

MODULO 3 | Lezione 1

DIAGNOSTICA DELLA RETINA

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ARGOMENTI DI QUESTA LEZIONE :

Retinografia Infrarosso

Autofluorescenza del fondo oculare

Angiografia con indocianina verde

Tomografia ottica a coerenza - OCT

Conflitti di interesse:

Heidelberg Engineering^{1,2}, OD-OS^{1,2}, Optos^{1,2},
Ocular Instruments⁴, Quantel Medical^{1,2}, Carl Zeiss
Meditec¹, Alcon^{1,3}, Allergan^{1,3}, Bayer^{1,3},
Boheringer¹, Genentech¹, GSK^{1,3}, QLT¹, Novartis^{1,3},
Roche^{1,3}

1 consulente, 2 finanziamenti per ricerca, 3 rimborsi per letture, 4 brevetti



LE TECNICHE DI IMAGING: APPROPRIATEZZA D'USO

ACCURATA DIAGNOSI



TERAPIA MIRATA



MIGLIORI RISULTATI, MAGGIORE
COMPLIANCE DEL PAZIENTE , NOTEVOLE
RISPARMIO ECONOMICO

A seguire una flow-chart che indica le più appropriate strategie diagnostiche secondo le varie tipologie di paziente



Imaging non invasivo

1	Foto a colori	FC
2	Retinografia con radiazione infrarossa	IR
3	Retinografia con luce aneritra con SLO (luce monocromatica blu)	RF
4	Autofluorescenza del fondo	FAF
5	Optical Coherence Tomography (OCT)	OCT
6	Enhanced Depth Imaging OCT (EDI-OCT)	EDI
7	Ecografia	US

Imaging invasivo

8	Fluorangiografia (FA)	FA
9	Angiografia con indocianina verde (ICGA)	ICG
10	FA ad ampio campo (Wide field FA)	WF
11	ICGA ad ampio campo (Wide field ICGA)	WFI



Prima Visita

Degenerazione maculare senile

IR OCT FAF FA ICG RF FC

Retinopatia diabetica

FC RF OCT FA WF US *

Corioretinopatia sierosa centrale

OCT EDI ICG FAF

Occlusioni vascolari

FC OCT FA WF

Tumori oculari

FC OCT EDI FAF ICG WFI US WF

* solo in caso di emovitreo



Follow-up

Degenerazione maculare senile

IR OCT FAF FC + FA* ICG*

Retinopatia diabetica

FC RF OCT + FA* WF*

Corioretinopatia sierosa centrale

OCT EDI FAF + ICG^o

Occlusioni vascolari

FC OCT + FA# WF#

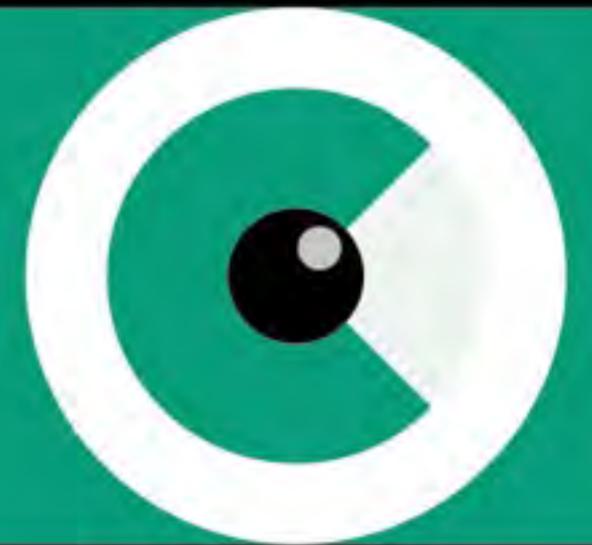
Tumori oculari

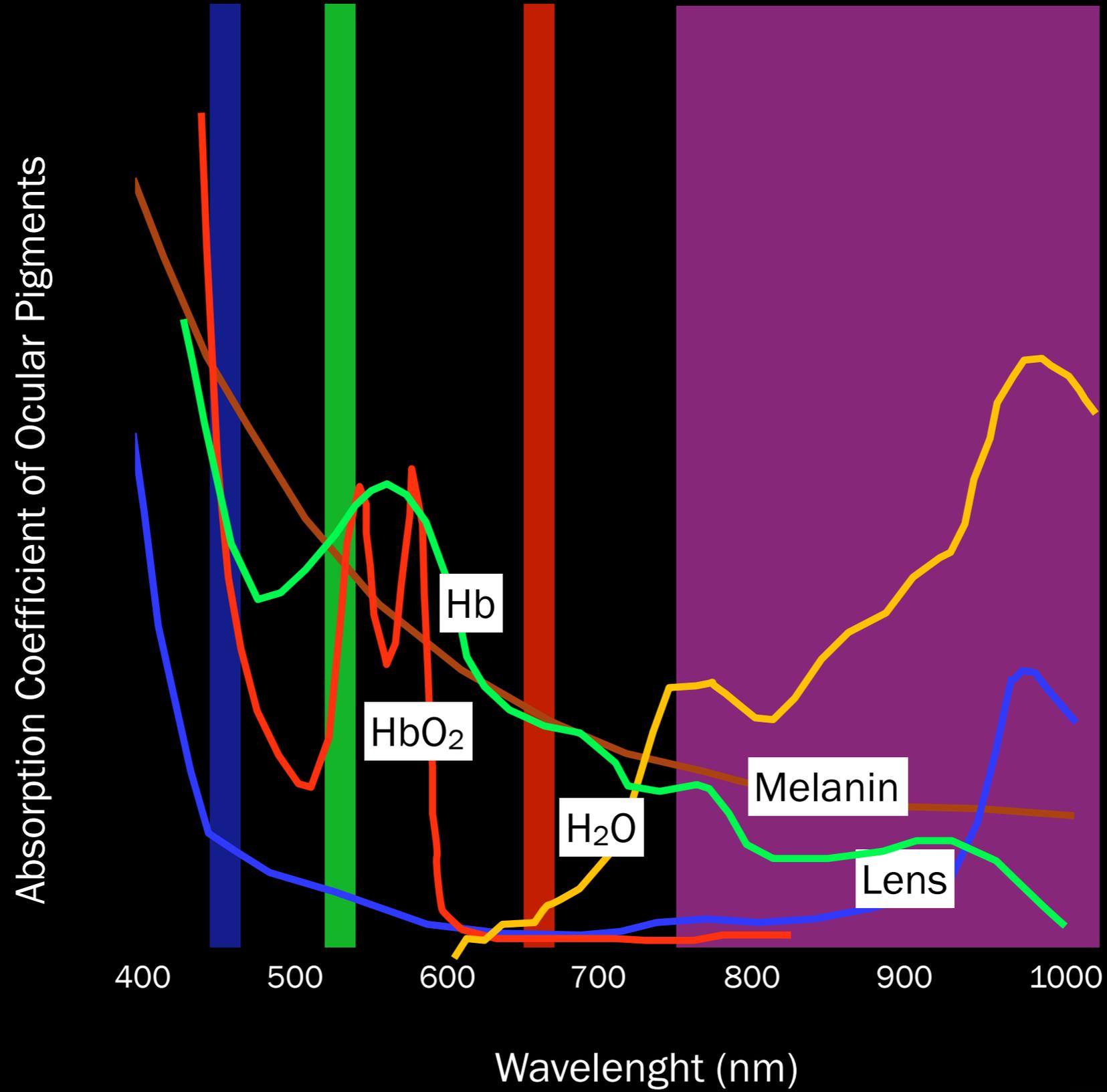
FC OCT EDI FAF US

* solo in caso di non risposta ° solo se necessità di ritrattamento # almeno ogni sei mesi durante trattamento per ischemia



Retinografia Infrarosso





Metodi e strumenti



HRA Spectralis



Nidek F10



Optos



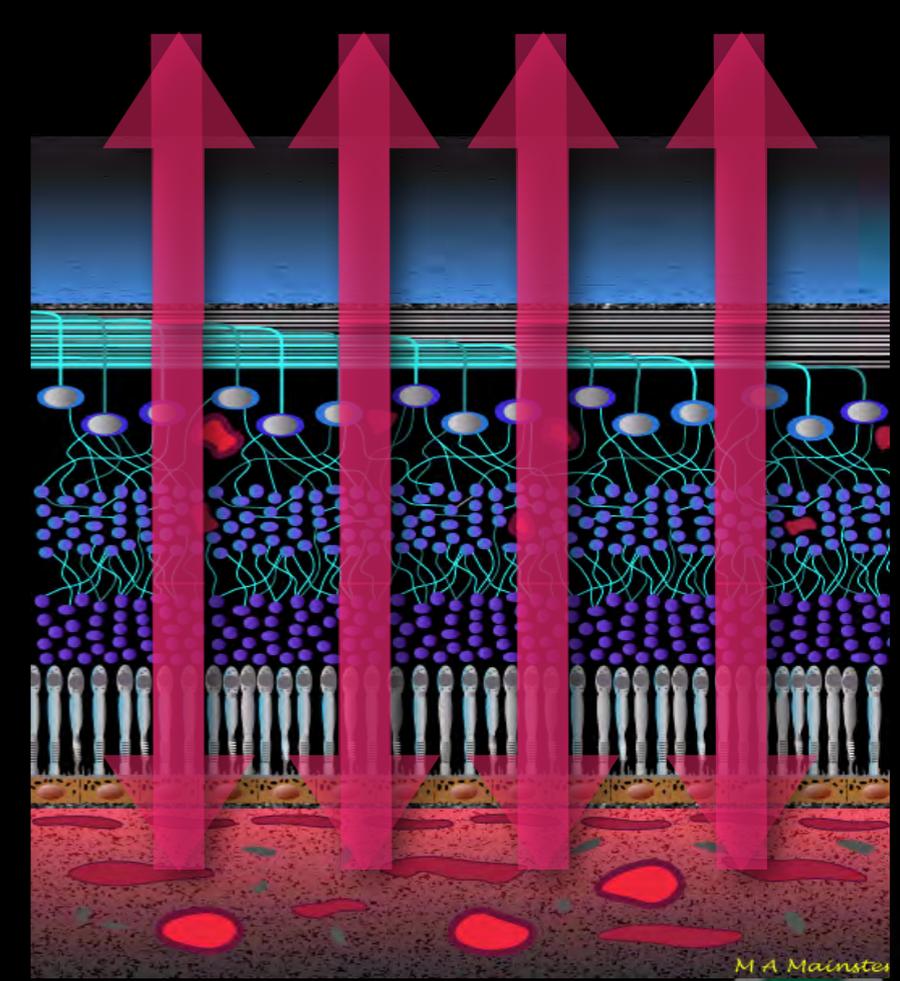
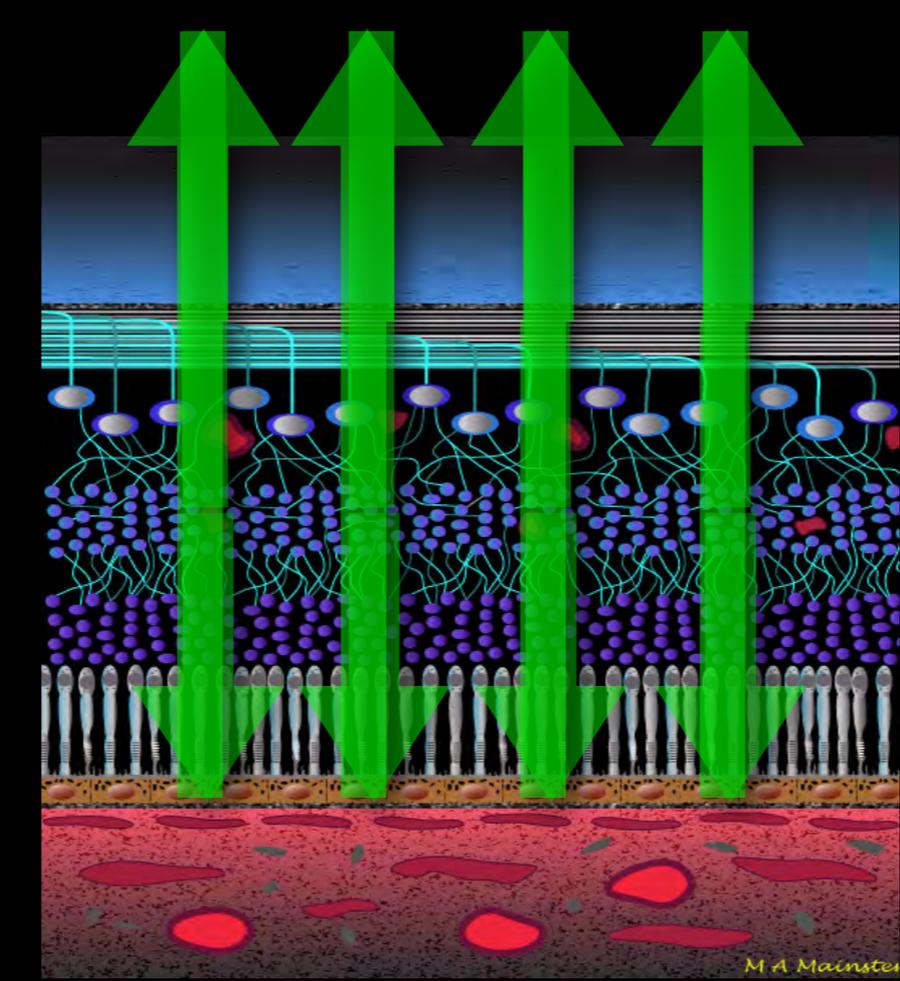
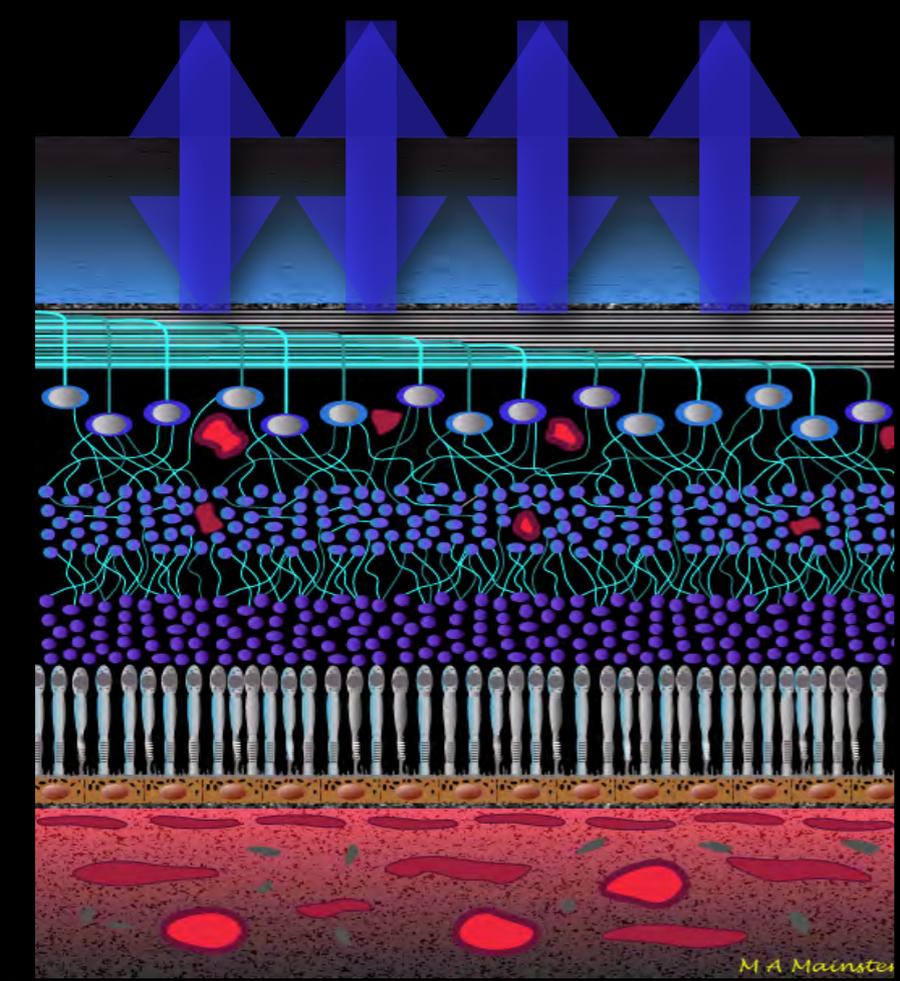
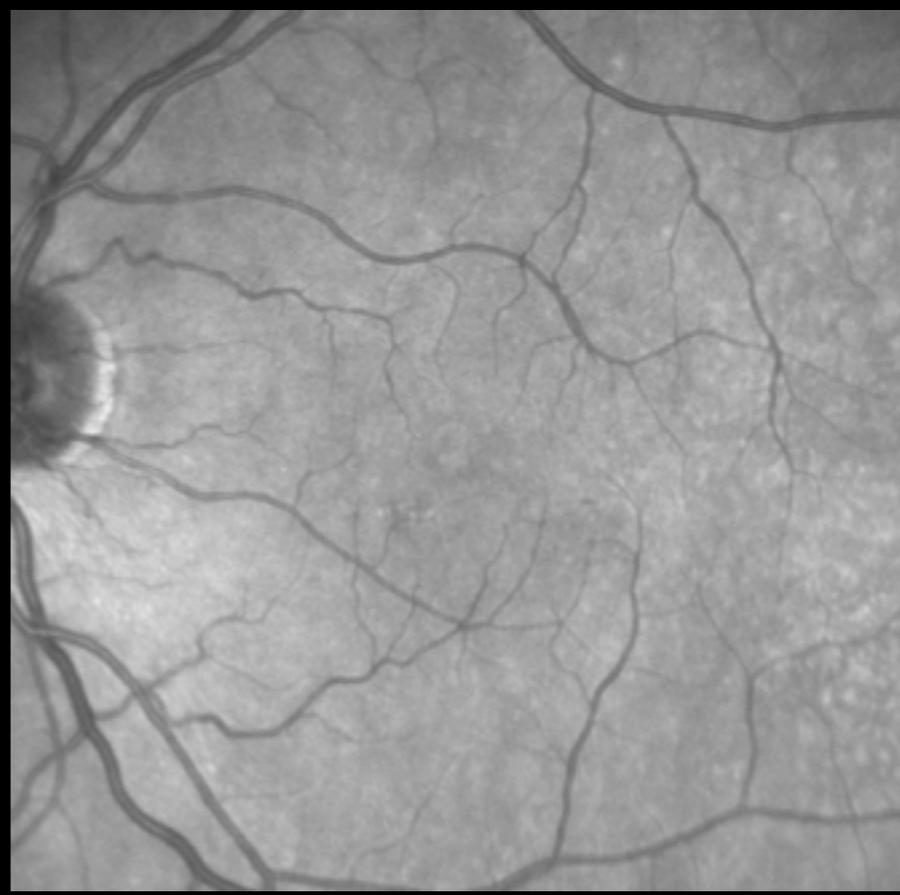
Zeiss Cirrus



Strumenti

	Heidelberg Spectralis	Nidek F10	Heidelberg HRA2 with polarized filter
wavelength	~830 nm	~780 nm	~830 nm





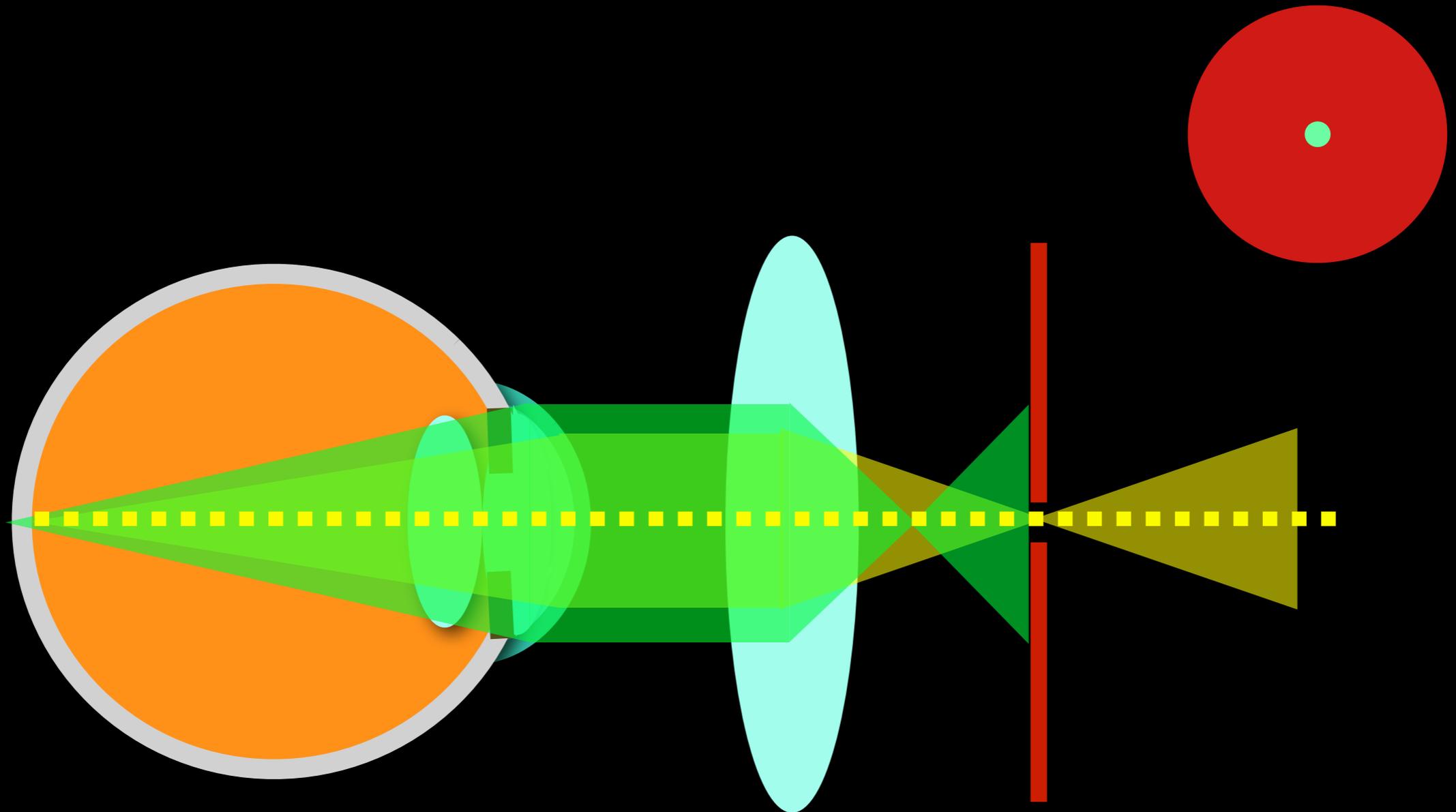
Blu Light

Green Light

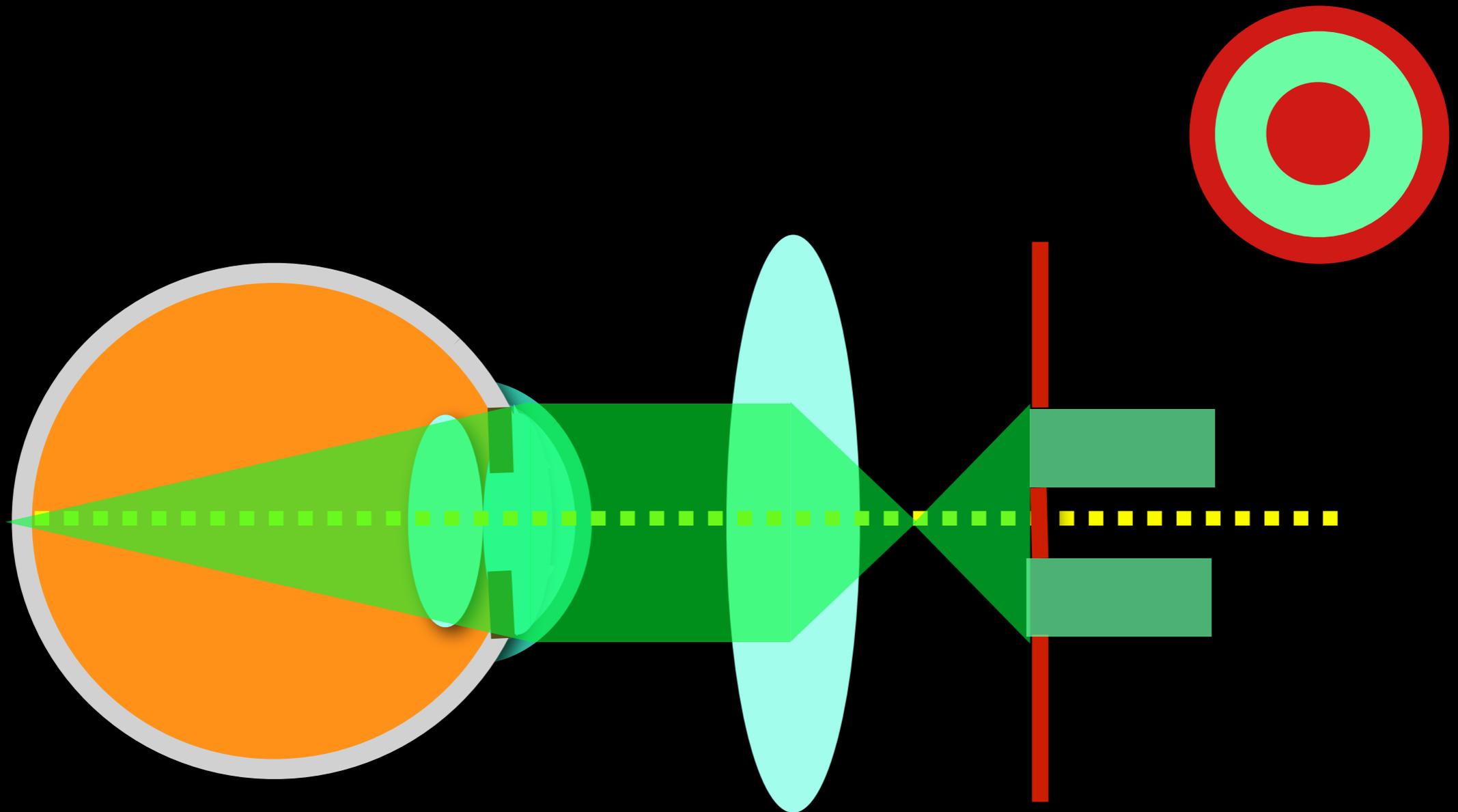
Infrared Light



Modo confocale



Retro mode



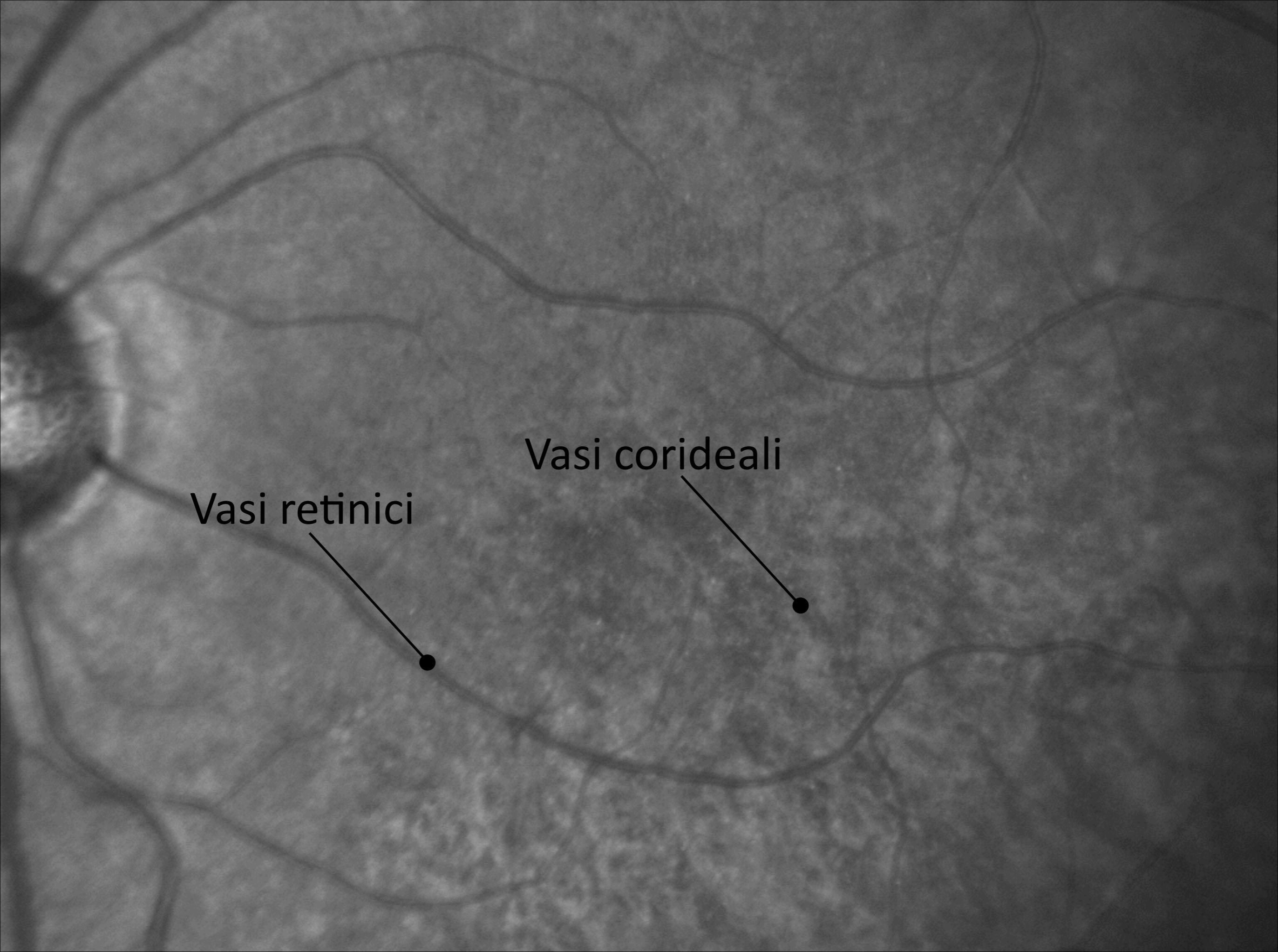
Differente assorbimento della luce visibile e infrarossa

assorbimento

	luce visibile	infrarosso
mezzi diottrici	si	no
pigmenti oculari	si	no
emoglobina	si	no
melanina in EP	si	no
melanina in Ch	si	no

a 500 nm 59-75% della luce è assorbita da EPR e coroide
a 800 nm solo il 21-38%

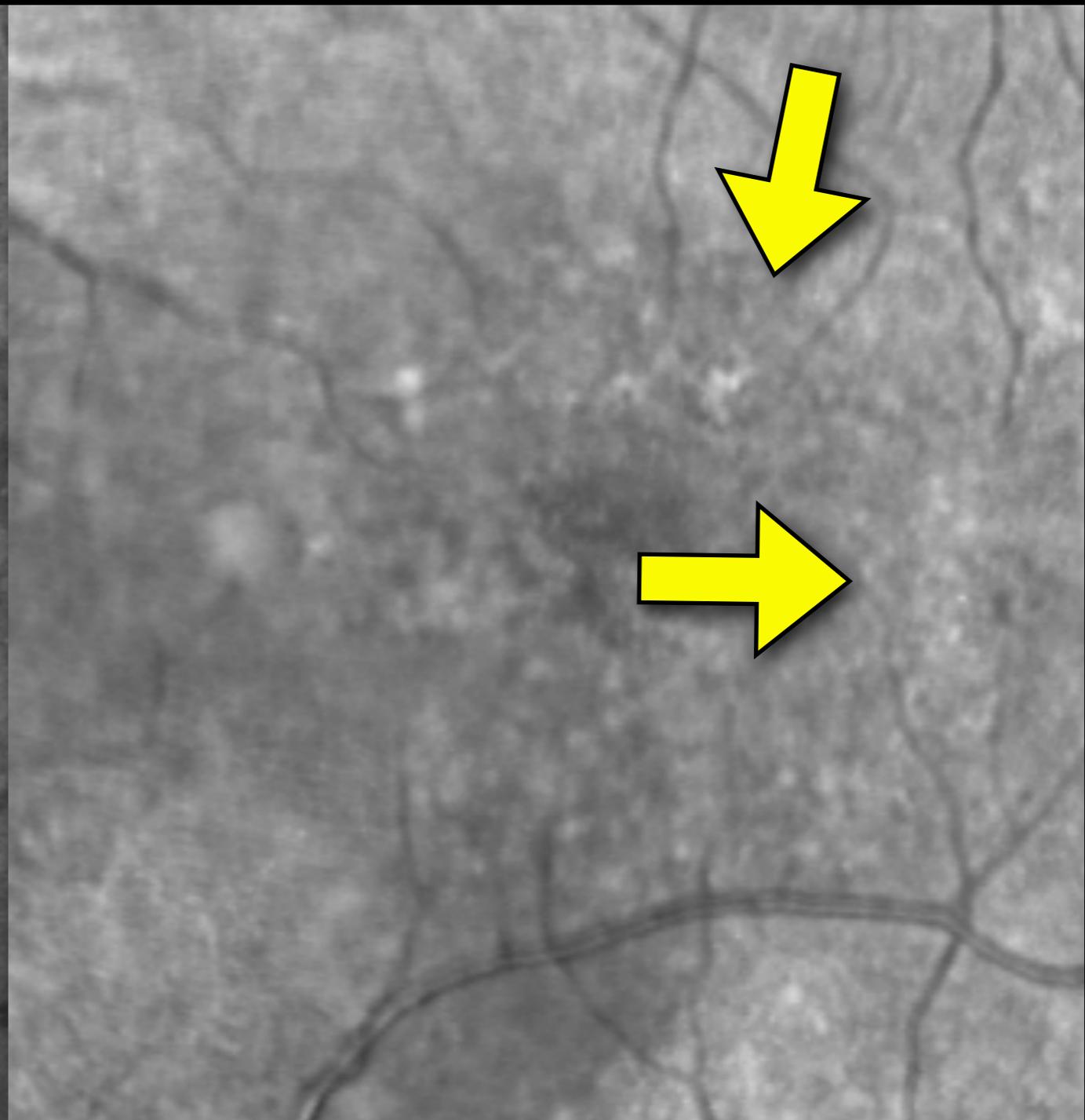
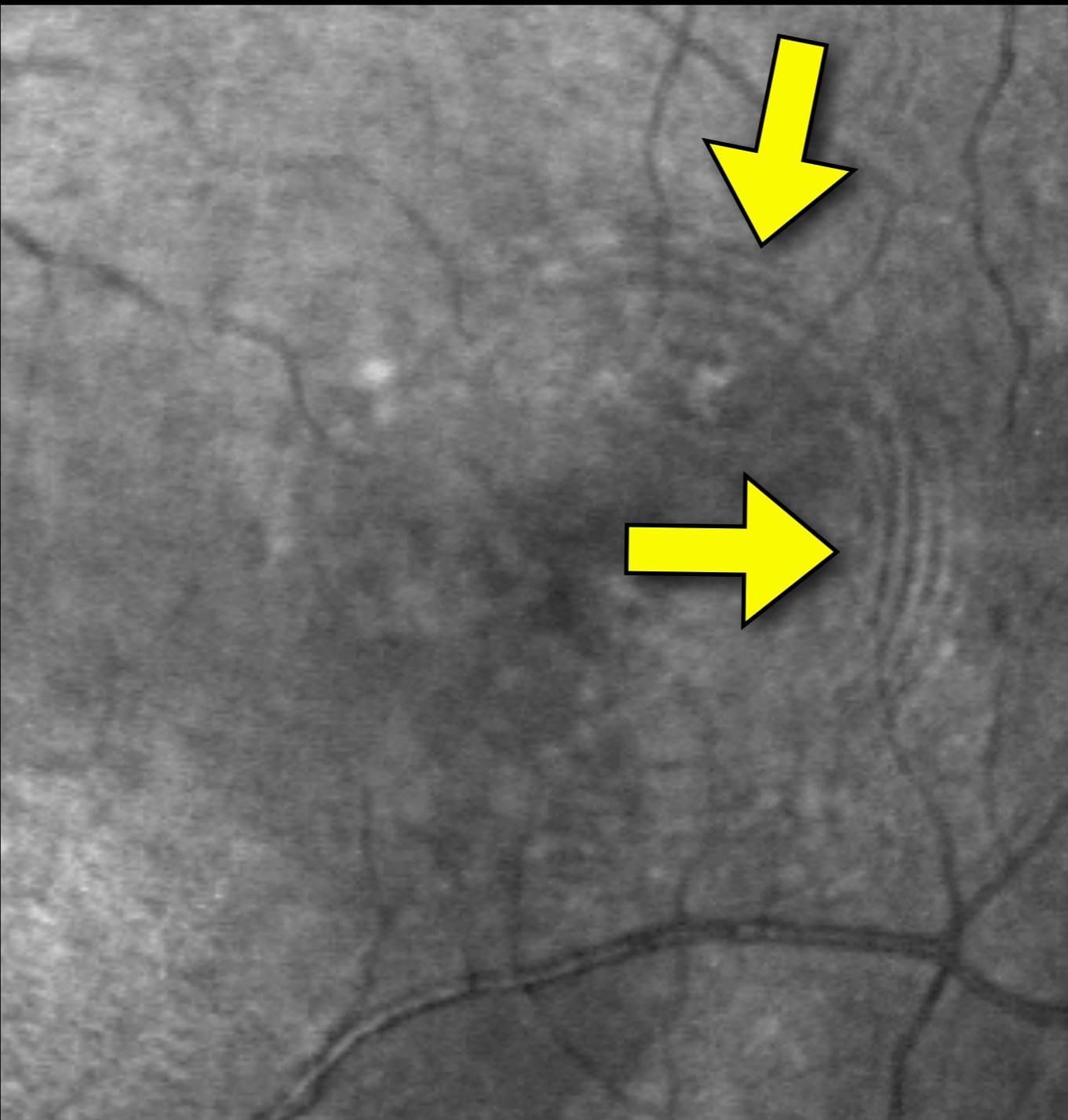




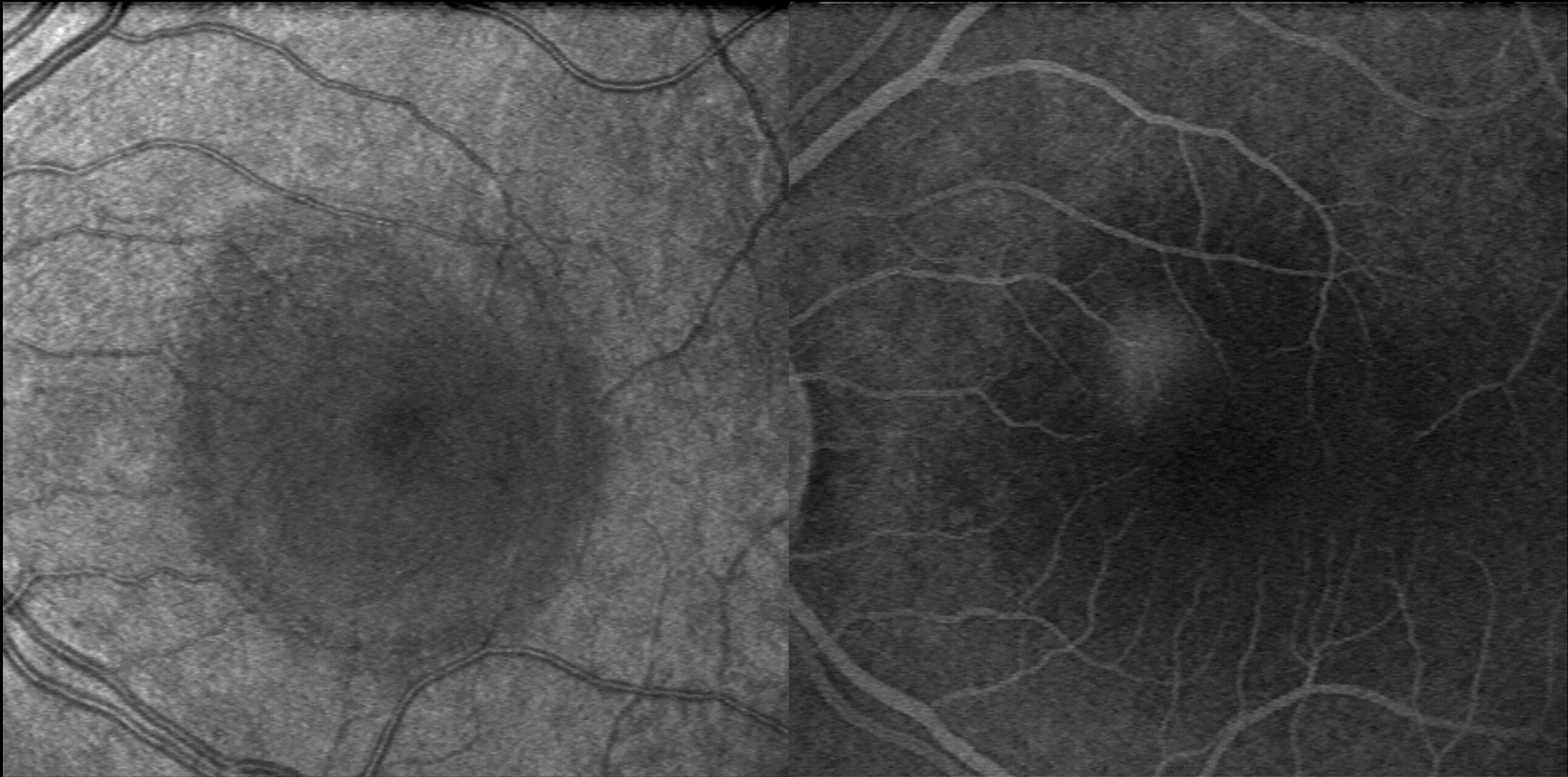
Vasi retinici

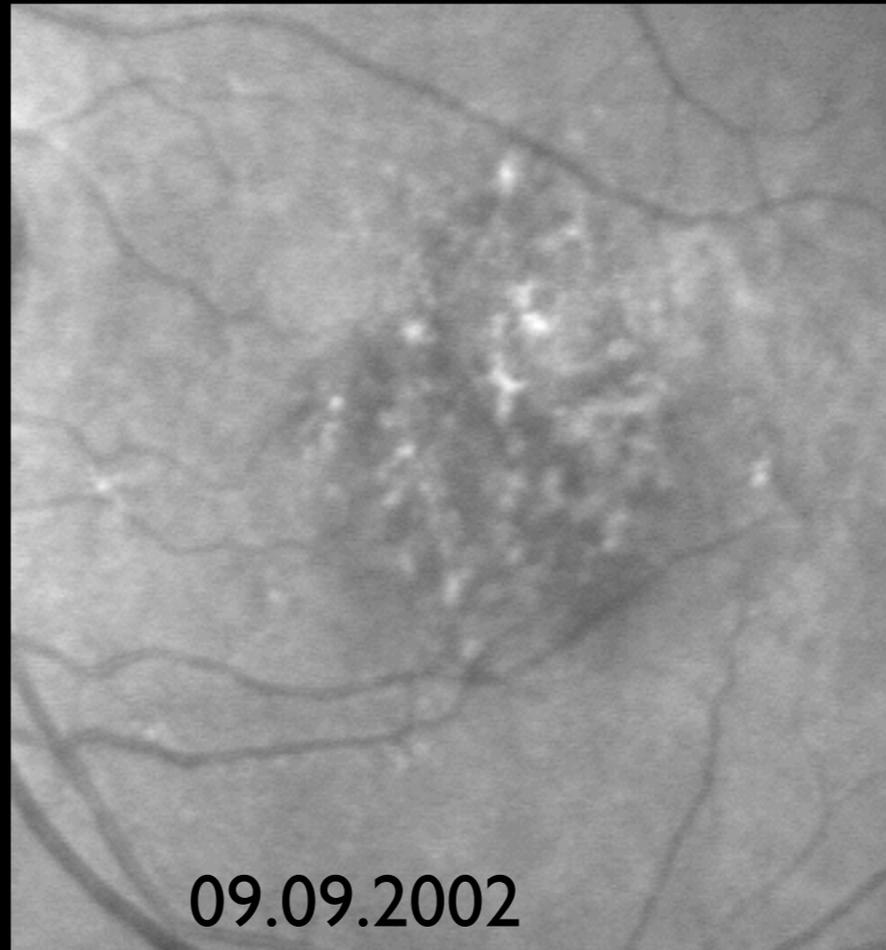
Vasi corideali

Filtri polarizzati



Visualizzazione di liquido intraretinico





...follow up delle lesioni senza iniezione di colorante o
mappa OCT

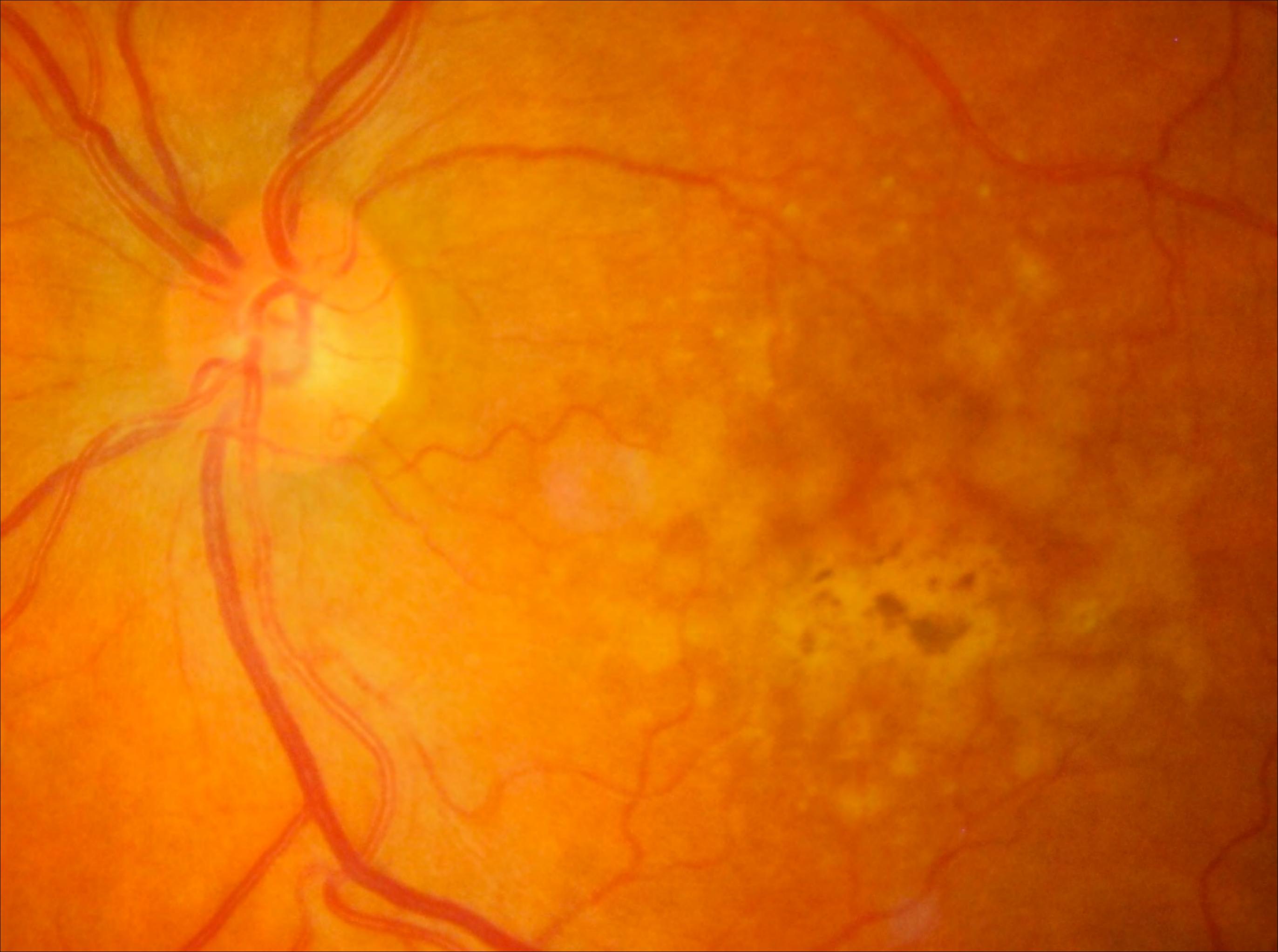


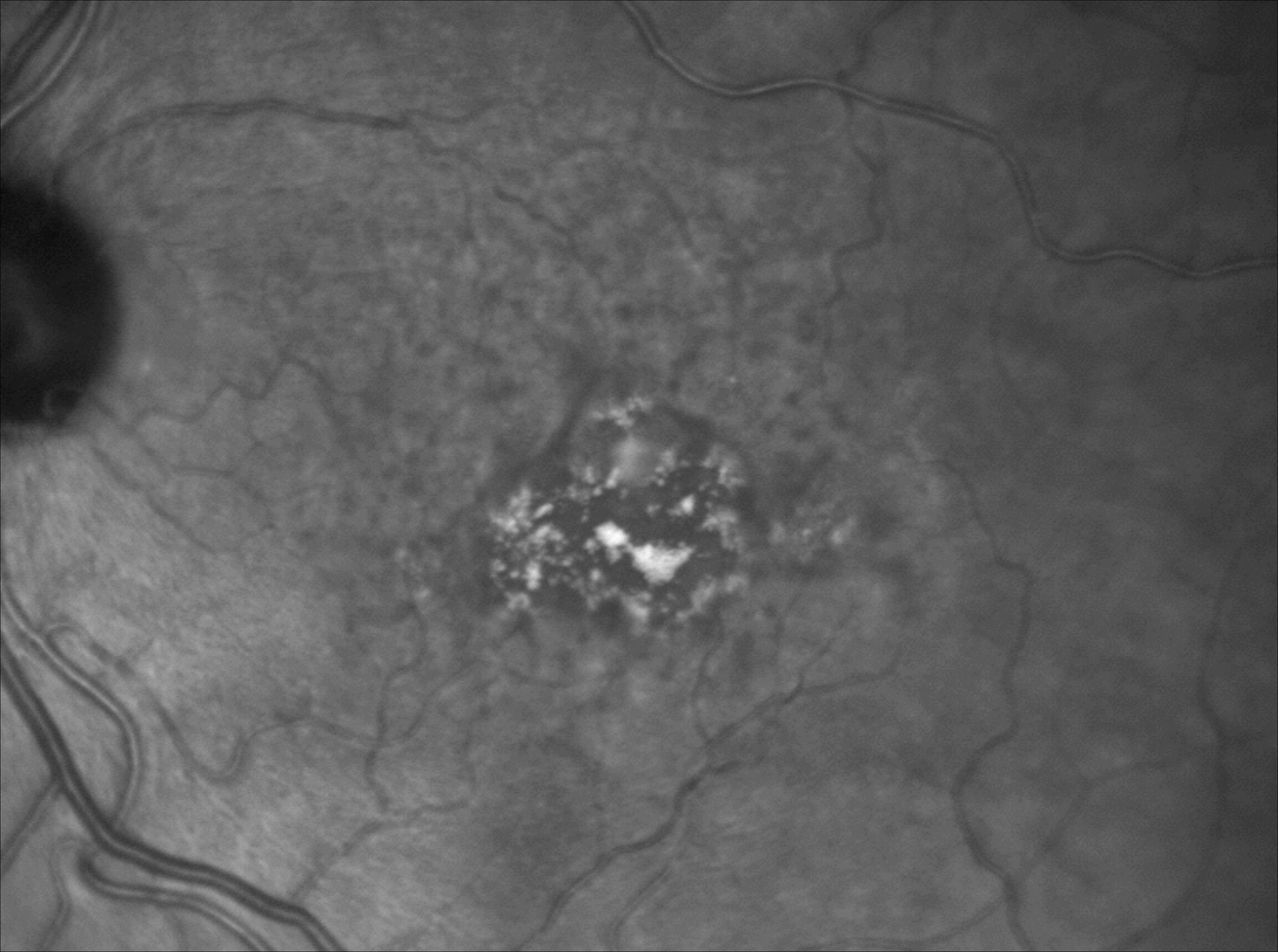
Drusen



Soft Drusen



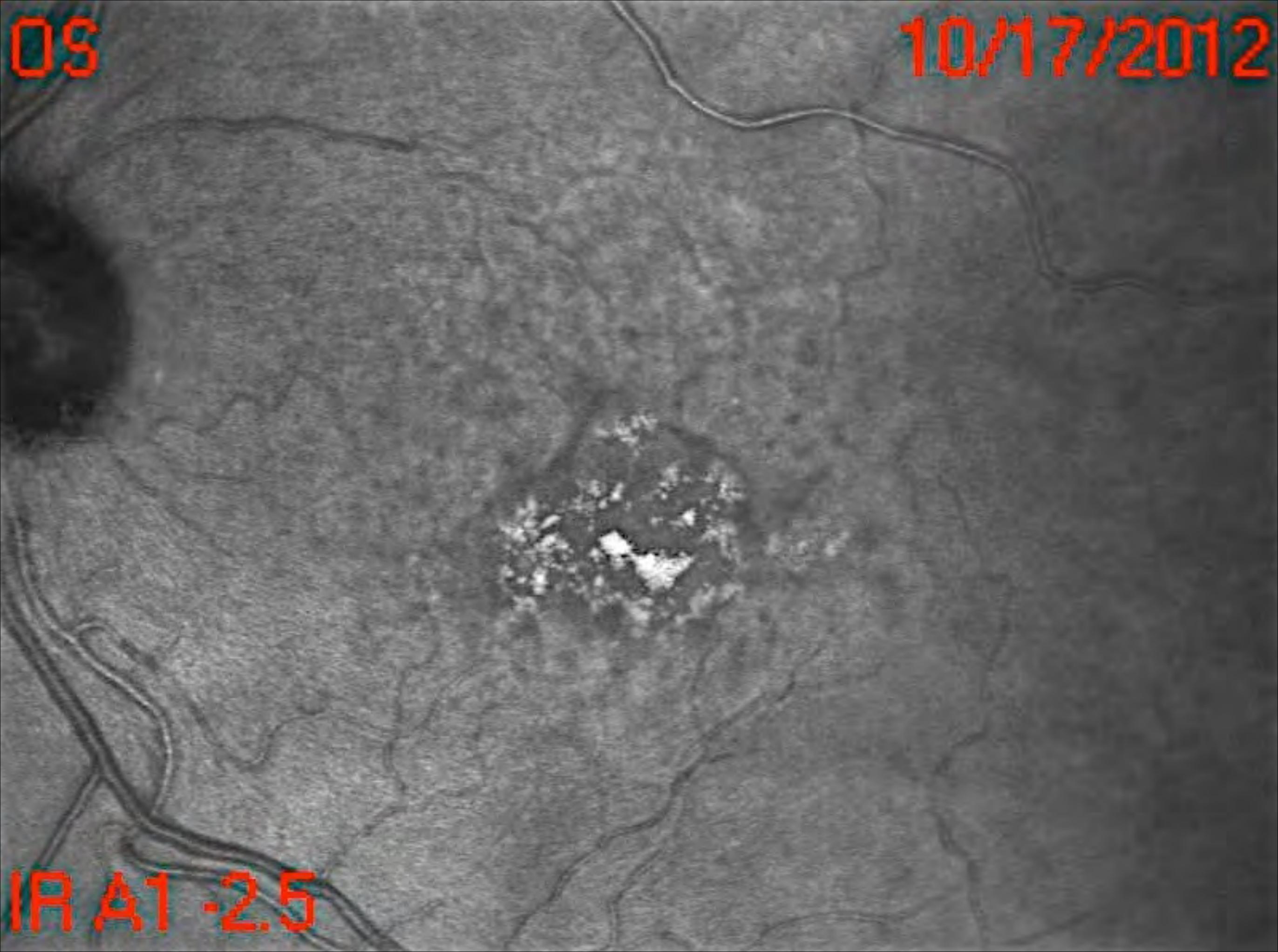




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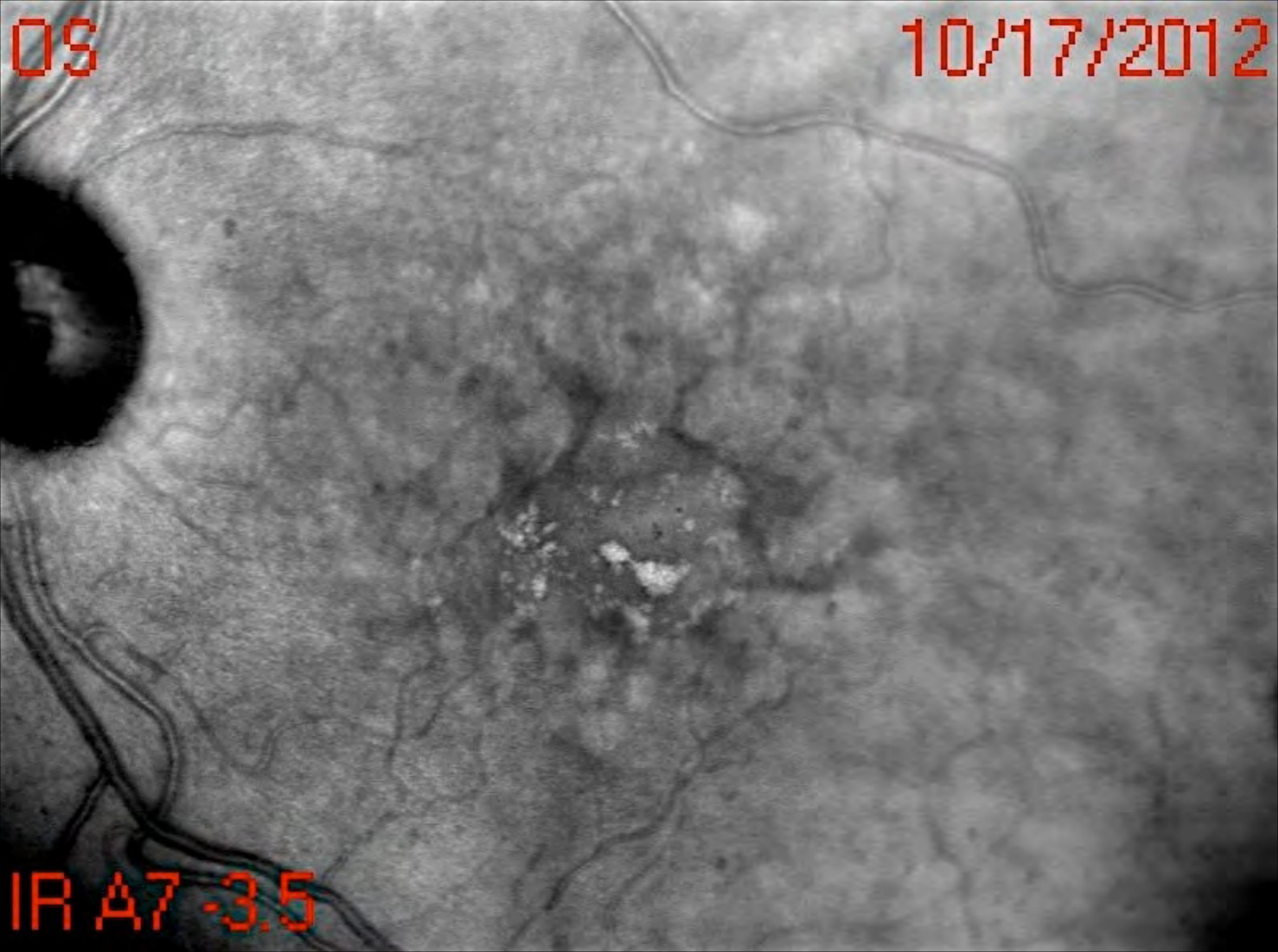
IR A1 -2.5



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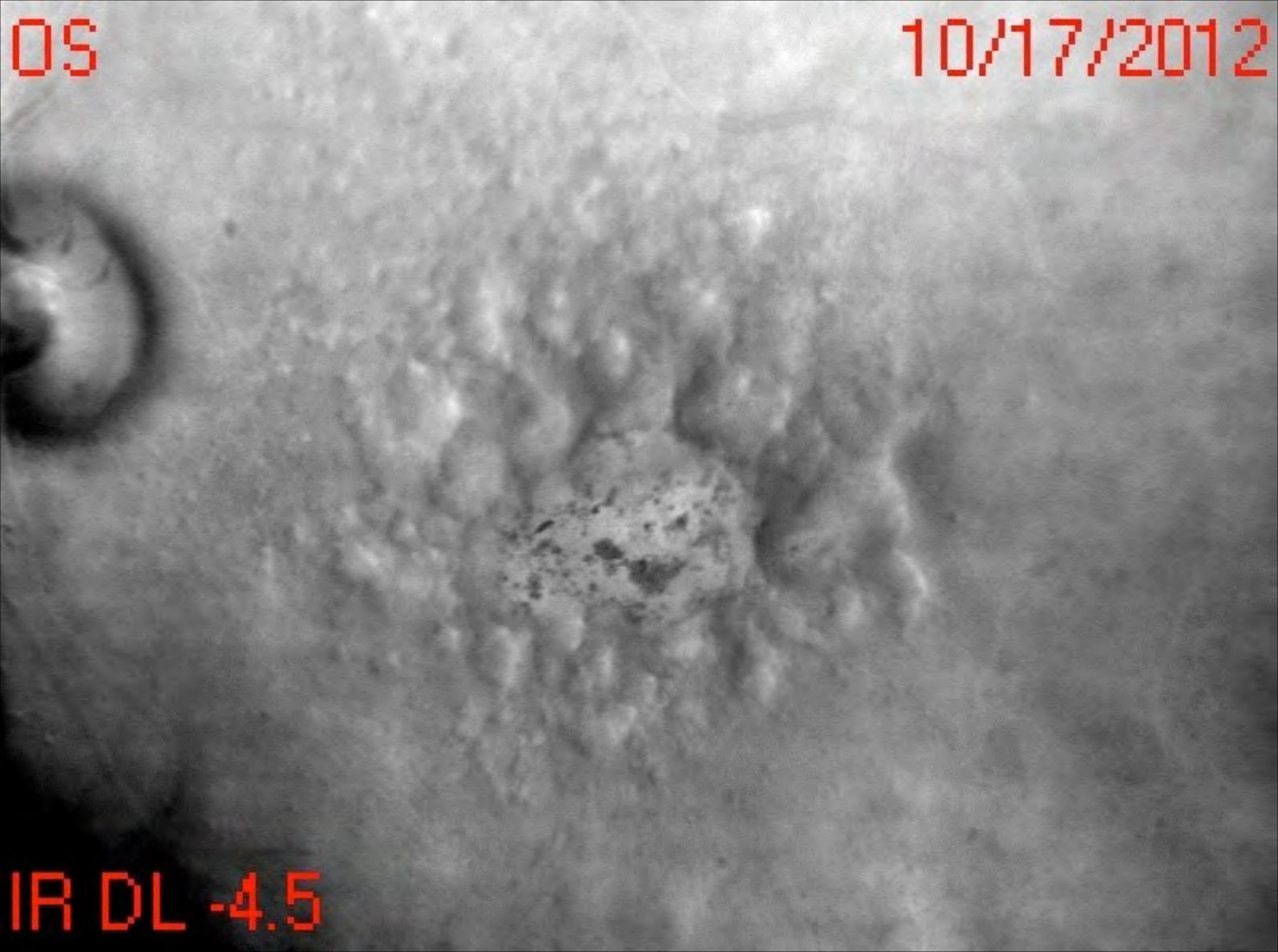
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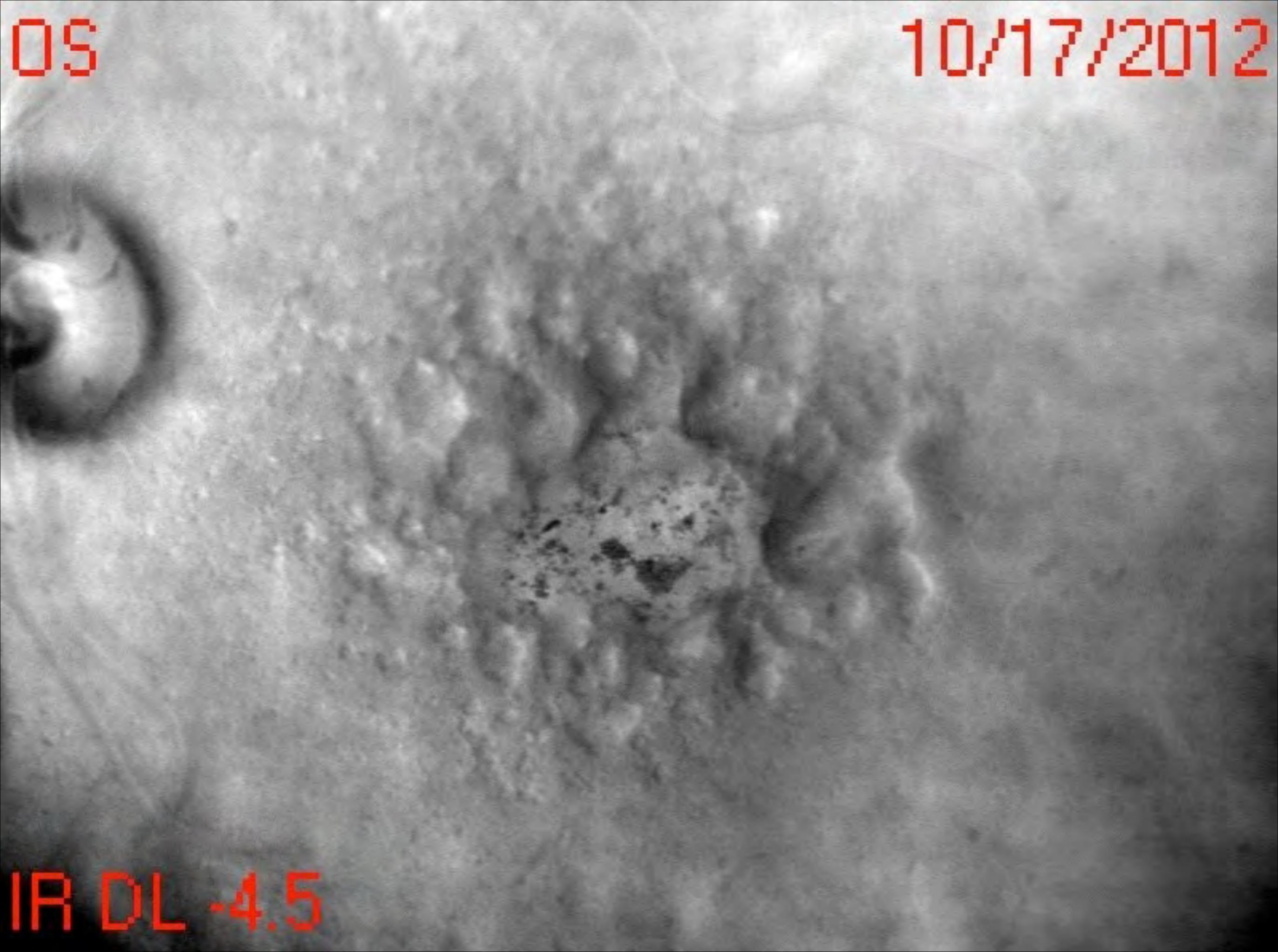
IR DL -4.5



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IR DL -4.5



Reticular Drusen

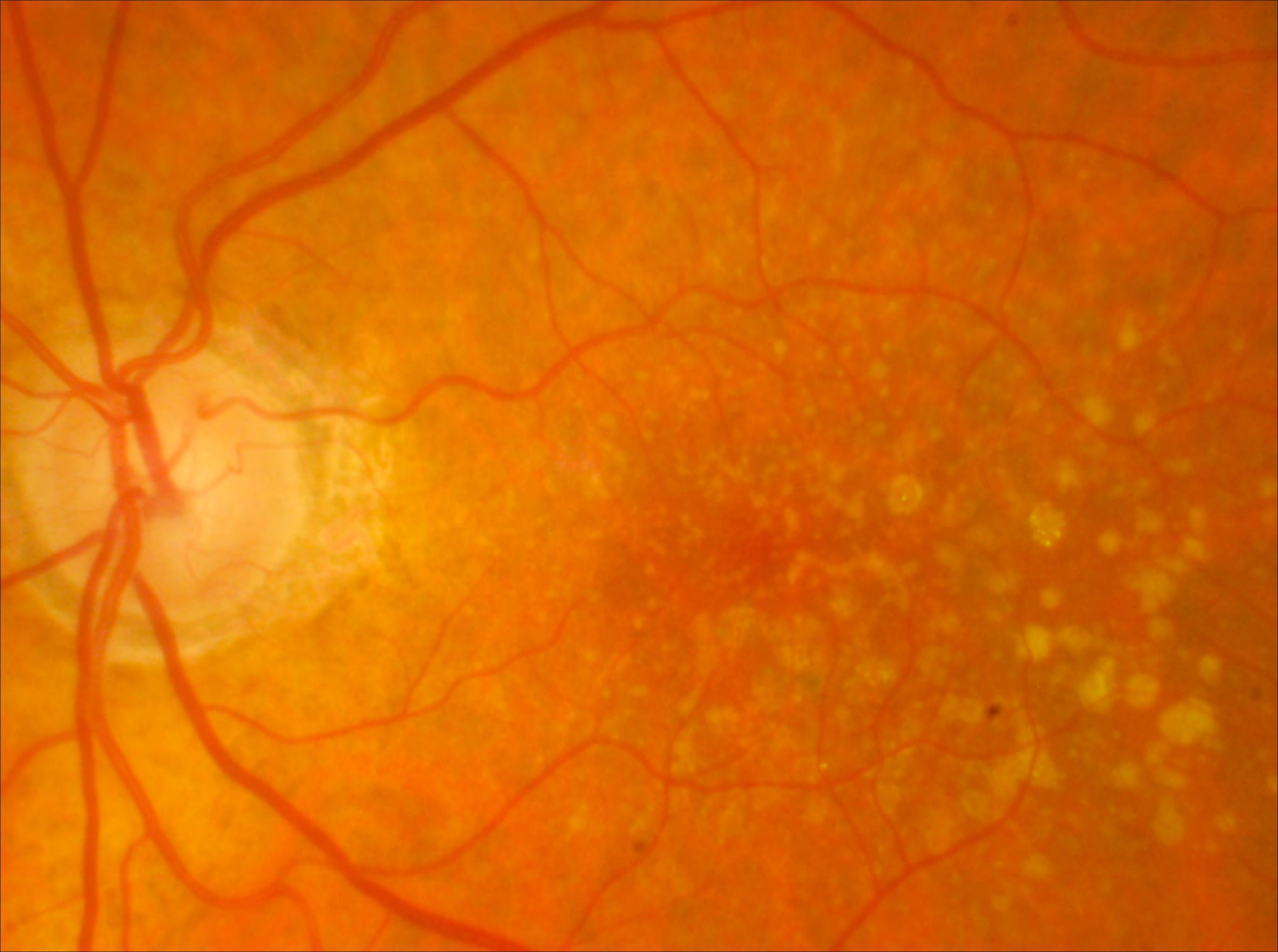


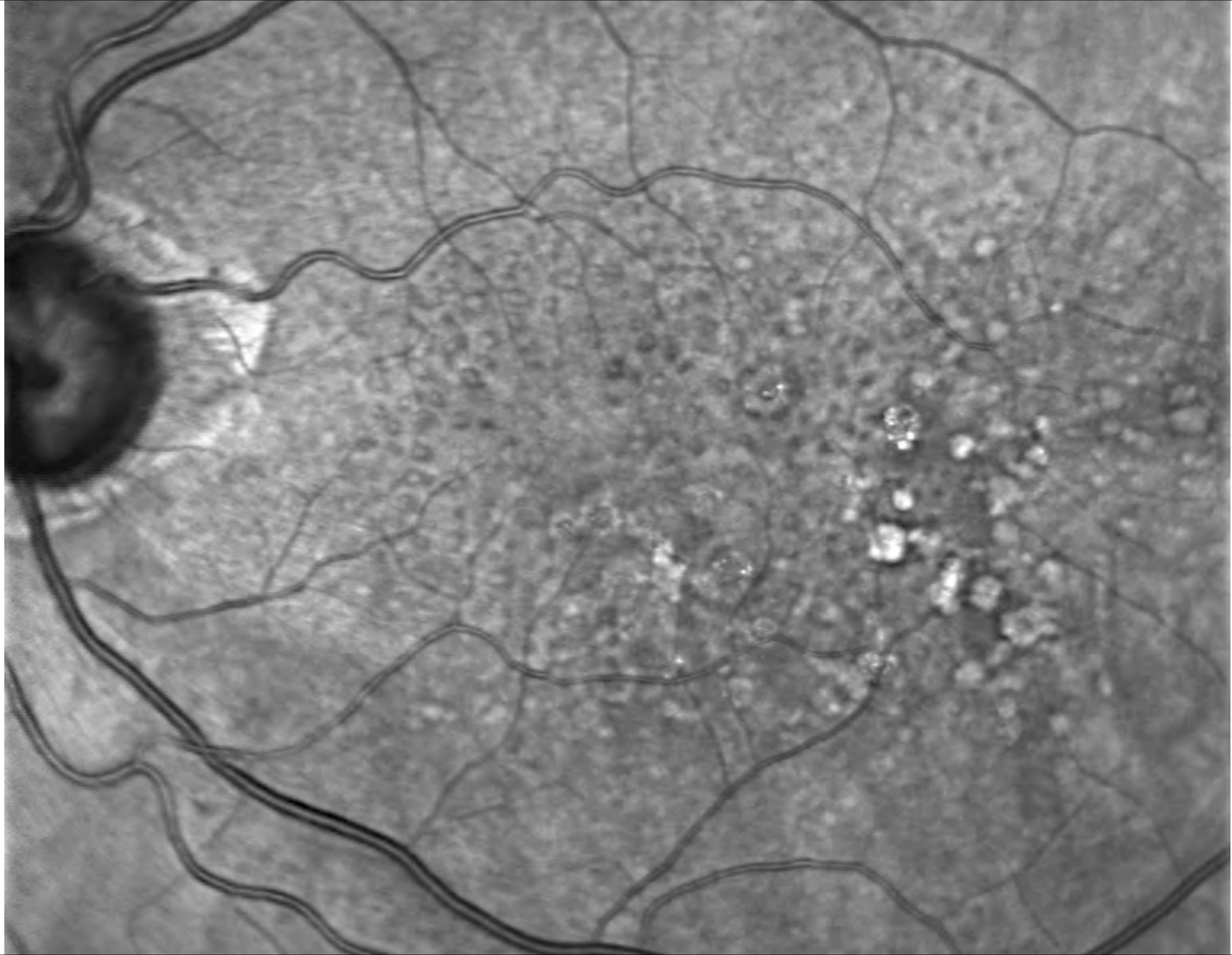
Reticular Pseudodrusen

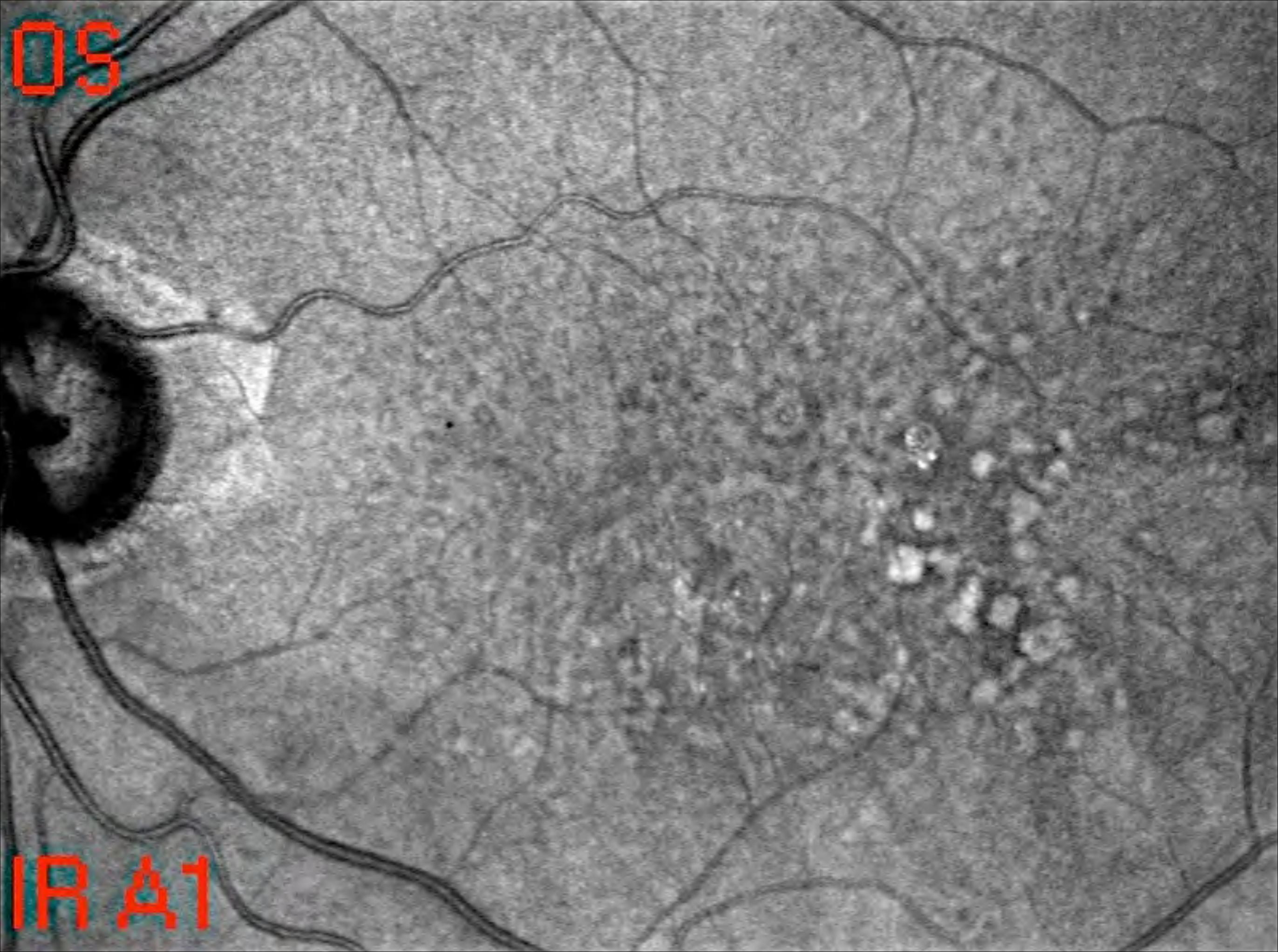


Subretinal drusenoid debris (SSD)



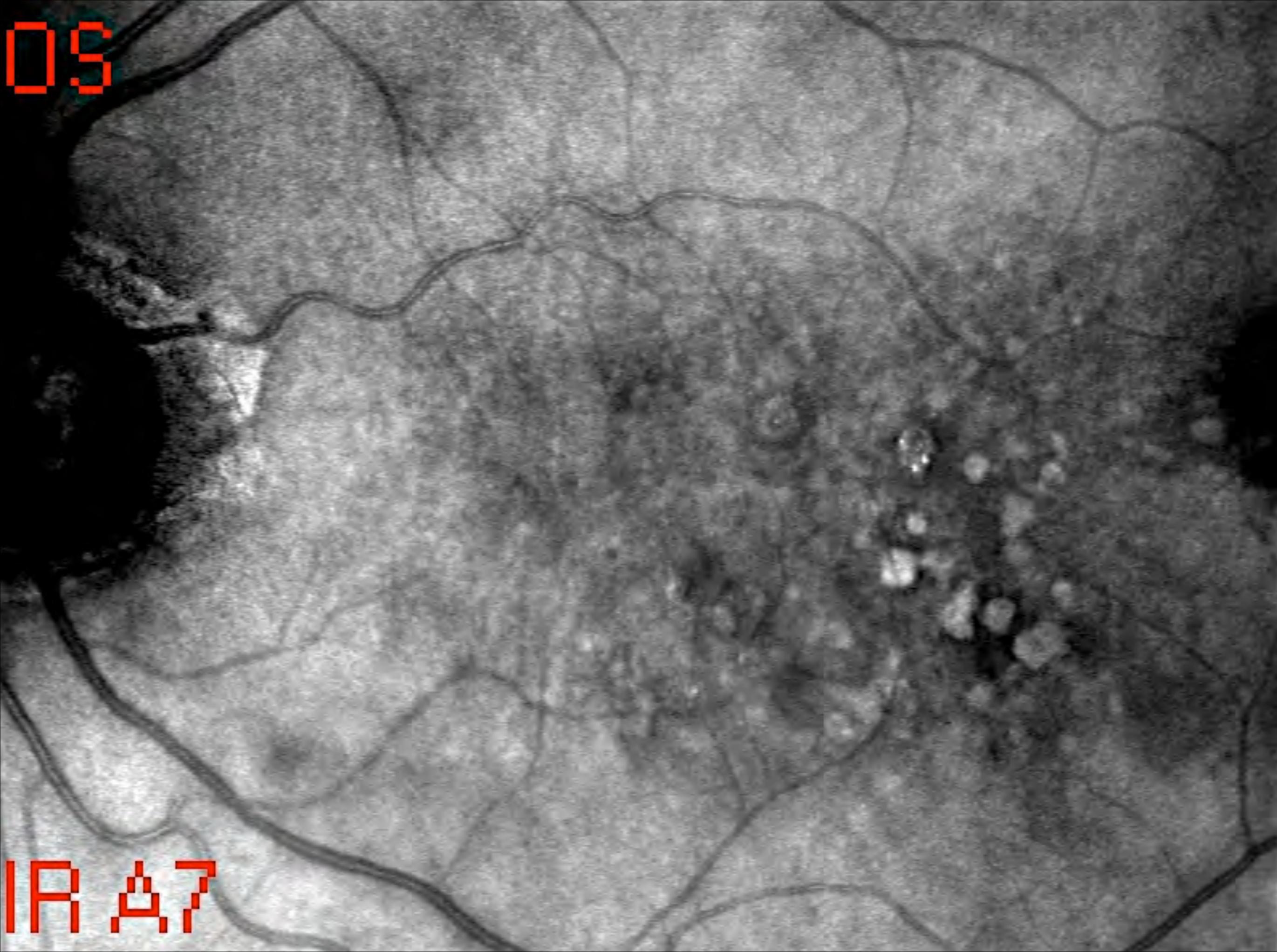






09

IR A1



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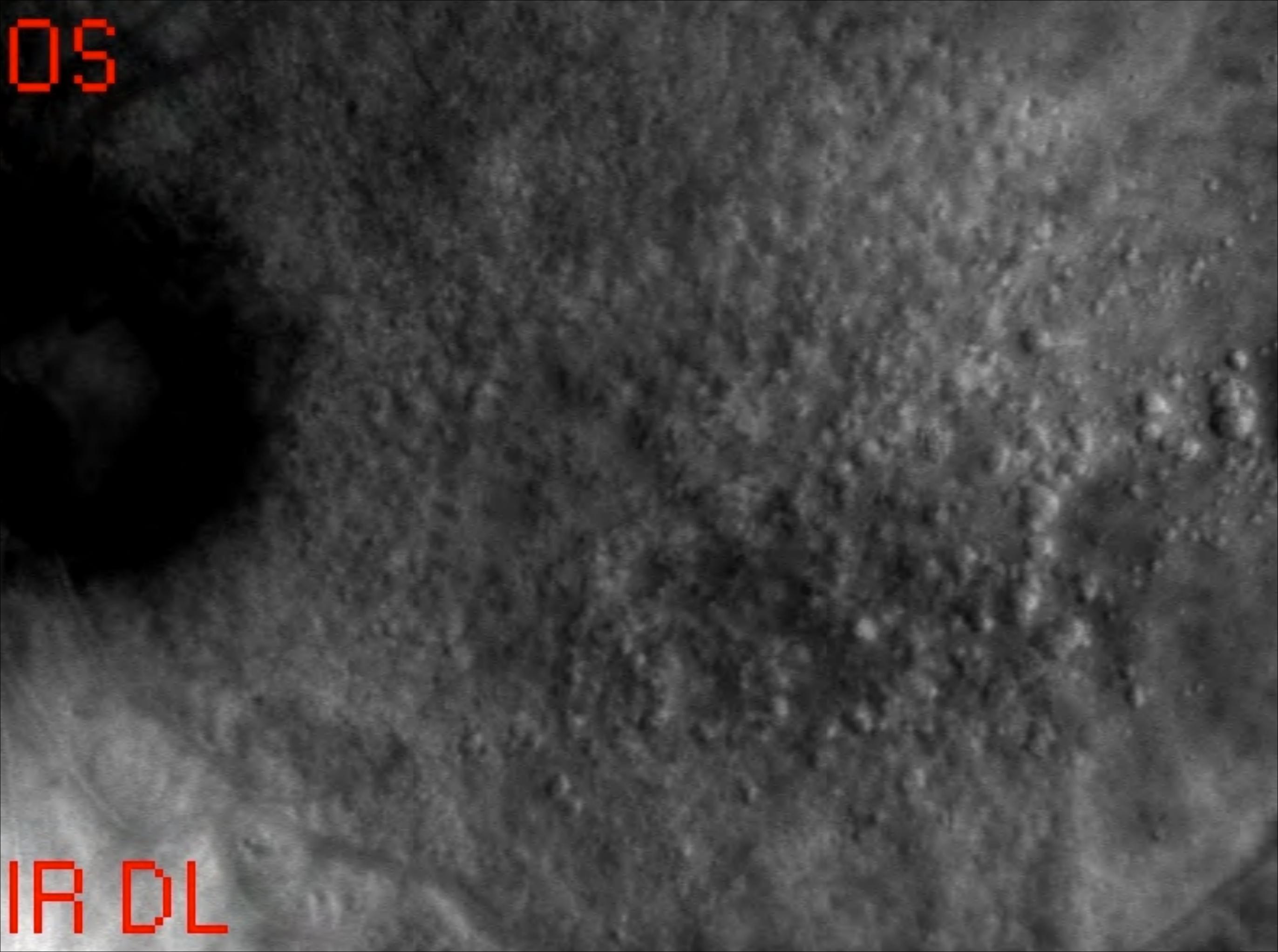
IR 47

05

IR RA

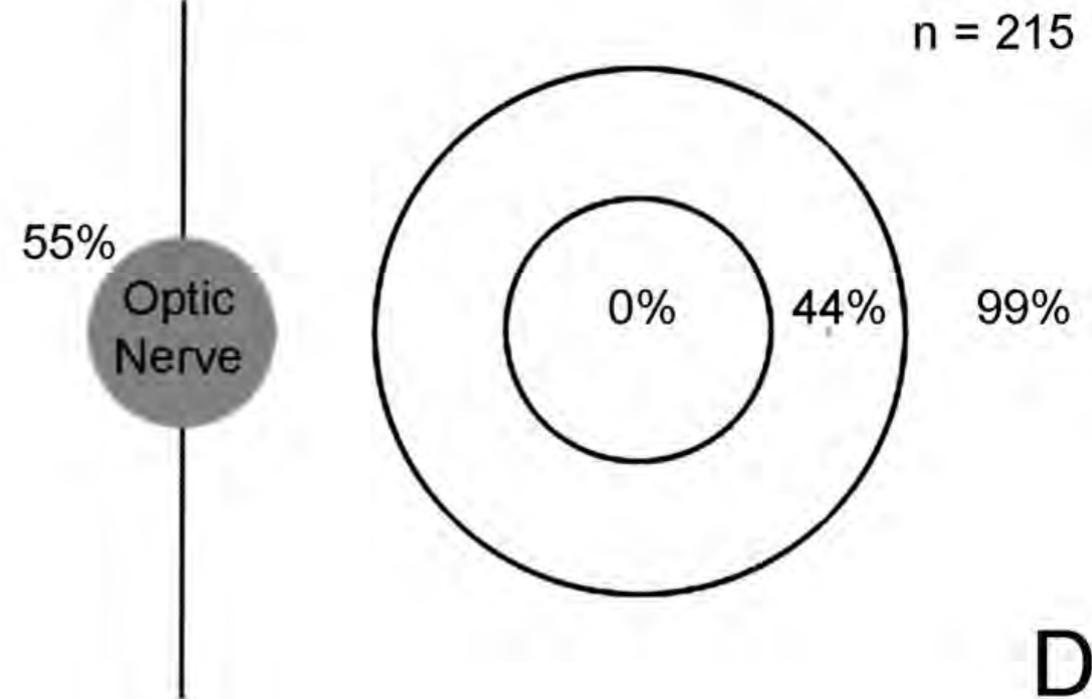
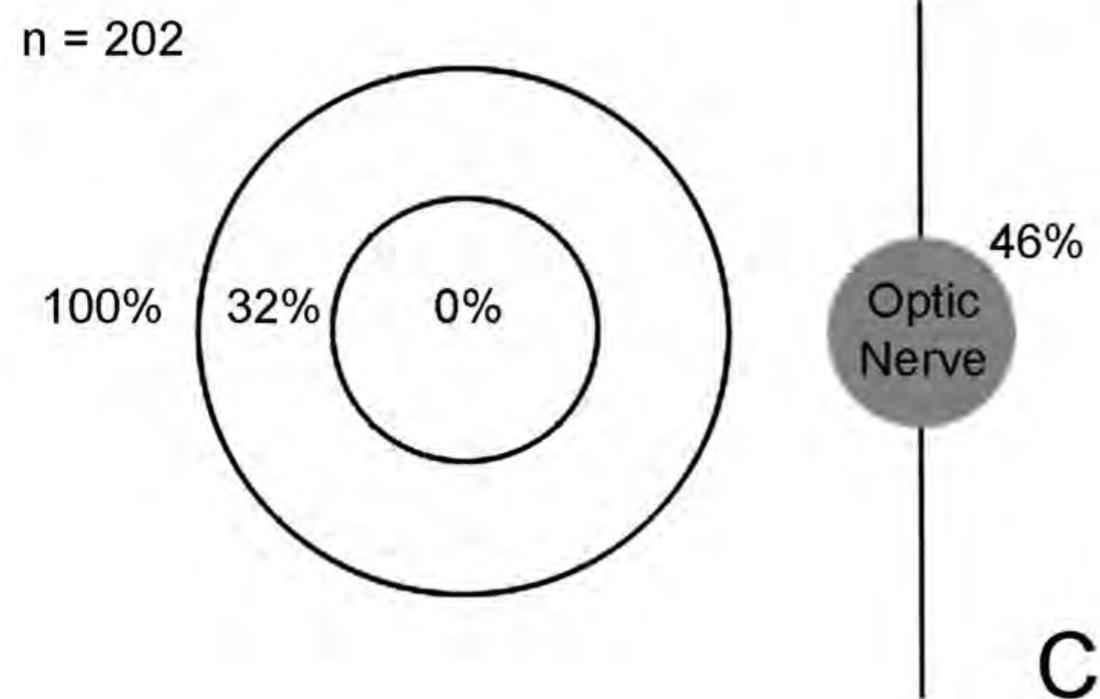
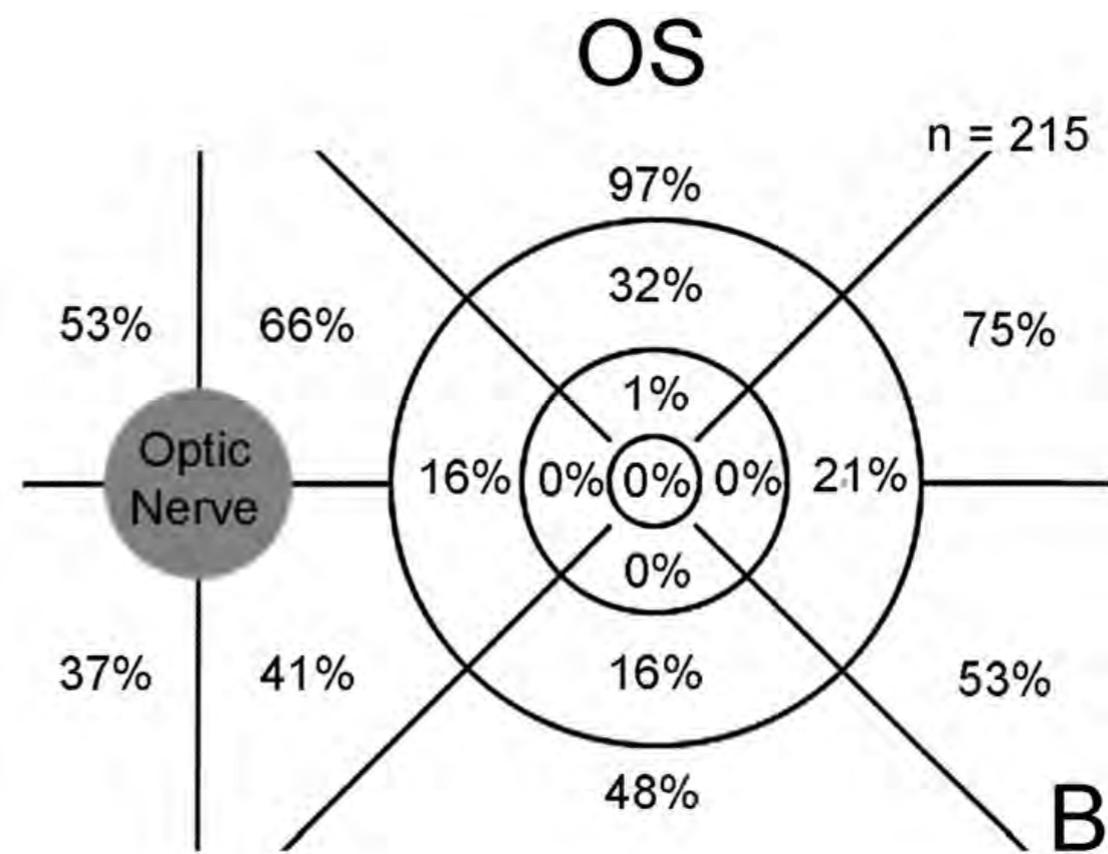
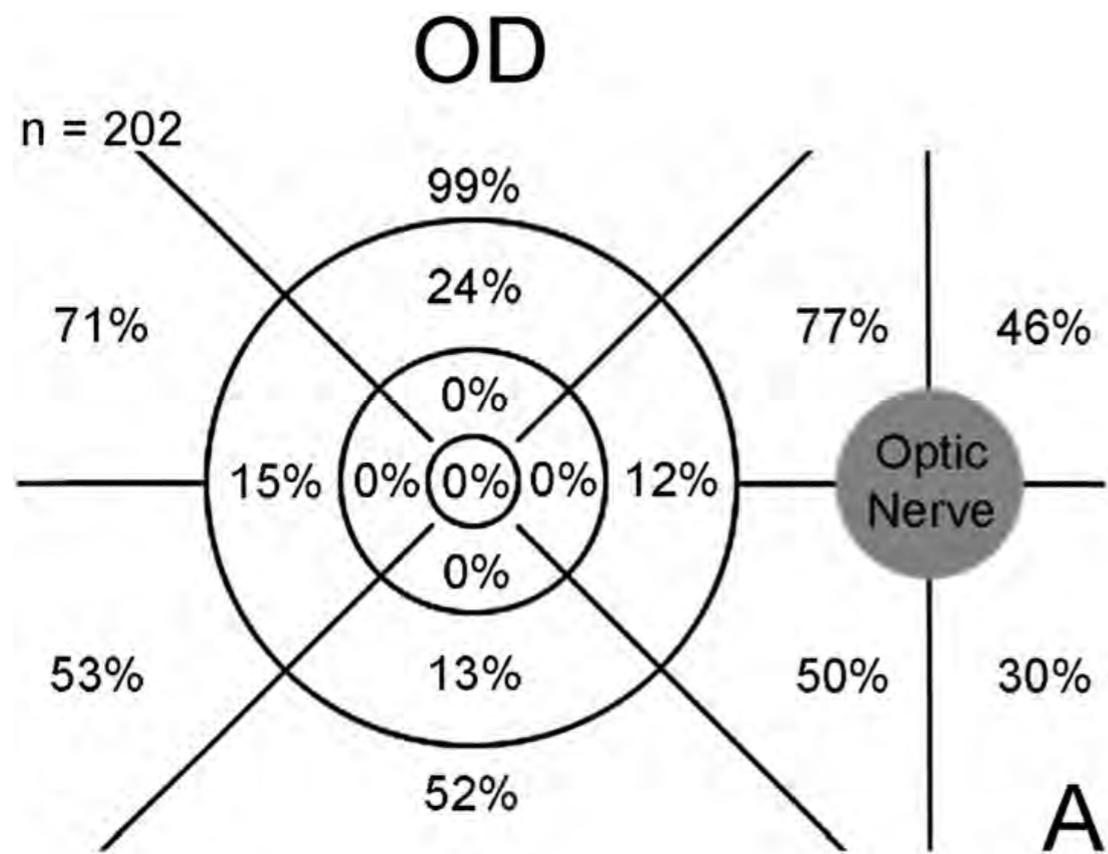
OS

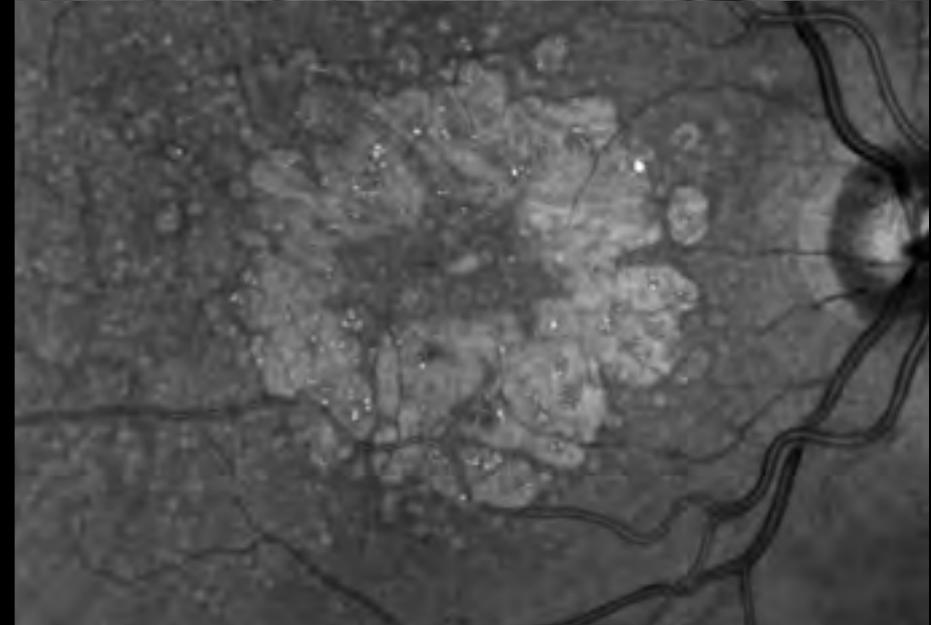
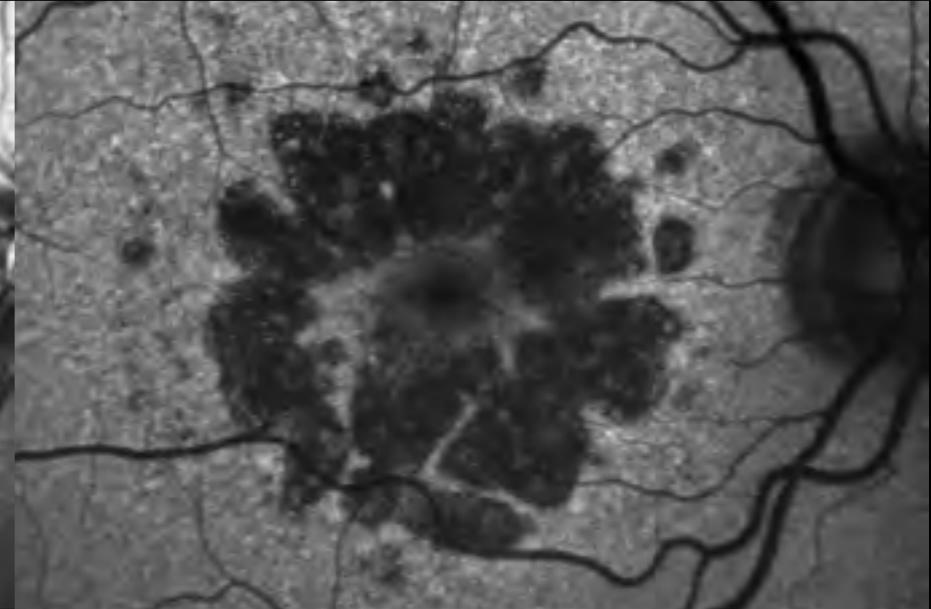
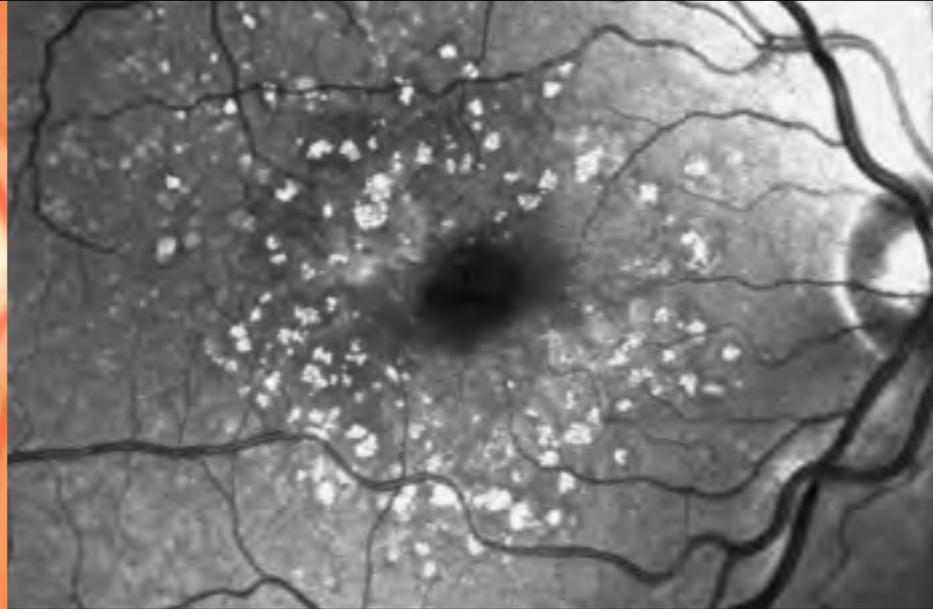
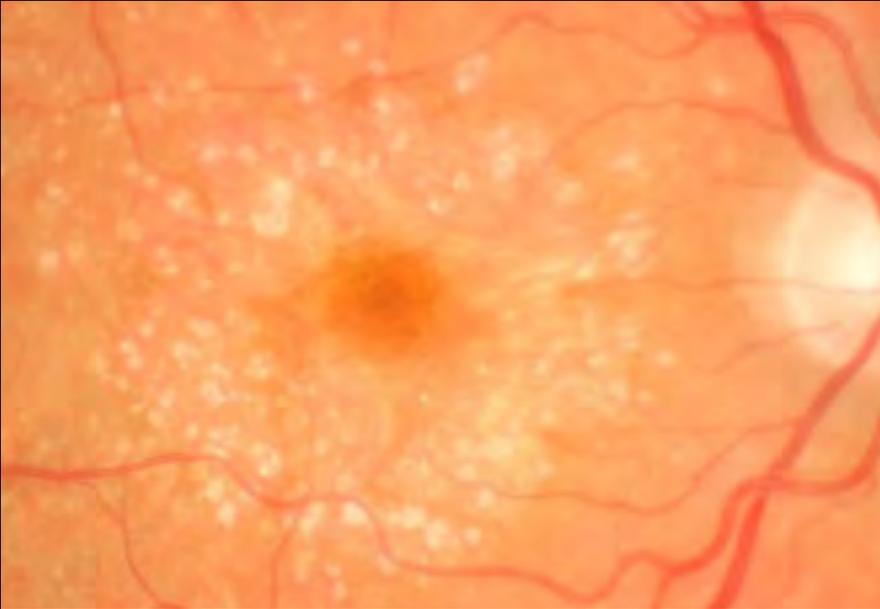
IR DR



05

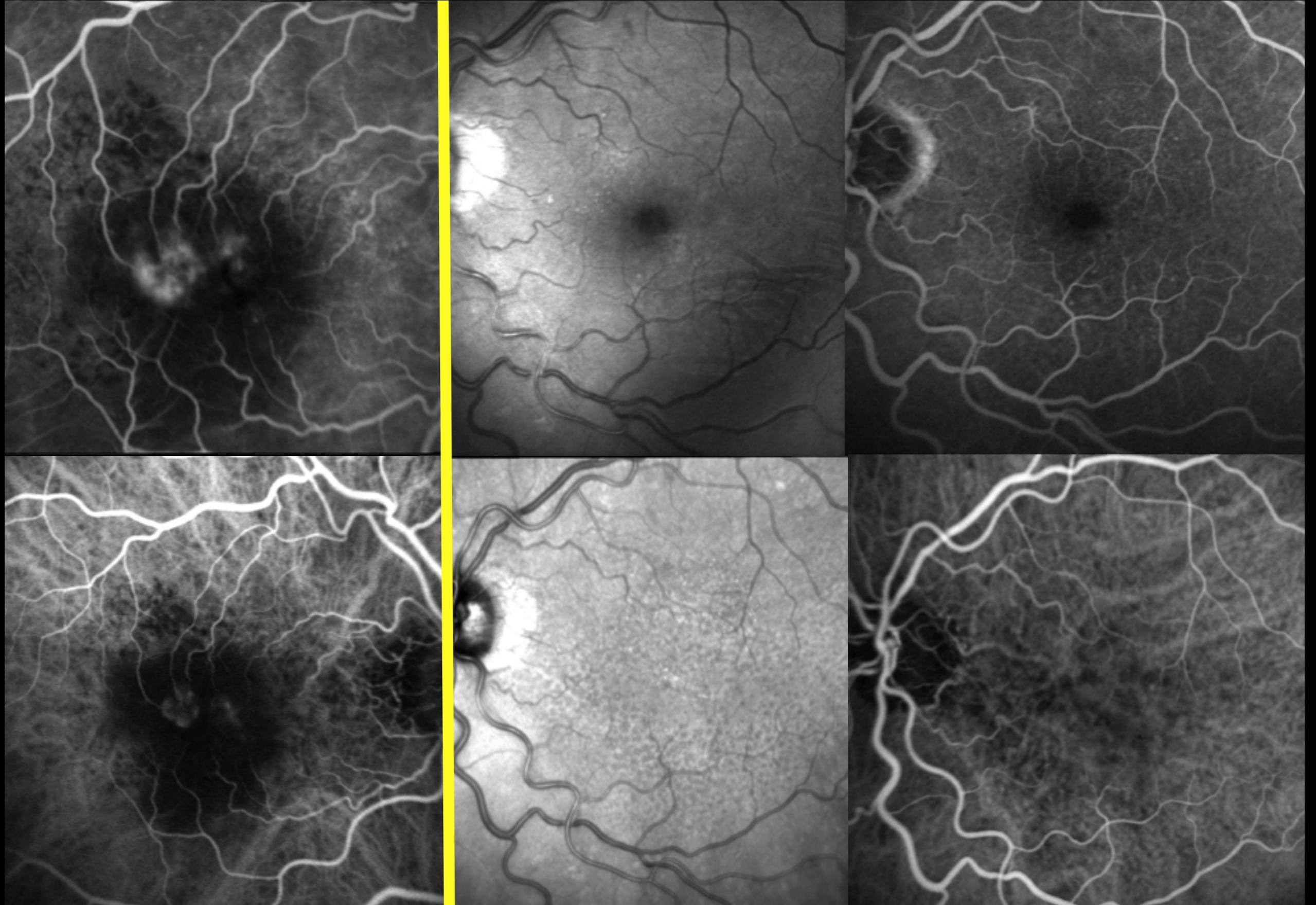
IR DL





“RDR were detected with at least one cSLO modality in 286 of 458 (62%) patients in either eye (bilateral 207 [45%]) and were visible in fundus camera photographs in 66 of 371 (18%) patients (bilateral 48 [13%])”



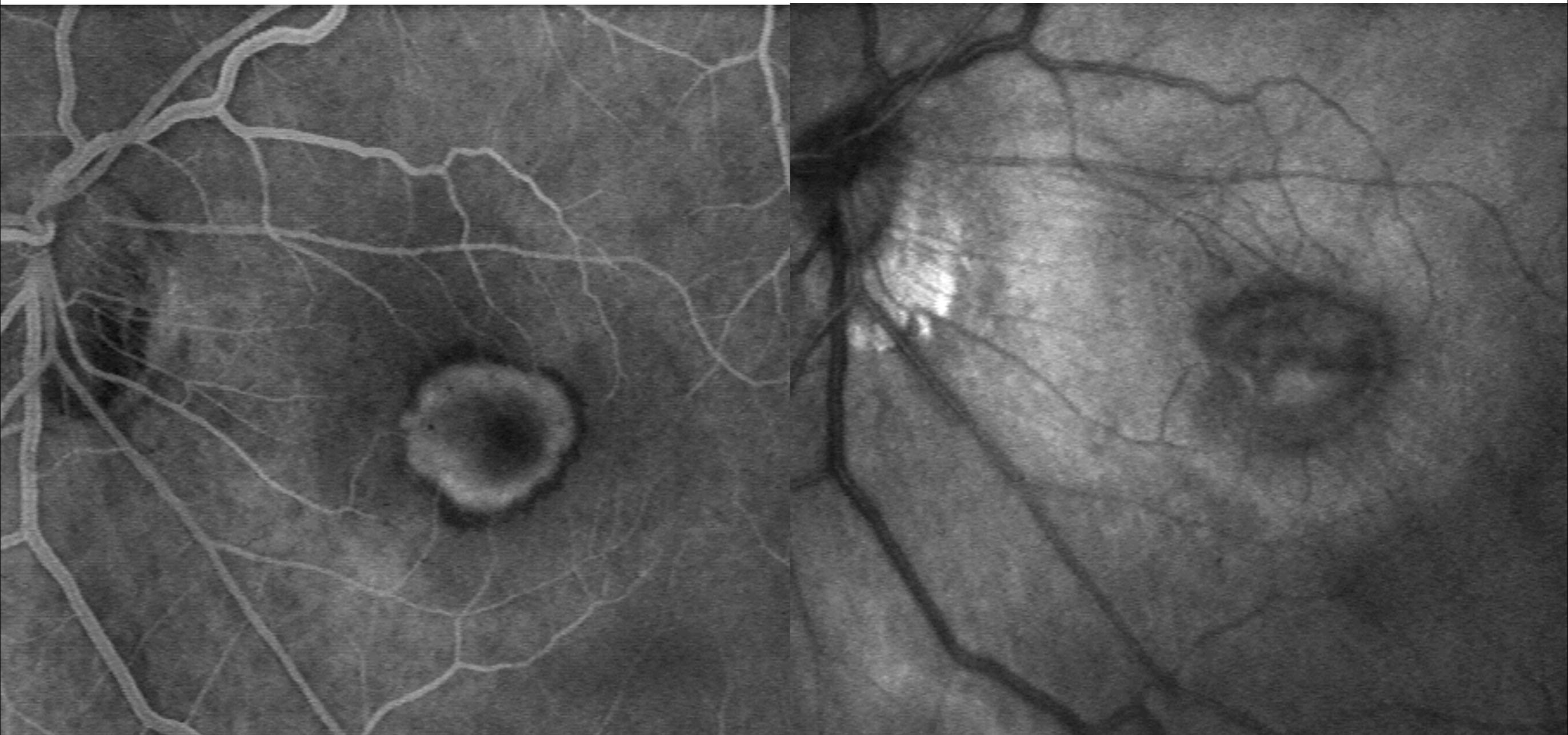


Viola, et al. *Investigative ophthalmology and visual science*. 46:E-Abstract(2005). - p. 244-244
Quentel et al. *Br J Ophthalmol* 2007;91:354-359
Viola et al. *Retina*. 2009 Jun;29(6):732-9



Membrane neovascolari coroideali





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M.E. Hartnett et al. *Ophthalmology*. 103(1): 1996 pp 58-71.

