

Food and type 2 diabetes

Introduction

Eating a healthy balanced diet and maintaining, or obtaining, a healthy weight is an important step in managing your diabetes and reducing your risk of developing other illnesses, such as heart disease. In addition to a healthy balanced diet, your doctor may prescribe tablets and/or insulin to help control blood glucose levels.

This is not a special diet. It is eating for a healthy life

It is important that you discuss your individual needs with your dietitian, so that you can find a flexible way of eating, which fits in with your personal lifestyle.

What changes may I need to make?

- Eat regular meals. Three meals a day will help control your appetite as well as your blood glucose levels
- Include starchy carbohydrates with each meal. Choose those that are more slowly absorbed (have a lower glycaemic index (GI)) e.g. whole-wheat pasta, basmati rice, new potato, sweet potato, yam, plantain, oats and wholegrain breads and cereals
- Eat more pulses. Include beans, lentils and chickpeas regularly in your diet
- Aim for 2-3 portions of fruit and at least 3 portions of vegetables and salad every day
- Cut down on sugary foods and drinks
- Eat less fatty foods. In particular cut down on saturated fat such as: butter, ghee, cheese and fat from meat
- Reduce the amount of salt you add to your food, and limit your intake of salty foods
- Try to have at least 2 portions of oily fish each week, such as salmon, herring, mackerel, trout or pilchards
- If you drink alcohol, have it in moderation
- Aim for 30 minutes of physical activity each day.

What is type 2 diabetes?

There are several different types of diabetes, which are all serious. nine out of 10 people with diabetes have type 2 diabetes.

Type 2 diabetes is a condition where your body doesn't make enough insulin or the insulin it makes doesn't work properly.

Insulin is a hormone that's normally made in the pancreas, just behind the stomach, which keeps your blood glucose levels (also called blood sugar levels) under control.

Glucose is released into the blood when you digest food and drinks containing carbohydrate.

Insulin is essential to move the glucose out of the blood and into the cells in our body to be used for energy. It also stops the liver from releasing glucose (we all have glucose stores in our liver).

If your body can't use insulin properly or produce enough, it can't use glucose to give you energy. Glucose can then build up in the blood – high blood sugar levels – which can lead to serious health problems if not treated.

What causes type 2 diabetes?

Type 2 diabetes is caused by a combination of lifestyle and genes. Although we don't know exactly why it develops, certain factors do increase your risk, including:

- Age – being over 40 (or over 25 if you're South Asian)
- Weight – being overweight, especially if you have a large tummy
- Ethnicity – being Black African, African Caribbean, South Asian or Chinese
- Family link – having a parent, brother or sister with diabetes
- Previous medical history – having high blood pressure, a history of heart attacks and stroke, gestational diabetes or severe mental illness treated with anti-psychotic medication.

Sometimes, though, there's nothing to explain why type 2 diabetes develops. Not everyone who's overweight has it, while some people who are a healthy weight do have it. Knowing why they've developed type 2 diabetes helps some people cope better with their diagnosis. Once diabetes is diagnosed, you can get the correct treatment and support.

What are the symptoms of type 2 diabetes?

Some people with type 2 diabetes have symptoms of high blood sugar levels, while others don't have any obvious symptoms. Perhaps you have had some of these symptoms without realising they were linked to type 2 diabetes:

- Going to the toilet a lot – your body was trying to get rid of the high levels of glucose by making you pass more urine
- Being really thirsty, drinking more and not being able to quench your thirst – you were becoming dehydrated, which causes extreme thirst
- Feeling more tired than usual – your body had less energy as less glucose was entering its cells
- Losing weight without trying to – your body started using its fat and protein stores for energy because it couldn't use the glucose from the food and drink you were eating.

You may have also noticed

- genital itching or regular episodes of thrush – high blood sugar levels create ideal conditions for yeast to grow
- cuts and wounds that took a long time to heal
- blurred vision – high blood sugar levels can cause the lens inside your eye to swell (this usually goes away after a period of time with normal blood sugar levels).

Being diagnosed and getting the right treatment to lower your blood sugar levels to within the normal range will bring these symptoms under control.

How can type 2 diabetes be treated?

There are two main treatments for type 2 diabetes:

1. Healthy eating and being physically active.
2. Healthy eating, being physically active and medication, which may include insulin.

Your diabetes team will talk to you about how to manage your diabetes. You may only need to make lifestyle changes at first, but over time you may also need to take diabetes medication, which may include insulin injections.

What is a healthy, balanced diet?



A healthy balanced diet is based on the five food groups shown in the picture above. Choosing different foods from within each group adds variety. Foods and drinks high in fat and/or sugar are not beneficial for healthy eating and should only be eaten occasionally and in small amounts.

Starchy foods

Starch based carbohydrates are broken down into glucose and absorbed into your blood. Glucose is needed to provide your body with energy. Try to choose high fibre, wholegrain varieties whenever you can as these are digested more slowly.

Top tips:

- Choose mixed grain, granary, rye or pumpernickel breads
- Use brown or wholemeal flour
- Serve without adding extra fat, e.g. butter, oil or ghee
- Choose wholegrain or oat-based cereals
- Avoid sugar and honey-coated cereals and muesli. If you need to sweeten cereals, use a sweetener or chopped, fresh or dried fruit
- Choose basmati rice and serve boiled or steamed rather than fried
- Roast or fried potatoes and chips should be eaten less often, preferably choose thick chips
- Mash potato without adding any fat such as butter or olive oil
- Choose sauces which are low in fat to eat with your pasta, e.g. tomato-based sauces
- Restrict portion sizes of starchy foods to one third of your plate.

Fats and oils

All fats and oils are high in calories, so if you are overweight you should restrict your intake. Reducing your intake of saturated fat (animal fats and coconut oil) and switching to unsaturated fats, such as vegetable, sunflower, rapeseed, olive or nut oils, can help to lower your cholesterol levels and reduce your risk of heart disease.

Top tips:

- Use small measured amounts, e.g. instead of pouring use a teaspoon and aim for a maximum 1 teaspoon oil per person per meal
- Choose monounsaturated oils and spreads
- Spread only thinly on bread, toast and crackers, and avoid where able
- Lower fat varieties may still contain a lot of fat. Use sparingly, and read the labels.
- Limit your intake of deep fried foods and pastries
- Thicken sauces with cornflour without adding fat
- Choose low fat snack foods, e.g. fruit, Ryvita, crackers, oatcakes, rice cakes, breadsticks, cottage cheese, baked crisps, plain popcorn.

Fruit and vegetables

Fruit and vegetables are a good source of vitamins, minerals and fibre. **Eating at least 2-3 portions of fruit spread throughout the day and at least 2-3 portions of vegetables a day** helps to reduce the risk of heart disease and some cancers. Vegetables are low in calories and contain very little sugar and therefore can be eaten freely without raising your blood glucose levels. Spread your fruit intake over the day to avoid a sudden rise in blood glucose levels.

1 portion is 80g or:

- 1 medium fruit, e.g. apple, banana, pear, orange
- 2 small fruit, e.g. plum, satsuma, passion fruit
- A handful of small fruit, e.g. grapes, berries, lychees, tomatoes
- 1-2 slices of larger fruit, e.g. melon, pineapple, mango, papaya
- 2-3 tablespoons of cooked or canned fruit in juice
- ½ - 1 tablespoon of dried fruit, e.g. dates, sultanas, prunes, apricots
- 2-3 tablespoons of vegetables, fresh, frozen or canned
- Medium bowl of salad.

Pure fruit juices and pure fruit smoothies contain natural sugars and will cause a rise in your blood glucose, so limit these to no more than 1 small glass per day.

Note: Remember that potatoes do not count as a vegetable (see section on starchy foods).

Milk and dairy products

Milk, cheese and other dairy products contain calcium, which helps to keep teeth and bones healthy. Choose 2-3 portions per day. One portion is 200ml of milk, 30g of cheese or a small pot of yoghurt.

Top tips:

- Replace full fat milk with semi-skimmed or skimmed
- Choose reduced fat cheese, low fat cream cheese or cottage cheese
- Choose strong-flavoured cheese and use less
- Grating cheese helps it to go further
- Low fat yoghurts may have a higher sugar content than regular varieties, choose 'diet', or fat free unsweetened yoghurts and compare the label to the chart on the following pages.

Meat, fish and alternatives

Meat, poultry, fish, eggs, nuts, pulses and alternative protein sources such as Quorn®, soya or tofu, provide us with protein, as well as vitamins and minerals. Pulses are high in fibre, which are particularly good for helping to control your blood sugar levels. A portion is 80g of lean meat, 140g of fish, 2 eggs, and 4-5 tablespoons of beans or pulses.

Top tips:

- Include 2 portions of these foods each day
- Choose lean meat and poultry
- Avoid fish canned in oil or brine, choose fish in water or a tomato sauce.
- Avoid adding fat/oil or frying. Instead, choose poached, scrambled or boiled eggs, steamed, grilled or microwaved fish and grilled, stewed or roasted meat/chicken.
- Beans and pulses such as lentils, kidney beans, butter beans, black eyed peas, chick peas & haricot beans are low in fat, high in fibre and can improve your blood glucose control. Try adding to stews, casseroles and curries. They can be used alongside, or instead of, meat and chicken.
- Nuts are quite high in fat so if you are overweight, avoid them as a snack and choose unsalted varieties.

Sugary foods and drinks

These foods and drinks are absorbed by the body and will cause your blood glucose level to rise rapidly. Try to reduce your intake of sugary foods and choose low-sugar alternatives. If you follow a healthy diet, it is not necessary to avoid foods containing sugar completely. Where possible, choose reduced sugar or sugar-free foods and drinks.

Top tips:

- Choose diet, low calorie, or no added sugar, squash and fizzy drinks
- Choose sugar-free hot chocolate and other milky drinks such as “Highlights®”, “Options®”, or supermarket own brand
- Choose reduced sugar/no added sugar jams, marmalade and pure fruit spreads and use sparingly
- Avoid sugar alternatives such as honey or maple syrup
- Fruit, low fat/sugar yoghurt, sugar-free jelly & low-sugar instant whip are good choices for dessert
- Choose plain biscuits such as rich tea, oatcakes, wholemeal digestive biscuits.

Artificial sweeteners

Artificial sweeteners can be used instead of sugar in foods and drinks. They can be bought as tablets or powder, e.g. Canderel, Hermesetas, Natrena, Sweetex, Truvia® and Splenda®. These may be listed on ingredient labels as Acesulfame-K, Aspartame, Nutrasweet, Saccharin and Sucralose. Each brand of sweetener will taste different; it is worth trying different varieties to find which ones you prefer.

Sweeteners to avoid

Some sugar substitutes are a mixture of sugar and sweetener, eg. Half Spoon® and Slite®. They contain some calories and will raise blood glucose.

Fruit sugar or fructose, e.g. Fructafin, Fruisana and Sorbitol should be avoided. These contain as many calories as sugar, are expensive and can cause diarrhoea.

What about diabetic foods?

Diabetic foods such as sweets, chocolate and biscuits are not necessary. They are often high in fat and calories, expensive and can cause diarrhoea if eaten in large quantities.

Salt

It is recommended that the average intake of salt is less than 6g salt (2.4g sodium) = approximately only 1 teaspoon per day. This is because larger intakes of sodium increase your risk of heart disease and stroke. Most people in the UK consume more salt than is recommended.

Top tips:

- Choose less processed foods (ready meals, soups, bottles sauces, canned products)
- Eat less salty foods (ham, bacon, smoked fish, cheese, salted butter, yeast extracts, stock cubes)
- Try not to add salt to cooking, instead use herbs, spices, pepper, lemon juice, garlic, vinegar or mustard for flavouring (check food labels of mixed or blended spices)
- Choose reduced salt varieties where they are available
- Try not to add salt to food at the table, and make sure that you always taste food first
- Cut down on salty snacks such as crisps, salted nuts and biscuits and olives
- Buy canned vegetables and fish labelled “no added salt” or those tinned in water not brine or oil
- Check food labels to see how much salt per 100g the products you are buying contain. Try to choose products which fit into the low or medium categories below.

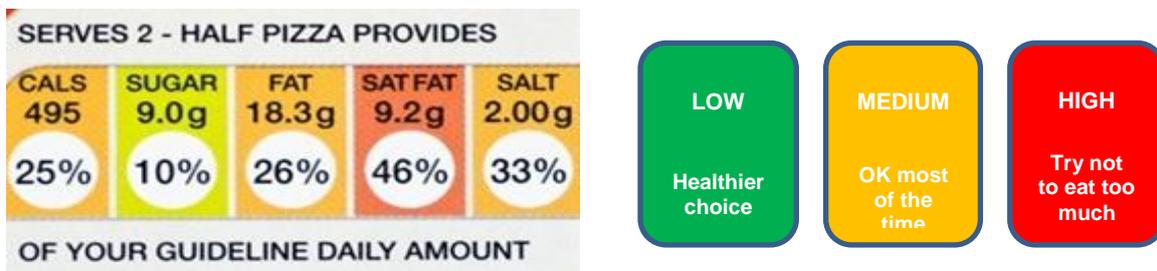
Food Labels

When reading food labels, always look at the ‘**per 100g**’ of food column. Try and choose as many foods in the ‘low’ category as possible. You should try not to eat too much of foods in the ‘high’

category. The table below shows how high, medium and low levels of fat, saturated fat, sugar and salt in foods.

	High	Medium	Low
Fat	More than 17.5g	3.1g-17.5g	3g or less
(Fat) saturates	More than 5g	1.6g-5g	1.5g or less
Sugars	More than 22.5g	5.1g-22.5g	5g or less
Salt	More than 1.5g	0.31-g1.5g	0.3g or less

Some foods have traffic light labelling on their packaging. The colours on the label show you whether the amount of fat, sugar or salt in the food is high, medium or low. Try and choose green or amber for healthier option.



When checking labels, please note the following ingredients are sugars:

Glucose, honey, dextrose, maltose, invert syrup.

Alcohol

Government guidelines for alcohol intake are the same regardless of whether a person has diabetes or not, e.g. no more than 14 units per week for men and women. **However, if you are taking certain medications, or insulin alcohol can cause hypoglycaemia (hypo)** for some time after drinking.

To avoid a hypo whilst drinking alcohol:

- Drink with meals rather than on an empty stomach
- Do not miss meals or cut down on your food
- After evening drinking, have a small starchy snack before you go to bed.

One unit is:

- Half pint of beer, lager or cider – regular strength
- 1 single standard pub measure (25ml) of spirits – e.g. whisky, gin, rum or vodka
- 1 small glass (125ml) wine, sherry or fortified wine.

Remember:

- Home measures tend to be more generous
- All alcohol is high in calories. If you are overweight, try to drink less alcohol
- Check that mixers and soft drinks are low calorie, sugar-free or diet varieties
- Strong beer and lager contains more alcohol. Home brews can also be much stronger
- Low alcohol beers and wines can be high in sugar. There is no need to buy special “diabetic” beers
- Alcopop type drinks are high in both alcohol and sugar and should be avoided
- Add soda water or diet lemonade to wine to make a spritzer
- Alternate diet or sugar-free drinks with alcohol.

Physical Activity

It is recommended that you should exercise moderately for at least 30 minutes daily. This is because of the health benefits that exercise provides, including:

- Improved blood glucose control
- Improving blood pressure
- Improving levels of fat (eg. types of cholesterol) in the blood
- Improving bone health, suppleness and flexibility
- Improving mood and general well being
- Obtaining and maintaining a healthy body weight

When exercising, your heart rate will raise and you should feel that you are warmer and are breathing more deeply but not out of breath, you should still be able to hold a conversation.

Top tips:

- Activity can be spread out throughout the day, for example 3 sessions of 10 minutes or 2 sessions of 15 minutes.
- Choose activities that you enjoy: dancing, swimming, bowling, gardening, walking, cycling, kicking a ball around with your children, grandchildren, nieces or nephews.
- Join a club and exercise and socialise together.
- Try to walk instead of taking the car, or get off the bus two stops early.
- Build up gradually and try setting some fitness goals for which you can reward yourself when you achieve them.
- If you are concerned or on medication, discuss any new exercise programme with your doctor.

Hypoglycaemia

Balancing your blood glucose levels is not always easy and sometimes they may drop too low. If this happens you need to take quick action, so make sure you know what symptoms to look out for and what to do.

In people without diabetes the body automatically keeps blood glucose levels within a normal range. If the level starts to drop too low, the body stops producing insulin and releases some of its stored glucose into the blood.

When you have diabetes, it is a bit more of a balancing act. It can be difficult to get the right amount of insulin for the food you eat and the activity you do. There will be times when your blood glucose levels drop too low (< 4mmol/l), and this is called hypoglycaemia, often shortened to “hypo”.

What are the symptoms of hypoglycaemia?

Everyone has different hypo symptoms but the most common ones include:

- Feeling hungry
- Trembling and shakiness
- Sweating
- Becoming anxious or irritable
- Becoming pale
- Palpitations and fast pulse
- Tingling sensation on the lips
- Blurred vision.

What are the causes of hypoglycaemia?

A hypo is caused by:

- Having too much insulin for the amount of carbohydrate eaten
- Medications such as sulphonylureas
- Missing or delaying a meal
- Being more active than usual or doing unplanned activity (this can include sex)
- Drinking alcohol especially on an empty stomach.

Sometimes you can have a hypo for no apparent reason.

How do I treat a hypo?

It is essential to treat your hypo as soon as you recognise the symptoms, or have tested and found that your blood glucose levels are too low. Act quickly, or the hypo may become more severe and you might become confused, drowsy or even unconscious.

Treat your hypo immediately with 15-20g of rapid acting carbohydrate. This can be:

- 5 dextrose tablets
- 1 mini can of cola (150ml) or half a small glass (100ml) of Lucozade original
- 2 tubes of glucogel (hypostop)
- 1 small glass of pure orange juice (160ml)
- 4 jelly babies.

If there is no improvement after 10-15 minutes, repeat the treatment. To stop your blood glucose levels falling low again you may need to eat some starchy food such as a plain biscuit, a slice of toast or one banana, especially if it is going to be some time before your next meal. Think about what has caused your hypo. Hypos should not happen often. If they do, consult your nurse, doctor or dietitian, who might suggest some changes to your treatment.

AVOID treating episodes of hypoglycaemia with foods that are high in fat, such as chocolate and biscuits. Fat will delay the absorption of the glucose and won't treat the hypo quickly enough.

If you are on Insulin

- Eating regular meals helps to control blood glucose levels. Avoid skipping meals
- Discuss the timing of your insulin and food with your diabetes team, to find a pattern that suits you
- When you exercise you may need to lower your insulin dose and/or take extra food. This needs to be discussed with your dietitian or nurse
- **If you become unwell you still need to take your insulin.** If you cannot eat, you may find it easier to drink fluids such as milk, fruit juice, or ordinary Ribena or Lucozade. You will need to discuss the quantity of these drinks with your diabetic nurse or dietitian.

My Change Plan

Making changes to your diet and lifestyle can be difficult so don't try to do everything at once. Start with one or two changes which you feel are achievable. When you are happy with these you could introduce some more.

The changes I am going to make.	How will I do it?

Additional information is available from:

- Diabetes UK <http://www.diabetes.org.uk/>
- Change4life <http://www.nhs.uk/change4life>
- British Heart Foundation <http://www.bhf.org.uk>

Who should I contact if I have a problem or question?

Please contact us: Dietetics and Speech Therapy Service, Hillingdon Hospital 01895 279416

What should I do in case of an emergency?

If your concern is related to your diet please contact us on 01895 279416. If your emergency is regarding your diabetes please contact your GP or NHS 111.

Languages/ Alternative Formats

Please ask if you require this information in other languages, large print or audio format.

Please contact: 01895 279973

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