

Dietary approaches

Low fat, healthy balanced dietary approach

Characteristics

- Conventional healthy, balanced diet that involves eating foods from all the five food groups
- Include more fruits and vegetables, some starchy carbohydrates, proteins and dairy, but limit the amount of fat you eat

Benefits

- The main principle of low-fat diets is that, gram for gram, fat contains more calories than carbohydrate or protein - so by reducing your fat intake you'll reduce your calorie intake, too
- Extensive research into low-fat diets, has shown that this approach that can help with weight loss, diabetes control (HbA1c) and reduction in cardiovascular (heart and blood vessel) disease risk factors
- There is also evidence that the positive changes gained from this dietary approach can be maintained for over four years
- Lifestyle changes that include limiting calorie intake, low fat diets and increased physical activity can effectively reduce the risk of Type 2 diabetes in high risk groups

Considerations

- Not everyone who is overweight and uses this approach loses weight. If insulin resistance is a problem and carbohydrate intake remains too high it can make it harder to lose weight
- If you replace fat with larger portions of starchy foods or sugars, you are less likely to get much benefit and excess carbohydrates will raise blood glucose levels. Therefore, it is important to look at your overall portion sizes and try to reduce portions of other foods, as well as the amount of fat that you eat

Top tips

- Include more vegetables and some fruit, which are generally lower in calories, so that you don't feel hungry
- Limit the use of oil in cooking
- Reduce the amount of butter and spread you use
- Opt for reduced-fat or low-fat alternatives for dairy and pre-packed foods whenever possible
- Read the labels on pre-packaged food - if the fat per portion is high (red on color coding) choose an alternative



Low-carbohydrate dietary approach

Characteristics

- There is no single agreed definition of a 'low carbohydrate diet' but many contain less than 130g carbohydrate each day
- Limit amount of carbohydrate eaten, and get more of your calories from proteins and fat

Benefits

- Most glucose (also known as sugar) in our blood comes from the carbohydrate in our food
- Reducing carbohydrate intake can help to lower blood glucose levels in people with diabetes
- The resulting reduction in insulin circulating in the blood can help people who are overweight or obese to lose weight (insulin is a weight promoting hormone)
- Low-carbohydrate diets have been found to be safe and effective in the short term in managing weight, and improving glycaemic control and cardiovascular risk in people with Type 2 diabetes

Considerations

- Low carbohydrate diets need careful planning to make sure that you get enough fibre, vitamins and minerals
- You are unlikely to get enough benefit from a low-carb diet for weight loss if you replace your carbohydrates with too much fat
- It's recommended that if you want to follow a low-carb diet to ensure your fat intake comes mainly from unsaturated (plant based/oily fish) sources, whilst limiting saturated fat (animal fats, processed foods) intake
- Although in the short term, in people with type 2 diabetes, low-carb diets may lead to significantly greater weight loss and improvements in HbA1c (diabetes levels) and lipids (blood fats), current research indicates that there is no greater advantage over the longer term when compared to other diets
- If you treat your diabetes with insulin or any other medication that puts you at risk of hypoglycaemia or hypo (low blood glucose levels), following a low-carb diet may increase this risk. You need to see your diabetes team to help you adjust your medications to reduce your risk of hypos with the following medications:
 - Insulin
 - Sulphonylurea medications: gliclazide, glipizide, glibenclamide, glimepiride, tolbutamide
 - Prandial glucose regulators: repaglinide, nateglinide
 - SGLT2 inhibitors: canagliflozin, dapagliflozin, empagliflozin
- There is no strong evidence to recommend low-carb diets to people with Type 1 diabetes

- If a person with Type 1 diabetes is of a healthy weight (eg they do not wish to lose any weight) and they have good blood glucose control, they do not need to reduce their carbohydrate intake. The best evidence for an effective strategy of improving blood glucose levels in Type 1 diabetes is matching insulin on a meal-by meal basis to the amount of carbohydrate eaten (carbohydrate counting)
- If a person with Type 1 diabetes is overweight and is trying to lose weight, then reducing their overall energy intake including calories from carbohydrates, fats, proteins and alcohol will help. It is important that they should consult their healthcare team for specific advice, as they may need to adjust their insulin to reflect the reduction in carbohydrates in order to reduce the risk of hypoglycaemia

Tips

- Make sure that the limited carbohydrates you include in your diet come from good sources, like vegetables and fruits, pulses, dairy and wholegrain options of starchy foods, rather than foods laden with unhealthy fats and sugars like cakes, biscuits, pastries, and fizzy drinks
- Choose fats mainly from unsaturated sources (eg olive oil, rapeseed oil, nuts, seeds, oily fish, avocados), whilst limiting saturated fats (animal fats and processed foods)
- Eat plenty of non-starchy vegetables
- Drink plenty of sugar-free fluids
- Use food labels to check the carbohydrate content of foods/drinks and select those with lower amounts of carbohydrate

More information and meal ideas:

- Diabetes UK - *Meal plans and Diabetes*
diabetes.org.uk

Very low carbohydrate lifestyle

Characteristics

- The aim of a very low carbohydrate lifestyle is to reduce dietary intake of carbohydrate per day to 40g or less
- This means eliminating all sources of sugary and starchy carbohydrate from the diet, while allowing limited amounts of berries, milk, yoghurt, nuts, seeds and pulses
- For weight loss on very low carbohydrate lifestyle replace carbohydrate mainly with non-starchy vegetables and some protein (avoid a very high fat or very high protein diet)
- If weight loss is not wanted it can be avoided by incorporating a little more protein or healthy (unsaturated) fat to provide calories. Note that fat has a very high energy content (calories), so not much extra is needed

Benefits

- There is a growing body of evidence to support very low carb lifestyle approach
- Very Low carbohydrate lifestyle is designed to help manage blood glucose levels if you have Type 2 diabetes, and to promote loss of fat around the internal organs such as the liver and pancreas. This is known to improve cardiovascular health, and reduces the risk of developing Type 2 diabetes if you do not already have it

Additional Considerations

As well as the considerations listed for the low carb dietary approach also consider:

- Within the first couple of weeks of a very low carbohydrate intake you may feel symptoms of tiredness, nausea and headache, but these are normal and tend to resolve quite quickly
- Although they can be helpful in the shorter term, very low-carb ketogenic diets may not be sustainable over a medium to longer term and there has been limited research in to them as yet
- Very low carb approach is a *lifestyle* rather than a *diet* because if it is successful it should be adopted as a lifelong way of eating. Returning to previous eating patterns is likely to promote the return of previous health issues such as raised blood glucose levels or obesity
- If following a very low carbohydrate lifestyle, removing nearly all carbohydrate from your diet puts you at risk of vitamin deficiency. As well as eating lots of non-starchy vegetables and having a varied diet, it is advisable to take a combined multivitamin once a day containing no more than 100% of RDA (Recommended Daily Allowance)
- A very low carb lifestyle doesn't suit everyone, and should be supported by a qualified Dietitian as well as your usual healthcare team
- As a very low carbohydrate intake is restrictive, following a very low carb lifestyle can require more time, cost and cooking skills to make it easier to maintain
- Eating out, socialising, celebrations and holidays where very low carbohydrate choices are not common can be difficult
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- If you have diabetes and are on insulin there is a very small risk of developing Diabetic Ketoacidosis (DKA). If you start to feel acutely unwell, have breath that smells of pear drops, have stomach pains or start to vomit then you should go to an Accident and Emergency department straight away. If you have urine or blood ketone testing strips you can monitor your ketone levels, and seek help if the blood ketone level is above 1.5mmol/L.

More information

- Coventry and Rugby Very Low Carbohydrate Lifestyle
verylowcarb1ife.wordpress.com

Mediterranean approach

Characteristics

- Largely natural, unprocessed and homemade foods
- Based mainly on plant foods and includes a lot of vegetables, beans and pulses, nuts and seeds, herbs, spices and olive oil. Wholegrain foods (e.g. whole grain breads, pasta and rice) and potatoes are included. Fish and seafood are eaten at least twice per week. It also includes some dairy (milk and yogurts) and eggs in moderation. Wine can be included in moderation
- Red meat is limited or avoided, processed foods and sweets are usually avoided
- Also includes physical activity and viewing meals as social and enjoyable occasions. These factors may also contribute to the positive effects on health linked with the Mediterranean diet

Benefits

- Lowers blood pressure
- Improves blood fat levels (increases HDL cholesterol (good blood fat) and reduces triglyceride (bad blood fat) levels
- Linked with lower cardiovascular (heart and blood vessel) disease risk
- Evidence that the Mediterranean-style diet can promote weight loss, improve blood glucose control and help reduce cardiovascular risk in people with Type 2 diabetes

Considerations

- Limited research has been done in the use of Mediterranean diet for weight loss but this does not mean that you cannot lose weight using this approach
- Although wholegrains and fruit are part of the Mediterranean diet large portions will still raise blood glucose levels so take care with portion sizes
- Although wine can be part of the Mediterranean diet it does not have to be included. Make sure that alcohol intake is in moderation. Alcoholic drinks are high in calories and excess intakes are harmful for health

Top tips

- Choose plenty of plant based foods especially vegetables, pulses and some fruit
- Choose wholegrain versions of bread/pasta/rice/cereals but watch portion sizes as these foods raise blood glucose levels
- Still consider portion sizes to make sure that you have the right amount of calories for your energy needs
- Include oily fish (eg salmon, mackerel, pilchards, sardines) once to twice weekly

More information and meal ideas

- Diabetes UK Mediterranean meal plans
diabetes.org.uk