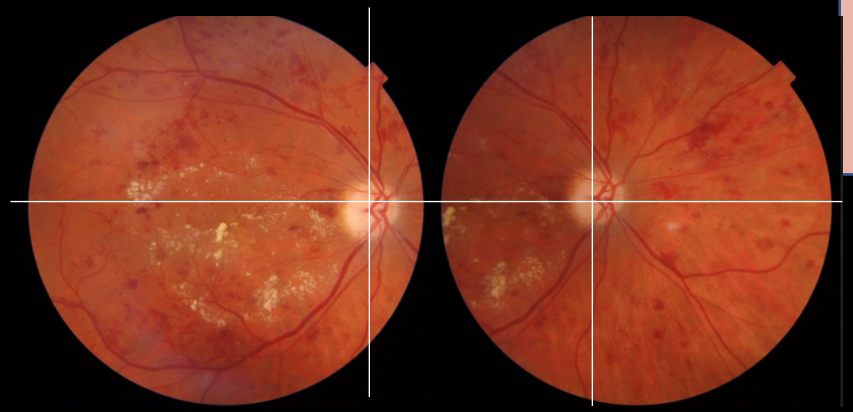


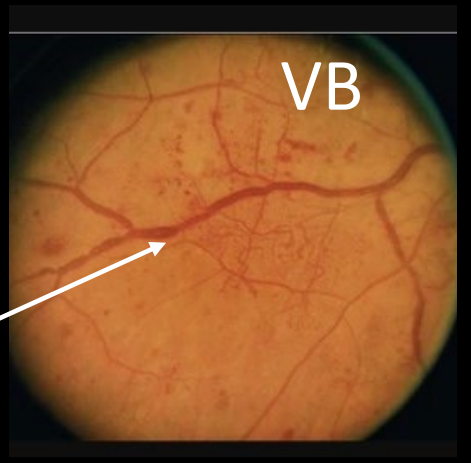


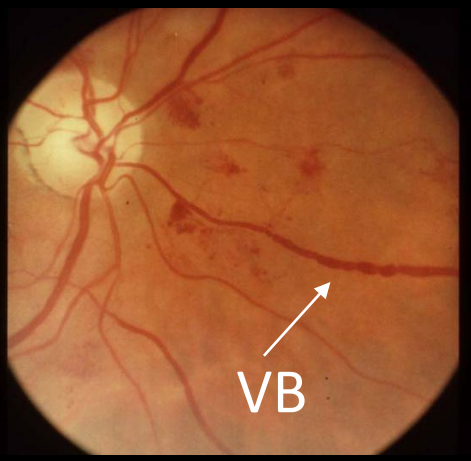
Definition of High risk R2 (4:2:1 rule)

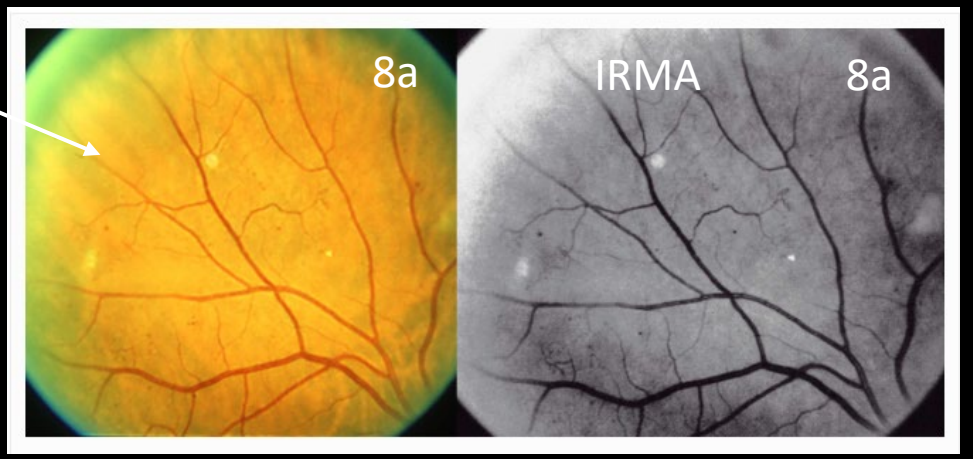
Definition:
Severe NPDR
(52% risk of PDR in 1 yr)

All 4 quadrants of > 20 retinal MA's/ haemorrhages
or
2 quadrants of venous beading
or
1 quadrant of IRMA> photo 8a







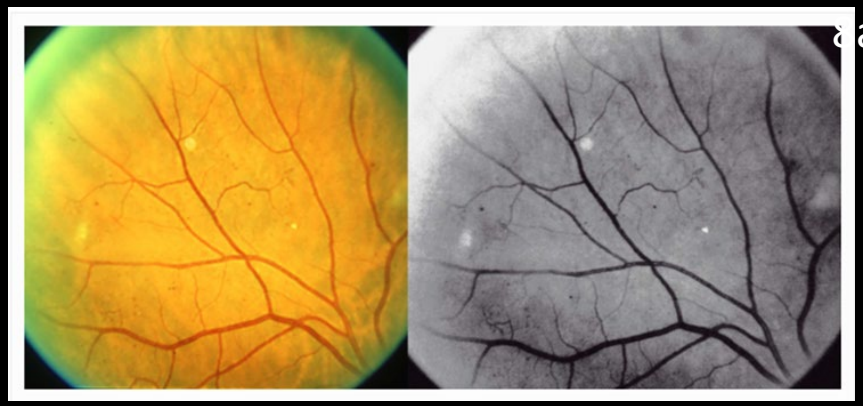


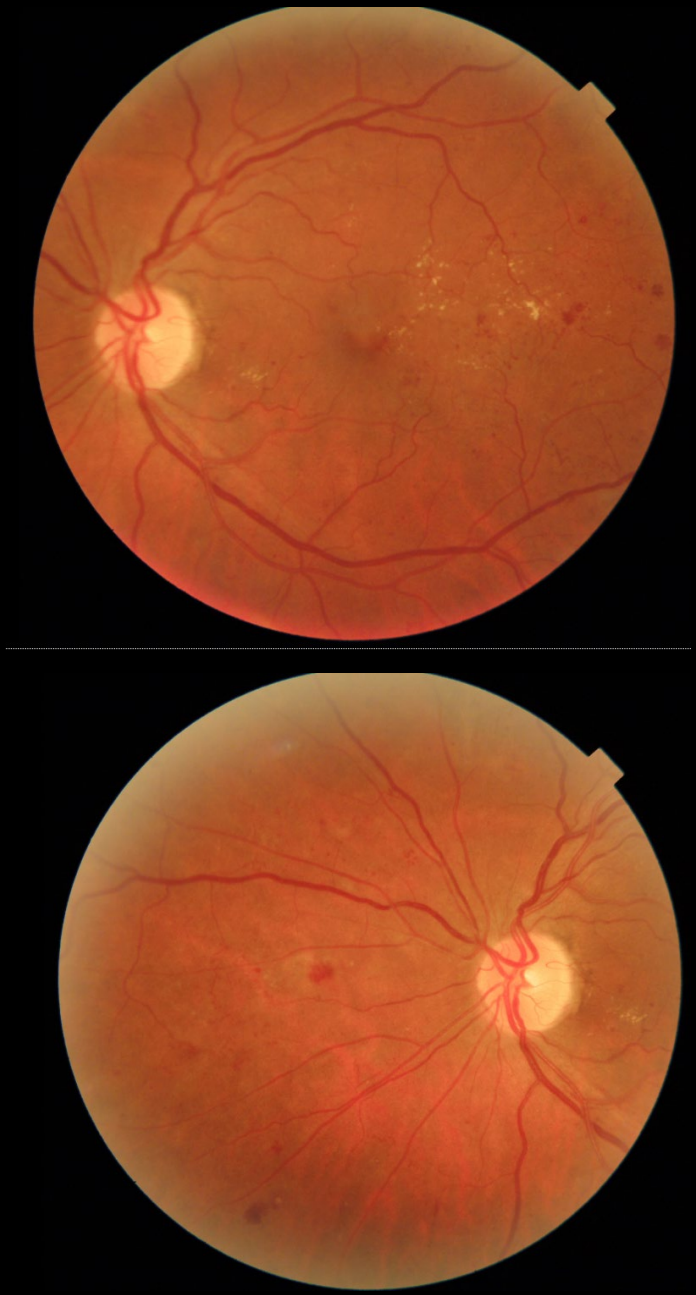
Fundus photographic risk factors for progression of diabetic retinopathy: ETDRS report number 12. Early Treatment Diabetic Retinopathy Study Research Group. *Ophthalmology*. 1991;98(5):823-833.

Definition of Low risk R2

Definition:
Moderate NPDR
(12-27% risk of PDR in 1 yr)

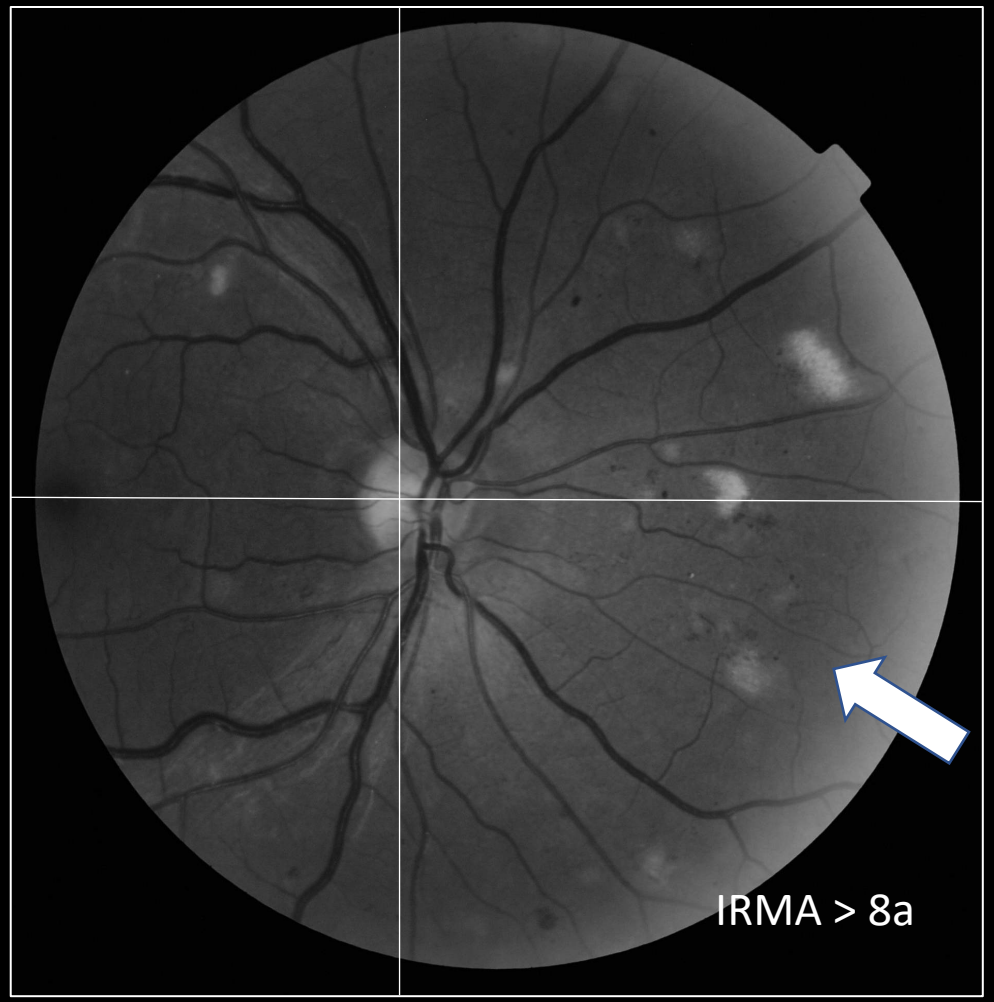
8 or more blot haemorrhages (MBH)
or **> 20** retinal MA's/ haemorrhages **in 1-3 quadrants** only
or
1 quadrant of venous beading
or
Any IRMA < photo 8a



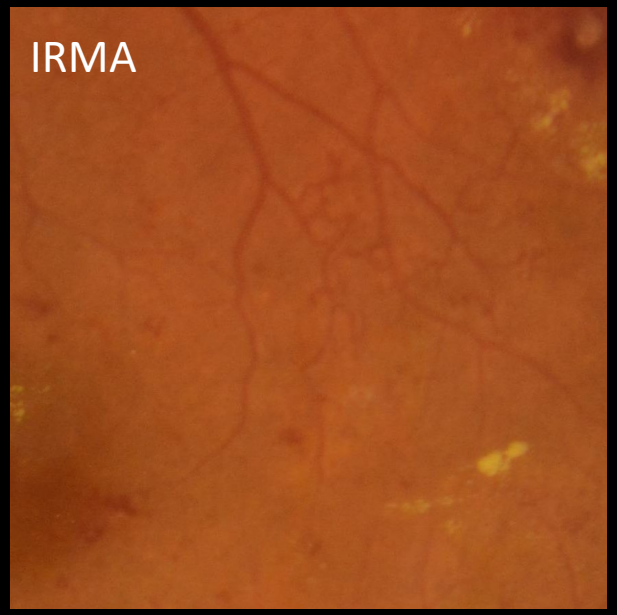


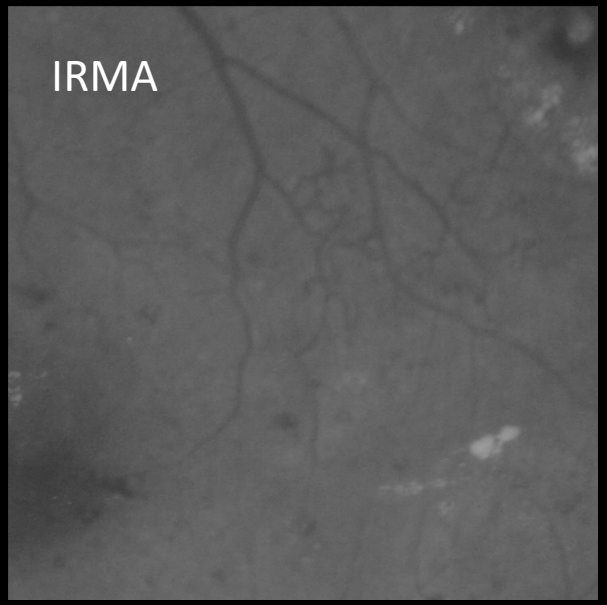
Fundus photographic risk factors for progression of diabetic retinopathy: ETDRS report number 12. Early Treatment Diabetic Retinopathy Study Research Group. *Ophthalmology*. 1991;98(5):823-833.

1) Look for IRMA first in any 1 quadrant



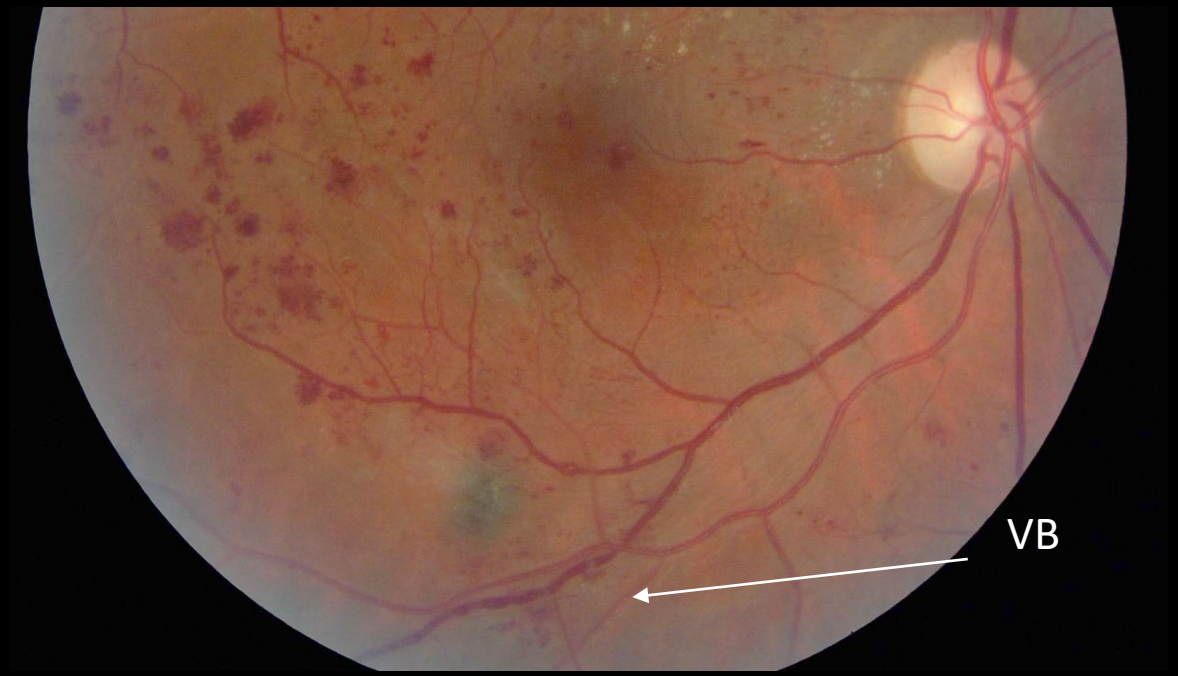
IRMA > 8a in 1 quadrant



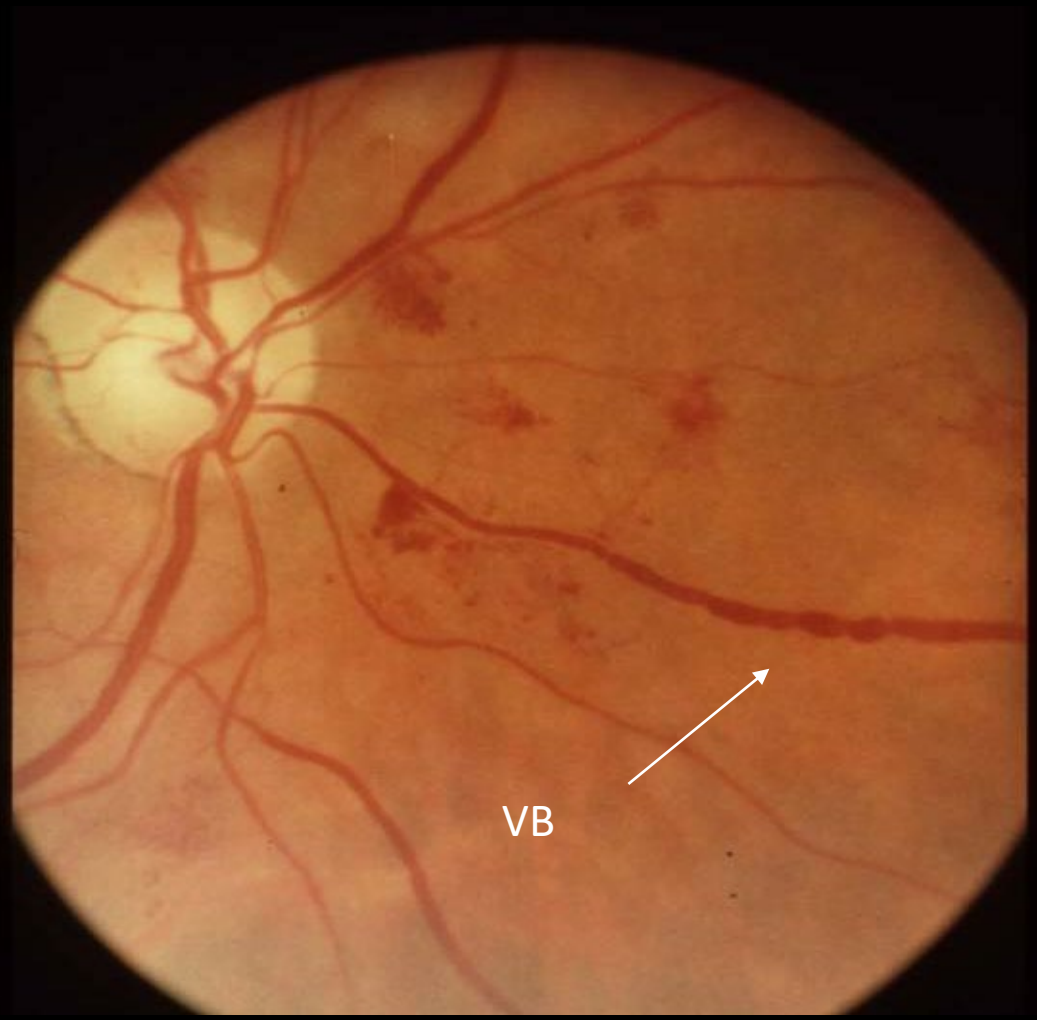


Severe NPDR or High risk R2

2) Then look for Venous beading in any 2 quadrants

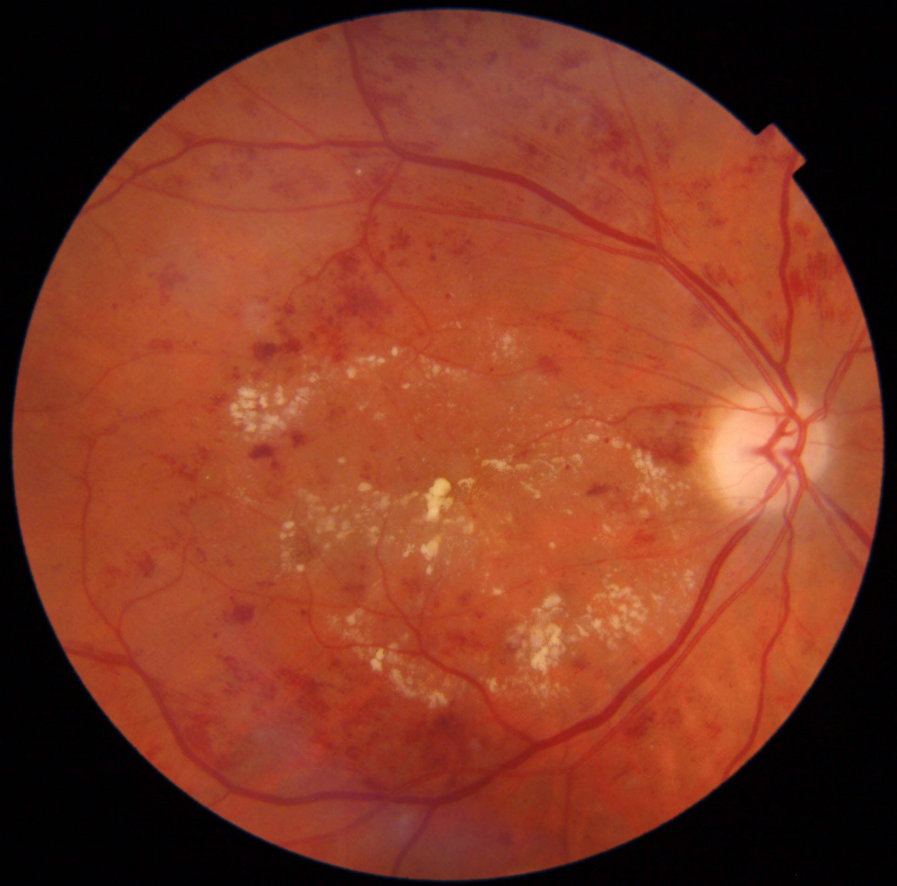


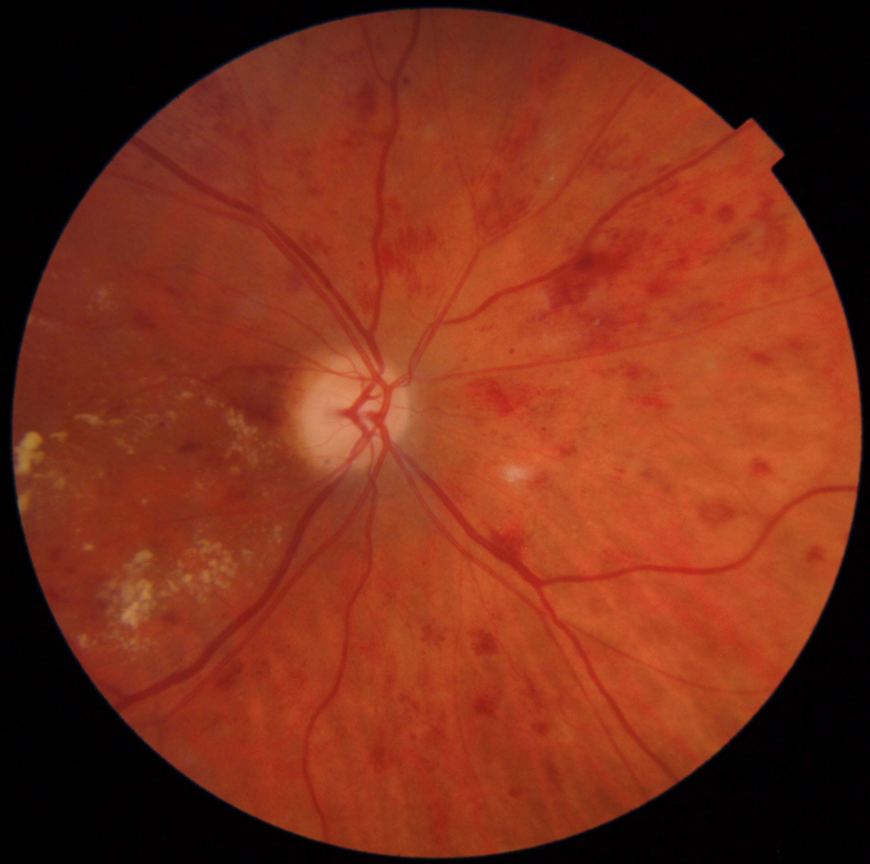
Severe NPDR or High risk R2



3) Lastly count the multiple blot haemorrhages/ MA's

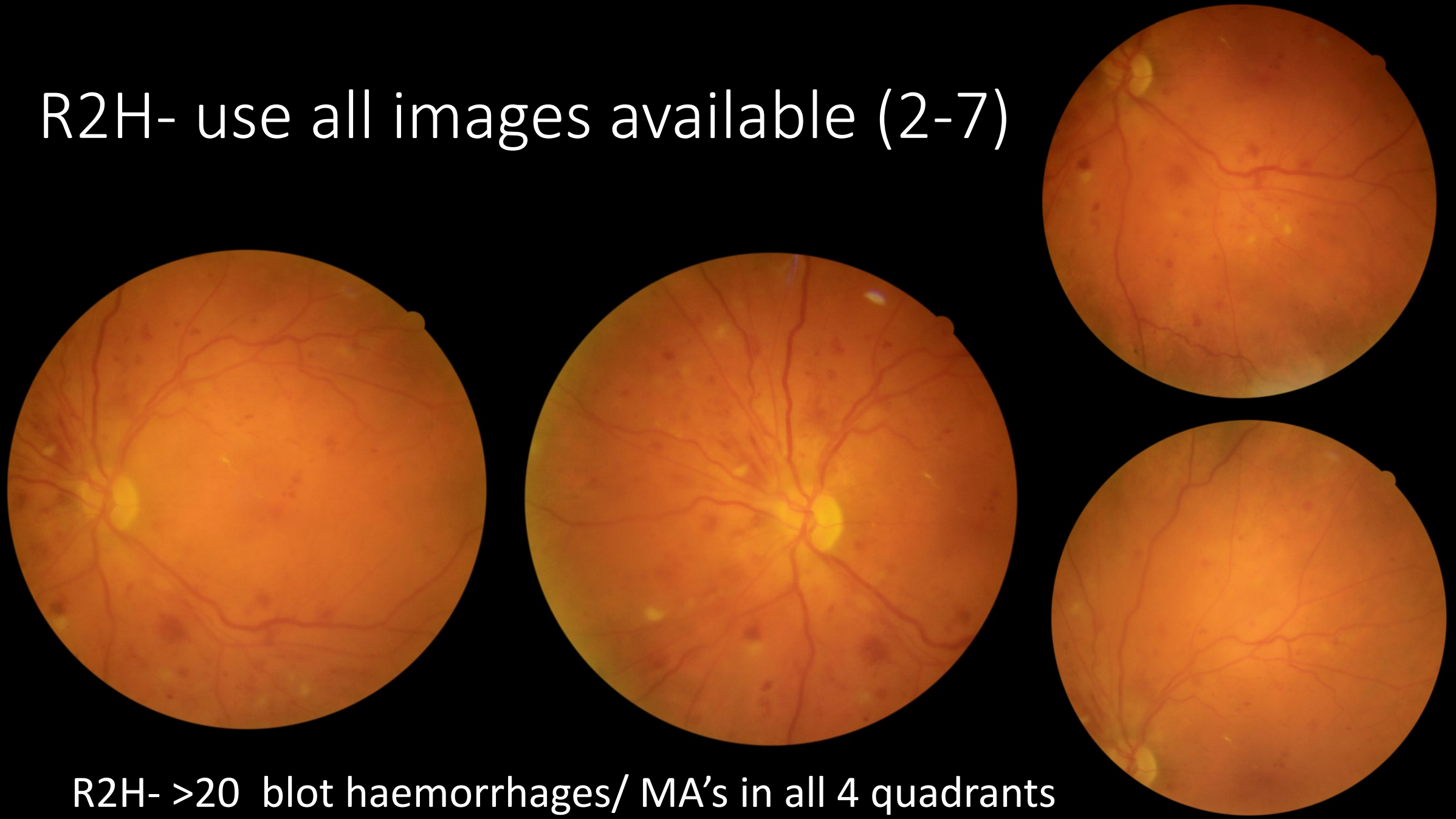
>20 MA/ Haem in all 4 quadrants





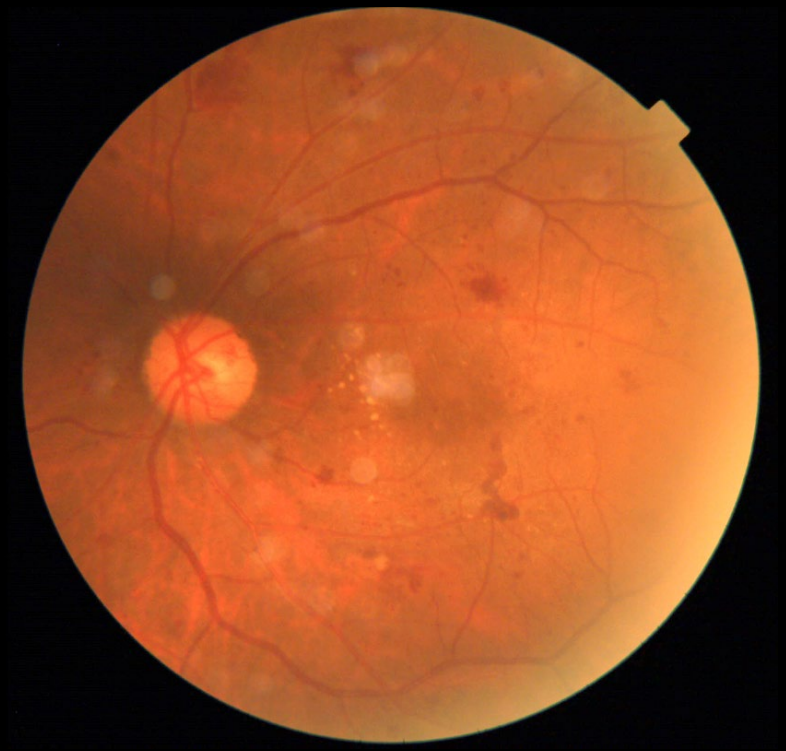
Severe NPDR or High risk R2

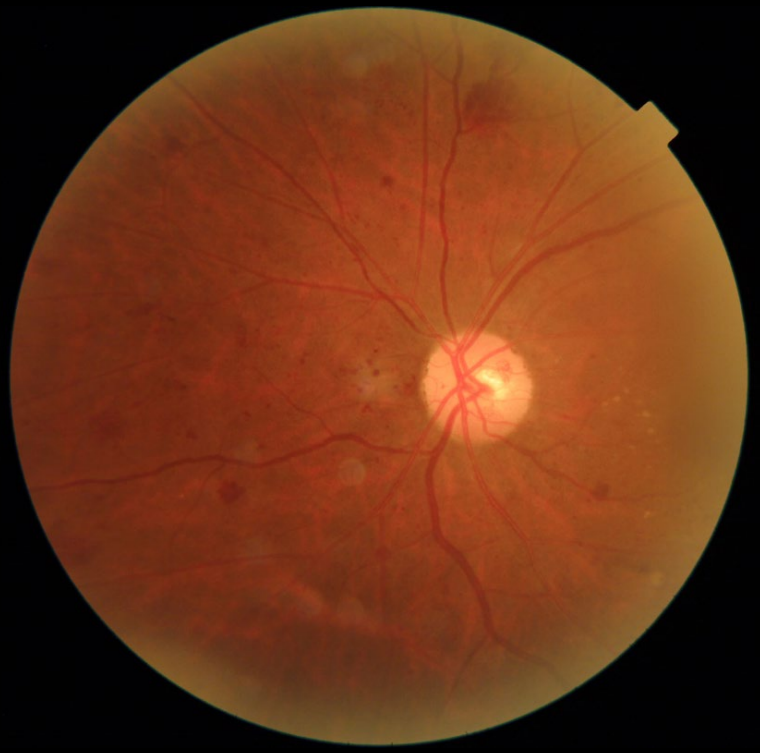
R2H- use all images available (2-7)

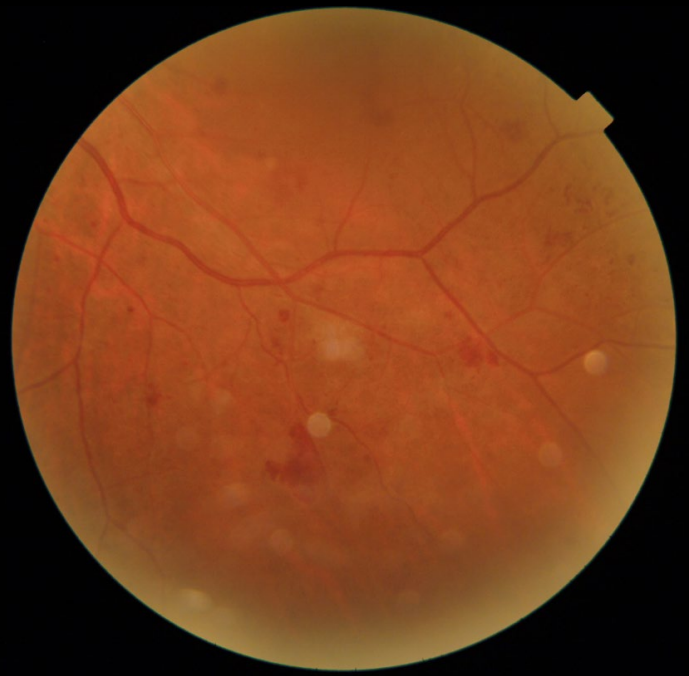


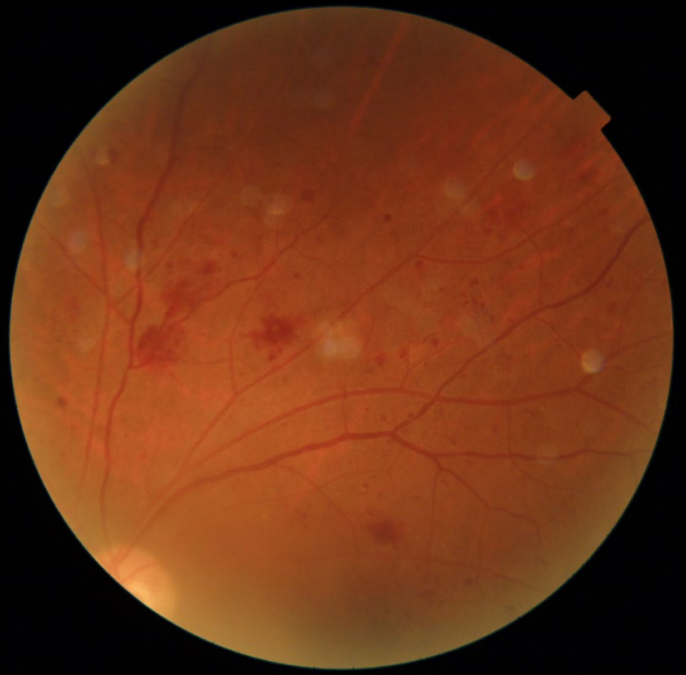
R2H- >20 blot haemorrhages/ MA’s in all 4 quadrants

4) Recheck for any signs of R3A







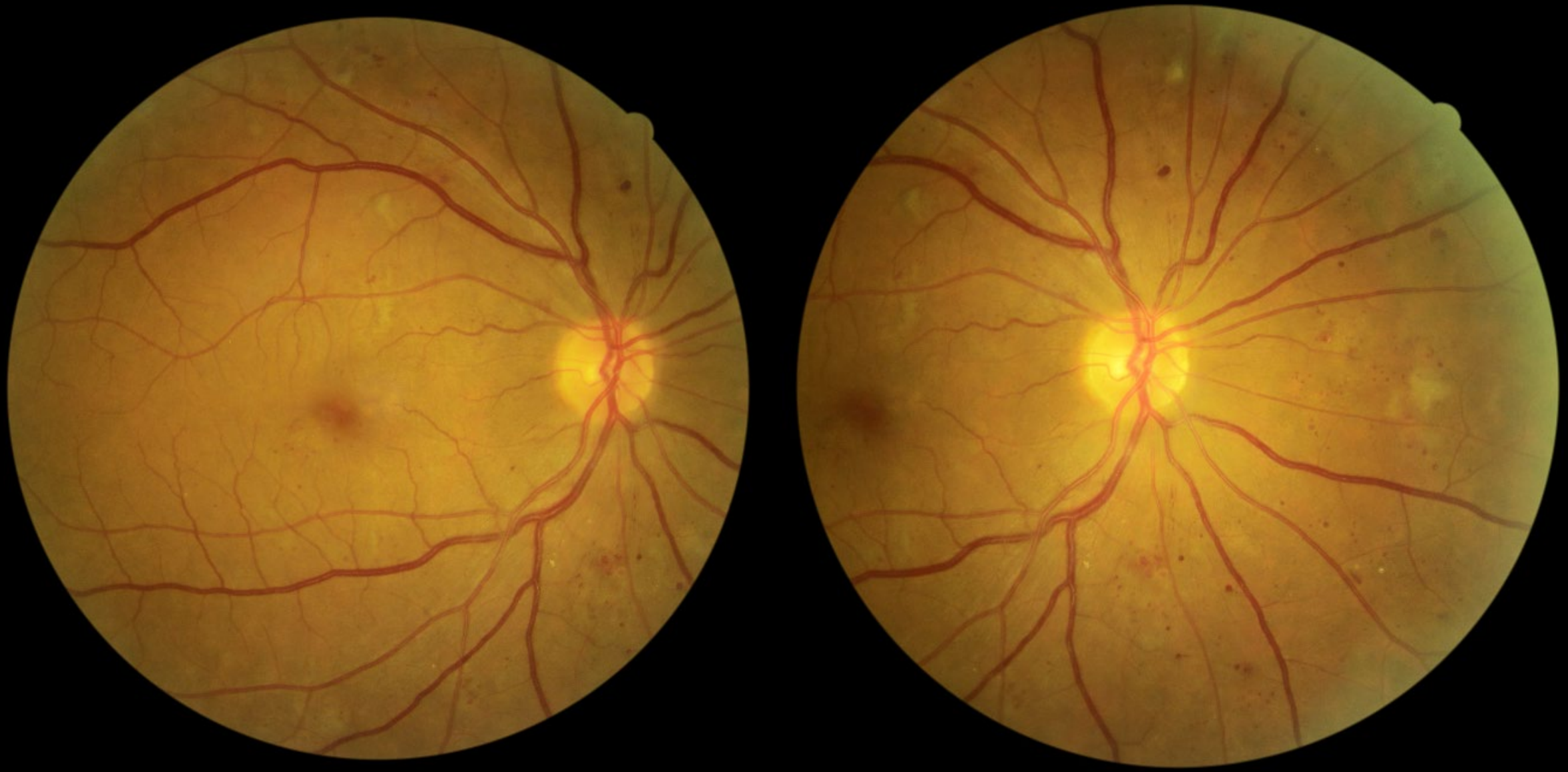


Graded as R2H

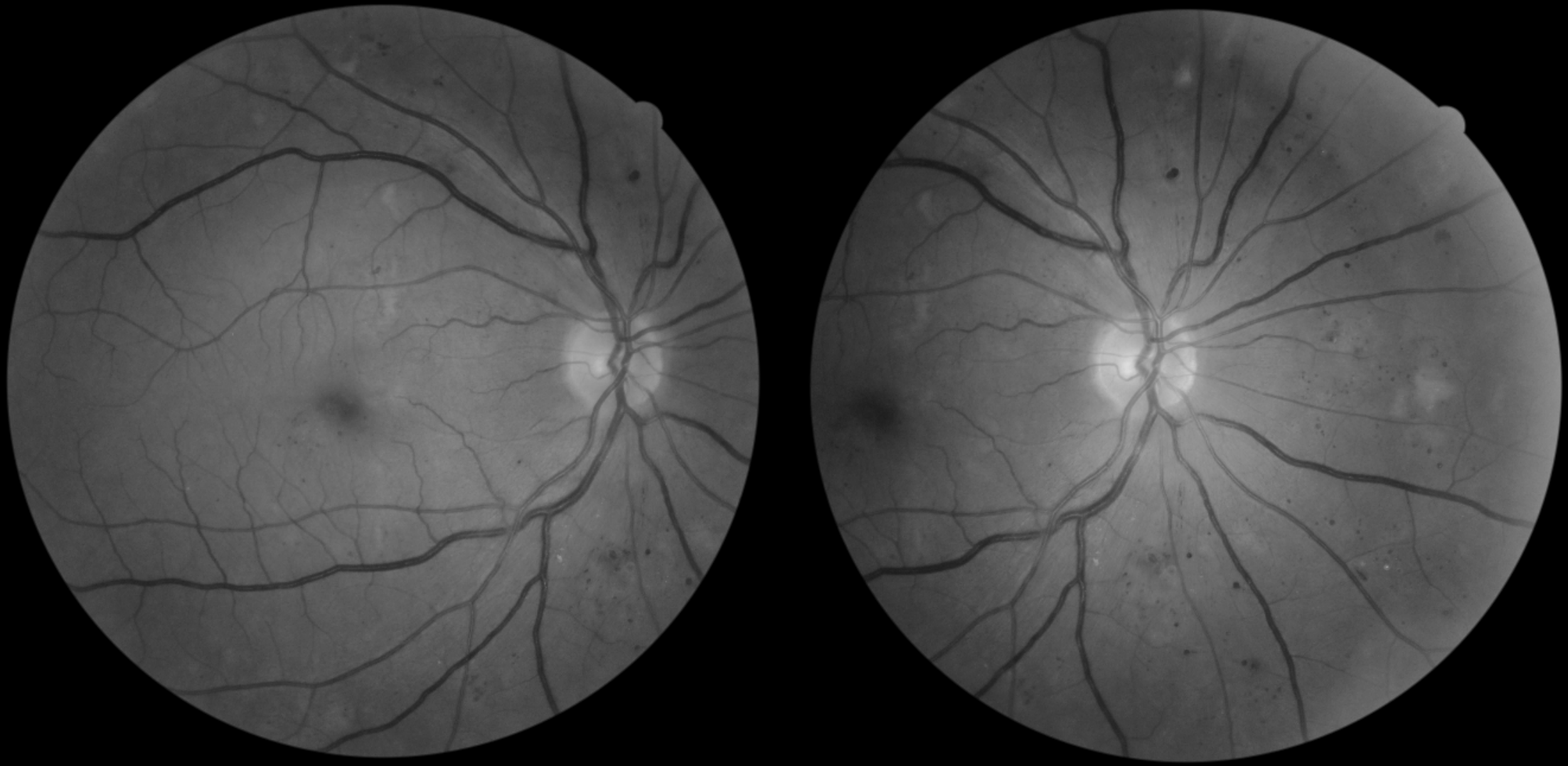
4) Recheck for any signs of R3A

In fact was R3A!

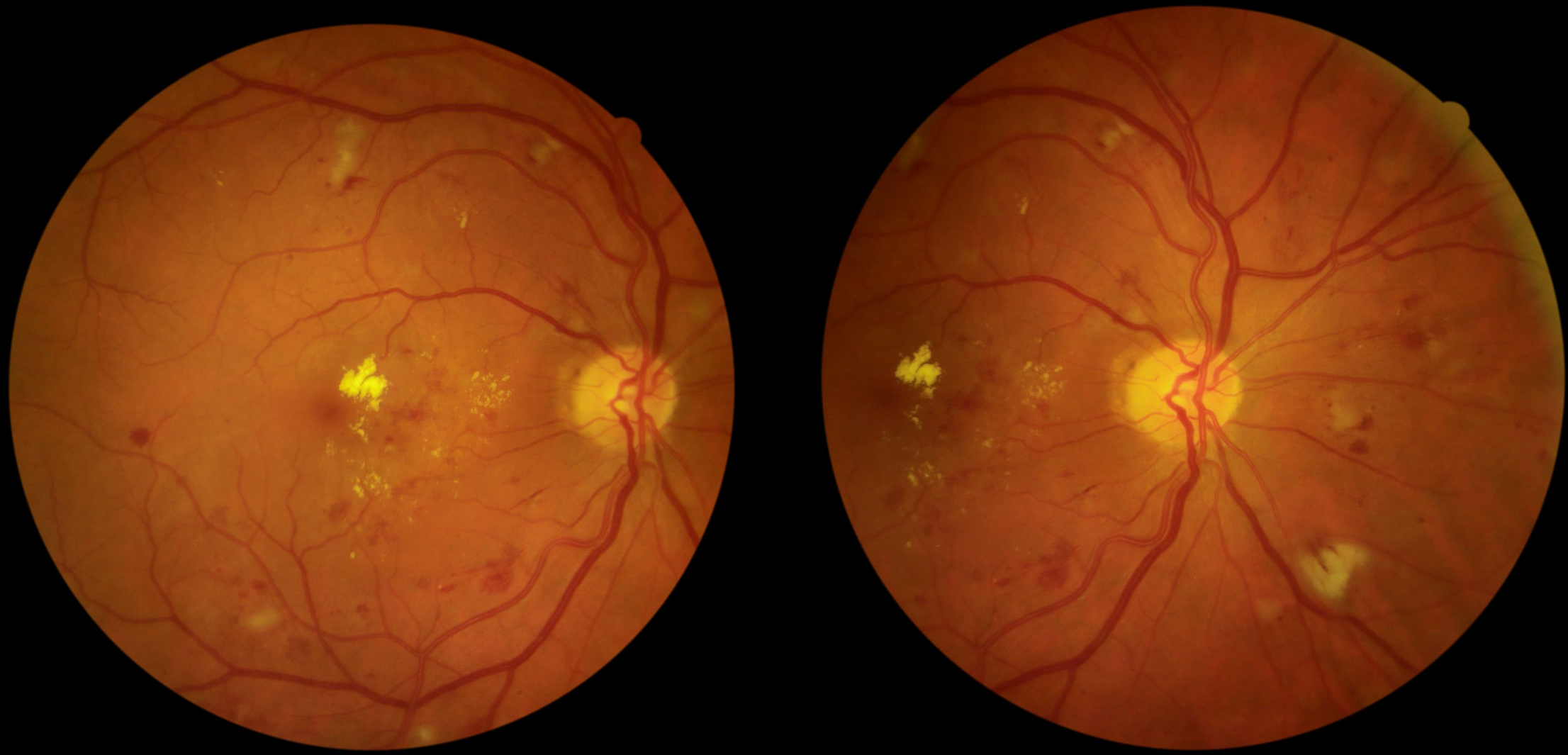
Example of R2L



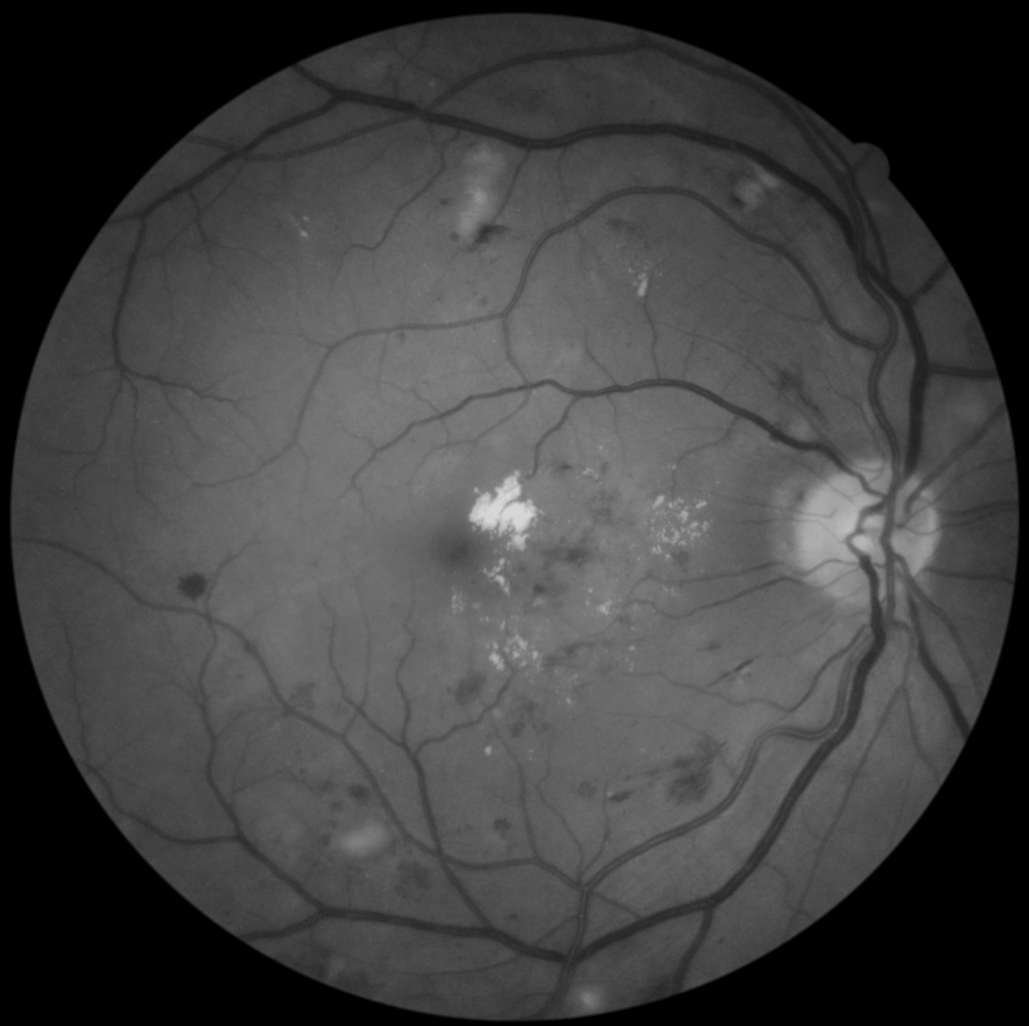
Example of R2L- more than 8 blot haems

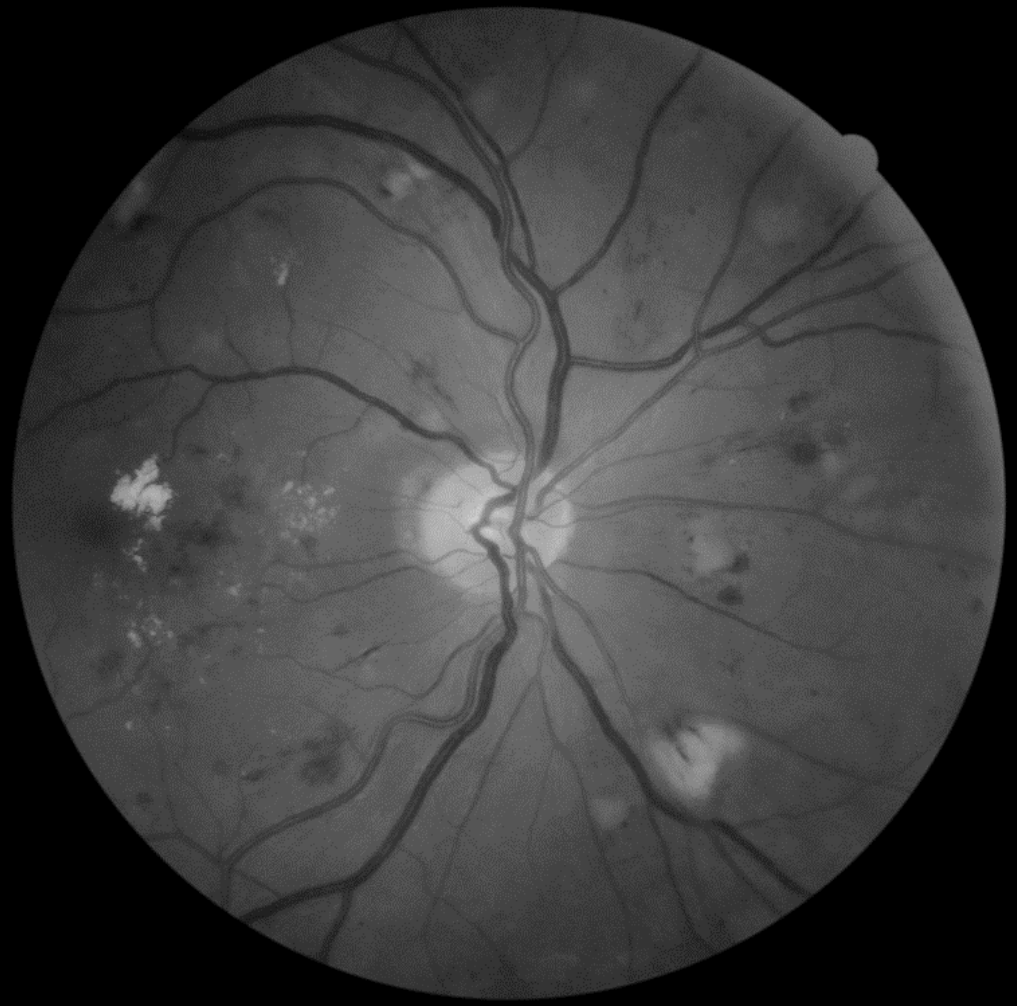


Example of R2H/L borderline case- multiple haems/ MA- not full view of all quadrants

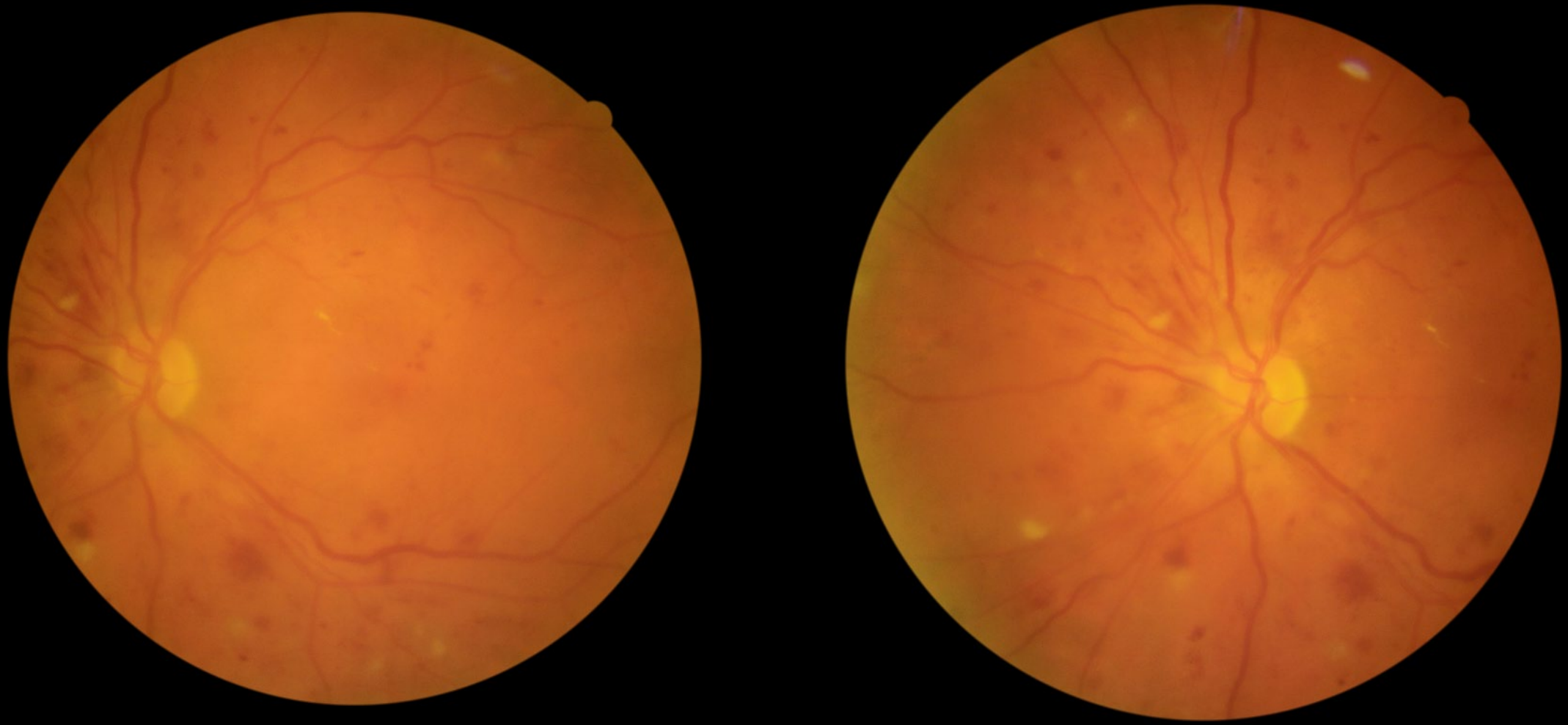


Example of R2H/L borderline case- multiple haems/ MA- not full view of all quadrants

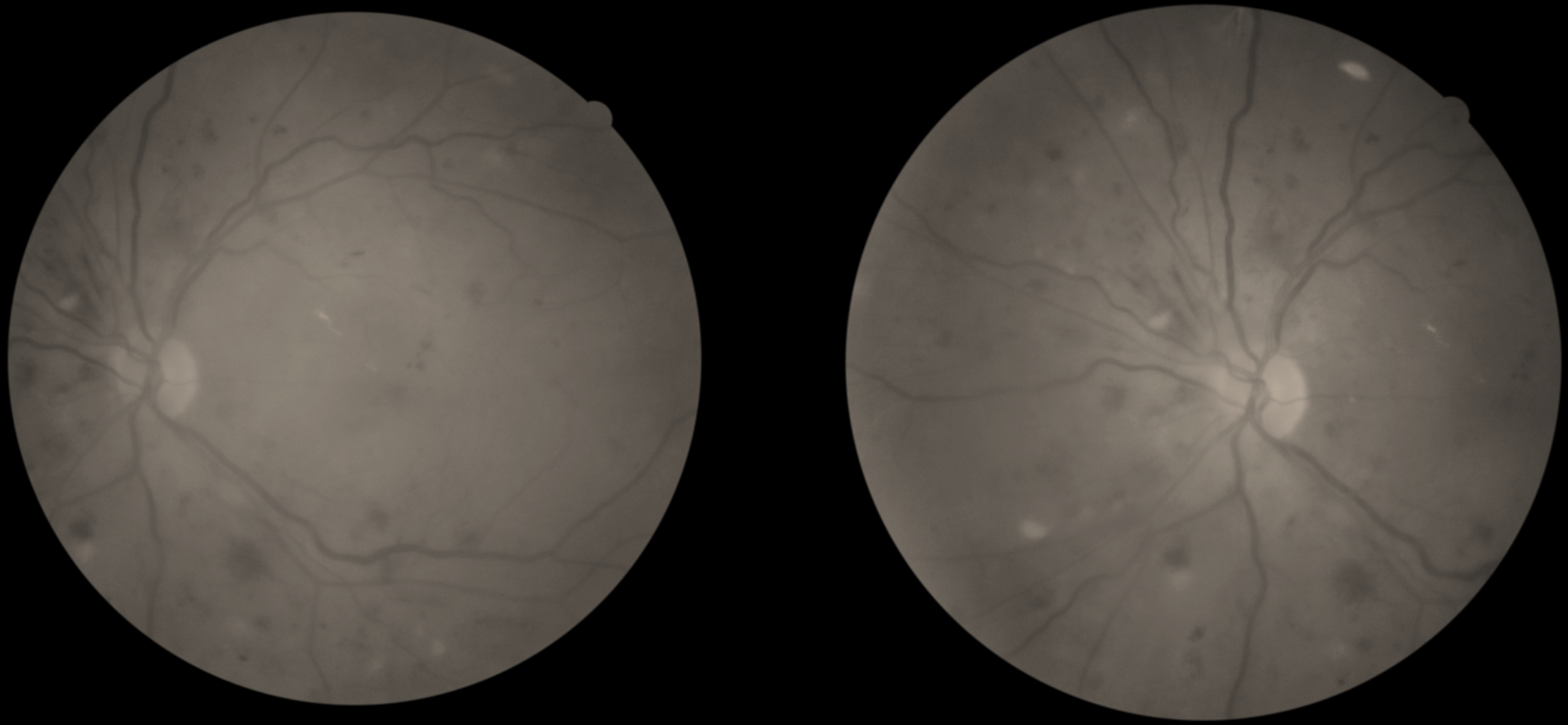




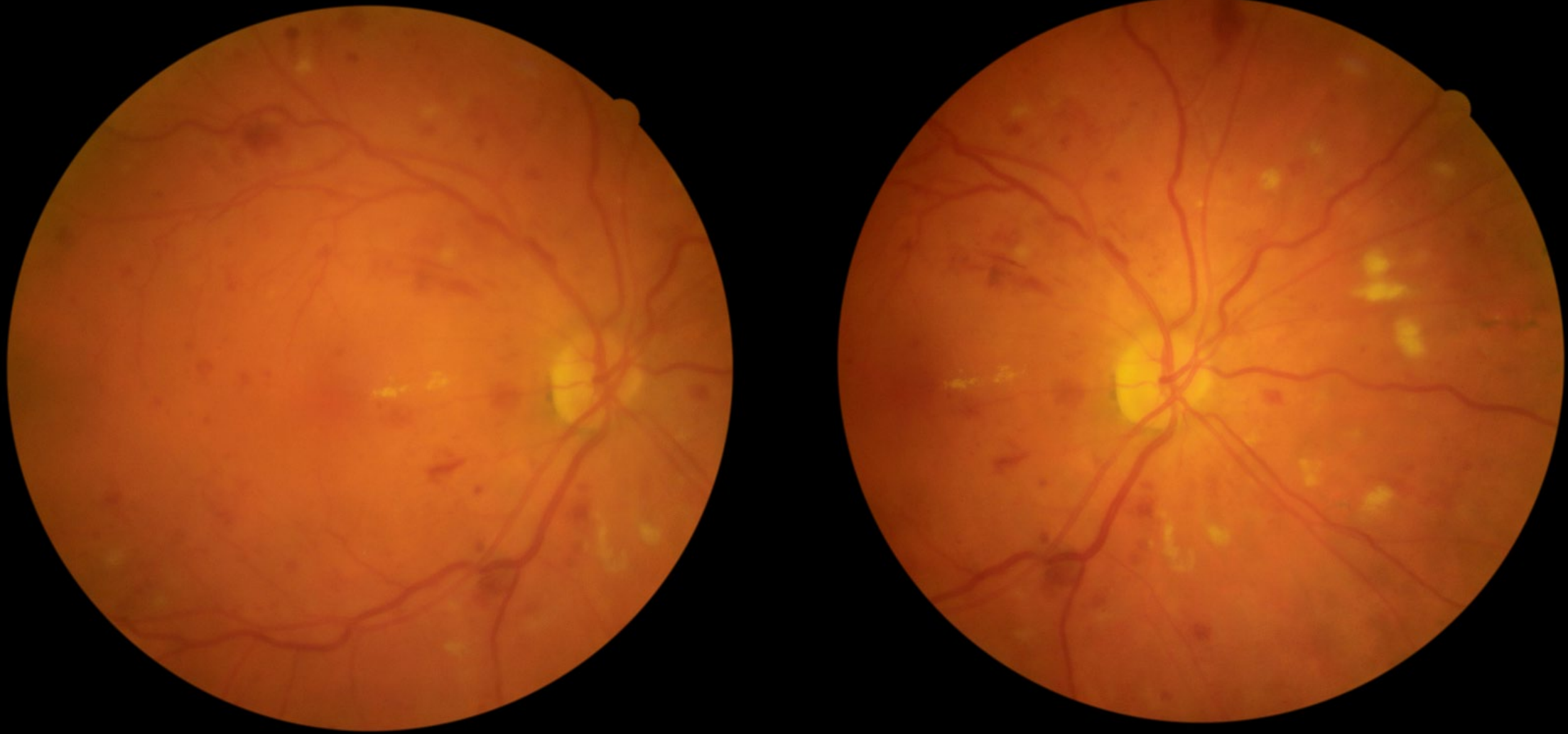
Example of R2H



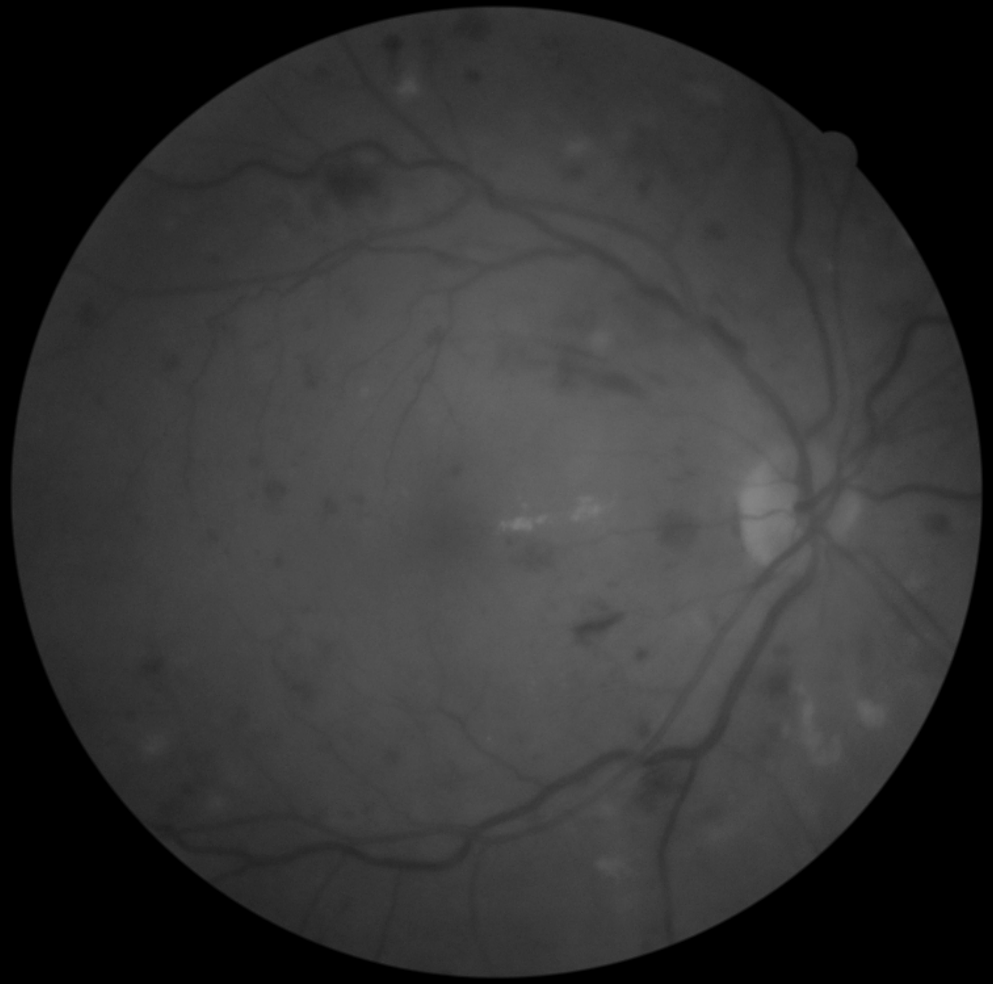
Example of R2H- > 20 Haems/ MA's in all 4 quadrants

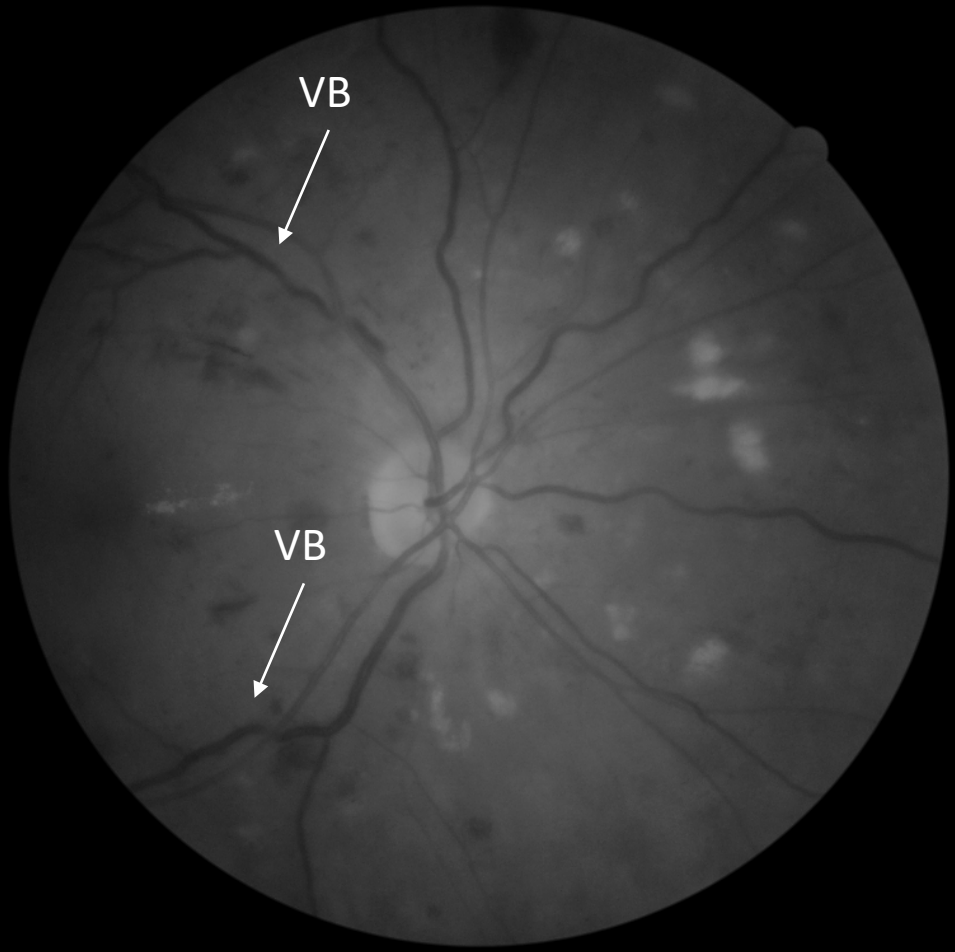


Example of R2H

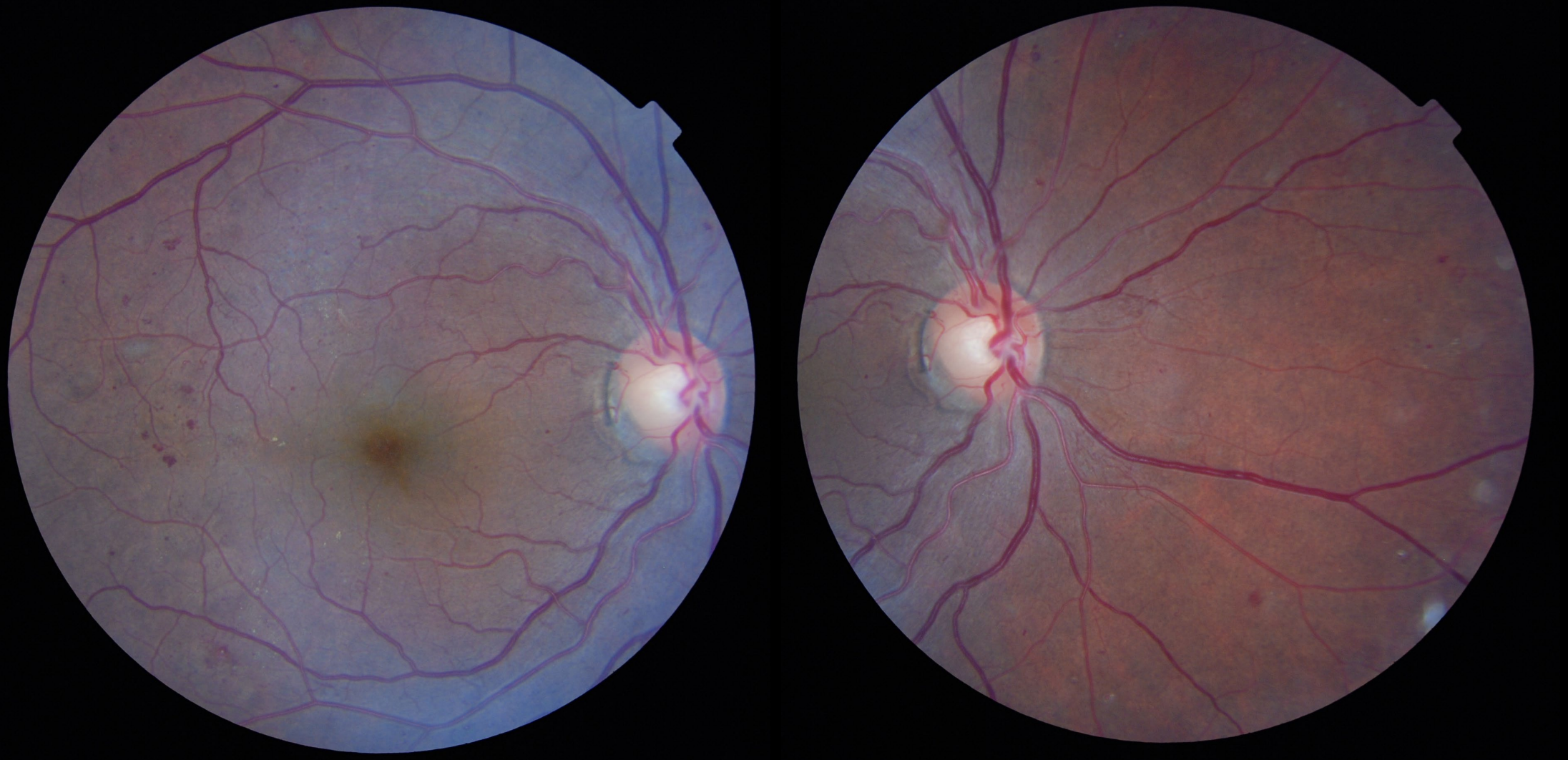


Example of R2H- VB in 2 quadrants

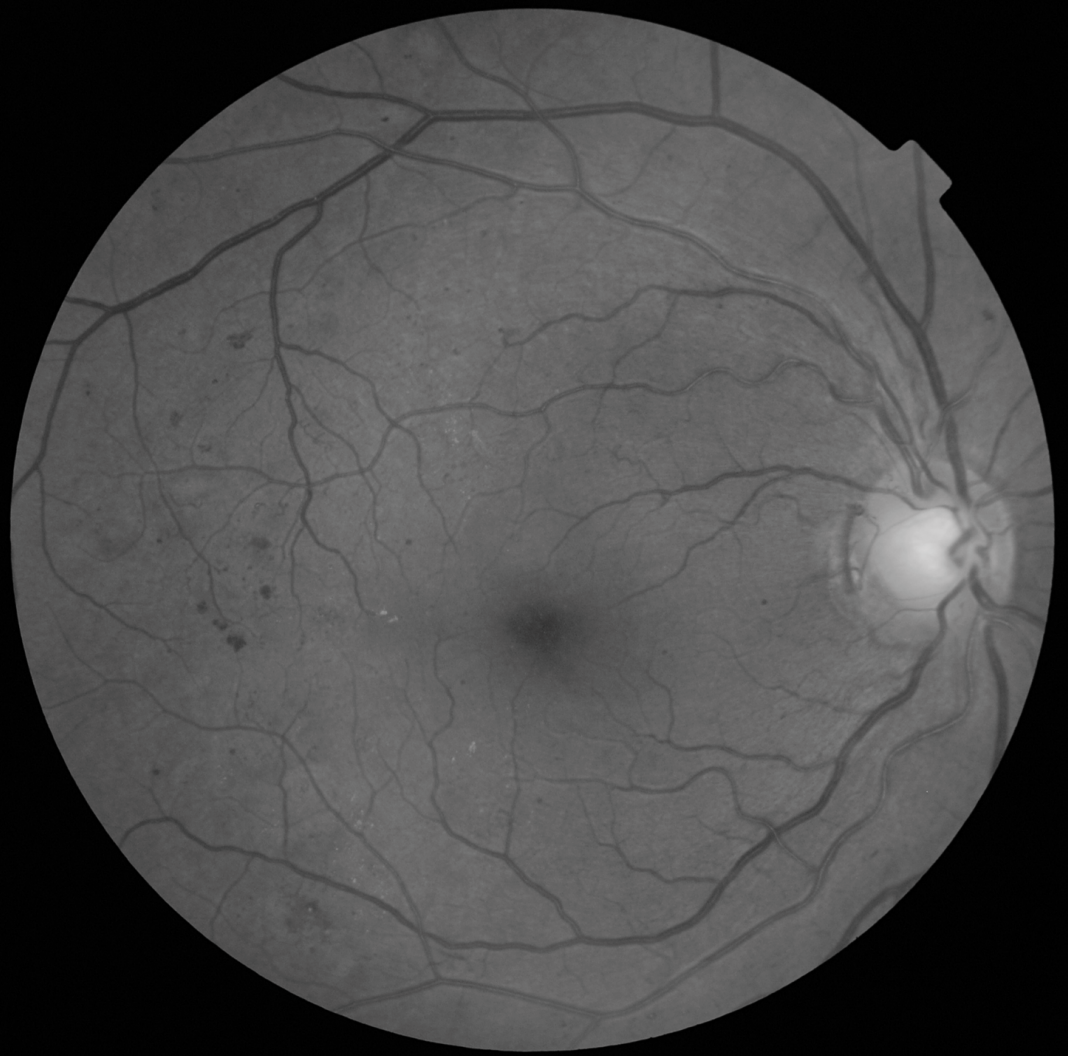


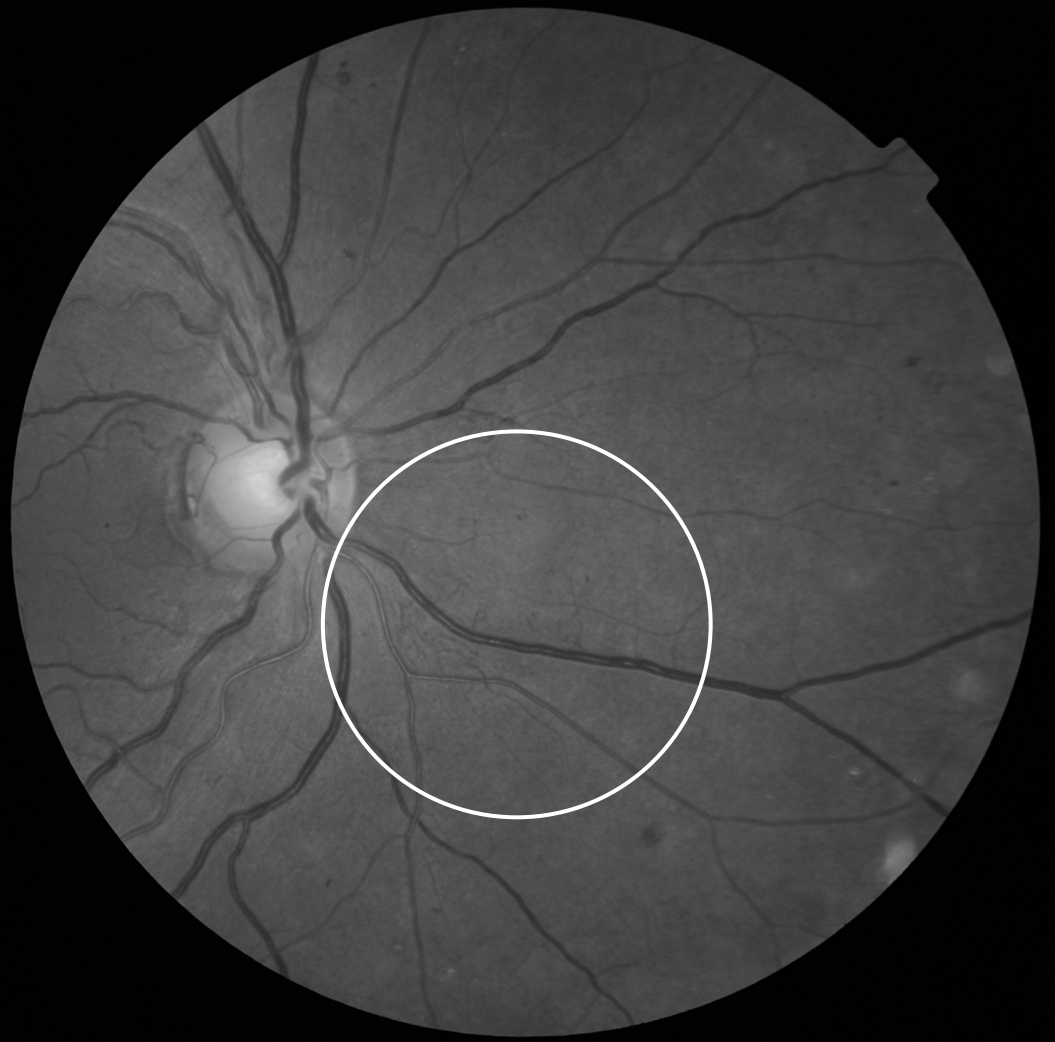


2) Example of R2H



Example of R2H. IRMA > photo 8a in nasal area

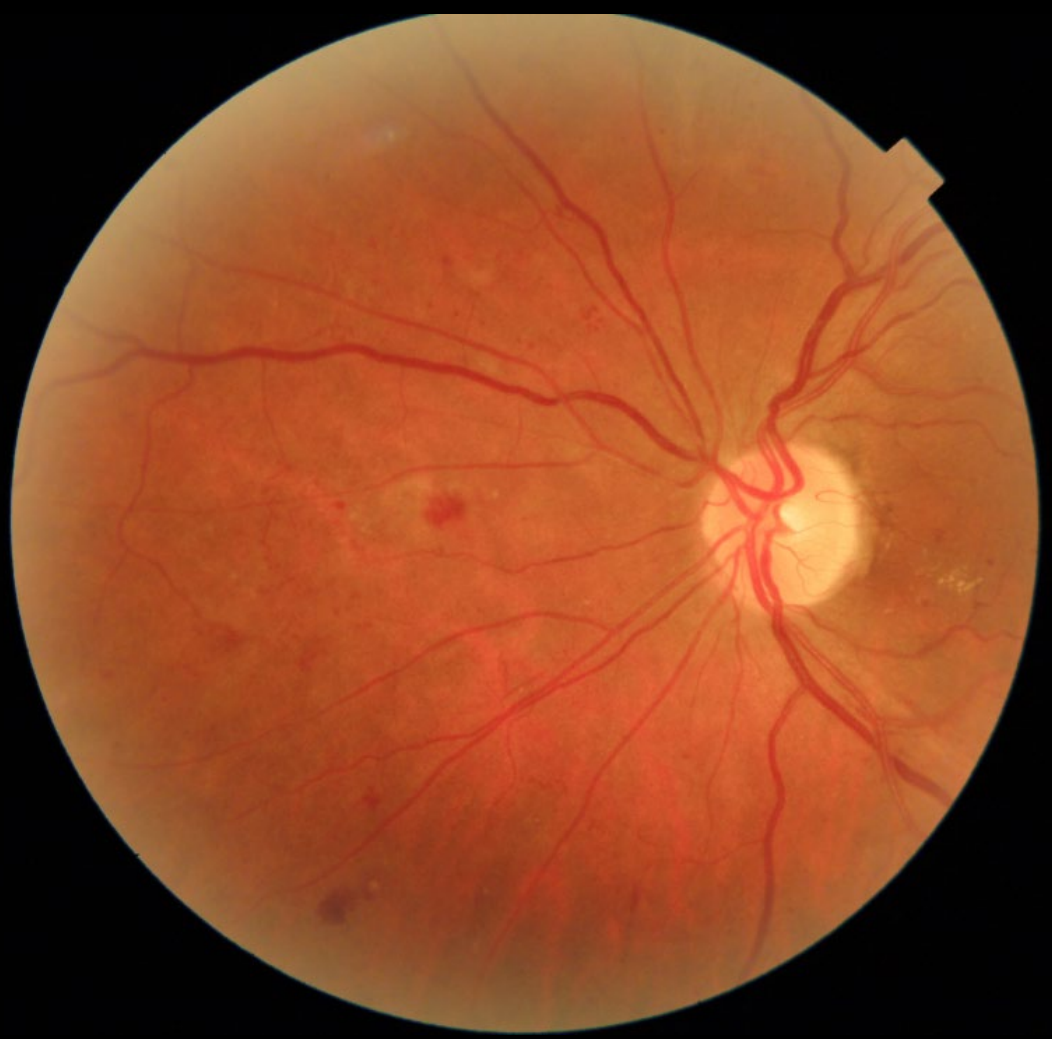


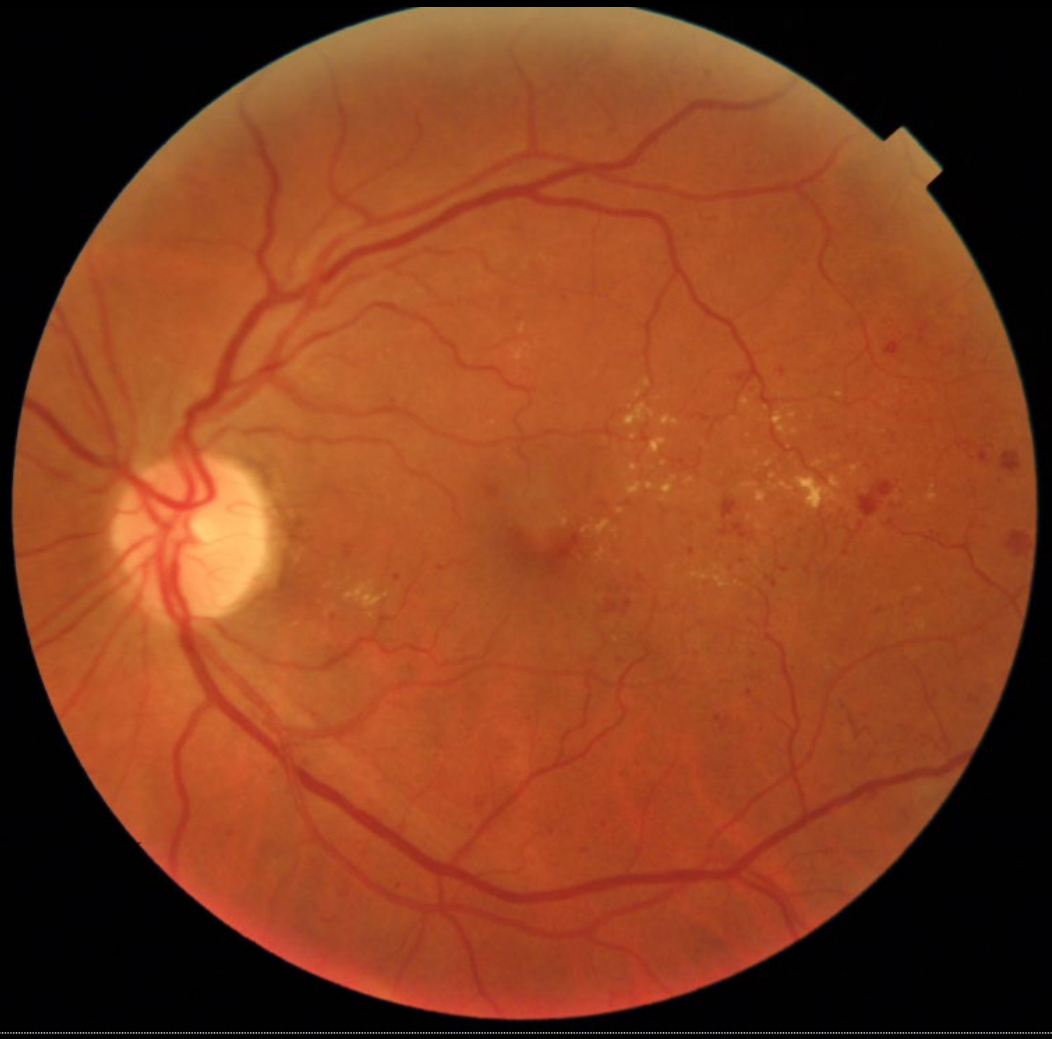


TEST CASES

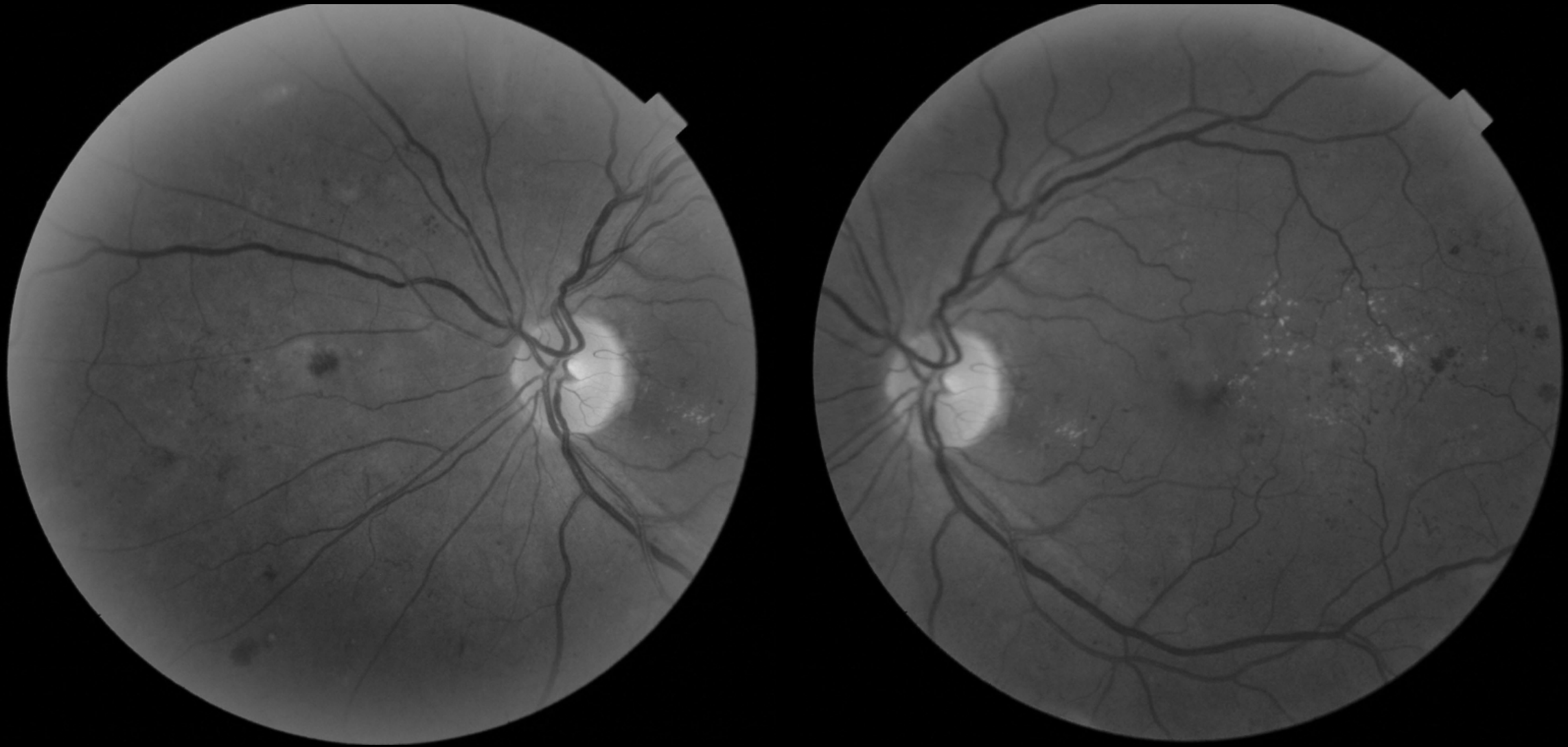
How would you grade these?

CASE 1

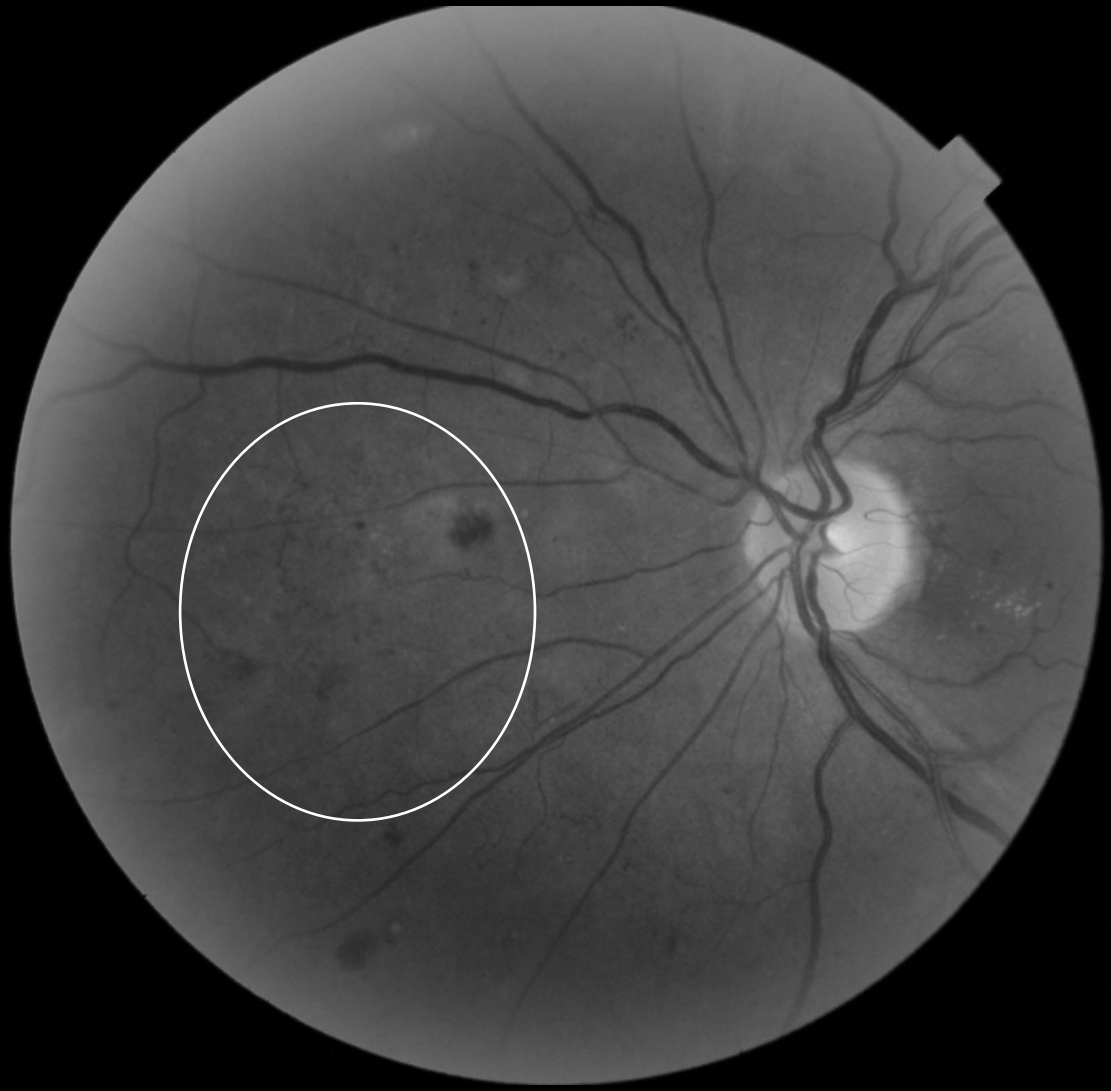


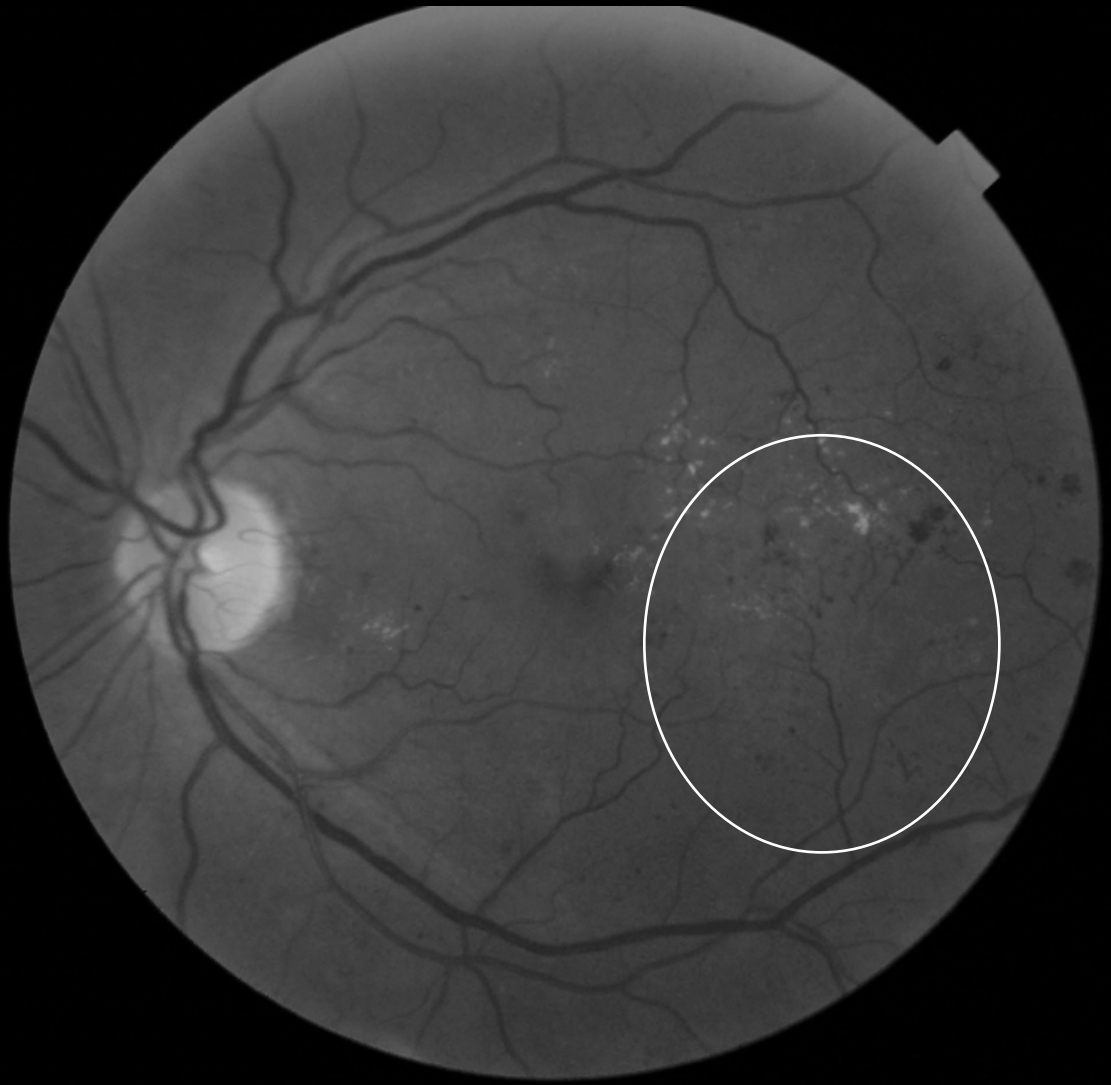


CASE 1

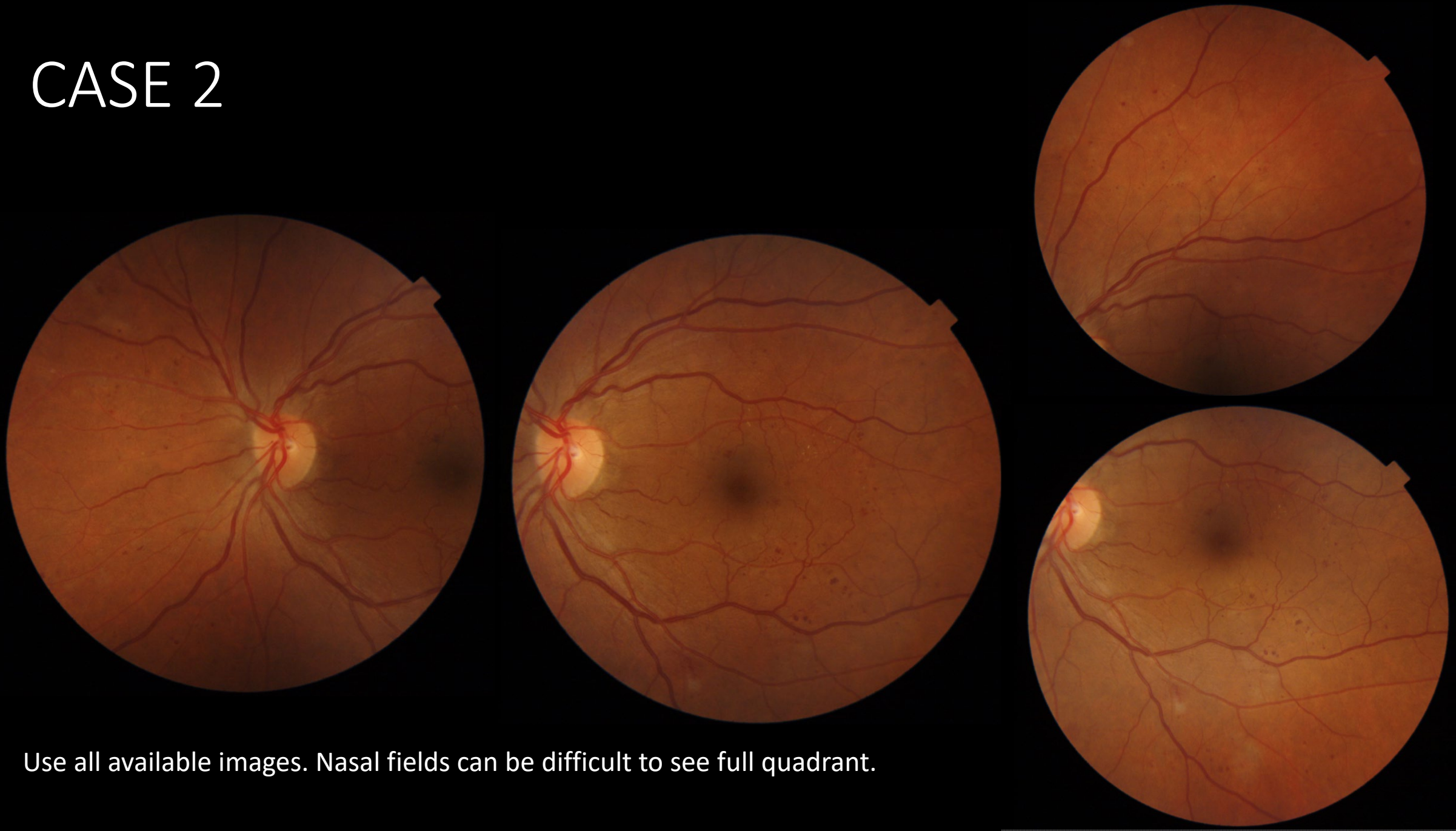


1) R2 H (IRMA > photo 8a- in at least 1 quadrant)





CASE 2

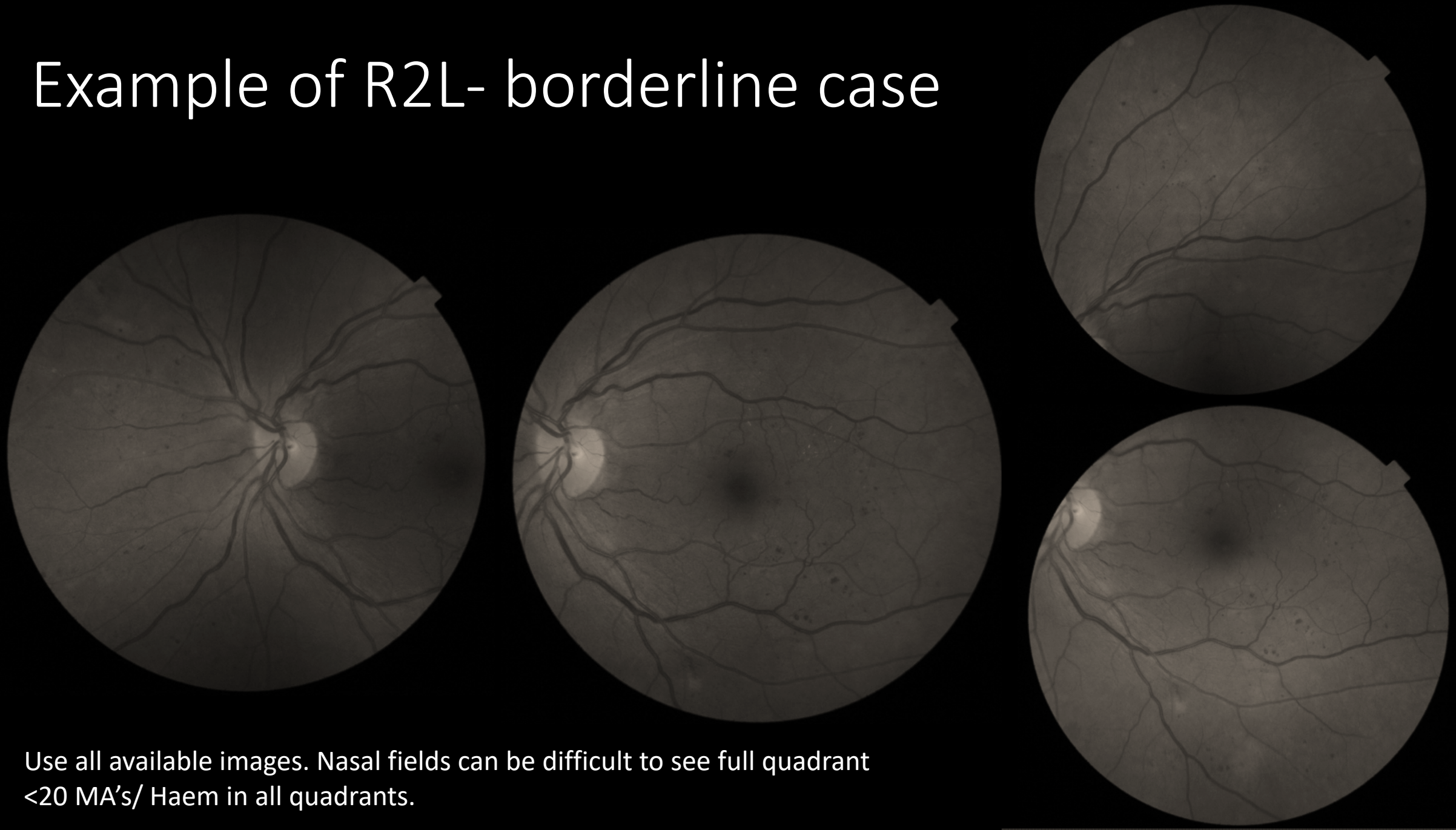


Use all available images. Nasal fields can be difficult to see full quadrant.

CASE 2

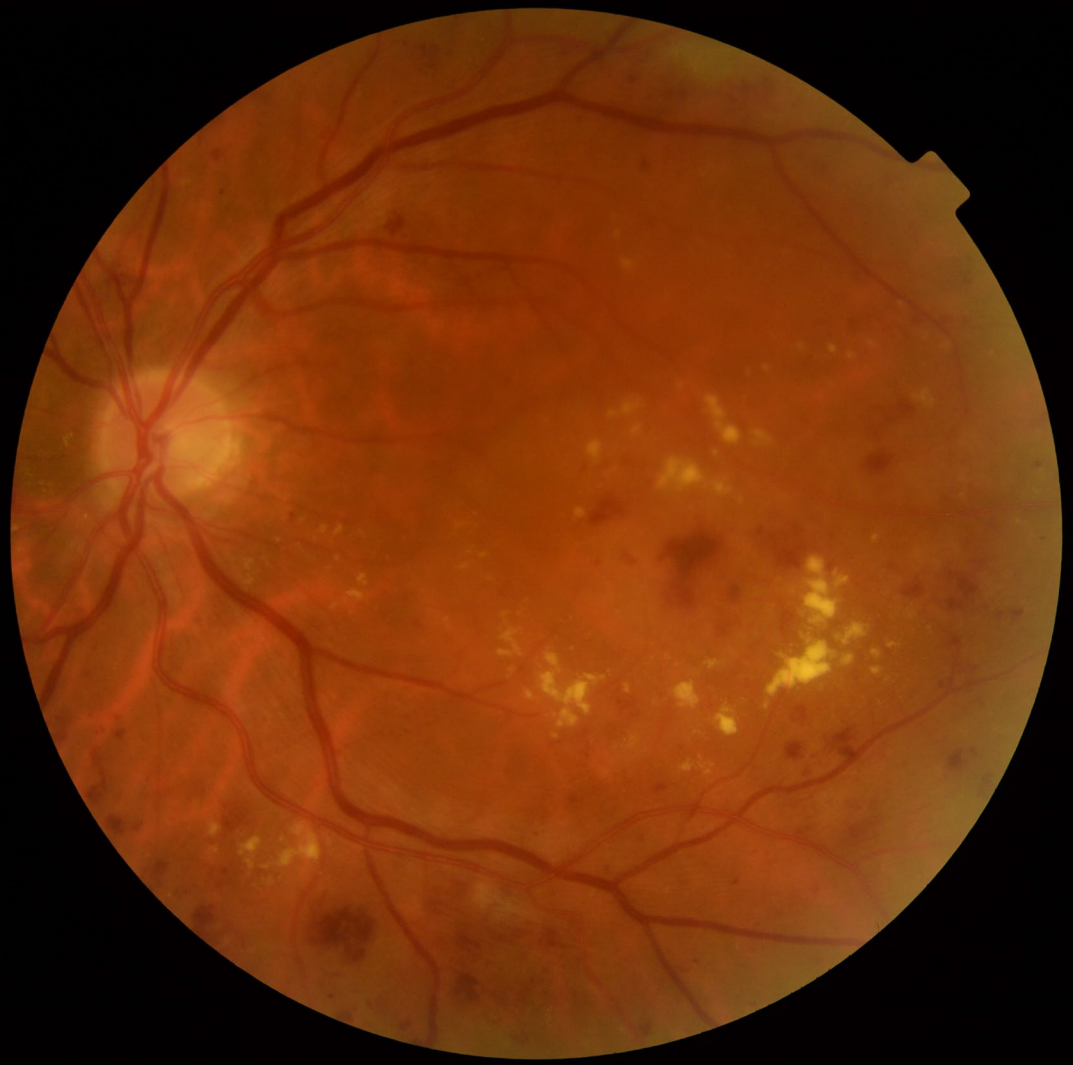
Use all available images. Nasal fields can be difficult to see full quadrant.

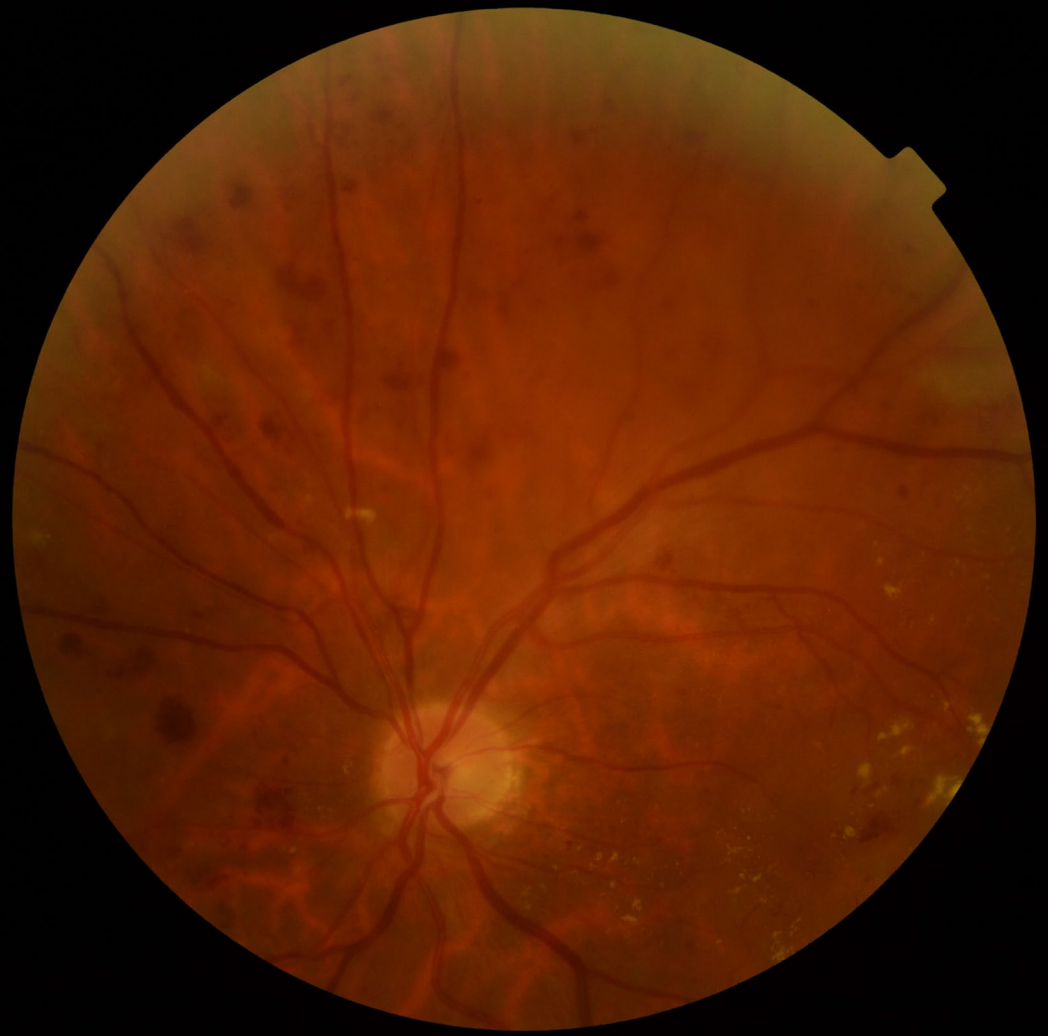
Example of R2L- borderline case



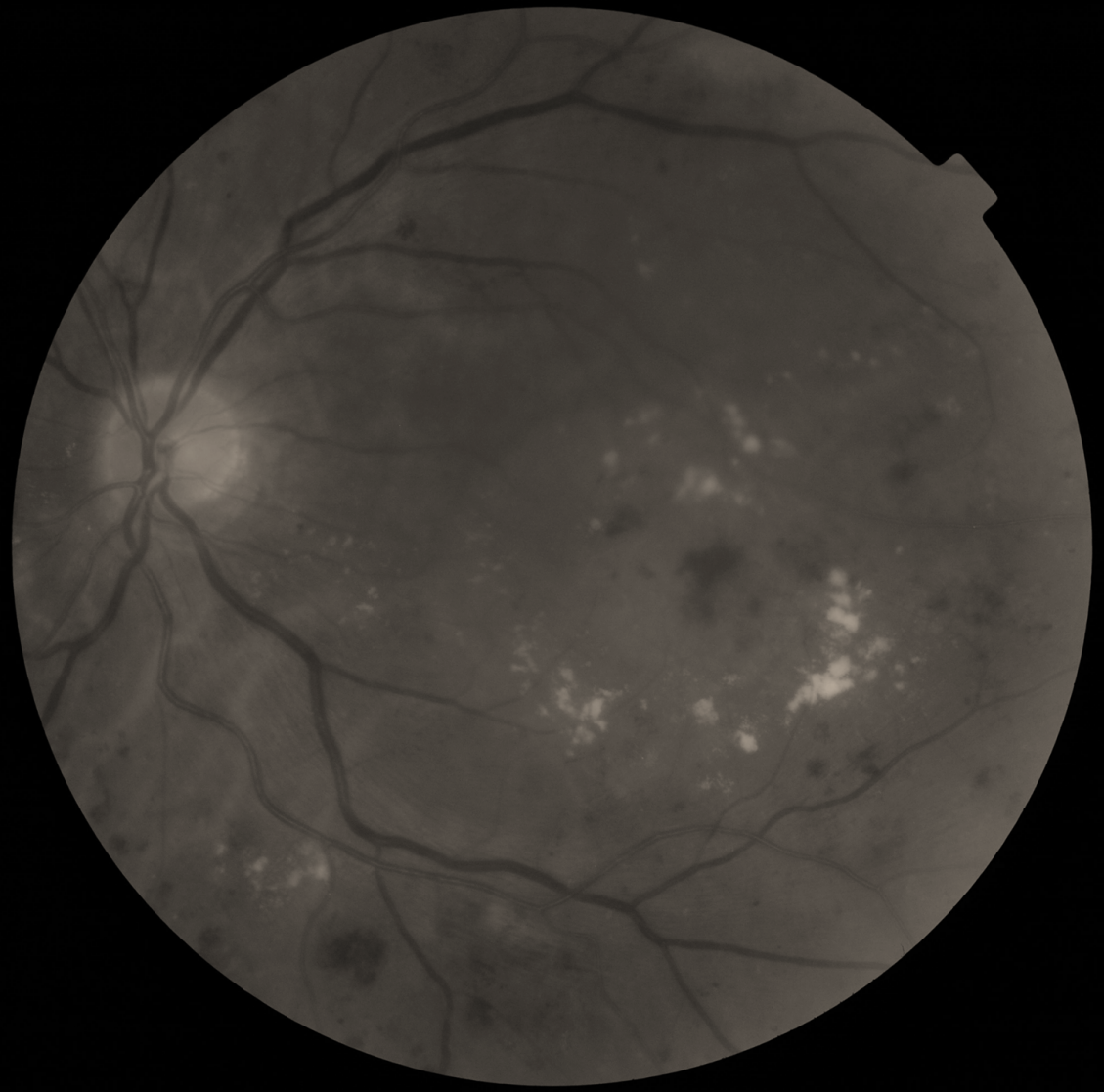
Use all available images. Nasal fields can be difficult to see full quadrant
<20 MA’s/ Haem in all quadrants.

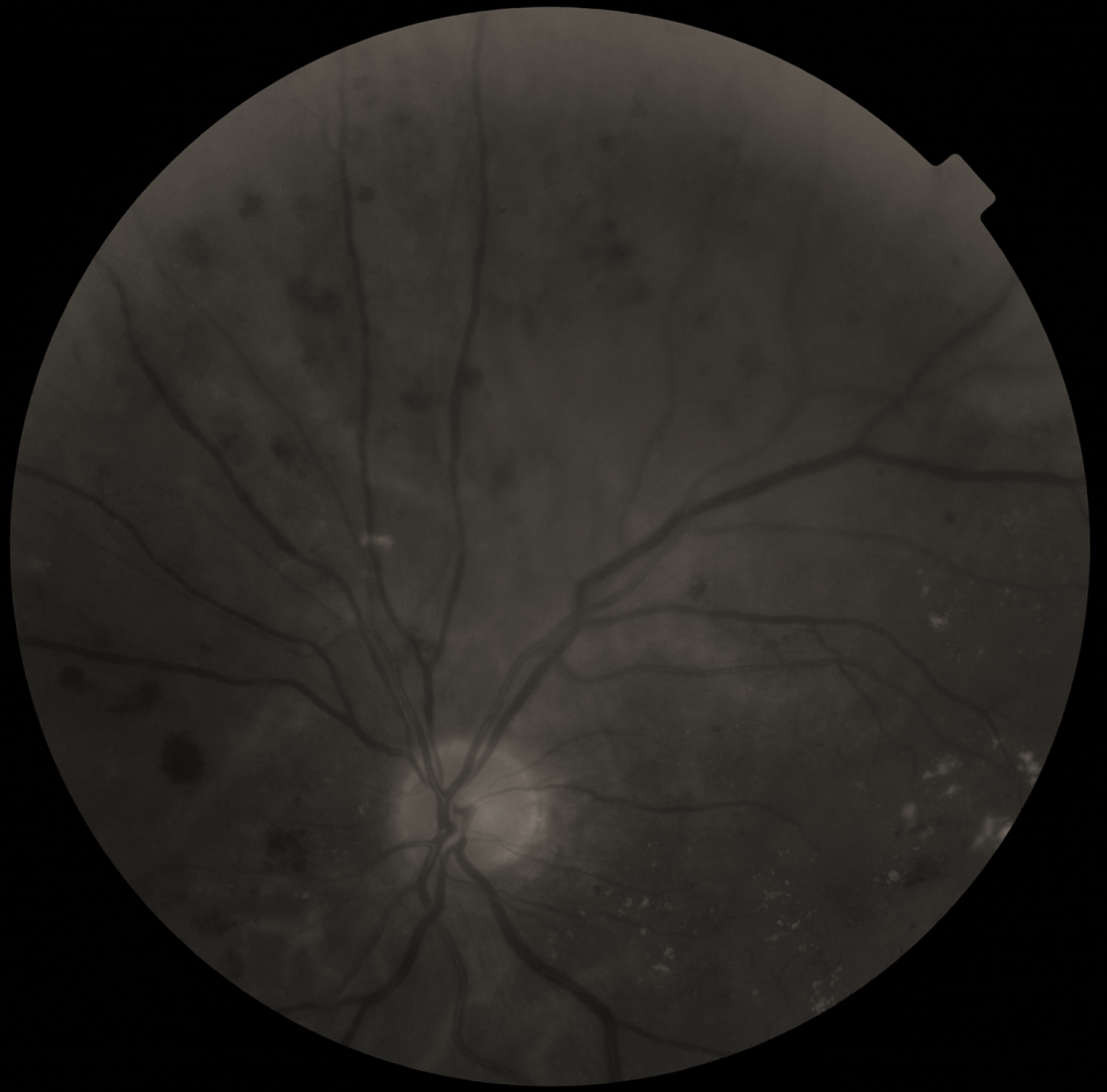
CASE 3



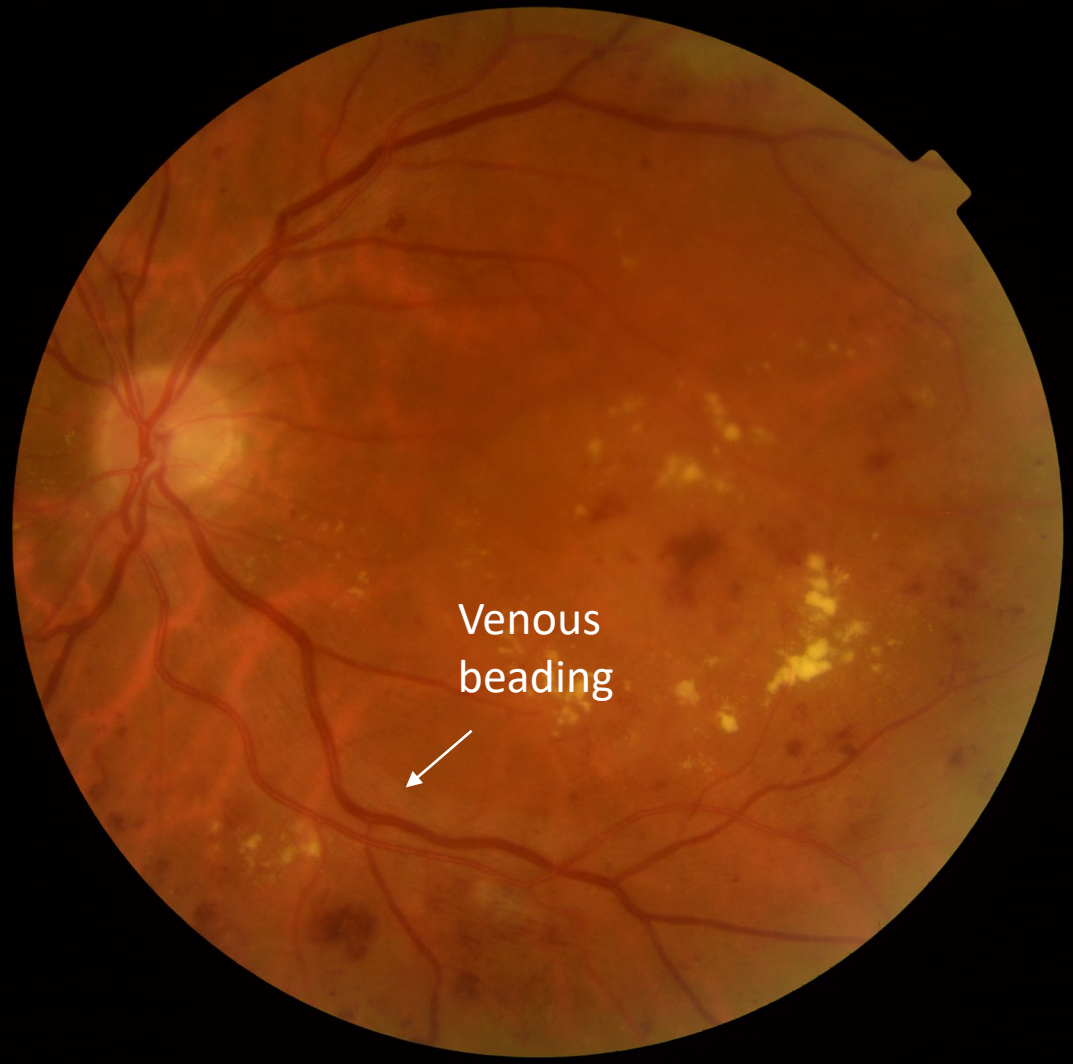


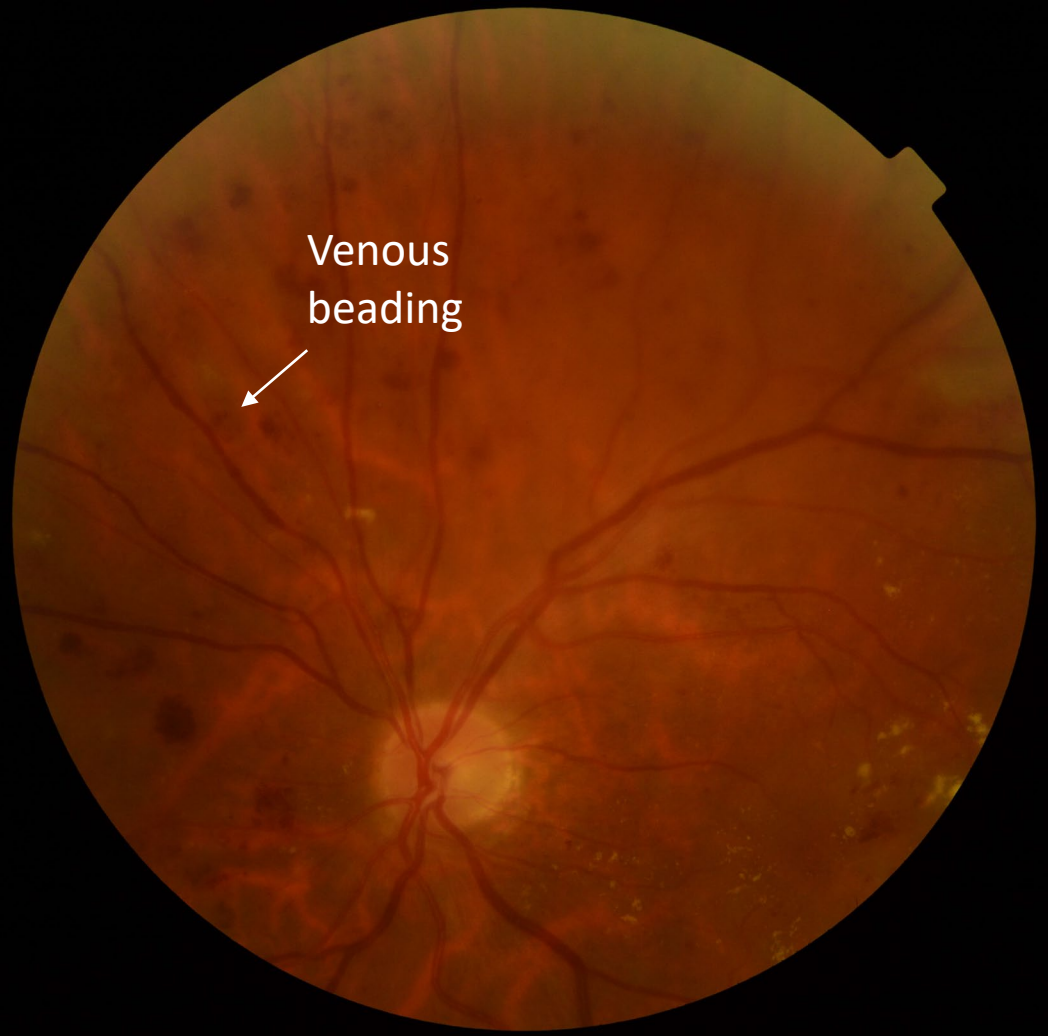
CASE 3



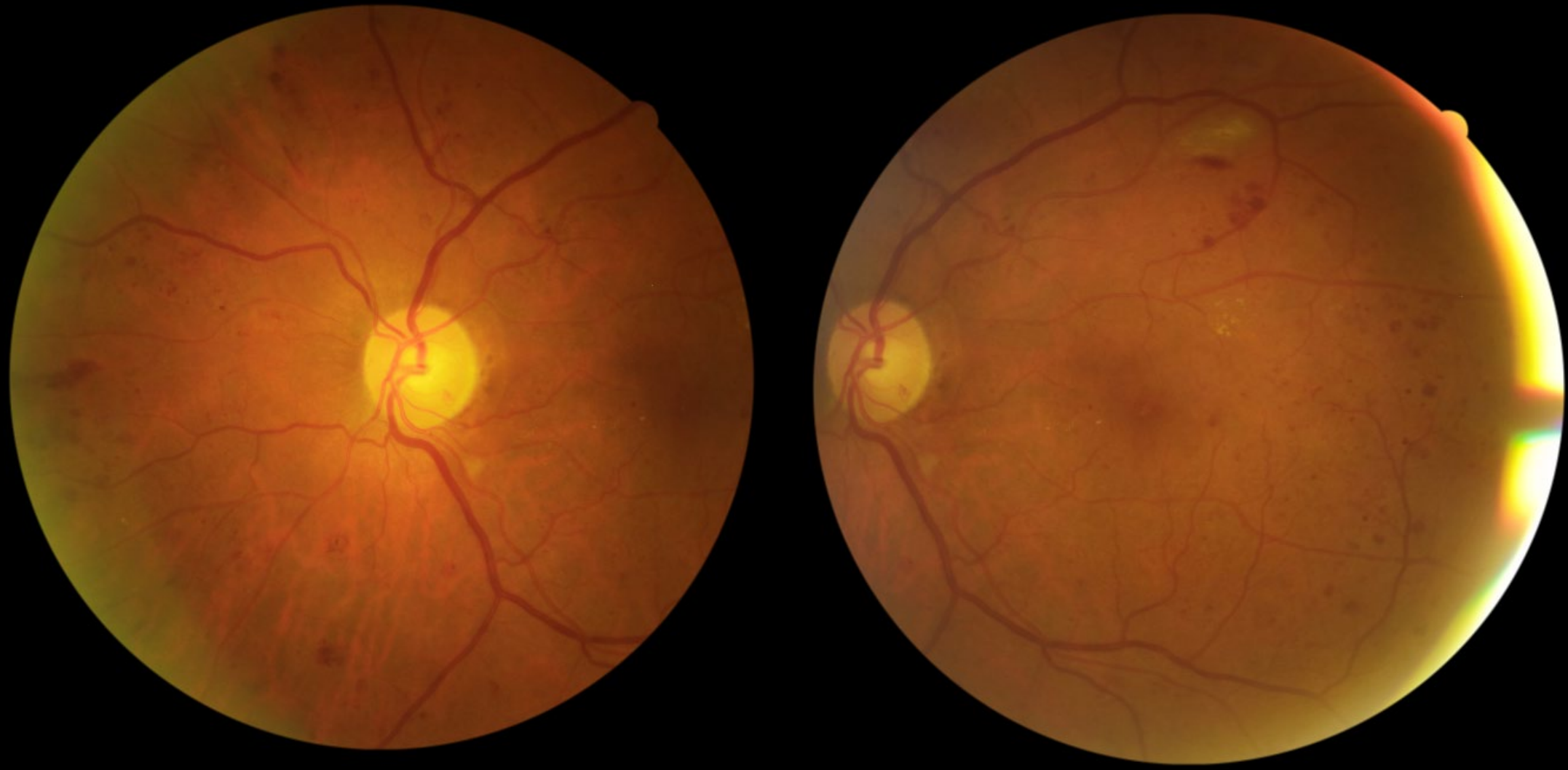


3) R2H – VB in at least 2 quadrants

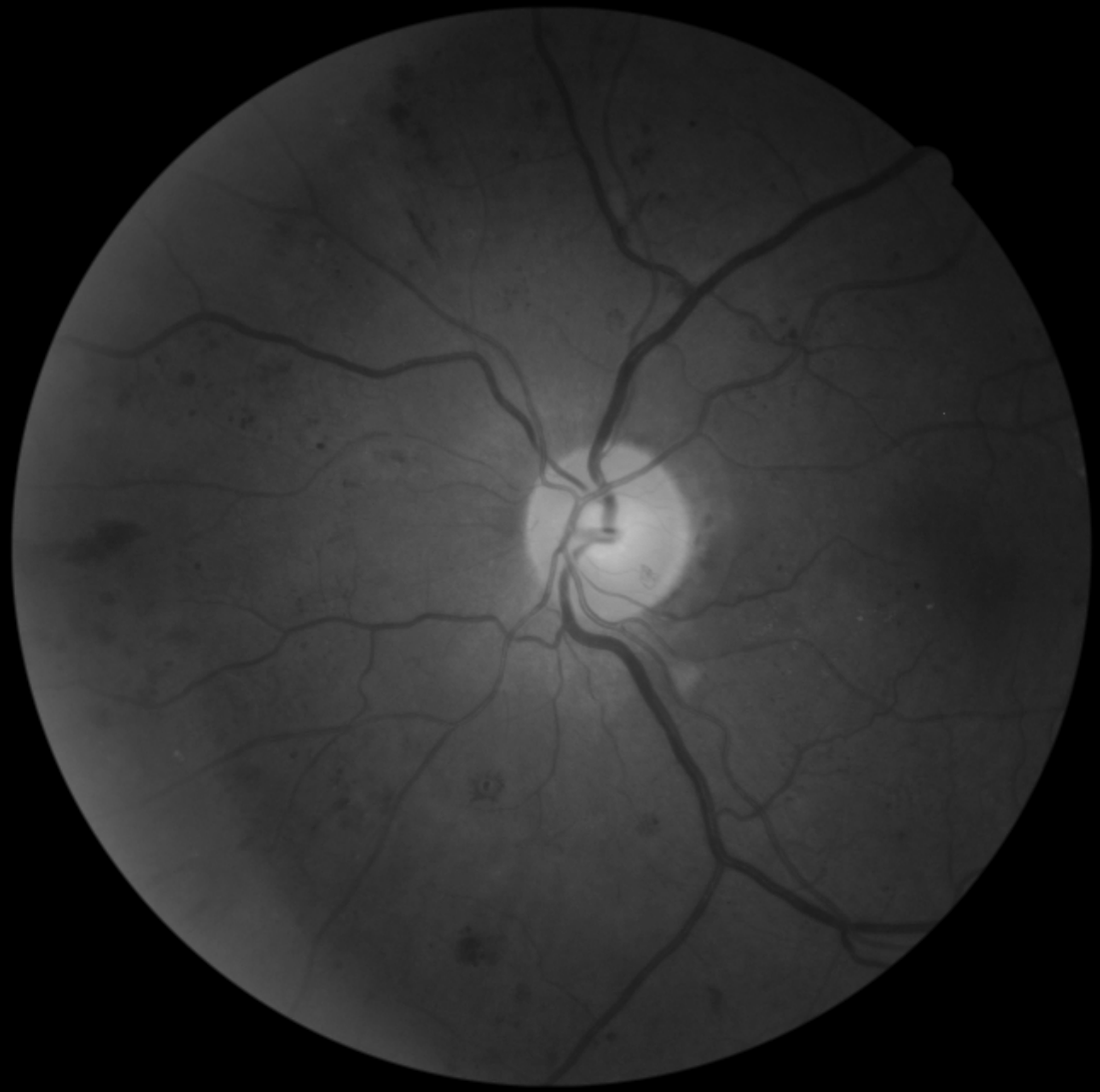


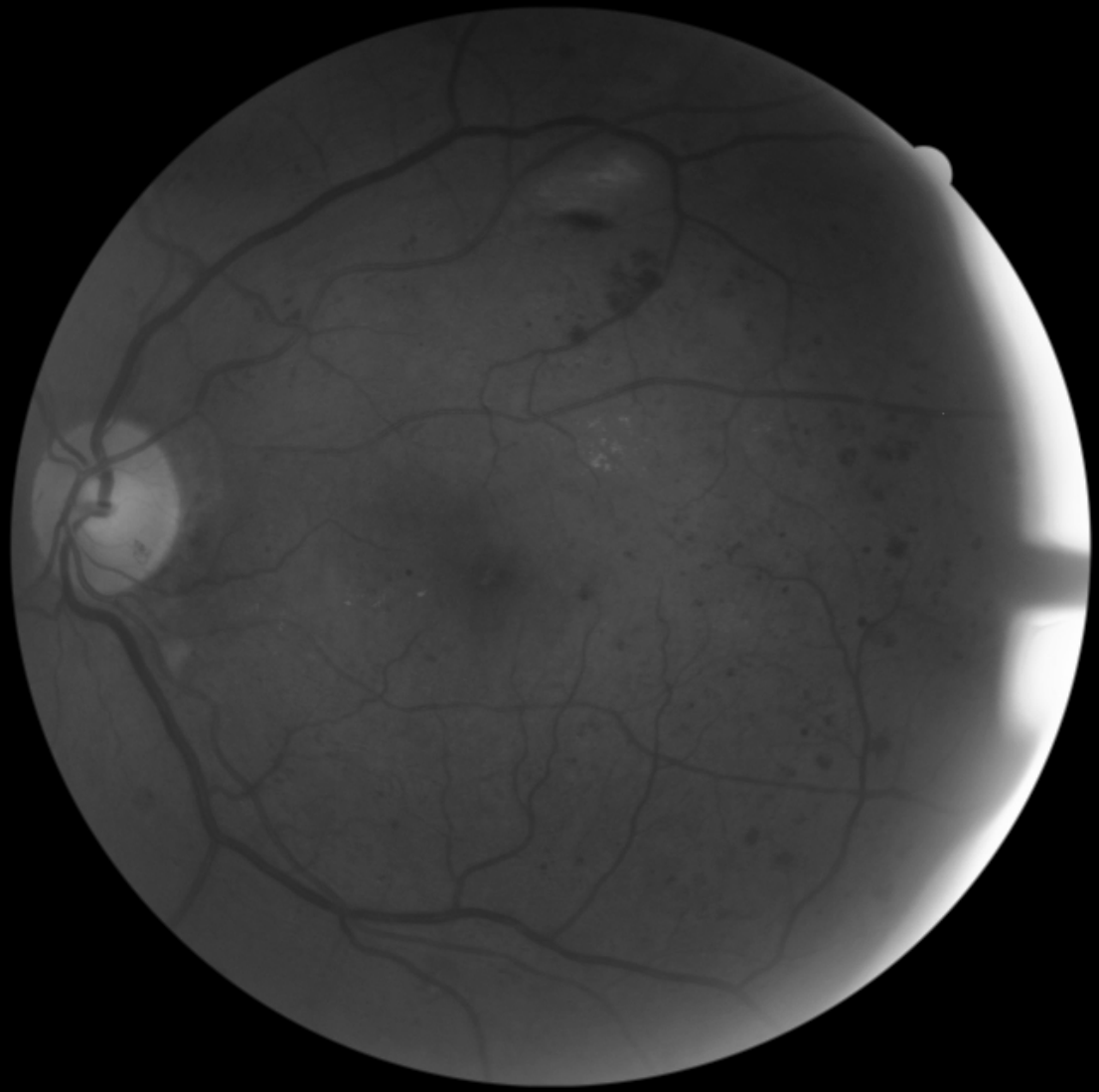


CASE 4

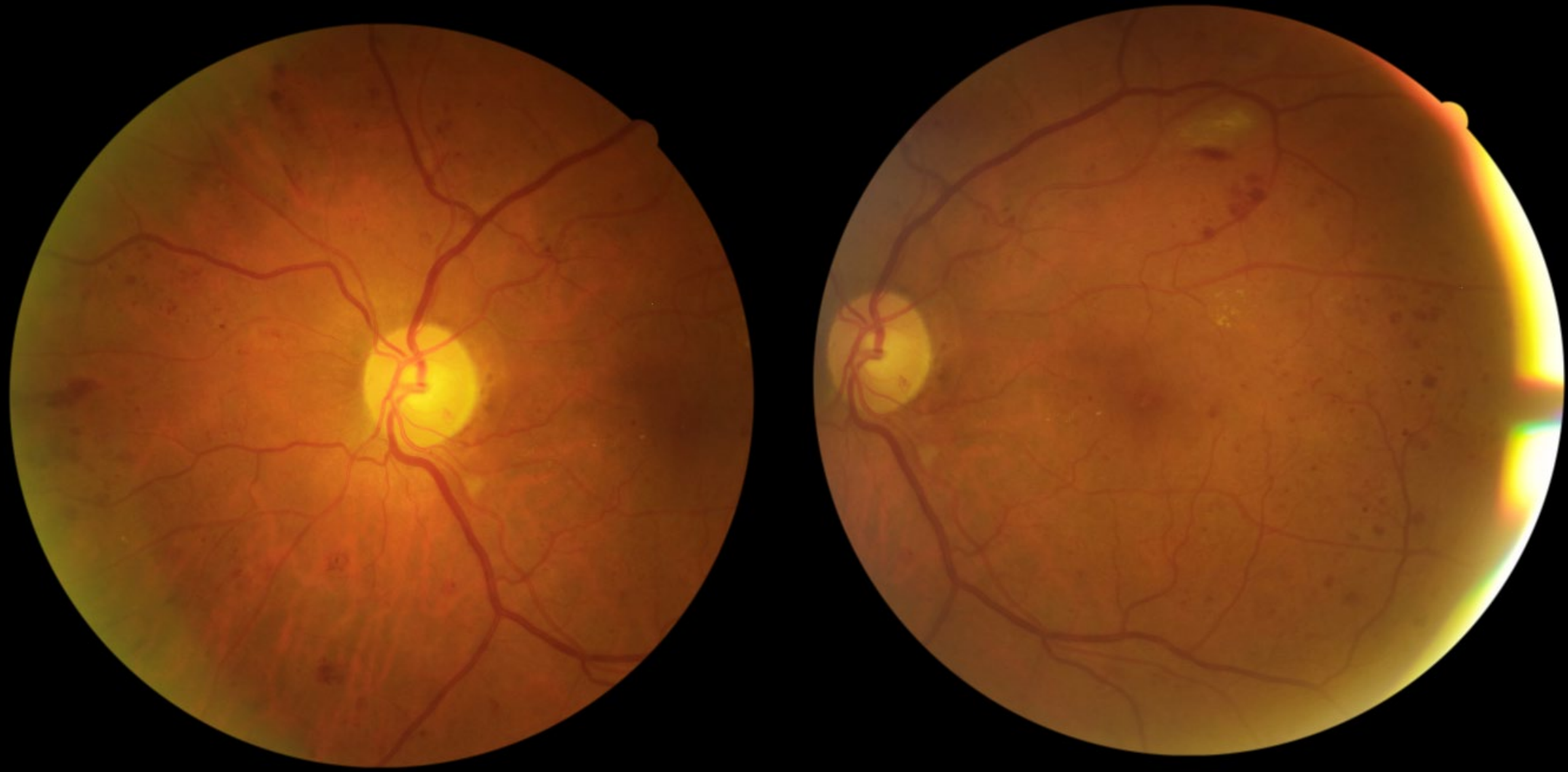


CASE 5

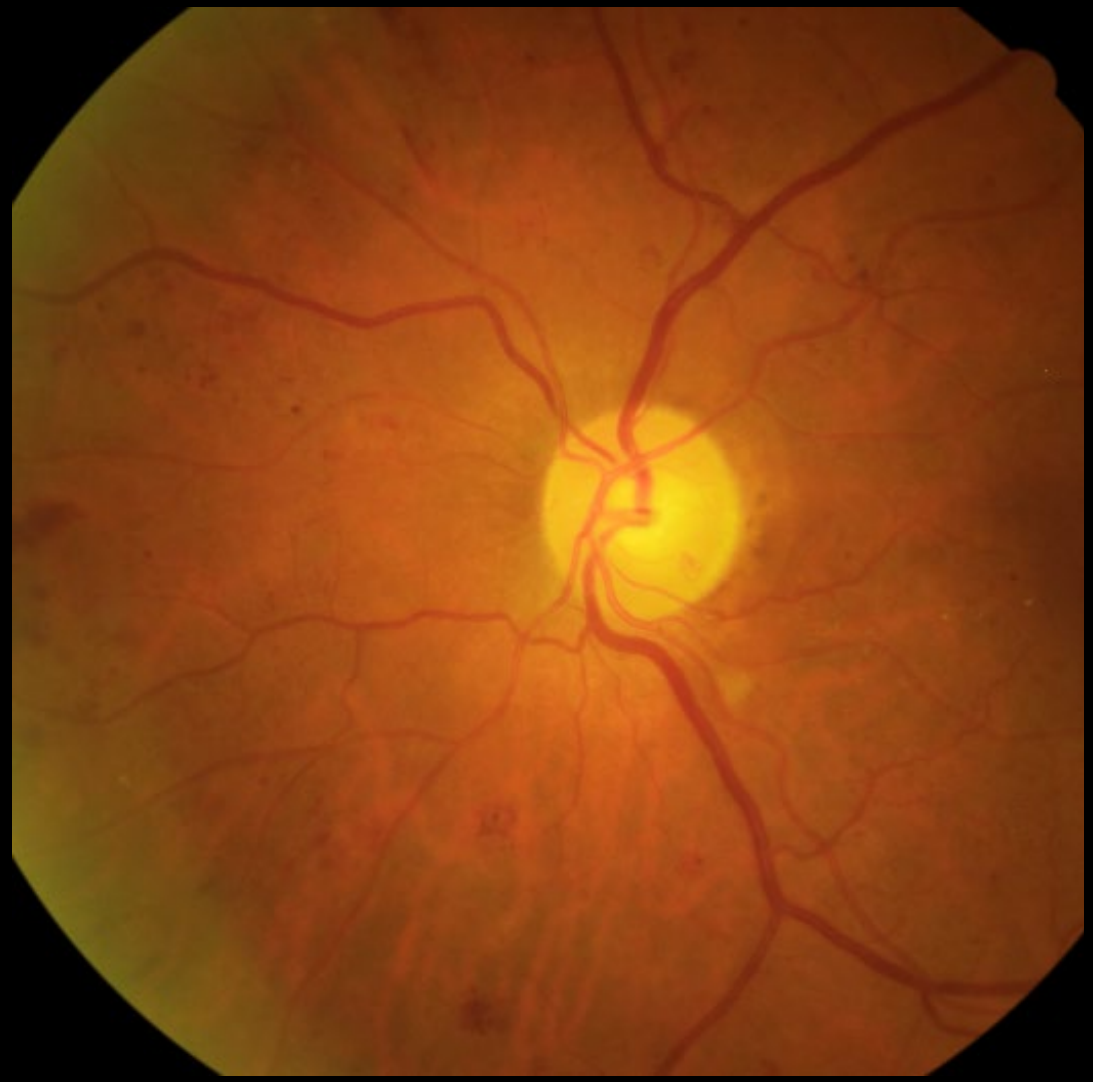


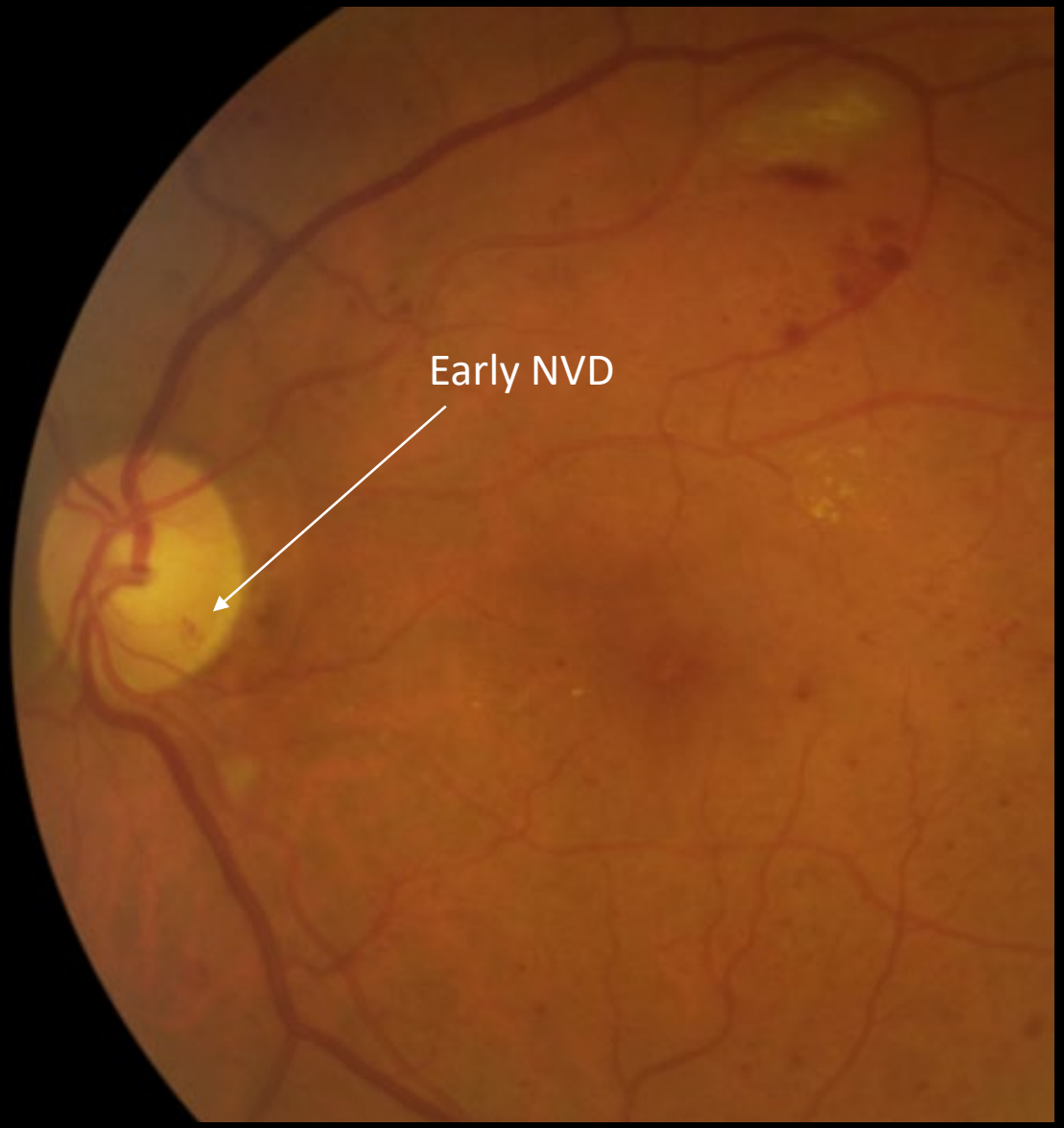


R2L/ R2H??



Actually R3a





Summary

- R2 refinement to reduce referrals to ophthalmology
- High risk R2 has 50% risk of progression in 1 year and can have R3a in the periphery
- Use the 4:2:1 rule (4 Q haem, 2 Q VB, 1 Q IRMA) for R2H
- Look for IRMA first, then VB and last of all count haemorrhages
- Don’t forget to look for NVD/ NVE!