

Lower carb dietary option, Doctor/Nurse protocol Norwood Ave GP Surgery: T2D, prediabetes. Updated April 2022

General point: Remember not all low carb diets are necessarily good, for example a diet coke and pepperoni sausage diet is low carb, but not well formulated. A well formulated low carb diet will be full of fibre & essential nutrients(1) see the Norwood diet sheet.

In general, we are trying to avoid the high blood glucose levels that lead to poor health, the new concept of 'time in range'(2) is a helpful extension of this

Try to see patients and their high blood sugars as an interesting puzzle rather than a problem; one to be worked out with the patient, so our approach is collaborative

At the first appointment:

- Explore possible benefits/ risks of a lower carb approach to T2diabetes (eg medications risk of hypo) and make a start on motivation. The idea of diabetes remission or coming off meds is very motivating for many people.

An example of the type of question you can ask.

'You have a range of different possible futures WRT to your diabetes, which will you choose?'

'Average weight loss on low carb is 9Kg is this of interest to you?' etc.,

- Check are the patients interested in the low carb approach?

-Visit basic physiology of sugar starting with the fact that 'your HbA1c shows how sugary your diet has been in the last few months', and explaining sugar can almost be seen as a metabolic poison to someone with T2D.

Ask

'Where do you think the sugar has come from in your diet?'

Explain dietary sources of glucose with sugar equivalence infographics(3) (shortlisted for a prize by NICE)

Give the Norwood standard diet sheet for low carb approach.

Establish baseline data; Wt., waist, height, bloods; HbA1c, renal, fasting lipids, FBC.

Enter EMIS computer code 'low carbohydrate diet'.

-Medications

Three risks to be aware of(4):

1. **Risk of hypoglycaemia** (Insulin, gliclazide) reduce dose/stop but monitor
2. **Risk of DKA** particularly with SGL2Inhibitors(5) in which case the DKA may be euglycaemic (normal blood glucose). Stop before starting the diet, monitor blood glucose and weight carefully.
3. **Risk of hypotension**, explain that with weight loss BP may well improve and medications for this may be reduced or cut back(6)

-Salt; Due to the renal sodium retaining properties of insulin(6) for those with T2D going low carb and therefore lower insulin results in considerable loss of sodium and consequently a diuresis.

Patients may well need to increase their salt intake –particularly in the first few weeks of the diet. Those on diuretics may be able to stop them

-Suggest a review date - often 2 or 4 weeks depending on assessed risks. Perhaps longer for pre-diabetes

On review

Weigh, measure waist, BP. Do medications need to be changed? See above

How is it going? Problems/suggestions

Ask about hunger and appetite. Hungry people are unlikely to stick to a diet. Many people who drop the carbs enough also drop their insulin sufficiently to allow them to burn their own fat as fuel(7) -so they become 'fat burners' who are far less hungry. Do they need to drop their carbs a little more? Another possibility to help with hunger is to increase the dietary protein. Think about the possibility of 'food addiction' for those who are struggling with cravings, experiencing weight gain. If moderation is impossible, rather like someone with an alcohol problem, abstinence from 'trigger foods' may be the answer. Possibly suggest a book 'Fork in the Road' it's on Amazon

Three worrying patterns wrt HbA1c and weight

1. **If both weight and HbA1c are climbing** the most common reason is 'carb creep' **NOT** failure of the diet needing medication. So check for this by rechecking dietary intakes. Over time many patients drift. It's better to see this as a learning opportunity. We all learn from our mistakes!
2. **Weight loss alongside a climbing HbA1c** is worrying –ask a doctor about this. ? T1D, ?Malignancy
3. **HbA1c 'too good'** eg. 28mmol/mol could the patient be anaemic?

Constipation?

Magnesium supplements can help a lot with this and can help with insulin sensitivity(8)

More fluids

More nuts or green veg

Produce Emis computer graphs of Wt., HbA1c etc. as feedback to maintain motivation.

Do they wish to continue?

Are they happy to share anonymised data?

If so enter Emis GP computer code 'obtaining consent'

Would they like to attend the Zoom group sessions –do they know how to find out when the next one is?

Next steps

Review date and agree next blood test (HbA1c etc.) -usually at 2 months from the start, but this depends on your risk analysis.

Lipid profiles Fasting profiles are preferable as triglyceride/HDL ratios are a better predictor of risk than LDL Lipid profiles and usually (but not always) improve on low carb(9)

Finally NICE UK T2D guidelines 1.3.6 Individualise recommendations for carbohydrate and alcohol intake, and meal patterns. **Reducing the risk of hypoglycaemia should be a particular aim for a person using insulin or an insulin secretagogue. [2009]**

Often this is achieved by increasing dietary carbs at the expense of weight gain **An alternative** is to reduce carbs and the drugs involved this has the advantage of weight loss and improvements in BP

References

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