



# Management of DMO

DR LIZ WILKINSON, NDDH

VICE CHAIR DIABETIC SCREENING ADVISORY BOARD, CLINICAL LEAD DIABETIC EYE SCREENING PROGRAMME NORTH & EAST DEVON, IMMEDIATE PAST PRESIDENT OPHTHALMOLOGY ROYAL SOCIETY OF MEDICINE

# What are our options?

- ▶ Improve diabetic control
- ▶ Focal laser
- ▶ Anti Veg F injection (2 options)
- ▶ Steroid injection – short term < 6 months
- ▶ Steroid injection – long term < 3 years
- ▶ Combination

# Interventions

Option	Guidance	Benefit	Risk -systemic	Risk- local	Licence/NICE Requirements
Improve Control	NICE Type 1 and Type 2	Slow progression Protect other organs Increase lifespan	None	None	None
Laser	RCOphth	Local	None	Macular burns	None
Intravitreal Anti Veg F (3)	TA 274 (2013) TA 346	Local Short term Decrease PDR	Thromboembolic	Endophthalmitis Retinal hole Inflammation ....	>400um Central retinal Thickness Patient access scheme
Intravitreal Steroid (2)	TA 349 (Dexamethasone) TA301 (Fluocinolone Acetonide)	Local, longer term from 6 months to 3 years	Minimal	Glaucoma Endophthalmitis Retinal hole Inflammation ...	Pseudophakic Unresponsive to other treatments or unsuitable Patient access scheme
Combination					

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# Diabetic control

- ▶ NICE guidelines for Type 2 DM
- ▶ Audit of impact of education on HbA1c

<b>A</b>	<p>Is for HbA1c, which is a measurement of the sugar in your blood. Your HbA1c should be 6.5% (48mmol/mol) to 7.0% (53 mmol/mol) or less. Ask your GP to tell you.</p> <p>Your day to day blood sugar should range from 4 (before meals) to 10 (after meals).</p>
<b>B</b>	<p>Is for blood pressure.</p> <p>This should be 130/80 or less.</p>
<b>C</b>	<p>Is for cholesterol.</p> <p>This should be 4 or less.</p>
<b>D</b>	<p>Is for diet. Low Glycaemic Index.</p> <p>Try not to eat processed or white food (eg: bread, rice, pasta) and eat lots of unprocessed food and vegetables.</p>
<b>E</b>	<p>Is for exercise.</p> <p>Walk as much as possible.</p>

## How I've done since my first appointment with you.

Thu 20/10/2016 17:53

To: Wilkinson Elizabeth (NORTHERN DEVON HEALTHCARE NHS TRUST) <elizabethwilkinson1@nhs.net>;

Hi Elizabeth,

After my appointment with on Tuesday 18.10.16, here is my email for you as requested.

When I had my first appointment with you I was shown a picture of the back of my eye and you pointed out a leak. I can not remember the exact date so please use my records to get them if needed.

Together we discussed how I could reverse the damage. I was eating healthy since being told about my Diabetes to try and and lose weight, but had a long way to go.

I listened to you telling me to walk 10,000 steps per day and how you were not using the lifts in the hospital to walk your own 10,000 steps.

I was really worried about losing my sight so set myself a target to do 10,000 steps everyday. I purchased a Fitbit to count my steps and read about what else I could do. My husband and I looked at other changes to be made in my diet (and his) to help lower my sugar levels and stop the pressure in my eyes getting worse. I also read that 30 minutes per day of exercise is also very good.

I started doing 30 minutes per day on a cross trainer and making sure I completed the 10,000 steps. I then joined my local gym and started running. I downloaded the couch to 5k app and started running. It has taking me longer than the apps eight weeks but I completed the steps each week and now run regularly. I have now downloaded the couch to 10k and started working on this. I live in Bideford and a few weeks ago run for the first time to Instow without stopping which is about 7 miles.


Since June this year I have using the slimming world diet (if you can call it a diet). I think of it as more of a healthier way of eating and once you get your head around what and how much you can eat it's really easy to follow. I really recommend Cauliflower rice which fills you up and replaces rice with chilly.

It has been hard work and at first getting used to the changes was hard but well worth it. I was a size 18 and have now just brought my first size 10 jeans. I am half the person I was and feel so much better and healthy for this. My blood work is the same as a "normal" person and the new picture of my eyes this week was normal. I am hoping that at my next meeting with the Diabetic nurse for my check up I will be taken off the last tablet I am on.

Thank you once again Elizabeth for your help and the kick I needed to get where I am today. Please feel free to use this email to show others that the hard work pays off. I hope it will help others.


Once again thank you.

Kind regards



“I was a size 18 and have now just bought my first size 10 jeans. I am half the person I was and feel so much better...”





“My blood work is the same as a normal person and the new picture of my eyes this week was normal. I am hoping that at my next meeting with my diabetic nurse...I will be taken off the last tablet I am on.”



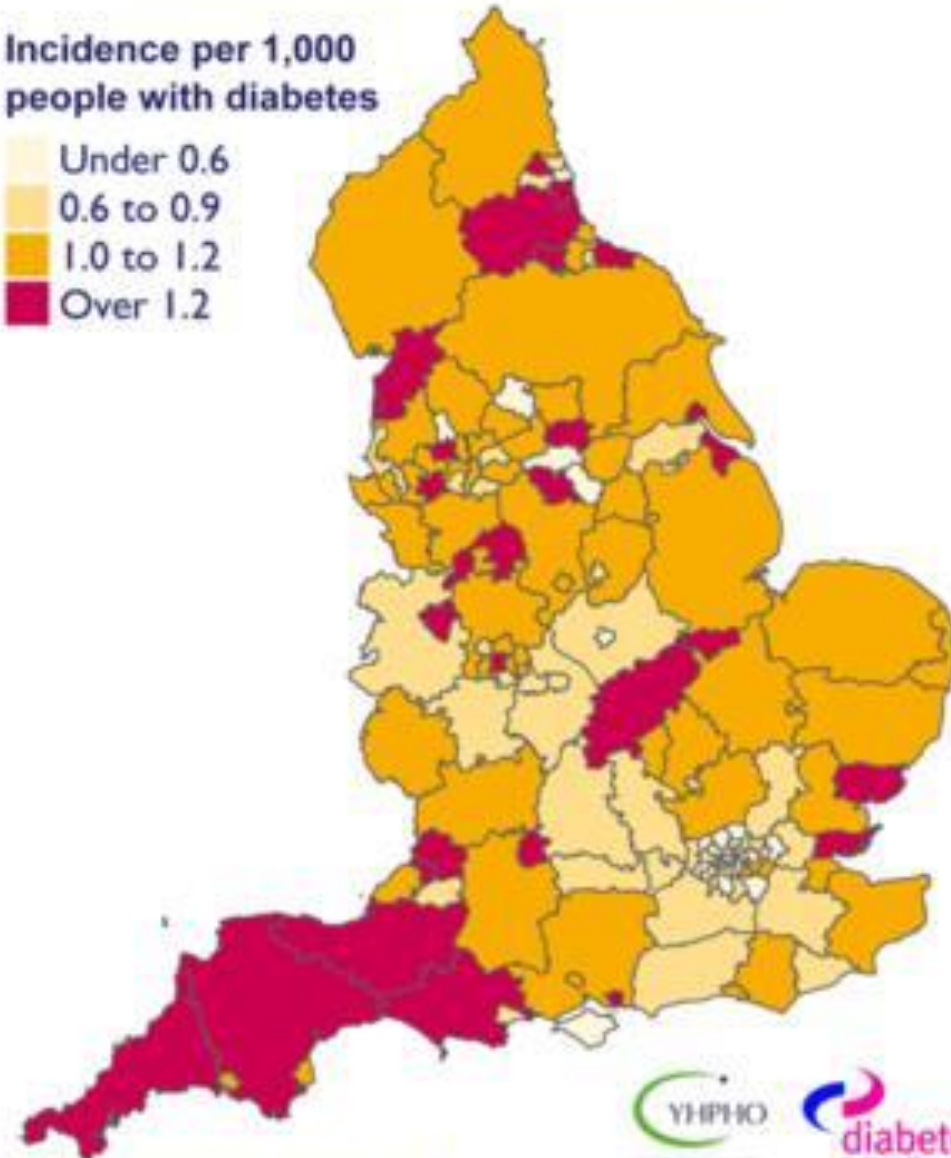
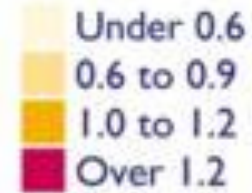
## Amputation rates in the South West

Diabetic complications are directly related to the control of the systemic disease and the duration.

### Major amputation rates in people with diabetes

Sources: The Quality and Outcomes Framework (QOF) 2007/08 to 2009/10,  
Hospital Episode Statistics (HES) 2007/08 to 2009/10,  
The NHS Information Centre for health and social care

#### Incidence per 1,000 people with diabetes

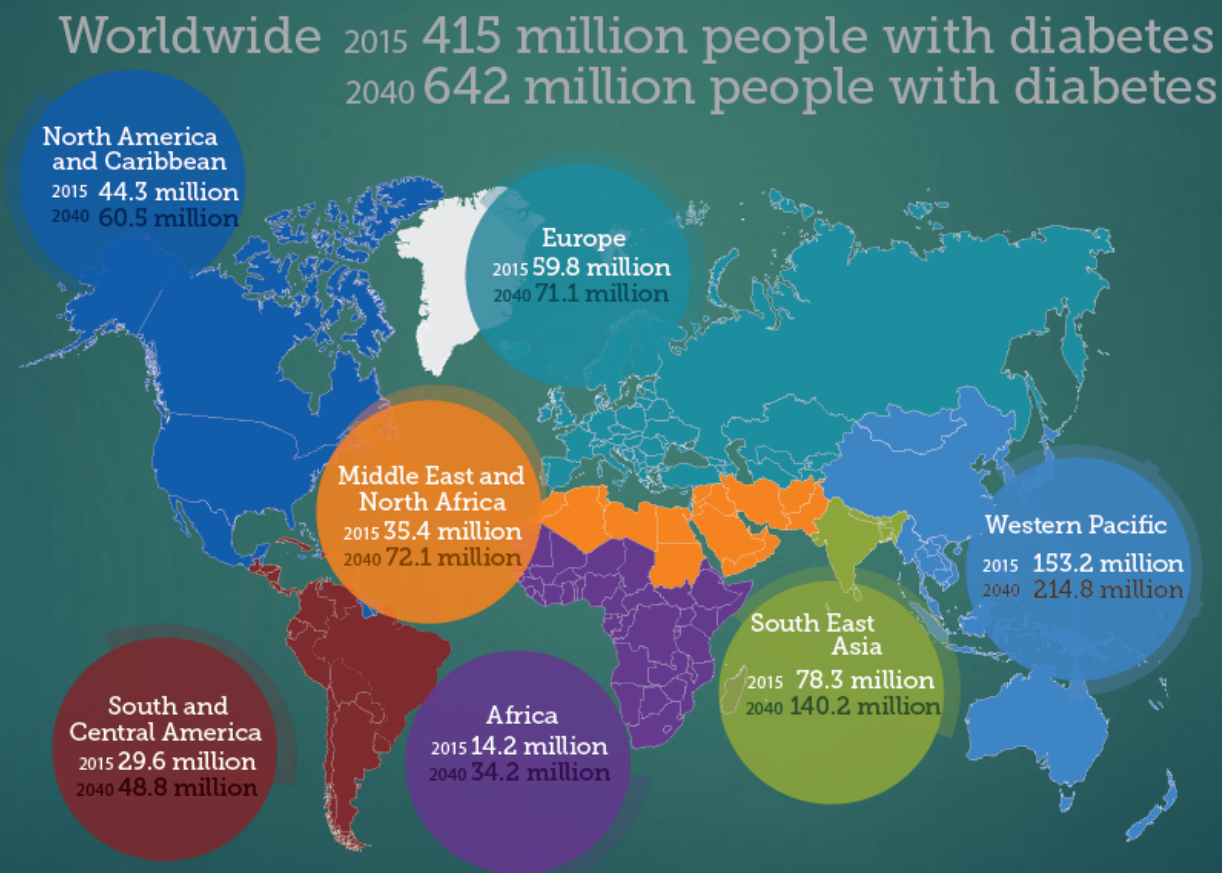


Contains Ordnance Survey data ©  
Crown copyright and database right 2012



Produced by YHPHO 2012

# An epidemic of diabetes



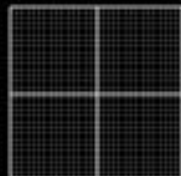
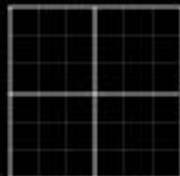
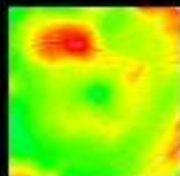
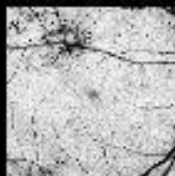
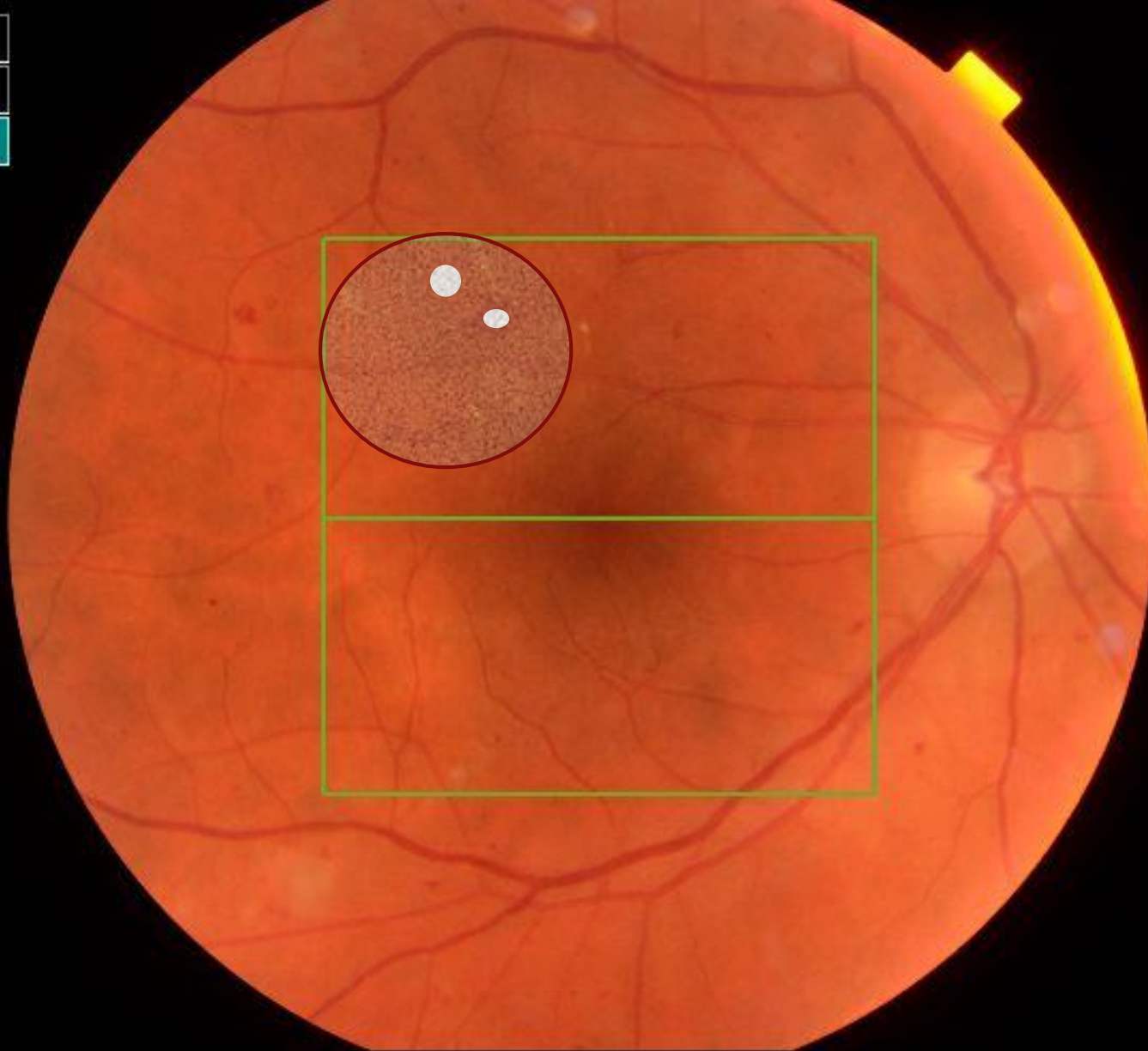
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Overlay

Grid

Circle



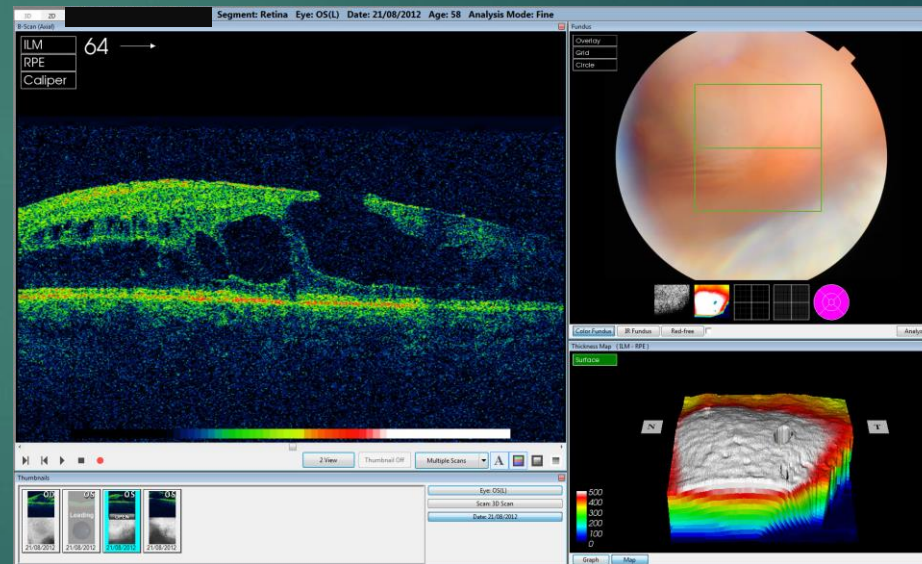
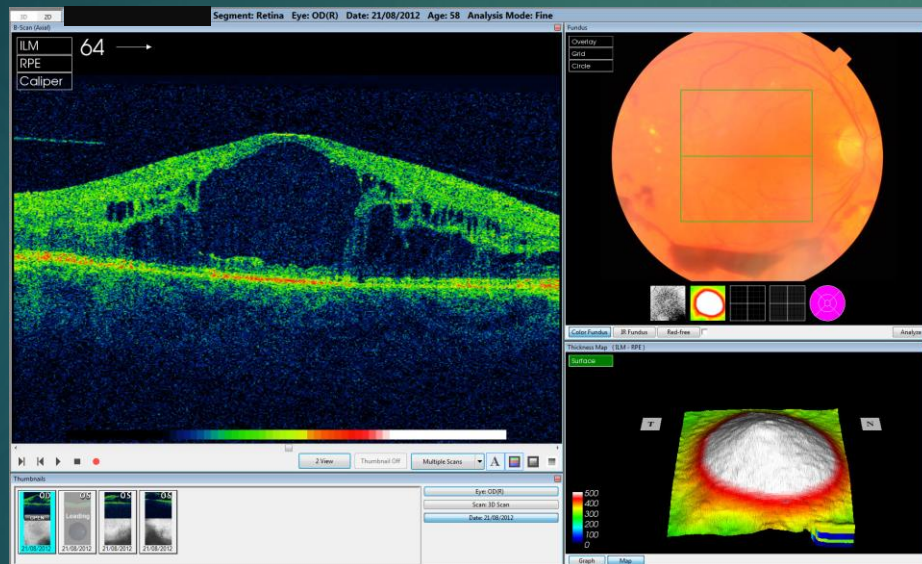
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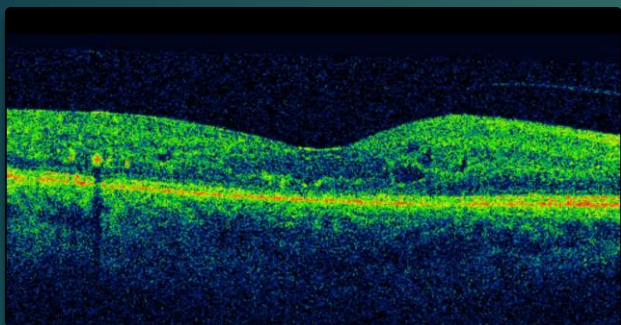


# Mr M

58 year old Type 2 Diabetic diagnosed aged 41  
Moved to area June 2012 – Bilateral PDR and DMO  
VA R 6/36 L 1/60



# Mr M

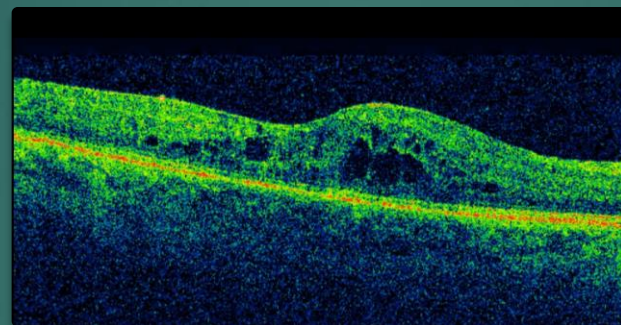


## May 2013

Post loading phase IVI Anti Veg F

CRT 826 now down to 282

VA 6/18

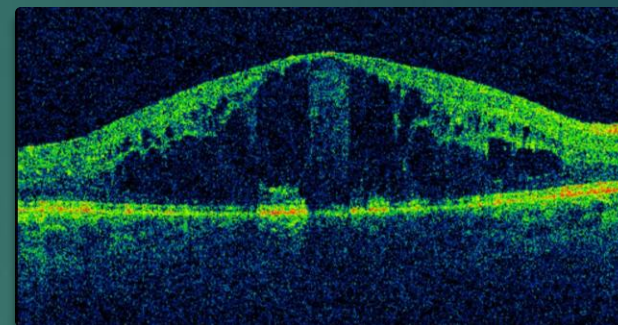


## January 2016

Switch to 2<sup>nd</sup> anti Veg F - 25<sup>th</sup> IVI

2 monthly

VA 6/24



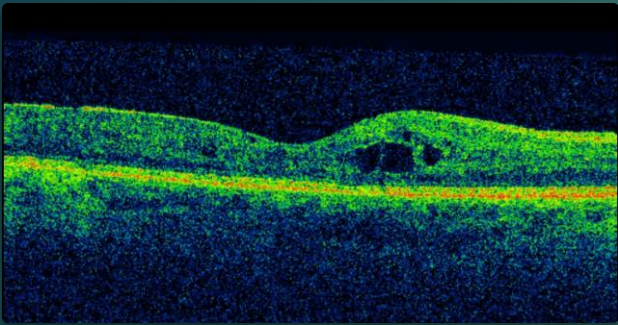
## May 2016

Post 2 monthly IVI

VA 6/36



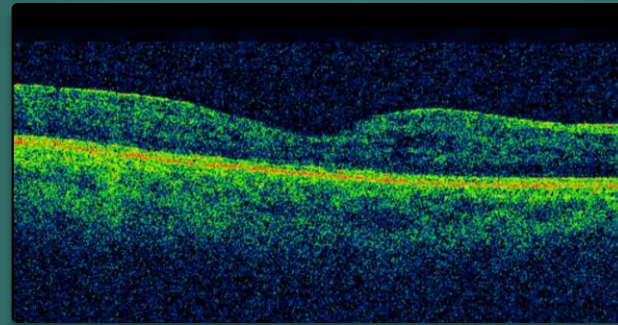
# Mr M



## August 2016

Post monthly loading 2<sup>nd</sup> anti Veg F

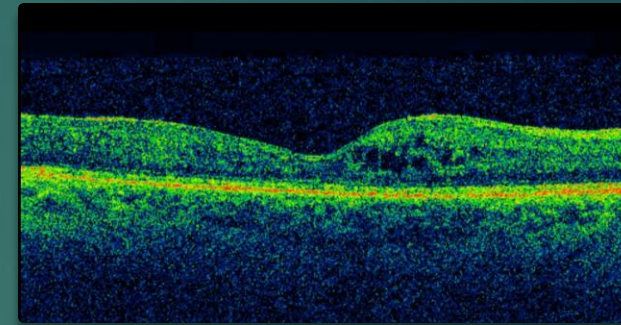
VA 6/18



## December 2016

Return to 2 monthly 2<sup>nd</sup> anti Veg F

VA 6/18



## October 2017

Post R phaco + IOL

Stability on 2 monthly IVI planned  
around surgery

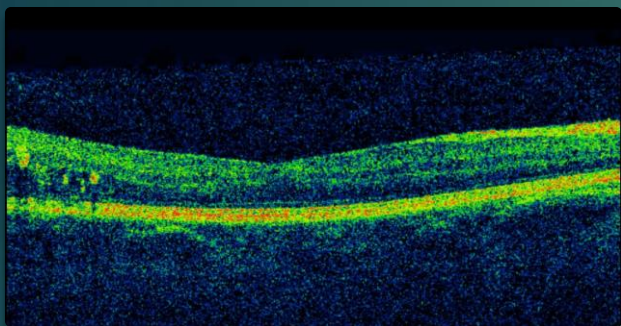
VA 6/18 +

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# Mr A

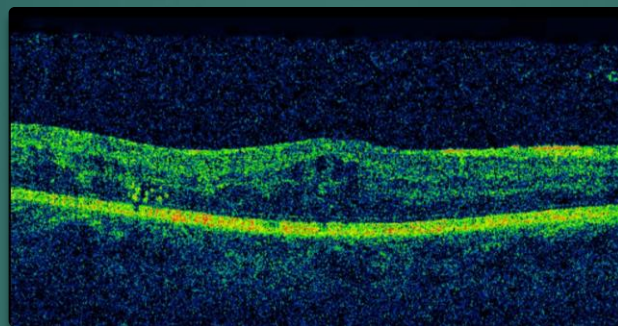
43 year old Type 1 Diabetic for 39 years  
Downs Syndrome, epilepsy, anxiety



January 2016

R VA 6/12

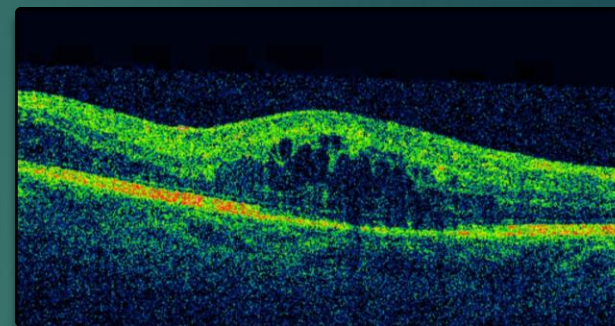
Bilateral PDR (proliferative  
diabetic retinopathy)



May 2016

VA 6/18

Post PRP  
Increasing DMO



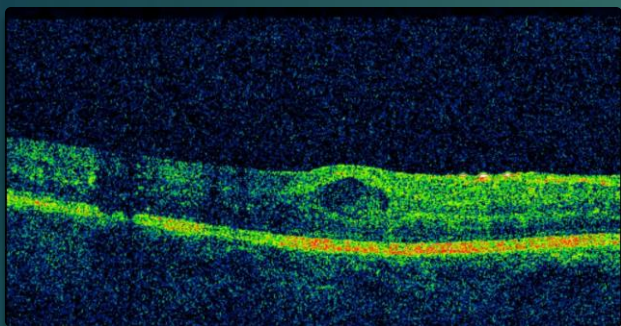
Aug 2016

VA 6/36

Pre IVI Steroid (short term)



# Mr A

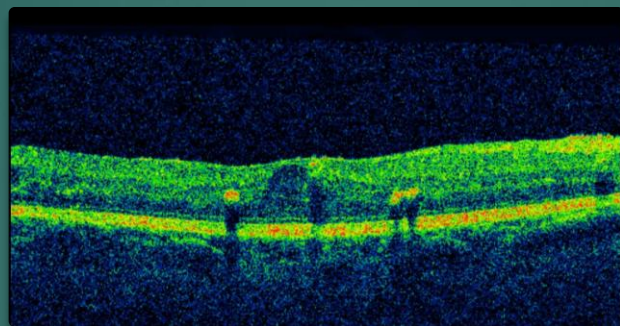


Sept 2016

6/18

Post IVI Steroid

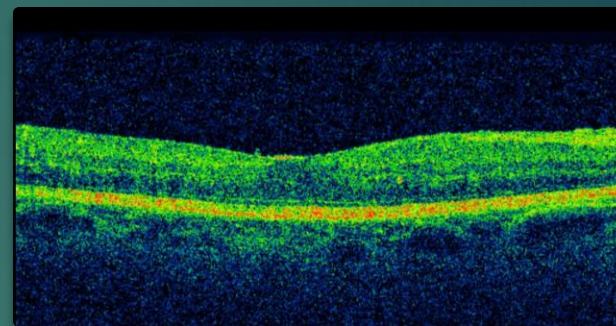
No adverse events



Jan 2017

6/24

Pre Long Acting Steroid +  
Cataract Surgery



August 2017

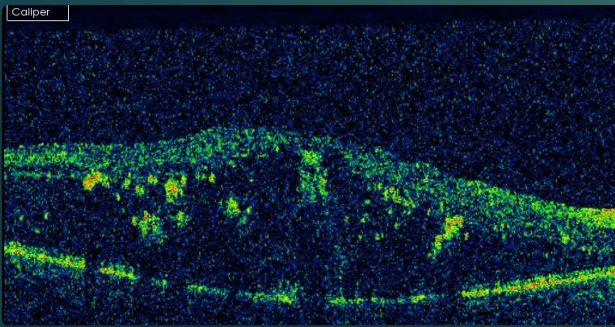
6/18

Post long acting steroid

No adverse events

# Mrs D

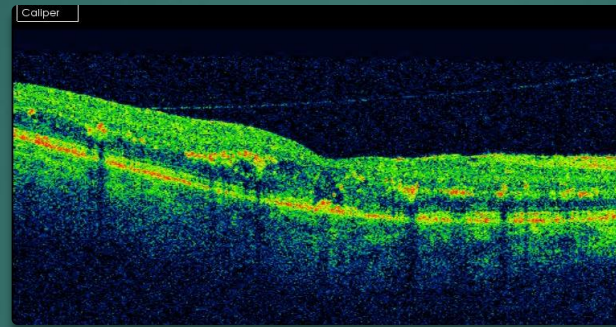
Type 2 Diabetic for 19 years  
R VA 3/60 L VA 2/60 with RAPD +



Nov 2012

Pre anti Veg F loading

**R VA 3/60**

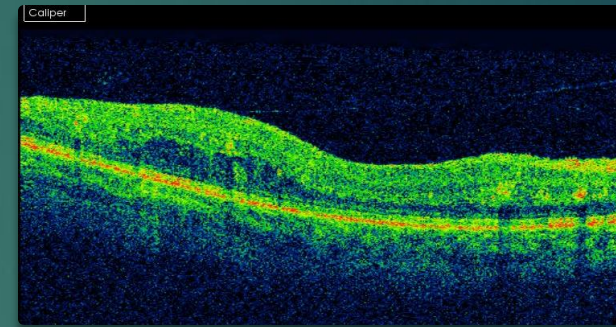


Jan 2013

Post loading

CRT down from 747 to 273

VA 6/60



May 2013

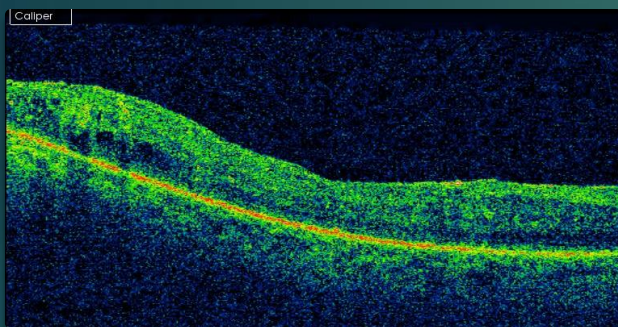
Severe CVE

Active PDR

Decision to stop Anti Veg F



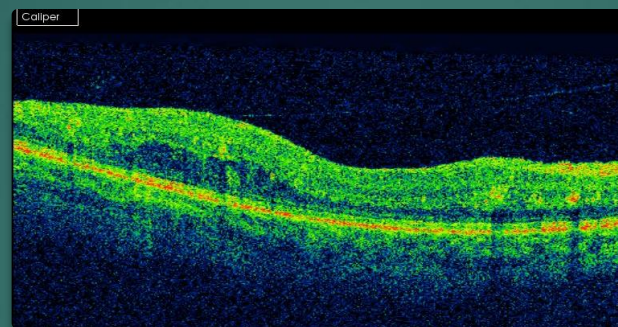
# Mrs D



April 2015

R Phaco + IOL

PDR under control

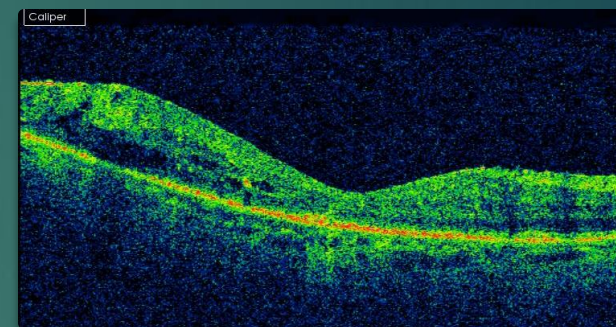


September 2015

Post op IVI Long Acting Steroid

Occasional top up PRP

VA 6/60



October 2017

2.4 years post steroid

VA still 6/60

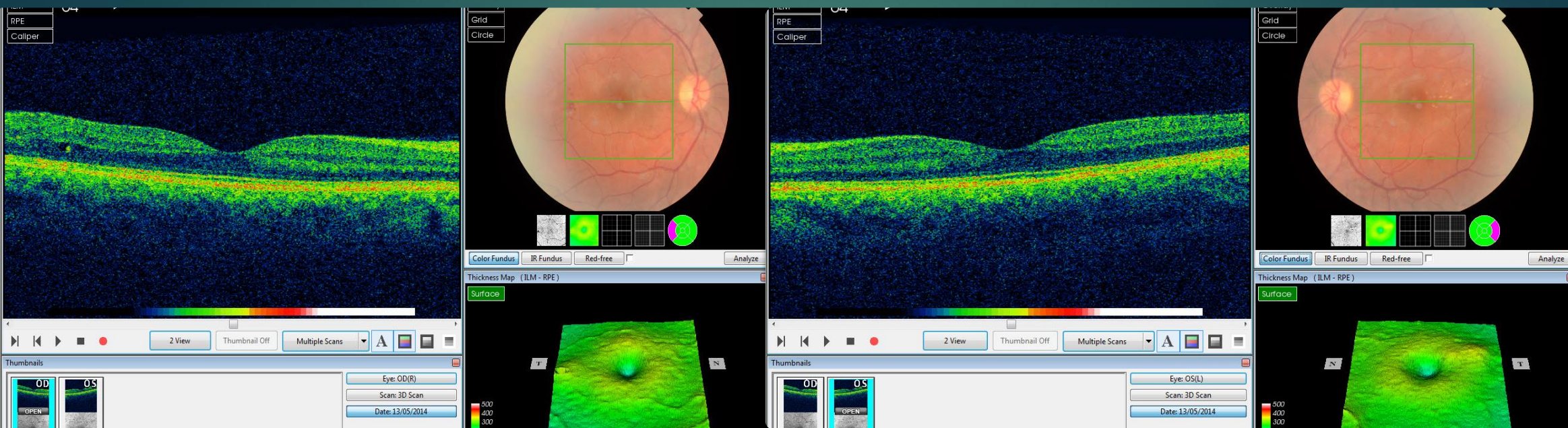
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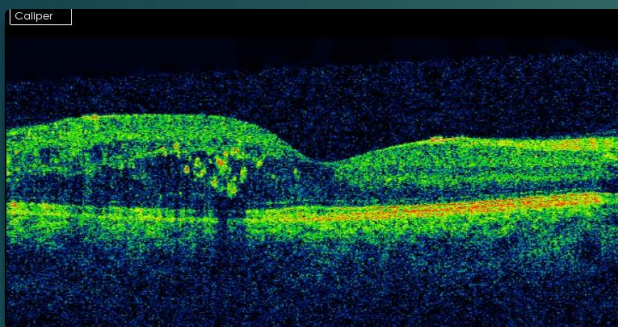
# Mrs S

35 year old Type 1 Diabetic for 28 years  
First seen 2013  
Pregnant 2015



OCT scans pre pregnancy  
2014  
VA 6/6 BE

# Mrs S

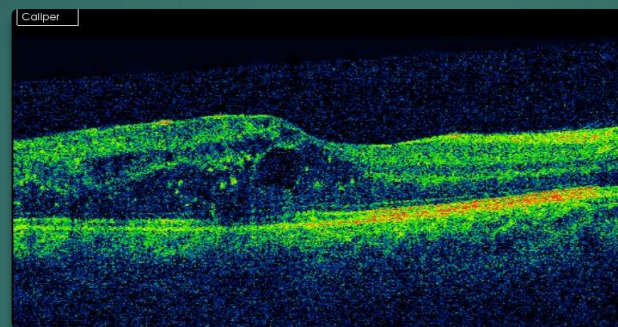


May 2015

18/40 pregnant

VA 6/9

Declines laser

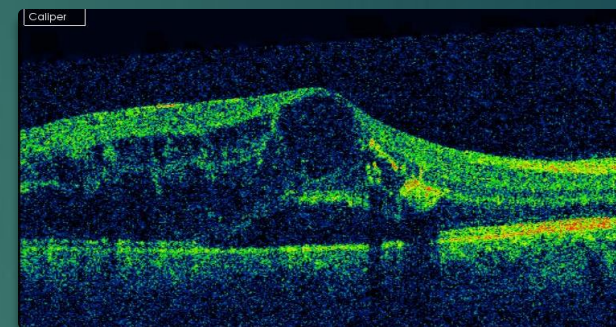


July 2015

29/40 pregnant

VA 6/12

Declines laser



Jan 2016

Post breastfeeding

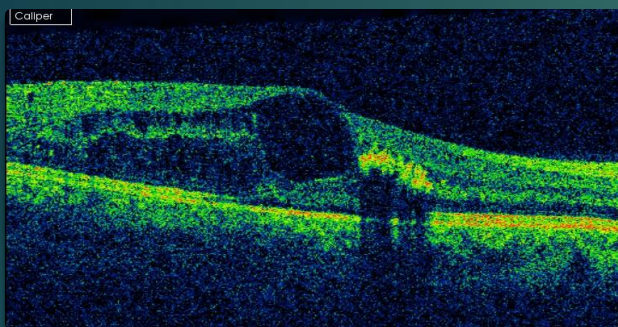
VA 6/18

Accepts IVI Anti Veg F x 5 loading

Laser left eye as below criteria for  
anti Veg F



# Mrs S

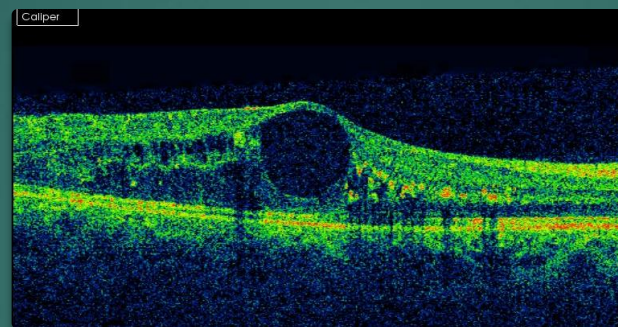


July 2016

Post anti Veg F

No anatomical/visual improvement

Anti Veg F switch

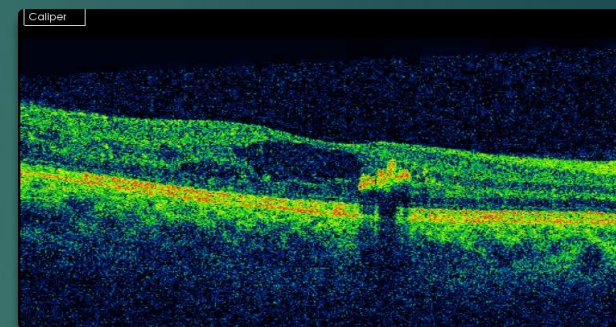


Feb 2017

Monthly anti Veg F

Now IVI BE

Holding the faith!



October 2017

VA back to R 6/9 L 6/6

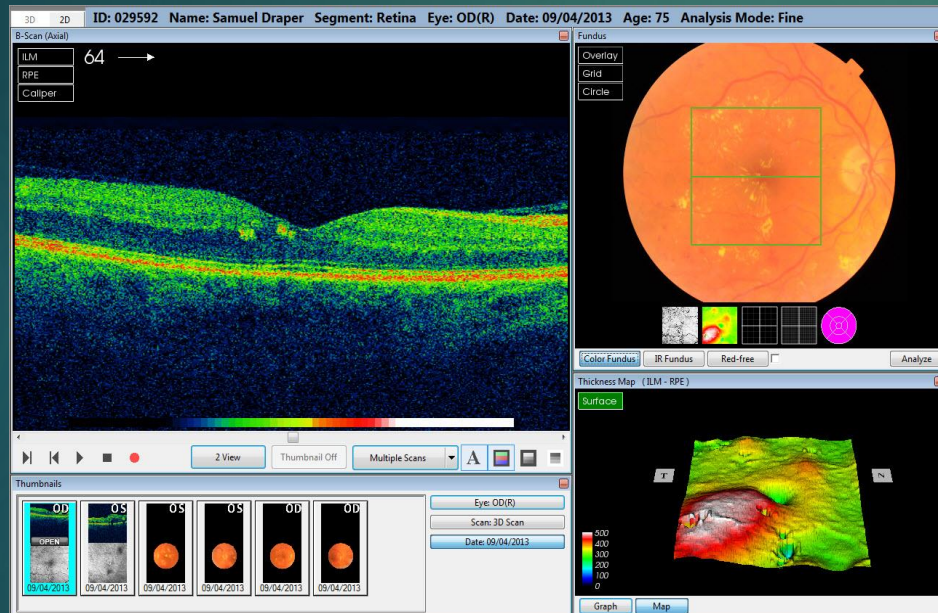
Monthly anti Veg F BE

Macular Laser intermittently BE

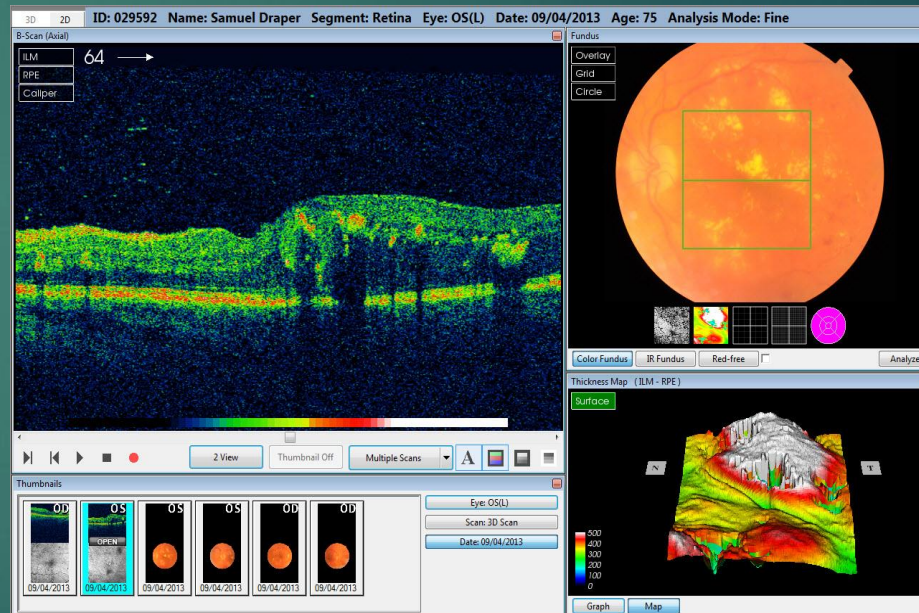
# Mr D

Aged 75 Type 2 Diabetic for 12 years  
BP 192/88    BM 17    Chol 7

April 13 R VA 6/6



April 13 L VA 6/18





### Details



### Clinic Type



### Clinic Type



DCI



Save



Close

[Edit Letter](#)

Preview



Print



## Investigations

Case L PRP recorded on 19-Sep-2017 under LA ,

sh

...

Tue 19-Sep-2017...

culopathy (19-Sep-2017)

diabetic retinopathy (19-Sep-2017)

retinal laser scars visible (19-Sep-2017)

2017  Dr Elizabeth Wilkinson

top up PRP. The right needs further focal laser.

© 2017 Dr Elizabeth Wilkinson

ing in the left eye as the haemorrhage  
not visualise the inferior fundus well enough to  
visible retina looks well lasered so the best  
with a single IVI Eylea to the left eye and I will  
this time

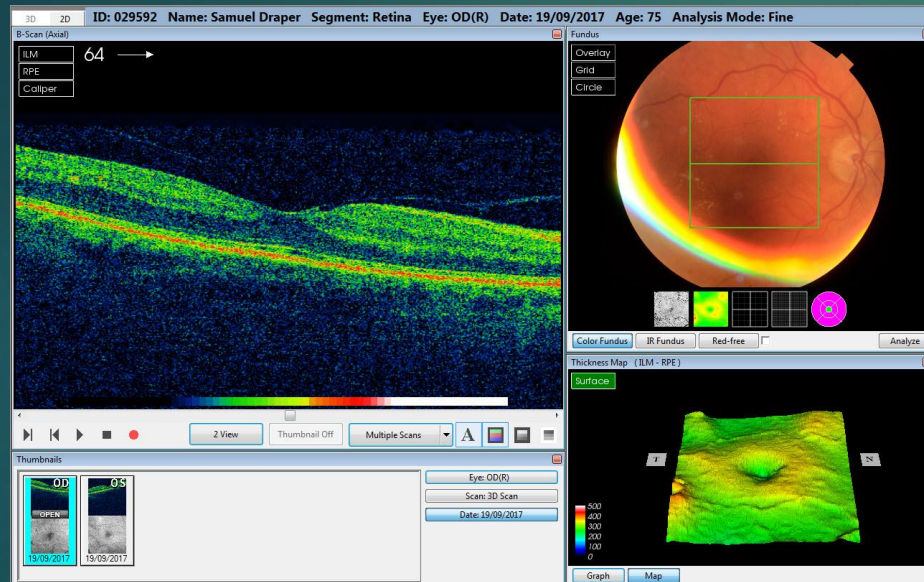
## History

POH		
	L IVI Eylea (7th)	28-Sep-2017
	L IVI Eylea (6th)	05-Jun-2017
	L PRP	22-Mar-2017
	L IVI Eylea (5th)	16-Feb-2017
	L PRP	08-Feb-2017
	L PRP	11-Jan-2017
	L PRP	14-Dec-2016
	L PRP	04-Nov-2016
	L PRP	07-Oct-2016
	L IVI Eylea (4th)	07-Mar-2016
	L IVI Eylea (3rd)	08-Feb-2016
	L IVI Eylea (2nd)	11-Jan-2016
	R macular laser - direct to microaneurysms	09-Dec-2015
	L IVI Eylea (1st)	30-Nov-2015
	BI macular laser - focal to areas of leakage, L PRP	12-Sep-2014
	BI macular laser - grid to area of thickening, L PRP	27-Sep-2013
	L PRP	09-Aug-2013
	L PRP	26-Jul-2013
	L PRP	28-Jun-2013
	L PRP	10-May-2013
PMH	<b>Endo.</b>	type II diabetes mellitus, controlled by Tablets, age at diagnosis: 63

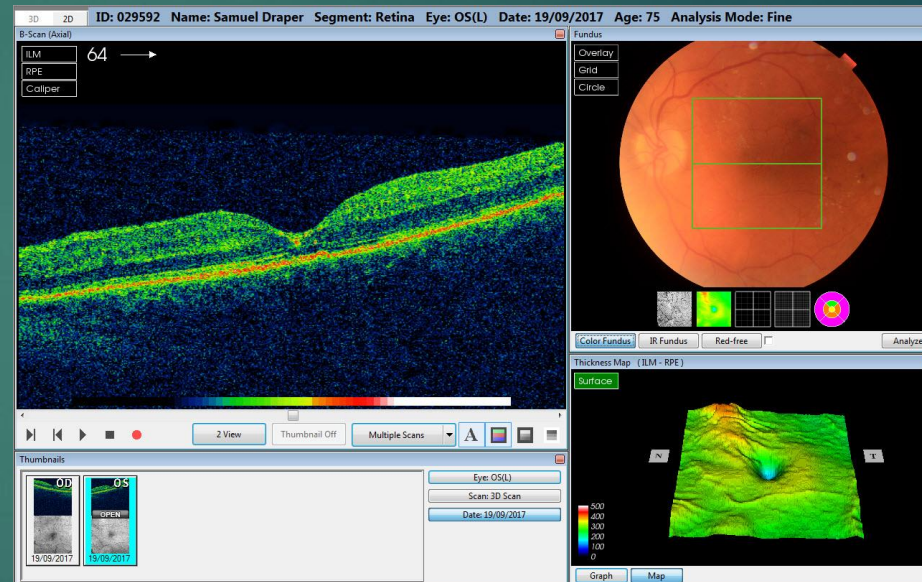


# Mr D

Nov 17 R VA 6/6



Nov 17 L VA 6/9



# What do we need to think of?

- ▶ Diabetic control (HbA1c) and duration
- ▶ CVE/MI risk
- ▶ Injection under LA?
- ▶ Glaucoma
- ▶ PDR
- ▶ Pregnant/Breastfeeding
- ▶ Travel/Work





# Standardisation Stratification



Standardisation  
Stratification  
Optimisation



Standardisation

Stratification

Optimisation

Individualisation



Standardisation

Stratification

Optimisation

Individualisation

