

Diet and type 2 diabetes

Nutrition and Dietetics

Patient Information Leaflet

Introduction

This booklet gives some general information about what to eat and drink if you have type 2 diabetes. If you need more detailed advice, please ask your GP to refer you to a registered dietitian.

What is type 2 diabetes?

Type 2 diabetes occurs when the level of glucose (sugar) in the blood is too high.

In people without type 2 diabetes, a hormone called insulin helps to control blood glucose levels. Insulin acts like a key and allows glucose to move from the blood into the cells that make up your body. Your cells use glucose as fuel.

In people with type 2 diabetes, the main problem is that the insulin produced cannot work properly, which is known as insulin resistance. As time living with type 2 diabetes increases, the amount of insulin produced by the pancreas may also reduce. If diabetes has not yet been diagnosed or it is poorly controlled, high blood glucose levels may cause the following symptoms:

- Tiredness.
- Excessive thirst.
- Weight loss.
- Passing water more often.

How is diabetes managed?

It is managed in one of four ways, depending on the person and the type of diabetes:

1. Diet alone.
2. Diet and tablets (for example, metformin and gliclazide).
3. Diet and insulin.
4. Diet, tablets and insulin.

Can type 2 diabetes be put into remission?

Recent evidence has shown that for many overweight or obese adults with type 2 diabetes, losing **15kg** (2 stone 5lbs) as soon as possible after diagnosis is successful for achieving remission. Remission means that your blood glucose levels are below the diabetic range, usually without you needing to take any diabetes medication. If you feel this amount of weight loss is not realistic, but you would like to improve your blood glucose levels and reduce the risk of cardiovascular disease (CVD), it is recommended to lose at least five per cent of body weight if you are overweight or obese (i.e. body mass index, also known as BMI, more than or equal to 25 kg/m²).

Any dietary approach that results in weight loss could be suitable, particularly low-carb (less than 150g carbs daily), high-protein and Mediterranean. The most important factor is choosing the dietary approach that you can stick to long-term.

How can I keep my blood glucose levels in target?

The main food group that affects blood glucose levels is carbohydrates. Reducing carbohydrate consumption is one way to improve blood glucose control and lose weight.

Carbohydrates		
Starchy Foods	Foods containing sugar	
	Simple sugars	Natural sugars
Bread/cobs/rolls	Sugar	Milk
Rice	Jam	Yoghurt
Crackers	Fizzy drinks	All fruit
Potatoes (chips and crisps)	Sweets	
Pasta	Cakes	
Breakfast cereals	Biscuits	
Anything made with flour	Desserts	
Chapatti/naan/roti	Chocolate	
Couscous	Jar sauces	
Pastry (pies, sausage rolls)	Sauces	
Yam	(ketchup/brown/BBQ)	
Fufu	Tinned spaghetti	
Plantain	Fruit juice	
Eba/gari	Honey	
Coating – breaded/batter	Maple syrup	

Simple sugars

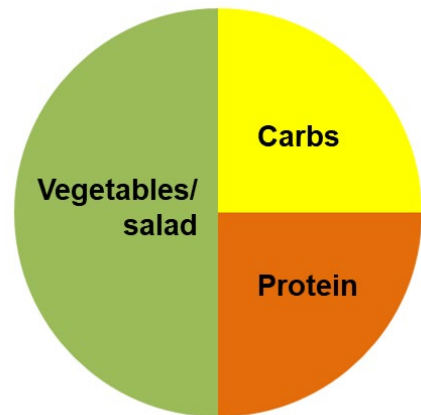
- Minimise these foods first (above in bold) to help control blood glucose.
- Replace sugar/honey in drinks and on food with artificial sweeteners. Speak to your dietitian if you have issues with diarrhoea or history of irritable bowel syndrome (IBS).
- Choose diet drinks or sugar-free versions.

Natural sugars

- Limit fruit to two to three small portions per day spread out. One portion is 80g, e.g. a fun-size banana, a medium apple, one quarter of a mango, a handful of grapes/berries.
- Milk and yogurt are a good source of calcium when eaten in moderation and should contribute to your recommended two to three portions of calcium per day (see advice on Calcium on page 4 of this leaflet). It is advised you opt for “no added sugar” or plain natural/Greek yogurt.

Starchy carbohydrates (yellow on the meal plate below)

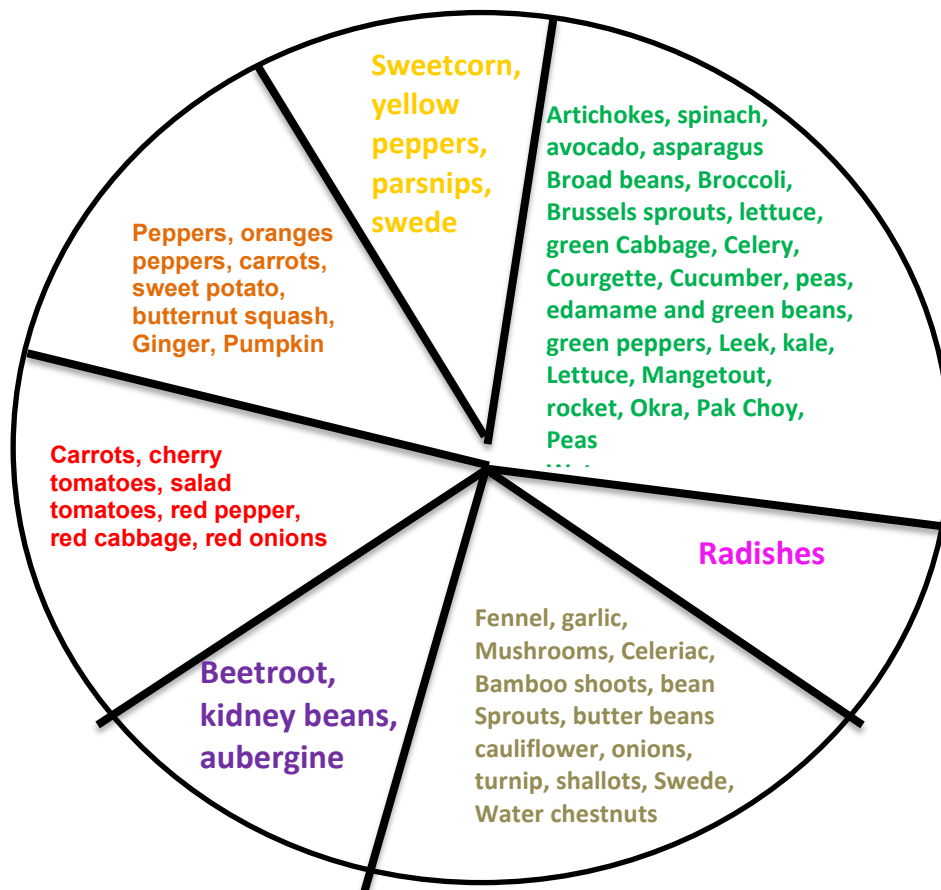
- Portion size is very important.
- Only have one portion at each meal and avoid double portions, e.g. pasta and garlic bread, burger bun and chips.
- For weight loss, aim to fill one quarter of your plate with starchy carbohydrates.
- Suggested portion sizes:
 - Two medium slices of bread.
 - Four tablespoons of cooked rice/pasta/couscous.
 - Four egg-sized new potatoes.
 - One medium wrap/chapatti/pitta.
 - Half of a fist-sized portion of fufu/plantain.
 - Two slices of boiled yam.
- Choose high-fibre low glycaemic index (GI) carbohydrates, e.g. seeded or wholegrain bread, brown/long-grain/basmati rice, ideally wholegrain pasta or white pasta cooked firm, and porridge (made from jumbo oats).
- To the one quarter plate of carbohydrates, add a one quarter plate of protein (chicken, meat, fish, eggs, vegetarian alternatives, cheese, and beans) and a half plate of vegetables/salad.



Fibre

- It is recommended that we consume 30g of fibre per day.
- Fibre is found in wholegrain, starchy carbohydrates, fruit, vegetables, and legumes (beans, peas, lentils).
- Fibre helps to keep our bowels regular and healthy.
- If you are increasing your fibre intake, it is important to do so slowly to avoid unpleasant gastric side-effects and to also increase fluid consumption.
- It is advised to choose a wide variety of different vegetables of different colours to get different nutrients and support a healthy digestive system.

THE RAINBOW OF VEGETABLES



What are the other aspects of a healthy diet with diabetes?

Healthy fats

- Healthy fats are essential for life. These include oily fish, extra virgin olive oil, avocado, nuts and seeds.
- It is recommended that adults with diabetes consume two portions of oily fish per week, e.g. salmon, mackerel, sardines and pilchards.
- Nuts and seeds high in healthy fats include walnuts, almonds, macadamia nuts, hazelnuts, chia seeds, flaxseeds, sesame seeds

Calcium

- Calcium is important for healthy bones and teeth.
- Aim for two to three portions of calcium per day.
- One portion is:

- 200ml milk
- 150g Greek/plain/no added sugar yogurt
- 30g (matchbox-size) cheese
- Non-dairy sources include:
 - Plant-based milks, e.g. soya/almond/coconut (with added calcium)
 - Spinach, broccoli, cabbage, okra and spring greens
 - Tofu
 - Almonds
 - Sardines and pilchards
 - Beans and dahl

Iron

- Iron is important to avoid tiredness and anaemia.
- Some good sources include:
 - Red meat, e.g. beef, lamb, pork
 - White meat and fish
 - Beans, peas, lentils
 - Nuts and seeds
 - Eggs
 - Spinach, cabbage, broccoli
 - Tofu
- It is suggested to include a vitamin C fruit after completing your meal high in iron to improve absorption.
- Fruits high in vitamin C include citrus fruits (orange, satsuma, tangerine), kiwi, strawberries, blackcurrants.

Protein

- Protein foods are the most filling food group:
- They include chicken, meat, fish, eggs, vegetarian alternatives, cheese and beans.
- Aim to fill a quarter of your plate at each meal with protein foods.
- Non-animal protein foods include soya, nuts and seeds, pulses and legumes.

Fluids

- Aim for six to eight cups of sugar-free fluid each day to keep hydrated.

- Water is the best choice, however, tea, coffee, and other sugar-free drinks including no added sugar squash, milk or sugar-free fizzy drinks also count.

Do I need a vitamin D supplement?

- Everyone should consider taking a vitamin D supplement of **10 micrograms** per day during the winter months of September to March.
- If you are at higher risk, e.g. any of the reasons below, you should consider taking a vitamin D supplement of **10 micrograms** per day all year:
 - You are not outdoors often.
 - You live in a care home.
 - You wear clothes that cover you up when you are outdoors.
 - You have dark skin.
 - You are pregnant.

What about salt?

Healthier eating should involve a reduction in salt intake. One of the benefits of this may be lower blood pressure. People often worry that their food will be tasteless if they do not add salt. However, your taste buds regenerate, so if you persevere with the change for a couple of weeks, you should get used to it and have a new appreciation of the flavour of your food. Here are some ideas about flavourings you can use to replace salt:

- Mixed herbs
- Chilli powder
- Black pepper
- Mustard
- Garlic (fresh or granules)
- Vinegar
- Lemon juice

Please note that the use of salt substitutes is not recommended. It is better to get used to eating food that is less salty.

What about physical activity?

- Any movement of your body will help lower blood glucose levels.
- It is recommended to do at least 150 minutes of moderate intensity activities (increased breathing, able to talk) per week e.g. swimming,

brisk walking or cycling, or at least 75 minutes of vigorous intensity activities (breathing fast, difficulty talking) e.g. running, stair climbing or circuit training. You can also do a combination of both.

- Every minute counts.
- Minimise sedentary (sitting) time.
- On at least two days of the week, do activities to build strength, e.g. carrying heavy bags, yoga, using resistance bands or lifting weights.
- For older adults, to reduce the chance of frailty and falls, do activities to improve balance on two days per week, e.g. bowls, Tai Chi or dance.

Physical activity for adults and older adults

Benefits health

ZZ Improves sleep

Maintains healthy weight

Manages stress

Improves quality of life

Reduces your chance of

Type II Diabetes -40%

Cardiovascular disease -35%

Falls, depression etc. -30%

Joint and back pain -25%

Cancers (colon and breast) -20%

Some is good, more is better

Make a start today: it's never too late

Every minute counts

Be active

at least

150

minutes moderate intensity per week

Increased breathing able to talk



OR

or a combination of both

at least

75

minutes vigorous intensity per week

breathing fast difficulty talking



to keep muscles, bones and joints strong

Build strength

on at least 2 days a week



Minimise sedentary time

Break up periods of inactivity



For older adults, to reduce the chance of frailty and falls

Improve balance

2 days a week



UK Chief Medical Officers' Physical Activity Guidelines 2019

Alcohol in moderation

- Alcohol recommendations for people with type 2 diabetes are the same as for the rest of the population, i.e. a maximum of 14 units per week for men and women.
- It is recommended to have two alcohol free days per week.
- A pint of 4% ale, lager, stout or normal strength beer contains two units, a 250ml large glass of red or white wine is three units and a 25ml shot of brandy, rum, vodka, gin or whisky is one unit.
- If you are trying to lose weight, reducing alcohol can also help as it contains “empty calories” (energy without nutrition).
- People with diabetes who take tablets and/or insulin should be aware that alcohol can cause blood glucose levels to decrease (hypoglycaemia). If you drink alcohol, the following advice will help you to make better choices and stay safe:
 - Add diet pop or soda water to spirits.
 - Alternate between diet soft drinks and alcoholic drinks during special occasions when you are drinking alcohol.
 - Stick to smaller servings, for example, a 125ml glass of wine, half a pint, a single shot, a white wine spritzer with soda water.
 - If you take tablets and/or insulin for your diabetes, reduce the risk of low blood glucose levels by eating before you drink alcohol, or drinking it at the same time as a meal. Then, eat a snack containing carbohydrates before going to bed.
 - Let people around you know that you have diabetes and at risk of hypoglycaemia, so they can act accordingly if you show symptoms of dizziness, irritability, sweating. These can symptoms can mistaken for drinking excessive amounts of alcohol.

Meal ideas

Breakfast

- Porridge with milk and sweetener.

- One or two slices of granary toast with light olive spread, plus half a tin of reduced sugar baked beans or chopped tomatoes, two eggs (scrambled), peanut butter or 30g of cheese.
- 150g of Greek/natural/no added sugar yogurt, plus 80g of berries and a tablespoon of seeds or nuts.
- One or two slices of seeded toast, 1 egg with 20g of mozzarella cheese, 1 spoon of chia seeds.

Quick meals

- A sandwich made with two slices of seeded or granary bread, plus cucumber and tuna (tinned in spring water), cheese, ham or chicken and salad.
- Steamed mackerel from a tin, with a side salad including some pasta or potato.
- One wholemeal pitta bread stuffed with houmous, red pepper and salad leaves, or chicken and salad.

Cooked meals

- A piece of baked salmon with new potatoes and three tablespoons of mixed vegetables.
- Wholewheat spaghetti with homemade bolognese sauce, made with extra lean beef mince or Quorn mince, tinned chopped tomatoes and onion.
- Grilled chicken, red and yellow peppers and tomatoes flavoured with spices on a thin bed of basmati rice.

Desserts

- Sugar-free jelly with a handful of chopped fruit, or Greek/natural/no added sugar yoghurt.
- A small handful of tinned fruit (juice drained) with Greek/natural/no added sugar yoghurt.
- Two wholegrain crackers with cheese or peanut butter.

Snacks

- Snacks are not essential, and if you are trying to lose weight, reducing snacks can be a good strategy.
- If you are hungry, these are better suggestions:
 - No added sugar yogurt (e.g. plain natural/Greek yogurt).

- Vegetable sticks, e.g. cucumber, celery, carrots and peppers (with or without hummus or peanut butter).
- A portion of fresh fruit (80g) or dried fruit (30g).
- Plain nuts (palm-sized portion or 25 to 30g).
- Avocado.
- Two wholegrain crackers with meat/cheese/peanut butter.
- Two oatcakes with cheese/peanut butter.
- 200ml of milk.
- Small bar of dark chocolate (ideally more than 80%).
- Ice lollies made with diet drinks.
- Sugar-free jelly.

Can I find out more?

You can find out more on the Diabetes UK and NHS website:

www.diabetes.org.uk

[Diabetes - NHS \(www.nhs.uk\)](http://www.nhs.uk)

If you have any questions, or if there is anything you do not understand about this leaflet, please contact:

Diabetes Specialist Dietitians at Russells Hall Hospital on 01384 244017
(8.30am to 4.30pm, Monday to Friday)

The community dietitians at Stourbridge Health and Social Care Centre on
01384 323749 (8.30am to 4.30pm, Monday to Friday)

Russells Hall Hospital switchboard number: 01384 456111

This leaflet can be downloaded or printed from:

<http://dgft.nhs.uk/patients-and-visitors/patient-information-leaflets/>

If you have any feedback on this patient information leaflet, please email
dgft.patient.information@nhs.net

This leaflet can be made available in large print, audio version and in other languages, please call 0800 073 0510.

للحصول على هذه النشرة بحجم أكبر، وعلى شكل إصدار صوتي و بلغات أخرى، الرجاء الاتصال بالرقم 08000730510.

此宣传单可提供大字版本、音频版本和其它语言版本，请拨打电话：0800 073 0510。

Ulotka dostępna jest również w dużym druku, wersji audio lub w innym języku. W tym celu zadzwoń pod numer 0800 073 0510.

ਇਹ ਪਰਚਾ ਵੱਡੇ ਅੱਖਰਾਂ, ਬੋਲ ਕੇ ਰੀਕਾਰਡ ਕੀਤਾ ਹੋਇਆ ਅਤੇ ਦੂਸਰੀਆਂ ਭਾਸ਼ਾਵਾਂ ਵਿਚ ਵੀ ਪ੍ਰਾਪਤ ਹੋ ਸਕਦਾ ਹੈ, 0800 073 0510 ਤੇ ਫੋਨ ਕਰੋ ਜੀ।

Aceasta broșura poate fi pusă la dispoziție tipărită cu caractere mari, versiune audio sau în alte limbi, pentru acest lucru vă rugăm sunați la 0800 073 0510.

یہ کتابچہ آپ کو بڑے حروف کی لکھائی، سمعی صورت اور دیگر زبانوں میں مہیا کیا جا سکتا ہے۔ برائے مہربانی فون نمبر 08000730510 پر رابطہ کریں۔