

Diabetes: Perhaps we can make a difference after all?

Two years ago, I believed that there was little GPs could do to help halt the inexorable tide of diabetes and obesity. In 30 years of medicine, I had seen people with type 2 diabetes presenting at younger and younger ages as average weights increased. On occasions, I had managed to make a difference – but mostly I had been disappointed by my ability to bring about lasting change, gradually giving up and confining myself to “prescribing the tablets”. I remember thinking this is how a dentist must feel having to manage the inevitable spread of dental caries!

Two years on, I really enjoy working with the people with diabetes in my GP practice. By changing our approach, the practice nurse and I have seen average weight losses of 10 kg associated with an average drop in HbA_{1c} of 9.1 mmol/mol (0.83%) and also improvements in cholesterol, liver function, blood pressure and general wellbeing for over 50 people with type 2 diabetes. Many of this group of individuals have come off medication, and we have all had a lot of fun into the bargain!

The practice nurse and I achieved this by including three main components in our new approach:

1. Recognising “golden opportunities” for an intervention during individual consultations.
2. Working with patients in a collaborative manner and incorporating choice.
3. Choosing a diet low in carbohydrates and higher in healthy fats.

Golden opportunities

As with any relationship, picking the best time to make a suggestion to patients is tricky. When are we most likely to be listened to? I would suggest this is when there is a sudden change in the course of someone’s case. The moment we inform an individual that they are hypertensive, alarm bells ring about possible future consequences so there is more interest in any advice we give.

Similarly, when someone previously stable needs an increase in medication, there is a sense of slight danger. Most folk are not delighted to take medication and are, I find, interested in alternative approaches.

Now I look actively for these “golden opportunities”, the list of which grows all the time. But, for the present, I would suggest anyone with central obesity who also has one of the following, should be considered as a potential candidate for change:

- A new diagnosis of diabetes or prediabetes.
- An abnormal blood pressure result.
- Mild to moderate arthritis of the knees.
- A raised gamma-glutamyl transferase (GGT) test result (denying abnormal alcohol intake and not on relevant drugs).

This last factor is particularly thought-provoking. A raised GGT is associated with non-alcoholic fatty liver disease (NAFLD) now prevalent in 20–30% of adults in the Western world (Anstee et al, 2011). NAFLD is associated with an increased overall cardiovascular mortality, quite apart from its relationship with central obesity and the metabolic syndrome (Adams et al, 2005; Marchesini et al, 2005). Moreover, research suggests that raised serum GGT is also an independent risk factor for type 2 diabetes (Perry et al, 1998). There is general agreement that an excellent intervention for NAFLD, diabetes and the metabolic syndrome is weight loss (Marchesini et al, 2005; Preiss and Sattar, 2008), and evidence that a fall in GGT that accompanies weight loss is associated with histological improvements in NAFLD (Dixon et al, 2006).

A collaborative approach

At this point, it is interesting to consider consulting style when treating this group of people. One style may be as follows:

“Given your diabetes, you really must start losing weight or I will have to start medication!”



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“Now I know the ‘low-carb’ diet is controversial but, I find, for many of the individuals I see, it is a valid choice.”

Compare this with:

“At this point you have a choice. I could start medication but I wonder, are you interested in discussing how we can work together to help you lose weight?”

I find the latter, more collaborative approach (beginning with the patient choosing to work with the doctor) flows more naturally into establishing weight loss as a shared goal between doctor and patient than the former. This in turn leads to shared ownership of outcomes, and so better results. In our case the practice nurse and I both joined our patients on the low-carbohydrate diet, which added another collaborative factor to the mix.

Years ago, having “threatened” the person with diabetes with the dire consequences of continuing obesity, I would rather dismissively refer them on to the practice nurse or dietitian. Now, having hopefully engaged their interest and having vitally established a baseline weight and waist circumference, I go on to offer a review appointment with me in 2 weeks’ time following this initial appointment. I suggest that continuity at this point is crucial. Many patients have told me since that it was a combination of seeing me a second time along with my expectation they would do well that “got them on the right path”.

The review meetings are informal in nature, and a good time to discuss what is working well for the patient and to agree further adjustments to the diet along with future goals. I have noticed that it is almost inevitable that individuals who attend that first review after 2 weeks have lost weight.

On the subject of collaborating: it’s really worth finding out who is doing the shopping and meal preparation for the patient, and offering an invitation for them to come along to the review if that is acceptable. This helps engender a “whole-family” approach. As a consequence of promoting this approach, the partner of one of my patients with type 2 diabetes has lost 25.4 kg in weight.

A diet low in carbohydrates and higher in healthy fats

Now I know the “low-carb” diet is controversial but, I find, for many of the individuals I see, it is a valid choice. For a long time, I had been giving

“sensible, balanced eating”-type advice but have only recently understood the number of “carb addicts”, who, like alcoholics, struggle to cut back their intake of sugar, bread and carbohydrate-dense snacks. Many have told me they have found it is easier to do without carbohydrates altogether, as eating small amounts of carbs gives them powerful cravings that are difficult to ignore.

The low-carb diet has a longer history than is generally known. In 1863, William Banting published his *Letter on Corpulence, Addressed to the Public* (Banting, 1863), in which he advocated cutting out all “starch and saccharine matter”, which he felt “created fat”. Later, the low-carb diet was the only treatment for diabetes available in the pre-insulin era (Westman et al, 2006), and it is now experiencing something of a renaissance, particularly as a treatment for metabolic syndrome and type 2 diabetes (Volek and Feinman, 2005; Nordmann et al, 2006).

The heart of the low-carb diet is that all sources of sugar should be restricted. I was surprised to discover that the starch found in bread, pasta, rice and potatoes is, in essence, a large number of glucose units and so should be removed from the diet when following this plan. This explains why the glycaemic index (GI) of wholemeal bread (GI 71) or baked potato (GI 85) is higher than table sugar itself (GI 68) (Foster-Powell et al, 2002).

In the low-carbohydrate diet plan we advocate at the practice (*Box 1*), this drastic reduction in sugar is balanced by encouraging an increased intake of green vegetables, whole-fruits (such as blueberries, strawberries, raspberries) and the healthy (unsaturated) fats found in olive oil, butter, eggs and nuts, along with full-fat plain yoghurt. We’ve found that those participating in the diet appreciate not having to weigh food or calorie count, and experience lower hunger levels than before starting the diet.

A pilot study

We carried out a pilot study of the effect of a low-carbohydrate diet among 18 people with prediabetes and type 2 diabetes in the clinic (Unwin and Unwin, 2014) and were delighted with the significant improvements in

Box 1. “So what should I eat to control my weight?” – the diet sheet that is distributed to patients of the practice who agree to follow the low-carbohydrate diet.

Reduce starchy carbs a lot (remember they are just concentrated sugar). If possible cut out the “White Stuff” like bread, pasta, rice – though porridge, new potatoes and oat cakes in moderation may be fine. Sugar – cut it out altogether, although it will be in the blueberries, strawberries and raspberries you are allowed to eat freely. Cakes and biscuits are a mixture of sugar and starch that make it almost impossible to avoid food cravings; they just make you hungrier!!

All green veg/salads are fine – eat as much as you can. So that you still eat a good big dinner try substituting veg such as broccoli, courgettes or green beans for your mash, pasta or rice – still covering them with your gravy, Bolognese or curry! Tip: try home-made soup – it can be taken to work for lunch and microwaved. Mushrooms, tomatoes, and onions can be included in this.

Fruit is trickier; some have too much sugar in and can set those carb cravings off. All berries are great and can be eaten freely: blueberries, raspberries, strawberries, apples and pears too, but not tropical fruits like bananas, oranges, grapes, mangoes or pineapples.

Proteins such as in meat, eggs, fish – particularly oily fish such as salmon, mackerel or tuna – are fine and can be eaten freely. Plain full-fat yoghurt makes a good breakfast with berries. Processed meats such as bacon, ham, sausages or salami are not as healthy and should only be eaten in moderation.

Fats (yes, fats can be fine in moderation): olive oil is very useful, butter may be tastier than margarine and could be better for you! Coconut oil is great for stir fries. Four essential vitamins A, D, E and K are only found in some fats or oils. Please avoid margarine, corn oil and vegetable oil. Beware “low-fat” foods. They often have sugar or sweeteners added to make them palatable. Full-fat mayonnaise and pesto are definitely on!!

Cheese: in moderation – it’s a very calorific mixture of fat and protein.

Snacks: avoid. But unsalted nuts such as almonds or walnuts are great to stave off hunger. The occasional treat of strong dark chocolate (70% or more) in a small quantity is allowed.

EATING LOTS OF VEG WITH PROTEIN AND FATS LEAVES YOU PROPERLY FULL in a way that lasts.

Finally, about sweeteners and what to drink – sweeteners have been proven to tease your brain into being even more hungry, making weight loss almost impossible – drink tea, coffee, and water or herbal teas. I’m afraid alcoholic drinks are full of carbohydrate – for example, beer is almost “liquid toast” hence the beer belly!! Perhaps the odd glass of red wine wouldn’t be too bad if it doesn’t make you get hungry afterwards – or just plain water with a slice of lemon.

“The success of the small pilot enabled us to get a grant from the Clinical Commissioning Group to run nurse-led evening clinics and extend the approach to more patients.”

HbA_{1c}, weight and blood pressure. We found that, despite a diet higher in fats and oils, the average cholesterol dropped significantly. The results of the pilot were published after a few months following the diet (Unwin and Unwin, 2014), but we continued to collect data from these individuals. Now a year since the pilot study, the mean weight loss among this group is still 9.113 kg (95% confidence interval [CI], 6.569–11.656 kg) with a mean drop in HbA_{1c} of 8.482 mmol/mol (0.78%; 95% CI, 2.079–14.88 mmol/mol [0.19–1.36%]).

The success of the small pilot enabled us to get a grant from the Clinical Commissioning Group

to run nurse-led evening clinics and extend the approach to more patients. So far, about 70 people with type 2 diabetes and obesity have entered the programme. The results from the first 49 participants are being analysed for potential future publication. Some of our preliminary results are displayed in *Table 1*.

Most would agree that no single diet suits all, but I have found the combination of opportunistically seizing an opening in the consultation, along with a more collaborative approach with my patients and following the low-carb diet have revolutionised my attitude and my practice.

Table 1. Preliminary, unpublished results from the extended pilot study.

Measure	n	Pre-intervention (95% CI)	Post-intervention (95% CI)	P value
Weight (kg)	49	100.0 (94.0, 105.9)	90.9 (84.8, 97.0)	<0.001
HbA _{1c} (mmol/mol)	31	52.9 (47.1, 58.6)	43.0 (39.2, 46.7)	<0.001
Cholesterol (mmol/L)	46	5.3 (4.8, 5.8)	4.9 (4.4, 5.4)	<0.001

n=number of people; 95% CI=95% confidence interval.

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