NHS
Somerset
Clinical Commissioning Group

SOMERSET POSITION STATEMENT

LOW CARBOHYDRATE DIETS

DIETARY ADVICE FOR PATIENTS WITH TYPE 2 DIABETES

Low carbohydrate diets are one approach for managing type 2 diabetes. This position paper has been developed collaboratively to clarify the use of low carbohydrate diets in Somerset. It is based on current NICE guidance and advice from other bodies.

GENERAL PRINCIPLES

Some people with Type 2 diabetes may choose to follow a low-carb diet in order to lose weight and to manage their blood glucose.

There is evidence to suggest that low-carb diets are safe and effective in the short term for improvements in glycaemic control, weight loss and cardiovascular risk in people with Type 2 diabetes.

However there is no clear indication that low-carb diets are superior to other dietary approaches in the longer term. A range of approaches should therefore be considered and the most appropriate diet identified between the person with diabetes and the health care professional. Low carbohydrate diets should not be promoted as the only. strategy for the management of type 2 diabetes.

Personalised plans developed collaboratively should consider diet modification together with physical activity and other lifestyle options. The care approach should be person-centred and take into consideration social circumstances, culture, beliefs other health considerations or co-morbidities and effects on quality of life as well as willingness to change.

Healthcare Professionals providing nutritional advice should practice within their competencies and within the constraints of their regulatory body and their professional role.

HEALTHY EATING ADVICE

Healthy eating advice should be emphasised for people with diabetes in the broader context of a healthy diet to promote long term health. Any eating plan which patients choose to follow should aim to provide optimal amounts of vitamins, minerals and fibre, and the specific foods to promote good overall health.

Therefore whether people chose to follow a low-carb diet or not, they should be encouraged to include vegetables, fruits, wholegrains, dairy, seafood, pulses, and nuts.

People should be encouraged to reduce sugar-sweetened foods, particularly sugar-sweetened drinks, and refined grains such as white bread.

WEIGHT MANAGEMENT ADVICE

The majority of people with type 2 diabetes are overweight or obese and for these people weight management should be the primary strategy.

A range of approaches to weight loss should be considered with the overall aim of energy intake being less than energy expenditure. Multicomponent interventions are the treatment of choice and weight management programmes should include behaviour change strategies.

There are a variety of dietary, behavioural interventions such as mindful eating, appetite regulation medication and surgical approaches to support individuals to lose weight.

Dietary strategies include calorie restriction, low fat diets, low carbohydrate diets, very low calorie diets, and intermittent fasting. The most appropriate approach to achieve weight loss should be identified between the person and the health care professional.

A low-carbohydrate diet is an effective strategy for promoting weight loss in the short term but should not be regarded as a more superior or a better approach than other strategies as consistent evidence shows that total energy intake is the main predictor for weight loss.

Personalised plans developed collaboratively should consider personal preferences for diet modification together physical activity and other lifestyle advice. By considering all of these factors a person is more likely to sustain their chosen dietary approach, which is the most important factor for successful outcomes.

DEFINITION OF LOW CARBOHYDRATE DIETS

The amount of carbohydrate recommended is sometimes expressed as a percentage of total energy intake per day (Kcal/day). This varies widely depending on individual's gender age weight and physical activity levels. A person with high energy requirements would to maintain their weight consume more energy (Kcals) and carbohydrates than a person with lower requirements.

For practical and research purposes Feinman et al have suggested that any diet providing <130g carbohydrate/day should be regarded as low carbohydrate, and diets providing <50g carbohydrate/day should be termed very low carbohydrate ketogenic diets. Moderate carbohydrate diets are defined as a carbohydrate content of 130-230g per day. High carbohydrate diets are defined as a carbohydrate content of >230g per day.

Table 1 Taxonomy of diets containing differing amounts of carbohydrate

Description	Amount of carbohydrate	
	g/day	% total energy intake
Very low carbohydrate ketogenic diet	20–50	≤10
Low carbohydrate	<130	<26
Moderate carbohydrate	130–230	26–45
High carbohydrate	>230	>45

Adapted from Feinman et al. [4]

TYPES OF CARBOHYDRATES

Whether people choose to follow a low-carb diet or not, they should be encouraged to choose healthier carbohydrates; such as vegetables, fruits, whole grains and pulses. A reduction in intake of unhealthier carbohydrates such as those from refined sources, including; white bread, white rice and particularly sugar and sugar sweetened drinks.

The recommendations made by the Scientific Advisory Committee on Nutrition (SACN) 2015 are applicable for people with diabetes and are summarised as;

- Reducing free sugars to not more than 5% of a person's energy (Kcal) intake. For adults this is approximately 30grams per day. It should be noted this is a maximum amount and some people may find to achieve their health goals they will need to eat less than 30g of sugar a day.

- Free sugars are defined as sugar added to food and drinks by manufactures and those present in honey, syrups and fruit juice. It does not include fruit sugar (fructose) present in whole fruit or milk sugar (lactose) present in milk and yogurt.

- Encourage wholegrain carbohydrates such as wholegrain rice, pearl barley, wholegrain breakfast cereals (no added sugar varieties) such as porridge, whole wheat pasta and wholegrain bread.

- Increase fibre to 30grams per day particularly including cereal grains and wholegrains.

  Fibre is only found in foods of plant origin such as vegetables, fruit, wholegrains and pulses. There are two types of fibre soluble and insoluble and most fibre containing foods contain a mixture of both.

As with all recommendations, tailoring the dietary approach to meet individual needs and goals is important.

GLYACAEMIC INDEX AND GLYCAEMIC LOAD

The rate at which carbohydrates are broken down and enter the blood stream depends on the type of carbohydrate consumed and is known as glycaemic Index (GI). Many refined carbohydrate foods and sugar containing drinks have a high GI causing a rapid rise in blood glucose levels in people with diabetes.

For people with diabetes having an idea of the GI of food and drink can be helpful but it is important to bear in mind that the GI is affected by the protein, fat and fibre in a meal (slowing down digestion and absorption) and that the major effect on blood glucose levels after eating is the amount of carbohydrate in that food or meal.

Glycaemic load (GL) takes into account the GI and the carbohydrate content (grams) of the individual food. The GL can sometimes be a more useful measure than GI when considering the total effect of carbohydrate intake.

DIETARY CONSIDERATIONS - LOW CARBOHYDRATE DIETS.

Is the diet nutritionally adequate?

Ensure that carbohydrate starchy foods are not replaced with unhealthy foods such as processed meats and other processed foods. Instead people should be encouraged to eat fish and plant based protein sources such as pulses nuts and seeds. Include vegetables, fruit, wholegrains, pulses and other fibre containing foods.

Restricting the total amount of dietary carbohydrate to a very low level (down to 50g) appears to be a safe short term strategy for up to six months. However there is currently no adequate data to know if long term adherence to a very low carbohydrate ketogenic diets (20-50 grams/day) provides health benefits or risks.

Is the diet sustainable?

Studies on very low-carb ketogenic diets have suggested that these may not be sustainable over a medium to longer term. In these studies carbohydrate intake in the different diets often converged toward a more moderate level of carbohydrate suggesting that the restrictions may be difficult to maintain.

The sustainability of any diet will depend on a range of factors, including but not limited to, an individual's health and life goals, attainment of shorter and longer term benefits, and broader lifestyle determinants.

Is it appropriate and safe?

- There are serious concerns about low carb diets for children with diabetes due to potential effects on growth. Therefore low carbohydrate diets should not be recommended for children with diabetes.

- This document has been developed for the consideration of type 2 diabetes. For people with Type 1 diabetes matching insulin to the amount of carbohydrate consumed is an effective strategy in improving glycaemic control. There is currently no strong evidence to recommended low-carb as an option for people with Type 1 diabetes.

- IMPORTANT, MEDICATION: People with type 2 diabetes who use insulin or insulin secretagogues will very likely need to titrate down and sometimes eventually eliminate their medication when commencing and sustaining a low carbohydrate diet. Failure to titrate down medications could risk hypoglycaemia. Medication adjustments must be discussed between the patient and clinician. Where there is uncertainty on behalf of the clinician it would be appropriate to seek advice.

- Low carbohydrate diets may not be appropriate or advisable for people who have certain co-morbidities and there are some vulnerable groups of patients where it may be detrimental to health and wellbeing. For example, frail patients with poor appetites where reducing carbohydrate intake is likely to lead to weight loss, malnutrition and reduced quality of life. As with all clinical interactions the needs and health of a patient in their entirety must be the first concern.

- Low carbohydrate diets may not be advisable for people who have an eating disorder or disordered eating. People should therefore be screened for an eating disorder using a validated tool by an appropriately trained professional before providing dietary advice. People identified as having an eating disorder should be referred to the appropriate team for further support

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