

The Glycaemic Index: Helping Patients in Primary care with T2D. A journey over 4 years involving two clever women and a single interesting fact

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Disclosures:

1. The 4 year Norwood Surgery low-carb project has been entirely self-funded by the partners, apart from a single £7,000 grant from The National Health Service.
2. The Norwood Surgery is an NHS only practice, we do not see any private patients
3. Dr David Unwin is an unpaid, voluntary medical adviser to Diabetes.co.uk and an Expert Clinical Adviser on diabetes to the Royal College of General Practitioners (UK)
4. Dr David Unwin has not received any payments or gifts with respect to his low carb work



The Glycaemic Index?

Table sugar
Brown bread











A clever woman

• Diabetes is largely about sugar




- People with T2 Diabetes struggle to metabolize glucose
- So that for many a 'moderate amount' of sugar leaves them 'moderately poisoned'
- Where, oh where is all this sugar coming from?







Food Item	G Index	Serve size g	How does each food affect blood glucose compared with one 4g teaspoon of table sugar? 
Basmati rice	69	150	10.1 
Potato, white, boiled	96	150	9.1 
French Fries baked	64	150	7.5 
Spaghetti White boiled	39	180	6.6 
Sweet corn boiled	60	80	4.0 
Frozen peas, boiled	51	80	1.3 
Banana	62	120	5.7 
Apple	39	120	2.3 
Wholemeal Small slice	74	30	3.0 
Broccoli	54	80	0.2
Eggs	0	60	0

Other foods in the very low glycaemic range would be chicken, oily fish, almonds, mushrooms, cheese



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A healthy breakfast: cereals, toast, fruit juice?

Food item	Serving size in g/ml	How does each food affect blood glucose compared with one 4g teaspoon of table sugar over 2 hours?
Corn flakes	30	8.4 
Milk	125	1 
Brown toast, 1 slice	30	3 
Pure Apple juice	200	8.6 

Total sugar equivalent for breakfast 21 teaspoons

Useful information for those with T2Diabetes making dietary choices

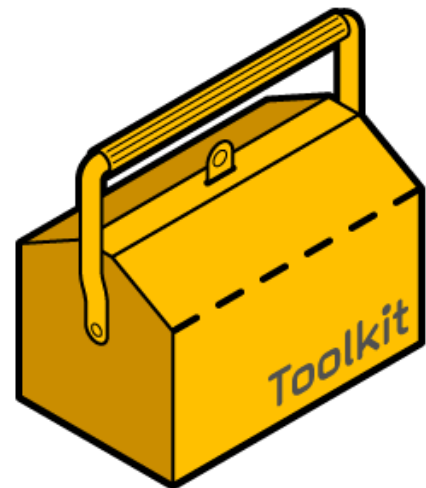
*As per calculations derived from the glycaemic index. To be found in: *It's the glycaemic response to, not the carbohydrate content of food that matters in diabetes and obesity* Journal of Insulin Resistance 2016. Unwin et al



Changing behaviour: Just 4 steps



Can Dr and patient agree on shared health goals?



Explore relevant resources and patient resilience

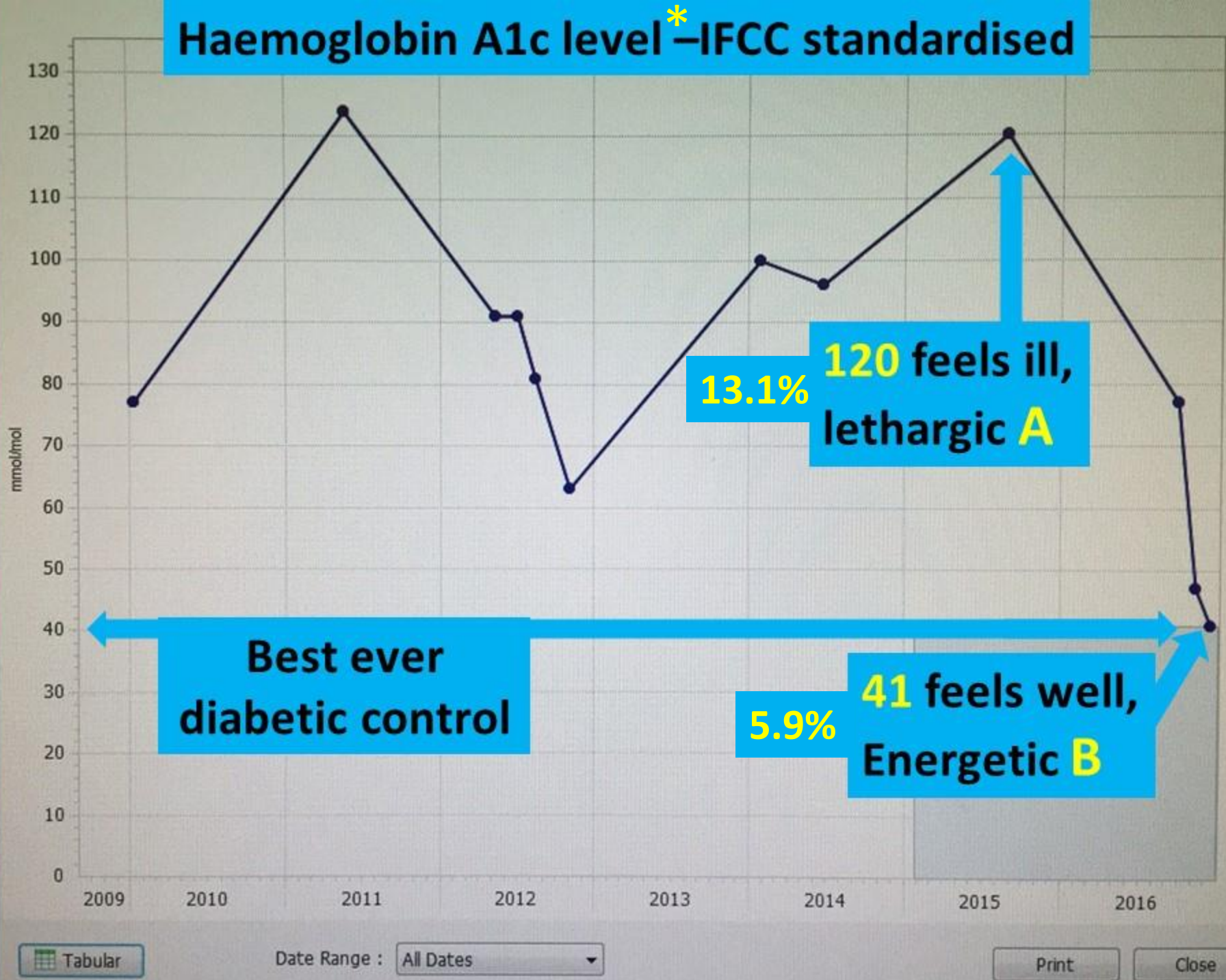


Agree next small steps towards agreed goals

At review reflect on what is working, sincere compliments on successes (noticing)

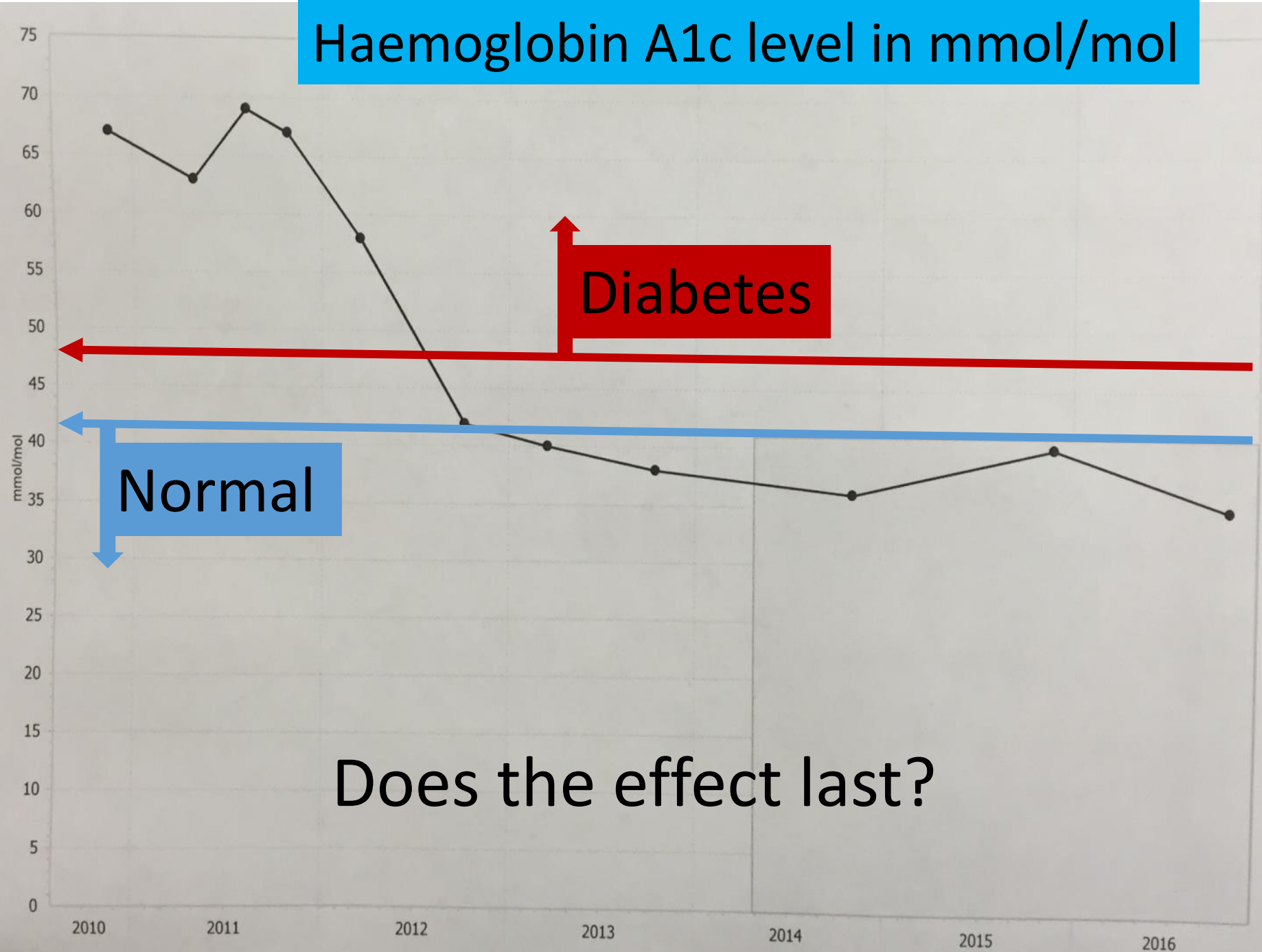


The difference between point A and point B for this man with Type 2 diabetes? DIET, mainly sugar and starchy carbs Also a feeling of control



**Type 2
Diabetes in
remission for
four years AND
off Metformin**

**This lady
started a lower
carb diet in
2011, loosing
27 Kg over the
years**



Southport and Formby CCG spend on drugs for diabetes

(BNF 6.1.) The average spend is £1439/month/1000pts

One practice, **Norwood** (in pink) spend only £1076/month/1000pts and have 9,072 patients

An estimate of the average yearly drug spend on diabetes in Southport for 9,072pts would be

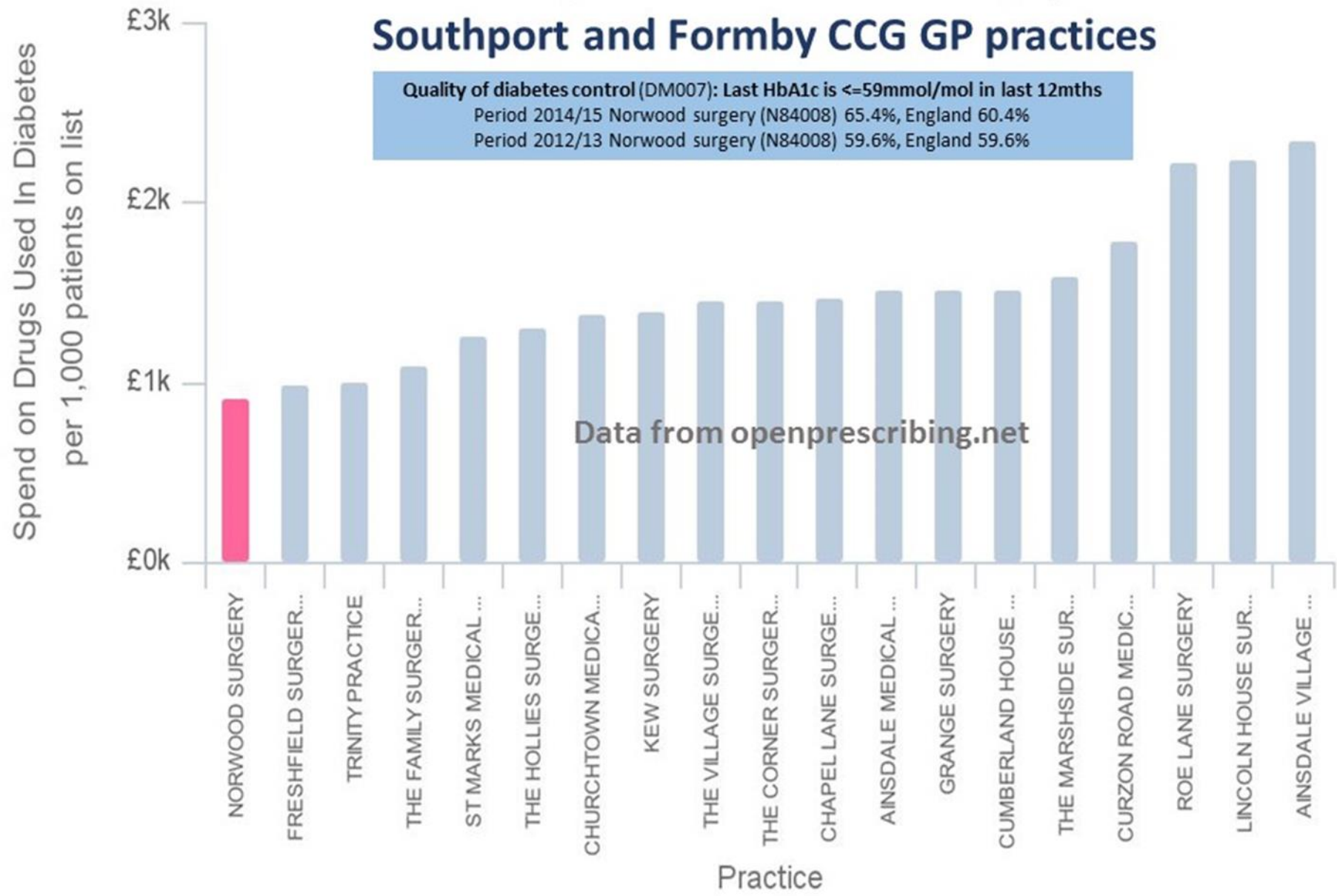
£156,546

Norwood spends

£117,137

£39,409 less

June 2016 figures for diabetes drug spend in Southport and Formby CCG GP practices



Case series of 125 consented patients helped by a lower carb diet
 In a primary care setting over an average of 15 months.

It's not just about Type 2 Diabetes

Significant improvements in weight, liver function, lipids and blood pressure.

	HbA1c in %			Total Cholesterol			HDL Cholesterol			Cholesterol Ratio			Triglyceride		
	Start	Finish	Loss	Start	Finish	Loss	Start	Finish	Loss	Start	Finish	Loss	Start	Finish	Loss
Averages	8.6	6.5	2.1	5.5	5.1	0.4	1.29	1.46	-0.17	4.3	3.8	0.5	2.23	1.64	0.69
	HbA1c in mmol/mol			Weight in Kg			Systolic BP in mmHg			Diastolic BP in mmHg			Gamma-G.T Level in U/L		
	Start	Finish	Loss	Start	Finish	Loss	Start	Finish	Loss	Start	Finish	Loss	Start	Finish	Loss
Averages	70.2	47.9	22.3	96.5	87.9	8.6	143	134	9	86	78	8	87.1	48.0	39.1

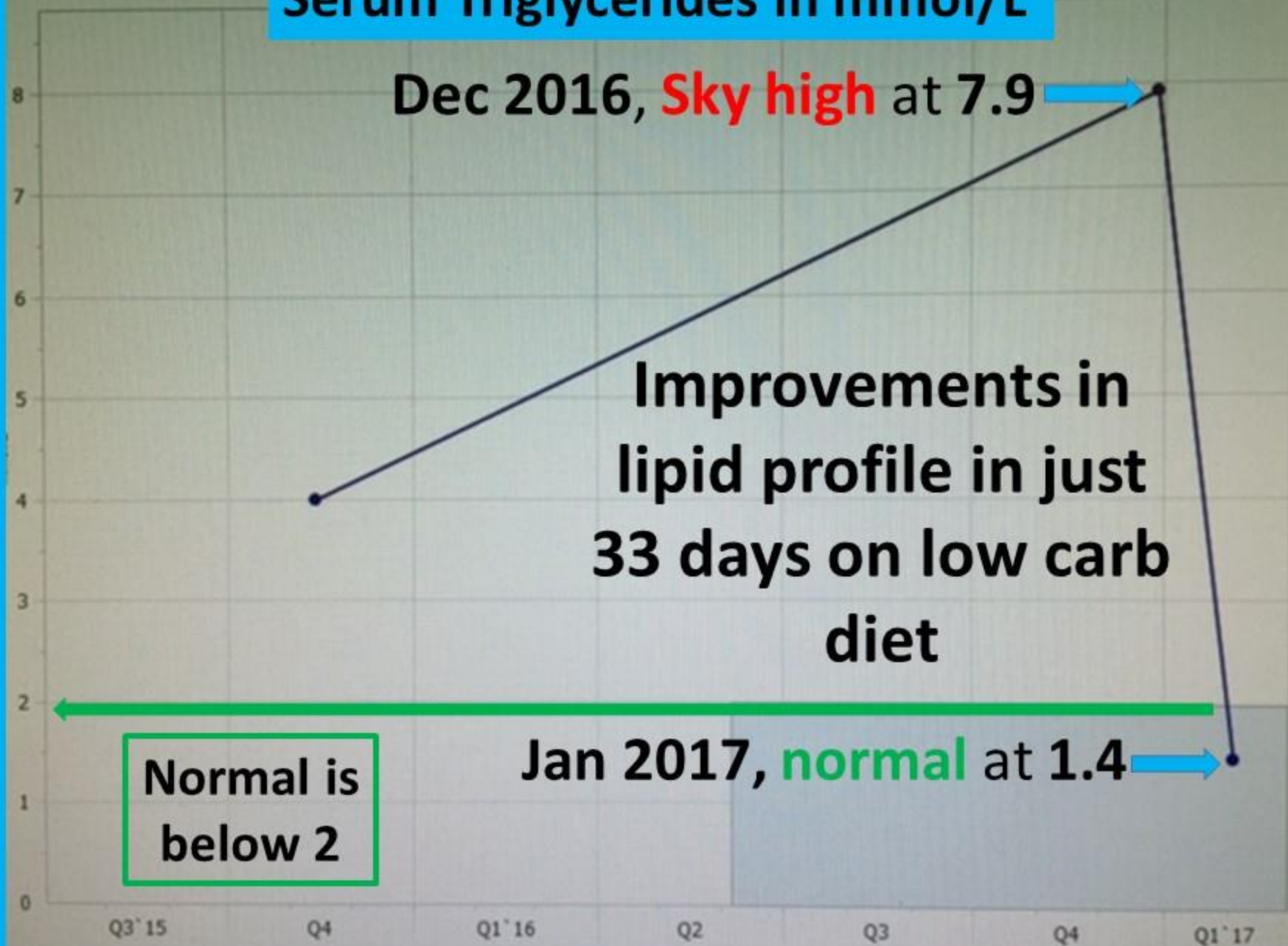
**Dietary carbs
effect lipids too!**

**Particularly
Triglycerides**

This 63 year old T2D
tried low carb, & in
only **33 days**

Waist ↓ by 15cms
HbA1c ↓ 9mmol/mol
Weight ↓ 7Kg

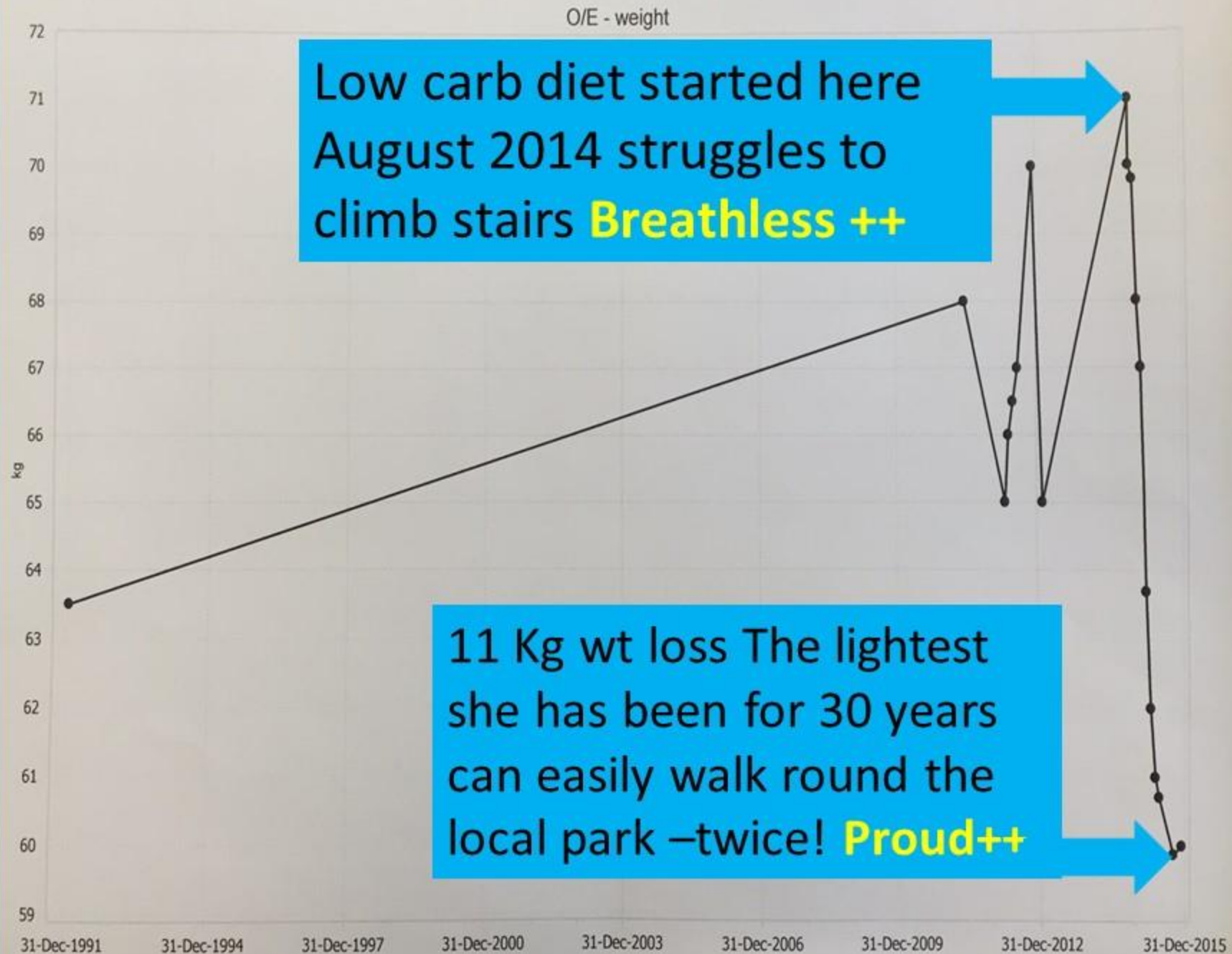
Serum Triglycerides in mmol/L



76 year old lady with heart failure for three years. 'life a struggle'
On all the medications I could think of.

Why had I missed out mentioning the most obvious thing that would help her;
WEIGHT-LOSS

Low carb diet was 'so easy I mainly cut out bread and biscuits'



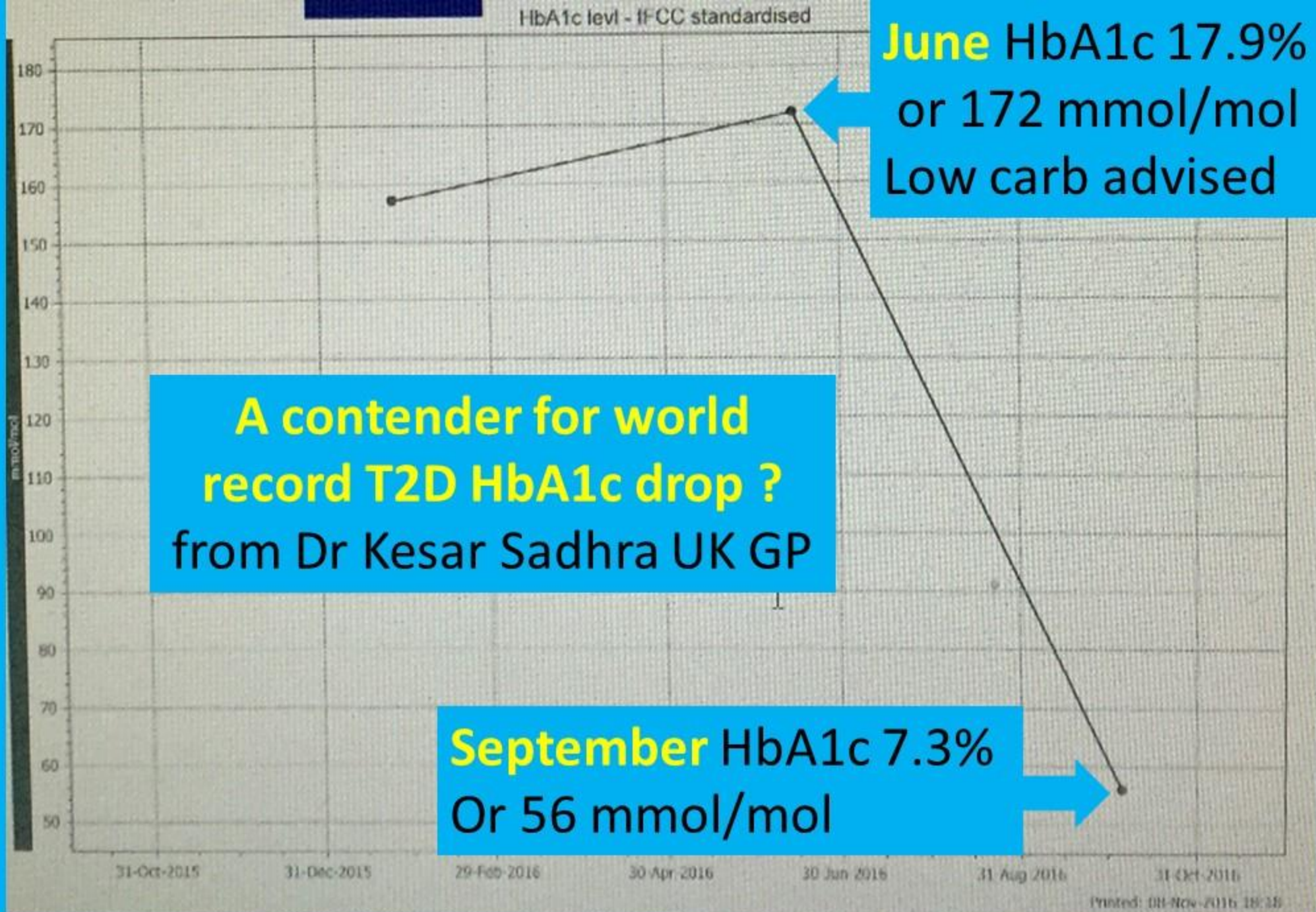
11 Kg wt loss The lightest she has been for 30 years can easily walk round the local park -twice! **Proud++**

Female patient aged 53 saw Dr Kesar Sadhra in the summer 2016

FOUR MONTHS saw this dramatic improvement in the control of her Type 2 diabetes on a lower carb diet

Also improved lipid profile

Total chol ↓
HDL ↑
LDL ↓
Trig ↓



We have eaten our way into this epidemic of obesity and diabetes, can we eat our way out of it again?



References:

- Unwin, D. Diabetes; Perhaps we can make a difference after all? **Diabetes in Practice**; Vol No.4, 2014.
- Unwin, D. , Cuthbertson, D., Feinman, R. & Sprung, V.: Raised GGT levels, Diabetes and NAFLD: Is dietary carbohydrate a link? **Diabetes in Practice**; September 2015.
- Unwin, D. & Tobin, S. A patient request for some 'deprescribing'. **BMJ**; 03 August 2015.
- Unwin, D. & Unwin, J. Low carbohydrate diet to achieve weight loss and improve HbA1c in type 2 diabetes and pre-diabetes: experience from one general practice. **Practical Diabetes**; 31(2):76, 2014.
- Unwin, D. Livesey G It is the glycaemic response to, not the carbohydrate content of food that matters in diabetes and obesity: The glycaemic index revisited. **Journal of Insulin Resistance** Aug 2016