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Welcome

Welcome to Eating Well – Type 2 diabetes. You’re bound to have lots of questions about your diet, and this guide is intended to help you get started and understand some of the different aspects. From eating out to cooking healthier meals, you can make informed food choices that fit into your lifestyle.

Balancing your diet when you have diabetes is just as important as taking your medication and being active. You will still be able to enjoy a wide variety of food, but changing your eating habits, if you need to, will help you manage your condition and protect your long-term health.

Your dietitian and diabetes healthcare team will also work with you to make sure that you get information that’s specific to you and this guide is not intended to replace any of that advice. In this guide there’s also lots of information about how Diabetes UK can support you as you live your life to the full.

For detailed diabetes information and lifestyle tips, visit www.diabetes.org.uk/Guide-to-diabetes.

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With thanks to all the contributors and advisors, and the volunteers who participated in photoshoots.

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TYPE 2 DIABETES EXPLAINED

You may hear a lot of different and sometimes conflicting information about diabetes and how it affects people, which can be confusing. It’s important to get the right information from a trusted source, so here are some of the facts.

What is diabetes?
Diabetes is a condition where your body can’t produce insulin, it doesn’t produce enough, or where your insulin doesn’t work properly. If you don’t have the right amount of insulin, or if your insulin isn’t doing its job properly, you can become very ill.

What is insulin?
It is a hormone that helps your body use the glucose in your blood to give you energy. Insulin is made by an organ called the pancreas, which lies just behind the stomach. It acts as the ‘key’ that ‘unlocks’ the body’s cells to let glucose in, which is then converted into energy.

Where does glucose come from?
Glucose enters the bloodstream when we digest carbohydrate from various kinds of food and drink, including starchy foods (such as bread, rice, potatoes), fruit, some dairy products, sugar and other sweet foods. The liver also produces glucose. In people without diabetes, insulin carefully controls the amount of glucose in the blood.

What happens in someone with Type 2 diabetes?
Type 2 diabetes develops when
the pancreas doesn’t produce enough insulin or when the insulin it produces doesn’t work properly (known as insulin resistance). As a result, glucose remains in the bloodstream and is unable to enter the cells where it can be converted into energy. This is why some people with untreated diabetes often feel tired. The body then gets rid of the excess glucose via the urine. This can make you pass more urine than usual and become dehydrated, which may lead to extreme thirst.

What are the symptoms?
The symptoms of undiagnosed Type 2 diabetes are the same as those you may experience if your blood glucose levels are higher than normal. These may include:
- passing urine more often, especially at night
- increased thirst
- extreme tiredness
- genital itching or regular episodes of thrush
- wounds and cuts that take a long time to heal
- blurred vision
- losing weight without trying.

What are the risk factors?
Although you already have diabetes, you might want to encourage your family and friends to see if they are at risk and to look out for the signs of Type 2 diabetes. The sooner they take action, the sooner they can get the right care.

People who are most at risk of Type 2 diabetes are:
- aged over 40 years old (or over 25 if South Asian)
- from a Black African, Caribbean or South Asian origin
- those who have a parent, brother or sister with diabetes
- overweight
- women with a waistline bigger than 80cm (31.5in)
- men with a waistline bigger than 94cm (37in), or 90cm (35in) for South Asian men
- those who have ever had high blood pressure, a heart attack or a stroke
- people taking anti-psychotic medication to treat a mental health condition
- women who have polycystic ovary syndrome or have had gestational diabetes or had a baby weighing more than 4.5kg (9.9lb)
- known to have pre-diabetes, impaired glucose tolerance or impaired fasting glucose.

The more risk factors a person has, the greater their risk of developing Type 2 diabetes.

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How is Type 2 diabetes treated?

There are three main treatments:
- healthy eating and being physically active, or
- healthy eating, being physically active and medication, or
- healthy eating, being active, medication and insulin injections.

Your diabetes healthcare team will talk to you about how to manage your diabetes. You may need to make lifestyle changes, such as eating more healthily and being more active, and – if necessary – losing weight. You may also need to take diabetes medication or have insulin injections – or both.

Everybody is different and it can sometimes take a while to find out what works best for your diabetes. As Type 2 is progressive, your treatment may need to change over time – either the dose or the type of medication. Your doctor or nurse will work with you to find the treatment that’s right for you.

Some people refer to Type 2 diabetes as ‘mild’ depending on how it is treated. Type 2 diabetes is not mild. It is a serious medical condition that won’t go away, but with the right treatment it shouldn’t stop you living a full life. It’s important that you understand what you need to do.
GETTING THE BALANCE RIGHT

We know we're meant to eat a healthy, balanced diet, whether we have diabetes or not. Here's how to get it right:

1. STARCHY FOODS
   Bread, rice, potatoes and pasta contain the all-important nutrient carbohydrate, which is broken down into glucose and used by the body's cells as fuel. Try to choose those that are more slowly absorbed (have a lower Glycaemic Index, see p12), as these won't affect your blood glucose levels as much. Starchy foods are naturally low in fat, and the high-fibre varieties are good for keeping your bowels regular and preventing digestive disorders.

2. HOW MUCH PER DAY?
   5–14 portions. One-third of your diet should be made up of these foods, so try to include them in all meals.

3. WHAT'S A PORTION?
   One portion is equal to: 2–4 tbsp cereal; 1 slice of bread; 2–3 tbsp rice, pasta, couscous, noodles or mashed potato; 2 new potatoes or half a baked potato; half small chapatti; 2–3 crispbreads or crackers.
2 FRUIT & VEGETABLES
All of these foods are low in fat and calories, and packed with vitamins, minerals and fibre, which are vital for good health. They can help protect against stroke, heart disease, high blood pressure and certain cancers.

How much per day? Aim for at least 5 portions. Fresh, frozen, dried and tinned fruit and veg all count.

What’s a portion? Roughly what you can fit into the palm of your hand. It’s best to mix and match fruit and veg to get as wide a range of vitamins and minerals as possible. See p8, point 4 for some examples.

3 DAIRY PRODUCTS
Milk, cheese and yogurt contain calcium, which helps to keep your bones and teeth strong. They are also a good source of protein, but some can be high in fat, so choose lower-fat alternatives where you can.

How much per day? Aim for 3 portions.

What’s a portion? ½ pint of milk; a small pot of yogurt; 2 tbsp cottage cheese; or a matchbox-sized portion of cheese (40–45g/1½oz).

4 FOODS HIGH IN FAT AND SUGAR
Technically, your body doesn’t need any foods in this group, but eating them in moderation will still mean you are following a healthy, balanced diet. Sugary foods will raise your blood glucose, as will sugary drinks, so bear this in mind and choose diet or low-calorie soft drinks instead. It’s also worth remembering that fat contains a lot of calories, so try to reduce the amount of oil you use in your cooking and choose lower-fat alternatives where possible.

How much per day? 0–4 portions (the fewer the better).

What’s a portion? One portion is equal to: 2 tsp spread, butter, oil, salad dressing, sugar, jam or honey; 1 tbsp Bombay mix; rasher of bacon; ⅛ of a vegetable samosa; 1 mini chocolate bar; 1 scoop of ice cream or 1 tbsp cream.

5 MEAT, FISH, EGGS & PULSES
These foods are high in protein, which is needed for building and replacing muscle cells in the body. They also contain minerals, such as iron, which are needed for producing red blood cells. Omega-3 fish oils, found in oily fish such as mackerel, salmon and sardines, can help to protect the heart. Good sources of protein for vegetarians are beans, pulses, lentils, soya and tofu.

How much per day? Aim to have 2–3 portions.

What’s a portion? One portion is equal to: 60–85g (2–3oz) meat, poultry or vegetarian alternative; 120–140g (4–5oz) fish; 2 eggs; 2 tbsp nuts; 3 tbsp beans, lentils or dahl.

The number of portions people need varies, and these are given as a guide. Your dietitian will be able to tell you how much you should eat.

Seasoning
Eating too much salt (6g/0.2oz or more per day) can raise your blood pressure, which can lead to stroke and heart disease, so limit the amount of processed foods you eat and try flavouring foods with herbs and spices instead.
TOP TIPS FOR EATING WELL

There are many ways you can enjoy eating well. Small, simple changes all go a long way to improving your diet and help to protect your long-term health. Here are our top 10 tips...

1. **EAT REGULAR MEALS**
   It's important not to skip your meals. Try to space them evenly throughout the day as this will help control your appetite and blood glucose levels – especially if you are on twice-daily insulin.

2. **INCLUDE CARBS**
   Include starchy carbohydrate foods in your diet. Carbohydrate (carbs) affects blood glucose levels, so be conscious of how much you eat (see p10). The best carbs are those our bodies absorb slowly. Try:
   - pasta, basmati or easy-cook rice
   - granary, pumpernickel or rye breads
   - new potatoes, sweet potatoes and yams
   - oat-based cereals, such as porridge or natural muesli.

3. **CUT THE FAT**
   Eat less fat – particularly saturated fat – as a low-fat diet is healthier for you. So try:
   - unsaturated fats and oils, especially mono-unsaturated fats like olive oil and rapeseed oil, as these types of fat are better for your heart
   - using skimmed or semi skimmed milk and other low-fat dairy products
   - grilling, steaming or baking foods instead of frying.

4. **TRY THE 'FIVE A DAY' RULE**
   Aim for at least five portions of fruit or vegetables a day to give our bodies all the vitamins and minerals and fibre we need.
   A portion is:
   - 1 piece of fruit, like a banana or apple
   - 1 handful of grapes
   - 1 tbsp dried fruit
   - 1 small glass of fruit juice or fruit smoothie
   - 3 heaped tbsp vegetables.

5. **DON'T BE MEAN WITH THE BEANS**
   Brilliant beans, lovely lentils and perfect pulses. They're all low in fat, high in fibre, cheap to buy and packed with nutrition. They don't have a big impact on blood glucose and may help to control blood fats (eg cholesterol). And there are so many to choose from: kidney beans, chickpeas, green lentils, and even baked beans. Try them:
   - hot in soups and casseroles, or cold in salads
   - in baked falafel, bean burgers and low-fat hummus and dahls.
6 DISH UP THE FISH
All types of fish are healthy, but top choices are oily fish like mackerel, sardines, salmon and trout. These contain polyunsaturated fat, called omega-3, which helps protect against heart disease. Aim to eat 2 portions of oily fish a week, ideally from a sustainable source.

7 SAY 'YES' TO LESS SUGAR
This doesn't mean you need to eat a sugar-free diet. You can include some sugar in foods and baking as part of a healthy diet, just aim to have less of it. You can use sweeteners as an alternative to sugar, too. Some easy ways to cut back on your sugar intake are:
- choosing sugar-free, no-added sugar or diet fizzy drinks and squashes
- buying canned fruit in juice rather than syrup
- reducing or cutting out sugar in tea and coffee.

Remember, sugary drinks are an excellent treatment for hypos.

8 SLOW DOWN ON THE SALT
Reduce salt in your diet to 6g or less a day. Too much salt can raise your blood pressure, which increases your risk of heart disease and stroke.
- 70 per cent of our salt intake comes from processed foods, so cut back on these types of food where you can.
- Try flavouring foods with herbs and spices instead of reaching for the salt cellar.

9 THINK BEFORE YOU DRINK
The recommended daily alcohol limit for women is 2–3 units and 3–4 units for men.
- 1 unit is a single measure (25ml) of spirits
- half a pint (284ml) of lager, beer or cider has 1 to 1½ units, and a 175ml glass of wine up to 2 units.
- Alcohol is high in calories. To lose weight, think about cutting back.
- Never drink on an empty stomach as alcohol can make hypos (hypoglycaemia – low blood glucose level) more likely to happen if you are at risk of hypos.

10 DITCH 'DIABETIC' FOODS
These products offer no benefit to people with diabetes and may still affect your blood glucose levels. They contain as much fat and calories as ordinary versions, they are expensive and can have a laxative effect.
THE CARB CONNECTION

Carbohydrates are often in the spotlight and there are conflicting stories about why we need them, what they really do, which ones are best and how much we should eat or not (in the case of low- and no-carb diets). So let's go back to basics...

WHAT ARE CARBOHYDRATES?
There are two main types of carbohydrate — starchy carbohydrates and sugars.

Starchy carbohydrates: These include bread, pasta, chapattis, potatoes, yam, noodles, rice and cereals.

Sugars: These can be divided into naturally occurring sugar and added sugar. Natural sugars are found in fruit (fructose) and some dairy products (lactose). Added sugars are found in table sugar, glucose syrup, invert syrup and honey. Sugars can often be identified on food labels as those ingredients ending in 'ose' eg sucrose, glucose, lactose, fructose.

Why do we need carbohydrate?
Carbohydrate is a nutrient and is an important source of energy. All carbohydrates that you eat and drink are broken down into glucose, which is the body's essential fuel that keeps us functioning — especially the brain. High-fibre varieties are important for keeping your bowels regular and preventing digestive disorders.

How much do we need?
It depends on your age, weight and activity levels. In 'Getting the balance right' (p6), we looked at carbohydrate portions - what they are and how much is needed. Remember that all carbohydrates break down into glucose, and the total amount you eat and drink will have an effect on your blood glucose levels, so being aware of how much carbohydrate you are eating could help you to achieve your optimal glucose control. If you're taking fixed amounts of insulin, you may find it beneficial to have consistent amounts of carbohydrates on a day-to-day basis. Your dietitian will help you find the balance that suits you.
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GI CONCEPT EXPLAINED

You may have heard about the Glycaemic Index (GI), which is a ranking of carbohydrate-containing foods based on their overall effect on blood glucose levels. Here's how you can take this into account when it comes to your diabetes.

Foods are given a GI number according to their effect on blood glucose levels. Glucose is used as a standard reference (GI 100) and other foods are measured against this.

Slowly absorbed foods have a low GI rating, while foods that are more quickly absorbed have a higher rating. This is important because, when you have diabetes, choosing slowly absorbed carbohydrates instead of quickly absorbed carbohydrates, can help even out blood glucose levels.

Research into low-GI diets has shown some benefits in HbA1C levels in people with Type 2 diabetes. They have also been linked with improved levels of 'good' cholesterol and a lower rate of heart disease.

Does anything affect GI?
Factors may include:
- Cooking methods: frying, boiling and baking.
- Processing and the ripeness of fruit and certain vegetables.
- Wholegrains and high fibre foods act as a physical barrier that slows down the absorption of carbohydrate. This is not the same as 'wholemeal', where, even though the whole of the grain is included, it has been ground up instead of left whole, eg some mixed grain breads that include wholegrains have a lower GI than wholemeal or white bread.
- Fat lowers the GI of a food. For example chocolate has a medium GI because of its fat content and crisps will actually have a lower GI than potatoes cooked without fat.
- Protein lowers the GI of food. Milk and other dairy products have a low GI because they are high in protein and contain fat.

If you only ate low-GI foods, your diet could be unbalanced and high in fat and calories, which could lead to weight gain (making it harder to control your blood glucose levels) and increase your risk of heart disease. So, it's important not to focus exclusively on GI and to think about the balance of your meals, which should be low in fat, salt and sugar, and contain plenty of fruit and vegetables.

How do I find out the GI values of all food?
There are books that give a long list of GI values for many different foods, though this does have its limitations. The GI value relates to the food eaten on its own and we usually eat foods in combination as meals.

How can I get the benefit of GI?
You can maximise the benefit of GI by switching to a low-GI option food with each meal or snack. A few suggestions are given in the table, right.
How strict should I be with applying the GI concept? Eating to control your diabetes isn’t just about GI ratings and shouldn’t be used in isolation. Choosing foods solely on the basis of their GI, without regard to their content of energy, saturated fat or salt, is unlikely to be a healthy diet.

Although some research has shown that low-GI diets help in controlling blood glucose levels, the amount of carbohydrate you eat has the biggest influence on your blood glucose levels after meals.

"All of the carbohydrate that you eat and drink are broken down into glucose."

Making the most of low GI foods

**BREAKFAST**
- Try an oat-based breakfast cereal, eg porridge.
- Add sliced fruit to wholegrain breakfast cereals.

**LUNCH**
- Add baked beans to your jacket potato and serve with a large green salad.
- Try a bean-based or vegetable soup.
- Eat a variety of grainy or pumpernickel bread, instead of white or wholemeal bread.

**EVENING MEAL**
- Consider boiled potato or sweet potato instead of mashed potato with your meal.
- Choose basmati or easy-cook rice instead of long grain rice.
- Include plenty of vegetables with your meals.
- Include more beans and lentils in your meal; try adding them to casseroles and curries.

**SNACKS**
- Get into the habit of eating fruit.
- Low-fat yogurt.
- Popcorn.
- Go easy on lower GI foods like chocolate and nuts, which are high in fat and calories, especially if you are trying to lose weight, so save them for occasional treats.