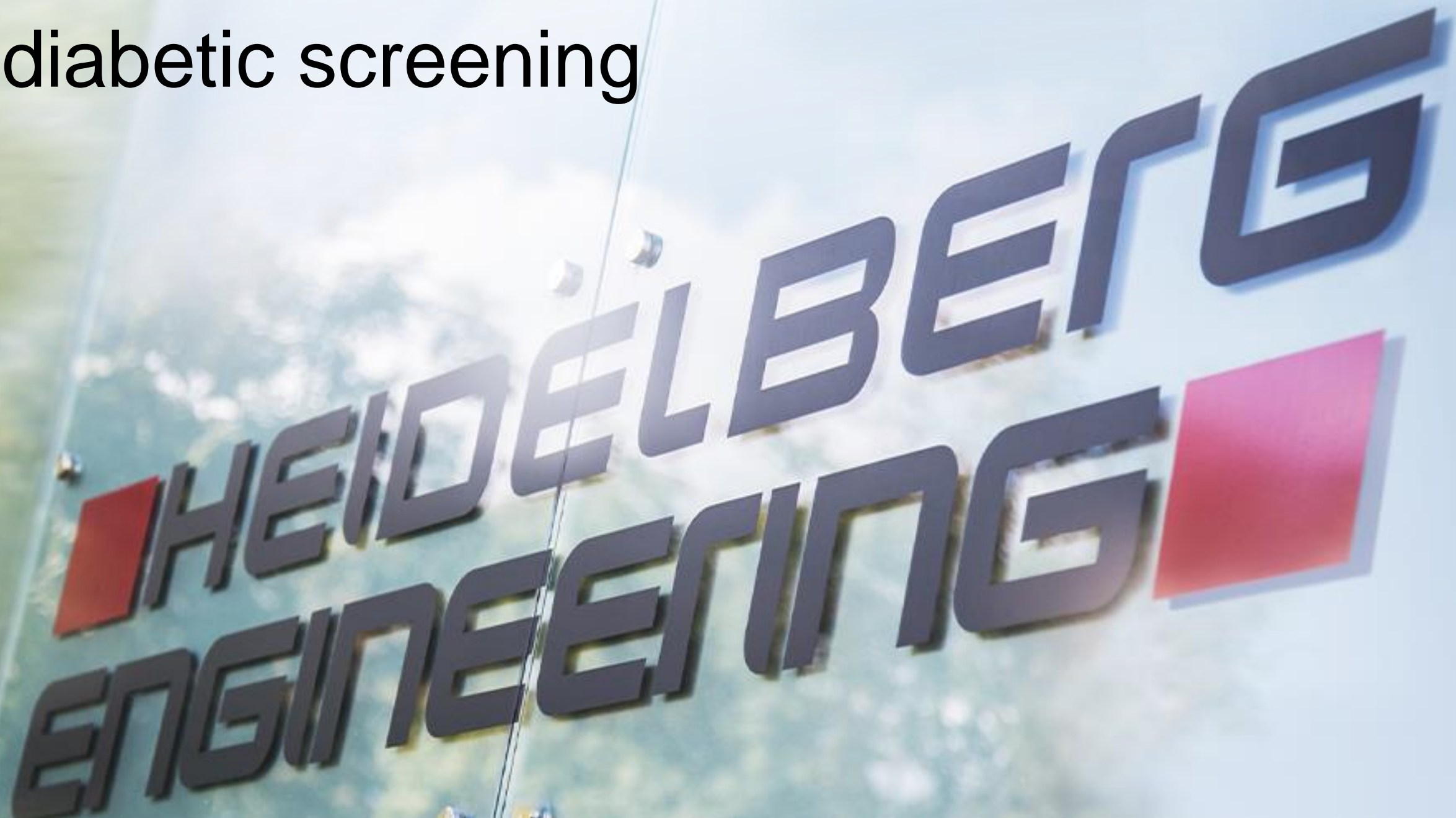


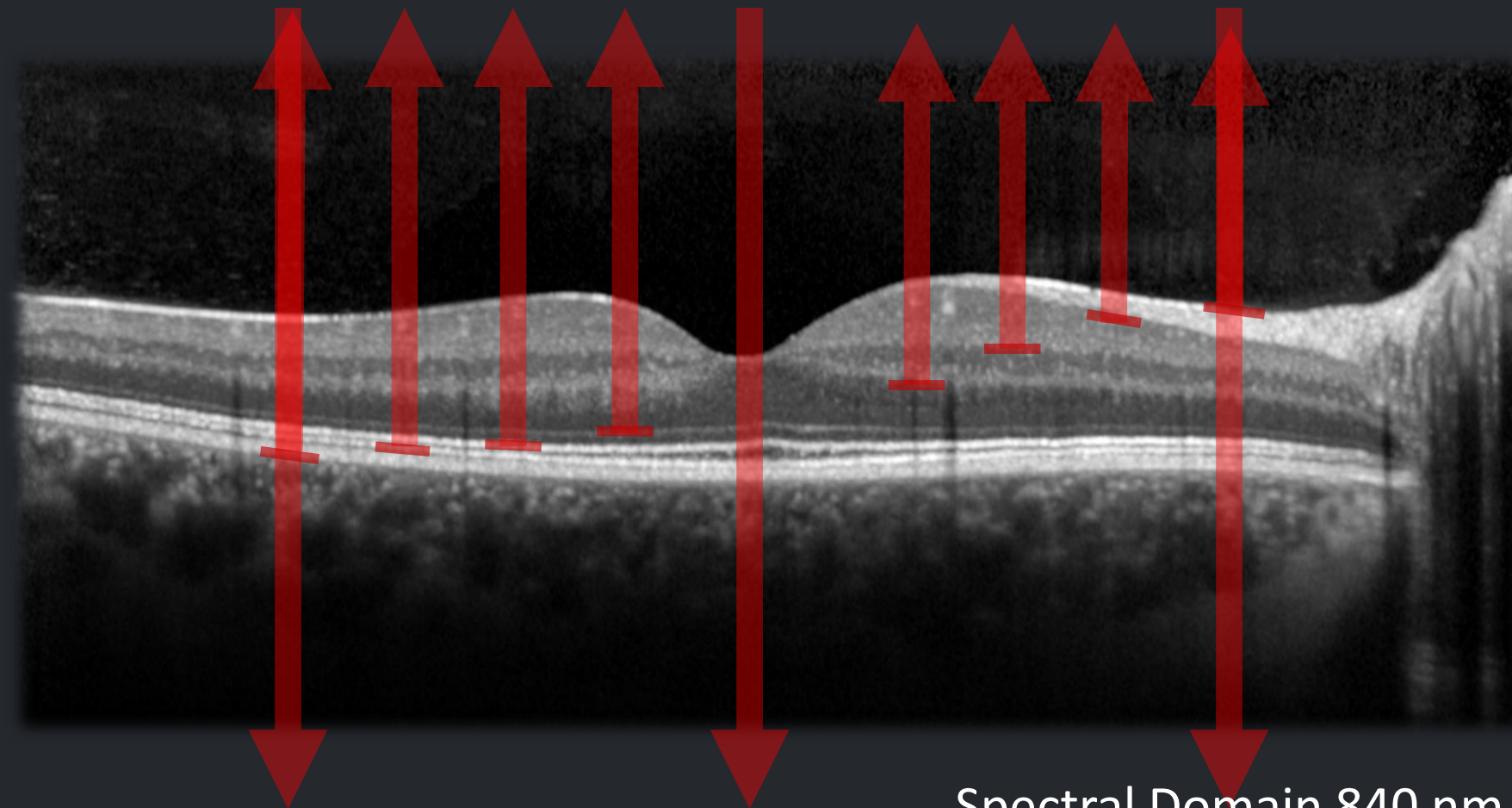
OCT in diabetic screening

Tim Cole

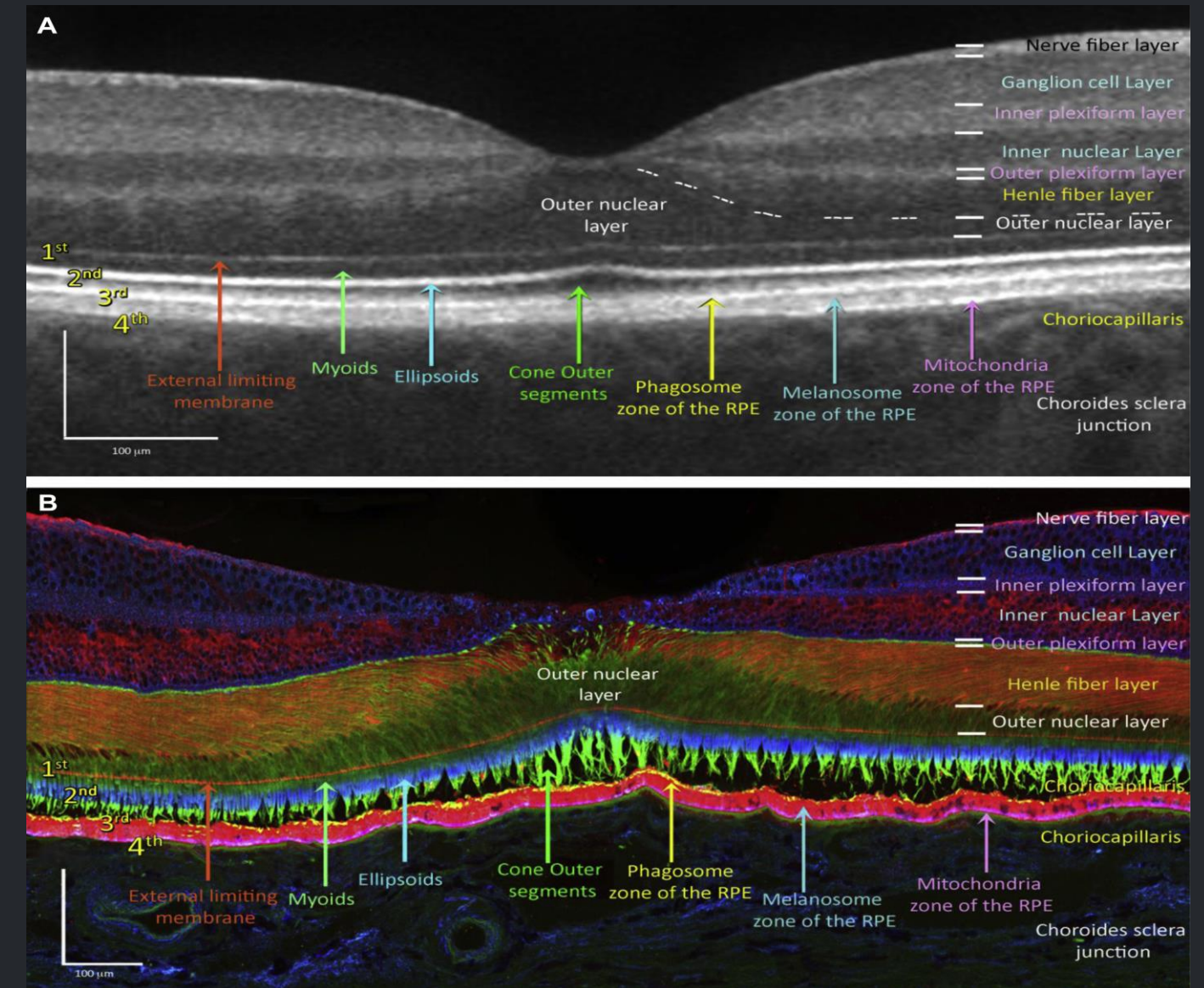
BARS 2021



OCT diagnosis

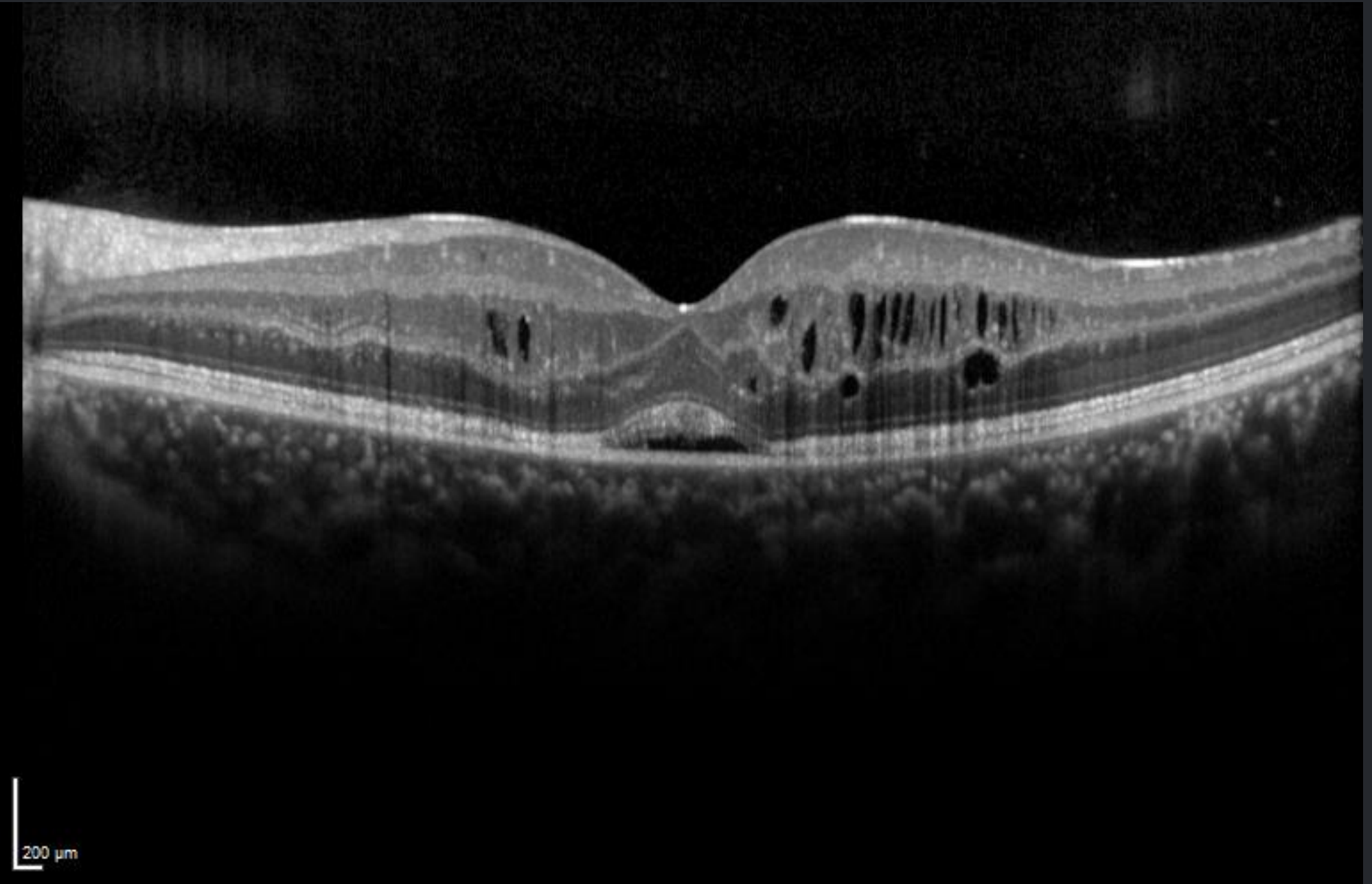
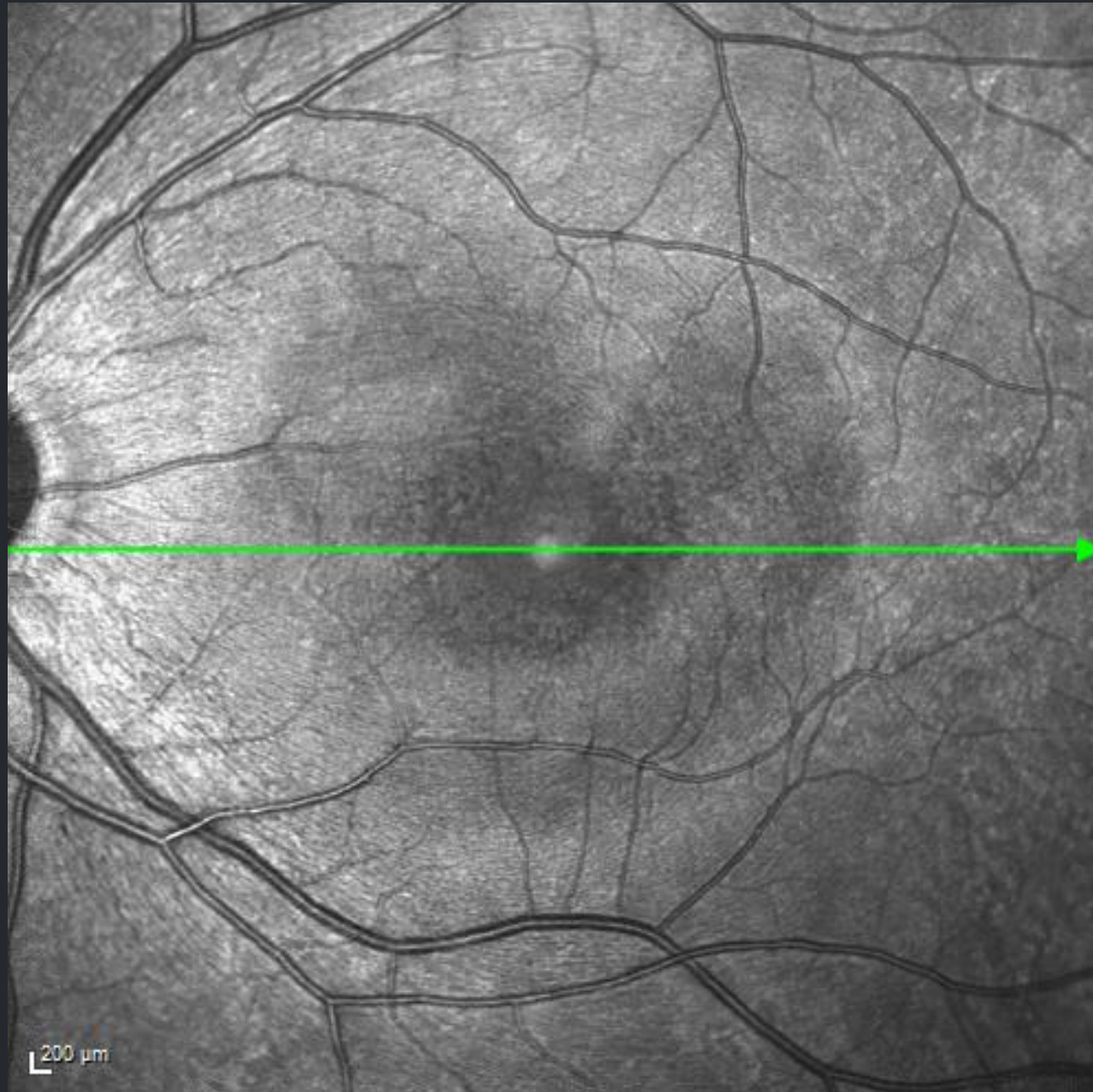


Spectral Domain 840 nm

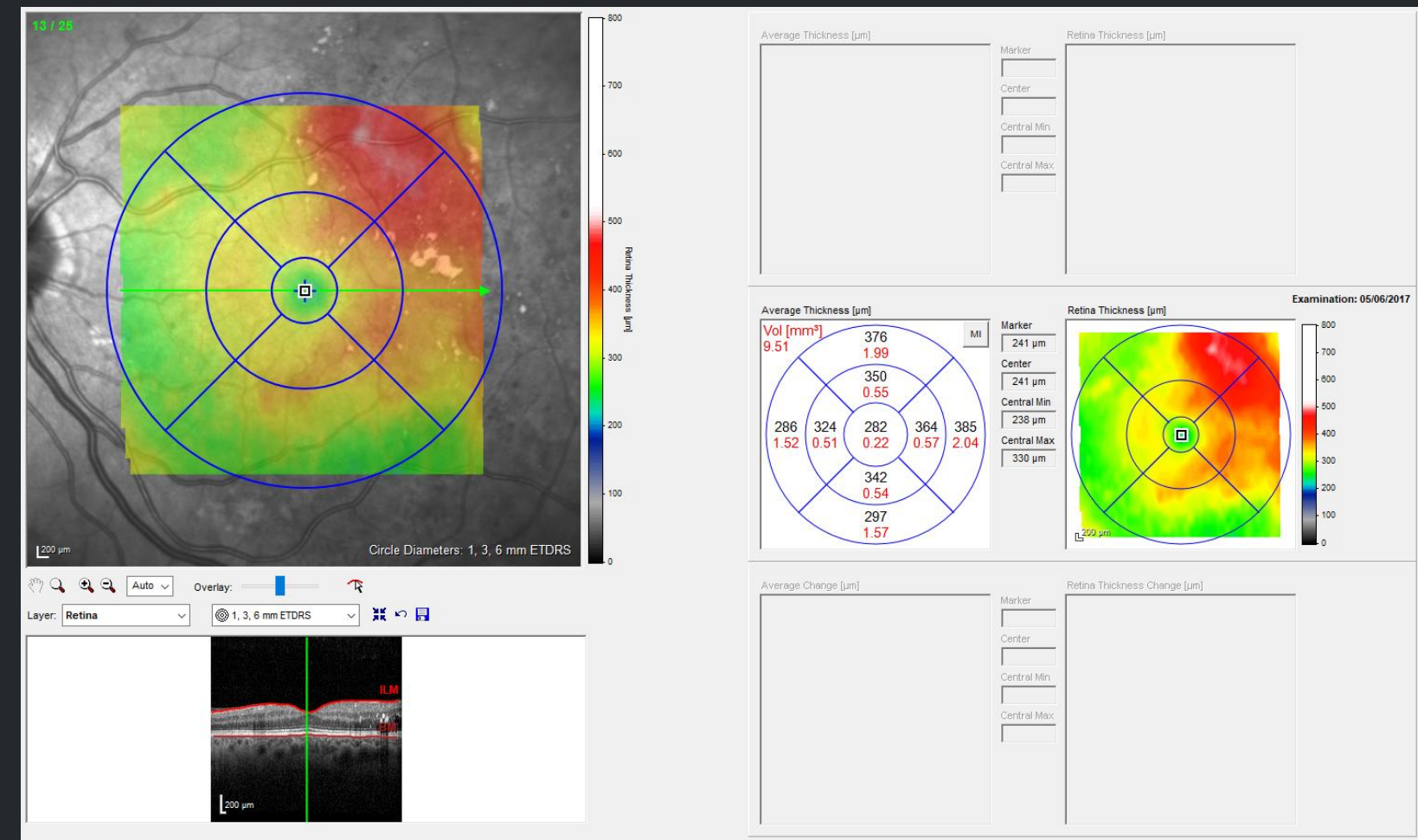
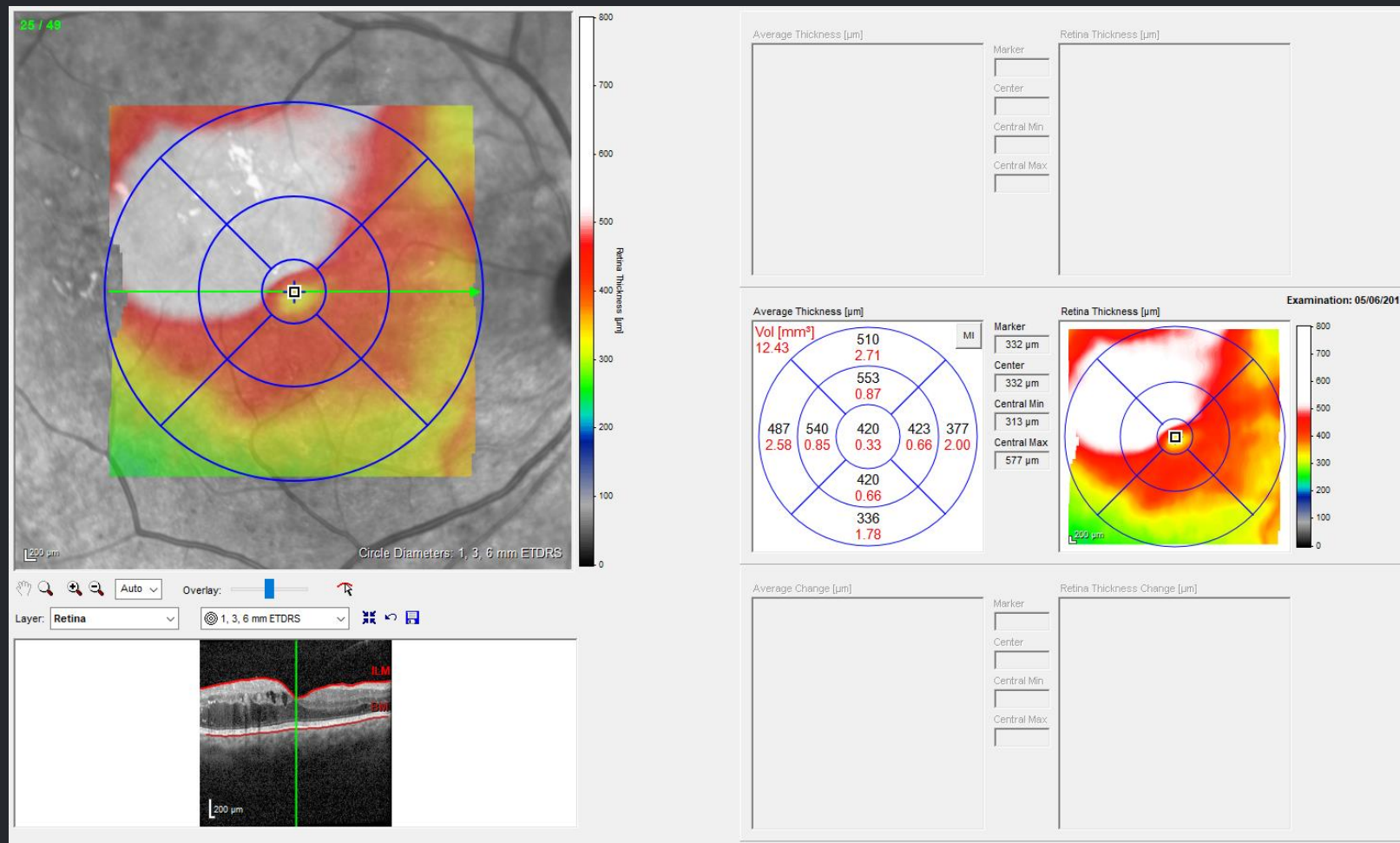


Cellular Characterization of OCT and Outer Retinal Bands Using Specific Immunohistochemistry Markers and Clinical Implications: [NicolásCuencaPhD](#) [sabelOrtuño-LizaránBSc](#) [IsabelPinillaMD, PhD](#)

OCT diagnosis | IRF / SRF



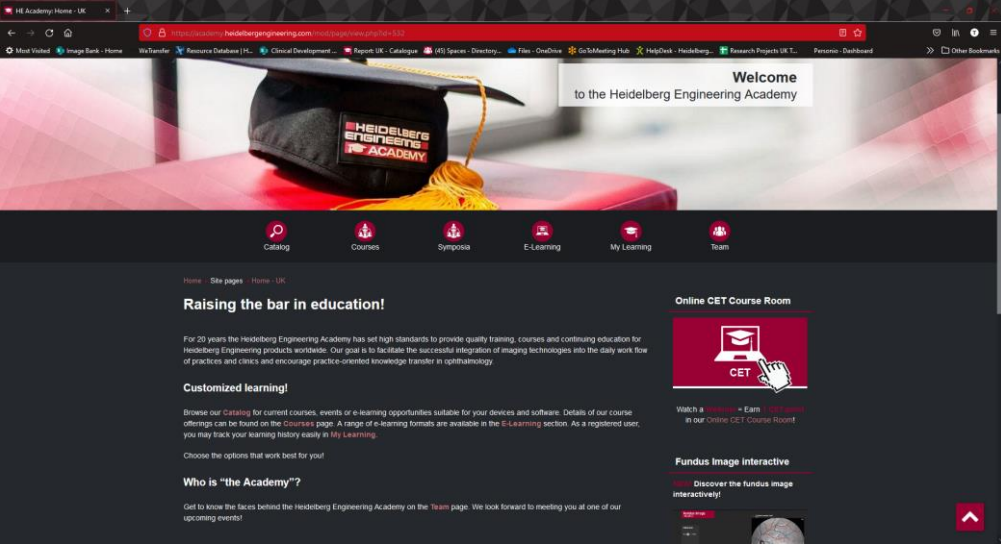
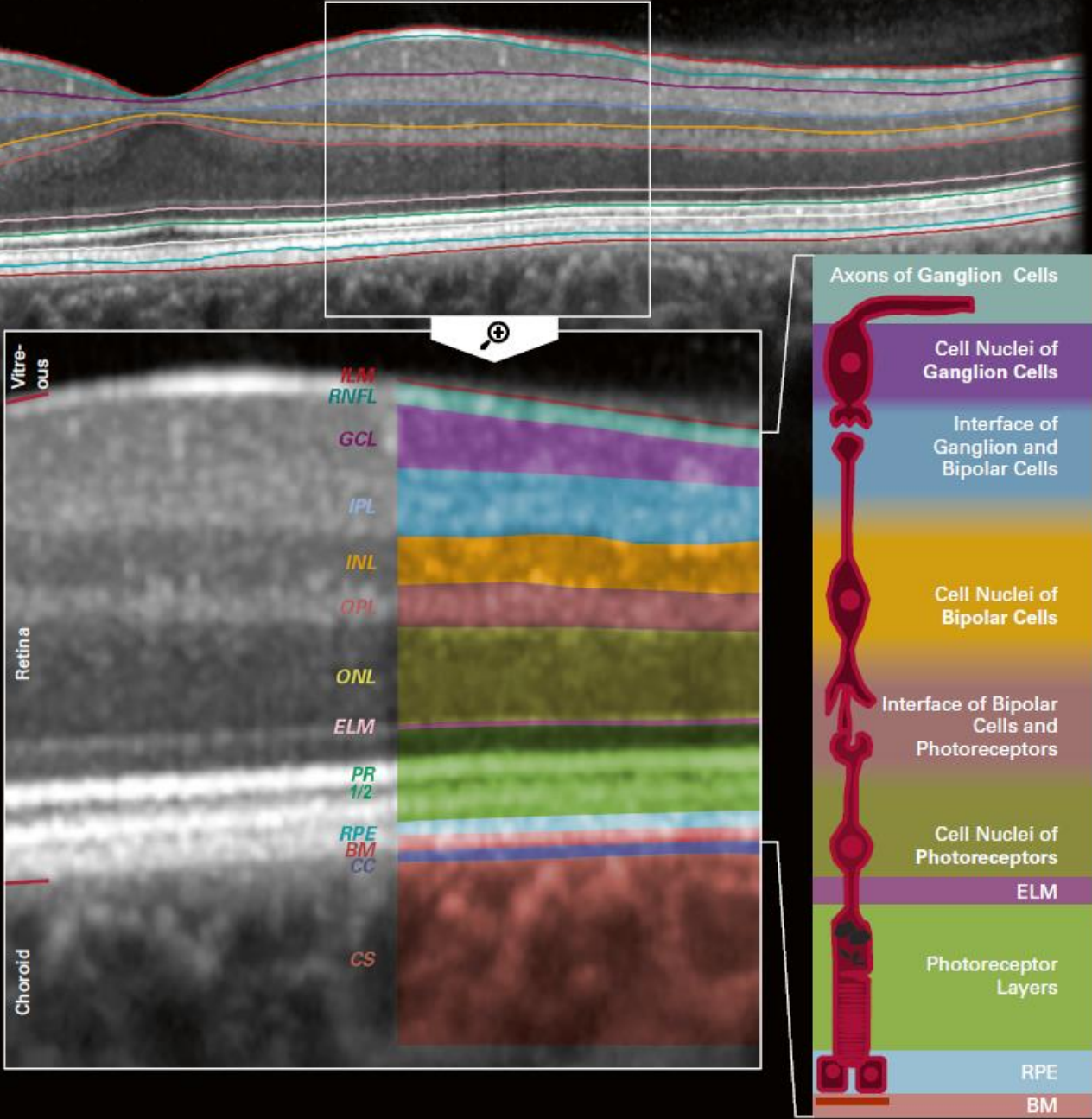
OCT diagnosis | ETDRS thickness grid



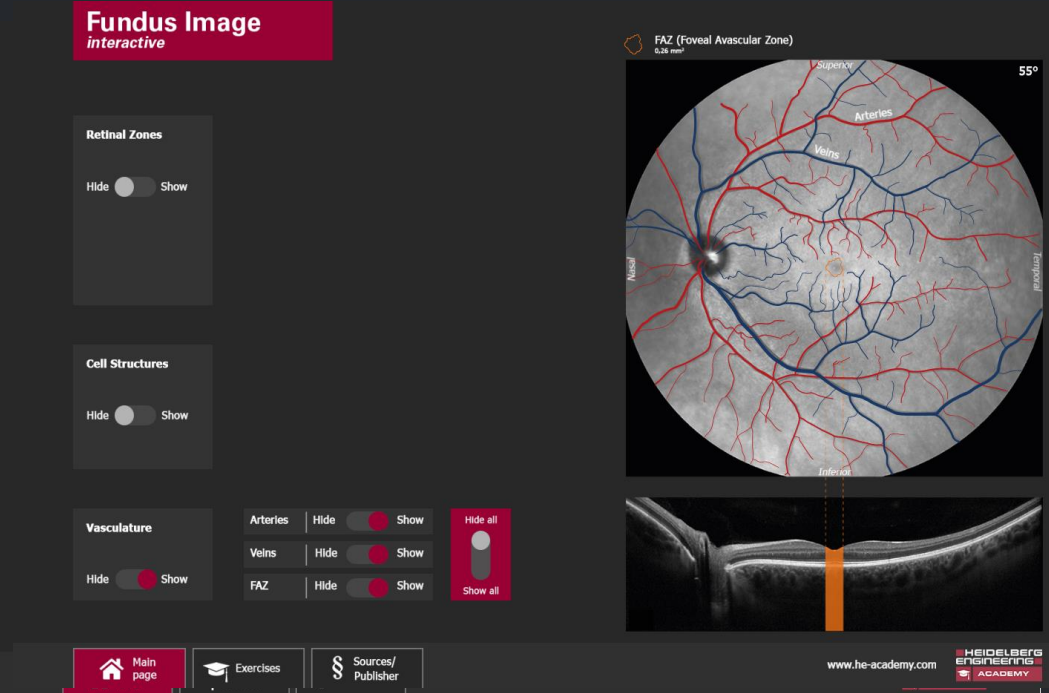
OCT diagnosis | Layers

Handout: Retinal Layers

Retinal Layers	
Abbr.	Name
ILM	Internal Limiting Membrane
RNFL	Retinal Nerve Fiber Layer
GCL	Ganglion Cell Layer
IPL	Inner Plexiform Layer
INL	Inner Nuclear Layer
OPL	Outer Plexiform Layer
ONL	Outer Nuclear Layer
ELM	External Limiting Membrane
PR1/2	Photoreceptor Layers
RPE	Retinal Pigment Epithelium
BM	Bruch's Membrane
CC	Choriocapillaris
CS	Choroidal Stroma



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NSC Grading Criteria - Minimum Data Set

Level R0 - None

Level R1 - Background

- microaneurysm(s)
- retinal haemorrhage(s) \pm any exudate

Level R2 - Pre-proliferative

- venous beading
 - venous loop or reduplication
 - intraretinal microvascular abnormality (IRMA)
 - multiple deep, round or blot haemorrhages
- (CWS - careful search for above features)

Level R3 - Proliferative

- new vessels on disc (NVD)
- new vessels elsewhere (NVE)
- pre-retinal or vitreous haemorrhage
- pre-retinal fibrosis \pm tractional retinal detachment

Maculopathy (M)

- exudate within 1 disc diameter (DD) of the centre of the fovea
- circinate or group of exudates within the macula
- retinal thickening within 1DD of the centre of the fovea (if stereo available)
- any microaneurysm or haemorrhage within 1 DD of the centre of the fovea only if associated with a best VA of $\leq 6/12$ (if no stereo)

Photocoagulation (P)

- focal/grid to macula
- peripheral scatter

Unclassifiable (U)

- Ungradable/unobtainable

NSC Proposed Management Criteria

R0 Annual screening

R1 Annual screening, inform diabetes care team

R2 Refer to hospital eye service

R3 Fast-track referral to hospital eye service

Maculopathy (**M**)

M1 Refer to hospital eye service

Photocoagulation (**P**)

P1 New screenee - refer to hospital eye service

P2 Quiescent post treatment - annual screening

Other lesions (**OL**)

Refer to hospital eye service or inform primary physician

Ungradable/unobtainable (**U**)

Media opacity hospital eye service

Unscreenable

discharge, inform GP

(option to recall for further photos if purely technical failure)



**Normal retina with no diabetic retinopathy -
NSC grade R0**



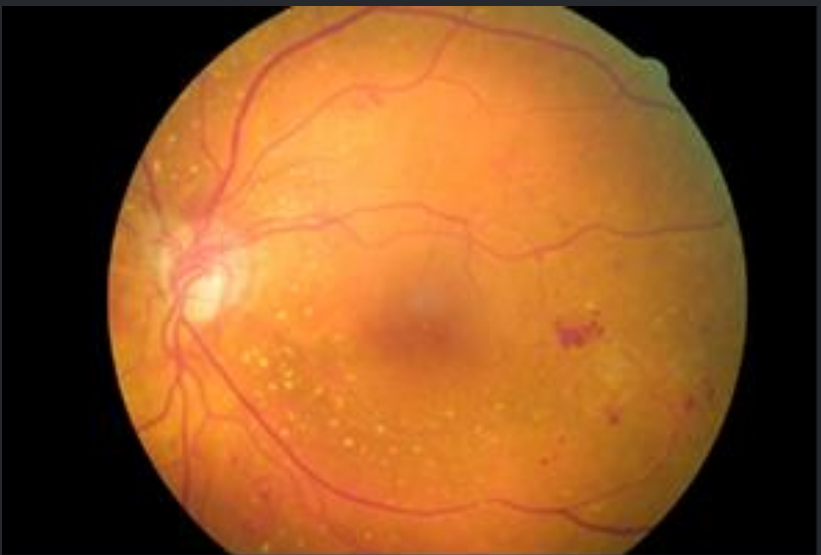
**Background diabetic retinopathy with MA
haemorrhages and exudates – NSC grade
R1**



**Pre-proliferative diabetic retinopathy with
CWS, IRMA and multiple blot
haemorrhages –NSC R2**



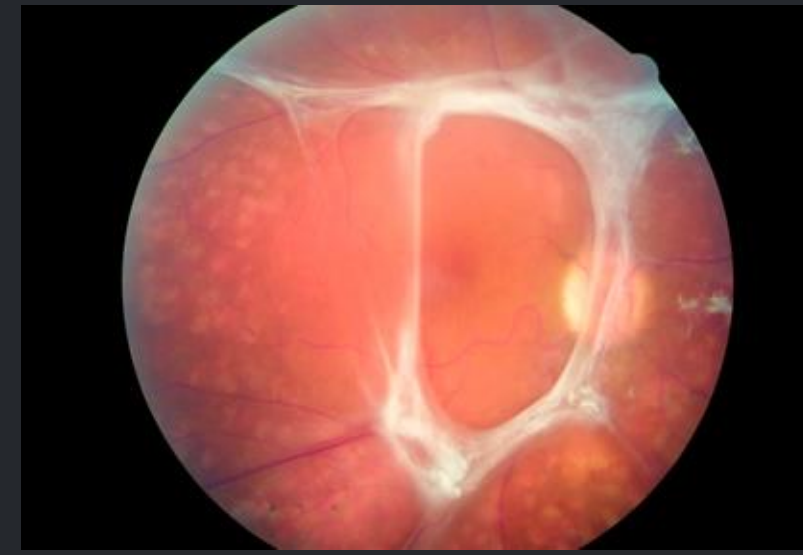
**Diabetic maculopathy with haemorrhages
and circinate exudates – NSC grade M**



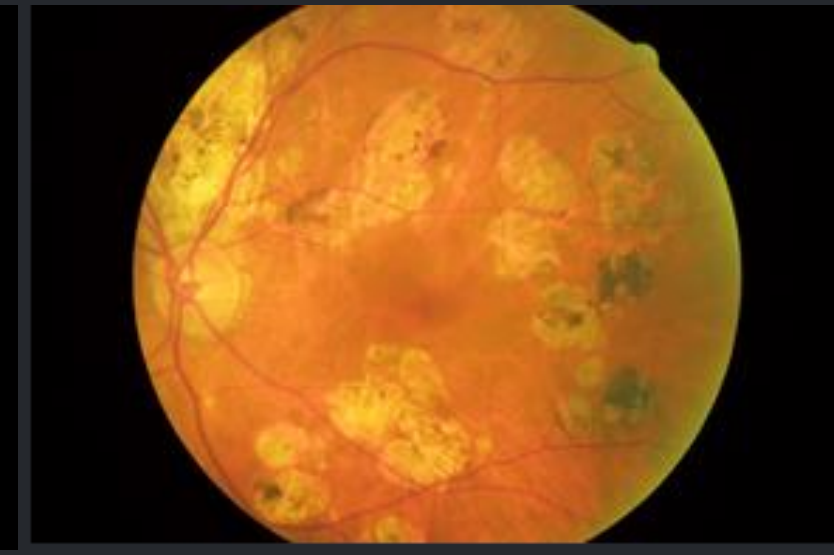
**Proliferative diabetic retinopathy with new
vessels at the optic disc NVD – NSC grade
3**



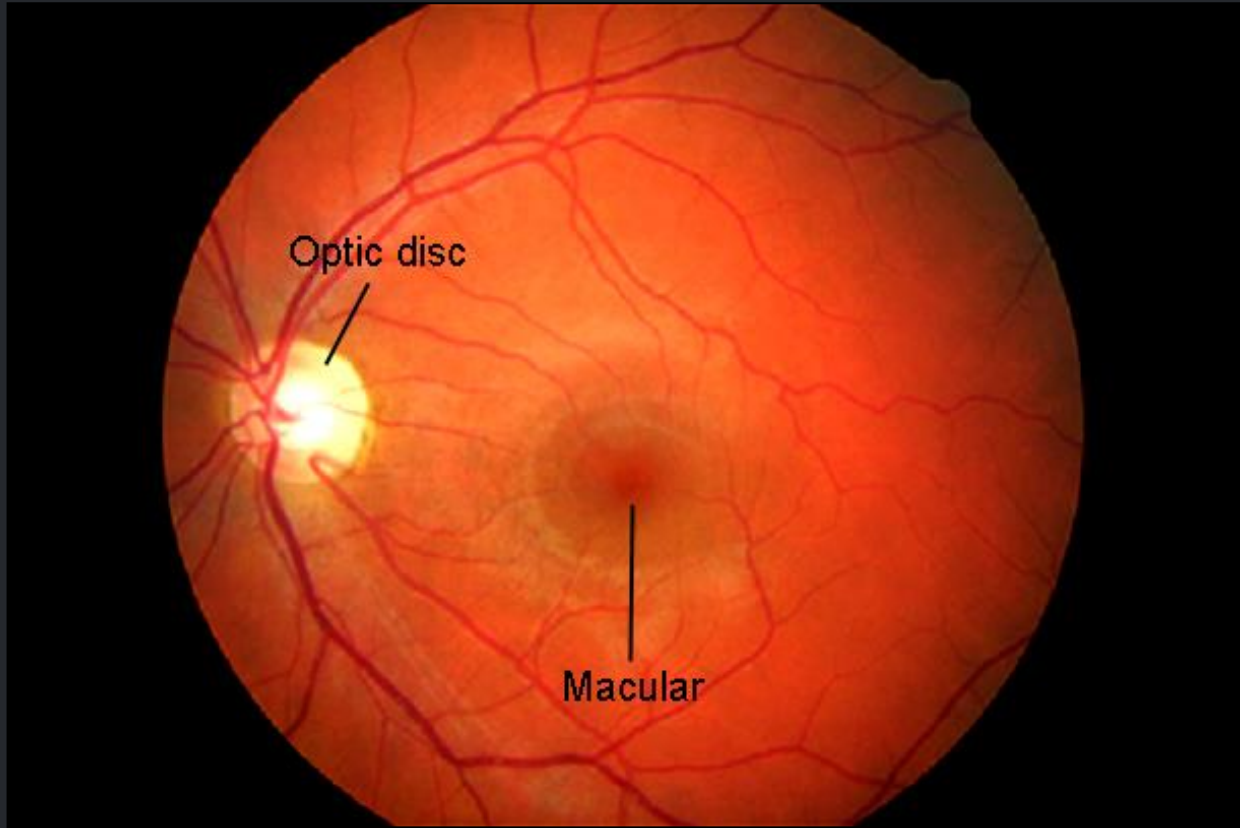
**Proliferative diabetic retinopathy with pre-
retinal and vitreous haemorrhages – NSC
grade R3**



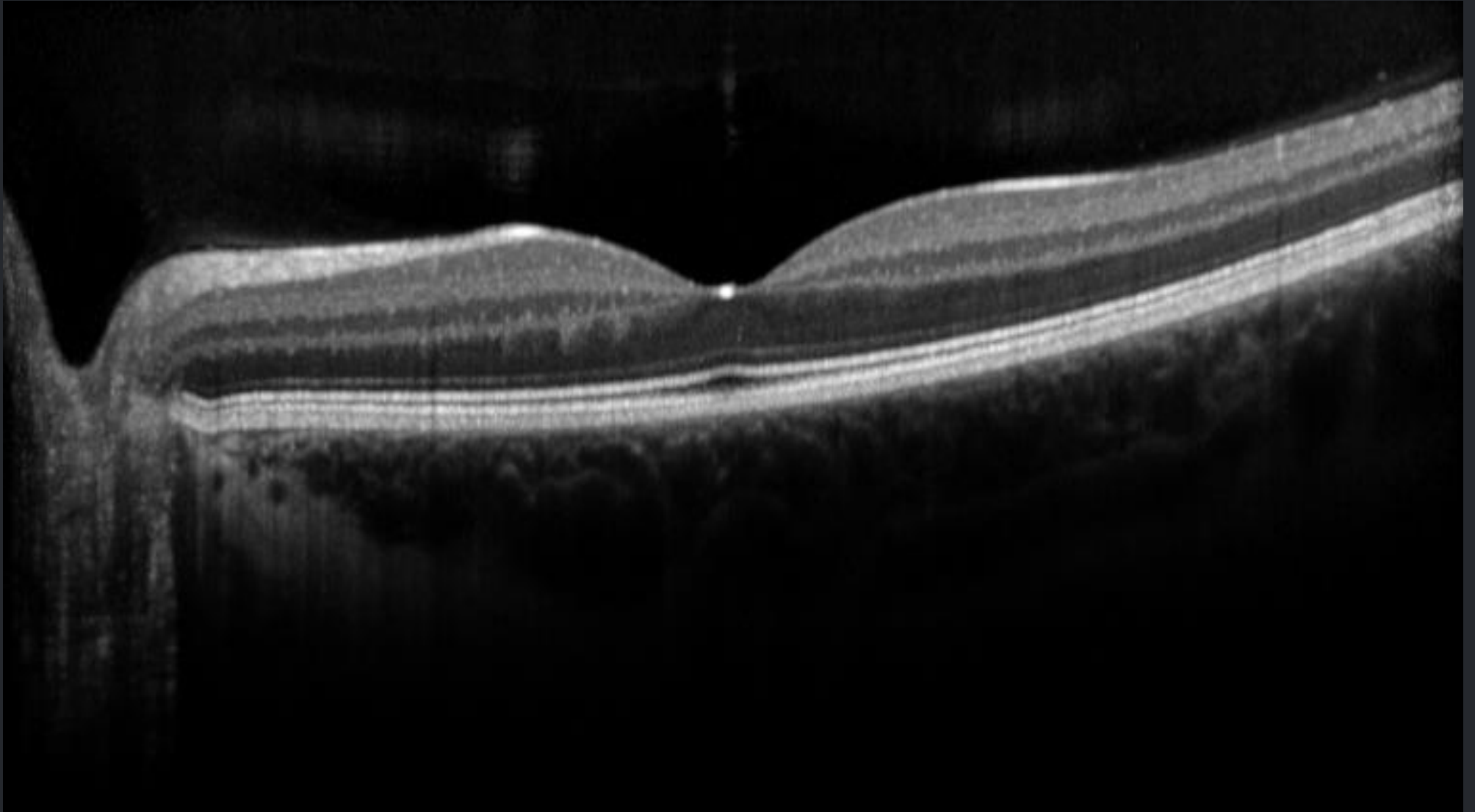
**Proliferative diabetic retinopathy with
fibrous proliferation – NSC grade R3**

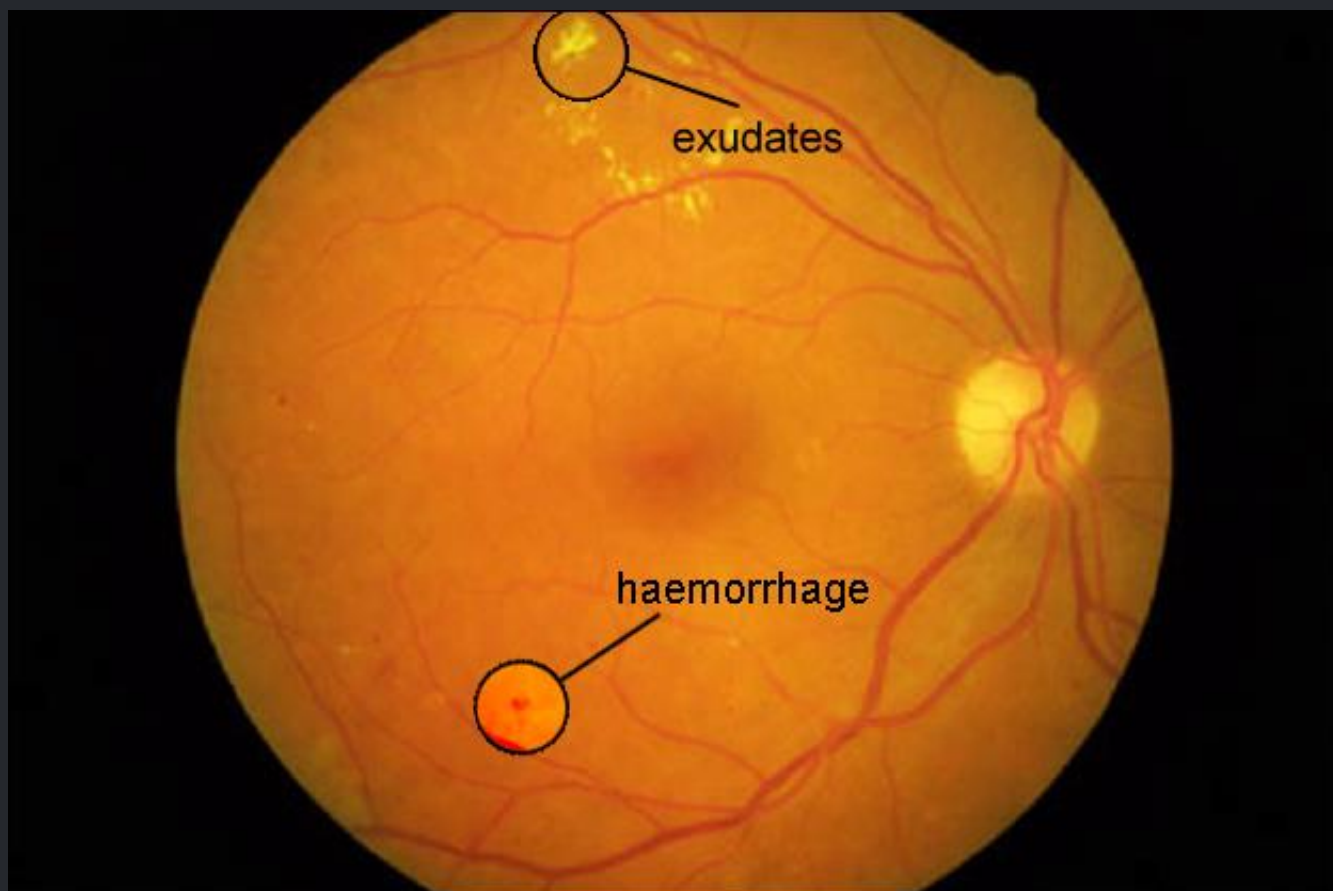


**Evidence of previous laser therapy – NSC
grade P**

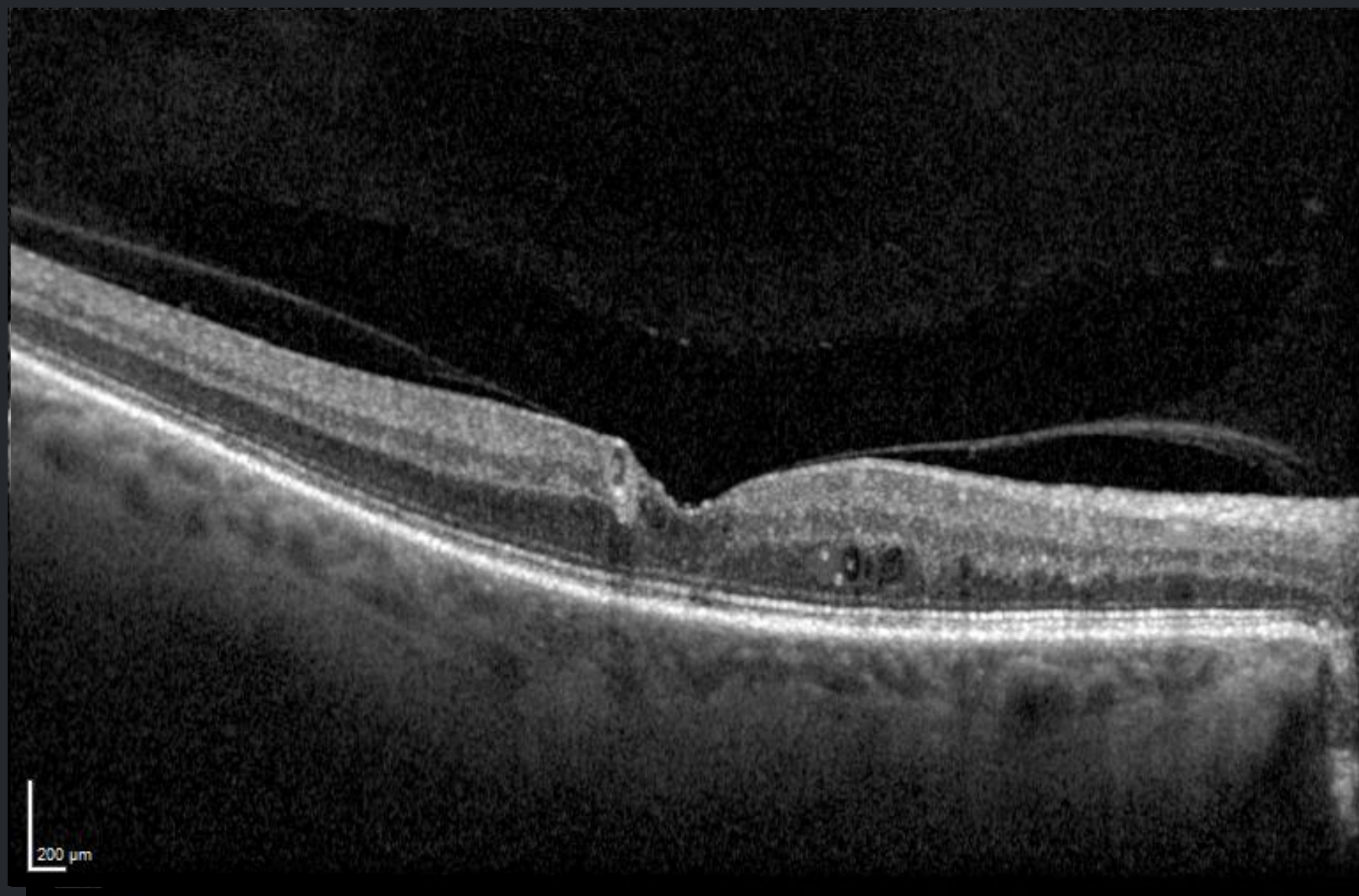


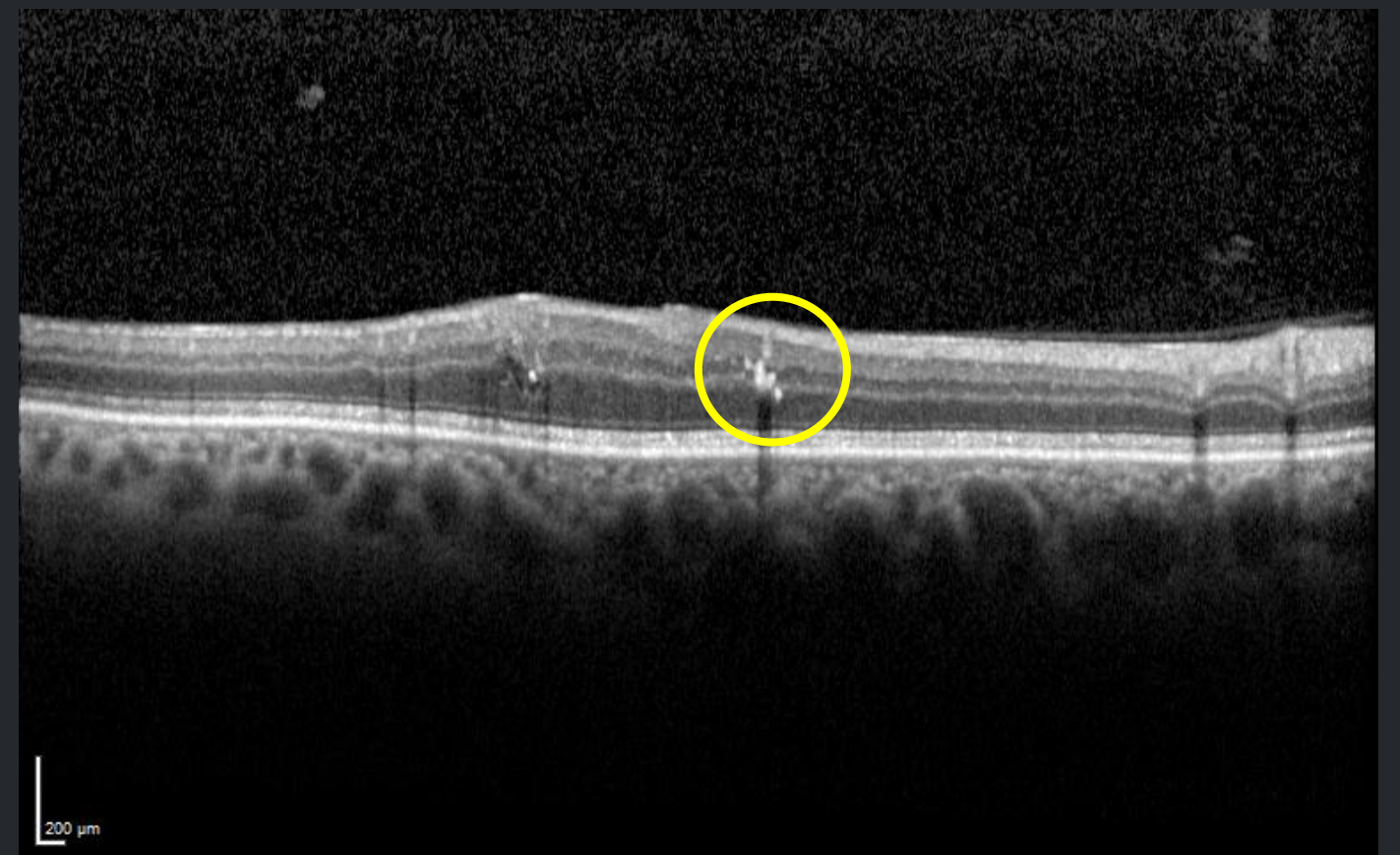
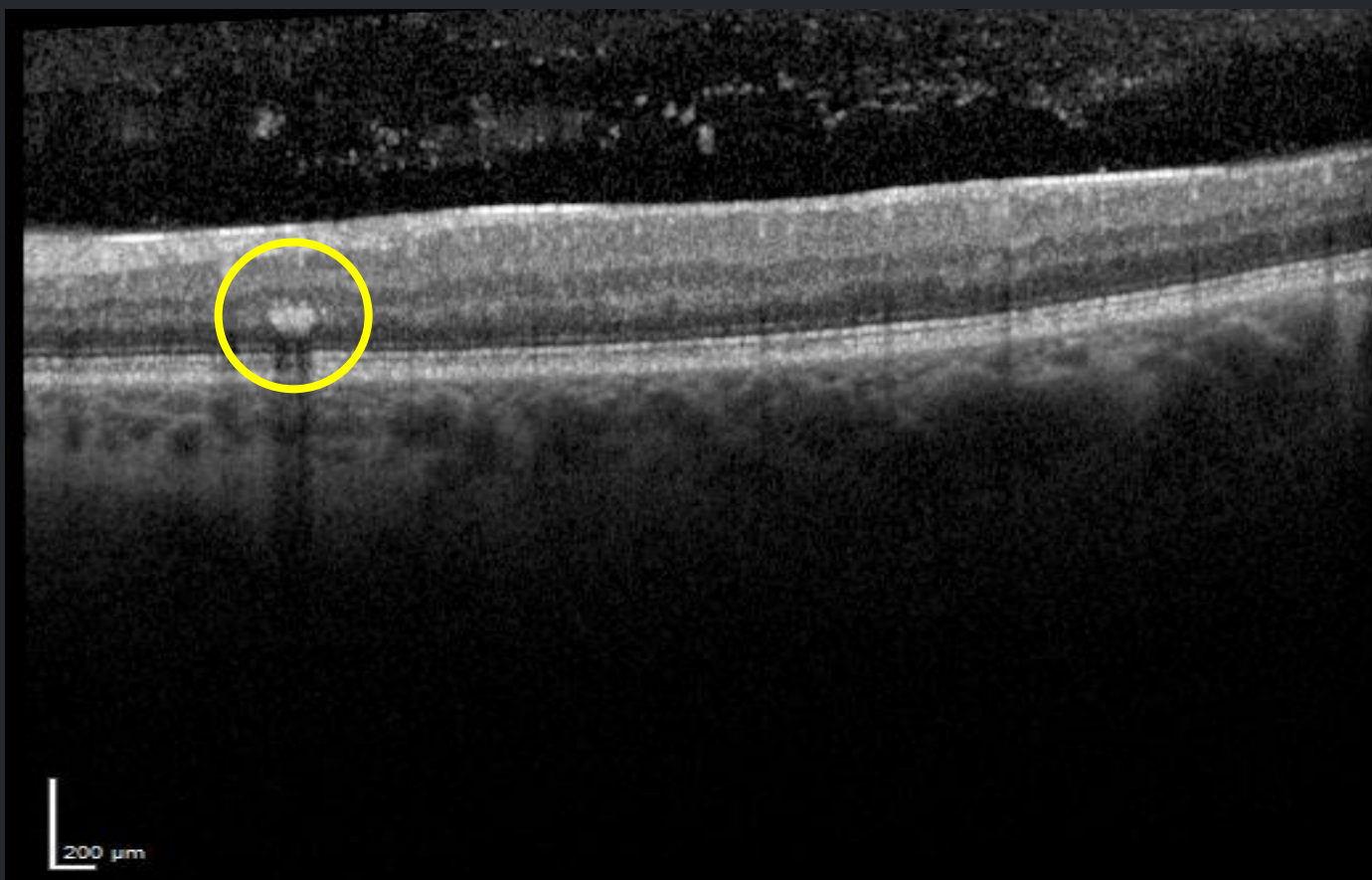
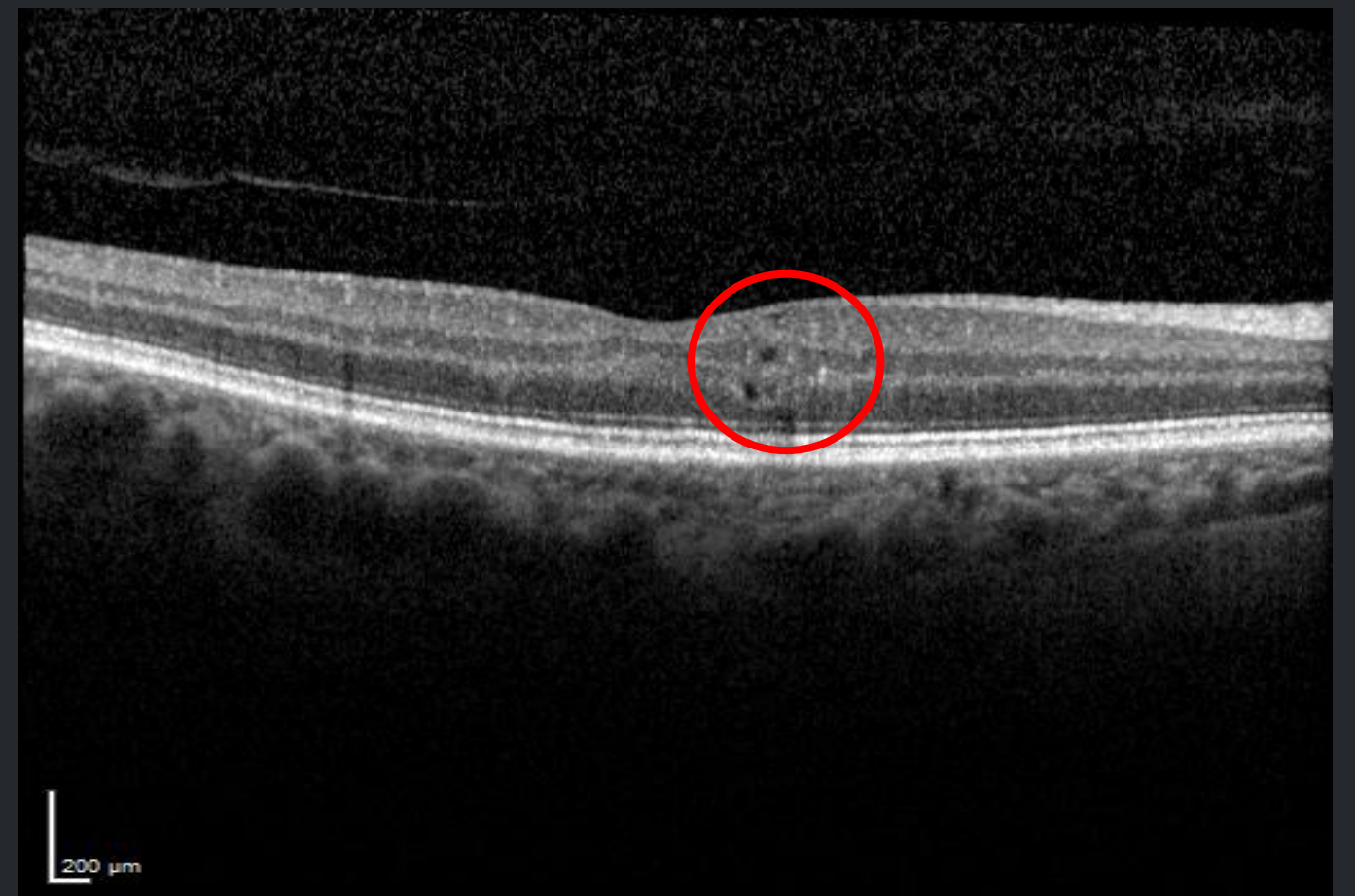
Normal retina with no diabetic retinopathy -
NSC grade R0



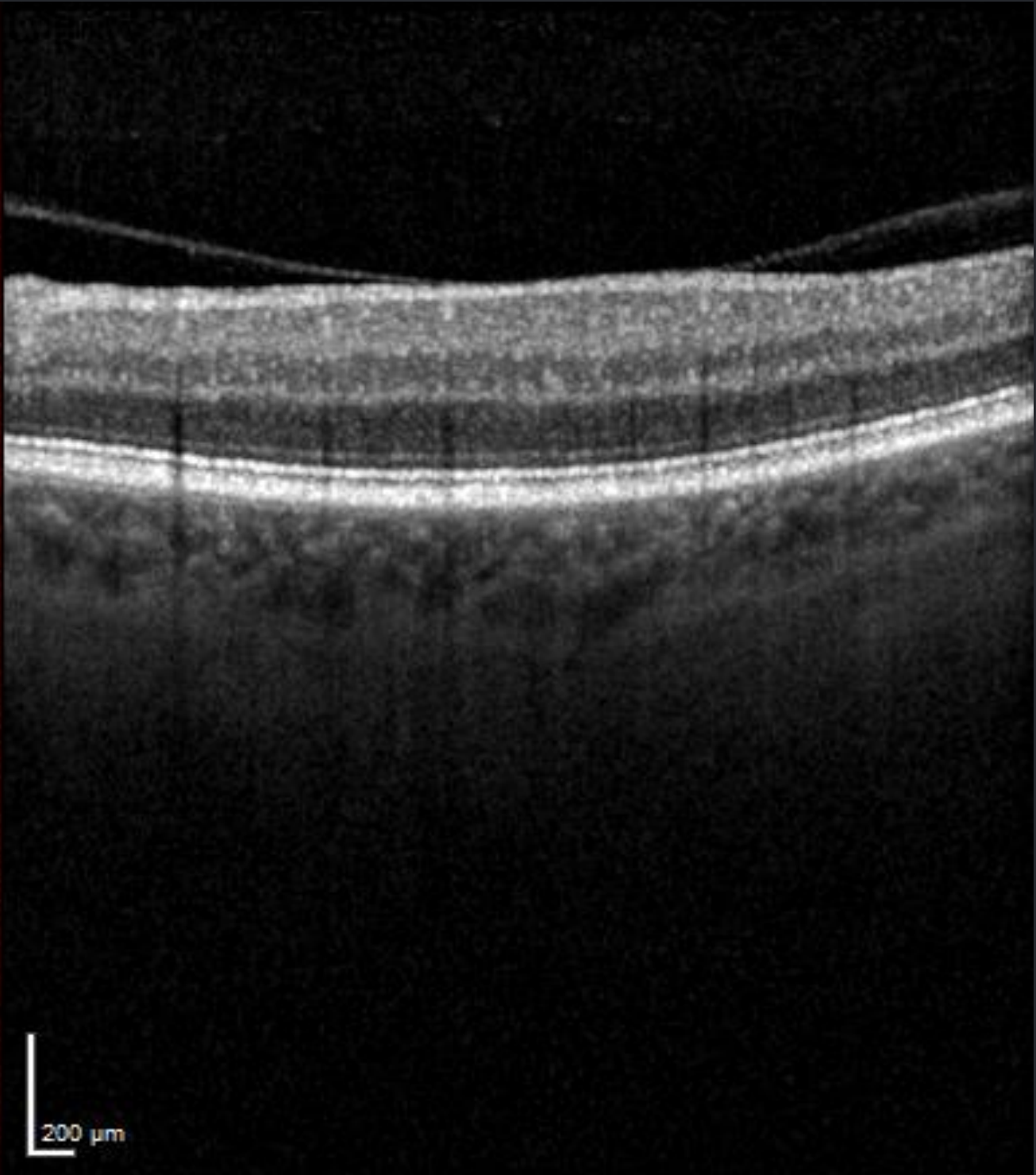
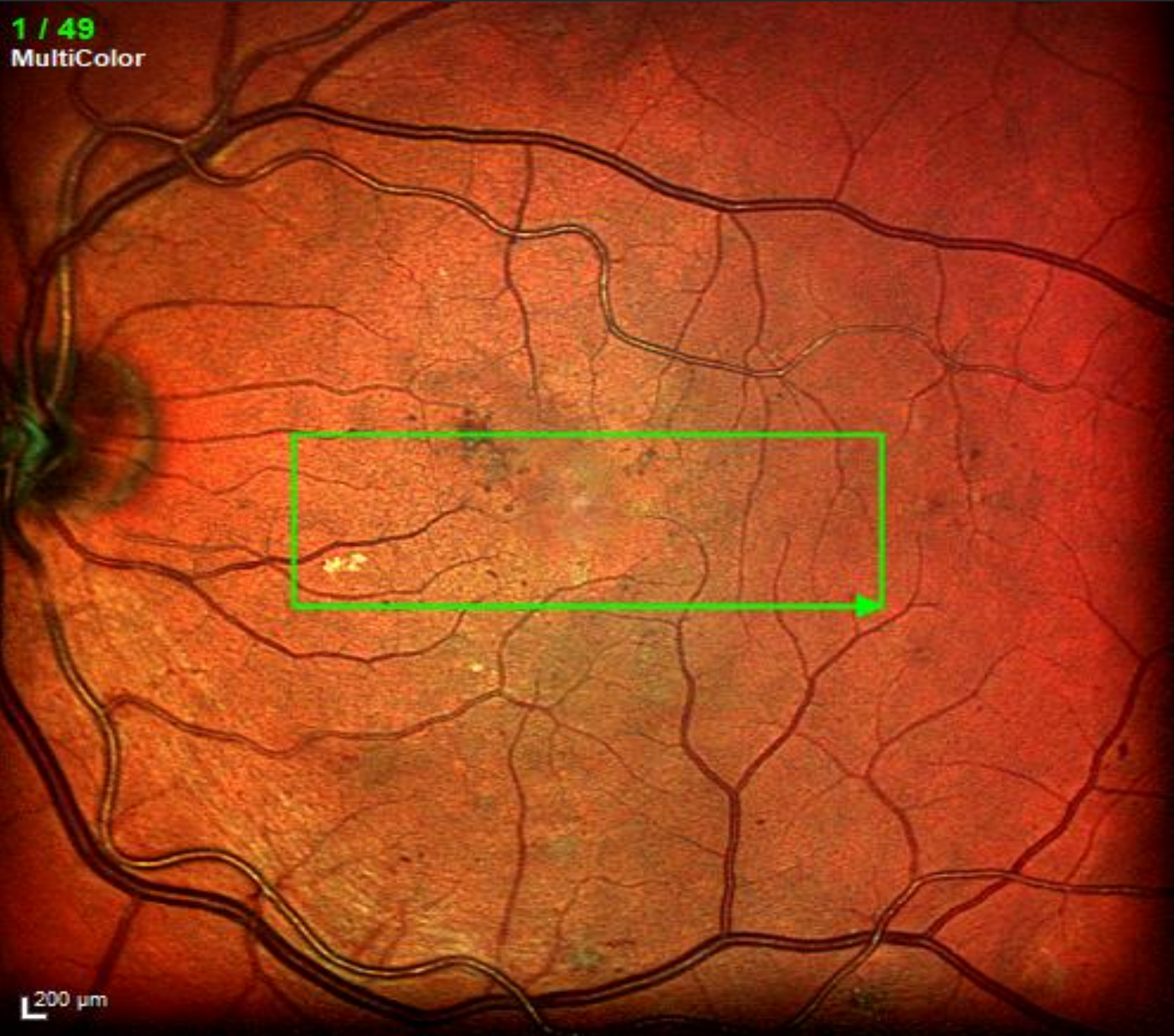


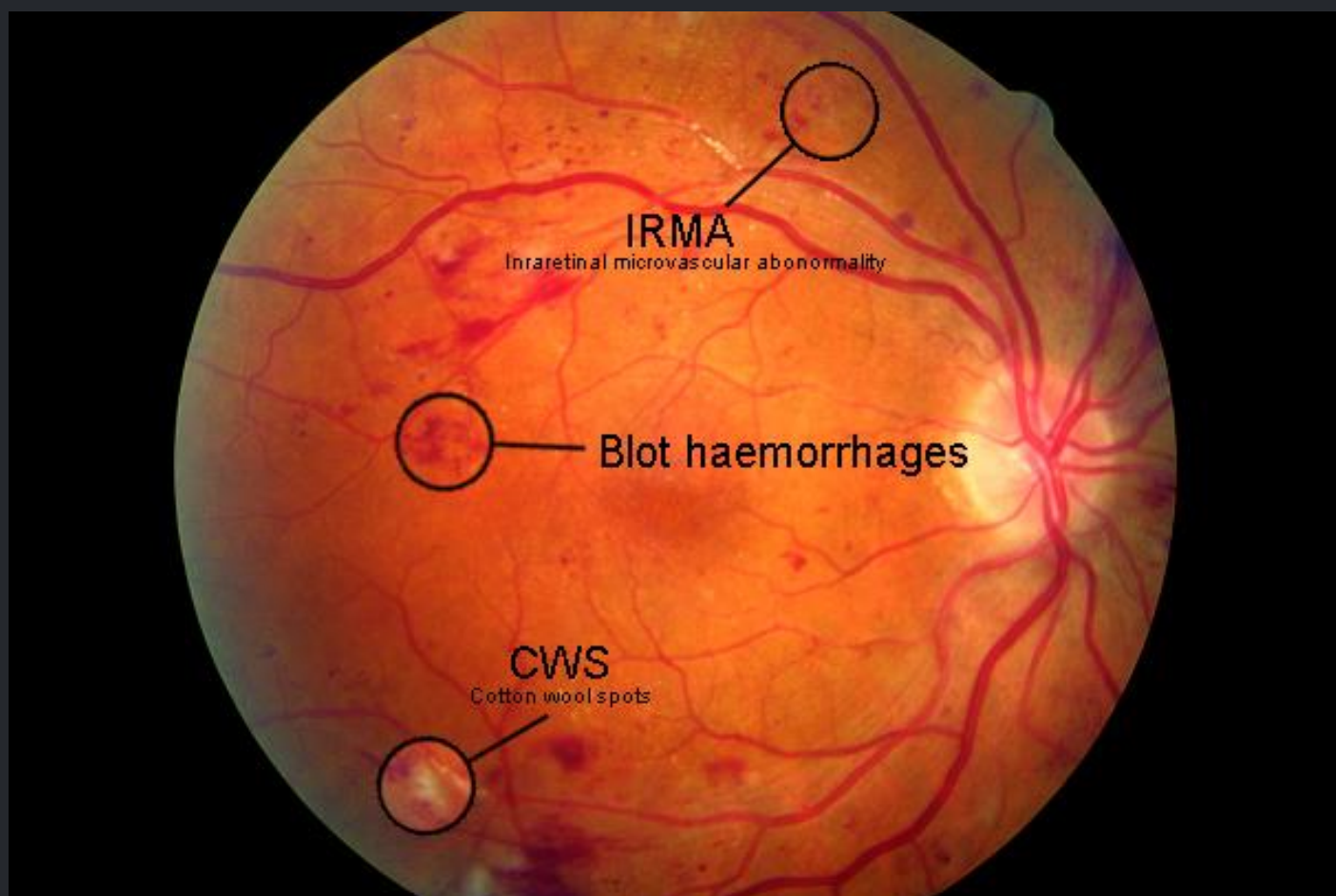
**Background diabetic retinopathy with MA
haemorrhages and exudates – NSC grade R1**



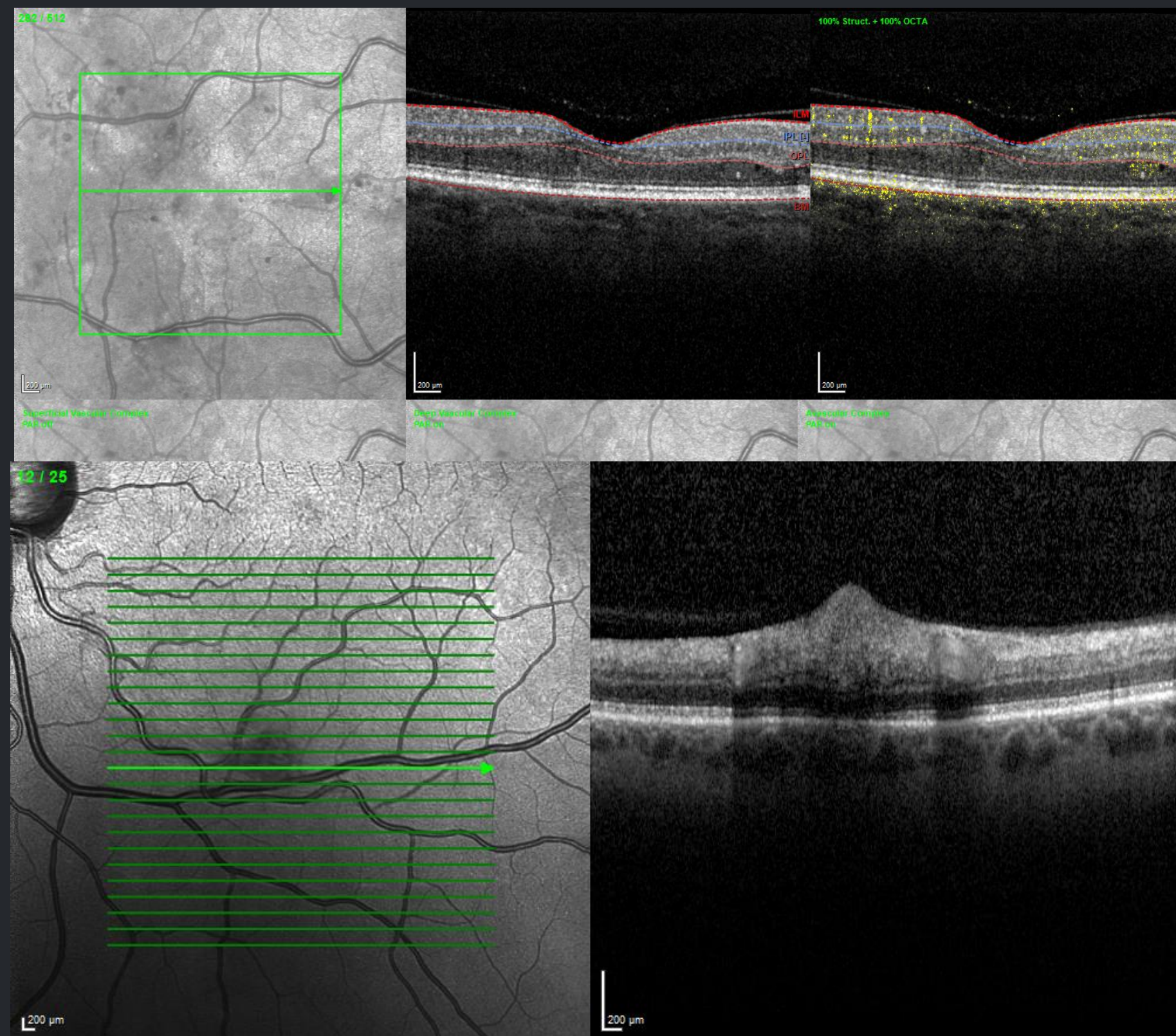


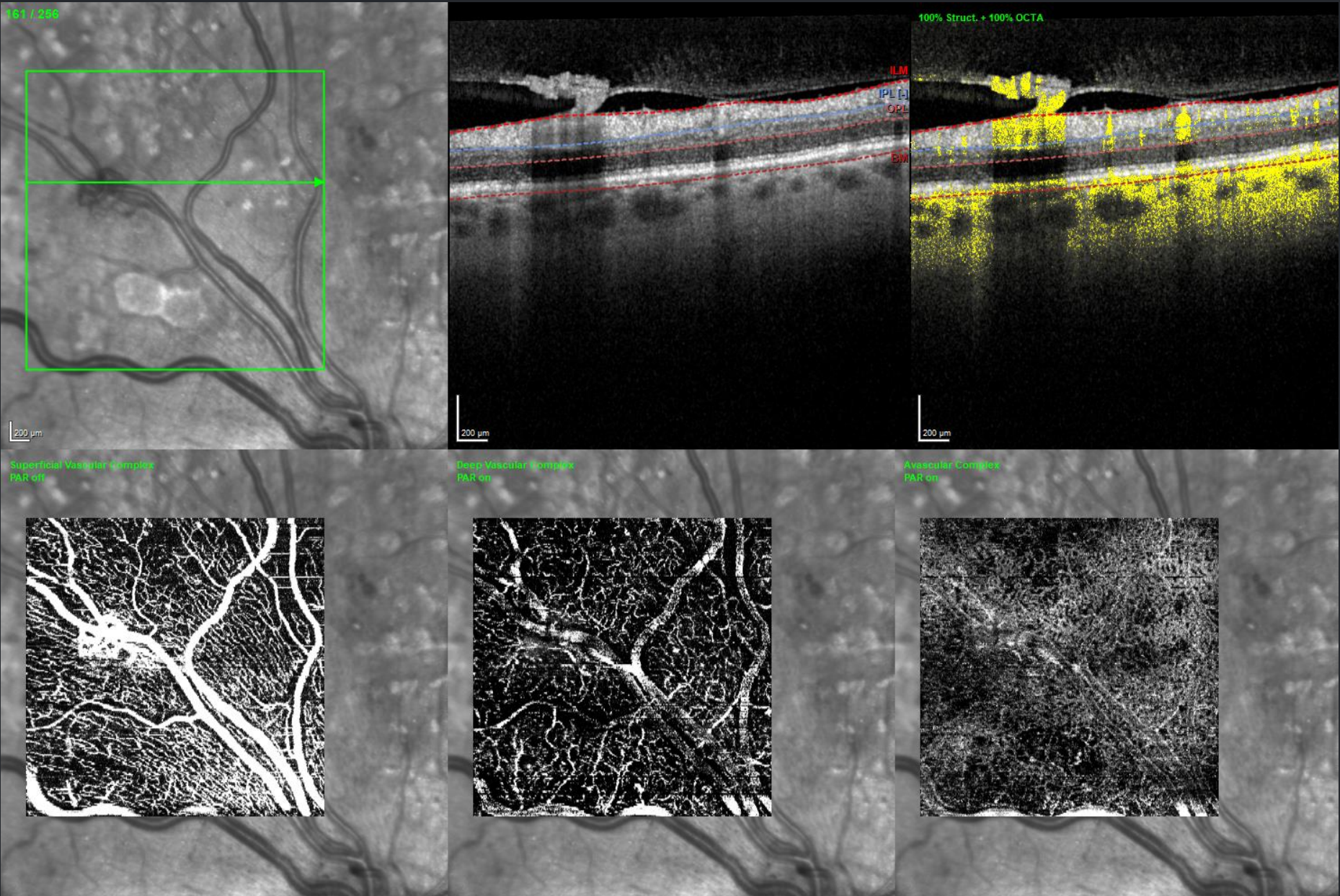
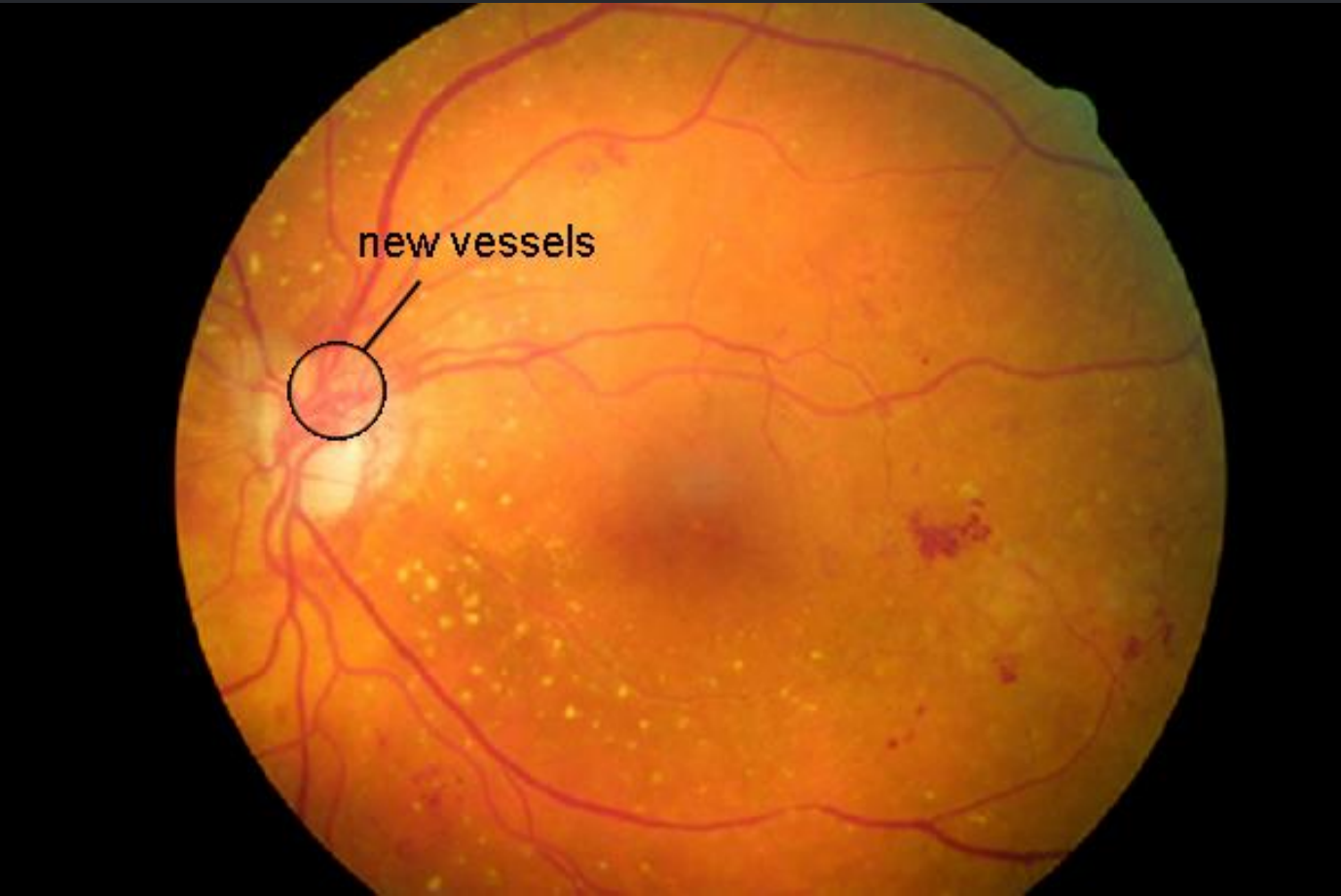
1 / 49
MultiColor

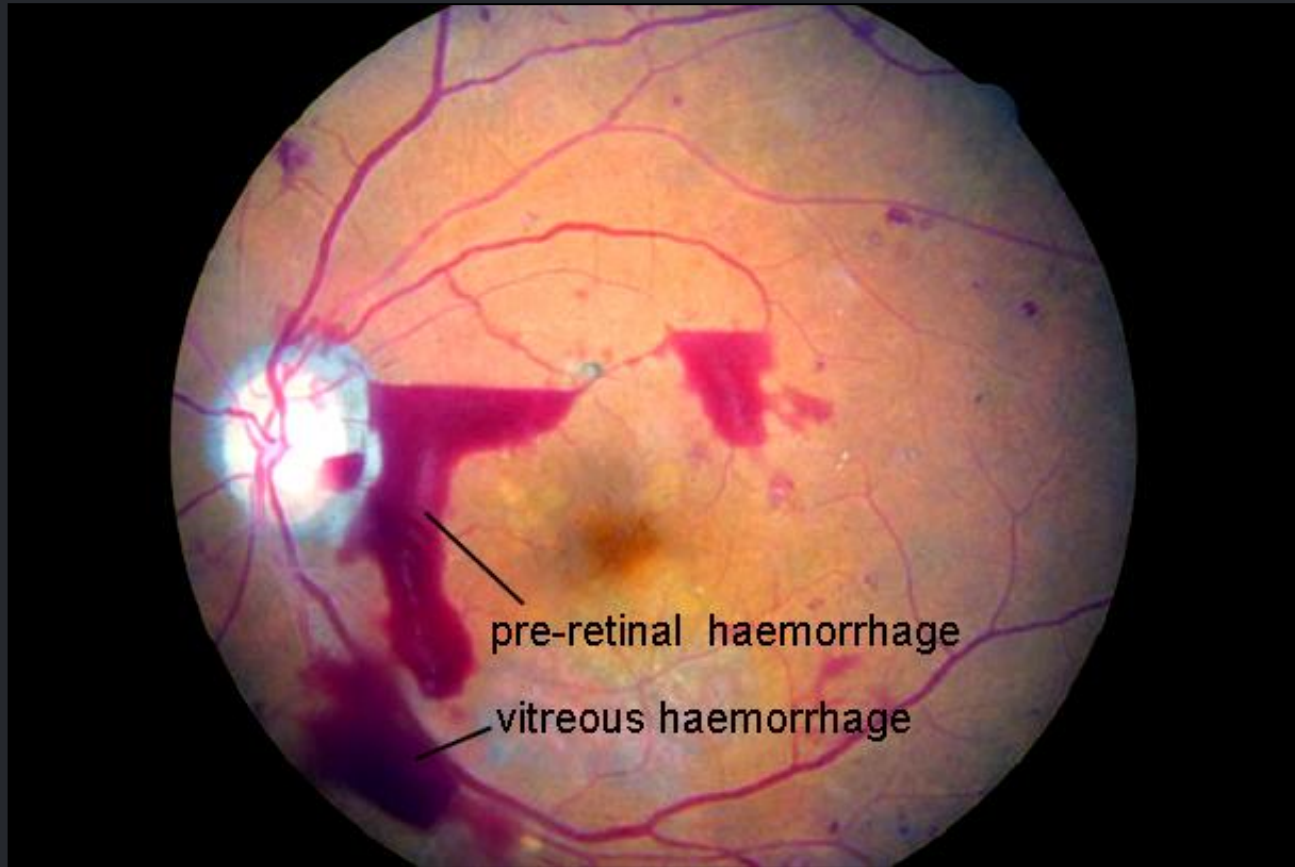




**Pre-proliferative diabetic retinopathy with
CWS, IRMA and multiple blot
haemorrhages –NSC R2**







Proliferative diabetic retinopathy with pre-retinal and vitreous haemorrhages – NSC grade R3

