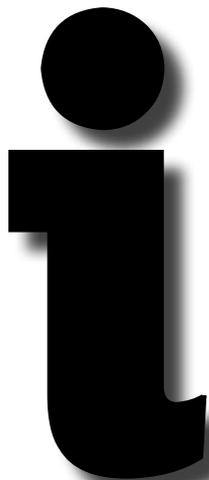


## **Healthy Eating and Diabetes** (page 1 of 5)



### **What is diabetes?**

Diabetes is a condition where the amount of glucose (sugar) in the blood is too high because the body cannot use it properly. Insulin is a hormone produced by the pancreas that helps the glucose to enter the cells of the body so that it can be used as fuel for the body. Without insulin, glucose cannot enter the cells and stays in the blood, causing blood glucose levels to rise.

### **The main two types of diabetes are:**

**Type 1 diabetes** develops when the body is no longer able to make any insulin. Type 1 diabetes is treated by daily insulin injections and changes to a person's diet to balance their insulin injections with their food and drink choices.

**Type 2 diabetes** develops when the body still makes some insulin, but not enough, or the insulin that is produced does not work properly. Type 2 diabetes may be treated by a combination of changes to diet, weight management, regular physical activity, tablets and/or injectable treatment (such as GLP-1 or insulin injections).

The main aim of treatment for both types of diabetes is to keep blood glucose, blood cholesterol and blood pressure levels as near to normal as possible to protect against long term damage to the heart, circulation, eyes, nerves and kidneys. What you eat and drink is a very important part of managing your diabetes, whether or not you have type 1 diabetes, type 2 diabetes, or other forms of diabetes.

### **What is carbohydrate?**

Carbohydrate is the body's main source of glucose for energy and is needed to help the brain, muscles and other organs in the body to function properly.

### **Different types of carbohydrates**

Carbohydrate foods can be divided into 2 main types: starchy and sugary foods.

**Starchy foods include all types of bread, breakfast cereals, pasta, rice, potatoes, noodles, pulses such as sweetcorn, peas, beans and lentils, and foods made from flour such as batters, pancakes, pies, pastries, crackers, cakes and biscuits.**

If you need your information in another language or medium (audio, large print, etc) please contact Customer Care on 0800 374 208 or send an email to: [customer care@salisbury.nhs.uk](mailto:customer care@salisbury.nhs.uk)

You are entitled to a copy of any letter we write about you. Please ask if you want one when you come to the hospital.

If you are unhappy with the advice you have been given by your GP, consultant, or another healthcare professional, you may ask for a second (or further) opinion.

The evidence used in the preparation of this leaflet is available on request. Please email: [patient.information@salisbury.nhs.uk](mailto:patient.information@salisbury.nhs.uk) if you would like a reference list.

**Sugary foods** can be further divided into foods containing added sugars (e.g. sweets, chocolate, sugary drinks, cakes, biscuits, puddings and desserts) and those containing naturally occurring sugars such as fructose, which is found in honey, whole fruits and fruit juice, and lactose which is found in all types of milk and yogurt.

All of these carbohydrate foods and drinks are broken down in the stomach into glucose and absorbed into the blood, causing blood glucose to rise. Your blood glucose levels are directly affected by the amount as well as the type of carbohydrate foods and drinks that we consume.

## The glycaemic index (GI) and slowly absorbed carbohydrate foods

Some carbohydrates break down or are converted into glucose very quickly by the body, such as sugary drinks and fruit juice, so need to be limited unless you have hypoglycaemia (low blood glucose) and need to treat it with some quick-acting carbohydrate. Other foods that tend to break down quickly into glucose are starchy foods such as white bread, Corn Flakes, Rice Krispies, long grain white rice and mashed potato, which contain very little dietary fibre.

Other starchy carbohydrate foods tend to break down more slowly such as wholegrain bread and cereals, basmati rice, pasta, new and sweet potatoes and pulses. These are better food choices as blood glucose levels do not rise as quickly when you eat these foods, as they take longer to break down into glucose in the stomach and be absorbed. They also contain dietary fibre which is good for the digestive system and helps you to feel fuller for longer, which means you are less likely to need to snack in between meals.

The glycaemic index (GI) is a ranking of how quickly individual carbohydrate foods and drinks are broken down into glucose and absorbed, and make blood glucose levels rise after eating them. The GI index runs on a scale from 0–100 and uses glucose, which has a GI of 100, as the reference food.

Quickly absorbed foods such as mashed potato, white bread and sugary drinks such as Lucozade have a high GI rating (above 70). Slowly absorbed carbohydrates have a low GI rating (55 or below), and include most whole fruits and vegetables, milk, some wholegrain breakfast cereals (such as porridge, Bran Flakes) granary, rye and seeded wholegrain breads, pulses, pasta, noodles and basmati rice.

Research has shown that choosing low GI foods can particularly help people with type 2 diabetes to manage their blood glucose levels better. There is less evidence to suggest a low GI diet can help with blood glucose control in people with Type 1 diabetes.

## How much carbohydrate do I need?

Everyone needs to include some carbohydrate in their diet each day. The actual amount you need will depend on factors such as your age, gender, physical activity level, and whether you are trying to lose or gain weight, or improve your blood glucose levels.

The amount of carbohydrate that you eat has the biggest effect on your blood glucose, and the more you eat, the higher your blood glucose levels will be after eating. Eating too little carbohydrate on the other hand, may cause your blood glucose levels to drop too low and cause hypoglycaemia (low blood glucose), especially if you have to inject insulin or take certain

diabetes tablets (such as sulphonylurea tablets for example Gliclizide, Glipizide or Glimepiride), so it is important to get the right balance.

Many people with diabetes eat far more carbohydrate than they actually need. This can lead to weight gain and high blood glucose levels. Reducing the amount of carbohydrate may help you to lower your blood glucose and to lose weight, especially if you have been advised to lose weight.

Unless you have been taught to carbohydrate count and to adjust your insulin doses, try to eat roughly the same amount of carbohydrate at your meals each day. This is so that your blood glucose levels vary less, making it easier to balance your insulin injections and/or diabetes medication with your food intake, if you need these. As a guide, 30-40 grams of starchy carbohydrate per meal is enough carbohydrate for most adults with diabetes. This is equivalent to 3 egg sized potatoes or 3 heaped tablespoons of rice, pasta or noodles or 2 slices of wholegrain cereal or a cupful of dried breakfast cereal

## Insulin and carbohydrate counting

**If you inject insulin and are on multiple daily insulin injections or an insulin pump, then you may be taught by your diabetes healthcare professional how to carbohydrate count. This is to help you to match your mealtime insulin doses with the amount of carbohydrate you eat and drink. The Salisbury diabetes team run introductory diabetes education sessions and a course, known as the Freedom for Life diabetes course to teach people how to be carbohydrate aware and adjust their insulin doses. They also run the DESMOND course for people with type 2 diabetes to help people to learn to be more carbohydrate aware.**

## Healthy eating for diabetes

A healthy balanced diet in addition to controlling your carbohydrate intake, will help you to keep your weight, blood pressure and blood cholesterol levels under control. Try to:

- **eat 3 regular meals a day and avoid skipping meals.** This will help you to control your blood glucose levels better and stop you from getting too hungry between meals
- **include starchy carbohydrate foods in moderation.** Suitable choices include granary and multigrain breads, porridge oats, wholegrain and bran based breakfast cereals, pasta (all types), Basmati rice, new and sweet potatoes. The high fibre varieties of starchy foods are also good choices, as they play an important role in the health of the digestive system and help prevent constipation
- **cut down on the amount of fat you eat,** particularly saturated fat found in fatty meats, whole milk, cream, lard, butter, cheese and shop-bought pies, pastries, cakes, crisps and biscuits, as this type of fat raises blood cholesterol. Choose unsaturated fats or oils, especially monounsaturated fat (such as olive oil and rapeseed oil), as these types of fats are better for your heart. If you need to lose weight, remember that all fats are high in energy (calories). Choose low fat foods such as lean meat, chicken and turkey, and low fat dairy foods such as skimmed or semi-skimmed milk, low fat or diet yoghurts reduced fat cheese and lower fat spreads

- **eat more fruit and vegetables** as these are a good source of vitamins, minerals, and fibre and are low in calories. Aim to eat at least 5 portions every day. A portion is an apple, orange, pear or small banana, a handful of grapes, a slice of melon, 2-3 tablespoons of vegetables or a cereal bowl of salad. All fruits and vegetables are suitable, however remember that all types of fruit and fruit juice contain natural fruit sugar (fructose), which will raise your blood glucose if you eat or drink too much, so be careful to limit your portion sizes of fruit, fruit juice and smoothies
- **eat at least 2 portions of oily fish a week** such as mackerel, sardines, salmon and pilchards. Oily fish contains omega 3, a type of polyunsaturated fat, which helps protect against heart disease
- **limit sugar and sugary foods.** This does not mean you need to eat a sugar-free diet. Foods that are low in sugar can be eaten as part of a healthy diet and small amounts of sugar can be used in baking. Have water, tea or coffee without added sugar and no added sugar squash and 'diet' fizzy drinks in place of sugary drinks, smoothies and fruit juice. Artificial sweeteners (such as Candarel, Hermeseta, Splenda, Truvia) can be used in moderation to sweeten foods and drinks. These have undergone rigorous safety tests by the European and the UK Food Safety Agencies before they can be sold to the public
- **reduce the amount of salt you eat** as a high intake of salt can raise blood pressure. Use less salt in cooking and try not to add it at the table. Limit the amount of processed and salted foods that you eat and try flavouring your foods with herbs and spices instead such as pepper, lemon juice, garlic, mustard
- there is no safe amount of alcohol that men and women can drink. To reduce your health risks from drinking alcohol, **limit alcohol to no more than 14 units of alcohol a week** (1 unit of alcohol is: ½ pint of normal strength beer, lager or cider, a small glass (120 ml) of wine or a single pub measure (25ml) of spirits). Never drink on an empty stomach as alcohol can make low blood glucose more likely to occur when taking certain diabetes tablets or insulin injections. Alcohol is high in calories so should be limited if you are trying to lose weight
- **do not eat 'diabetic' foods or foods labelled as 'suitable for diabetics'.** These foods offer no real benefit to people with diabetes. These foods contain polyols or 'nutritive' sweeteners (sorbitol, maltitol, xylitol, isomalt or mannitol) as a substitute for sucrose sugar. Whilst polyols have less of an effect on your blood glucose levels than sucrose, they will still raise your blood glucose and can have a laxative effect if you eat too much. They can be very high in fat and calories, and are more expensive to buy than standard food products. **Note: As of 20 July 2016 under new European Union (EU) regulation, manufacturers are no longer allowed to label food as 'diabetic' or 'suitable for diabetics' in the UK. Members of the public are asked to report what they consider to be misleading food labelling to their local Trading Standards Team ([www.gov.uk/find-local-trading-standards-office](http://www.gov.uk/find-local-trading-standards-office)).**

## How to balance your plate at mealtimes

The plate model shows what a healthy, balanced meal should look like. Half your plate should be vegetables or salad, a quarter of your plate should be protein rich food (such as meat, fish, chicken, eggs or vegetarian alternatives to meat for example Quorn, soya protein). The remaining quarter of your plate should be starchy carbohydrate food (such as bread, potatoes, rice, pasta, noodles, oven chips).



## Managing your weight

Being overweight can make managing diabetes more difficult as it makes it harder for the body to use insulin properly (known as insulin resistance). By measuring your waist you can get a good idea if you have excess fat around there and need to lose weight. If you are a woman, your waist measurement should be below 80cm (31.5 inches) and if you are a man, it should be below 94cm (37 inches).

It is best to lose weight slowly over time, by keeping to a diet that is low in energy (calories), fat, sugar and alcohol, and by increasing the amount of physical activity that you are able to do. You may also need to limit your portion sizes of foods such as meat, fish, eggs, cheese, bread, potatoes, rice and pasta. Fill up instead at meals on vegetables and salad, which are low in energy, so that you do not get too hungry.

Even if you do not reach your ideal weight, losing 5-10 % of your current weight and keeping it off, will help to control your blood glucose, blood pressure and blood cholesterol levels better and improve your overall health.

## Further information and dietary advice

This leaflet should help you to understand about food and diabetes, and begin to eat a healthy balanced diet. For further information and dietary advice, ask to be referred by your GP, practice nurse or diabetes health care professional, to your local diabetes education programme or a registered dietitian with experience of diabetes.

## Diabetes UK

Diabetes UK is the leading diabetes charity in the UK and provides information and support, and campaigns nationally on behalf of all people affected by diabetes. Their care line telephone number is 0345 123 2399 (weekdays: 9 am – 7 pm). Their website address is [www.diabetes.org.uk](http://www.diabetes.org.uk) and includes lots of information about diabetes and enjoying food. There are meal plans and recipes that you can download free of charge from their website. They also have a free information guide that you can order from Diabetes UK called 'Enjoy Food', which includes recipes and tips to help you to shop, cook and eat well with diabetes.

For further information about diabetes and food, please contact the Diabetes Specialist Nurses / Dietitian at the Diabetes Education Centre, Salisbury District Hospital (telephone: 01722 425176, email: [diabetes.centre@salisbury.nhs.uk](mailto:diabetes.centre@salisbury.nhs.uk)).